SWALLOWED WHOLE

The amazing story of the discovery of *Hairy Bollock Extract*, the world's most potent dietary supplement
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JUST PAY SHIPPING AND HANDLING

While hiking through the Brazilian rainforest I chanced upon a previously unknown variant of the wonderplant *Scurrilus bollickus*. The local natives call this the Hairy Bollock Plant, and I asked the shaman of the local Whereethehellarewe tribe if it had any known medicinal properties. He gave me a curious smile and said that it was in fact widely used for various conditions. He said the tribal word for its use was unpronounceable but he knew that the Chinese had a word for it..."Plar See Bow".

I filled up several dozen cardboard boxes with the plant material the local natives were pleased to cut down for me, and shipped them back to my garage in the US. The next issue was what to do with it? Hence I faced the same dilemma hundreds of producers of natural herbal formulations have faced through the years, i.e. which disease to pick?

The obvious one is weight loss, because it affects millions of people, but there are literally hundreds of wonder pills on the market, so competition will be tough. Diabetes, given the epidemic of type II, is a possibility but Kevin Trudeau has fixed that one in his splendid fact-filled book, as we will discuss later. Also, this is the sort of area the Federal Trade Commission keeps an eye on [not the Food and Drug Administration, which amazingly had its legs cut off by a law passed in 1994 and thus is impotent]. Same applies to cancer; you have a big target population and many are in such a state of desperation they will ingest anything [often as not failing to tell the doctors treating them], but since your natural herbal formulation will do nothing at all, or even make them croak prematurely, you will draw unwanted attention.

A product area that has exploded lately is the “improved sexual performance” area. Actually, the area of interest to BigPharm is called “erectile dysfunction” and refers to the failure to achieve or maintain an erection. Judging by the saturation advertising you’d think every man in America had a weak member [or had “restless leg syndrome” for that matter, another global pandemic]. The first “celebrity”, if that’s the correct term, with sufficient courage to endorse these products was Senator Bob Dole. This is puzzling, because the most common weakness in politicians is their complete lack of a spinal column.

Viagra [sidenafil] was the first product to hit the market, followed rapidly by numerous Webpages selling “natural” versions, as well as several trillion truly offensive emails sent randomly to men, women, nuns, small children and the Pope, offering discounts on Chinese Viagra [the actual same molecule synthesized illegally by patent ignoring Chinese chemists with just a few impurities thrown in for fun] and on Mexican Viagra [ground
pig shit with high levels of bacterial endotoxin plus sawdust from the floor of the garage in Mexico it was bottled in]. But we'll return to this exciting topic later, after my wife and I go and sit in separate bath-tubs by the ocean.

Alzheimer’s comes to mind, but Garry Null said on PBS that he has already solved this apparently [strangely just before President Reagan developed it, a bit of a shame because I heard Garry say on PBS his system would reverse it]. Prostate cancer affects a lot of men, but saw palmetto cures this, even when it …er…doesn’t [it does reduce symptoms of benign hyperplasia however, a rare example of a natural herbal formulation actually doing something]. How about bee pollen for allergies? The problem here is that you’d have to make your natural herbal formulation actually smell like pollen.

But first you need some cash. You have to put your natural herbal formulation into tablet form, and package it in a box. Then you need a Webpage to promote it, and preferably a TV advert or even better an infomercial.

Small companies in the biotech industry go bust all the time and there are “lab equipment” companies that buy up their equipment on the cheap and resell it. So a tablet press can be bought without too much difficulty, especially if you don’t ask any difficult questions about its previous use or levels of contamination. Then you’ve got to put it somewhere to start up your operation. The garage isn’t big enough so you need to find a warehouse somewhere. [I was once looking for some space for an unrelated reason and the realtor took me into the adjacent building to show me how he had set up the various optional rooms. The people in this building were making “multivitamins” in less than pristine conditions. Even though they didn’t know me from Adam, they were extremely uncomfortable with me being there].

Set up your company. There is only one Golden Rule here; it must be in Utah. In that State, the Dietary Supplements industry has an…..er……how do we put this, …er, a good working relationship with the local politicians. A very scary book I read a few years ago explains this close and mutually beneficial relationship in far greater and totally frightening detail. [“Natural Causes; Death, Lies, and Politics in America’s Vitamin and Herbal Supplement Industry” by Dan Hurley. [Broadway Books; ISBN: 978-0-7679-2042-1]

Next you have to establish a criminal record. This will give you “street cred” with all the other criminals in the field [the meth dealers who made Metabolife, the great Kevin Trudeau, etc]. You are almost certainly not criminally minded, so go out and get a speeding ticket and refuse to pay it.

Then you have to think about the production technique. BigPharm is of course hog-tied here, because they need to make their products under Good Manufacturing Practices, which costs a gazillion dollars. But here we
are making a *natural herbal formulation* as a supplement. And, legally speaking, supplements are FOODS. Yes, really! Food. Yum Yum.

Okay, so now you empty out the cardboard boxes into a big container [those water troughs for horses work well]. Add some industrial strength solvent like acetone or dimethylsulfoxide, to extract the “natural healing goodness”. Then evaporate it, praying you get all the solvent out so it is not instantly lethal, freeze-dry it [another piece of equipment easy to find], add chalk, and have your press pound it into tablets. If there is a competitive product on the market made by BigPharm that is colored red, make sure you put in Red Dye #3 or whatever so that your tablet is the same color. This is a tried and trusted technique.

You need a name for your *natural herbal formulation*. Pick one that sounds a bit like a legitimate drug made by evil BigPharm. Examples are the splendid and highly effective *natural herbal formulation* Leptoprin, which sounds like leptin, a hormone involved in controlling eating, or Phenterfein which sounds like the drug “Phentermine” which in fact was an effective weight loss drug, except…er…your heart valves stopped working.

You need a Webpage, which is not very expensive in this day and age, but try to make it look professional. Dress up people in white coats, etc, for the Homepage. Make it look like those toothpaste ads where the guy is wearing a white coat for some unknown reason and ticking off all those boxes on his clipboard, prevents gum disease, shiny white, etc. Put in a link to a second page where you can list all the glowing testimonials you are going to get. “My penis has doubled in size” says Wanking Larry from Toledo, etc. “I lost 100 pounds overnight” says Obese Betty, etc. Please resist the temptation to make these up yourself, because if you do you will bring the whole industry into disrepute.

You are going to have to put up with those truly annoying “Consumer Reports” type websites and other Buyer Beware type pages that say your product is dogshit plus nobody can get their money back. Follow the Industry Guidelines here and completely ignore them.

Another smart idea is to design a Webpage that trashes all your competitors. This is a particularly good idea in the weight loss fields, simply because there are hundreds of products claiming to be the “NUMBER ONE ULTIMATE FAT BURNING MONEY SUCKING WEIGHT LOSS MEDICAL BREAKTHROUGH”. So what you do is to “review” each one and point out that “they provide no actual evidence”, the cited clinical trials “don’t seem to actually exist” [you’re right of course] and so on, but end by saying “BUT…there’s now *Hairy Bollock Extract*, and EVERYBODY agrees that this product is WONDERFUL…”. You get the idea. Ignore the fact that your product can be criticized on exactly the same grounds; this is irrelevant.
Get a celebrity endorser, or even better a TV or radio talk show host. Larry King pushed "coral calcium" dreamed up by noted criminal Kevin Trudeau and total charlatan Robert Barefoot despite the fact that you can buy calcium supplements at the drugstore for a dollar or so [Larry is now filling his trouser pockets with cash from the Omega-XL gang]. They claimed that coral calcium was better absorbed than regular calcium and that their product could prevent heart disease, lower blood pressure, cure cancer, prevent multiple sclerosis, cure snake bite, and prevent your wife from talking when ball games were on TV, until those miserable spoil sports at the Federal Trade Commission shut them down in 2004.

Spend a bit of money on an infomercial. There are several well-proven templates for infomercials. You can dress it up like a talk show. “Emphasis on Health”, “Scientifically Speaking”, “Focus on Nutrition”. Make the title snappy. Or you can make it look like a roundtable discussion by experts, or even a straight interview [the recent Supple advert for joint pain is an especially effective piece of nonsense serious medical advice].

Some time ago I happened upon this “talk show”. The “gusher” [see below], an attractive brunette, introduced her guest as the noted author, lecturer, nutrition expert, world leader in his field, thousands of awards, you get the picture. His topic was a product called Chitasol, which allowed you to lose weight without exercising. This peaked my interest so I listened on. The man had an unusual name, so I looked him up on “PubMed” [the National Library of Medicine database, accessible to all of us, just go to http://www.ncbi.nlm.nih.gov/sites/entrez, you can enter the name of a scientist if you know it, or a topic… DHEA… or a cross-linked topic… cortisol and fat… etc] and only found a single hit [I can’t even be sure it was him], a bit unusual to say the least for a world renowned expert. The American Society for Clinical Nutrition had never heard of him either. But what finished me off was when the Gusher asked him how this wonderful breakthrough in weight loss was achieved. He turned his grey pasty face to the camera and smirked “good science, just…. good science”. I vomited on the cat.

If you are going to do this sort of thing you need a Gusher. A gusher is a person who introduces you, stares adoringly at you while you dribble nonsense, gushes out the powder puff questions from the pre-written script, etc. My favorite is our local PBS lady who orgasmically gushed out “thank you Doctor Null for bringing us all this cutting-edge medicine” after he had babbled and dribbled incoherently for an hour or so. But be careful, because many of these “shows” have made fatal mistakes you should not repeat. For instance, don't totally load the script with adoration, throw in at least a few “you cannot be serious” and “surely it cannot simply cure everybody”. Watch an infomercial by Kevin Trudeau, the true Master.
Hire attractive actors. The Chitasol advert failed not just because the Federal Trade Commission shut it down but also because the primary Oileista looked so grey-faced he looked like he hadn’t seen the sun in a decade. The gusher, an attractive brunette with the intellect of a pea, looked really good though. [This also proves that you need a good lighting engineer].

Another I saw, about some sort of colonic irrigation crap, was also shit for another reason. All three presenters were extremely dodgy looking to begin with, but the third was downright slimy. In English comedy sitcoms there was often a character who was the local small-time crook or black marker; well-dressed, slick greasy black hair, pencil thin moustache, inner pocket full of fake Rolexes, etc, you get the idea [in England these guys were called “spivs”; possibly a derivation of the word “spiffy” meaning conspicuously well-dressed]. So imagine my hilarity when the chief Oileista, an ugly cove by any measure, appeared with his pencil thin moustache and slick greasy black hair. [The same greasy character shows up on the “Blood Sugar Institute” infomercial. You guessed it….just send shipping and handling….].

Infomercials for weight loss products will require “before and after” photos. Find a 400 pound brunette for the “before” and a nice trim preferably “ripped” 100 pound blond gym-rat for the “after”. Don’t worry about the fact they look like two utterly different people because the image will only be on the screen for a few seconds, not long enough for the viewer to register this obvious fact. A really good trick [tried and trusted] is to get a woman who is a body building champion and wait until she gets pregnant. When she gets really fat you have your “before” photo and when she returns to her usual weight after delivery you can use this as your “after” photo. Brilliant!

Here’s an example of a fairly standard use of the above technique:

On the left is Kirsty Kennedy, who is 30-years old and weighs 300-lbs. The lady on the right is Taryn Wright, 31, and a size six. Both were featured in *Womens Health*, a popular magazine in the UK, in which Kristy took a wonder NHF weight loss supplement [HBE] and morphed into Taryn, 98-pounds lighter. Sadly for *Womens Health*, Kirsty reads it and noticed her unauthorized photgraph.

Law suits are pending.
I also found some stuff on the web saying that you need to get your model to stick his/her stomach out and not smile, then suck it in and smile for the “after Hairy Bollock Extract” shot. Another trick is to use a diuretic drug prior to the after, which seems a little harsh.

Finally, try not to say something really DUMB. If anything, a Golden Rule is to be “suitably vague”, i.e. let the audience think what the product is doing by themselves. This guy I watched being “interviewed” was selling seaweed extract. Nothing wrong with that I thought, after all most Japanese eat it for breakfast. But then the guy dropped the ball badly. “Seaweed is the reason the Japanese have one of the lowest rates of cancer in the world” he declared. Now even my Aunt Betty knows Japan has about the highest rate of cancer in the world, including lung cancer, because they all smoke like chimneys, and stomach cancer, probably from all that seaweed eating.

Okay, so now *Hairy Bollock Extract* is up and running. You will need a couple of 1-800 phone lines, one for ordering and one for refunds.

In your infomercial, and this is the critical step, you need to say “I’m so convinced about the healing powers of *Hairy Bollock Extract* that I’ll send you a free month’s supply absolutely free, you just pay shipping and handling”.

Just look at that offer! I’m going to lose 100 pounds in weight, prevent prostate cancer, grow an enormous penis, and they are going to send their natural herbal formulation to me for free! What wonderful people they must be, unlike those bastards at evil BigPharm who just want all my money for their toxic worthless shit. I mean, when has BigPharm released any of their Big Penis drugs, we know they must have them! A conspiracy to keep us all tiny, I say.

Sorry, I digressed. Now the phone begins to ring. “That’s correct, sir. We’ll send you a free month’s supply of *Hairy Bollock Extract* for just $6.95 to cover shipping and handling”. And here is the KEY STEP. Get their credit card number.

So you mail out the *Hairy Bollock Extract* tablets. You charge $6.95 to their credit card. So far so good. Then you charge a full three months supply of *Hairy Bollock Extract* at the special discount cost of $139.00 a month to their card as well. So, now your first order for *Hairy Bollock Extract* has made you $423.95.
Don’t feel guilty about this, everybody does it. Just look at the wonderful Canadian crook Jesse Willms. Jesse dropped out of High School, but by 23 he had formed more than 40 companies. He jumped on the Acai berry/lose 100-pounds in weight horseshit and offered a free trial of “Acai Burn” that required only a small handling fee. It is thought that on average he then milked credit cards for $500-1000. Current estimates are that he pulled this harmless little prank on folks from the United States, Canada, the United Kingdom, Australia and New Zealand, selling at least a dozen brands of acai berry weight-loss pills, as well as colon cleansers and other supplements, all to the tune of over $450MM. Even attempts to shut him down were stymied by his use of shell companies and payment data manipulation ruses. Way to go, fellow Healer Jesse!

[To digress for a moment, in 2011 a young man went into hospital with severe rhabdomyolosis after taking acai berry. Nobody could figure out what actually caused it, because when they analyzed the acai berry supplement, it had no acai berry in it].

Actually, the reader can discern that this technique can be applied to any product. We are making a natural herbal formulation but the product can be essentially anything you have the ability to huckster. The sky is the limit! We live in the greatest country in the world, we have the greatest ingenuity, and a significant percentage of our population are blind fucking stooopid, so let’s get to it! Look at those guys who built that little box with the flashing red light bulbs in it, curing all your ills. They’re selling it for just three payments of $39.99. Yes, there is a sucker born every day. For an even better profit margin get some brightly colored rubber bands from China and sell them as “balance focusing energy bracelets” for $60 or more, then laugh all the way to the bank.

Okay, so now a thousand customers have taken you up on the free sample offer. What is quite scary, but also firmly documented, is that a significant percentage of people taking your product will actually con themselves into thinking it is having a significant effect, simply because [if asked] they will point out that it is a natural herbal formulation and therefore by definition safe, healthy, and of course highly effective. And how can you argue otherwise. Let’s face it, the human race did perfectly okay for thousands of years before those bastards at BigPharm came into the picture. And other than plague, tuberculosis, malaria, HIV, measles, childhood diarrhea, typhoid, rotavirus, smallpox, schistosomiasis, sleeping sickness, dengue fever, influenza, and a few other trivial annoyances, we’ve done perfectly well. In fact, for thousands of years Chinese herbalists have used natural herbal formulations to protect us, using the technique of Plar See Bow.
But some won’t be as pleased. There will be reports of bellyache [bugger…didn’t we test for bacterial endotoxin…must have been those frigging cardboard boxes?]. Others will point out that they saw no effects at all. But a whole lot of them will note that…er…accidental billing of $423.95 to their credit card, when all they wanted was a free sample to try out, not three months supply of the natural herbal formulation, newsletter, video disk, whatever.

[By the way, make sure you charge monthly for the newsletter, but don’t actually bother to print one or send it, it’s just a waste of your money].

But don’t worry about credit card complaints because you have plenty of options, many of them tried and trusted methods.

1. Ignore them. If your product is selling well and you’re a bit nervous about things, wait until you hit about $4,239,500.00 then empty your bank account, declare bankruptcy, and head for the Cayman Islands.

2. Refer them to your 1-800 refund guaranteed Hotline. Contract a company in Bangalore to answer the phone for you. “Your call is important to us, a specialist will be with you in……. 172 minutes, by the way cully velly velly good for you sahib…”. If your contract company feels that under Hindu courtesy they actually have to answer, make sure the specialist has a thick, utterly incomprehensible accent. And don't lose sleep over this. This is a tried and trusted method.

3. It is probably wise to issue at least some refunds, so at least you can claim truthfully that you were doing so. Remember, if you’ve hung in there for any significant length of time you’ve now got $42,395,000.00 generating interest in the bank. Also remember that you still have their credit card number on file – save it for a later date or sell it to the Bulgarians. “I’m sorry sir, we didn’t realize you didn’t want the next nine thousand issues of my highly informative newsletter in which I will eventually reveal the ultimate answer to natural health, the Universe, everything….“ [The answer is 42].

4. But some people are relentless. “I’m telling you, this product did NOTHING, it’s UTTERLY USELESS!” Here is where selling Hairy Bollock Extract to improve sexual performance is a good move, because you can always send a new box of your natural herbal formulation spiked with a little bit of real Viagra [the Chinese will be happy to sell you some of theirs]. Don’t feel badly about this; it is a tried and trusted method. Reumofan, a natural herbal formulation for arthritis, which it appears is produced in a Mexican garage, was found to be
spiked with not one but several prescription drugs, including a combination that can cause bleeding disorders. Another great example was Slimming Beauty Bitter Orange Slimming Capsules, a weight loss dietary supplement sold on the Internet. The label claimed that Slimming Beauty was "100% herbal" and "a natural vitamin and calcium" capsule for use even by children as young as 2. Problem was, Slimming Beauty was spiked with large amounts of sibutramine, a powerful prescription-strength stimulant that triggered "cardiovascular events" like heart attacks and strokes. A tried and trusted method in other words.

In this regard, regarding the tried and trusted method of spiking, I congratulate our friends in the vitamin-B industry in flogging a product that will provide energy and muscle building, when of course it doesn't. Our colleagues at “Healthy Life Chemistry by Purity First” solved this dilemma for their B-50 product by adding some methasterone and dimethazine, two anabolic steroids used illegally by bodybuilders. Completely accidently, they forgot to list this on the product label. Just an oversight I'm sure.

The boys behind all this, Mira Health Products Ltd. of Farmingdale, N.Y., were suitably apologetic. They apparently had no knowledge of the reports of fatigue, muscle cramping and pain, some of which resulted in hospitalization, or of the impotence in men and unusual hair growth in women.

5. Be aware when to “dun a runner” as the British term so precisely defines it. But don't get paranoid either. The Food and Drug Administration cannot touch you and your FOOD, and the Federal Trade Commission are under-funded and overwhelmed, so you can fly under the radar for a long time. Also remember that if the heat is applied, just change the name of your product to something else. This is a tried and trusted method. For example when the Federal Trade Commission got all nasty about Propolene, net effect on weight loss zero, the clever manufacturers just changed the name to Lipozene. And when the Federal Trade Commission got all stroppy about Lipozene, well…er…they just kept on selling it anyway [I saw this on TV just the other night!]. The latter, too, is a tried and trusted method.

6. Don’t feel you are alone, crying in the wilderness when your natural herbal formulation could cure the world of…er…whatever. There are hundreds if not thousands of natural herbal formulation companies. Join their Trade Organization so they’ll send someone to scream on TV if anybody questions your product. Plus, you are in Utah, the best place to be, so if trouble arises a suitable stack of money can be pushed under the snouts of the politicians’ reelection campaigns. This is a tried and trusted method.

7. There is a worst-case scenario, and I sincerely apologize for mentioning it. You picked Hairy Bollock Extract because privately the Shaman told you that it is completely harmless and that the only real use for the Hairy
Bollock plant is that it makes Spaghetti Bolognese taste really good. But he neglected to tell you that the \textit{S.bollockus} plants his villagers cut for you were ones they themselves avoided because the water source for that patch of land comes from a disused lead mine. So ten of your customers drop dead from acute lead poisoning, and another, a small child, chokes to death on the rather large tablet. You by now of course have a good lawyer [shit, you can afford one!] and you could hang this up in courts for years, but since you have $42,395,000.00 in the bank it is time to do a runner to the Andeman Islands. After all, all you have to do is lie low for a while then return and invent a new \textit{natural herbal formulation}. Ten of them, in fact….

8. Finally, if you do run afoul of the Federal Trade Commission, take it like a man. They'll fine you some massive amount …“ Federal Trade Commission fines \textit{Hairy Bollock Extract} makers TWO MILLION DOLLARS for false claims..”. Just cough up while developing a new \textit{wonder ultimate improved} version of this medical breakthrough. You've still got $40,395,000.00 in the Caymans after all.
HAIRY BOLLOCK EXTRACT: THE MOST POWERFUL WEIGHT LOSS PRODUCT EVER.

Okay, forgive me for being lazy. Some would say that promoting *Hairy Bollock Extract* for weight loss is the easy way out, and they’d be right. But the clinical data now shows that my product is the most potent *natural herbal formulation* ever discovered.

Why this choice? Because it is so easy……..

What swayed me was when I was in the attic and found some china I had packed away. I had wrapped them in an old newspaper [USA TODAY] dated March 2\(^{nd}\) 2007. In it, I discovered to my great amusement, the GNC retail giant had published a full-page advert praising four “Doctor-formulated and Scientifically Engineered Weight Loss Supplements”. Strangely all four seemed to be claiming that they were the best product. Maybe they were all equally good, I don’t know…

Unlike a lot of ads in this “field” each product came with its professional endorser. The first was “Hydroxycut Hardcore”. This product “was clinically proven to decrease body fat by an average of 7.9% more than controls”. There was some small print that said that this was achieved “using the key ingredient in Hydroxycut”, which seems to imply the test subjects didn’t actually take regular Hydroxycut. These ingredients were Garcinia [now the new wonder drug anointed by Dr Oz], chromium polynicotinate, and Gymnema extract. Certainly doesn’t sound too palatable! It also said that they “decreased their total fat area”. Area? Huh? How the hell would you measure that!?

This product was endorsed by Dr Marvin A Heuer, MD, the Chief Scientific Officer of Iovate Laboratories, an outfit in Canada that seems to be a *major producer of natural herbal formulations*. So here what I did was to go to PubMed, since this guy was an MD and obviously a world expert in weight loss, so I could read his other pearls of wisdom, and maybe steal some of them. There are in fact about 40 hits [going back to 1966] on PubMed for Heuer MA. They are all about Dentistry.

The second product was Hydroxycut weight loss Formula. Apparently the difference is that Hydroxycut Hardcore is “the most powerful hardcore fat-burning supplement ever created”, whereas Hydroxycut Weight loss formula, ..er… is a weight loss formula. Confused yet? I certainly was.
This was endorsed by Dr. Christine Lydon, a graduate of Yale [it didn’t say what in exactly] and Fitness Expert and Author. She looks very nice in her photo. She has five papers in PubMed, all of them about “ligament flexibility”, which makes her an international expert on weight loss.

The third was RapidSlim. You can lose up to 30 pounds rapidly using this product, “the world’s fastest weight-loss solution”. Sorry…er…better than the others? RapidSlim has a “maximum strength formula with premium liquid South African Hoodia”. We’ll talk about the poor sad plight of the innocent and rapidly disappearing Hoodia plant later.

Dr. Bryce Swanson, the endorser, is a “Resident Physician”, so you can trust her every word obviously. According to this physician the product “delivers unprecedented results… [and] no other product works faster”. No other product including the other three in the Ad? For a moment I thought the endorser had a crumb of credibility, because PubMed lists several publications from a “Swanson B” on the topic of the nutritional needs of HIV-positive patients, but this turned out to be a Barbara. More recently lovely Bryce has turned up on TV ads. She comes across a bit too earnest and scary, but nowhere as bad as the half-woman half-lizard who did the terrifying Leptoprin ad [see later]. In the last ad I saw Bryce reminds us she “is a Doctor” and that “she has reviewed the published data”. Published where? On the wall of a toilet in the Bus station in Wang Bong Mongolia apparently.

Finally, there is Cylaris, the “World’s Strongest Weight-Loss Formula and Far Better than the Other Three in this Ad which are complete Crap”. People lost 287% of weight compared to a placebo! It is formulated to support “favorable metabolic signaling” and “based on available published research” which the advert…er…fails to remember to cite. [I did eventually find this research, and it’s a doozy, as we’ll see later]. It is enthusiastically endorsed by Dr. Richard Margolin, a family practitioner from Illinois. There are zero hits in PubMed on weight loss from Dr. Margolin, although we can forgive him since he is a family practitioner.

So, which one to take? They are all the most wonderful weight loss breakthroughs ever made, so I guess it doesn’t matter. But what’s in them that makes them so good?

Back to the beginning. Hydroxycut has had…er…a few problems in the past. It, like hundreds of other products contained the infamous “ECA stack”. The active ingredient was the dreaded ephedra [ephedrine] which is basically natural “speed”, suppressing your appetite while you floated around the room. An analysis of 52 controlled trials did indeed show a modest short-term weight loss with ephedra, about 2 pounds a month, but no long term benefits on weight loss or evidence of improved athletic performance. Only one annoying side
effect. Your heart stopped. Assuming you actually lived, trial analyses showed a 2-3 fold increase in psychiatric issues and upper gastrointestinal problems. Okay, you went crazy and had the shits. And what is more, most the cardiac problems happened in young fit healthy adults grunting away in gymnasiums, not old fat guys like me.

When ephedra got banned, the Dietary Supplements industry had two options. Keep on selling it anyway until all the stocks containing ephedra were used up, or take out the ephedra, the active ingredient, and keep selling it anyway. In fact, changing the formula by removing ephedra enabled you to now announce a “NEWLY FORMULATED MOST POWERFUL ULTIMATE FAT BURNING EVER” type of advert.

So poor old Muscletech, a Canadian company, got sued [by the State of Missouri] for selling Hydroxycut containing ephedra without mentioning that ephedra posed serious health risks, that they failed to disclose that even their own research showed no difference between this product and a placebo, knew that it’s only property was as a mild appetite suppressor, failed to mention “clinical trial” drop-outs [one had to go to hospital with atrial fibrillation], and manipulated “before” and “after” photos. I’m shocked!

This lawsuit raised an issue I hadn’t thought much about. People who use these products range from nutcase gym rats who do not have an ounce of body fat on them but look in the mirror and decide they still need to lose a few more pounds, to people who are truly seriously overweight. These latter people are not “fit”, they have high blood pressure and other serious ailments related to their weight. The product was advertized as “extremely safe” but I suspect never actually tested in such people.

So, is Hydroxycut now reduced to caffeine and aspirin? I hope not, since these drugs cannot even wildly be regarded as “thermogenic fat burners” as the ads imply. I take these regularly for hangovers and I’ve never lost weight. As for side effects, I found this wonderful website saying that if you experienced high blood pressure, rapid heart beat, nosebleeds and so on, just stop taking Hydroxycut for a few days and the symptoms will go away. Of course they will. You’re fucking dead!

But I digress. The Hydroxycut ad talked about Garcinia, chromium, and Gymnema extract as the three active ingredients in its “most powerful hardcore fat-burning supplement ever created”. Ever created. So I looked these up. Garcinia, which actually represents a very large family of plants, is thought to have some mild appetite suppressing qualities which could potentially help you lose maybe a little bit of weight. We’ll have massive fun with Garcinia later.
The actual active ingredient is hydroxycitric acid. This molecule can interfere within the Krebs cycle in our cells, specifically a pathway that feeds off this to take two-carbon units and turn them into fatty acids [rather than breaking them down which the term “burning” would imply]. And, indeed, Garcinia can result in weight loss, in rats [rats everywhere delighted, etc]. Results in humans are substantially more ambiguous, and there are a couple of trivial side effects.

In fact, I had heard a rumor that Roche had tried it out but noticed…er…carcinogenic effects. A 2005 study in Japan confirmed this; they fed it to rats and it kept their weight down, but it also gave them testicular cancer. So, you could still use it in females, right?

But then, of course, the useless anti-healer FDA had to stick their noses in, in 2009. They issued a warning stating that Hydroxycut use could cause liver damage, cardiovascular problems, seizures, rhabdomyolysis [muscle damage], and …er…death [a 19-year old died of liver failure, and 23 other people had this but survived]. More minor side effects were fatigue, chills, cramps, problems sleeping [probably because the stuff is loaded with caffeine], vomiting, nausea, etc. [As we will see later Garcinia lover Dr Oz, had selective amnesia/deafness here].

The second ultimate fat-burner was chromium. Chromium is an essential element [in extremely low concentrations, you pee the rest out]. Need some? Eat a potato. Nobody seriously thinks chromium can control weight loss, but there have been trials of chromium supplements in controlling blood sugar in type II diabetes. A study at USDA in 1998 thought it might have some benefit, but “small” compared to the effects of exercise and diet. A meta-analysis published in 2002 examined 15 trials involving 618 patients. In healthy people chromium had no effect on glucose or insulin levels. In diabetes patients one study performed in China reported reduced levels but this was not seen in the other trials. A 2007 study, from North Dakota, looked at chromium supplementation in women and found no effect on weight or body composition. Similarly, a Connecticut study in 2010 gave a gram of chromium picolinate to 80 overweight individuals each day for 6-months, and saw no effects whatsoever.

In fact, you can ingest too much. In 2008 the FDA got all snotty about "Total Body Formula" and "Total Body Mega Formula" which contained so much chromium that it caused fatigue, muscle cramps, hyperactivity, hypoglycemia, renal failure and liver toxicity. The FDA stated that it would investigate how excessive amounts of chromium got into these products. I wonder how?
Gymnema is much more interesting because a couple of studies [of “very poor quality” according to a snooty Harvard associated website] suggested it reduced blood glucose levels and hence could be of value in treating diabetes. [Of course if you already have diabetes and are treated for it and then you try this stuff on the side your blood sugar may drop even further. Main symptom? Death]. Gymnema was first used in Ayurvedic medicine [the ad that says this calls it the “sugar destroyer” which is not exactly accurate] as well as in Italian medicine [makes Spaghetti Bolognese taste good]. One ad I found said it helped “support normal blood sugar levels” without the slightest evidence for this claim.

Okay, so based on this, the Garcinia might mildly suppress your appetite. Chromium, I think we can safely say, does nothing. As for Gymnema, messing with your blood glucose physiology will not affect your weight problem. So where on Earth does the “hardcore fat-burning” claim come from?

The ad in question listed the complete “ingredients”. These included the usual natural herbal formulation plus a lengthy “scientific” explanation including the following gem: “First Hydroxycut Hardcore elevates levels of norepinephrine -- the key fat-burning hormone -- by 40%. The second step involves ensuring norepinephrine levels remain elevated longer by drastically increasing cAMP levels. Then another step involves alpha-receptor inhibition to ensure the fat-burning signal grows in strength. Finally, the last step involves producing heat (thermogenesis) [sic] by accelerating the breakdown of released fats in the mitochondria”. That’s funny, doesn’t too much norepinephrine make your heart race [like ephedra did]?

It’s hard to know where to start. The primary role of norepinephrine is to push up your heart rate and blood pressure, as well as to tell the liver to chop up glucagon into individual glucose molecules to provide you energy to outrun the saber-toothed tiger that just came around the corner. It also tells the pancreas to temporarily stop making insulin so that the amount of glucose already in the blood rises. It also breaks up lipid stores into triglycerols which are another important source of energy. This is mediated by fatty acid metabolizing lipase enzymes. Problem is, there is nothing in Hydroxycut that could even remotely turn these enzymes on, let alone stimulate norepinephrine release. Moreover, the ad seems to be implying that somebody was brave enough to have his norepinephrine levels pushed up by 40%. I’m no expert here, but that would kill you. If nothing else your heart would dramatically slow down.

Then how do you “drastically increase” cAMP? Cyclic AMP is an intracellular messenger, converted from the energy molecule ATP by an enzyme, adenylate cyclase. This all helps the liver produce glucose. I may be wrong here but I thought epinephrine, not norepinephrine, mediated this?
The alpha receptor inhibition bit about fat-burning increasing in strength means …er.. I’ve no clue! Alpha receptors are the receptors on muscles [especially smooth muscle] the norepinephrine stimulates. Finally, you get hot because your mitochondria heat up, or something. Maybe this has something to do with spontaneous combustion.

Despite all of this, as a dedicated natural herbal formulation maker myself, I was determined to find something positive, so I dug deep into the literature. A 2000 study I eventually found was published in the splendidly named Journal of International Medical Research. I’d never heard of it, but it can be accessed on the Web. The author was Dr Thom, from a company named PAREXEL Medstat in Norway. He studied a magic mixture of an amylase inhibitor [the idea being this would stop the enzyme amylase in saliva from breaking down carbs], inulin [which is claimed to prevent sugar absorption], and hydroxycitrate [from our friend Garcinia] to prevent the “uptake of fat”.

His data showed that people taking placebo had no change in weight, but those on the mixture lost an average of 3.5kg over 12-weeks, which had a probability of 0.001 [i.e. very significant]. Problem was….., er…., they never looked at the statistical difference between the two groups. Given the big variances [6-8kg] my guess is that there was no difference between the two groups at all.

This paper also contains a little gem. Several people dropped out, and “when we contacted them they said they lacked the motivation to continue, but they are all included in the analysis”. Okay, so if they had dropped out, how did they get measured? If they were in the test group, but had stopped taking the mixture, why would you include them since this would skew the results? Hardly scientific…..

To their enormous credit the makers of Hydroxycut were not dismayed or deterred. GOOD FOR THEM. Not only is their new product hydroxycitrate-free […]er… I think] but that wonderful Lower Primate from that cringe-worthy Jersey shore reality show, THE SATURATION, or whatever the prat is called [his Mother obviously hated him, and the christening must have been good fun] enthusiastically endorses the new natural herbal formulation. ”Hey, yooze guys, look at my pecs Snickers Baby…”

In the “Product Information” page of the RapidSlim website there …er.. is no product information, just a suitably vague implication it contains Hoodia, a rapidly disappearing plant from South Africa which has mild appetite suppressing properties [even this is now being disputed]. It also contains vague descriptions of “thermogenic formulations”, the ingredients of which are never listed [which I thought was illegal].
Incidentally, while we are on the topic of “fat burning”, those who actually study this for real have muddied the pool lately. A 2009 study at the University of Colorado pointed out that when we work out we use carbs as the main source of energy not fats. But fats do get oxidized as a result of exercise, and one would expect that to mainly occur the same day. So, the idea these guys proposed was that fat oxidation would be elevated in the 24-hours after exercise, and that this would be higher in endurance-trained individuals [those guys who go biking over the Trailridge at 12,000-feet in the Rockies]. This wasn’t observed however, and it seems to mean that the relatively low intensity exercise most of us can manage doesn’t improve “fat burning” as we expect, and the only way to do this is to drop our fat intake.

But I digress. Finally, the USA Today advert praised the properties of “Cylaris”, which we were told is the “World’s Strongest Weight-Loss Formula” in case you’ve forgotten, and which contains ..er…. effectively nothing. There’s a few vitamins and minerals [eat a broccoli stick with that potato], a frigging ton of caffeine, and the mysterious “cissus quadrangularis” extract.

I had never heard of this, but apparently it is a sort of vine-like plant found all over Africa and Asia. And, boy, did I have fun with this one! The story is so much fun, it deserved a Chapter on its own, but before I give you the long version, here’s just a taste.

What I quickly found out on PubMed was that it has been used in India as a folk remedy to accelerate bone healing after you break one, so the connection with weight loss will be immediately obvious to you. But I also found a couple of simply extraordinary studies which both described the absolutely wonderful activity of “cissus”; weight peels off, blood pressure drops, glucose stabilizes, adipose tissue melts, you become amazingly attractive to women, etc. Both were from a laboratory in the Cameroon, and not some mudhut in the jungle but from their premier University in Yaounde. I also found two reports saying that “cissus” gave you cancer, obviously erroneous, and another that said that the plant extact included anabolic steroid-like molecules. No worries, mate, when your testicles fall off you lose weight, don’t you [ask those poor rats].

But all this is good, and as a natural herbal formulation producer myself I am very pleased to see these products taking their rightfull place in our Dietary Supplements industry, and it is very refreshing to see four Dietary Supplements companies going head to head, each claiming that their product is the “best”. This can only benefit us all.

[Note from Editor: .....er....all four products are made by Iovate].
To the discredit of our wonderful natural herbal formulations Industry, some naughty folks have been spiking their products with drugs made by evil BigPharm. Good examples are Pro-Slim Plus, and Perfect Slim, which were found to be spiked [completely accidentally I’m sure] with the potent drug sibutramine, the active drug in the diet drug Meridia. Sibutramine is a “serotonergic” drug [monoamine reuptake inhibitor]; it works by jamming up serotonin and norepinephrine receptors, which suppresses appetite. Apparently, it was initially developed as a new anti-depressant, but while it was ineffective at this, it was noticed it promoted weight loss [people treated for a year showed a loss of about 5% body weight]. Problem was, it blasted up your heart rate and blood pressure and made you at increased risk of strokes [risks outweighed benefits] so it was withdrawn. This cost Abbott Labs [by now the owner] some very serious mullah.

You can still give it to rats, however, and a study in Alabama looked to see if reducing weight and calorie intake would increase the lifespan of these animals, as some people have claimed. It did not. Rats everywhere were said to be “disappointed”.

It soon became apparent to those spoil-sports at the FDA that there were lots of diet pills flooding the market that were, er….accidentally, spiked with sibutramine, thanks no doubt to those resourceful chemists in India and China. As a result FDA demanded the withdrawal of over sixty products, pointing out that many of them were not only spiked, but often had at least twice the recommended dose. How annoying, you would lose weight twice as fast, wouldn’t you…?

A press release from the FDA stated that it was “seeking product recalls” and it might take additional steps, such as “warning letters” or even “criminal charges”. How unfair, just because some people get strokes and drop dead. What all this tells you is that the FDA are toothless wankers.

Not to be outdone by his colleague THE SIMPLIFICATION [or whatever] on Jersey Shore, fellow Pan troglodytes Ronnie is now hawking Xenodrine. This is now ephedra-free [gosh, I bloody well hope so] so your heart doesn’t stop, and has a lovely TV advert with gorgeous women losing several hundreds of pounds of weight. The magic ingredient is “proprietary Thermodyne Complex” a suitably vague concoction that seems to consist of tons of caffeine and tyrosine. Tyrosine, as any fifteen year old biology student can tell you, is one of the most common amino acids and in just about anything you eat. Well done, Ronnie!
I have figured out a new way to promote Hairy Bollock Extract as a wonder weight loss natural herbal formulation. I went to the National Institutes of Health website, and took a look around for obesity trials. The key is to find one that actually worked, then take its name and use this as the title of your product. Then, you can cite the actual clinical trial at NIH, since it had the same exact name, as proof your product is so fabulous.

Okay, I have to admit up front I didn’t think of this. I have to take my hat off to the manufacturers of “Pounds Lost”, the latest fabulous fat burning wonder natural herbal formulation that emerged in the Spring of 2011.

You see, …er…, these guys found a trial, conducted by the Heart, Lung and Blood Institute at NIH, and …er… assimilated it, just like the Borg do.

In the POUNDS LOST study at NIH, 811 overweight and obese adults aged 30 to 70 were assigned to one of four diets, and asked to record their food intake in a diary or an online tool that showed how intake compared with goals. Group diet counseling sessions were held at least twice per month throughout the two years of the study, and individual sessions were held every eight weeks. Participants were given personalized calorie goals, ranging from 1,200 to 2,400 calories per day, which reduced their overall caloric intake as compared with their daily energy requirement. All participants were asked to do moderate-intensity physical activity, such as brisk walking, for at least 90 minutes per week.

The point of this trial was to see what happened if you changed the proportions of carbs, lipids, and protein. The bottom line from the study was that it didn’t matter which combination you actually took as long as you stuck to the calorie restriction rules and took the needed exercise.

So, in 2011, enter “Pounds Lost” into the wonder diet pill arena. Was this a diet guide based on the NIH findings to help you lose weight. Actually, no, it consists of our old friend Cissus quadrangularis, the wonderplant of the tropics. The blerb states that “Pounds Lost “reduces the caloric impact of your daily diet by blocking the absorption of fats and simple carbohydrates. Pounds Lost increases your metabolism by breaking down fat stores which it uses as an energy source. Pounds Lost also reduces your appetite, curbs cravings and controls emotional eating by increasing serotonin levels”. We must also acknowledge the generosity of the manufacturers; the advert I saw would send you six shots for only $0.95, your credit card can handle that, surely? [Well, yes, to begin with… he he he….].
At the end of the day its “calories in…calories out”. You’ve got to start eating less and exercise more. The Extreme Makeover Edition of this is one of my wife’s favorite shows…”The Biggest Loser”. In this TV show obese people are put through absolute torture at some ranch under the supervision of “trainers”, such as Jillian Michaels and Bob Harper. Some of the weight loss is extreme, >10-pounds a week, i.e. ~8 pounds over what most experts consider safe. In fact, there is a rumor these guys have a sports book on who on the show is going to drop dead from a heart attack first, compounded by statements from Losers themselves that they did all sorts of extreme things so they could win the money, plus many of them put their weight right back on afterwards.

You’d think the good publicity from the show would be all that good old Jill needed to drive her career, but no, she had to dive into the *Hairy Bollock Extract* arena and produce diet pills. That’s right, after telling the viewers to diet and exercise, now she recommends pills.

And they are called, yep you guessed it….Maximum Strength Fat Burner…of course they are….

Apparently lovely Jilly hooked up with Basic Research, also known as Carter Reed of Utah [here we go again…] one of our great leaders in the marketing of utterly worthless products and targets of an almost endless number of lawsuits. Recently, Basic Research is being sued for false advertising in marketing “Jillian Michaels Maximum Strength Calorie Control” (Take Two Capsules Before Main Meals And You Lose Weight). Before you think Jilly has been taken for a ride here, you need to remember she is hawking a plethora of crap including Calorie Control, Fat Burner, Body Detox and Cleanse, and QuickStart Rapid Weight Loss System, in cahoots with our pals in Salt Lake City.

I found MSCC in Walmart in a huge floor display. It contains the entire vitamin cabinet and the entire herb garden. It also contains “citrus aurantium”. This is actually the name of the bitter orange tree, but the extracts from it have been used to replace ephedra in weight loss products. There is no evidence it has any effect on weight loss. Plus, it can kill you. Thanks Jilly.

In 2010 the ambulance chasers turned up and questioned Jilly’s veracity when she says that you just take two MSCC pills a day and then eat all the chocolate cake you wanna. To counter, rather cleverly Jill stated that her supplement had been reviewed by “the *leading weight loss experts* in the world” before she endorsed it. [Gosh, then they’d really like HBE….]. So far, I’ve not been able to determine who she is referring to. The law
suit [which included Walgreens no less] also pointed to toxic levels of citrus aurantium, which drives your blood pressure through the roof. Just for fun, later that year our lawyer pals went after her Detox/Cleanse nonsense as well, due to possible gut and liver….er…problems.

Luckily for Jill, scientists poured doubt on the claim any of these were toxic, although they did say [contrary to the leading experts in the world] that her products were crap, actually they said “ineffective”, “absurd” and “completely bogus”.

Not to be out-done, fellow trainer Bob Harper sniffed and pouted and demanded a weight loss pill for his very own. MSCC already being taken, he opted for the more benign Smart Weight Loss formula. Where his formula differs is that it has been tested in not one but two “randomized, double-blind, placebo controlled studies”. 
That’s the good news. The bad news is that the results of these studies have only been published in the aboriginal Blurgg language of a remote tribe in the Australian Outback on their dungy wall, and so if you are not actually fluent in Blurgg you won’t be able to read these spectacular results. His pills contain vitamin C and calcium [Citracal, with that pasty-faced actress in their ads, won’t be happy], pomegranate [which as we will see later cures everything], and some rather strange stuff…Frauenmantle extract, wild olive extract, cormino extract, and horsemint extract. So, you can frolick with the Frauleins, and smell nice when out riding, er…

The National Library of Medicine has never heard of Frauenmantle, but Wikipedia has a nice picture of something that looks like a cabbage. NLM has indeed heard of Cormino, but this is the name of a scientist, not a herb. Horsemint is a member of the mint family, so add it to boiled potatoes to make them taste better.

But let’s not be mean, and thank Bob for his efforts in healing us…

[Er…Smart Weight Loss is made by lOvate…Editor]

I think the natural herbal formulation wonder weight loss maximum fat burner industry should pat itself on the back. I mean, just look up weight loss pills on the Internet and there are millions of hits. Cutting edge research at these manufacturers has given you the consumer incredible levels of choice to find the right green tea based lose 100lbs overnight healing materials. And what has BigPharm given us? A few admittedly, but as soon as they market them they withdraw them again because someone’s heart valve blew a gasket or something. To
my knowledge, there’s just one out there, tucked neatly at my Walmart between the $38 bottle of parsley from Jennifer the Trainer Biggest Loser Woman and MegaGreenTea/ultimate fat burner. That one is “Alli”.

Orlistat [the proper name of Alli] is a derivative of lipstatin, a lipase inhibitor isolated from bacteria. By blocking lipases in your gut it reduces the amount of lipid in your food that can be chopped up into the triglycerides your intestines can actually absorb. Taking it for a year can reduce body weight by 3%. The major side-effect is that you can get the runs, so maybe Jamie Lee should endorse it [ha ha…er…sorry].
DON’T BE A SISSY, JULIUS.

So let’s go back and take a closer look at this mysterious Cissus quadrangularis. It’s recently turned up again in “Pounds Lost”, and therefore poses a serious threat to wonder weight loss maximum strength doctor-formulated Hairy Bollock Extract. Sorry, but I cannot in good conscience let this happen.

I found lots of stuff all over the Web stating that Cissus had been thoroughly tested and verified in clinical trials, but the more I dug the more all of this came down just to two specific publications, one in 2007 and the other a year later, and both from the same laboratory.

This laboratory was listed in the two papers as the Laboratory of Nutrition and Nutritional Biochemistry, at the University of Yaounde, which is the capital city of the African country of Cameroon. The University has a very nice webpage showing lots of bright young students, and lists the Nutrition program within its School of Sciences.

I have traveled extensively in Africa, and you don’t often meet people who are seriously obese; more often as not they have the reverse problem. But nevertheless this lab decided the test the properties of Cissus in a natural herbal formulation and somehow managed to round up a couple of hundred people who were obese and willing to eat it.

The individuals who took Cissus not only lost lots of weight but just about every other risk factor such as blood glucose, low-density [bad] cholesterol, triglycerides, etc, plummeted as well. By now of course everyone in the world should be taking Cissus as a result, but somehow this has not happened. I suspect a BigPharm conspiracy here, so congratulations to “Pounds Lost” for breaking their embargo.

I took a closer look at the results of the 2007 paper. A lot of it was very technical, so I just cut to the chase and looked at the “weight data”. It was in kilograms, and since I don’t think in kilograms I converted the values to pounds. The placebo group were told to keep to about 2100Kcal per day but didn’t take Cissus. This lot had a average weight of 250lbs, which is pretty fat, and had no weight change over the study period as expected. A second group took Cissus. However, the average weight of these guys was 210lbs, in other words they were already 40lbs lighter before the study was even started! That immediately flushes the term “randomized trial” straight down the toilet.
Then, even better, a second group got another formulation of Cissus, but their starting weight was only 167lbs [so why would they need to lose weight?]. Anyway, all the guys taking either type of Cissus significantly lost weight.

Now I’m not going to say all this was made up. But if it was made up, it wasn’t made up that well. You can claim 7-8 kilogram weight loss, but be careful about Mr Statistics and his dreaded pal Mr Variance. For instance, let’s take the main Cissus gobbling group. They went from 95.8+11.8 down to 89.2+9.2 kilograms. But if you look carefully, the variance shown here was “standard error of the mean”. The standard deviation is about twice this, so this means they started with a mean weight of 95kg with a spread or variance of over 22kg. After Cissus gobbling, they were 89kgs, with a spread of over 18kg. In other words, all these values completely overlap, and despite their claims to the contrary, were certainly not statistically different from each other.

The second paper, in 2008, has the same problems, but here somebody probably whispered in their ear and they went out into the jungle and found yet another 70 or so obese people [Christ, what are these people eating?] all of whom were almost exactly 215lbs in weight. Ten weeks on Cissus and weight loss was reported as 10-12kg, i.e. about 20-25lbs. Here, they showed the variance as standard deviations, and yes, they were really big and totally over-lapping.

In this second trial Cissus was given in a natural herbal formulation in combination with another magic ingredient, Irvingia gabonensis [“African Mango”, more recently endorsed by TV’s new dreadful Oprah-annointed guru-wannabe Dr Oz no less!], and the results were even better. Waistlines shrunk by an average of 25%. Wow! I gotta get some.

[If I may digress for a second, congratulations to Dr Oz for winning not one but two Pigasus Awards. That takes some doing! [look it up on Wikipedia if you’re lost here]. The bigger picture, though, is that Oz endorsed this material on Oprah’s show. If he’s such a big medical expert why didn’t he see through the crap data like just about everyone else on the planet has? Does he know nothing at all about Statistics? This is very troubling].

Well, there you have it. Both papers appeared in the journal “Lipids in Health and Disease”. I don’t know it, but I assume it is peer-reviewed. If so, the reviewers need to bone up on their understanding of statistics.

There was a ton of biochemistry data in the first paper. Doing these assays costs a very significant amount of money. Any sort of trial in fact costs serious cash. You've got to cover the salaries of the people doing the measuring, drawing blood from over 150 study participants [no mean feat], not to mention the dietary
counseling, and often as not cover travel expenses of the patients [unless of course the University of Yaounde is right next to Fat Town, Cameroon. Maybe there’s lots of McDonalds there?]

Strange thing, though. The acknowledgements section is where you usually read “This study was supported by grant X234 from the Ant and Dec Foundation for Obesity Research”, that sort of thing. But in this paper, the funding source was never stated. Maybe the University footed the bill for all that extensive and very expensive biochemistry? If so, they must think very highly of this particular lab.

But the acknowledgments did say something. It said that the natural herbal formulation was prepared and supplied by “Gateway Health Alliances” in Fairfield California.

Huh? The Cissus plant is ubiquitous all over West Africa, so why not just pop out the back, cut some down, and grind it up? One author, Gabriel Agbor, was listed as in the “Medicinal Plants” program at the University, surely he knew a Cissus when he saw one?

And, oh yes, the authors. The convention is that the person doing the heavy lifting, working in the lab, etc, is usually listed as the “first author”, whereas the Big Boss, running the entire show, is invariably listed as the final or “Senior” author. The first author on both papers was Julius E Oben, who is identified on the University Website as the laboratory director, whereas the last author on the [utterly amazing] 2007 paper was Gabriel from above, listed by the University as a “post-doctoral fellow”. All quite strange.

At this point I was about to give up. But, just for the fun of it, I looked up “Gateway Health Alliances” on Google. It clearly sounded like evil BigPharm, and if they had any sense they would have patented all this stuff, thus posing a serious threat to my Hairy Bollock Extract. Can’t have that.

The bottom line [admittedly I didn’t look too hard] was that I couldn’t find much at all. One webpage seemed to suggest they were some sort of distribution company, rather than developing anything themselves, and a Small Business index [“Manta”] seemed to think they had between one and four employees. That’s not many people when you are churning out vital natural herbal formulations.

Then I found out two other things. First, Gateway Health Alliances had indeed patented both Cissus and Irvingia for their fabulous weight loss properties. Second, they now had a Chief Scientific Officer. Guess who?

Julius Oben.
[No conflict of Interest there then...].

You’d think, quite naturally, that as soon as Julius’ spectacular results were published, lots of BigPharm guys in Armani suits would come knocking. A lose weight/cure diabetes drug would make them a gazillion gazillion dollars. They could buy the patents outright, or easily license them. But they were [and are] nowhere to be seen. I wonder why? Maybe Julius should change his aftershave. At least Dr Oz loved this dogshit major medical breakthrough.

Okay, so now that Julius is safely on his Gulfstream funneling back and forth between his Company duties in Fairfield CA and his University appointment in the Cameroon, what can we say about Cissus? Stuff that people might actually believe, that is....?

I mentioned above that what initially threw me completely when I learned that the active ingredient in wonder weight loss best ever Cylaris was Cissus, [thank you Julius], was that the first descriptions of this plant was from Indian medicine, as a folk remedy for broken legs. Bone fractures....wonder weight loss....er.....

Lots of Indians believe in medicinal plants, and don’t seem to be that perturbed by all the heavy metal contamination in the soil some of these plants get cultivated in. Cissus, apparently, makes Chicken Vindaloo taste really good, but in Hindi, Cissus is called Hadjod or “bonesetter” because it also seems to help bone fracture healing. Plants often contain a gazillion different highly complex molecules so the “active ingredient”, if there is one, is very hard to identify with any certainty. A 2010 study I found noted that certain compounds from highly purified extracts of Cissus had the ability to increase the activity of an enzyme [alkaline phosphatase] that is involved in making bone cell precursors [osteoblasts] differentiate and increase their mineral content [matrix mineralization]. This has to happen if a fractured bone needs to heal itself. Admittedly, the evidence is primarily anecdotal, but Indian physicians think that giving Cissus to patients does appear to speed up recovery, and they may well be right. Strangely, however, none of these reports mention anything about these patients losing half their body weight, 25% of their waistline, halving their blood glucose, etc.

That has not discouraged chemists from trying to define “what is in Cissus”. I found papers describing “iridoids” such as cinnamoyl catalpol, picroside, stilbenes [quadrangularin A and pallidol], quercitin, and various glycosides. But no doubt Julius was way ahead here.
As with many plants, Cissus contains various molecules that have anti-oxidant properties, and there are quite a few studies looking at these properties under various conditions. As an example, petroleum ether fractionation followed by methanol extraction [I hope they boiled this off!] of Cissus resulted in purified compounds that reduced liver damage in rats given a drug called isoniazid, which was attributed to anti-oxidants in the extract. [Isoniazid is a primary drug given to people with tuberculosis; liver damage is a side-effect of the drug].

As many of you know, Hairy Bollock Extract is a brilliant remedy for hemorrhoids. But so is Cissus apparently, both in Africa and Asia. The good news, for me at least, is a study in Thailand in 2010 in which 570 people shoved Cissus up their bottoms with no observable benefit. But hats off to the trial organizers for such a visionary and important study.

One could go on and on here, extolling the healing properties of Cissus. PubMed has lots of hits about Cissus, on quite diverse topics. But let's finish with two studies, both published in 1991. Both were from the highly reputable Cancer Institute in Madras [Chennai] India. The first looked at a whole variety of foods and plant materials for their…ahem….er…mutagenic activity. Cissus, apparently, had lots. Given this alarming data, they did a second study and fed Cissus to mice. They observed “moderate levels” of genotoxicity, including chromosomal aberrations, sperm head abnormalities, and micronuclei production.

But of course this a tiny price to pay if you lose weight and control your blood sugar, right Julius?
HOODWINKED

Hoodia gordonii [milkweed] is a very rare succulent plant found only in certain areas of South Africa. It is protected by the South African government who strictly regulate its export, and issue certificates to the exporters. There are hundreds of weight loss wonder pills that contain Hoodia extract, often in very high concentrations [hundreds of milligrams]. Okay, hands up those of you how see a slight problem with this picture. Very rare…strictly controlled… weight loss pills full of the stuff. A shelf at my local Walgreens alone must have twenty kilograms of the stuff.

Er…to cut a long story short, if one was to be completely uncharitable one might start to think that pills packed with Hoodia actually contain ..er..no Hoodia at all. Like TrimSpa. In fact one study checked out lots of Hoodia products and found no Hoodia at all in at least half of them. I’m shocked. And then on top of that, why is Hoodia in these pills in the first place? Other than because Oprah endorsed it….

In fact, some data suggests that Hoodia does seem to have an effect, maybe. The sap of the plant contains a steroidal glycoside molecule [P57] that raises the concentration of the energy storing molecule ATP in neurons in the hypothalamus region of the brain in rats if P57 is injected directly [ouch] into this region. This is a region of the brain known to be associated with what we would call “hunger pangs”, and the treated rats did indeed ingest much less food and as a result lost weight. As a result one can regard P57 as a mild appetite suppressant, although this has never actually been verified in a legitimate clinical trial in humans, hence the caution expressed by scientists in the pockets of BigPharm. But rats love the stuff. By rats I mean the little furry things, plus all those shits who keep sending me “genuine Hoodia” spam emails. Genuine my ass.

In 1997 the rights to P57 were licensed by a British company called Phytopharm, and this company then sublicensed to the BigPharm giant Pfizer. Phytopharm conducted a small study in 2001 in which they first showed that P57 was safe and well tolerated in humans, and then gave it to a group of overweight men. After two weeks the men receiving the P57 had eaten less, and had lost about 1 kilogram [about 2 pounds in weight]. This sounds good, but if these guys were about 250-300 pounds to start with this is a 0.7% reduction. Still, this could translate into ~50 pounds over a year if P57 was taken daily [the rat study suggested that once you stopped the drug the effects were quickly lost]. This would require expensive long term safety studies, just in case this made your legs drop off.

Then out of the blue Pfizer dropped it, in 2002. I’m not sure why, but usually BigPharm offloads something when they’re convinced the drug in question won’t make it past the Food and Drug Administration. This was
obviously a very serious decision considering an effective obesity drug would make them a zillion dollars. There are various rumors; P57 is a total bitch to synthesize and their medicinal chemists threatened mutiny; and, more scary, some hints of liver damage.

I found a rather fancy webpage praising the effects of Hoodia, and listing the best products [all made by them of course]. This website had something you almost never ever see, specific scientific references! Now we’re talking; I could go read these and see exactly what happens in obese rats fed these wonderful Hoodia products. Here are the cited refs:


Well, not bad. The “FASEB Journal” [journal of the American Federation of Sciences] is not exactly a high-impact journal, but it is perfectly legitimate and is peer-reviewed [this means that your submitted article would be reviewed by an expert in the field the paper addresses]. Problem was….there are no articles by Tulp anywhere in FASEB J. Volume 15 has no such article, and in the second citation no page number is even given. So I went back to PubMed. I found a “Tulp” who studied rats [but not weight loss drugs] at Drexel going back to the mid-1990s who later moved to Heidelberg in Germany. Same problem with Dr. Harbi. He/she has a single paper, on rats, from Heidelberg. Very strange don’t you think? I must add ‘cite fake research papers” to my business plan for Hairy Bollock Extract.

Another magic ultimate doctor-formulated wonderdrug is glucomannan. Glucomannan turns up in lots of natural herbal formulations. It is a dietary fiber that is the main polysaccharide obtained from the root tubers of the Amorphophallus konjac plant. The name sounds complicated but in fact it just consists of chains of glucose and a very similar sugar unit called mannan. It has been used as a dietary fiber [i.e. helps you take a big dump] for more than 1,000 years in eastern cultures. This soluble fiber has very substantial water-holding properties, and so if you add water you end up with a viscous goo. This swells up considerably, so if this is in your stomach this temporarily gives you a feeling of satiety and fullness. But be warned, because the distention effect, as well as the increased lipid, can upset your lower intestines. Glucomannan causes flatulence, abdominal pain, and intestinal obstruction. If you take medications with food [as many of them require] glucomannan can block their uptake.
The distention property has an obvious effect on food intake and thus helps all the inter-related problems caused by over-eating. This does not however justify labeling it the “UTIMATE WEIGHT LOSS MEDICAL FAT BURNING BREAKTHROUGH” which is just hogwash.

Glucomannan has been clinically tested. In a study conducted at McGill University, Montreal, Quebec, glucomannan was tested in type II diabetic and non-diabetic subjects. Subjects were given plant sterols, glucomannan, a combination of glucomannan and plant sterols, or a placebo. The results of the study indicated that glucomannan and a combination of glucomannan and plant sterols substantially improved plasma LDL [bad] cholesterol concentrations, but no weight loss was reported.

Another study, in Italy, was performed in children with high cholesterol levels. One group of kids got glucomannan in gelatine capsules. The glucomannan treated group showed decreased values in plasma total cholesterol and low density lipoprotein cholesterol after 8 weeks of treatment. A further study, conducted in Norway, compared three sources of fiber, glucomannan, guar gum, and alginate in healthy overweight subjects. All three fiber supplements induced significantly weight reduction during a five week observation period. All three had equal effects. This result is obviously promising, but I’ve been unable to find any other legitimate study showing any weight benefits at all.

I suppose if there is anybody you should trust to be objective, then it would be the American Society for Clinical Nutrition. So I looked up a nice little review published in 2004, from the University of Exeter, who are well regarded experts on obesity. These guys looked at a variety of trials of glucomannan, which I followed up on. The only one I could find which seemed to have any credibility was done in Spain in 2008, and it had good news and bad news. The good news was that people taking fiber including glucomannan had measurable drops in [bad] LDL cholesterol levels, as well reductions in hunger pangs [satiety], attributed to the swelling of the fibers in your tummy. The bad news? In the 16-week trial taking the glucomannan fiber had zero effect on weight loss.

Take home message: if the glucomannan “WORLD’S MOST POWERFUL FAT VAPORIZER” diet pill costs $139 a bottle, and generic fiber costs a few cents, well you figure it out, you’ve just blown $138. Of course you could always eat a bit more fruit and veg, known to have just a little bit of this material so they say. I have to say however that based on all this glucomannan did not sound that bad to me, but personally I’ll stick to the broccoli, and if necessary, the Metamucil. But an Abstract I found from a bunch of misery guts at Harvard was far less friendly. Their paper stated…. "Over-the-counter dietary supplements to treat obesity appeal to many patients who desire a "magic bullet" for weight loss. Asking overweight patients about their use of weight-loss supplements and understanding the evidence for the efficacy, safety, and quality of these supplements are
critical when counseling patients regarding weight loss. A schema for whether physicians should recommend, caution, or discourage use of a particular weight-loss supplement is presented in this article. More than 50 individual dietary supplements and more than 125 commercial combination products are available for weight loss. Currently, no weight-loss supplements meet criteria for recommended use. Although evidence of modest weight loss secondary to ephedra-caffeine ingestion exists, potentially serious adverse effects have led the U.S. Food and Drug Administration to ban the sale of these products. Chromium is a popular weight-loss supplement, but its efficacy and long-term safety are uncertain. Guar gum and chitosan appear to be ineffective; therefore, use of these products should be discouraged. Because of insufficient or conflicting evidence regarding the efficacy of conjugated linoleic acid, ginseng, glucomannan, green tea, hydroxycitric acid, L-carnitine, psyllium, pyruvate, and St. John’s wort in weight loss, physicians should caution patients about the use of these supplements and closely monitor those who choose to use these products”. Obviously people in the pockets of evil BigPharm and the US Broccoli Industry.

Glucomannan was the magic ingredient in discredited products such as Propolene. When cornered by the FTC the makers just changed the name to Lipozene. Websites are full of “this product did nothing for me”, and “I purchased a bottle for $29.99 and then a week later they charged my credit card another $59.99, and then when I complained they charged yet another $29.99. I wouldn’t mind but the product DIDN’T WORK”. I’m shocked! [I saw a Lipozene commercial on TV just the other night. The gusher was really cute. She emphasized that Lipozene is only for people needing serious weight loss. Just send shipping and handling. Obviously Lipozene and the FTC have kissed and made up].

Propolene/slash/Lipozene [and now Zylotrim, of Reno, Nevada] was developed after years of painstaking research performed at the Obesity Research Institute in Encinitas, California. The Institute has both clinical trial facilities, capable of studying obesity in hundreds of patients at a time, and a drug discovery division focused on developing potent new diet pills. The latter, as you would expect, includes pharmacodynamics and pharmacokinetics laboratories, and pristine GMP facilities needed to make the pills. In the clinical laboratories, doctors, nurses, and statisticians work closely together to monitor and counsel patients and evaluate the various new formulations they have developed, looking at both efficacy for weight loss, but also toxicity and safety issues. For this cutting edge research, including hundreds of research papers in peer reviewed Medical Journals, the Obesity Research Institute has been recognized by the American Society of Clinical Nutritionists as a Center of Excellence.

Actually, I made all that up. I found a “small business” guide on the Web and it did not actually know exactly how many people work at ORI, but it could be as few as 2, and not more than 10. Plus, it is an LLC, not a real “Institute”. When slapped by the FTC it had two owners, Henny Den Uijl and Bryan Corlett. Henny is apparently
still around; he was listed as a participant in a golf tournament at a very fancy golf club in Rancho Des Rich Guys recently. This seems to be a fund-raiser. Good, he’s got enough cash from sticking ground Konjac in a pill and selling it for a zillion times its value, after all.

A different type of natural herbal formulations, or perhaps we should say natural crustaceanal formulations to be accurate, arose from one of the first [and worst] infomercials I had the bad luck to waste 30 minutes of my life on. The product was Chitasol as in “lose weight without diet and exercise”. This was the first time I had heard this oft-used claim, and when I thought it out for a few minutes I realized that even assuming Chitasol did exactly what it said it did I calculated that you would have to consume a large bucket of Chitasol with every meal for it to have any effect.

A believer in chitosan is Darryl Hannah, who in “Splash” played a mermaid in love with Tom Hanks. When he took her to dinner she consumed a lobster, shell and all, thus ensuring she got the “fat trapping” properties of the shell along with all that muscle and molten butter.

Chitin is an acetylated complex polymer of two carbohydrates [sugars], 2-amino 2-deoxy-glucan and 2-acetamido 2-deoxy-glucan found in large amounts in the shells of lobsters, shrimp, and crabs. The deacetylated product is called “chitosan”. [The “give away” in diet adverts is when you see “don’t take if you are allergic to shell fish” in the small print]. This copolymer has extremely high hydration properties, making it form viscous gels with water especially under acidic conditions, i.e. much the same way glucomannan does. In case you’re interested, formation of hydrogels by such materials is called “syneresis”. But you probably knew that. What you probably don’t know is that this property does have a worthy usage however, in the development of extremely tiny “nanoparticles” of chitosan and similar molecules that are being tested to deliver drugs in the body.

So, what does PubMed say about the “chitosan” products? A meta-analysis conducted by a group in New Zealand looked at the results of 14 trials involving 1131 people. Overall the data indicated a slight effect of taking chitosan, with an average weight loss of about 1.7kg higher than placebo [about a pound]. However, when the trials were further analyzed, with trials in which the chitosan treatment was not properly concealed tossed out, these differences were lost. As a result the authors concluded that differences seen were “not clinically significant” [nice way of saying “none”].

This group conducted their own trial as well. They recruited 250 people and enrolled them in a 24-week study which was randomized and double-blinded. People given chitosan got 3g per day. Again, the treated group did slightly better than controls [loss of 0.4kg versus increase of 0.2kg]. This was “not clinically significant”.

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The way chitosan works, according to the adverts [and also based on a demonstration on TV that when fat and chitosan are mixed in a beaker with acidified water the whole thing coagulates] is by “trapping fat”. Okay, so if this is true then if you took chitosan the amount of fat in your excretions would rise, correct?

Some brave people at the University of California, not to mention some iron willed patients, put this to the test. Feces were collected for 12 days after taking 2.5 grams of “Fat Magnet” [10 capsules per day]. In male subjects fat excretion increased 1.8g each day, while no difference was seen in females. In case you are wondering, 1.8g is 0.018 kilograms. The authors discussed their results and went through the usual whining about “because of the DSHE Act of 1994 supplements are not subject to approval by the FDA” “there’s no way chitosan could absorb even a fraction of the fat in a normal diet” “because the American diet is high in fat…calls into question whether this product could ever work for those likely to buy it” “claims not merely unsubstantiated, they are false”, i.e. usual stuff you’d expect from people secretly working for BigPharm.

They also made the statement “In advertising materials for chitosan, it is claimed that it can prevent the absorption dietary fat, up to 120 g per day…. and can thus be used as a weight control aid for individuals maintaining a high fat diet. There are three lines of evidence that contradict this claim. The first line of evidence comes from the fact….. [that] the dosage to achieve approximately a 50% reduction in fat digestibility, or an excretion of less than 70 g of fat per day for our subjects, would be an order of magnitude higher than that suggested by the manufacturer [i.e. you’d need an even bigger bucket]. The second line of evidence comes from two recent trials where chitosan use without energy restriction for 4 or 8 weeks failed to increase weight loss over placebo. The final, and most conclusive, line of evidence comes from the data reported here: chitosan did not increase fecal fat excretion and thus failed to act via its proposed mechanism. We conclude… that the central claim associated with [chitosan], fat malabsorption, is false and the associated claims for weight loss are therefore misleading”.

A noted obesity clinic is found at the University of Exeter. The Brits have their own problems due to Fuller’s London Pride, Young’s Special Bitter, and the elixir of the Gods, Henley Brewery Ordinary Bitter, the consumption of which has made grown men cry. The Exeter lot studied chitosan in obese people and found no effect whatsoever.

[I recently changed my mind about Henley, dropping it to #2. Try Fuller’s Chiswick Bitter next time you’re over there].
In 2001 a paper appeared in the Journal of the American Nutriceutical Association showing the wonderful effects of chitosan. Fifty nine “mildly obese” females were studied. After eight weeks of taking chitosan the average weight in the treatment group was 88.7+13.9, down from 89.7+14.2, i.e. a whole kilogram. Controls however were 87.8+12.8 to start with, and 89.3+14 eight weeks later. The drop in the chitosan group was statistically significant [a probability of 0.005, i.e. really significant], and when the probability was calculated between the two groups it was less than 0.0001, i.e. really really really significant.

My ass. First, the variance in each group was so huge [12-14kg] that none of these values would be different. Second, on what planet would a value of 88.7+13.9 compared to 89.3+14 have a statistical probability of P<0.0001. Only on the planet Horseshit Datafabricus. This of course did not stop this paper from claiming that their chitosan formulation was efficacious in facilitating weight loss. And yes, at least one author was from a Company. I wonder what that Company makes?

Not everyone agrees however, and in fairness we should mention a 2006 study from a group in San Antonio Texas. They enrolled 150 participants for a 60-day study; most were women and in their late 40’s on average. The people taking chitosan [3g per day] lost nearly 3 pounds more than control or placebo groups. No effects on other measures, such as cholesterol, etc, were seen. Without actually saying it, the authors seemed to think the chitosan was “working”.

I’m sure this study was properly conducted, but I still wonder why they actually bothered? All the scientific data amassed by 2006 clearly showed only a tiny effect or no effect at all, so why conduct yet another study on the same issue? Perhaps one reason was the fact that I noticed that the paper was submitted in October 2004 but was only accepted in April 2006. That’s nineteen months! Most papers go back and forth to the journal for revisions, but the average time for acceptance is about 4-5 months. In 19 months, clearly a world record, they could have repeated the actual study at least six times if a reviewer had wanted something checked. Very strange!

They can cheer up though, because in 2007 I found a Web advert from a company in nearby Houston Texas stating that Chitasol was “America’s #1 fat binding diet system, having helped over 1 million Americans lose weight and keep it off”. It has apparently been “shown to bind up to 28 grams of fat per serving” as well as “creating a natural feeling of fullness” while “maintaining healthy cholesterol levels”. And just six bottles are only $101.70. A bargain.

You see, this merely confirms to me the great BigPharm conspiracy. The clinical trials, all obviously faked, only studied maybe 2000 people, and manipulated the data so that only tiny amounts of weight were lost, no
changes were seen in lipid levels, and only tiny changes [if any] in fecal fat were recorded. And yet, in reality, as we saw above millions of people have used Chitasol, all have significantly lost weight due to the huge absorption of fat [28 grams!] even a 500mg tablet of Chitasol confers, while keeping their cholesterol low. The only reason the Federal Trade Commission went after these people was because BigPharm put them up to it so the makers of Chitasol would not get the Nobel Prize.

Needless to say, both the FDA and FTC have had a field-day with such products. In 1999 they told “TRY-Lean” to stop being naughty and claiming their product would reduce the risk of obesity, high blood pressure, heart attack, and cancer. The following year they got all nasty about "The Enforma System" about their claim that the user could "eat what you want and never, ever, ever have to diet again". The system consisted of "Fat Trapper," a chitosan-based product purported to prevent the absorption of dietary fat; and "Exercise In A Bottle," a pyruvate product that supposedly increased the body's capacity to burn fat [it would actually have the reverse effect]. The product was promoted by former baseball player Steve Garvey, who clearly needs to get a life now that he can no longer hit that little ball with his little stick.

No doubt reflecting their known distaste for good old Kevin Trudeau the Federal Trade Commission also got upset about Chitozyme and Acceleron, featuring Kev in infomercials stating that Chitozyme was "a revolutionary fat trapping product that promotes weight loss while letting you still eat your favorite food guilt free," and that Acceleron "was proven to increase your metabolism" and "burns more calories." Proven by whom we wonder?

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A simply brilliant product is Lipovox. This magic pill gives you weight loss, cures acne, reverses aging, and removes those wrinkles around your eyes. There are ten magic “nutraceuticals” formulated by “World famous Dermatologist” Dr. Richard Perricone. Most of the ingredients can be found in a Big Mac. Perricone sometimes shows up on PBS giving a lecture at Yale where he is faculty. Except he isn’t, and his lecture hall is actually a TV studio. Apparently he had an unpaid position as an Assistant Professor of Dermatology for a while but he was booted in 2002. Astonishingly, the boys at Yale didn’t approve of his books and anti-inflammation theories. But, lads, he was featured on Oprah! Unlike Garry Null however he is very coherent, and likes to talk about “anti-aging”, a totally silly field. If you are gullible enough to follow up, he’s selling fish oil to cure wrinkles [fish oil, not snake oil]. These days he’s finally given up on this nonsense and instead is focusing on women’s cosmetics, hawking his revolutionary Anti-Aging deep cleansing cold plasma fusion gel serum which can make the Duchess of Cornwall look like Sophia Vergana.
A slight wrinkle [wrinkle…geddit?] in all of this is that his products contain nanoparticles, which we now know trigger the inflammatory response in macrophages in the dermis ["inflammosome"], which is not good for you, plus his cosmetics not only contain carcinogens such as acrylamide, and carcinogenic contaminants such as ethylene oxide, dioxane, nitrosamines and acrylamide, and formaldehyde, but also allergens, and toxic hormones. No doubt this why the good Doctor did not support a program in California suggesting that cosmetic companies list their toxic products. Toxins? What toxins?

Another splendid product is Zalestrim. The product is for women; it makes you lose weight without diet or exercise [it is the "MOST POTENT FAT BURNER"], grow huge breasts [wait a minute, aren’t they mostly fat??], and want sex constantly. In my kitchen I have a bottle of “mixed herbs” which seems to have in it just about the same ingredients [ginger, cinnamon, green tea, passion flower, magnolia, etc], but Zalestrim is only $119.00 a bottle [plus it makes Spaghetti Bolognese taste really good]. Good deal huh? And what happens if a man accidentally uses it? But the thing I’m most interested in, for …er… purely scientific reasons, is what makes the boobs grow so big? The passion flower maybe?

Is it true to say that all these health fraud products are not tested in humans? Actually, they are. An example is good old Lipozene. I found a webpage that was several pages long consisting of literally dozens and dozens of emails saying that [a] Lipozene had zero effect, and [b] that the purchaser’s credit card had been milked big time. This, in one sense at least, is the “clinical trial”!

Despite my clear advice to my fellow Healers not to overstate yourself some people just don’t listen. A classical example is Dr. James Harrison of Hartford CT. In his “Diabetisyn; Scientific Solution to Blood Sugar Levels” adverts he states that “Many people with diabetes check their blood sugar every day… By exercising often, eating a healthy diet, and supplementing with Diabetisyn, many people can keep their blood sugar level nearly normal”. Implication….? That you don’t need diabetes medications, you can just take Diabetisyn [$50 a bottle].

What is in Diabetisyn? Chromium [eat a potato]. Glucomannan [discussed above]; as we saw this is simple plant dietary fiber [eat a celery stick]. Garcinia, with the wonderful hydroxycitric acid. Gymnema, of course. Willing to bet your life this will control your blood glucose? Dr. Harrison provides testimonials [of course]; “blood sugar down 50 points”. Points? You mean 50 milligrams per 100 milliliters of blood? “My blood pressure is the lowest for ten years”. Er… I thought this reduced blood glucose? “I’m type III diabetic and feel 100% better all ready [sic]”. What the hell is “type three”?! “My pet cobra bit me and I lived”. Sorry, I made the last one up.
Most natural herbal formulation products for weight loss very sensibly put in a recommendation that their product should be used in “conjunction with diet and exercise”. So let’s look at Jenny. She’s in her mid-30’s and is a few pounds overweight. So, since she is otherwise reasonably fit she joins the local gym, works out twice a week, watches what she eats, and sensibly takes Hairy Bollock Extract. Over one month she loses seven pounds, and sends an email to the Hairy Bollock Extract testimonial webpage [note: we never fake these].

But we need to convince people her weight loss was due to taking Hairy Bollock Extract. So here is how we do this. We get into our time machine and go back one month. We put Jenny into our cloning machine [patent pending] and produce two identical Jenny’s. One Jenny works out and diets. The other Jenny works out at an identical rate, diets, and takes Hairy Bollock Extract. After one month we weigh the two Jenny’s and show that the diet and exercise caused 3.5 pounds weight loss, and the diet, exercise and Hairy Bollock Extract together causes 7 pounds in weight loss. In other words our wonder medical breakthrough drug causes a CLINICALLY PROVEN 100% INCREASE IN WEIGHT LOSS.

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Another award for a brilliant commercial should go to those wonderful people at Leptoprin, a product from the highly prolific but also rather secretive Klein-Becker Company that seems lately to have disappeared [nobbled by those FDA guys?]. The product was actually manufactured by “A.G.Waterhouse”, based in… you know where…. which was a front for Basic Research of ….capital of you know where… which was a front for Klein-Becker. Confused? I certainly am.

The TV advert is now longer on but was fun to watch, consisting of a seriously scary looking woman saying “when is a diet pill worth $153 a bottle?” When it works of course!

You see Leptoprin is "developed for the significantly overweight", with serious warnings, apparently, that it is "much too powerful" for the "casual dieter". So, if you need to just lose 10 pounds if you use Leptoprin you will shrivel to nothing and die. If you can’t afford $153 a bottle you can always buy it instead from Generix Labs, which is secretly Klein-Becker as well. Confused?

The manufacturers claimed that their product was “backed by the results of a clinical trial”. As we discussed above this breaks one of the golden rules ["be vague", or at least do a dodgy trial in an impenetrable region of Central Africa compliments of Dr Julius].
The scientific study was published in Current Therapeutic Research, Volume 60, page 220, 1999. The authors were Antonio [University of Nebraska], Colker [Beth Israel Center New York], Kalman, Torina and Shi [“Peak Wellness” of Greenwich CN] and Brink [“Brink Training Systems”, Newtown MA]. The paper was entitled, wait for it… “Effects of a standardized guggulsterone phosphate supplement on body composition in overweight adults: A pilot study”. The study was “supported by a research grant from ProLab Nutrition, Bloomfield, CN”.

The paper explains that “guggulipid” is an extract of a plant, *Commiphora mukul*, found in India. It talks about how this compound might reduce lipids.

To test this, a study was set up with six people in three groups. [Very small test groups, but lets not be picky and point out that this study had a statistical power value of ZERO]. You would have thought one group would consist of guggulsterone, but in fact people were given a formulation containing “guggal extract”, our friend the liver-dissolving Garcinia, and L-tyrosine [garden variety amino acid that would do nothing]. The two others got either a placebo or nothing. Everybody then took part in a three day a week exercise program and also told to follow a 1800-kcal diet regimen.

After six weeks everybody was evaluated. The results “showed a significant loss of body weight due primarily to loss of fat mass”.

Wonderful news!

This solved a big problem for Klein-Becker. The original Leptoprin formulation had the usual herb garden nonsense, with the active ingredients being the famous ECA stack…ephedra, to make you float around the room and have no interest in eating, caffeine, to make you float around the room after the effects of the ephedra had worn off, and aspirin, to help you after you stopped floating around the room and banged your head on the table*

[*I played rugby for twenty years, and while this is the most physical and aerobic game on the planet I never got a head injury [okay, I broke just about everything else]. This is because you don't tackle with your head, nor are you allowed to grab somebody around it. Not so, football. Whacking somebody helmet to helmet makes you a “man”, and is about to explode in lots of law suits against the NFL and NCAA from people who can't find their car keys anymore.

But that's okay, because now there is Anatabloc, a new natural product that cures you when you get concussion. At least three different companies have already jumped on this bandwagon. The active ingredient,
anatabine, is found in vegetables, so it is food, yum, yum, etc. Following their cue from Utah, the Virginia-based makers [Star Scientific] had taken the precaution of slipping healthy amounts of….er…campaign contributions ["lavish gifts" according to the lawsuit] to the state Governor. Or rather, ex-Governor – Bob McDonnell was your standard God-fearing right wing nutjob who is currently in hot water for corruption, including his rather cosy relationship with Jonnie Williams, one of our nutriceutical manufacturing Healers].

So….. ephedra had to go because it killed you. So instead Leptoprin morphed instead into a natural herbal formulation containing, you guessed it, Commiphora and Garcinia. I’m sure they’ve taken out the hydroxycitrate by now.

And why not? These materials were clinically proven to work!

But were they? The paper is retrievable, so I looked at the actual numbers. As above, the “test” group getting the natural herbal formulation showed a tiny drop in weight compared to the other two, but the data “variance”, the spread of the data, were totally overlapping! The authors claim however that the statistics showed the weight loss to be lower, when in fact the difference in means was only 2.6 kilograms. Pull the other leg!

I found literally dozens of webpages containing complaints from people who were …er… marginally disappointed…with Leptoprin. All obviously faked by evil BigPharm.

After much searching, I did manage to find more stuff about this wonderful “guggal” stuff. A 2003 study at the University of Pennsylvania School of Medicine looked at the wonderful healing ability of this extract, specifically the ability to reduce cholesterol. In this study involving about 100 people the guggal raised “bad” LDL-C levels by 4%. There were no significant changes in levels of total cholesterol or “good” HDL-C. While guggulipid was generally well tolerated, 6 participants treated with guggulipid developed a hypersensitivity rash compared with none in the placebo group. So, your bad cholesterol goes up, plus you get a rash. Not sure which is worse.

You have to hand it to Basic Research, Klein-Becker, or whoever they are this week, they certainly know how to get after your wallet. No $9.95 plus set of kitchen knives for them. All their products cost big bucks! Of course those spoilsports at the Federal Trade Commission had to intrude, alleging the usual “deceptive acts and practices” stuff:

“Respondents have manufactured, advertised, labeled, offered for sale, sold, and/or distributed products to the public, including but not limited to:
Dermalin-APg, a topical “penetrating gel,” containing aminophylline and other ingredients, that has typically sold for $135.00/8 oz. bottle;

Cutting Gel, a topical “penetrating gel,” containing aminophylline and other ingredients, that has typically sold for $89.00/4 oz. bottle;

Tummy Flattening Gel, a topical gel “concentrate,” containing aminophylline and other ingredients, that has typically sold for $119.00/4 oz. tube;

Of course…Leptoprin, a “weight control compound” capsule, containing ephedrine, caffeine, aspirin and other ingredients, that has typically sold for $153.00 for a 180-tablet bottle (30-day supply); and

Anorex, a “weight control compound” capsule, containing ephedrine, caffeine, aspirin and other ingredients, that has typically sold for $153.00 for a 180-tablet bottle (30-day supply); and

PediaLean, a “weight control compound” capsule, containing glucomannan and other ingredients, that has typically sold for $79.00 for a 120-capsule bottle (20 to 30-day supply).

**WOW!** Just one each would cost you $728! Must contact them about licensing my *Hairy Bollock Extract*.

But I digress. The FTC went on that “representations [about Leptoprin] ..were…false or misleading”. Surely they must be mistaken?

Miss your Anorex now that the evil Federal Trade Commission has trashed it? Don’t feel bad, Klein Becker still sells it [minus the ephedra]. I found nearly 200,000 hits for Anorex on the Web. Well done FTC! You certainly put it to Klein Becker, stopping them from selling.. er.. wait a minute?

But these lads can still fall back on Zantrex-3….. **YES! It’s New Zantrex®-3... 546% more weight loss than the leading ephedrine-based diet pill... and that's a fact. Here's another fact: Zantrex®-3 is way beyond ephedrine, way beyond fat-burners, way beyond everything on the market today... Zantrex®-3 is a new category of bifurcated weight loss compounds providing both rapid weight loss and incredible energy combined into a single power-packed Super Pill.**

Not bad for caffeine.
Just for fun you should take Zantrex with “5-hour energy” – caffeine and energizing B vitamins [I’ve never figured that one out…], with no crash. Trouble is, about 25% of people crash badly, and there have been at least 13 deaths attributed to it, so now the law suits [from US States, not ambulance chasers] are now flying.

Similarly, caffeine now also turns up by the absolute ton in “energy drinks” young people like to guzzle by the gallon [Red Bull, etc] – several have marketing tactics directly aiming at children. Some products contain both caffeine and alcohol, drawing the ire of the FDA in 2010. This didn’t matter, you just bought the energy drink and then added gin or your poison of choice. As an alternative just sign up to sell “Verve Energy Drink”. The makers, Vemma, recruit college kids with the lure of massive profits, instant BMWs etc, in this brilliant pyramid scheme marketing opportunity.

On December 18, 2002, the Food and Drug Administration Commissioner announced the Consumer Health Information for Better Nutrition Initiative. The focus of this was to provide scientifically accurate information about foods and dietary supplements “so Americans know the health consequences of what they consume”. This initiative was designed to “encourage makers of conventional foods and dietary supplements to make accurate, science-based claims about the health benefits of their products”. Ha Ha Ha Ha………

Why would the FDA stoop so low. I mean, just look at the wonderful natural materials in our products. The list of ingredients is so very impressive aren’t they? Guarana mix, Belgium elderberry, Garcinomium bollicum tincture, oil of Oprahendorium, M’bongoland passion lily stems, and so on. The FDA will say of course “how do you know these materials are actually in the pill? How did the manufacturer determine the correct dose [usually never listed under the guise of “daily recommended dose not yet determined”]? What is the active ingredient? Is the material even absorbed across the stomach? How long does the material stay in the blood and what peak concentration does it reach [PK/PD]? Are there any side-effects? Does the material interfere with conventional drugs you might be taking?” and further nonsense.

I can only speak for Hairy Bollock Extract, and if you have any questions please free to contact our Call Center, just outside Pyongyang. Your call is important to us.

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In my *Hairy Bollock Extract* Ultimate Fatburner TV commercials I have been careful, honest as I am like my fellow Healers, to put “Results not typical” in small print or in faint letters on the TV screen people can barely see. One example I noticed was the “Nutrisystem” weight loss program in which as part of their “breakthrough science of the glycemic index” Dan Marino and his pals lost various amounts of weight from eating “man-food”, *ugga uggga uggga*, pizzas, hamburgers, etc, which the company mails to you. I’m sure these guys did, but every single example, from 20 pounds to over 60, all came with a disclaimer that the weight lost by each endorser was “result not typical”. I found this very confusing so I called the 1-888 number to ask what a *typical result* was?

“You don’t understand, sir” was the polite reply. “There is in fact no such thing as a typical result; everybody responds differently”.

I thought this was a reasonable response, but then I asked how they knew that Mr. Marino and friends had “atypical” results unless they had “typical” results with which to compare [plus the TV advert talks about a “survey” from which surely one could calculate a “typical” level of weight loss on this program].

“You don’t understand, sir…..”

Looking on the Internet I found testimonials. “Nutrisystem is the best thing since the invention of sliced bread”, etc, but here and there some complaints. “They send you stuff that is different to what they show on TV”, “tastes terrible…”, “cardboard…”, and [I’m sure this is some terrible mistake], “I asked for my money back and I’m having a hard time getting a refund”.

By the way, “glycemic index” really means something. It refers to the way we metabolize carbohydrates. Some get broken down into sugar units very rapidly [like white rice for instance], which cause your blood sugar to rise rapidly, whereas more “complex carbohydrates” take much longer to break down, so your blood sugar rises more slowly and doesn’t reach the same peak levels. This distinction is very important if you are diabetic, but what the connection is here with losing a few pounds so you can toss your football a bit further is beyond me. Not that Marino needs any help in this regard.

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And then I make the huge mistake of turning on the TV again. Because now there is Smartburn.
The pressures are relentless. Coal-fired boilers must meet increasingly tighter environmental regulations, future standards are more uncertain than ever, and economic pressures—from the market and regulators—continually demand efficiency and lower operating costs. Until recently, responding to these challenges has meant spending a lot of money on environmental compliance systems that detract from the boiler’s operating performance.

RMT has a proven alternative. Our practical application of combustion science technologies will allow you to improve your coal-fired boiler’s combustion performance and lower NOx emissions in the process. It’s a smarter, more flexible alternative—SmartBurn

Er….wait a second, that can’t be right… Try again. Ah, yes, here we are…

“In two 8-week studies, subjects using key ingredients (yes, you guessed it…. *Garcinia cambogia* extract, chromium polynicotinate, and *Gymnema sylvestre* extract) in SmartBurn lost, on average, MORE WEIGHT than subjects using a placebo. Clinically proven components to promote weight loss – fast…

• Theanine, which helps put you in a state of relaxed alertness [a what?]
• HCA, to help you control your appetite. [This is hydroxycitrate; your liver comes out of your ass].
• Hoodia, the most talked-about ingredient, which has received worldwide attention [they mean Oprah].

SmartBurn with Hoodia is a revolutionary, and advanced doctor-formulated total-body weight-loss solution for women that promotes rapid total-body weight loss while also helping to manage stress. SmartBurn can help you lose weight fast when added to your diet and exercise plan”. According to Dr Jennifer Glover, the endorser, Smartburn is one of the most powerful weight loss supplements on the market today. This statement, I am sure, is backed up by randomized double blind clinical studies conducted in multiple clinical obesity clinics around the world, and not merely on Jenny’s dog Spot. A “JR Glover” turns up on PubMed on dozens of papers, ....on [a] the basis of epileptic seizures, [b] heat shock proteins in yeast, and [c] the Ehlers-Danlos specter, a bleeding disorder. What a clever girl! Well, if she says it works it must do..!

But competition is good and I’m sure Smartburn will give that Iovate RapidSlim rubbish a run for its money.

[Er…Smartburn is also made by Iovate. Editor]
SPRINKLE ON THE FAIRY DUST

Added to our growing list of healer geniuses we must now add Dr Alan Hirsch. Not so long ago, Hirsch stood up at a fancy conference of endocrinologists and described a trial he had conducted in over 1400 men [yep, that’s right, over ONE THOUSAND FOUR HUNDRED] who had weight problems. They took his magic sprinkles and as a result lost an average of 30-pounds in six months. A more recent infomercial claims 100-pounds plus [way to go Alan].

Perhaps telling this fairy tale in front of a room full of professionals was perhaps a tiny mistake, especially if you then claim that this was a form of “peer review” afterwards [the Endocrine Society was not amused]. The strange thing also….where was the huge clinical trial published? Given the great results it should have sailed into any respectable medical journal. So where was it? You know what, there were even people out there that were cynical enough to say that the whole thing was completely made up! Surely not…?

Can you imagine doing a trial on over 1400 people on anything? The logistics alone are enormous. It would take dozens of staff just to run it. Pity the poor University of Chicago where it was done.

Wait a minute. The University of Chicago have no record of this trial. Huh?

So, anyway, these minor concerns aside, you eat regularly, but before ingesting you sprinkle Dr Hirsch’s magic material, called SENSA, on your food. Then, and there is all sorts of gobblygook put out by his company explaining how all this tells your brain to eat less, you lose weight. Of course, Hairy Bollock Extract can do this also, but it tastes awful.

I’d like to explain that SENSA is a natural herbal formulation, so you’d be immediately convinced, but it is not. Hirsch describes the ingredients as “tastants” so they sound both catchy and deeply scientific. This arose from his years of cutting edge research, which sadly for him nobody else believes. So what are they? Number one is maltodextrin, just a complex carbohydrate [sugar] that tastes okay [and adds extra calories to your food so you lose weight…er…]. Two is tricalcium phosphate. I don’t know what this tastes like, but it is used in dentistry, bone replacement materials, that sort of thing, so it is an obvious ingredient to tell your brain to stop eating – maybe it forms little bone-like shells around your satiety centers or something. The third, allegedly “active” ingredient, is silica. Silica is sometimes used as a food additive, but if it has any neurological activity I’ve certainly never heard of it [plus I could find nothing on PubMed]. Plus, don’t breathe it in, you’ll get silicosis and die. According to the half-hour long infomercial on my TV the other day, SENSA is based on solid clinical
evidence. But then, so is Hairy Bollock Extract. Last time I looked, you could get SENSA for $4.95 for just shipping and handling. Then, according to a complaint webpage, you get milked for two months at $89 a month before you can even stop the billing. I cannot speak for Dr Hirsch, but as a fellow natural herbal formulation entrepreneur, I don’t think he is billing enough, you should be able to get away with at least $130-140 a month for this wonderful product.

According to Dr Hirsch, this magic combination all works through taste receptors [of which we have tons on our tongues] that tells the brain to stop eating.

I found this wonderful puffery piece by an author, Mary Thompson, who apparently is some sort of beauty expert. She tells us “According to Dr. Hirsch, he tested more than 4,000 tastant combinations when creating Sensa to see which ones were the most effective in inducing weight loss.

He said that he discovered that certain scents enhance the smell of food and speed up the satiety process, so users feel full faster and eat less.

Sensa is unique in that it’s based entirely on the science of smell [Editor…huh?…taste surely?], so there are no stimulants, pills or drugs in Sensa that work against your body’s natural impulses.

Also according to Dr. Hirsch, when Sensa was tested in one of the largest clinical studies involving a non-prescription weight loss product, 1,436 men and women lost an average of 30.5 pounds in 6 months just by sprinkling Sensa on everything they ate. None of the participants were told to change their diet or fitness routine. This too is what attracted me.

Dr. Hirsch says that he came up with the idea for Sensa after spending more than 20 years studying patients who lost their sense of smell due to illness or brain trauma and noted that many of them gained weight. That’s because people who don’t have properly working smell and taste receptors have nothing to control their appetite. In fact he says, science has discovered that there are subtle, almost imperceptible scents that can curb our desire to overeat.

So in a nutshell, Sensa enhances the smell and taste of your food and allows you to feel satisfied on smaller portions without feeling hungry or deprived.
Dr. Hirsch also went on to say that by enhancing smell, Sensa helps trigger your ‘I feel full’ signal so you eat less and feel more satisfied and the Sensa weight loss system works to curb people’s appetites so they can gradually ‘shrink’ their appetite rather than turning to crash diets or pills that aim for instant weight loss”.

Thank you Mary. But just one tiny question? Sensa is a combination of three ingredients, and you say he tested over 4000 combinations. I may be wrong, but I’m terrible at math, but doesn’t that mean he actually ran $4000^3$ tests? That’s 4000 times 4000 times 4000. That’s 64 billion mixtures of potential “tastants”, a lot of work to come up with a sugar, a dental chemical, and a food additive that is in food already!

Hirsch’s Smell and Taste Foundation webpage points out that “Dr. Hirsch has conducted and published more than 180 research studies on the effects of smell and taste on human emotion, mood, behavior, diseases states, consumer preferences and weight loss, among other topics. His studies have been published in numerous medical journals including the Journal of the American Medical Association (JAMA), Chemical Senses, American Journal of Psychiatry, Psychiatric Times, International Journal of Obesity, Neurology, Journal of Neurologic Rehabilitation and Psychosomatic Medicine.”

Actually, the majority of his papers have been published in a journal called “Headache”, and there are 20 papers listed on PubMed, not 180. Only one appeared in the prestigious JAMA, but this was a letter not a research article [Dr Hirsch was suggesting a drug regimen to help people who couldn’t taste salty things apparently].

In fact, a quick perusal of PubMed shows that most of his “publications” were not studies at all but various comments or letters to the journal about somebody else’s publications. A few were actual studies, one an analysis of how much Clinton lied during his Lewinsky deposition, two papers on people exposed to hydrogen sulfide, an article on burning mouth syndrome, and an article on whether owning pets reduced headaches. In other words, not a single paper ever discussing or for that matter researching the effects of smell and taste on human emotion, mood, behavior, diseases states, consumer preferences and weight loss.

Of course this merriment had to come to an end, and recently our fellow healer Dr Hirsch had to pony up $26.5MM for making stuff completely up.

"Resolutions to lose weight are easy to make but hard to keep," said Jessica Rich, director of the FTC’s Bureau of Consumer Protection. "And the chances of being successful just by sprinkling something on your
food….the science just isn't there.....” Er, what about those 1400 people in the trial? Hirsch and his evil mastermind in attendance, Adam Goldenberg, chief executive of the parent company were found liable for deceptive advertising. But this is not so bad, 25-mill against the estimated retail sales of $364 million. Decent little profit, I’d say.
LACTOBOLLOCKS

One of the areas I will not be promoting the healing powers of *Hairy Bollock Extract* is the upset tummy industry. I cannot complete intellectually with Dannone.

In fact the marketers at the French company Dannone are complete geniuses. I actually don’t know many people who don’t like yogurt, and don’t eat it at least occasionally; this includes me – as a disclaimer here I should say I sometimes eat Dannon “Fit and Lite”. I eat it simply because I like it and it tastes good -- however, five or six years ago Les Messieurs at Dannon Des Frogland decided to take it all to a much higher level, and con us all into thinking that there were massive health benefits from eating yogurt. But wait, not everybody else’s yogurt, but Dannon yogurt exclusively. And so Dannon began their long and hilarious slide down a very slippery slope. A slope powered by farting.

So, just for the fun of it, let’s go back and look at this whole sorry tale of flatulence, no..I mean fraudulence, …er…no, I mean fraudulent flatulence… Whatever.

It all started with Nuclear Family sitting around the breakfast table. In this commercial a bunch of very healthy-looking bright young totally non-stressed kids were guzzling down the product [in this case “DanActive….with *L.casei immunitas*…” while Dad is reading a newspaper report saying “Did you know that stress depresses your immune system? And it says here that 70% of your immune system is in your digestive system, so we should all eat “DanActive” to boost our immune system”. This, we are then told, is because DanActive is “clinically proven to help strengthen your body’s defense system”. So there….

To back up the “clinically proven” bit Dannon cited a couple of studies, and I found a few more just by searching *Lactobacillus*. [That’s what the “L” stands for in the ads]. Collectively, these seemed to suggest that DanActive boosted minor elements of immunity, and that Lactobacillus had been found by some to have minor effects on body cells involved in immunity.

For instance, I found one article that described how Lactobacillus gets ingested, and the few that escape the stomach acid get into the small intestines and can then pass into a very specialized cell in the wall of the gut called M cells. These exist in the Peyer's patches [discovered, you guessed it, by Peyer], which are clusters of lymphoid tissue surrounding the gut [i.e. not *in* your digestive tract as the ad stupidly implies, but in the body tissues *surrounding* it].
But not only do they have to get there, the adverts seem to suggest they somehow take over. A minimal amount of reading tells a different story. Not only is the amount of Lactobacillus surviving as far as the small intestine a tiny percentage, but it is already there as part of our normal gut flora. Dannon yogurt containing $10^{10}$ bugs sounds extremely impressive, but you may be shocked to hear this actually comprises only a tiny percentage of the total numbers of bacteria in your tummy system. So, what Dannon are playing here is a numbers game, getting you to think that their yogurt, or at least lots of these Lactobacilli, will repopulate your intestine with “good bacteria”. Even most of the $10^{10}$ bugs you slurp down will get fried in the stomach acid, so in fact it will only change things by about 0.0000001%.

It is known, and we’ll get into this in a minute, that bacteria in the gut do indeed tickle the immune system and that this can be a good thing. I suspect Dannon would claim that their specially enhanced bacterial culture is particularly good at this, but I can find no evidence for this in what is published. Dannon cites a paper where intense exercise [which can indeed be stressful, at least until you’ve taken a shower afterwards and drunk your Power Water] resulted in a drop in a rather minor/obscure population of white blood cells called NK cells [for “natural killer” cells, ‘cos they can kill a tumor cell line in a test-tube and it was hoped for a short time we could get them to kill cancers] and DanActive somehow expanded or restored these, but these sorts of studies receive a “so what” sort of response from most immunologists.

I cannot of course be sure, but I suspect the “let’s imply our yogurt boosts immunity so we can sell buckets of it to silly Americans who actually have fully functional immune systems but think they don’t” all came about as a result of an incredibly silly paper that said our immune system was severely damaged by taking exams, and that DanActive restored this immunity soon thereafter. Of course, total collapse of immunity has to be deal with across student campuses each exam week, as we all know. Two of the names on the published study were employees of Dannon and hence one must suspect the company forked up for the study expenses [the paper does not actually say], either way, given the results, it seems that this was the basis for the subsequent ridiculous claims Dannon ran with.

It was done in Spain, where people are quite emotional to begin with, and featured 155 students taking exams. The study, to give it credit, seems to have been very well controlled. These kids were given skimmed milk or Dannon Actimel [not, you will notice, DanActive] for three weeks prior to their exams and then for three weeks after [bit of a strange design that, but anyway…]. Consuming the Actimel did not change “anxiety levels” or serum cortisol [another measure of stress, many would say the most important indicator, so this badly debunks Dannon’s claim right there] or for that matter the activity of the students’ phagocytic cell activity [something you’d definitely expect to rise if their immune systems were boosted]. But, most importantly, this study showed
that levels of lymphocytes, cytokines, or antibodies—in other words all the essential components of our immune system—did not change at all. The only thing that changed were NK cell levels, which went up an ennie weenie bit. Hence this study cited by DanActive as “boosting your immune system” in reality showed that with the exception of a rather small cell population the role of which is still very unclear, all the important elements of the immune system did not change at all. That is not to say that it is certainly true that restoring the gut flora with Lactobacillus is a good thing when this is damaged, such as in old people, kids with diarrhea, or after a surgery where large of antibiotics were given killing your gut flora [my hand goes up here… I took Actimel and it worked well], but by misrepresenting the results of their own study Dannon broke the first rule of science. If thou doeth an experiment and nothing important changeth, thou shalt not say it went up-eth.

Looking on the Internet it seems lots of people are not that pleased with Dannon. I found a page complaining about the “sugar content and saturated fat” in their products – Activia has nearly 20-grams of sugar, you might as well eat a Twinkie—and another from the American Dietetic Association no less, saying that there is no clinical proof that probiotics [i.e. yogurt et al…”food with a benefit”] boost immunity.

The Center for Science in the Public Interest is also concerned, given the epidemic of what they call “functional foods” that supposedly improve health by adding dietary supplements. The CSPI has concluded that scientific studies of DanActive have shown no ability to stave off illness. NK cells and wrist-slitting Spanish students everywhere must be mortified.

In 2006 the CSPI called upon the Food and Drug Administration to wake up and do something before this nonsense gets completely out of control. Yeah, good frigging luck.

The news release cited CSPI legal affairs director Bruce Silverglade as saying that “many so-called ‘functional foods’ would be more aptly named dysfunctional foods. Many ‘energy’ drinks, for example, primarily consist of water, sugar and caffeine”. Those of you paying through your nose for Exercise Power Vitamin Water take note.

“When the Food and Drug Administration has warned companies, such as the makers of Mars candy and Arizona Iced Tea, that they were violating the law, the firms largely ignored the agency and have continued to market their products,” said Heller. I’m shocked!

CSPI provided a number of examples. These included Enviga [Coca-Cola company] that contains a combination of caffeine and an antioxidant found in green tea, which burns calories and promotes weight loss according to Coca-Cola. CSPI said that these claims were based on inconsistent, short-term and industry-
funded studies. Another was Cocoa Via made by Mars [who in my opinion make the best candy in the world] which could reduce “bad” LDL cholesterol, whereas the Food and Drug Administration pointed out it was chock full [pun, sorry] of saturated fat, which …er… raises serum cholesterol levels. The company, however, has ignored the FDA’s warning and continues to market the products with the same labels. Returning to Dannon yogurt, the CSPI also bashed DanActive, providing the splendid information [that I must have missed] that 25 percent of the participants in the trial study in Spain had to cut their dose in half because they suffered bloating, gas, and nausea. No wonder they failed those exams! This is key information, because yogurt does not boost your immune system, but it sure as hell makes you fart.

Up to this point, things were going well at Dannon. They were selling yogurt by the truck load. But then a fly appeared in the ointment. This fly in question was a California housewife who came to the opinion that the supposed health benefits of yogurt, which she was failing to notice, did not seem to be outweighing the massive farting. So, as all Californians like to do, she hired a law firm.

Before they knew it, Dannon were looking down the barrel of a class action law suit. It would have been absolutely hilarious to hear them defend their “clinical studies”, not to mention any professional immunologist with half a brain slice their “data” into tiny little pieces and then shred it to bits, but sadly Dannon bit the bullet and settled. This cost them tens of millions of bucks which sounds a lot but was a fleabite compared to their profits.

You’d think Dannon would put their head down here, but no….Suddenly, and I cannot actually tell you why, not being a fly on the wall at the Centre Du Colon, Paris, but suddenly Lactobacillus casei immunofartalotus was out and Bifidobacterium was in. Maybe Dannon detected subtle differences on their Fartometer? Whatever the reasoning, “immunity” was out, and “regularity” was in.

Regarding nomenclature, there are serious international committees of taxonomists that decide on naming new species, including bacteria. But Dannon did not care, so Bifidobacterium animalis, one of the most prevalent anaerobic bacteria in our gut flora, suddenly got transformed to “Bifidus regularis”. I wonder why they called it “regularis”…er…?

Entrez the glorious Jamie Leigh Curtis of Halloween stardom, the noted clinical nutritionist to plug the new line of wonder products from Place De La Fart. In her defense, if you’ve been continually chased by a psychopath in a hockey mask, your bowels would be screwed up as well. Jamie must love all this, because every time Dannon moved the goalposts, from colon health, to regularity, to the dire “Activia challenge”, to “doesn’t eating Activia just make you feel soooo good?” trying to keep one step away from the lawyers and the FTC, she kept
getting dragged back into the studio to make yet another advert. Hope she got paid really well to compensate for pushing such a crap product. Last time I looked, she got shipped off to Paris and then the Greek Isles, for their latest flavors. Nice job if you can get it.

Then of course there were the spoofs, ranging from the brilliant Saturday Night Live sketch where “Jamie” stopped in mid-sentence due to tummy cramps, then announced she had shit her pants, to the bright spark who put one on YouTube where it was the real TV Activia commercial but the soundtrack was altered so we could hear lots of continuous farting noises. If you think about it, this is a curiosity, because the spoof version was actually what really happens!

Good old Jamie did her lovely best to tell us, in the vaguest of terms – lots of tummy rubbing, pulling faces, etc – that Activia “helps with regularity”. What Jamie is trying to say was “constipation”, but, as I only recently found out, you cannot claim “something cures constipation” [unless you have solid proof, which they don’t] because constipation is considered a disorder or disease state by the FTC, and so if you fraudulently claim that your product can cure constipation the FTC can slap you around.

You can just imagine the scene over at Phillips in their boardroom. “Those bastard French are killing us, why don’t we have a colon product? Get the scientists on this immediately!” As a result, enter the utterly dreadful “Phillips Colon Health Lady”. Constipation, diarrhea, cramps, gas, shitting your pants, this Lady gleefully tells passers-by. One even responds adoringly “I love your work…” Oh please…

I am a fairly calm chap who believes in live and let live, but the PCH Lady gets under my skin. If I was at a wedding, or on a plane or bus ride, as in the TV ads, and a woman got up and started bleating on about regularity and diarrhea, I’d cut her frigging head off.

This dreadful lady makes vague statements about “replacing the bad bacteria with the good”. Obviously, the guys at Phillips had to put their own label/spin on this to distinguish their product from Dannon, but the reality is that this is nonsense, because it implies that the gut flora that colonizes the entire human race is bad, and we need to become part human part yogurt entities to function correctly. That is not to say that the gut flora sometimes gets severely compromised, and as we said above yogurt products can help re-establish this.

All this, as I’m sure you know, falls into the category of “probiotics”, the concept that not only is food nutritious, but has added benefits. Some of this has some scientific basis, much of it does not [being either anecdotal or
old wives tales] and then of course there is the Looney Tunes fringe, those guys who feel we are “unclean” and must flush out our bowels on an hourly basis. We’ll get to these funsters later.

So, as we said, foods that are supposed to have some benefit if you eat them are called “probiotics”. Obviously, DanActive would like to be in this category. Most in the “active ingredients” in this category are bacteria, but there are fungi also. These appear in milks, cheeses, fruit juice, wine, sausages, etc. The benefits were regarded as general, but now the definition has been widened by claims that certain probiotics are useful in certain pathological conditions where they are thought to be boosting immunity in some way.

The claims include the possibility that bacteria like Lactobacillus increases the [already huge] IgA antibody response in the gut, and that this protects you from colon cancer. This claim, which makes no sense at all if you think about it, from the “Lactobacillus Reference Center” in Argentina, [no conflict of interest there then] has not been reproduced. Other observations, in test tubes at least, is the capacity of Lactobacillus to produce different cytokines, but here the bacilli induce molecules that are part of the positive immune system, but also molecules designed to turn it off, which complicates matters to say the least. In fact, models showing the interaction of probiotic bacteria with the immune system in the gut fail to mention that all the bacteria in the normal gut flora already do this.

In 2009 Dannon settled on a $35-million class-action suit alleging false advertising regarding DanActive, and their bare-faced claims that the product boosted your immune system. Dannon admitted no wrong doing, but just wanted to “avoid the distraction” while they worked hard on increasing the sulfur/methane output of millions of women. Of course, when you are making zillions with your product, this was just a flea-bite. Part of the class-action suit referred to a study by the American Society of Microbiologists [if anybody should know about bacteria and probiotic effects, it would be these guys] that concluded that the benefits of such foods was “unreliable”.

In a sense, maybe Dannon were right about their claim that their yogurt regulates and shortens intestinal transit. Certainly, if parts of your colon swell up with massive gas bubbles, this would definitely influence matters.

Things were no better on the other side of the Pond, with the UK Advertising Standards Authority telling Dannon to stop putting out ads saying Actimel stopped kids from getting bacterial infections.
Apparently, somebody at the FTC didn’t like the Halloween movies that much, so they then told Jamie Lee and her pals at Dannon to stop pushing their silly Activia “challenge” for “occasional regularity”. Just to rub it in, they also forced them to pay another $21-million in settlements.

Dannon took their medicine, but also released a snotty statement from their Yogurt Bunker in White Plains NY about continuing research into probiotics so they could “educate and communicate the benefits” to the general public. Of course you might argue that they had already educated the public quite enough thank you with their boosting immunity rubbish, but their argument in fact is sound because there will always be the granola-heads out there willing to believe this stuff.

Despite all this, Activia fulfills very nicely the Ancient Chinese philosophy of Plar See Bow. One can find lots of webpages in which people “swear by” yogurt to keep them regular. But equally you can easily find people saying [praise the Lord] “we knew this was a complete scam from the beginning”. Of course, there is a third category – “I took this stuff and thought my bowels were going to explode”, “I shit my brains out for weeks”, endless web entries talking about “severe abdominal pain”, “explosive watery diarrhea”, etc, which of course all adds to the entertainment value.

We talked above about the Dannon/Phillips nonsense that their products replace the “bad bacteria” in your gut with “good bacteria”. This is all very strange, because critics of enema treatments tell us that frequent flushing of your colon kills the beneficial bacteria in your gut, make you more prone to infection, and screw up muscle and nerve functions. Another problem is that if you do this often you flush out vital electrolytes and ions [like sodium] which can have an unfortunate side-effect [death].

We are a part-human part-bacterium complex commensial organism. The small intestines end of our gut does not contain bacteria -- for various reasons, not the least being various nasty fluids bactericidal all over the place -- and the fact that gut contraction to move our hot dogs prevents bacterial adherence and colonization. In the large intestine, however, it's party time, with estimates of $10^{12}$ bugs per gram of “what’s left of our food” contents. Actually, a fair proportion of what we deposit in the lavatory each morning is bacterial.

We know that these bugs interact with host gut tissues, and the idea of “probiotics” arose from the idea that this is not only “good”, but we should be able to manipulate these processes further.

Most bacteria in our system are anaerobic, which makes sense since there’s not much oxygen down these parts, and this includes our Dannon-adulterated pal Bifidobacterium. A minority of bacterial species are present
that need oxygen, including our pal Lactobacillus. If I were to list all known species however, it would take the whole page.

These are very good for us [belying the awful claim of “bad bacteria” hawked in the TV ads]. They can help ferment various materials such as complex carbohydrates that we cannot by ourselves, and break them down to simpler sugars we can deal with. They make vitamin K for us, produce short chain fatty acids, and help us absorb things like calcium and iron. Another, very important aspect, is that they can prevent us being infected/colonized by pathogenic bacteria by simply pointing out that [a] hey, we outnumber you for nutrients, so [b] piss off because we were here first. [I failed here completely to explain this in more formal terms, sorry]. This is called the “Barrier effect”. Even better, some bacteria produce substances called bacteriocins, which said pathogens absolutely hate.

It is well established that probiotics are useful in situations where the gut flora has been screwed up, and Lactobacillus is very good here, but formally showing that adding a probiotic culture of bacteria to normal nutrition in normal healthy people has any significant benefit is far harder to do, even for Jamie Lee. I did find one article on the topic of “enhancing phagocytosis” but it was in some dairy cattle journal which because I didn’t know the secret handshake it took me some time to access. When I did, I was underwhelmed…a transient increase in neutrophil activity but none in a second [monocytes]. What we actually need to do is perform a trial with lots of normal people taking these long enough to be sure they get some sort of benefit. Problem there, is that the sulfur/methane/carbon footprint they would fart out would block out sunlight.

What about use in specific disease states? People who get acute pancreatitis often get infected with bacteria via their gut, so a 2002 study in Hungary wondered if giving Lactobacillus as a probiotic treatment would establish a barrier effect and prevent this. It worked well; there was only one case of bacteria-induced necrosis in the treated patients but seven cases in the control group.

This drew the attention of a multicenter program in Holland. They thought the results were interesting, but noted the small number of patients….low quality…, that sniffy sort of thing, so they put together their own “properly designed” trial [called PROPATRIA]. Nearly 300 patients were studied, and as soon as they showed any signs of acute pancreatitis some were given a mixture of Lacto and Bifido strains \([10^{10}]\) daily. There were about 150 patients in the two groups, and infectious complications occurred at the same rate, in about 30% of them. Nine people in the control group then died, and 24 died in the group getting probiotics.

Ooops.
As you might imagine, our tulip growing friends got absolutely slammed. But think about it? If somebody shoves a bucket of yogurt in front of you, you ask if “it works”, not “is it safe?” A subsequent report, from the rather scarily sounding Dutch Health Care Inspectorate [did they spit?] pointed all sorts of fingers, including the actual proven safety of the *natural bacterial formulation* used. The makers stated their probiotic was a “diet food for medicinal use” [yeah…well done…suitably vague!!] and hence a FOOD, and like in the States, they didn’t need safety testing. After all, the dead people in the trial provided that. [Appalling, Editor]

Do manufacturers of probiotics perform rigorous quality controls. *I’m certain they do.*

Health experts in Rome, Italy, seem to disagree however. A team from their Instituto Superiore di Sanita went out and sampled a whole bunch of *natural bacterial formulations.* In 2010 they reported that 87% of these products did not conform to government guidelines. Most said they contained Bifido, but analysis showed these were there only “sporadically and always as dead cells”. Wow. Some were supposed to contain Bacillus coagulans, which is thought to be good for you, but instead contained Bacillus cereus, which secretes a really fabulous toxin. Half of the products, and I’m totally shocked to tell you this, listed bacterial species “with fictitious names” [I’m sure they didn’t mean Lactobacillus immunitas…].

An article in 2010 from UCLA dived in, starting with the inevitable “safety and efficacy not required by the FDA” stuff you the dear reader will now know by heart, but then pushed the use of Saccharomyces [yeast] instead. Aren’t there the same problems? Still, I think Jamie Lee has a gap in her schedule. I found a couple of others as well. A bunch in Sweden tried out the usual Lacto/Bifido treatment in patients with inflammatory bowel disease and reported some improvement [measured as “adequate relief”, which sounds rather painful; straining the potatoes as our Aussie friends like to say].

A review article in 2010 from Germany tried to put this all in some sort of perspective, but it didn’t say much beyond what I’ve covered above. It did dig up the relatively new idea that probiotic bacteria were good at triggering Toll receptors [primitive pattern recognition receptors for certain sugars, bacterial cell wall, bacterial DNA sequences, etc] that trigger macrophages to eat them, but [a] I would have thought our usual flora has these [by the way there is now the new fancy name of the “core microbiome” for this!], and [b] the claim this reversed colitis was only shown in mice. Mice, of course, are delighted.

Before we move completely away from the topic of Lactobacillus, did you know that this bacterium can protect you from a nuclear bomb? Well, it does! The product is called “Del-Immune” and it comes from Russia. It is a strain of Lactobacillus that “provides immediate immune support”. I was once given this wonderful videotape
which showed a bunch of older Russian women stirring Del-Immune into their morning beverage [coffee and vodka].

And where in Russia did these lovely babushkas allegedly live? Chernobyl. That’s right, you heard me correctly, Chernobyl. That’s where the huge nuclear power plant went BANG and sprayed highly radioactive materials into the atmosphere to the extent that detectors in Sweden a thousand miles away went completely ape shit. Everyone in the vicinity got either vaporized or enough radiation to kill Godzilla, but these lovely ladies, now minus functional bone marrow, just reached for the Del-Immune.

Damn! I didn’t think of that. Take Hairy Bollock Extract and protect yourself from nuclear war!

….deja vu…all over again.

You’d think, with all the stupidity and borderline scientific fraud Dannon got into, not to mention the law suits, that would be the end of the yogurt/probiotic nonsense. Okay, so Jamie Leigh still gets to gorge on Activia for her regularity, and that obnoxious frigging Phillips Colon Health woman still appears daily on TV, but one might have thought this bubble had burst.

But no.

Enter Bayer backed TruBiotics. Very lazily, instead of coming up with some new line of promotion, Bayer has their actress stating that TruBiotics improves regularity and supports immune system health….because 70% of your immune system is in your gut…… Oh dear, this is where we came in.

Plagiarism aside, haven’t we already gone through this nonsense?

So, time for me to stand up for my principles. I contact the TruBiotics people, asking for the evidence for immune support, and receive a very polite reply:

Dear Sir:

Thank you for taking the time to contact Bayer HealthCare. We appreciate your interest in TruBiotics® Daily Probiotic Supplement.
Trubiotics® Daily Probiotic Supplement Naturally Supports Your Health Every Day:* by replenishing your body’s good bacteria, supporting digestive health, and by supporting the 70% of your immune system found in the digestive tract.

Please keep in mind that Trubiotics is considered a probiotic supplement. It is not intended to treat, cure, diagnose or prevent any disease. Trubiotics works with your body to help support a healthy digestive tract and immune system.

If I may be of further assistance, please feel free to contact me.

Sincerely,

Rachel Vansant
Consumer Advisor

Thank you very much Rachel I reply, but you did not answer my question. What is the evidence this supports immune health? How did you reach this conclusion?

Rachel quickly replies:

Dear Sir:

Thank you for taking the time to contact Bayer HealthCare. We appreciate your interest in Trubiotics® Daily Probiotic Supplement.

Trubiotics® Daily Probiotic Supplement Naturally Supports Your Health Every Day:* by replenishing your body’s good bacteria, supporting digestive health, and by supporting the 70% of your immune system found in the digestive tract.

Please keep in mind that Trubiotics is considered a probiotic supplement. It is not intended to treat, cure, diagnose or prevent any disease. Trubiotics works with your body to help support a healthy digestive tract and immune system.

If I may be of further assistance, please feel free to contact me.

Sincerely,

Rachel Vansant
Consumer Advisor

Well that clarifies everything, doesn’t it…..
NATURAL MALE STUPIDITY

I am pleased to tell you that Hairy Bollock Extract has passed its first clinical trials, and will go down in history as the most potent “Natural Male Enhancement” product ever discovered.

Hairy Bollock Extract is a hundred times more potent than that rubbish Enzyte, but since Enzyte was the pioneer of this field, we should at least respect it given that it was the first great Weak Willy Wonderdrug.

Enzyte was invented, if that’s the right word, by a genius named Steven Warshak who owned Berkeley Premium Nutriceuticals, a company he founded in Cincinnati in 2001. Steve is an expert in erectile dysfunction, genitourinary disorders, tissue generation and repair, and is Adjunct Professor Emeritus of Medicine at the University of Ohio, with a further honorary degree from the Institute of Sexology in Paris. Based upon this deep understanding of such matters, he invented Enzyte.

I made that bit up. Actually he worked for an ice hockey rink where he sold advertising. “Tonight’s release from the penalty box is brought to you by Johnson’s adult diapers; your Ohio adult diaper experts….” He hung around the Men’s locker room and was shocked to see how small everyone’s penis was. Ice rinks are cold of course and this can make Percy* shrink, but he still felt he needed to act. So he drew on his deep understanding of medicine and physiology to come up with a natural herbal formulation which he called Enzyte [snappy name, huh?].

[*From the Australian name for the penis. “Point Percy at the Porcelain”, “Train Terrence at the Terracotta”, etc, and several other versions of Aussie for urination].

The man is a genius. His Smiling Bob advertising campaign, seen by everyone on the planet, was simply brilliant. I absolutely do not think Steve should be banged up in the Big House [no Big Prisoner jokes here please; Editor] for thirty years for massive fraud, nor should he be pestered with that Class Action lawsuit by those guys who saw no benefit [must have too small in the first place for the drug to work].

But for the few of you not yet exposed, let’s review the commercials. Smiling Bob is a tall, rather dull grey faced dude. But now he has a permanent rictus of a smile on his face, making it look like he has lockjaw. The voice-over is not subtle, in fact it bangs you over the head. Smiling Bob has prestigious length off the tee, length……geddit? The performance of his business is also rising; rising…..geddit? He has a new swelling of pride; swelling…..geddit? You see, Smiling Bob used Enzyte and now he has the Biggest Penis in the World.
Bob dives into the swimming pool, and despite his **Massive Tackle** his swimming pants, er..., accidently fall off. [A bit curious that; you’d think they’d get caught on his vast **One-Eyed Trouser Snake**]. Now, Bob is a gentleman and would never **Shake Hands with the Wife’s Best Friend** while underwater. So now, grin still permanently fixed, he climbs out of the pool to the gasps and admiring looks of wifey and the rest of the neighborhood ladies. You see, even flaccid, Smiling Bob has to drag it along the ground behind him.

**Enzyte** adds “one to three inches” to your penis. It is safe, it is after all a **natural herbal formulation**, and **98% of the millions of men who have used it** report successful elongation. In fact, you can expect about a 41% increase in size based on user’s reports. Wow, just imagine getting those **millions** of reports.

If you are average, say 6-inches on erection, this means you can expect to grow to about 10 inches on this drug. Thus, instead of banging the head on the opening to the cervix you can force it up through the uterus and play a tune on your wife’s transverse colon. Whoopee!

What is in **Enzyte** that makes your member grow to vast proportions? Let’s look shall we?

**Tribulus terrestris** [a plant] and Yohimbe are aphrodisiacs, and thus two examples of something that does not exist except at Hogworth’s Academy. Yohimbe does have some biological activity, acting as a selective competitive blocker of adrenergic receptors that has sometimes been used as an alternative, though unproven, treatment for erectile dysfunction. It certainly does appear to have some effect, but this effect is not considered adequate by the physicians [paid by evil BigPharm] to treat ED. Unfortunately at higher doses oral yohimbine causes numerous side effects such as rapid heart rate, high blood pressure, and overstimulation [including tremors]. The latter is associated with anxiety, insomnia and sleeplessness in many users [because yohimbe selectively accumulates in the brain]. I guess that if you can’t sleep you might as well…..

**Epimedium** [Horny Goatweed…for horny goats…geddit?] The "active ingredient" in Epimedium is a molecule called icariin, which has been reported to be able to increase levels of nitric oxide, which relaxes smooth muscle. What makes this interesting is data indicating that it inhibits the PDE-5 enzyme [the target of Viagra] although with about a ten-fold less efficiency. Of course what dosage in a human is needed to achieve this and whether that dosage is in Enzyte is a total mystery, and to actually figure it out breaks one of the first rules of making **natural herbal formulations**. Even if it works like Viagra, this drug treats erectile dysfunction. It doesn’t make your penis **bigger**.

**Avena sativa** is …er… oats. [Oat, get your oats…geddit?]
Maca is a plant found in South America that drives people to want to have sex constantly. Well, that's what the Shamans say. The University of North Carolina disagrees; in a 2007 study in rats injected with this stuff the effects were described as "small" [no pun intended]. No serious studies on humans have been reported.

Muira puama is a shrub native to Brazil, and has a long history of use as an aphrodisiac. It reportedly improves libido as well as potency. An unpublished study from France reports that a daily dose of 1 to 1.5 grams of the extract, 62% of patients with loss of libido had significant improvement while 51% of patients with ED felt that Muira puama was of benefit. A 2000 report from the Institute of Sexology in Paris [must do sabbatical there some day] indicated that women taking this stuff plus gingko had much higher sex drives. Higher than those the French are supposed to have in the first place? Tres bien!

Enzyte also contains Gingko biloba, so that you think you are smart taking Enzyte, saw palmetto, which has a mild effect on prostate hyperplasia [so you can see the obvious connection with penis growth], and arginine, needed to make nitric oxide to relax blood vessels.

The advert also contains a warning though. It says that some pharmacists and doctors are skeptical about Enzyte. You’ll notice happily however that it says only some of them. The ad says they know lots of doctors who swear by it. [Er…don’t you mean swear at it? Ed.]

So, how does Enzyte work…?

First, the aphrodisiacs get you thinking about sex despite your obvious … er.. inadequacies. The horny goat stuff and the oats drive you to get your oats [or is it goats?]. Well, it doesn't matter.

All these get dissolved in your blood stream and concentrate in your penis by binding special goat-and-oat receptors. This allows the Maca to trigger cell transcription factors called maca-wackers that cause the cell nuclei to start to make and secrete epithelial and endothelial cell specific growth factors. Ginkgo meanwhile tells the brain to get smart and remember to secrete angiogenic factors that stimulate the growth of blood vessels. The cells in the penis divide and expand, and the angiogenic factors encourage the blood vessels to elongate and grow out into the newly formed tissue so it gets lots of blood flow. By making your prostate swell with blood, the saw palmetto stops further penile growth at a carefully calculated 41%, as the results from the millions of men clearly demonstrate.

As always, there are nay-sayers, and good old Steve became the defendant in a class-action lawsuit and the target of more than 3,000 complaints [a record] to the Better Business Bureau. In an article I found on the
Internet he was quoted as saying that “Our ultimate goal is to be the nutraceutical Pfizer”. Well, okay. If Kevin Trudeau is correct and by definition Pfizer sells drugs that are crap, then Warshak has every right to sell natural herbal formulation that are crap as well, right?

The article went through the usual BigPharm-inspired whining and moaning about how easy it has become to “peddle faux pharmaceuticals in today’s marketplace. Unlike drugs, which must be proven safe and effective before they can be sold, nutritional supplements are regulated pretty much like any other consumer product. They’re legal as long as they don’t do any harm, the pills actually contain whatever ingredients are listed on the bottle and the manufacturer doesn’t make claims about them that aren’t backed up by scientific evidence”. Er…except of course they don’t.

Genius Steve did not just get heat from the Food and Drug Administration or the US Haberdashery Association [all those men’s suits that have to have the crotch area expanded dramatically] about Enzyte. They were also pissed about “Rovicid” which can lower cholesterol and prevent heart disease; “Prulato” for the prevention of prostate cancer; and “Rogisen” for macular degeneration of the eye. Good grief, don’t these guys realize this man is a HEALER!

As we said above, consumers lodged more than 3,000 complaints with the Cincinnati Better Business Bureau about Berkeley Premium Nutraceuticals and related corporate entities. Jocile Ehrlich, the bureau’s president, was quoted as saying that she has “never seen anything like the number of consumer beefs Berkeley has generated”. But before you get angry about this remember the positive results reported by millions of men.

The tiny [ha ha] minority of Enzyte naysayers also got a bit hot under the collar about the free samples [while stocks last] the company had been offering [just pay shipping and handling], which also enrolled them in a “Value Added Program” that automatically shipped a new supply every month, charged of course to their credit card. The basis of this was to ensure that the customers didn’t miss a dose. Remember, if you stop taking Enzyte, Percy falls off. The Ohio attorney general’s office complained about this and Steve said he was developing an “improved system”. Presumably one in which your credit card gets melted and you fail to realize it. Warshak was quoted in the article as saying “We want to be very consumer-focused and do the right things”. Good for him, we all need elephant sized wangs.

As a fellow healer, at the time I began to get worried about his subsequent change in tactics in which he tried to make his products look like regular drug ads. Bad move Steve. Still, he stressed at the time “They’re not a replacement for pharmaceuticals”. Nutraceuticals are FOOD, feeding Percy. I found a Web article explaining his philosophy that “When you’re young, everything works fine. You don’t have to do anything to keep yourself
healthy. In middle age, things begin to slow down. And finally, in stage three, real disease sets in. That’s when it’s time to see a doctor about prescription medications”. For instance you might have to see a doctor because your penis is so huge it bends under its own weight, so that pee gets refluxed into your kidneys and they stop working. “Stage two is an area where you may not need a prescription for your issue just yet,” he said. “But a dietary supplement can help a lot.” Especially if you need some Massive Tackle.

The article ended with a true gem, stating that regarding his products, Warshak considers it misguided to talk about effectiveness.

“It’s not about whether something works or doesn’t work,” he said. “It’s more about whether it can help or not.”

Huh?

Anyway, soon thereafter a rumor began to circulate that earlier claims were completely baseless, that Enzyte does not after all lengthen your penis. Huh? But what about all those millions of men out there sticking it on a plastic ruler and telling themselves “it looks an inch bigger already”. Are these millions of men lying, surely not? But some misguided naysayers then claimed that this breakthrough natural herbal formulation medical miracle advances the cause not an inch, a centimeter, a millimeter, a micron, or even the width of the orbit of an electron. Surely they must be mistaken?

And then, disaster. Steve and the boys retracted their claim about increasing penis length. Steve then told us that Enzyte “won’t alter the size or shape of your penis” but you will still get “fuller, firmer, better quality erections”. Forgive me for being obtuse, but what the hell does that mean?

Of course it didn’t take long for those people at the Federal Trade Commission to get all nasty about this wonderful natural herbal formulation, or the other similar products Steve was peddling, including the female version of Enzyte called Avlimil [again, a really clever commercial] which makes your clitoris become gigantic. When I was first sexually active I wasn’t 100% sure exactly where the clitoris was, so this will be very useful.

In early 2006 the rotten no-fun Federal Trade Commission filed a complaint against Steve and a bunch of his completely innocent pals stating that the health benefits of over a dozen [way to go Steve!] of his products appeared to have no value. In addition, and I do not believe this at all, after the customer paid the $4.50 shipping and handling fee they then got billed automatically “on a recurring basis”. I don’t believe this for a minute, it is just not the behavior of a producer of a natural herbal formulation whose only ambition is to heal people using safe and natural products. So I think it was a complete atrocity that they were forced to plead.
guilty in 2006 to “conspiracy to defraud consumers of $100,000,000 [really] of supplements they never ordered”. But don’t worry, I just checked and Wal-Mart still has plenty of Enzyte for sale.

In 2008 Steve got banged up in prison, along with his beloved mother Harriet, for conspiracy to commit mail fraud, bank fraud, chopping up parsley and putting it in a tablet, sticking tongues out at the FTC which really upsets them, and money laundering. The prosecution even got some lackey to testify that that these healers had fabricated the claims of enhancement given by Enzyte [thus ignoring the testimonials of millions of men], and that the company had defrauded customers by continuing to charge them for additional shipments [shit....if they hadn’t, Percy would fall off…who the hell was defending them?]. Also “company employers were instructed to make it as difficult as possible…to provide refunds”. Lies, surely?

Anyway, our evil government got their way, and Steve got framed on 93 counts. The beak gave him 25-years, and since they don’t allow Enzyte in jail, he is now truly emasculated. Harriet only got banged up in the Big House for 2-years.

Steve was cooked, but Enzyte was not. A company, Pristine Bay, bought up the rights. Then, to protect it from lawsuits from those millions of men, it changed its name to Vianda. Bad move. The fact that Vianda now owned Enzyte now explains why Smiling Bob still occasionally turns up on nosebleed channels only watched by men with tiny Percys. Here’s where it gets ugly. I’ve always found this whole story hilarious, not just because [a] I know a little about physiology, [b] because just reading the ingredients tells you immediately they would do nothing [unless you are making Spaghetti Bolognese], and [c] because there is no pill in the Universe that will make any organ in your body increase in size. But if you also asked me if there were any risks in taking Enzyte I would respond of course not.

Well, I would be wrong. In 2010 a group in Chicago rounded up a bunch of young healthy volunteers and fed them Enzyte. They had to fill in a consent form first acknowledging that their penis might suddenly double in length of course, but they took the risk. The results were published in the very prestigious Archives of Internal Medicine. Each subject was hooked up to an ECG to measure their heart rhythm [you must have had this done – you get a series of squiggly lines that is showing electrical conduction across your heart needed to make your heart valves open and close correctly and that your ventricles pump in synchrony]. Part of the squiggle is the Q point and then later comes the T point; this measures [in milliseconds] the depolarization then repolarization of electrical charge across the ventricles [your two big heart chambers]. The bottom line is that if the interval between Q and T gets bigger or smaller than usual, you are at great risk of what is called “arrhythmia”, in which your heart doesn’t beat correctly and you then die.
Three hours after taking Enzyte, the QT interval in the test subjects just taking a single tablet went up from about 380ms to about 420ms, and got even a little higher by 5 hours. Subjects taking sugar pills looking exactly like Enzyte had no increases at all. The Enzyte group also reported intense flusing, caused by the niacin in the tablet. The article then talked about the risk of ventricular tachycardia in taking Enzyte, and pointed out that two legitimate drugs, cisapride and terfenadine, got pulled by the FDA for exactly the same reason [and these drugs only pushed up the QT interval by only about 15ms]. The article stated that “because most male patients are embarrassed to report ED, use of supplements such as Enzyte are likely to be under-reported to health care providers…this creates a relatively anonymous patient population at elevated risk of drug-induced sudden death”. The article also stressed the point that the subjects taking the Enzyte in their study were all young and healthy, whereas many men seeking help for ED are older and often have some degree of cardiovascular disease, and hence would be of even greater risk.

By the way, has anyone checked on Smiling Bob lately? Somebody said he had a heart attack.

An accompanying commentary agreed, pointing to all the trivial little minor problems with other natural products such as ephedra [your heart explodes], kava [your liver falls out of your ass], red yeast [spiked with lovastatin], etc, plus the GOA report we will mention elsewhere that found 92% of supplements they sampled were loaded with lead and mercury. This then further discussed our friend DSHEA [thank you Utah] that says these are all FOODS and “presumed safe”, making the point that it is utterly unclear what the word “safe” actually means in this context. Moreover, if Enzyte was restricted by these rules just to “structure/function” claims, i.e. promotes male enhancement, doesn’t this in itself constitute a biologically active state? If so, then the supplement needs to show the evidence [yeah, good luck]. The commentary concluded that “we are left, then, to the situation where evidence of benefit is slim to non-existent, which makes any level of risk…a sufficient concern to warrant a recommendation against [use]”.

This caused unmitigated joy amongst our lawyer friends, who filed a class action law suit against Vianda, and the CVS pharmacy chain that still sticks Enzyte on floor displays, based on these …er… little problems with the QT interval triggering heart rhythm disturbances. And then you die. With a smile on your face though…[disgraceful..Editor].

So, Enzyte gets squashed by the FTC and everybody goes to prison. That would be the end of such nonsense, right?
Wrong. Enter “Extenze”. Whereas the Enzyte adverts were cheesy but at least had a mild degree of comic humor, the Extenze adverts were just creepy, border-line porno. Which I’m told, was the current employment of some of the actors “endorsing” the product. Okay, I’m no expert but I thought the reason why guys “act” in porno movies is because they are rather large to start with, so why they need further expansion is a little unclear.

Extenze is made by Biotab. There are lots of webpages about them but many are something about “didn’t work”, “can’t get my money back” “milked my credit card”, so I’ve no idea what these mean.

But even the boys at Biotab got scammed, and a fake product appeared. Er...what I mean here is that a fake product got out there pretending to be the fake product...er... Anyway, it wasn’t Biotab’s fault. The fake fake pills were spiked with tadalafil, which is a real ED drug [see my recommendations on spiking natural herbal formulations above] and also spiked with sibutramine. This kills you. But with a smile on your face. [STOP...Editor].

In 2011 the usual spoilsports ruined the fun, and Extenze got bashed in Court, coughed up tons of cash, promised to no longer claim that Extenze makes Percy gigantic, etc etc.

But you have to admire Biotab’s style. Not to be out done by Enzyte, the boys at Extenze put their logo on a racing car owned by NASCAR owner/driver Robby Gordon, so that Robby could not only zip around [and around and around and around] racing tracks but also [every minute or so unless he crashed] be open about his personal inadequacy. Problem was, Entenze dun a runner when it came to paying up. In the report I read the Huffington Post said that Mr Gordon was getting the shaft. [Shaft...geddit...].

Another person that is probably not too pleased with Extenze is LaShawn Merritt. He is the best 400-meter runner in the world, skipping happily around the track in 43sec [I ran one when I was 17 in 49.9, not only did I not win, but I went home in an ambulance]. In April 2010 he was banned by the Olympic Committee for taking the anabolic steroid DHEA, something a bit surprising to his fellow competitors given his amazing talent and continuous record of passing drug tests.

You see, LaShawn decided to spice up his love life by taking Extenze, not realizing that Extenze was spiked with tons of DHEA [why this is actually in there nobody can explain, anabolic steroids don’t do anything to Percy]. When he gave a routine urine test the DHEA was detected, and he was banned immediately.
But luck was eventually on his side. He’d bought the Extenze at a local 7-11 near his home in Virginia. The store clerk, a lady named Leslie James, remember him coming in and buying condoms and a packet of Extenze. She testified to the US Olympic people and they eventually convinced the IOC to cease the ban so he could run in London 2012.

Half way through his first heat, his hamstring tore and he was forced to stop. Too bad it wasn’t a groin strain because just think of the fun we would have had with that…..

[His DHEA levels back down to normal, not to mention Percy, he won the World Championship in 2013].

Even now, this hilarity continues. The very first Website I found on a search in 2011 was “The Doctor’s Guide to Male Enhancement pills”. It started with a short video by some guy who once apparently was a renowned presenter at CNN. Carnal Nonsense Network?

Anyway, according to the Doctor’s Guide apparently the top three you should be using are Longinexx [really!], Zyrexin, and Xantho-RX. And just for fun, this webpage really put the boot in the groin [ha ha] of Extenze. A penile patent problem maybe? Say that five times quickly.

Longinexx, we are advised, works so well because it is a perfect balance of amino acids and herbs, the implication being that the others don’t get the balance between horny goat weed and dogshitium quite correct. This product, which is “masterfully engineered” and precision-targeted [to your credit card] will make you “dramatically bigger” so you have to build a special pocket around your waist just to put Percy in.

Zyrexin is dual-action. It stimulates “massive amounts of nitric oxide” but also directly inhibits the PDE-5 that chops up the cGMP signaling. By doing so, Percy explodes. And by the way, since NO will make any blood vessel in your body vasodilate [especially your lungs] the “massive amounts” will drop your blood pressure alarming and your body will slide lifelessly off the side of the bed. [But with a smile on your face…]

Xantho Rx is the only product that “understands the Xanthoparmelia extraction technique”. This is where Percy gets so huge it takes several nurses to pull you out of the Greek prostitute you are experimenting with. Sorry, what was that? Oh, so Xanthoparmelia isn’t a Greek hotty, it’s a lichen. That makes sense then. Xantho sensitizes your nerve endings [huh?] so you twitch uncontrollably. You have to take it for three months to work so expect to have your credit card milked for at least nine.
I was in a hotel one night and bored and I made the huge mistake of watching a movie on the PPV system called “Alien versus Predator”; I don’t know how it ended because I fell into a coma. But I’m looking forward to “Extenze versus Xantho Rx”, at least see the credit card damage if nothing else.

If you don't like the idea of pills there are also creams you can use directly on Percy.

I remember one distinctly from a few years ago, not just because it was disgusting but because Fox Soccer kept running it incessantly [which many men watch with their kids]. It featured a very sleazy young woman at a disco, sweat running down her tight stomach. But now it’s time to head home so out she goes with her handsome beau. At the door she turns to the camera and says [if as if any of us gave a damn for Christ sake put the soccer match back on...] “My man doesn’t need a prescription; he uses Maxoderm!”

One can imagine the absolute screams of anguish over at Pzifer [producers of Viagra] when Maxoderm first appeared. Vice Presidents slit their throats; chemists cried uncontrollably, etc. They had spent at least $200,000,000 on developing Viagra, isolating the target enzyme, purifying it, doing X-ray crystallography studies to get a three-dimensional image, designing a compound of exactly the correct size to fit the active site to block it, then using medicinal chemistry to synthesize it.

And then another one or two hundred million to do the safety and toxicity studies and make it under GMP conditions, then another two to three hundred million to perform the Phase II and Phase III clinical trials to see if sildenafil actually really worked. And all you actually have to do to get the same outcome is slap parsley on your penis!

So, off to the Maxoderm website to learn all about why “my man doesn’t need a prescription”. But to my shock, erectile dysfunction, the obvious implication of the TV commercial, didn’t figure at all.

Instead we are told that Maxoderm is for “self-pleasuring”. This confused the hell out of me. If Maxoderm is about wanking, why the bit on the advert about “doesn’t need a prescription”, plus why is the guy leaving with that really skanky looking girl? Regardless, this website was a source of wonderful stuff. When you put it on you get a “warm sensation”. Apparently it is okay if you slap it on Percy and then have regular intercourse or oral sex as long as you wipe it off with a damp cloth first. Charming!

Hands up if you can spell “I-R-I-T-A-N-T”?  

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Maxoderm contains “very powerful ingredients” that “dramatically improve stimulation”. Well I don’t know about you but my level of stimulation was already quite adequate thank you. The product consists of an “ionized water-based formulation”. If it is water based, or ionized for that matter, how does it penetrate the skin? But never fear, the product is endorsed by Dr. M.A. Savino, a world leader in urology. Strange, but I got no hits on PubMed for this internationally renowned urologicowankological genius.

Okay, back to the website. You get the best results if you use it five times a week, and even the first time you use it “it is already beginning to improve erection quality and firmness”. There’s something such as “erection quality”? Your “orgasm will be more intensified”. I think if mine were more intensified my head would fall off, plus how do you measure such a thing? Plug yourself into an Orgasm Intensity Monitor? But to get the greatest benefit you need to put it on five times a week, for 8-12 weeks! I’m not good at math but that’s about $700 or $11.59 per pleasuring. But now the site gets technical. Apparently there is an “Initial Integration Phase”, not exactly defined, in fact not explained in the least. Then you are into a “Maintenance Phase”. If you stop using Maxoderm however, we are told that some of the gains you have made will be lost, plus your penis will wither and fall off. Message, once you start using this product you must use it forever.

Unlike a pill, Maxoderm uses a “targeted delivery system, so that 95% of its powerful formula reaches the desired area”. I guess this is like toothpaste, targeted by your toothbrush. This is because the water based formulation goes straight into Percy. You may have noticed that when you stand in the shower, the targeted delivery of water forces the water through your skin and pools inside your feet.

As you might expect, like Hairy Bollock Extract, Maxoderm is a wonderful natural herbal formulation. It contains, we are told, water, sunflower seed oil, soy bean oil, stearic acid, sodium bicarbonate, citric acid, methyl salicylate [the actual real ingredient], cetearyl alcohol, aloe barbadensis leaf juice, green tea leaf extract, arginine, panax ginseng extract, muira puama extract, white nettle extract, saw palmetto fruit extract, maca root extract, erthroxylum catauba extract, rosemary leaf extract, grapefruit seed extract, lecithin, methylparaben, propylparaben, tocopheryl acetate (vitamin E), ascorbyl palmitate (vitamin C), zinc oxide, methyl nicotinate, xanthan gum, fragrance. [Copied verbatim, spelling errors and all].

So, let’s look at each of these ingredients so we can appreciate the sheer genius of the people at Barmensen Labs [the leaders in the sexual enhancement market]. I’ve broken them down into categories.

1. Rubefacients [scientific name for, oh my gosh… irritants]: methyl salicylate [better known as wintergreen oil] is a really good rubefacient, which means when applied to the skin it causes redness and dilation of the capillaries under the skin area, which is why it is a key ingredient in so-called “deep heating linaments”. If
overused it causes stomach and kidney problems […five times a week for twelve weeks…er…]. Methyl nicotinate is a rubefacient that does much the same thing if applied to the skin. Lethicin is an emulsifier and lubricant. Xanthan gum is used to make solutions highly viscous. Cetearyl alcohol is widely used as an emulsifier in the cosmetics industry. Methylparaben is a preservative used in cosmetics, as is propylparaben. Aloe barbadensis is a poisonous plant, the juice of which is a major IRRITANT. Lamium is the scientific name for the nettle family. OUCH! Put it on and Percy will fall off.

2. Aphrodisiacs: Maxoderm contains Muira puama, Maca, and Erythroxylum catuaba -- a tree with magical properties which make you sexually hot! Of course you have to believe in the first place that there is any such thing as an aphrodisiac. I'm not certain but I thought aphrodisiacs were substances that make you are interested in sex when you would otherwise not be, or compounds you can slip into the coffee of somebody you'd like to bonk for the rest of your life but who thinks that you are a horrible spotty little worm and that he/she would disembowel themselves before you even got to first base. Nowadays of course this is called “date rape” and you go to prison. So you smell the aphrodisiacs in Maxoderm when you are otherwise utterly disinterested and you immediately start a’pleasurin’. The picture of Cindy Crawford naked doesn’t count; that's a stimulant. Of course, the whole idea of aphrodisiacs is silly [and if you think a rhino horn will help, downright obscene].

3. Protective agents: Vitamin E acetate is used in skin creams to prevent sun damage. It will protect Percy from sunburn. Vitamin C will protect Percy from scurvy. Zinc oxide will prevent diaper rash, a side effect of too much pleasing.

Hey, I just figured out what the targeted delivery thingy is…. Your hand.

I discovered the benefits of Maxoderm long before it was invented. I had an important rugby game coming up and earlier in the week during training I had a slight tear in my right calf muscle. I was very worried about this [I was also the team’s goal kicker] and tried to warm it up really well in the locker room prior to the match. A team-mate knew of my problem and gave me a jar containing this truly horrible grey colored thick oily Ben-Gay smelling gel. This is a great wintergreen based ointment, he said, it'll warm up your muscle in just minutes. So I put it on my leg and it worked great. About 20 minutes into the match I was playing really well, but in a moment of absent-mindedness I put my hand in my shorts and scratched my testicles, forgetting I hadn’t washed my hands after using the ointment. The rest of the story is too painful to relate…..

Just to show that they understand the biology all my fellow natural herbal formulation makers of course have to include arginine in their products. This is because even though everyone in the western world ingests more
arginine each day than they could possibly make use of, arginine is needed to make nitric oxide, the gas that tells the smooth muscle around the big artery in Percy to relax and let the blood in.

For a long while, nitric oxide was just a gas. Then we started to realize it was an important mediator in the body, influencing tons of things such as nerve activity [neurotransmission], control of the blood vessel tone [especially important in your lungs], renal function, gut motility, ovulation, and so on. Nobody thought it had anything to do with penile erection, and studies in the early 1980’s showing these effects in cows and dogs were essentially ignored because at that time NO was not even thought to exist in the human body. But now, thanks to modern medicine, we have Viagra, Levitra, and Cialis. The latter one is where “their hands meet….a simple touch…and then [since he “can be ready by taking Cialis”]…….

They should be scrambling up the stairs to start bonking, but instead they go to the theater, then get somebody to put out two bathtubs on the beach they can separately lie in. Does ANYBODY get the point of these commercials? Take the pill so you are ready and then have a choice between shagging like a rabbit or sitting in a tub on the beach. Er…let me think…give me a moment…..

By the way, on a recent visit to my doctor a sales rep walked in with a big bag with Levitra written on the side. She was HOT. I said something clever about phosphodiesterases to start a conversation. Too bad I’m old fat balding and seriously ugly.

That by the way is how these drugs work. NO switches on a signaling pathway in the smooth muscle that is mediated by cyclic-GMP. The phosphodiesterases break down cGMP as a homeostatic control. The drugs block this enzyme, so the signaling is sustained, the smooth muscle remains relaxed, blood can flow in, and Percy gets pointed.

A note to my fellow Healers. If you get some snarky guy on the phone asking if you take the arginine and it gets turned into NO then shouldn’t all your blood vessels dilate right across your body, and then shouldn’t you drop dead from zero blood pressure a minute or so later? No of course not, you reply, because all those other natural ingredients in your product are Percy-centric chemoattractant agents [clinically proven].

Why is Hairy Bollock Extract so very important? Well, Erectile Dysfunction is a relatively common problem in older men, and can result from multiple causes, including hypertension, diabetes, high cholesterol, smoking, and mental problems such as depression. Trauma to the genitals, as well as long distance cycling, are
additional causes. Loss of spouse, divorce, simple aging, as well as psychogenic issues like tendency to premature ejaculation, fear of failure, also contribute.

Some men however just cannot shake off the feeling that they are too small. The solution of course is to make your penis bigger, or at least think you’re doing so, the button Warshak and gang [and Mom] exploited so wonderfully. What virtually every inadequate-feeling male also forgets is that the female channel is about the same size, and so all those millions of men who gained 41% in length from Enzyte found themselves 41% further away from their wife’s body. Of course at the end of the day, it’s not the size, it’s knowing how to use it. Right guys? I’ve nothing to crow about, but I’ve never had any complaints… [you’d better stop here…Editor]

You can, if you are desperate, have surgery. The most common is liposuction; this is the usual treatment for obese men whose abdomen is concealing their penis. A further technique is to release the ligament that attaches the penis to the groin area, and another is a type of skin flap. None of these truly “lengthen” the penis, they just make it look like this has happened. There are also potential risks and side-effects. In fact, your money would be far better spent on getting a psychiatrist to tell you that you are in fact….normal.

Pfizer and competitors, but not natural herbal formulation makers, of course have to deal with the evil Food and Drug Administration. So this means they have to warn you about the tendency of PDE5 inhibitors to drop blood pressure as well as other cardiac events on rare occasions [the commercials are on the TV so relentless there are 4-year olds that can recite…”do not use if you take alpha-blockers”…]. These of course don’t happen with the natural herbal formulation because they are FOOD. Yum yum. I can personally assure you that if you are using Hairy Bollock Extract this will never happen.

In fact, given the spectacular results of randomized double-blinded clinical trials of doctor formulated Hairy Bollock Extract-STD™, I considered for a while promoting it as a natural herbal formulation for HIV, syphilis, Chlamydia, etc, but I know some of my fellow manufacturers have gotten into hot water for doing this. I have noticed however that there is a flourishing market for treatments for genital herpes outbreaks in people in which Percy has been used injudiciously.

One great example is “Medavir” [good name, huh?]…. The Medavir website claims its product is "a clinically proven medical breakthrough in herpes simplex treatment", which is a bit of a stretch because no clinically proven cure for herpes actually exists. Again this breaks the golden rule of “suitably vague” and because it was pushed as a cure, this let in the otherwise useless FDA.
The FDA's warning letter to Stacy Lyles, head of Medavir Medical Advances, states, "the FDA has determined your firm's marketing of the products Medavir, ViraBalm, and Vyristic Immune Support, which are offered for sale on your website, violates the Federal Food, Drug, and Cosmetic Act….These products are unapproved new drugs and are misbranded….they are dangerous to health when used in the manner recommended or suggested in their labeling." Again, doesn't the FDA realize these people are healers?

Thank God for USA Today! Just when we thought we’d have to make do with our tiny penises, they recently very kindly ran an advert for ExtaMax. The ingredients in ExtaMax, we are told, are the highest quality, time tested, all natural compounds, proven to increase the size, strength and pleasure of your penis. It gets bigger, stronger, and…er…happier. As you will obviously expect by now, it contains Yohimbe, Maca Wanker, Catauba and Muira Puama, the ABSOLUTELY ESSENTIAL ingredient L-Arginine, and tons of Ginseng [I’ve no idea why..]. Finally, there is the splendid "Orchic Substance (bovine)". Er….this is just my guess here, but this sounds like ground bull testicle. Yippee….Rocky Mountain Oysters! Prion-free, I’m sure...

I recently came back to this topic. You’d think, given the amazing implosion of Enzyte and similar fake products, this field would have quietly died. But no, we are still bombarded with ads for Virectin, Cyvita, Extragen, and their ilk. [Cyvita is my favorite. Rather than claiming it contains horny goat batshit weed and Percywacker oil, Cyvita just contains two isomers of carnitine, the simple amino acid. This is of course very smart, you can charge $50 a bottle for an ingredient that will cost you just a few cents].

I would have thought that there can only be a finite number of men who think that parsley grown in the arsenic laced paddy fields of Bangladesh will double the size of Percy, but it seems I am spectacularly wrong.

My epiphany came about when I read that a spam company by the name of Amazing Internet Products had experienced a security flaw that revealed that, over a four-week period, some 6,000 people responded to e-mail ads and placed orders for the company's Pinacle herbal supplement. Most customers ordered two bottles of the pills at a price of $50 per bottle. Amongst those wishing to "Make your penis HUGE," was the manager of a $6 billion mutual fund in New York City. A restaurateur in Boulder, Colorado, requested four bottles, the president of a California firm that sells airplane parts who used his American Express card number to pay for six bottles, or $300 worth, of Pinacle, and a whole laundry list of people you’d think would never fall for such an obvious fraud.
Who is the genius behind this, acquiring Warshak’s mantle? He is Braden Bournival, a 19-year-old high-school dropout. He has office space in Manchester NH, where his teenage sister fills padded envelopes with bottles of parsley Pinacle and ships them off to customers.

Nice work if you can get it.
A NASTY LITTLE MOLECULE CALLED CORTISOL.

As noted above *Hairy Bollock Extract* is the most powerful weight loss product ever made. Brand new data now shows it also blocks cortisol. Did you know that belly fat around your middle is not your fault, but due to this nasty little molecule called cortisol! That's what my fellow Healers over at Relacore told me at least.

That's strange. I thought that my belly fat was due to the products of Messrs Anheuser and Busch, but I guess not so excuse me while I open another can of Bud.

And Relacore, which cures not only this problem but stress and tiredness as well must work, right? I mean, Wal-Mart wouldn't have a big floor display in the middle of the aisle if it was totally fake, would they?

Relacore is made by the Carter Reed company of….yes, you guessed it…. Utah.

Relacore, we are told, is “the most significant weight-control advancement in more than a decade”. *More than a decade*, no less! Better than those wonderful Iovate products -- surely not? Relacore's “natural anti-stress, mood elevating formula can help positively alter the underlying stress-related causes of excess belly fat...resulting from that nasty molecule cortisol... leaving you happier, full of energy, and with that flat, youthful tummy you thought you'd never see again. You're going to love what Relacore can do for you”

Not only can Relacore reduce stress-induced belly fat in conjunction with proper diet and exercise, but Relacore also helps balance hormone levels that cause stress-induced overweight and overeating. Relacore is the best way to control the accumulation of cortisol and belly fat because the formula nips the problem of stress and anxiety in the bud, so to speak”. Bud…..geddit? Hey, I really like Bud.

But before we have fun with Relacore, we need to begin with its Daddy, a wonder drug called Cortislim. Can’t find Cortislim anymore? That’s because the FTC had a complete hemorrhage.

Cortislim contained the usual pot pourri of vitamins and minerals, etc. The label I found listed Magnolia Bark extract, 1.5% honokiol, Beta-Sitoserol [sic], Suntheanine (as 100% L-Theanine), Green Tea Leaf extract *(Camellia sinensis)* 50% EGCG, Bitter Orange Peel extract *(Citrus aurantium)* 5% synephrine, Banaba Leaf extract *(Lagerstroemia speciosa)* 1% corosolic acid, and Vanadyl Sulfate (providing 5 mcg vanadium).
Magnolia Bark has been used in Chinese herbal medicine for at least two thousand years as an aromatic, pungent and warming stimulant that treats various disorders of the digestive system and strengthens stomach function, said the blurb I found. Most stuff talked about improving digestion, relieving stomach pains, gastroenteritis and flatulence. So, in those 2000 years did the Chinese get around to using it for weight loss and stress reduction? Apparently not! Very strange, that….

Honokiol is a biphenol compound in magnolia bark which might have some promise, as yet not proven, in treating artery diseases, and may have anti-inflammatory activity against arthritis [only studied so far in mice]. I did find one paper saying it had hypnotic properties [different to anti-stress]. There was nothing in PubMed about weight loss, but I did find a paper [from Japan in 2000] on the anti-anxiety effects of honokiol. This was tested on mice in a maze. How the hell they determined the mice were feeling less stressed is beyond me.

Beta-sistosterol is a natural herbal formulation recommended for “prostate health” [it does in fact have a very mild effect on benign hyperplasia, but not to the extent the Joe Theisman ads try to convince you]. So, it will certainly influence stress and belly fat, won’t it?

Theanine is the stuff in green tea that makes you go all Zen. So why then does Cortislim also contain Green Tea Extract in addition?

Bitter orange is still used throughout the world as a remedy for insomnia, indigestion, and constipation. It is also widely used in the cosmetics industry. [I don’t know why]. There is some data indicating it might improve circulation of blood through the heart and cerebral tissue, but its primary indication for use is to treat heartburn. The active ingredient is synephrine [a relative of ephedrine…run away], a molecule that can potentially increase metabolism. However, the effects of bitter orange in reducing that annoying belly fat is very controversial. In fact one study in 1995 reported its ability to stimulate the appetite, thus causing weight gain. None other than the Commission of the American Botanical Council also recommends that bitter orange should be used to treat loss of appetite. The main issue however is safety; synephrine, by binding adrenergic receptors, stimulates a rise in blood pressure by constricting arteries. In fact the Food and Drug Administration, no doubt for a bit of fun because it can’t do much else, released data showing 7 deaths and 185 adverse reactions to synephrine-containing weight loss products in recent years. How childish.

Banaba has been used in herbal medicine mainly for blood sugar control. One of its active constituents, corosolic acid, is suggested to possess insulin-like activity, stimulating glucose uptake. Some recent research from Japan claims that this component was observed to be an activator of glucose transport into cells, which
ultimately results in a lowering of blood glucose levels. Of course, if this is really true, don’t take this with conventional diabetes medications unless you wish to die. Other than that however, data is minimal. I found some stuff saying corosolic acid reduced markers of oxidative stress [no, not that type of stress] in rats but with no effect on weight. There’s some vague suggestions that this molecule might have some role in diabetes treatment, but studies are obviously still at the “effects in rats” stage.

So Cortislim stopped you farting, calmed you down if you were lost in a maze, shrunk your prostate, and made your heart race. What any of this has to do with that annoying belly fat is totally beyond me, but why these effects would upset the Federal Trade Commission is also puzzling. As a fellow natural herbal formulation maker I think this indicates the intrusive and unwarranted interference we’ve come to expect from our government.

I had heard some anecdotal stuff about “magnolia and stress” [a medical colleague told me it might work…”if you ate the whole tree…”]. So I looked this up on PubMed and rather surprisingly could only find a single report. This report was from a Company called “Next Pharmaceuticals” in California. [Not Utah].

The study described a trial in which Magnolia was given to overweight females “who typically eat more in stressful situations” [whatever that actually means] and who “scored above the national mean for women on self-reported anxiety”. Twenty-eight subjects completed the study. Whereas controls showed weight gain, no significant weight gain was seen in the women taking Magnolia. No significant drop in overall cortisol levels were seen however, so there goes my idea above, although differences were seen depending on the time of the day it was measured. [This is because Mr. Homeostasis likes to make it go up and down a bit each day, this called a diurnal or circadian rhythm]. The authors concluded that their results showed that obese subjects who eat in response to stress may benefit from taking Magnolia as a dietary supplement. They conceded that their sample size was small, however, and there was higher attrition in the control group than in the treatment group.

So, guess what “Next” does? That’s right, natural herbal formulations for a variety of health issues. One of their products is called Relora. This is a Magnolia based product that is “a natural stress management ingredient that helps control stress-related eating and has the added value of being non-sedating. In central nervous system receptor binding assays the plant extracts in Relora bind to several important targets associated with stress. It does not bind to the benzodiazepine receptors that would cause sedation, yet has the relaxing qualities that have been demonstrated in both animal and human studies. In addition, it normalizes hormone levels associated with stress-induced weight gain and eating behavior. Stress has been shown to play a
significant role in a variety of conditions. A large percentage of overweight adults have excessive abdominal fat due to stress-related over eating. Relora appears to maintain healthy hormone levels in stressed individuals and act as an aid in controlling weight and stress-related eating. I’d love to see the data behind that “central nervous system receptor binding assays …. several important targets…” claim. This is all wonderful but other than the citation above, I could find absolutely nothing in the literature.

And then I found this absolute gem on their website. It says…. “Is Relora FDA Approved? Relora, like all dietary supplements, is regulated by the Food and Drug Administration under the Dietary Supplement Health and Education Act of 1994”. Which means of course that it isn’t!

So what about Relacore? It contains the usual vitamins, plus Magnolia, passion flower, Scutellaria, Panax Ginseng, Pinellia, Poria, Jujuba, and Perilla. Make a nice garden at least.

Magnolia we discussed above [hope they have a license from “Next”], and Banaba “for blood sugar control”. The action of passion flower is supposedly similar to Banaba but also useful for “anxiety”, as is Scutellaria [skullcap]. The active ingredient, wogonin, is a flavone with potential activity against tumors. Problem is [a] it is very insoluble with minimal absorption, and [b] there is zero data about stress or weight loss.

Panax ginseng has been used primarily to improve psychological function and exercise performance but compelling evidence is completely lacking. Side effects include nausea, diarrhea, euphoria, insomnia, headaches, hypertension, hypotension, mastalgia, vaginal bleeding, and blood pressure problems, plus it interacts with some conventional medications. Sounds good, huh?

If you are taking Relacore you should be aware of a possible problem with another ingredient, Pinellia. Some plants used as a source of this material were found to contain ephedrine. This was published some time ago [1978] and the content was low, but it was thought to be “a key active constituent of the herb”. More recently, processing methods were examined, and this confirmed the presence of very low levels of ephedrine. What does Pinellia do? It has been used for chest complaints, such as sinus congestion and nasal discharge. Well, that’ll all help with weight loss won’t it…?

What about the other stuff? Poria is a fungus, it has mildly diuretic and sedative effects. Some blurb I found described its usage for difficult urination and edema caused by stagnation of fluids; upper abdominal distention, poor appetite, and diarrhoea due to deficiency of spleen and stagnation of damp [huh?], phlegm-damp syndromes [huh?], palpitations and insomnia. Somewhat similarly, Jujuba is said to cure coughs, resolve other lung complaints, soothe the internal organs [huh?], and, last but not least, reduce water retention. I did
find a study describing the sequential fractionation of Zizyphus jujuba, showing that the active component was cis-9-octadecenoamide [oleamide]. Administration of oleamide to mice significantly reversed the scopolamine-induced memory and/or cognitive impairment in the passive avoidance test and Y-maze test.

Helpful if you get stuck in a maze, then.

Perilla…er…makes curry taste really good. It repels flies if you rub it on your skin. One product claims it “boosts your immune system” which means those geniuses at Carter Reed put it in the wrong product. How about a curry version of DanActive. L.casei immunitas tikka marsala?

Okay, to recap. Relacore reduces the stress associated with flatulence, diarrhea, and above all that well known and dreaded condition, stagnation of damp and phlegm-damp syndromes. Your blood sugar is controlled, your nose stops running, you find it easy to pee, you fall asleep, and you find it easy to get out of a corn maze. Given all these benefits, why does the Food and Drug Administration [bribed by BigPharm] want them closed down?

In 2004 the FDA wrote to the owners of a webpage that were praising the ability of Relacore to “prevent stress-related abdominal obesity” and to “reduce sub-clinical depression” and thus were implying that Relacore was acting as a “drug”, when of course it is a FOOD. Yum yum. Those evil guys at FDA had the NERVE to say that the product provided no evidence that it was “safe and effective” [they obviously didn’t read all those glowing testimonials] and that if Relacore really wanted to be regarded as a drug then “scientific data” was needed to be submitted [ignoring the “Next” study]. Christ! Where on earth do natural herbal formulation producers have the time to do science. They’ll be asking for clinical trials next. Listen, if Wal-Mart has huge aisle displays it must work, right?

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As a brief aside, maybe Carter Reed should consider adding licorice. Licorice as a medicinal plant dates back thousands of years. Eating far too much can produce pseudoaldosteronism, by inactivating the key 11beta-hydroxysteroid-dehydrogenase enzyme. I’m adding it to hairy bollock extract.
SNEEZING AWAY YOUR MONEY.

Got allergies? I hate the Spring. All the frigging trees start pollinating and I have 6 weeks of misery. Right now, my thousands of scientists around the world are working on *Hairy Bollock Extract* as a cure.

People get two types of allergies. Seasonal, like me, which are annoying but not life-threatening [seasonal allergic rhinitis]. Continuous, like house dust or food allergies, which if you are seriously unlucky can kill you. Allergy is not asthma by the way, the latter is more serious but is similar in the sense that some of the same basic mechanisms are involved [they sort of overlap].

Allergies are rife in the US, but relatively rare in developing countries. About one in six people in the US are allergic to something. This represents a massive increase over the last hundred years or so, and one clue is that kids that grow up in the countryside, like on farms, are much less likely to get allergies. Kids that grow up in pristine conditions in affluent middle class neighborhoods who shower every morning, wash their hands before meals, spray fruit before eating it, while Mom [or the maid] vacuum the house each day, have a much higher risk of allergy.

This has led scientists to propose that we are too clean, what is called the “hygiene hypothesis”. The hygiene hypothesis arose about 20 years or so ago. Some scientists love it, others hate it, but all agree it cannot explain the whole thing. The general idea was put forward to try to explain the steep rise in allergies in Western countries, and proposed that reduced exposure to infections in early childhood because of smaller family size, better living standards, better personal hygiene, etc, were the root cause. For example, kids that grow up on farms, rolling in the muck, and those that attend the human feedlot, the daycare center, are far less likely to get allergies. At the actual mechanistic level, the debate rages on. The idea is that our interactions with the microbial world around us, ranging from the gut flora we possess to the parasitic worm that burrows into our ankles when we swim in the river, plus some genetic factors thrown in, conspire together to direct the type of immune response we then make to pollens and other allergens, with the net result that interactions in one direction makes us more likely to make an allergic response, but if the developing immune system is pushed in the other direction we are much less likely to do so.

Because so many people have allergies it is not surprising that many members of BigPharm have entered this market. Products are available that need a prescription, whereas others do not.
Given this, it is slightly curious that our good friends at Iovate have produced a “doctor formulated” natural herbal formulation to treat allergies. I guess they think there is a percentage of the population that would prefer a natural product. Fair enough, they are Healers after all.

In fact, AllergyMD [wonderful title don't you think] actually does contain molecules that block a part of the allergic reaction, at least in test tubes, and their formula does contain a plant extract used by herbalists. However, their blurb is over the top, by a royal mile: “clinically proven compounds that have been scientifically developed to help support your immune system against seasonal and environmental challenges. Most dietary supplements do not provide both fast and long-lasting immune support, but this is where the dual-release Allergy MD formula differs from single purpose formulas”. Well, I say, us guys at Hairy Bollock Extract have some serious catching up to do.

“Even better, unlike any other dietary supplements, AllergyMD uses cutting-edge "Nano-technology, so that the clinically proven compound" [huh? -- didn’t the blurb above say compounds?] “starts to release in just 15 seconds! Then, the extended-release technology ensures you get powerful, 100% drug-free, and long-lasting results. By providing fast, as well as extended support, AllergyMD helps you overcome seasonal and environmental challenges quickly. With just one serving per day, AllergyMD arms you with powerful, long-lasting support”!

“AllergyMD is so effective because its key compound inhibits a specific immuno-active group of molecules known as leukotrienes. These leukotrienes mediate the immune system reaction in your body. When leukotrienes are elevated, your body manifests a variety of several undesired reactions as a result of environmental challenges. By inhibiting the immune-system activating effects of these leukotrienes, AllergyMD provides a level of immune system support so you can rise above the seasonal and environmental challenges you face”.

Wow, this absolutely great! Even though the contents are “natural” they have been “scientifically developed” That takes some doing!

Nanotechnology! Wow!

The product blocks leukotrienes, which mediate the immune system in your body! So now that they are blocked you now have no immune system! You could get a liver transplant without drugs to inhibit rejection! Without an immune system you wouldn't get AIDS! This is a stupendous breakthrough. Even though you've no longer got an immune system it is …er… still supported!
Let’s get to the good stuff. The plant in question is the Butterbur [Petasites hybridus] and it contains a family of molecules [sesquiterpene esters] called petasins, which are thought to exhibit anti-leukotriene and anti-histamine activity. However a group in Switzerland pointed out the lack of clinical trials of petasins [I’m shocked!] and so they performed one. It won’t win prizes. They compared a regular anti-histamine with a purified petasin formulation in 8 people with allergy and ten without. This seems to imply only 4 and 5 in each group. Not enough! But anyway, they injected various materials, including histamine, into the skin [a safe way to do it, otherwise you might get anaphylaxis] and measured swelling reactions. Sadly, petasin did nothing.

Another group, in Germany, looked at the effects of petasins on prostaglandin release. These are not exactly the same as the leukotrienes which allergy medications target, but similar in that they are made from arachidonic acid, and are involved in the same mechanisms. The tests were done on rat cell lines, but that’s okay, unless of course you were the rat. There are two enzyme systems involved in prostaglandin biosynthesis, called COX [cyclo-oxygenases]. The extract of Butterbur did nothing to COX-1, but strongly blocked COX-2. This filled these scientists with joy, because it meant that petasins appeared to be specific COX-2 inhibitors, and since they were ‘natural’ [and of course, FOOD] could replace Vioxx et al. But then, disaster. When they purified the petasins the effect was lost. Oh dear. Whatever was giving the positive effect was not the petasin molecules. Bear in mind of course that leukotrienes, the supposed target of AllergyMD, are made through a separate enzyme called 5-LOX, not COX.

An allergy group in Scotland [a wild heath-filled country north of England] tested Butterbur extract in 35 volunteers during grass pollen season. Measurements were taken in the morning and evening for peak nasal inspiratory flow, nasal and eye symptoms, and rhinoconjunctivitis-specific quality-of-life score [translation: how miserable you’ve gotten]. The extract had no significant effect on PNIF, total nasal symptom score, eye symptom score, or quality of life compared with placebo use. Translation: it didn’t work.

Is this set in stone? Maybe not. Another Scottish study noted that in test tubes at least, Butterbur has something in it that inhibits cysteinyl leukotriene biosynthesis [hence the claims made by AllergyMD]. [Note that BigPharm drugs like Singulair inhibit the receptors these bind to, not their production. Also these are not “immune-activating” as claimed, they are the immune system]. This study used a different approach in that they first rounded up people who had problems with grass pollen allergy, then they performed nasal provocation [this means they squirted a chemical into the nose to induce the problems breathing through this orifice lots of us are familiar with]. Under these conditions administration of Butterbur straight afterwards had a significant protective effect. A study in Switzerland also had a similar result, and showed that Butterbur reduced leukotriene and histamine levels in nasal fluids to a similar level than an anti-histamine.
A concern here was that these positive effects were seen with extracts, not purified petasins [and the German study saw effects which they then found were not due to these molecules]. However I found one study that took eosinophils, a white blood cell that is a major player in the asthmatic response [but probably less so in the simple allergic reaction which primarily involves mast cells] and activated them in a test tube. Under these conditions the addition of petasins blocked various intracellular responses, including the production of leukotrienes.

But yet another fly in the ointment came from another German study. In this study, macrophages, a white blood cell type that is a rich source of prostaglandins and leukotrienes, were stimulated with purified petasin and associated molecules. While some of these inhibited leukotriene synthesis, the purified petasin molecule itself did not. Translation: *Petasites* extracts work, purified petasin does not.

Bottom line, there’s something in these extracts that could potentially have an effect. But since scientists do not know exactly what this is, there’s no way to figure out its effective dose. But take AllergyMD anyway, it’s FOOD so it’s safe, isn’t it? In fact, if it does have some mild effect as some studies suggested, and it prevents a trip to the Doctor, it actually may have some beneficial value.

I’m sure Iovate would pour scorn on much of the above and attribute it to sour grapes by a competitor [me], and point out that it is the *combination* of the total ingredients in AllergyMD that prevents allergy, supports your immune system, long-lasting …er.. whatever. So we should also look at the other ingredients as well in this marvelous natural herbal formulation. There is salicin [from willow bark, no wonder it’s weeping]. This molecule induces cell death in human colon cancer cell lines, so will help your runny nose. N-acetyl-cysteine is an interesting molecule; it is used to flush the kidneys out when people get poisoned by mercury or too much Tylenol. It can also reduce the production of oxygen radicals by cultured lung epithelial cells stimulated by the allergens in ragweed, as long as it is given at the same time [if you wait a few hours it is ineffective]. This is rather novel, because it suggests molecules that can act as anti-oxidants could potentially inhibit pollen induced allergic airway inflammation.

This was also tried in a study in brown Norway rats. Hey Sven, toss another walrus on the Barbie! [This is a *strain* of rat, they’re not *from* Norway. Editor]. In this study N-acetyl-cysteine was given daily for 1 week before challenge with an allergen. It was found that N-acetylcysteine exerted an antioxidant protective effect that reduced pulmonary inflammation.
AllergyMD contains bromelain (pineapple enzyme). Bromelain is actually a mixture of protein breaking and milk-clotting enzymes found in the juice and stem of the pineapple plant. Because it breaks down proteins it has been used as a meat tenderizer, and in softening leather. It has been promoted in natural herbal formulations as a weight loss product despite zero evidence it has any activity on lipids. [Enzymes that break down proteins cannot do anything to lipids]. Obviously, if you eat it, since it is a protein mixture itself, it would be broken down in the stomach into amino acids. That’s why diabetics cannot take insulin by mouth.

It is totally unclear to me why bromelain would have any effect on runny noses, but I did find one randomised, multicentre trial including 116 children that compared bromelain monotherapy to bromelain plus standard therapy, or to standard therapy alone, for the treatment of acute sinusitis. The bromelain monotherapy group showed a faster recovery compared with the other groups. In mice, bromelain reduced symptoms in a model of allergy and changed lymphocyte ratios [the latter not always a good idea].

The pantothenate pathway is an important biochemical pathway. A derivative which is in AllergyMD, pantethine, has been implicated in the control of chronic urticaria [a response related to allergy, sort of…]. These molecules have also been studied in mice with hypothalamic obesity, so maybe you might lose a little bit of weight. Picrorhiza, a plant, contains molecules that inhibit COX-1 at high concentrations. It comes from Ayurvedhic medicine, which you either think is rather cool [like that Oz idiot] or you run away [I’m in the latter group] and was used for the treatment of jaundice and chronic liver diseases. Of course this will also help your runny nose. A final ingredient, vinpocetine, is widely used in the clinical pharmacotherapy of cerebral circulatory diseases, so when you get an allergy attack and take AllergyMD the blood vessels in your brain collapse and don’t recognize the fact. I looked up “vinpocetine and allergy” in PubMed but I could only find a single paper. I’d explain it to you, but it was written in Russian!

One cannot of course leave this splendid topic without a big tip of the hat to “Airborne”. Airborne was developed by the noted virologist and immunopharmacologist Victoria Knight-McDowell, in the early 1990’s, designed to minimize the duration of colds and flu, based on her years of cutting edge research.

I made that up. Vicky was an elementary school teacher. But she was good at selling her product, starting with Trader Joe’s in Kalifernyar, and then Walmart and Rite-Aid. She was very careful to market it as a supplement [and therefore “Food”…yum yum….]. In addition, she had her supplement carefully tested for its efficacy by GNG Pharmaceutical Services no less.
Problem was, GNG had no clinic, or doctors, or anything, just a PO box in North Korea. Needless to say our friends at FTC were not amused, and demanded $30MM for peddling all this nonsense.

Nobody of course really gives a crap if the Granola-Heads think that popping such nonsense will reduce the duration of a cold from seven days to just a single week, but what people did notice was the astronomic amounts of vitamins in this product, especially Vitamin A. In fact, if you took the recommended three tablets a day, you’d consume enough Vitamin A to kill a small elephant. Bon appétit.

One more point. Airborne is loaded with vitamins A, C, E. These are anti-oxidants. The mechanism your neutrophils use to kill viruses is pro-oxidant. Something that these vitamins would interfere with. Confused? So am I.
The handsome young man in his customary blue shirt and nice tie looks into the camera and says in his calm reassuring voice “Buy my Echinacea to boost your immune system”. Yes, it’s Andrew Lessman, and you are watching [you poor dear you] the Home Shopping Channel. You need to get a life.

Echinacea is the coneflower, and judging by the little ticker on HSC that shows how many jars Andy is selling, 100, 150, 200, etc… most of the pretty little coneflowers in the world have been cut down by now and there cannot be any left!

You see, this poor flower has been anointed by the natural herbal formulation artists as being able to “boost your immune system” and as a result, just like the poor innocent Hoodia plant for weight loss, is being cut down into rapid extinction. Have none of you been looking at my ads for the eminently superior Hairy Bollock Extract? Shame on you.

The idea that Echinacea could have “herbal medical” properties arose in the 1930’s and became popularly associated with the ability to resist the common cold. Regardless of the old saying “treat a cold and it will go away in a week; let it run its course and you’ll be better in seven days”, the idea that Echinacea can reduce the course of the infection has persisted. Nobody knows what the “active ingredient” in Echinacea is, assuming there even is one, or how it might work. If you use it and it doesn't work, then you obviously didn't use it properly. [Excuse me a sec while I put that in my Hairy Bollock Extract website].

But where Echinacea is a bit different to all the other natural herbal formulations is that so many people believed in its healing properties that they asked the NIH to fund studies to prove this once and for all [thus breaking the established natural herbal formulation golden rule of Plar See Bow].

In fact, a fairly large number of trials exist, some are ambivalent in their conclusions, but the most stringent failed to find any benefit.

Here are some examples [from tons, and, no, I didn’t cherry pick]. In one study I found a total of 109 patients with a history of more than 3 colds or respiratory infections in the preceding year were given a fluid extract of Echinacea purpurea [one of the plant strains, there are several] or a placebo twice a day. The incidence and severity of colds and respiratory infections were determined during 8 weeks of follow-up, based on patient reported symptoms together with findings on physical exam. During the 8-week treatment period, 35 out of 54 patients in the Echinacea group and 40 out of 54 patients in the placebo group had at least one cold or respiratory infection. The average number of colds and respiratory infections per patient was 0.78 in the
Echinacea group, and 0.93 in the placebo group, a difference that was not statistically significant. The average duration of colds and respiratory infections was 4.5 days in the Echinacea group and 6.5 days in the placebo group, again not a significant difference. The study concluded that treatment with Echinacea did not significantly decrease the incidence, duration or severity of colds and respiratory infections compared to placebo.

This is how science works, you study big groups and apply statistics to the results. But Ron, who took Echinacea and his cold symptoms lasted four days meets Barbie in the elevator, and she tells him she took the placebo and her symptoms lasted six days. I guess that means that Echinacea really does work, they both conclude. And so do millions of other people.

Another study, at the University of Wisconsin, involved 148 students with common colds of recent onset. Again, no statistically significant differences were detected between the Echinacea and placebo groups for any of the measured outcomes. In this study In fact people taking the placebo had symptoms for five days on average, and those taking Echinacea six days of symptoms. In a separate study 128 people were recruited and given either 100 mg of Echinacea purpurea (freeze-dried pressed juice from the aerial portion of the plant) or a lactose placebo 3 times daily until cold symptoms were relieved or until the end of 14 days, whichever came first. Symptoms (sneezing, nasal discharge, nasal congestion, headache, sore or scratchy throat, hoarseness, muscle aches, and cough) were scored subjectively by the patient and recorded daily in a diary. No statistically significant difference was observed between treatment groups.

In thumps Mr Meta-analysis, inevitably. One analysis pointed out that products available under the term Echinacea differ appreciably in their composition, mainly due to the use of variable plant material, extraction methods, and addition of other components. With this in mind the authors searched all the available medical databases looking for Echinacea trials. In each case, they looked for certain parameters including the numbers of individuals with one or more colds, the severity and duration of colds, as well as total symptom scores, nasal symptoms, and duration of colds. Sixteen trials including a total of 22 comparisons of an Echinacea preparation and a control group (19 with placebo, 2 with no treatment, 1 with another herbal preparation) met the inclusion criteria for the meta-analysis. All trials except one were described as double-blind, and most had reasonable to good methodological quality. Nine trials suggested that Echinacea might be having an effect, whereas six found no effect.

Another meta-analysis had similarly ambivalent findings, but this pointed out that the date of the trial was also a factor, simply because older trials tended to be generally less rigorous. Twelve clinical studies published from
1961-1997 had concluded that Echinacea was efficacious for treating the common cold, but the meta-analysis study revealed “inherent flaws in study design”. Of five trials published since 1997, two showed that Echinacea lacked efficacy for treating and preventing symptoms, whereas three concluded that it was effective in reducing the frequency, duration, and severity of common cold symptoms. The authors cautioned however that such results were unclear because of procedural uncertainties, such as small populations, and the use of non-commercially available, non-standardized dosage forms.

As I said, the active ingredient has never been identified, but such plants contain molecules called alkylamides, which if purified have biological effects. With the important caveat that these studies have been in test tubes only, these include stimulating liver cells to start up metabolic processes, suppression of secretion of a key cytokine [IL-2] by immune T lymphocytes [hardly a boost of the immune system, in fact the reverse! Without this crucial cytokine the T cells can’t divide and respond, nor can they send signals to other cells to start making antibodies]. In this same regard I also found a study in human volunteers comparing Echinacea tablets or tincture on cytokine levels in the blood. Both forms decreased the cytokines TNF and IL-8, leading the authors to conclude that “both formulations trigger the same effects on the measured immune parameters”. There is a minor problem here, because if Echinacea was boosting the immune response, why didn’t these parameters go up? Both TNF and IL-8 [molecules produced by activated cells involved in immunity] have chemoattractant properties, IL-8 directly by recruiting neutrophils [phagocytic white blood cells] into the upper respiratory tract to chew up the cold viruses, and TNF indirectly by inducing a whole slew of other chemoattractant molecules. This study thus demonstrates that Echinacea inhibits your immune system. When I first started looking at this story I confidently expected to read that the production of more chemokines would be stimulated by taking Echinacea, bringing in extra neutrophils to eat up those cold viruses, so I’m stunned to see the reverse actually happens.

Is Echinacea safe? Probably, but not always, especially if you have other chronic diseases. It has been noticed that because Echinacea fools about with processes in liver cells, this could potentially affect serum levels of antiretroviral drugs used in HIV-positive patients. Such people often turn to natural herbal formulations in addition to their conventional treatment [and often as not don’t tell their doctor]. In fact, interactions between natural herbal formulations and conventional medicines raises great concerns about safety, efficacy, and how this impacts safe patient care. These interactions can result in rather bad things such as hypertension and prolonged bleeding, as well as completely screw up anesthesia [that’s why they keep that mallet in the corner of the O.R.].

But if you don’t want to bother with Echinacea, how about a nice cup of tea? Fifty million Brits can’t be wrong.
On Andy’s website under “Immunity” he recommends “hand-picked 100% Silver Needle White Tea, harvested from young, unopened leaf buds, the rarest and most costly of all varieties of tea. Sipped hot or cold any time of day, Silver Secret White Tea offers an enjoyable blend of delicate, fragrant aromas, along with remarkably powerful and healthy anti-oxidants. Pure Silver Needle White Tea was once the richest extravagance exclusively reserved for royalty, but today this exceptionally unique beverage can also be enjoyed by you”.

This sounds great! I myself rarely go a day without a cup of Harrod’s #14 blend. To make Andy’s choice however you should use “the purest water at a temperature of less than 185 degrees Fahrenheit”. Er…but if you don’t use boiling water how do the tea leaves get infused? This breaks the first rule of making tea properly.

And, oh yes, why is this good for your immune system? Andy never says. PubMed has never heard of it, but I eventually found a “speciality tea” site that described this tea as having “polyphenols such as catechins which have antioxidant activity, 50 - 100 times more than vitamins C and E”. These are actually flavonoids, found in certain teas. So, if these are 100 times more anti-oxidative than Vitamin E, and too much E kills you …er…

Is drinking tea good for you? Actually, who cares? I love a cuppa. Tea drinking goes back 5,000 years in some societies. Even British Soccer hooligans take a break from fighting at the half-time so they can get a cup of tea. Right now however tea is morphing into a kind of natural herbal formulation, to which I bitterly object. The issue is the catechin antioxidants found in tea leaves, identified for possible use in the prevention and treatment of a variety of cancers. So far, studies involving humans have been completely inconclusive. This might reflect the fact that people that guzzle tea like the Chinese also smoke, so proving a drop in cancer rates would be impossible.

Obviously finding something to boost immunity, especially to something likes AIDS where the immune system is directly damaged would be a massive scientific advance. BigPharm would make a gazillion dollars if it could come up with something you could just put in orange juice, yogurt, and toast, and prevent AIDS by boosting your immune system. Think about it.

Perhaps the area where an immune “booster” would be most wonderful however is in the immune response to cancer. We generate T cells and antibodies to “tumor specific antigens”, but given the incidence of cancer obviously these mechanisms are not very effective. There are a few vaccines; the vaccine against HPV that prevents young women from dying horribly from cervical cancer and which has the Bible Belt peeing down its leg for example*. CD8 cells and [maybe] NK cells can kill certain tumors [the yogurt anti-cancer trial results are
not in yet]. Therapy using specific antibodies is a very promising avenue and is already quite widely used. “Boosting” is not needed here, because we can make tons of these antibodies in a test tube.

At the most trivial level there might be things out there you could eat that “boost” the innate system in some transient way [given that neutrophils only live a couple of days]. If there are, I haven’t seen any myself [other than a possible benefit of taking zinc as a supplement] but I remain open minded. But the serious stuff, the specific response, is a receptor driven, specific peptide/MHC recognition system that is finely tuned by homeostatic mechanisms. If you could figure a way to boost that just by eating something without giving us autoimmune disease or leukemia, I’ll buy you a beer.

[*In 2013, seven years after HPV vaccination was first available the number of cases of cervical cancer fell by more than half in U.S. teenage girls. This came despite the pronouncement by [mercifully retiring] Rep. Michele Bachmann that the vaccine causes "mental retardation". She should know of course, being a retarded moron herself.]

While this is encouraging, still only about a third of U.S. teen girls ages 13 to 17 have had the full series of shots that prevent HPV infection, despite repeated studies that show the vaccine is safe and effective. Modeling suggests that if 80% coverage could be reached, some 50,000 lifetime cases of cervical cancer could be prevented.

Right now there are two HPV vaccines, Cervarix and Gardasil. Gardasil targets HPV strains 6, 11, 16 and 18 to protect against cervical, vaginal, vulvar and anal cancer and genital warts. Cervarix targets HPV strains 16 and 18 and protects girls and women against cervical cancer. Only Gardasil is available for males.

Vaccination rates remain low in part because providers don't recommend them strongly enough and because some parents are reluctant to administer them. Parents worry about the safety of the vaccine, despite an excellent safety record, and about immunizing children who are not sexually active. This is of course the central issue because the vaccine must be administered early, before sexual activity starts, to get the best outcome. Despite the fact that cervical cancer is amongst the most hideous out there, parents still baulk.
In 2014 a study appeared in the prestigious Pediatrics journal. This study examined the behavior of 339 adolescent girls, and found no evidence that risk perceptions regarding having sex had changed after getting the HPV vaccine, thus putting to rest the idea that after vaccination these girls would start behaving badly.
OSCILLOCOCCINUM IN CRISPY DUCK SHIT SUGAR WATER

Oscillococcinum is not a *natural herbal formulation*, in fact, as far as I can tell it isn't *anything*. It is an “imprint”.

Huh?

All this came about a couple of centuries ago when a French Doctor, Joseph Roy, came up with the theory that several diseases, including cancer, were caused by a bacterium that he called Oscillococcus [cocci are spherical shaped bacteria, rather than rod-like]. Trouble was he couldn’t isolate or culture it [by then, the great scientist Koch had defined these stringent conditions; this was how he discovered the bacterium that causes tuberculosis]. But then, finally, he thought he had found it in, of all places, duck liver. Quack quack. Rather ironic, really…

Flash forward to the modern day. Clever folks at Boiron, the French company that makes Oscillococcinum, now offer this *preparation du canard* as a remedy for colds and flu, and you know what…lots of French people swear by it, making the owners of Boiron fabulously rich. They should of course be swearing at it. Boiron’s ads also tell you it is the “number one recommended by pharmacists” treatment for colds and flu. I’m sure the Association de Pharmacists de la belle France would immediately confirm this obviously utterly true statement.

So how does it work? The quick answer is that it is the biggest con-job out there, but let’s stick to the plot here. First, Boiron makes a preparation of duck heart and liver, which they call “Anas barbariae hepatis et cordis extractum” [i.e. dogs bollocks]. Then they grind up the preparation and dilute it in distilled water by an order of 100 to the power of 200. That’s right, you read this correctly…$100^{200}$. Anybody with the slightest knowledge of simple math would instantly realize that this means that there is no chance that even a single morsel, a single molecule, even a single duck liver electron, can be left in the totally pure water now remaining. In fact, the entire universe is thought to only contain $100^{40}$ atoms. Sacre bleu.

But that’s okay, because the healing properties of the duck liver have left an “imprint” in the diluted water. Er….a problem here is that the sugar pill [sucrose and lactose] is…er…a pill, i.e. dry not wet. I’m really confused already.

First, you might ask, why would duck liver have any healing property to begin with, other than tasting good and cheering you up a bit when you have the flu? All this goes back to an 18th Century lunatic called Hahnemann. He came up with the idea that diseases cause disturbances in your “life force” [Luke] and that if you can
somehow implant a reflection or artificial version of the disease, this “imprint” [I guess] somehow vaccinates or cures you. Was this guy an early Scientologist, I hear you ask?

It is very unclear how Roy decided on duck liver [and for a much more detailed explanation take a look at the Oscillococcinum story on the absolutely splendid “Homeowatch” webpage], but apparently he thought the liver was the “seat of suffering”. For this reason, liver gets diluted out by the boys at Boiron to a volume equal to the current size of the visible universe, then you consume it. Fret not, because despite these vast dilutions, the “imprint” remains.

You’ve heard of manna from heaven, and for the folks at Boiron this came in the shape of the H1N1 crisis a few years ago. Suddenly adverts filled our TV screens. Although this product is unadulterated duck shit, one must admire the ads [cartoon characters walking thro a garden], they were quite beautiful.

This did not exactly thrill the spoilsports at the USDA and FTC/FDA who told them in June 2010 to stop their deceptive advertizing in the US and behave themselves and stop capitalizing on public fear. No more claiming that watery duck was an effective emergency cure for swine flu or bird flu, or that Oscillococcinum could be used for fast relief of symptoms. I suspect the response at Centre Du Canard was along the lines of “fuck off Yankee duck haters”, since they are still on TV. We fart in your general direction, FTC. They did at least cough up $12MM in 2012 in response to the inevitable class action suit, but this was just a fleabite.

As you might imagine, any sensible evaluation of Oscillococcinum in actual trials reveals the shocking truth, that a little bit of sugar dissolved in water doesn’t really help that much when you’ve got the flu. A systematic review by scientists in Holland and in New Zealand looked at this issue a few years ago, and reviewed not only vaccination, specific drugs, but also homeopathy, namely Oscillococcinum.

The article simply looked at Oscillococcinum as a “prevention” for colds and flu. Three trials specifically addressed this aspect, in studies involving 2265 people. There was no evidence whatsoever, they concluded, that this could prevent influenza, and that “the popularity of homeopathic Oscillococcinum in some parts of the world is not supported by current evidence”.

Whole Foods disagrees. A nice lady there told me she takes it when she gets the flu, clearing up her symptoms in just seven days, versus a whole week if she doesn’t take it. When I told her it was just a sugar pill, she replied with a smile, “yes, it’s homeopathic”. Seriously, she actually said that to me. Very insightful of her, actually. And it is only $18.99 a pack. A bargain!
You’d think that mega-dilutions preserving imprints would solely be the territory of frauds and crooks who delight in fleecing dumb stupid Frenchmen, but it is not. In one spectacular event, even the snooty Science Journal “Nature” got taken for a wonderful ride. When I was reading all this dilution nonsense it set off a light bulb somewhere in the more alcohol resistant part of my brain, and I vaguely remembered a big scandal regarding “diluting” that happened about 20 or so years ago. Somehow, I remembered a name. Jacques Benveniste.

I looked him up on PubMed, and the entire story came flooding back. This all happened in 1988, when Nature got talked into publishing an extraordinary paper entitled “Human basophil degranulation triggered by very dilute antiserum against IgE”. The authors were a multi-national group from France, Israel, Italy, and Canada, with the senior author being Jacques Benveniste from the famous INSERM laboratories in Paris.

Without getting too technical, basophil degranulation is the basis of the allergic reaction. This is because basophils are white blood cells that release tons of histamine and other compounds when they get triggered to degranulate, and this is what gives you the sneezing, nose running, cannot breathe symptoms. The trigger itself is caused by the fact that a particular antibody allergic people possess, immunoglobulin-E, or IgE for short, sits in a receptor on the surface of the basophil. The IgE is looking for its specific “allergen” like tree pollen, grass, dust mites, etc, and if it binds this material this sends a signal into the cell underneath to degranulate.

Got that? Okay, well, you can fool this system into being triggered if you use an antibody that recognizes human IgE [for instance, if you purified human IgE and stuck it in a goat, the goat would say “hey, that’s not goat, let’s make an antibody to it”].

So what Benveniste and pals did was to throw in “anti-IgE” antibody into a test tube with purified basophils. This grabbed hold of the receptor bound IgE molecules, sending a signal into the basophil underneath, causing the cell to degranulate and release histamine, and this was nothing new, this reaction was well documented. What was really new however, was that these scientists claimed that the histamine release reaction was still sustained if you diluted out the anti-IgE solution way out beyond $10^{60}$, even as far as $10^{120}$, when there would zero antibody molecules left remaining [a point reached at a dilution of about $10^{14}$, in fact].
To explain this, the Nature paper then dived into “water as a template” [they avoided the term “imprint”] establishing an infinite hydrogen-bonded network, or setting up some sort of electric or magnetic field; whatever it was, it could not be a conventional “molecule”.

This paper, published on June 30th 1988, was extremely unusual because it was followed by a statement by the Senior Editor of Nature [John Maddox] that read “readers may share the incredulity of the many referees” [all serious Journals send papers to referees before deciding whether to publish], and noted that “there was no physical basis for such an activity”. This raises the question as to why the paper was accepted despite “many referees” thinking it was an April Fools Day joke, but I cannot answer that. Dear John, I’ve got this lovely little bridge that runs across from Brooklyn to Manhattan, and I can get it for you real cheap….

But this was just the beginning, because the Nature gang took the previously unheard of tactic of sending a team to INSERM to have Benveniste repeat his experiments with them looking on.

And guess what? One of the things they quickly uncovered was that two of the authors of the Nature paper, not to mention the extravagant hotel bills of the Nature team, were being paid by a benevolent outside interest. Any guess?

Anybody?

Boiron.

Problem was, Boiron obviously did not look after the Nature team well enough, because they quickly concluded the whole thing was garbage. Terms like “statistically ill-controlled”, “observer bias”, “not reproducible”, “illogical”, and because the whole thing was set up to “prove” homeopathy, and by inference Oscillococcinum, scientific “misuse”.

If I read the reports correctly, even the laboratory notebooks in Paris seem to suggest that degranulation effects were lost beyond a dilution of about four-fold [which immunologists would predict], not a gazillion. Also, it seemed that the published studies “did not always work” [that’s why you do such things more than once, to see if the results are truly reproducible] and that there had been a span of several months when nothing happened at all. Maybe they should have fed some duck pate to the cell donors first?
When the Nature team sat in on the actual performance of these experiments, results were all over the place. Sampling errors were rife, and the Nature investigative report stated, astonishingly, that Dr Benveniste and his colleagues did not seem to be aware “of what sampling errors are”.

The team then wanted to do a fully “blind trial” but this seemed to trigger not histamine release, but Gallic Melodrama. This is understandable of course, because it is not everyday that a journal Editor shows up and says “we’ve published your paper, now show us it is reproducible”. One can of course argue Maddox et al should have thought twice before publishing the INSERM paper in the first place. But, like all of us in science, Nature had to assume that the submitted data was 100% honest, nor did they know anything about the sinister involvement of les amis from Dead Duck Central; had they done so the Nature paper would have never got published because of the obvious conflict of interest. So, anyway, the first author of the paper [usually the guy who did most of the actual lab work], Dr Davenas, got to take the anti-IgE diluted solutions to a separate room, which was videotaped. These got put in pre-determined, coded tubes [they even covered up the coded labels with aluminum foil!] along with the basophils, with everything run three separate times.

The outcome was that there were substantial sampling errors [statistical variance inevitable in such assays], but the team also acknowledged that the two primary readers [Dr Davenas and Dr Beauvais] did things carefully and accurately. The outcome? At expected dilutions, in all three experiments basophils degranulated and released histamine. When the anti-IgE antibody was diluted out, this effect was completely lost. If the anti-IgE had left a healing/homeopathic imprint, it had gone out for lunch and a Gauloises.

In the end the Nature report was relatively gentle, but still described a laboratory at INSERM that was just not up to scratch. It concluded that “the climate of the laboratory is inimical to an objective evaluation of the exceptional data”, and also noted that “the folklore of high dilution work pervades the laboratory”. I’m sure the cash from Boiron had no influence.

What, you might ask, of the other laboratories whose names appeared in the Nature paper? The Canada scientists dun a runner and wouldn’t return telephone calls from Nature. The bunch in Israel seemed to suggest they could reproduce the findings, but then the big cheese in Israel did the equivalent of dun a runner and withdrew his name from the publication. Benveniste then apparently ran a further experiment, but the official at INSERM who had the codes “is said not to have had time to decode them” [probably due to needing time to consume this very agreeable Chablis….] Yeah, sure.
Apparently once the three studies had been decoded and the results showed the whole thing was nonsense the Nature report states that things in the room grew “tense”. Benveniste was obviously disappointed [no doubt seeing the flow of money and his lifetime supply of foie gras from Boiron at risk], but also stated [and you guys who are scientists in the field will absolutely love this bit] that his paper was no worse than “many papers published in Nature”. I’m not touching that one.

Benveniste never backed down, despite losing most of his funding due to Debacle Du Duck. In 1997 he published a very silly paper entitled “Transatlantic transfer of digitized antigen signal by telephone link” – seriously, I’m not kidding you, and then the following year he wrote to the Lancet:

“In more than 10 years of research we have successfully shown that: (1) the effect of high dilutions of various agonists on various in-vitro systems is highly reproducible; (2) the activities observed at high dilution are erased by an alternating magnetic field (blind experiments in collaboration with Centre National de la Recherche Scientifique, Meudon, France); (3) they can be transferred to naive water with a specially configured amplifier; and (4) they can be recorded on a computer hard disk and sent any distance via the Internet (blind experiments in collaboration with Northwestern University, Chicago, USA). There is no mystery in these data, not even the need for a new theory let alone so-called paradigm. Quite simply, the hithertofore unknown nature of the molecular signal has revealed itself to be a spectrum of specific, kilohertz range, frequencies. Year after year, we have presented these data as abstracts at international biology congress (bibliography available from the author on request). Unfortunately, after the phony 1988 investigation published in Nature of our experiments, the conviction that “this cannot be because we cannot understand it” is easily justified and prevents our publishing these data in detail for scrutiny by the scientific community”. Shades of Scientology anybody?

Needless to say, those who believe in homeopathy regard Benveniste as a hero [he died in 2004 after heart surgery], and a review in their “house” Journal in 2007 stated that “an increasing number of scientists report they have confirmed the basic results”. Mass cheering at Boiron. The review, by Dr Yolene Thomas in France [of course] stated that the studies published in Nature had “stringent experimental conditions” including “doubled-coded procedures”, i.e. a rather different conclusion to the Nature investigation report. Thomas then states that the investigation’s “attempted debunking exercise failed to find any evidence of fraud”. Were the Nature people looking for fraud? I don’t believe so, I think they were just looking for reproducibility, but she has a point here because [astonishingly] one of the team sent by Nature was a trained magician. Yolene then says that “only two experiments” failed to reproduce Benveniste’s findings. In fact, it was all three.
Her review then discusses two studies that appeared, in 1999 and 2004, that backs up Benveniste’s earlier claims. In both cases the lead author is one Monsieur P Belon. In both studies Dr Belon’s affiliation is listed as, surprise surprise, “Boiron, Sainte-Foy-Les-Lyon”. So, no conflict of interest there then [I subsequently found out M. Belon was the Bioron Research Director, meaning he spends all day diluting water with more water].

Yolene concludes by describing the “difficult road Jacques travelled” and the need for “sustaining freedom in scientific research”, with the splendid ending that we need to put “the emphasis back where it belongs, on observable fact”. With the exception of replacing the word observable with reproducible I would agree with the latter. We should all have the freedom, for example, to say that these “imprint” products are total shite.

In August 2014 a guy in Norway published a blog describing a homeopathic remedy for the Ebola virus outbreak occurring at the time. You get spit from a patient, then dilute it in water, then drink it. 2014 DARWIN award contender right there!!

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Can anything help you reduce the risk of catching a cold? Well, maybe. There is some evidence that zinc can help a little bit, maybe….

Regarding zinc supplements, the two big hitters at the moment are Zicam and ColdEeze, you take ‘em, your cold or flu goes away.

Well, not really. There is some evidence that if you take lots of zinc right away, it can reduce the length of symptoms by a day or so. Problem is, most people take more than a day or so before they start to feel bad.

There is another problem, and that’s because zinc tastes absolutely terrible [the original product had 75mg per lozenge], plus you lose your sense of smell [anosmia]. A Cochrane analysis noted this in 2013, and also said that the actual results showing a benefit had a really big statistical variance. But, by then, the lawyers had gotten to them – a $12MM class action suit – followed by the FDA [in 2009] who told them to withdraw the product. So, the present Zicam contains a small amount of zinc, plus some medicinal plants [“luffa”, whatever that is]. But, er, it doesn’t, instead it contains a homeopathic ultra-dilution of luffa. This pushes my vote to ColdEeze, which has a little bit of zinc but no dilution homeobollocks fakery, at least as far as I know.
PICK THOSE KNOBBLY KNEES UP

One of the reasons I have heard my true calling as a Healer is because I played rugby for 22-years, and soccer for 40. I broke my leg in three places, a rib, a thumb, and broke off my front tooth when I accidentally bit a goalpost in a diving header. I’ve been scratched, punched, bruised, hacked, raked, spat at, squashed, bitten, and called rude names. Somehow, and I really cannot explain why, I never hurt my knees.

But then you get old and fat. My knees started to bother me, and after an MRI I had both of my knees scoped. Soon after, a friend suggested I try glucosamine and chondroitin supplement, given the lots of good results with it.

So I did, and I thought it was helping. Of course I had no ability to clone myself to see how I did without taking it. After a while I ran out of tablets and never found the time to get more, but by that point I was feeling much better.

As a Healer and dedicated producer of natural herbal formulations I also strongly believe in the ancient Chinese method of Plar See Bow, so I was convinced the supplement was helping. But the scientist part of me kept saying I should actually look at the literature so, reticently, I did so. A quick version would be that some trials suggest that glucosamine and chondroitin really help, and others say it has no benefits at all. But there’s much more to it than that, as we will see.

The idea of using glucosamine and chondroitin for osteoarthritis first arose in the late 1960’s [as an ointment], but soon this moved to oral ingestion. The general concept is that oral ingestion of glucosamine and chondroitin makes up for the loss of cartilage. Chondroitin is a highly hydrophobic gel forming polysaccharide, which is the main heavy lifter against joint compression as we walk, run, jump. Glucosamine is a simple amino sugar that form the basic blocks for very big complex glycoaminoglycans which are major components of the cartilage.

As time has gone by, there have been more and more trials. To try to sort all this out, I’ve divided the various results into good and bad, so let’s start with the good stuff…

A study in 2000 looked at glucosamine and chondroitin supplementation in patients with osteoarthritis of the knee. The supplement was “Cosamin-DS” made by a company called Nutramax, and they helped fund the
study. Our friends at Nutramax are the 900-pound gorilla of the field and will feature prominently in the next few pages.

The study used the Lequesne Index. This consists of various patient-friendly things like “does it hurt when you get up”, “how stiff are you”, “how far can you walk”, “can you get up stairs”, that sort of thing. Each response gets scored, and the total you can get is 24. If you get 24, shoot yourself. Over 13 is really bad, and over 8 you might think about knee replacement. In the Cosamin study, patients who had “mild to moderate” problems started with an average score of 10.4, whereas a smaller group with “severe” symptoms started at 10.7. Huh? Statistically these are all the same.

Anyway, people taking sugar dropped from 10.4 to 9.0 after six months, while the score dropped to 7.4 in people getting the glucosamine and chondroitin. In the severe group it dropped to 9.6, i.e. ineffective. As a result the authors [one worked for Nutramax, and the other for a private orthopedic clinic] concluded that glucosamine and chondroitin was effective in the management of osteoarthritis.

For glucosamine and chondroitin to work, it has to get into you. A 2002 study fed glucosamine and chondroitin to beagle dogs and indeed found that the two compounds turned up in the bloodstream. [Dogs everywhere delighted, etc]. But, other than that, this paper was strange. It had great credentials, listing not just the evil FDA, but also the University of Maryland, and BigPharm nasty Eli Lilly as the affiliations of the scientists. Only problem, not only did the glucosamine and chondroitin get donated by Nutramax, but Nutramax also paid for the study. So the FDA, which goes out of the way not to be compromised or influenced in any way by Industry, had Industry pay for an FDA study? Surely not? If FDA are going to act in this manner, can they fund my Hairy Bollock Extract kills Malaria trial please?

The following year, a study came out of Holland suggesting that glucosamine and chondroitin might slow the degeneration of discs in the spine, which would a useful application. Then I did a double take. The study had just one patient. Mr Statistics doesn’t like n=1.

A 2007 study from Spain and Portugal gave people with osteoarthritis of the knee glucosamine [from Rottapharm, a wonderful major European manufacturer of natural herbal formulations….red yeast for your heart and so forth…], Tylenol, or sugar pill. The main read-out was the Lequesne Index, as above. People getting glucosamine reported a drop in score of about 3, which was statistically significant.
A 2009 trial conducted in France, Belgium, and Switzerland tested chondroitin supplements in people with osteoarthritis of the knee. What I noticed straight away was that the authors of the paper had to list their “consulting fees” and, boy, do these guys do well, with frigging awesome piles of cash from a huge list of BigPharm, including Nutramax rivals Rotapharm, who makes these supplements. Anyway, the trial found significant improvements, including X-ray, and reduction in pain over time, and concluded it could be useful in long-term treatment of osteoarthritis. What I did notice in this paper was that the reduction in pain was bigger in the patients taking chondroitin initially, but by 9-12-months this benefit was lost. If the patients were in pain however, they were allowed to take up 4mg/day of Tylenol. I find all this a bit confusing? Presumably they had to record their pain levels, then take the Tylenol?

And, yes, one other point. Patient enrollment was described as “between 2000 and 2002”, so why did the authors suddenly feel compelled to report their findings seven years later? Very strange.

As we are seeing, the more something looks like it could have a benefit, the more studies get performed. In addition, these studies get done by bigger and [in terms of design] smarter research groups. Then all the data gets scrunched statistically. Much of this, by now, has fallen into the “bad news” category.

In 2006 a giant group of scientists from all over the US published results of glucosamine and chondroitin therapy in 1583 patients. Given singly or in combination it had no significant effect on pain levels in general, but if a smaller subgroup was analyzed who had moderate to severe pain the combination of glucosamine and chondroitin did have a benefit [79% reported a decrease in pain compared to about half in the placebo group]. You will note the Nutramax study described above missed this. Of course, the fact that the placebo group had such a good response themselves is a bit of a limitation to precise analysis.

A 2009 review by chaps at the University of California rather gently decided that the effects of glucosamine and chondroitin were “inconsistent”, pointed out that short-term effects often or not were seen in concert with the use of [ethically unavoidable] pain medications [that would easily skew things like the Lequesne Index], noted that the treatments were “poorly concealed” [so the patient knew what he was taking], and the funding often came from the manufacturer of the actual glucosamine and chondroitin being used.

[A digression for a moment. I read quite a few expert reviews about this and they point out the conflict of interest issues but never actually come out and say “these guys got the cash and so made sure the funder got the results they wanted”.

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Years ago I read some papers from a guy in New York. He didn’t have much or any federal funding so he approached various Drug Companies and asked for money to test their drugs in his infectious disease model in mice. They gave him cash, which not only paid for the animals, but a chunk of his University salary and a technician, and supplies. His papers then showed that their drug worked. I reviewed some of these and thought they were perfectly okay, after all he was using classes of drugs we all knew worked against these infections. However, another reviewer pointed out that all his studies were funded by Wonderpharm and all his studies with wondercin showed it was the best thing since sliced bread. You see the problem here…?

Okay, so here comes the Muscle. You knew that sooner or later Mr Meta-analysis would show up.

A huge Cochrane Review showed up in 2009. It was a mile long and a whole tree was cut down in order to print it. Steam came out of my printer. Anyway, this meta-analysis was done by Canadian scientists, and scrunched 25 trials with 4963 patients given glucosamine. They found that if “allocation concealment” was properly done, glucosamine had no effect on joint pain. However, there was a twist. It seems that if you were in a trial [which the review described rather sniffily as low quality] and took the “Rotta” brand [made by natural herbal formulation maker Rottapharm] then you did do better than placebo, so there was a benefit. In non-Rotta trials no effects on pain, stiffness or function, were seen.

A neutral observer might say “this sounds like the Rotta preparation is just simply just a lot better than the rest out there”. If so, why exactly? Nothing I’ve read has even tried to explain this to us consumers. Good angel: better ingredients, better production methods, exact dosages? Bad angel: the bastards spiked it with Tylenol…

The review pointed out another important point. If the trial was done in Europe the glucosamine and chondroitin would be provided by licensed manufacturers, i.e. Rottapharm. In the US however, glucosamine and chondroitin are not regulated [because they are FOOD, etc] and so “the relative efficacy and safety of the various preparations are known to vary markedly”. [I’m shocked]. The review pointed to various studies that looked at a bunch of commercial glucosamine and chondroitin supplements and found actual amounts in each to be all over the planet. For instance, one study bought 500mg glucosamine tablets from lots of natural herbal formulation makers, and the actual quantities in each one were 542, 409, 277, 325, 330, 233, 298, 231, 274, and 238mg. One had no glucosamine at all. So the actual dose patients got in the various studies was…who knows..?

A 2015 study followed this up further. Chondroitin has an excellent safety profile, it argued, but variations in the quality of the product probably underlied the big variation in efficacy and the reason why multiple trials had no
benefit. It is extracted from a range of animal tissues, and a variety of extraction and purification techniques are used, resulting in different content, purity, biological effects and safety. Another 2015 study found that in some patients taking glucosamine and chondroitin in which no benefit [in their knees] could be found on X-ray, some beneficial changes could be seen if a more sophisticated MRI-based imaging system was used.

A second study also tested US supplements on Caco-2 cells. I won't bore you with this but the ability of drugs to cross a culture of these cells is a good indicator of whether a drug will be able to get across the intestine’s epithelium [and into you]. They compared compounds to an internal standard known to do this well. Two commercial chondroitin samples were within ~20% of the standard, but two others were 70% and 90% lower. One did not cross the Caco-2 cells at all.

Another rather confusing issue has arisen from pharmacokinetic studies [this means “wot gets to the blood after you eat it and how long does it stay there”). This is a bit technical, but what I read seems to imply that glucosamine gets absorbed and gets into the bloodstream but the levels achieved are low [one study fed people 1500mg tablets but only 11-micrograms ended up in the blood]. This is way too low to contribute to chondroitin biosynthesis. Can it get to the joints? A 2005 study fed glucosamine to horses [really big joints] and then sucked out synovial fluid. The bottom line was that the amounts of glucosamine they could actually find was about 500-times lower than the concentrations used in the various test tube experiments that were used to claim the “efficacy” of glucosamine. This is a very important observation. The review also looked at trials of actual cartilage loss, and here it looks like Rotta-trials worked, and a newer one, non-Rotta, did not.

The review finished by suggesting further research, especially as to whether the various over the counter supplements were equally active and safe, and whether if chondroitin actually brought anything to the table at all. They also asked why trials in recent years were all essentially negative, when early trials had positive results. In my opinion however, what they didn’t ask “what was it about the Rotta preparation?” Did it really work, and if so why did it? Was there a pharmacological reason, or the fact that those trials ‘were “influenced”’?

A group from England, Switzerland, and Denmark performed a big analysis in 2010, that covered 10 trials and 3803 patients [Mr Statistics happy…, etc]. The analysis found that glucosamine and chondroitin did not reduce joint pain, or the narrowing of joint space. They concluded that glucosamine and chondroitin should not be prescribed [in Europe] nor should health insurance cover it.
This analysis then went on to say that trials that reported large differences on joint pain were poorly designed and performed, with only small sample sizes. When Industry was kept out of the process differences between test and control groups were much smaller [and usually insignificant] compared to trials in which Industry was sitting in the room with the bags of cash. Surely not?

The review ended by acknowledging that “some patients are convinced that these preparations are beneficial”, and that the authors saw “no harm [in taking] these preparations as long as they perceive a benefit and cover the costs themselves”. Yeah! Plar See Bow.

A scary moment here occurred in the early 2000’s when certain clever people pointed out that ingesting glucosamine on a daily basis might increase insulin resistance and give you diabetes. A subsequent study in 2003 did not find any evidence for this. However, a more recent 2007 suggested caution in people who already have diabetes, observing some worsening in people taking glucosamine. A further study in 2011 directly showed that glucosamine triggers a pathway in cells called HBP; when switched on this can kill insulin producing cells in your pancreas. So, tread carefully.

Among the very big players in the glucosamine and chondroitin supplement industry in the US are Cosamid-ASU, and Osteo Biflex. Cosamid is made by Nutramax, and Osteo Biflex by…er… The producers were/are Rexall Sundown, bought by Natures Bounty, which became NBTY, who were bought by the Carlyle Group, a shadowy lot that the documentary film maker Michael Moore thinks is seriously dodgy. Anyway…

Both of these Companies have clearly taken my advice and turned what are two rather boring molecules into *natural herbal formulations*. Nutramax have turned glucosamine and chondroitin into a complex mixture [always a good idea to make the ingredients as complicated as possible, see above/below] by adding “ASU”.

What is ASU, other than Arizona State University? It stands, apparently, for avocado soy unsaponifiables. Fruit. Bean. Fat. The idea here is that there is stuff, something, in this rather tasty sounding goo that upsets bone cell cultures in test tubes. For this reason this goo gets included in your Cosamid.

I rather like Nutramax. They have a nice webpage, and are endorsed by somebody who could throw a little ball accurately and ferociously. Above all, unlike 95% of such sites, they give you references to look up. Okay, not all of them are easy to find, but at least they are there.
Using this as a starting point I was intrigued to find out why avocado and soy can help treat osteoarthritis. Two 2007 papers from Nutramax started to enlighten me. This told me that avocado/soy is a true goo full of a zillion plant chemicals and so nobody knows what the active ingredient is.

Anyway, you take chondrocytes [from cow bone] which are the basic cells glucosamine and chondroitin are supposed to influence. You put these in a test tube and add ASU and then measure stuff. What they saw was that ASU increased collagen production by the cells. They also took cartilage explants from cows and showed that ASU decreased the production of pro-inflammatory molecules including prostaglandins. They concluded that ASU might be a useful supplement, which is reasonable, but also that it provided protection against cartilage degeneration [which…er…they never actually measured].

This was followed by another paper in which they did the same sorts of studies using more chondrocytes, but also a cell line THP-1. This was derived from macrophages, and I can only assume these were included because it is macrophages, in rheumatoid arthritis at least, that chews up your joints. Anyway, same result, the cells in culture squirt out lots of pro-inflammatory and ASU depresses this. To actually work in reality of course, “whatever it is” in ASU has to be absorbed, get in the bloodstream, then get into your synovium at a sufficient concentration to do something. Not trivial.

The Nutramax guys also cited two further papers on this topic. Actually, these were not papers but abstracts for the annual FASEB meeting, where I assume they were put up as posters. Same results again, but here I noticed the curiosity that the cells in the test tubes had to be stimulated with LPS [a nasty bacterial toxin] to make them release stuff [raising the issue of why the other papers never did [or needed to do] this?]. This added the important information that things worked even better if a green tea extract was added. Excellent [following my advice to make your natural herbal formulations as complicated as possible]!

In fact, ASU was being tested for its analgesic effects back in the 1990’s. I found two reports, both from France. The first showed that people taking ASU as a supplement relied less on NSAID pain-relievers than people just taking these alone. A similar result was published the following year; in this study the Lequesne score also dropped. These results were acknowledged in a 2009 Cochrane review, but the authors stated that overall, there is no conclusive evidence for the use of herbal therapy in osteoarthritis. Nevertheless, my conclusion here is that if “whatever it is in ASU that works” gets to your joints it might depress inflammation and also be analgesic. Test tube studies point to this, but are hardly anything conclusive.
So, meanwhile, over at Osteo Biflex, ASU having already been snarfed by Nutramax, Osteo-B have stuck in “5-Loxin” so their product is now a proper natural herbal formulation. This sounds like [meant to sound like one might suspect] an inhibitor of 5-lipo-oxygenase, i.e. leukotriene blocking, but in fact is an extract of “Boswellia”, which is a tree and which contains a zillion complex compounds including triterpines, which are thought to have anti-inflammatory properties. I could not find out too much [though I excluded a lot of dodgy papers in which this cures just about everything including snake bite], but I did find a study in which this extract made rats remember how to get out of water mazes faster [rats delighted, etc]. But the best bit is, another extract from this tree is thought to be the basis of frankincense. Now you’re talking!

Very recently, an Indian natural herbal formulation maker, Laila, have found a much better molecule out of the Boswellia tree which they call “Aflapin”. Expect a patent fight here, hooray..!

As you might imagine, because arthritis is so common, there have been lots of herbal remedies tried out by your friendly local witchdoctor. Reading this stuff is fun, you get to hear about lots of brilliant natural herbal formulations such as Withania, Boswellia, Curcoma, Gitadyl, Reumalex, Stinging Nettle, Willow Bark, and my favorite Harpagophytum, or Devil’s Claw. Arrr Jim Lad. The bottom line is that some herbs and their products, capsaicin is a good example, do indeed have some analgesic properties. Where this is useful is as an alternative to guzzling all those NSAIDs, which upset some people’s tummies.

A group in Germany looked at herbal treatments in a meta-analysis in 2007. The literature indicated that ASU and something called harpagoside had positive effects, ginger and rose hip were okay, and Boswellia not so good. That’s not going to go down too well at Osteo Biflex HQ.

Another review appeared in 2009 on “herbal medicinal products”. This review concluded two things: first, that most studies of HMP were crap, and of the few that are not, capsaicin, ASU, and a Chinese compound SKI306X had some beneficial effect. Overall, however, the authors felt that the effectiveness of HMP are not proven beyond doubt, and that there were all sorts of “adverse events” noted with many of them. Except for Hairy Bollock Extract that is.

But, do not despair Boswellia lovers, because a 2014 meta-analysis suggested that Boswellia serrate extract might be having a beneficial effect on joint pain, at least in the short term. Longer term effects were “less convincing”.

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DOCTOR FORMULATED CLINICAL TRIAL TESTED.

I met this guy at the *natural herbal formulation* Trade Show and he told me that the more I stuck into *Hairy Bollock Extract* the harder it was to point any fingers if there were any ...er... adverse effects. Make sure you don't put dosages on the label, he told me, instead describe the active ingredients as a "proprietary blend". This will prevent competitors from ripping off your idea, as well as hide the fact the formula contains very little of the active ingredients listed on the bottle in an attempt to fool consumers. [Surely not? Editor]

So I'm making a “Doctor Formulated” new version containing a proprietary blend of *Hairy Bollock Extract*. And this is completely valid. I am a Doctor. I have a Ph.D. in Ancient Languages from the Bob Jones Evangelical University, Pyongyang Annex. And if you don't have one, just go to the Internet and buy one. You won't be the first!

The new *Hairy Bollock Extract* is going to be complex. In addition to the extract itself [recommended daily dose not established] I'm going to add arginine [why not, everybody else does], Garcinia, Hoodia, yohimbe, nettle, vitamins A, C, and E [synthesized in Mongolia by a friend of this guy I met in the bathroom at the Trade Show...this is called networking by us business professionals], a boatload of caffeine of course, passionflower, rosemary, dandelion, and a little pinch of Viagra I got from a Chinese website.

Of course, the fact that this is a complex mixture gives the impression that the ingredients work together, even synergize, in their thermogenic fat burning penis raising abilities. [If in fact they antagonize, plus shut down the effects of your blood pressure medication, warm the jet up for the Andeman Islands double quick matey...]. At least, that's what I want people to think. In fact, even if each did have some biological activity, I would have no idea how to measure this, or determine the actual dosage needed to [a] get the effect, while [b] not shutting down your liver functions. It is far better, as my *natural herbal formulation* colleagues have learned, to put in ingredients that do nothing at all. Even better, don't even put them in. Hoodia plants are being wiped out, and I believe in conservation. So did the guys at TrimSpa.

Some of my *natural herbal formulation* colleagues, *to their credit*, do use things like HPLC to check for impurities, too much lead, mercury, dioxin, etc, as well as to verify that their product does indeed have the correct dose of the active ingredient. The Hoodia lot however seem mostly not to do this; I've no idea why? But I've no idea whatsoever what the active ingredient in *Hairy Bollock Extract* even is, or if there even is one [jeez,
don’t say that you idiot. Editor]. But that’s okay, because you can just leave that bit on the bottle about contents mostly blank anyway, the Food and Drug Administration doesn’t seem to mind after all.

Then there’s the clinical trial. The guy at the Trade Show just smiled when I mentioned this, but I’m sure all natural herbal formulation makers conduct extensive trials to verify the claims they make about their products. These people are healers after all.

Just by chance a few years ago I would sometimes stop at a local bar that is right next to a gym. There was a girl who worked out each day, then came in and had a vodka and tonic, then would go on the patio and smoke about forty cigarettes. No wonder she was so fit, slim, and healthy. So I enroll six girls from the gym and six barflies. Then I tried to randomize them, but because they dislike each other, I keep them in the two original groups. They both take Hairy Bollock Extract for a week. The girls report anorexia, the guys great sustained penile erections. My trial has been a great success.

The most important thing here is that this process keeps the cost down. That’s why Leptoprin is only $139 a bottle. In contrast, evil BigPharm do all sorts of worthless crap so that they can drive the price up. Disgraceful.

So, what do these evil people at BigPharm do? It is a sad tale, but in all fairness we must tell it so you can understand the depths of their depravity……

Let’s pretend we work at BigPharm and plan to make a new antibiotic against all those terrorist anthrax attacks that keep on happening. In reality of course BigPharm has mostly given up on antibiotics but hey this is just pretend…..

The first step is called “discovery”. You need hit optimization assays, which can be biochemical high through-put systems, meaning you need to sift through many thousands of compounds in your “compound library”. The assays you use next could be cell-based, meaning a cytoplasm assay or something; anything containing the enzymes or other molecules you plan to block, including metabolic labeling for macromolecular biosynthesis inhibition. You select the most active products and perform a single point antimicrobial activity assay to see if they actually really work.

Those that do are called “hits”. Now you do tons of stuff to see the active concentrations needed, whether the compound is toxic to human cells, whether it still works if dissolved in serum [some drugs stick to serum
proteins too avidly and hence never get where they’re supposed to]. Since we’re killing anthrax here, we need to do a spontaneous resistance frequency assay, and determine bug kill kinetics.

So now we’ve gotten through this stage, and we now call the compound we like the best a “lead”. You can forget the anthrax bit here, because what happens from here on applies to virtually all drugs, antibiotics, blood pressure, cholesterol, diabetes, you name it….

We now need to establish data confirming biochemical affinity, solubility, LogP, effect on CYP liver enzymes, effect of route of administration, liver microsome assays, mechanistic studies, and metabolic labeling studies.

The lead is now a “candidate”. If a blood pressure medication we need to show it actually does this in animal models. We need to determine the extent to which it binds proteins in human serum, and the degree to which it disassociates. If it looks good, then some poor soul has to synthesize a truck load of it, for advanced studies.

But we’re not home yet. The final preclinical stage are “studies required for nomination”. This means we have to do even more stuff if we want to go to the Food and Drug Administration and ask for an IND. This means “investigational new drug”, i.e. permission to try it out in humans. These are an ocean of additional assays, mechanistic studies, and finally “others”. The “others” are pharmacokinetics, metabolism and protein binding of your final “candidate”, toxicokinetics, acute toxicity studies, genotoxicity, safety pharmacology [hopefully a gap in the dosage between an effective dose and a dose that kills the patient], drug stability, and pK/pD determinations so that you know ahead of time the dose to use in clinical trials. And then on top, you need to evaluate the market, competition, patent issues, regulatory affairs, and present a coherent clinical plan the FDA will accept.

Okay, so now you are at the clinical stage, and now we are talking serious piles of cash needed. In human volunteers you’ve got to determine the actual pharmacokinetics and metabolism of your drug, figure out how well it gets absorbed through the tummy and then how it is distributed [i.e. Enzyte/Maxoderm accumulates in Percy, that sort of thing], how it is metabolized and then how quickly you pee out the metabolites. You also may have to consider “special populations”, such as older people, or people with pre-existing liver or kidney problems, who might respond a bit different to other people. You have be sure it doesn’t do something to non-targets; for instance if it is a Percy-pointing drug you better be sure it doesn’t stop the heart, make blood pressure plummet, you go blind after masturbating, that sort of thing.
Obviously you’ve got to have enough patients or volunteers to test all this, plus the cost of all the sophisticated assays to verify these parameters. This is how Warshak arrived at that 41% bigger penis figure.

Based on all of this you’ve also got to deal with Precautions and Warnings, i.e. “persists for four hours, see a doctor”. An even bigger issue is “drug interactions”, i.e. blocks my diabetic medication, retroviral drugs, I used it with HeadOn and my brain exploded, etc. One thing that can happen is that drug A turns on all those liver enzymes that metabolize drugs, and drug B gets chopped up before it can have any effect. Some natural herbal formulations are known to be extremely good at this [except Hairy Bollock Extract of course]. Then finally there is post-marketing adverse events reporting, such as “I took this drug and my legs fell off”. Of course natural herbal formulations, being FOODS, are utterly safe and this requirement is obviously not needed.

Did I say serious cash? Well add two zeros to it because now you’ve got to do a real clinical trial. Statistics scares me personally, but must now rear its ugly head. You tell your resident statistician that you think your drug will drop high blood pressure, whatever, by…say 15%. You’ve got two groups of patients, one gets the drug and the other a sugar pill or maybe an established older drug for the same ailment. Mr. Stats then does a statistical power calculation. This is some fancy math that says that if you do indeed see a 15% effect, then to be sure that there is a 95% chance that this was actually due to the drug effect and not simply to random chance, then you need "x" individuals in each group ['arm'] of the study. All these guys like to talk in terms of “x”s.

Problem is, “x” could a big number, maybe 200-300 people or more sometimes. If you use a smaller number then your “statistical power” is diminished. As you can see, this costs big dollars to run this sort of study.

I'm going to reveal proprietary information here. I've tested Hairy Bollock Extract for weight loss, with wonderful results [just send shipping and handling]. Okay, we only had six people per group, but who’s counting.

People just dieting and exercising lost 2kg, whereas people taking Hairy Bollock Extract lost 5kg on average. Note we use kilograms rather than pounds; this is because it makes things look more scientific, plus of course everybody’s bathroom scales are in kilograms anyway [huh? Editor]. But that horrible Mr. Stats said that if we take the control group data, this could mean that one person lost 1.6kg another 1.8, another 2.2, and a fourth 2.4, for example. Those evil people in BigPharm would take this data and calculate the average, i.e. 2kg, but they would also calculate the “spread” or variance between the individuals. Idiots!
Bottom line? If you are a natural herbal formulation producer make sure you cite your wonderful clinical trial results, but whatever you do don't actually show them. If you are forced to …er, provide some sort of data, under no circumstances show the variance bars.

Okay, so you’ve got a drug past the evil FDA. But even then your woes are not over. You have to perform “quality controls”, verifying that your pills have the correct dose in them, and that each new batch you make is identical.

As we discussed, very clever evil BigPharm chemists did find the active ingredient in Hoodia, the molecule P57. But the stuff you get in the diet pills is an “extract” of Hoodia, almost certainly an extremely complex mixture of all those exotic alkaloids and other “healing phytonutrients”. So how do you know that the pill made by your friendly neighborhood natural herbal formulation maker actually has P57 in it? To test that, you need very big, very expensive instruments with lots of flashing lights. So you have to assume you have some, praying that the extraction process didn’t remove it, and hope that there isn’t too much, due to those annoying toxic side effects. But don’t worry, Oprah loves it.

So you look on the label and it says 600mg Hoodia. Is that the Hoodia plant, the flowers, the stem, the stalk, the extract, or the P57? How was this dose decided upon? At the home of Hairy Bollock Extract we don’t have the resources to conduct trials in humans to determine the optimal dose; this isn’t a bottle of aspirin after all. But we have various choices: [a] just throw in some parsley because we have no clue what dose to use, plus it’s only an appetite depressant anyway; [b] have some guys in the warehouse eat various amounts of the plant to see at what amount they start to not feel hungry; or [c] just guess…who cares!

Sorry, I’ve digressed. Clinical trials. Okay, so let’s assume you’ve hit a home run, and your drug gets widely tested in lots of trials all over the world. Now you are at the mercy of Mr. Stats’ ultimate toy, the dreaded meta-analysis. The results are not always what you hope, i.e. anti-oxidants kill you, etc. The outcome of the test is a numerical scale, with a value of “1” meaning “neither a benefit or a risk”; if the statistical value is above 1, this means “watch out…” If below 1, this implies whatever you did was having a beneficial effect. In the recent “vitamin E makes you live longer studies”, the meta-analysis values were above 1. Ooopps.
THE SECRET LIFE OF PLANTS.

And vegetables. Did you know garlic is an onion and therefore a vegetable? I thought “plant” and my wife “herb”.

The handsome, fairly young looking man on the TV looks a bit worried. “My doctor told me to watch my cholesterol”, he explains. “So I watch what I eat, ride my bike, and take Garlique”.

Okay, but what do you do for your cholesterol levels?

First, the obvious. Garlic makes Spaghetti Bolognese taste especially good. The active ingredient is “allicin” and in test tubes it does indeed inhibit cholesterol synthesis. Some animal studies also suggest a cholesterol lowering capability. Despite this, allicin has never been thoroughly tested in a clinical trial, at least one in which results were “consistent” and in which the actual formulation of the garlic material was properly controlled. A 2007 study addressed these issues.

Three types of garlic were tested… raw garlic, Garlicin [Nature’s Way of…you guess the State] and Kyolic-100 [a very popular brand made by a California company]. All were fed to study subjects in sandwiches. The idea tested was that garlic would reduce LDL [bad cholesterol] over 6 months of treatment [169 subjects made it to the end of the study]. None of the subjects, regardless of which type of garlic they ingested, had any differences in blood cholesterol levels.

There is actually a ton of literature on this topic. Trials prior to 1995 suggested a modest effect on high levels of cholesterol, but trials after that time found no effects. One explanation is that the newer natural herbal formulations containing garlic actually have very low levels of allicin in them, which as we said above is thought to be the active ingredient.

Okay, so we’ve had some fun at the expense of BigPharm, but where they really hit the target was with the statin drugs. If you’re worried about your cholesterol see a doctor. If you trust garlic instead, see your doctor and ask for a brain transplant.

Drugs like Lipitor [atorvastatin] and Zocor [simvastatin] have potent effects on cholesterol levels. Lipitor was made by synthetic chemistry, whereas Zocor is a new derivative of a molecule found initially in a fungus. Both
are 3-Hydroxy-3-methylglutaryl coenzyme A reductase inhibitors, this enzyme is the key step in making cholesterol via the mevalonate pathway. Statins have been around for about 15-20 years, and have demonstrated efficacy and safety in patients. When you take them, your cholesterol levels drop significantly. Since high cholesterol is a major factor in heart disease these drugs are thought to play a major role in reducing cardiovascular risk.

[By the way, be careful with *natural herbal formulations* if you take statins. There is some anecdotal evidence that Echinacea synergizes with statins [although I should point out I couldn’t find this on PubMed] and St John’s wort inhibits them].

Okay, so we’ve dropped your total cholesterol levels, including the “bad” LDL form. So let’s now turn our attention to increasing the levels of “good” HDL cholesterol.

It is now known that the body can move cholesterol around using a cell system involving the anti-cholesterol ester transfer protein (CETP). This delivers cholesterol to the liver and to organs wanting to make molecules like testosterone. It has been noted that the activity of CETP appears to be inversely correlated with HDL-C levels, so, obviously, if some drug can be found to block CETP then HDL levels should rise. The best approach would be to use statins to drive total cholesterol levels down, coupled with CETP inhibitors to drive the HDL:LDL ratio up.

As a result some drugs are being developed that target CETP. One new drug, torcetrapib, can substantially increase HDL-C levels, alone or in combination with atorvastatin. There are several others being looked at, including a compound called rimonabant. Andrew Weil will love this [since he devoted his research to this] because rimonabant is a cannabinoid receptor antagonist. That’s right, dope, man. Selective blockade of this receptor has been shown to lead to decreased appetite and food intake in animal models, but it also changes the lipid profile and might be acting via the CETP pathway somehow. So why did I get the munchies?

In terms of getting HDL levels up, it was hoped Niaspan, an extended-release form of niacin that is a far higher dose than is found in dietary supplements, might help, hence those dreary TV ads featuring concerned kids confronting their parents, etc…”Dad, you really need to talk to your Doctor about Niaspan”. A very recent trial looked at more than 3,400 statin users in the U.S. and Canada who were at risk of heart attacks due to low HDL. After taking Niaspan their HDL levels did indeed rise, and their levels of risky triglycerides dropped, better than in people who took a statin alone. Unfortunately, this had no impact on the incidence of heart attacks,
strokes or the need for angioplasty. In addition, the trial results showed a small increase in strokes in the high-dose niacin users — 28 among those 1,718 people given Niaspan compared with 12 among the 1,696 placebo users. Why this happened is not clear, because previous studies have shown no stroke risk from niacin.

While talking about *natural herbal formulations* for lowering cholesterol, you may have heard of plant sterols and stanols. In fact if you are eating margarines you’re already ingesting them [much cheaper than the “natural remedies” by the way]. And if you think I’m going to pour scorn on them for once you are wrong. These do in fact reduce cholesterol absorption from the gut and can influence your cholesterol serum scores. But you also absorb some of the sterols/stanols themselves and they accumulate in your brain apparently. Nobody knows as yet if this has any adverse effects.

Returning to the main topic, the most famous plant, other than the rapidly disappearing coneflower and Hoodia plant of course, is the foxglove.

William Withering was a doctor in England in the 18th century. Because of his great interest in botany, he was aware of a *natural herbal formulation* that was used to treat “dropsy”, what we now call congestive heart disease. This wasn’t new in fact, descriptions of certain plants having these effects go back to Roman times. But Withering’s great advance was that he figured out that the active ingredient in the *natural herbal formulation* was contained in the leaves of the foxglove [Digitalis]. Some people think that this observation marked the beginnings of modern “therapeutics”, i.e. a drug effect based on evidence based empirical science, as opposed to *natural herbal formulation*-based witchdoctor bone reading hand waiving credit card milking fantasy which has now disappeared. Er….no, wait a minute….

Anyway, what the good Doctor Withering had stumbled upon is now what we call cardiac glycosides. These are a family of natural compounds which include the stuff secreted by poison frogs [really!]. The ones in foxglove leaves block the potassium/sodium pump on the membranes of cardiac smooth muscle cells in your heart. Sodium accumulates inside the cell and this in turn keeps calcium ions inside the cell. This improves the ability of the cell to contract via the calmodulin/actin mechanism, so that blood is pumped out of the heart more efficiently. These drugs also augment signals from the vagal nerve, slowing the heart beat down.

Today, there are lots of drugs that can be used and as a result the use of glycosides is declining. These newer drugs include diuretics, angiotensin converting enzyme inhibitors, drugs that block the β1 type of adrenergic receptors, and so-called inotropic drugs that directly influence the intracellular calcium mobility mentioned above.
But let's look also at the Dark Side. Oh come on, it's fun. Long before possible benefits of ingesting plants [other than purely as food] were realized [foxglove above being a good example], most of the natural herbal formulation industry of the time was involved in the development of poisons. Of course you could argue that some of them are still doing [STOP, don't go there! Editor]. Kings, Roman Emperors, you name. Dropping like flies. I didn’t realize that Socrates was executed in 399 BC by hemlock, nor did I realize this was the “official Greek state poison”. That’s like “Chevy… the official truck of the Mongol Hoards”.

So let’s have some fun and go back briefly and see to what extent this noble art has now reached.

Plants, at least some of them, are full of phytotoxins. One goody is aristolochic acid. A plant named “Fangji” in Chinese actually consists of two, Stephania, used in folk medicine for weight loss, and Aristolochia, which is a poisonous plant. And guess what, a maker of a natural herbal formulation based on Stephania switched the two by accident, causing kidney damage [including cancer] in over 100 Belgium women who used it. Ooops. Aristolochic acid, the active ingredient, destroys the kidneys, and is both genotoxic and carcinogenic. A recent study found over a hundred websites still selling products that contain this compound. They are advertised as “..don’t like your kidneys?…wanna DIE?…take this wonder natural herbal formulation…!”

Aristolochic acid actually has quite a history. Prior to the Belgium incident in the 1990’s there was a big outbreak of endemic nephrology in the Balkans around 1966. It wasn’t until about ten years ago that it was demonstrated that the aristolochic weed was growing amongst the wheat plants in Balkan fields, and both people and horses had gotten sick from eating this.

Certain herbal teas [groundsel or comfrey teas] contain pyrrolizidine alkaloids, a large family of molecules, many of which are toxic. Certain plants, such as Senecio, produce these molecules in their pollen, which is eaten by bees, .that make honey, which is eaten by humans. Get the picture? The alkaloids cause cancer, DNA damage, the usual stuff, and often first appear as the cause of liver damage in which the blood vessels become highly tightened [occlusion]. These chemicals are known to be present in herbal preparations but are never quality controlled for or even measured, so you’ve no way of knowing if there is any in one that could damage you. I’m certain Hairy Bollock Extract has none.

By the way, I like tea a lot, and putting silly flavorings into them like peppermint or fruit or whatever is an affront to the good Lord who created them. Celestial Seasons take note.
Coumarin is found in cinnamon, as well as certain bark and plant oils such as lavender and peppermint oil. Some fruits, and green tea, contain coumarin. The main action is the induction of tumors in the liver and adrenal glands. Luckily we probably never ingest much if any of this molecule in regular food.

The alkenylbenzenes [safrole, methyleugenol, and estragole] are present in multiple herbs such as nutmeg, anise, tarragon, basil, and fennel. They are genotoxic and carcinogenic, but people eating normally probably only ingest trace amounts. How much of these spices end up in natural herbal formulations, I’ve no idea.

Of course the most notorious plant materials are the ephedrine alkaloids, found in the “Ma Huang” family of plants [Ephedra]. The key molecule is ephedrine but there are also several chemically related molecules in the plant extracts. As described elsewhere, ephedra was until recently a promoter of weight loss and athletic performance. The alkaloids are very similar in structure to the body molecule epinephrine, and so they increase the heart beat, raise the blood pressure, and stimulate the nervous system. As a result of the latter, people experienced a loss of appetite, insomnia, and nervousness. As a result of the former, they died.

A couple of years ago I found 22 million websites. Obviously I didn’t look that hard but based on a brief survey about half of them were of the “if you use this you are a frigging moron and you will die” type and the other half were “buy genuine ephedra from us”. That means that after the Food and Drug Administration shut this business down, there are only about 11 million places you can still get it. Well done, FDA!

Ephedrine and caffeine have synergistic effects [hence the natural herbal formulation of Metabolife and ilk]. This is because caffeine inhibits an enzyme that normally breaks down a molecule triggered by epinephrine, prolonging its activity [in this case, of the ephedrine].

With ephedrine off the table [but still apparently underneath it in simply vast quantities] natural herbal formulation manufacturers turned to a similar molecule, synephrine, found in several citrus fruits. We don’t ingest even remotely enough by eating a few oranges a day to cause any damage. Of course, if you have hypertension and ingest synephrine as part of a natural herbal formulation, don’t make any plans for the weekend.

The splendid Kava plant, a favorite of certain natural herbal formulations, contain molecules called kavalactones. These are used in folk medicine because they are believed to have mild calming and elation properties, and indeed there is some data suggesting that they have central nervous system effects. They also cause skin and liver damage, the latter to the point of requiring a transplant. The important antioxidant
glutathione binds kavalactones and this causes depletion of this molecule, increasing the risk of oxidative stress to the liver and other organs.

Kava is banned in most of the civilized world, except of course the supposedly even more civilized good old USA, because of the above effects on your liver. That’s okay though, you can get another if you golf with a transplantation surgeon. It gets you high, and people have been arrested under DUI rules for tripping on it while driving.

The spice star anise is used in herbal teas. Usually this is harmless, but people have gotten epilepsy when the Chinese anise has been substituted by Japanese anise. The latter contains anisatin, a hallucinogen.

Several types of plants, including cassava, lima bean seeds, and sorghum, contain cyanogenic glycosides. Certain enzymes can break these down into smaller molecules, in the process of which HCN is released. Yes, cyanide… But don’t get too worried, because plants are either processed to remove this or there is so little not to worry us.

Thujone is a terpenoid found in certain plants such as wormwood and sage that has been used as a food flavoring ingredient [it was used in absinthe liquor]. Artemesia [wormwood] pops up on the Web as a natural herbal formulation, but remember these are FOODS so you’ve got nothing to worry about. Thujone screws up neurotransmission in your brain resulting in hallucinations and psychotic behavior. Should you wish to experience this there are lots of Websites selling absinthe. One I found, based in Albany NY, actually boasted of the “high levels” of thujone in its product. Party on, dude!

Based upon this, do not stop eating plants. They are good for you. But remember, over-consumption often triggers the problems above, “natural” does not equate to “safe” [nor to “food”], you can buy almost any supplement over the Net from places [like Utah] where there is zero regulation, and that you have no idea what is really in them or how much. There is no such thing as “botanical standardization and safety”. Ask those women who consumed Aristolochia.

The reality is that us Healers have to stick together more than ever. For instance, recently, hundreds of herbal medicinal products were banned from sale in Britain under what is clearly a discriminatory and disproportionate European law. As of 2011, traditional herbal medicinal products must be licensed or prescribed by a registered
herbal practitioner to comply with an EU directive passed in 2004. The directive was introduced in response to rising concern over adverse effects caused by herbal medicines. This is shocking!

The UK Medicines and Healthcare Products Regulatory Agency (MHRA) issued more than a dozen safety alerts in the past few years, including one over aristolochia, noted above. According to the Alliance for Natural Health (ANH), which represents herbal practitioners, not a single product used in traditional Chinese medicine or ayurvedic medicine has been licensed. In Europe, around 200 products from 27 plant species have been licensed but there are 300 plant species in use in the UK alone.

The ANH estimates the cost of obtaining a licence at between £80,000 and £120,000 per herb. They say this is affordable for single herbal products with big markets, such as echinacea, but will drive small producers of medicines containing multiple herbs out of business. This means thousands of patients who rely on herbal treatments face being denied access to them. Medical organisations, including the MHRA, have warned the measures may drive patients to obtain herbal medicines over the internet – where risks are much greater. Absolutely untrue!

This is shameful. As me and fellow Healers know, there are lots of highly beneficial products out there, many of which will be banned. These include the wonderful Cascara bark to flush those horrible parasites out of your colon, Pau D'Arco for inflammation, Ashwagandha (*Withania somnifera, or winter cherry*) for boosting the immune response, Skullcap for anxiety, headaches and pain relief, Meadowsweet for stomach acidity, diarrhoea, headache, and best of all the wonderful Horny goat weed to excite Percy.
Remember how I advised you, my fellow healers, not to go completely overboard and claim your product cures everything. Well, I’m very sorry to tell you that this golden rule was unfortunately broken by our dear friends who are the makers of the splendid natural hairyfruitus formulation, POM Wonderful. Boy, are those evil-doers over at FTC seriously pissed.

I loved the commercials by the way, something about heavily muscled ancient Greeks being in the absolute prime of health, free of woes and disease, due to pomegranate consumption, you must have seen it…after all, the manufacturers pomeleled, sorry, pummeled us all over our heads with their ads. I didn’t have the heart to mention the fact that said Greeks had a life expectancy of about 35 however.

Sadly, the owners, to use the term the FTC used, had the temerity to suggest POM Wonderful juice was a “silver bullet against disease”. How can the FTC possibly justify that, especially after Oprah featured it?

And what diseases, my gosh. Cardiovascular. Prostate. Even Percy gets perked up.

POM cleans off that nasty arterial plaque. Your blood pressure nose dives, and vast gallons of blood now flow to your heart. LDL cholesterol levels drop precipitously. If you are at risk of prostate cancer and that rather scary PSA number starts climbing up, just guzzle some POM and it gets slowed by 350% [sounds like it goes backwards!]. Drink to prostate health! By keeping PSA levels down, your erectile function climbs thro the roof. [Huh? What the hell has PSA levels got to do with erectile dysfunction? Editor].

Christ, FTC had a kitten. They even had the gall to say that these claims were all made up. Surely not?

Stoopid stopid stopid. Don’t say your product cures anything, because then those bastards at FTC will say you are selling it as a drug. It’s a FOOD. Yum Yum. Since it’s a drug, then you have to provide adequate directions for use, rather than our tried and trusted “effective daily dosage not determined”. Even if it’s a food, don’t for heaven’s sake list a nutrient content claim because then they’ll get you for misbranding.

The FTC also gave the expert “endorser”, Dr Mark Dreher, a bashing as well, and told him not to be naughty. Obviously they didn’t read his cutting-edge stuff on anti-oxidants in people drinking pomegranate juice, published in the Journal of Agricultural Foods and Chemicals, or in atherosclerotic mice [mice everywhere delighted, etc] in the same journal, or the protective effects against UV damage in skin [that’s why Australians
love to call the English “Pommie Bastards” ‘cos they don’t get enough sunlight], or finally his masterpiece, on its effect on calves, in the Journal of Dairy Science, where it seemed to do, er…, not much from what I can tell. It did involve collecting lots of cow shit, though. Mark has now dun a runner, and is CSO of Nutrition Science Solutions. He looks a very nice man on his new webpage, which tells us about his PhD in Agricultural Biochemistry. I’m not sure what his new company does, but the site has a big banner talking about their “proven track record of accomplishment”. Yeah right.

This is very unfair. POM Wonderful apparently sprayed piles of cash [over $35MM apparently] all over the place to test the juice or extracts on every conceivable function or ailment from systemic lupus to restless leg syndrome to actually believing what Oprah tells us, and every study came back showing the healing properties. Even, er…, when they didn’t. It tells us yet again, whether we make natural herbal formulations or natural ancient grecian formulations, that this relentless pursuit of healers by the FTC needs to stop.
The Irish have a wonderful slant on this common epithet, pronouncing it “Sh-eye-te”. This gives the added impact to the word, sorely needed for the next few pages.

Years ago I read this medical journal, I think it was the Lancet, but anyway it told this story about this girl who was admitted to hospital. The doctors just could not figure out what was wrong with her, only that she had some sort of strange variation of inflammatory bowel disease. They questioned her carefully and often about her personal habits and couldn’t identify anything that would cause her symptoms. Then, one day a nurse was by her bed when the patient’s locker door fell open, revealing about a year’s worth of laxatives.

“Well, I’ve got to keep regular” she explained.

The use of purgatives, so-called colonic irrigants, and so forth have long been used in medicine. When I was three and constipated the District Nurse called by and shoved a stick of soap up my ass. I tried for many years to identify her and return the favor.

“Colon therapy” works at either end. You take a pill [usually containing magnesium], or you shove the healing detoxifying natural herbal formulation up your bum. In fact some people even enjoy enemas apparently. Kinky devils. It has entered the realms of naturopathy [run away!] where concoctions containing things like coffee are added to the mix. A niece of my wife was convinced into taking a coffee enema for her cervical cancer. Sadly she died soon thereafter; the person administering it would have as well, if I had ever caught him.

The concept underlying this abject nonsense is that we must be “regular” i.e. crap every morning. If you don’t, you develop a state of “autointoxication”. All that nasty …er… waste accumulates in your intestinal tract, allowing toxins to “enter your body” as well as blocking proper digestion. None of this has ever been verified scientifically, a nice way of saying that it does not exist.

There’s a sort of Old World sentiment here, the idea that you are “unclean” even if you have a perfectly functional digestive tract…. “Touch not the unclean thing, lest you yourself fill with intestinal parasites. And lo, when they had feasted on the fowl and gannets and larks and aardvarks, they called upon the Holy Enema. And lo, the Double Latte did cleanse and heal and expel the foul parasites, and all was good upon the land”.

To deal with these awful toxins you need to cleanse your body, using of course natural herbal formulations like Hairy Bollock Extract. If you are especially kinky you can shove a hosepipe up your bottom and get the full
benefits, such as removing the millions of parasites hiding there. Of course if you really had “intestinal parasites’ you’d be seriously ill. [I went into the Rockies once and nobody told me about the Giardia in the water]. Moreover, if you shove that hosepipe through the wall of your bowel in your zeal to scrub out those horrible little toxins and parasites, then you can detoxify your liver and spleen at the same time, just before you then die.

“Do you need an intestinal cleanser…to maintain good colon regularity and health? The answer definitely is…”YES!” says the ad. Plus you need a frigging psychiatrist.

I apologize. That was uncalled for. This is a serious subject and making fun of all those wackjobs with “degrees” in homeopathy and naturokinetic wankology is unseemly.

So let’s look at what medical advice the Web can offer us.

There’s the “Dual-Action Cleanse”. Sounds good. This two-part system is formulated to maximize elimination [scientific word for a really good crap] without causing cramping. It assists in cleansing the vital organs and lymphatic system. It does? You think? How would something you shove up your ass clean your lymphoid system?

The Gold Medal however goes to Dr Heather Johnstone, who is Chief Academic Officer [what!? Huh?] of the Global College of Natural Medicine. As you know, the GCNM was founded by Tiny Tim, and has colleges throughout the world. My friend flunked out because she couldn’t pass SH300, Principals of Shit I.

Good old Heather promotes the “DrNatura” program, which describes the relief experienced by thousands of happy clients who once suffered from “constipation, IBS, severe gas and bloating, weight gain, chronic fatigue, acid reflux, parasites, stomach pain, diverticulitis, skin and hair problems and many other common ailments. They put an end to their suffering by becoming clean inside”. All these at once? Poor things. And here was me going to my Doctor with diverticulosis, when Drs Johnstone and Natura were “in”.

Death, we are told, begins in the colon. “Don't believe it? Ask any coroner. Autopsies often reveal colons that are plugged up to 80 percent with waste material”. So I did. “Have you lost your frigging mind” he replied. How rude!

And then of course those parasites are literally eating us from the inside. “All the toxins and 'dead' processed foods lead to poor digestion causing a toxic build-up in the body, including the colon. This toxic waste material in the colon turns into a sinister world of monstrous creatures that feed on living flesh: parasites”. Feed on
living flesh! Zombies in your colon! So …er.. all those people who DO NOT clean their colons are going to die any minute from parasites plus 80% blockage of this organ, correct? I better get that hose up my bottom without delay!

Okay, here I admit I started to get scared. Are my bowels, flushed out as they are on a daily basis by beer, really full of parasites? To educate myself I found this Webpage sponsored by ParaTrex, which solves all this apparently. We have Giardia, Toxoplasma, Roundworms, Hookworms, Tapeworms, and Flukes. Well, we would have if we lived in the 10th Century at least, but let’s not quibble with these experts. The primary ingredient in this splendid natural herbal formulation is “Organic Fresh Water Food Grade USP Diatomaceous Earth”.

What? Huh? It took me a while, but apparently this just silica. You know, the food additive. But no, if you are riddled with colon parasites, not only will this remove them but there are additional benefits as well. To quote a “diatomaceous earth” website, the “silica in ParaTrex will reduce inflammation of the intestinal tract. In addition, it can cause disinfection in the case of stomach and intestinal mucus and ulcers, prevent or clear up diarrhea and its opposite, constipation, and normalize hemorrhoidal tissues. If you are a girl it can prove effective with female discharge, abscesses and ulcers in the genital area and cervix, as well as mastitis (especially for breast feeding mothers), act as a supportive treatment for inflammation of the middle ear, and reduce swelling of the lymph nodes in the throat. It has anti-inflammatory disinfecting, absorbing and odor binding effects, can normalize circulation and regulate high blood pressure, decrease vertigo, headache, tinnitus (buzzing of the ears) and insomnia, can help diabetes by promoting synthesis of elastase inhibitor by the pancreas, and help arterial disease by strengthening the blood vessels. It can prevent tuberculosis. By improving the elasticity of the joints, silica helps rheumatism. In addition, it can help avoid Alzheimers disease by preventing the body from absorbing aluminum and may flush out aluminum from the tissues. Finally, and of course inevitably, silica can stimulate the immune system”.

Alzheimers and aluminum? Anybody…er…?

Given this, New Colon Sweep sounds far more gentle to me. It is made from “all-natural oxygen and hydrogen elements” that are bonded with magnesium. So there are oxygen and hydrogen elements that are not natural? These compounds are then coated with Vitamin C and whole fruit bioflavonoid complex. It doesn't get any more natural than this!
Oxygen and hydrogen elements... is called water. For magnesium, use milk of magnesia [it's a bit cheaper than the bottle of New Colon Sweep at $29, which is only enough for 12 days so the 4 week recommended course will cost you $87.00 for three]. The rest make it smell nice.

I found another written by somebody with a BSc degree [in shit presumably] from the University of Sydney. Good on yer Sheila! My friends at U of S cannot seem to find her name on their database. Maybe it was the Victoria Bitter Global University of Natural Health and Crocodile Skinning. Anyway, “Formula One” pushed by this lady seems to consist of just a few herbs from the garden known to be “cathartics”, and “Formula Two” consists of activated charcoal and a few other inert ingredients.

There were the usual testimonials. “I can now crap with the best of ‘em” says Dungy Doug from Wollongawollo, South Australia. But I found another page that said “my stools turned completely black and my belly ached really badly”. You mean you didn’t enjoy it? The belly ache was either the bacterial endotoxin in the pill or the “cathartic” effect. The black stool means you were bleeding into your intestine. Can’t think why?

Oxy-powder contains a bucket of magnesium, and “germanium-132”. Sounds radioactive! And it’s only $42! Cheap at the price! As a measure of true SHIT germanium is one of those “cure everything” magic materials. I found this natural herbal formulation page describing how you keep taking germanium “until the cancer or AIDS is gone”. May these people rot in Hell. I also found out that in 2003 the Food and Drug Administration refused an entry of 20 kilograms of bulk germanium destined for use in human dietary supplements, because they believed this healing material caused kidney injury.

If I’m going to buy anything it will be Colonblow, because you get a tee-shirt with your order. Now you’re talking! Colonblow [good name eh?] contains things like Cascara [a very potent laxative], but also Psyllium. The latter is the basis of Metamucil and similar brands made by BigPharm which most of the other natural herbal formulation makers seem to despise on the grounds that “psyllium makes constipation worse rather than better”. If so, then why would you put a laxative and psyllium in the same formulation, since they have opposite effects?

And now we have Colon Flow. According to their website, which pictures a nice looking girl in a bathing suit in a yoga pose [at least that’s what it looks like...maybe she’s trying to have a huge dump] this is a new wonder new natural herbal formulation designed to “help to cleanse the colon in order to support, normalize, and enhance healthy bowel movements, healthy bowel function, and regularity”. But there’s more... it will “gently and effectively speed up the elimination of unhealthy toxic waste that can be trapped in your intestinal tract”. And not just that, “It will give you the comfort of eliminating waste regularly and easily, and will reduce foul toxic
waste buildup that can lead to constipation, impaction, hemorrhoids, digestive issues, bad breath, parasites, bloating, gas, weight gain from extra fecal matter, irritable bowel, sluggishness, fuzzy thinking, headaches, tummy bulge, sleep disturbances, and more!”. Oh wow!

Problem is, Colon Flow is just Colon Blow [see above], with the name changed. The major ingredient is psyllium, again as above. And yes, if you take this stuff, you will fart continuously until you explode then die. You can send it back though [for a “$10 processing fee”…yeah].

And now there’s Colon Flow Blow. No, Blow Flow, Flo-Jo …er, never mind.

The “Blessed Herbs” website is a treasure. Not only can you flush yourself out for only $279.00, but one formulation contains “Refreshing Green Tea Blend”. That’s funny, I thought you were shoving it up your ass, not drinking it!

Needless to say, there are a few naysayers out there. They point out that such cleanses drain electrolytes from your body, disrupt nerve and muscle function in the gut, and can kill the good bacteria. Well, straight away you see the big fallacy here, because our bowel bacteria are bad and can only be replaced by good bacteria after an appointment with the Phillips Colon Health Lady.

Personally, I’d recommend the Power Body Detox [$180] but it is used by Posh Spice [Victoria Beckham] who despite having a megarich husband has a permanent pout and has never ever been seen to smile [maybe it’s the permanent tummy ache?]. To cleanse, Jennifer Hudson and Kate Winslet eat four 150-cal cookies each day, then nothing else; sounds dull. [As well as dangerous]

I stopped by Whole Foods to get some orgghhanhic carrots. There were two very nice young ladies at the check-out. Did you find everything sir? Yes thank you, I responded. But I also mentioned that I had found an entire shelf of natural herbal formulations designed to “Cleanse your Liver”. So one girl says “I thought that’s what the liver did itself?” “Yeah, like clean your body of toxins, break them up” says the other. “Yeah, so why would you need to cleanse it?” says the first. Conclusion… these girls stayed awake during High School Biology, the owners of Whole Foods didn’t.
OXIDIZE ME BABY.

As is required for virtually all natural herbal formulations, Hairy Bollock Extract is a potent source of needed antioxidants. Myself and my fellow Healers recognize the fact that the average America is even more vitamin deficient that those half dead skeletal creatures in rural Somalia, and the only way to prevent almost immediate death is to ingest our vitamin pills every morning without fail. And not just pills, but regular foods, supplements, cosmetics, dog food, even water, you name it, must now be pumped full of vitamins. You see, if we don't prevent those nasty oxygen radicals from destroying all our cells, we'll die younger. Ignore those naysayers saying we eat them then pee them out an hour later. That's bullshit [as are those who say we should just eat plenty of fruits and vegetables].

Most of the time in these articles I've not bored you with the science to any extent; after all, all you are looking for is further evidence that you should ingest Hairy Bollock Extract on a daily basis. So forgive me if I get a bit technical here. I need to stress to you why such things are vitally important.

Our story begins with the realization that there are lots of reactions in the body that remove electrons from oxygen \([O_2]\) molecules. These generate short-lived, highly oxidizing “oxygen radicals” that are very chemically reactive. These reactions are critical to life, playing roles in respiration, as well as critical cellular processes in the body.

These reactions have to tightly controlled, for obvious reasons, and a central theory [note theory, not fact] holds that over our lifetime more and more cells slowly become damaged by the wear and tear of radical generation. As a result, as myself and all my Healer colleagues in the Dietary Supplements industry continually tell you, radicals are BAD. Moreover, even though people with decent nutrition get plenty of radical destroying antioxidants in their food, there is NOT ENOUGH and we must chow these down in huge quantities to kill off the nasty radicals.

Okay, so these radicals actually have multiple positive effects, as we see below, but please believe me, these are minimal. There is a delicate balance between radicals and antioxidants thanks to Mr. Homeostasis, and please completely ignore the new data regarding what happens if you tip the balance heavily in favor of the antioxidants. There is also a general feeling that because these supplements are FOOD, Yum Yum, they are completely safe because they are “natural”. Of course they are. Okay, so, er….they are synthetic, made in a big chemical vat, but so what? Whereas antioxidants in foods come in a mixture of forms; trans and cis [which
direction parts of the molecule are pointing in], reduced and oxidized, etc, usually only one form is present in synthetic supplements. But who cares?

1. **What are “radicals” and how are they made?**

   A radical is a molecule that can survive for a while at least without one or more unpaired electrons. Oxygen derived radicals are molecular oxygen, generated in the electron transport chain, the superoxide anion [the regular oxygen minus an electron], the hydroxyl radical [OH, water minus a hydrogen and minus an electron], nitric oxide [NO] and hydrogen peroxide [H₂O₂]. Hydrogen peroxide and the superoxide anion can react to make the hydroxyl radical, and superoxide and NO can react to make the highly reactive peroxynitrite molecule.

2. **What critical processes in the body involve the generation of radicals, and how do we deal with them?**

   The above description sounds both nasty and dangerous, but in fact these actually comprise of deliberate chemical reactions in the body that are necessary to our function and survival. To give some examples:

   * **a. The metabolism of oxygen as part of the cellular process of respiration.**

     Let’s start at the beginning. We all know what the lungs are and how they work. Their purpose is to get oxygen from the air, so we stay alive, and expel carbon dioxide produced by cells as part of normal metabolism.

     Oxygen is only poorly dissolved in blood [because of Henry’s law, which I won’t bore you with]. Most of our oxygen enters red blood cells as they pass through the lung, where it binds to an iron-containing protein called hemoglobin. This forms “oxyhemoglobin”. When the red blood cells flow through tissues in the rest of the body, the local “tension” of oxygen is lower [because it is being used up], and this causes the oxyhemoglobin to dissociate, releasing oxygen so it can go into the cells. Mr. Homeostasis is very clever.

     As cells metabolize, they release carbon dioxide. This can dissolve into the blood [it is much better at this compared to oxygen] or enter red blood cells. In the latter, it combines with water to form bicarbonate [H₂CO₃], a reaction mediated by an enzyme, carbonic anhydrase. As the red blood cells pass through the lungs, where
the “tension” for carbon dioxide is low, the reverse reaction is favored, mediated by the same enzyme. As a result the carbon dioxide molecule is released and we breathe it out.

To facilitate all this, hydrogen and chlorine ions buzz back and forth inside and outside the cell. In addition, hemoglobin [sans oxygen] can bind hydrogen. Also, depending on the situation, the proteins normally found in the blood plasma can also mop up, or release, hydrogen ions. The result of this “homeostatic equilibrium” is that the pH [measure of acidity/alkalinity resulting from how much hydrogen is dissolved in a solution] of the blood remains remarkably constant at 7.35-7.40 [i.e. just slightly alkaline]. This is extremely important, because Mr.Homeostasis has spent millions of years evolving enzymes and other body systems that work best at this pH range. [See article on Kevin Trudeau, who disagrees with Mr. Homeostasis].

Okay, so what do “we actually use the oxygen for”? In the mitochondrium of each cell, the cytochrome oxidase enzyme complex on the surface of the inner membrane has a bi-metallic core made of iron and copper molecules that breaks O₂ into two O’s. O’s by themselves are highly reactive, so we have to treat them carefully. Most are combined with hydrogen and that electron that plays bouncy bouncy across the entire enzyme chain on the mitochondrial membrane to result in a molecule of water. But this is not completely efficient so some O’s escape. Some bind water molecules forming hydrogen peroxide, discussed just below. The primary scavenger of these oxygen molecules however is the coenzyme Q [CoQ or Q₁₀ depending on your fancy, [which Andy at HSC will sell you by the barrel] wedged in as part of the entire chain. Not only can it transfer said electron, but it acts in the inner membrane as an anti-oxidant, binding the “O” before it can damage the lipids and other proteins on this membrane.

b. The production of hydrogen peroxide as part of normal cell processes.

All cells contain hydroperoxidases, the most important of which is catalase. This is a tetrameric enzyme consisting of four identical, tetrahedrally arranged subunits, each containing in its active center a heme group and NADPH [NAD with a phosphate and a hydrogen in tow]. By breaking down hydrogen peroxide in cells catalase is an important anti-oxidant enzyme. Because oxygen is so reactive it can form hydrogen peroxide by reacting with water, and the enzymes catalase and superoxide dismutase [as well as the glutathione associated enzymes] reverse this. A major source of hydrogen peroxide can result from the production of the superoxide radical [see below], which the enzyme superoxide dismutase breaks down before it can damage the cell. Since the lungs are directly exposed to very high amounts of oxygen, it is very important for this organ in particular to possess defenses against such oxidative reactions.
c. The production of oxygen and nitrogen radicals by white blood cells to kill bacteria and viruses.

The great majority of our white blood cells are phagocytic; this is a fancy word that means that their job is to eat bacteria and other nasties if they find their way into our body.

At first, it looked like a primary way of actually killing bugs was to put them into a vesicle in the cell [phagosome], drop the local pH, and fuse other little vesicles called lysosomes to the phagosome which contain a variety of highly nasty enzymes called hydrolytic enzymes. Catch ’em and fry ’em in acid.

But as further research was performed it was realized that these cells can do something else, namely make and then squirt two sorts of molecules at the bugs. These are the oxygen [superoxide] and nitrogen radicals. These rapidly oxidize the bugs and kill them. Kids that lack the ability to make these radicals die from overwhelming infections from bugs we would otherwise regard as innocuous.

Well, as you can see, we can’t let any of these happen, can we? The real answer of course is that we must, but under controlled conditions. Hence the existence of multiple redundant antioxidant molecular systems based upon molecules that, until very recently, we either ate or made ourselves.

3. Why are these radicals thought to be bad for us?

As we’ve seen above, normal metabolic processes generate short lived molecular “radicals” of oxygen and nitrogen that oxidize anything they happen to run into. It is estimated in fact that maybe 1% of radicals we make daily escape to bind to other structures [DNA, proteins, or lipids] and oxidize them. To deal with this our body system of antioxidants react with these radicals chemically, neutralizing them. But over a long time damage caused by these radicals accumulates [so the theory goes] causing organ damage and other signs of aging. In this regard, in 1957 a scientist by the name of Harman proposed the “free radical theory of aging” in which he suggested that the life long exposure to radicals gradually caused cellular damage associated with the aging process. The implication of this is that if we found ways to reduce radical production then our cells would remain functional for longer and a possible outcome would be that we would live longer. Our splendid Dietary Supplements industry latched on to this [and who can blame us, it is after all on face value a neat idea] by pumping out anti-oxidants as supplements. The flaw in the argument however is that while aspects of
“oxidative stress” have been clearly shown to be associated with the pathology of certain chronic diseases, how do we know these aspects are causes rather than just effects?

The problem with this, as meta-analyses of anti-oxidant supplements are now revealing, is that nobody thought to discuss this with Mr. Homeostasis. He is pissed, and as a result people using supplements are dying quicker, not living longer. [Are you insane? You can’t say this! Editor]

4. What are the antioxidants and why are they important?

We’ve sort of answered this question, at least in terms of normal body anti-oxidants. But to review this in more detail, there are three sorts of molecules that can act as anti-oxidants. The first are enzymes made naturally in the body, discussed above. The second group we get from our diet [a couple we can also make ourselves]; these are the lipid soluble molecules beta-carotene, Vitamin E, and Coenzyme Q; and the water soluble molecules, Vitamin C, Vitamin A, glutathione, and alpha lipoic acid.

*Beta carotene.* Much of the yellow and red color of flowers, fruits, and certain vegetables are due to molecules called carotenoids. These are chemicals consisting of a primary chain of 40 carbon atoms. After we eat them we do not ourselves change color, but salmon and flamingos do. Carotenoids are the precursor molecules for the formation of vitamin A in animals.

The initial precursor molecule, beta-carotene, is converted to vitamin A by an iron-dependent oxygenase enzyme which cuts the beta-carotene molecule essentially in half, forming retinal and then retinoic acid [the acid form of vitamin A]. Most vitamin A gets made by this process in epithelial cells in our intestines, and then gets taken for storage in the liver. Vitamin A and its metabolites are essential for multiple body processes, including the process whereby light is converted into electrical signals that go from the eye to the brain.

*Vitamin C.* Vitamin C [ascorbic acid] is an electron donor in various cell reactions. When it does so it becomes ascorbic acid free radical [AFR]. Oxidizing reactions utilizing vitamin C occur in all compartments of a normal cell. While superoxide anion is highly unstable, AFR is relatively stable [we won’t bore you as to why]. AFR can react with itself to form one molecule of ascorbic acid [another example of a “cycle” in which an important molecule is “used” and then is regenerated] and one of dehydroascorbic acid [DHA]. In addition, two AFRs can also borrow a proton from the NADPH molecule if told to do so by the AFR reductase enzyme, making two molecules of ascorbic acid.
The cell can also use the glutathione cycle to produce ascorbic acid from DHA. In some cases the total amounts of ascorbic acid and DHA are regarded as “cell total ascorbate”, but this is probably not a helpful measurement since the two molecules do different things, plus different types of body cells take up different amounts of these.

Most creatures on the planet make their own vitamin C from sugars. Only humans and guinea pigs do not. Why? Maybe because we ate so much fruit when we were busy hunting and gathering we got so much vitamin C that Mr. Evolution felt it was a waste of biochemical energy to make it ourselves. The biochemical reason why humans cannot make ascorbic acid is because we lack an enzyme, L-gulono-lactone oxidase. A side effect of the action of the GLO enzyme is the generation of hydrogen peroxide, so maybe we dumped this enzyme as a way to avoid or reduce this process, given that we were getting ascorbic acid from fruit. If it makes you feel any better, bacteria can’t make vitamin C either. Amphibians appear to be the first animals that developed biosynthetic ways to make ascorbic acid.

Oxidation/reduction biochemical reactions involve a triad of ascorbic acid, DHA, and AFR, which help a variety of cellular processes proceed properly. However to regard it purely as an “antioxidant” simply because it can donate electrons to get various biochemical parties rolling is a gross under-simplification. In fact experts in the field feel that the other processes involving ascorbic acid have been neglected as a result. For instance, ascorbic acid binds to and stabilizes tetrahydrobiopterin, a co-factor of the nitric oxide synthase enzyme, which results in NO production by endothelial cells on the wall of blood vessels, which in turn helps control their degree of relaxation [vasodilation, thus reducing the local blood pressure]. Probably the most important role however is in acting as a co-factor for a series of dioxygenase enzymes found in all cells, involved in incorporating oxygen into organic materials from which the body can generate energy. Ascorbic acid is also involved in processes leading to the synthesis of certain hormones and neurotransmitters.

**Vitamin E.** Vitamin E ingested in food consists of eight different molecules, four tocopherols and four tocotrienols. Vitamin E’s role as an antioxidant is at the cell membrane level, where it scavenges oxygen radicals, but where also “pro-oxidant” activities of vitamin E can be seen. When vitamin E binds to radicals the reaction product then gets bound by glucuronic acid and excreted. Vitamin E is carried around the body through the blood and lymphatic systems by binding to lipids. In the liver, vitamin E is hooked up to low density lipoproteins, and any excess of vitamin E is secreted into the bile for removal via the intestines. Because we get plenty of this vitamin in our regular diet, deficiency is very rare. [But we still need tons more, right? Editor]
CoEnzyme Q. Co-enzyme Q, or ubiquinone to give it its chemical name, is a very important enzyme “co-factor” found in mitochondria in every cell in the body. CoQ is an electron acceptor and works primarily in the “respiratory chain”, a biochemical system involved in taking the energy derived from the breakdown of glucose and storing it in the energy molecule ATP while also generating carbon dioxide and water as side products, as we mentioned above. In addition, CoQ is a potent antioxidant in the same system, mopping up oxygen radicals that are generated as a necessary result of this process.

CoQ sits on the inner membrane of mitochondria, shuttling along electrons as part of the respiratory chain. In this position in the mitochondrion it is in a reduced form [this means it has two extra hydrogens] allowing it to absorb radicals and so preventing other lipids from being attacked [this is called lipid peroxidation] which would disrupt the respiratory process. Vitamin E can also do this, but is far less efficient than CoQ.

There is a well-understood lipid pathway in the body, the mevalonate pathway, that builds our body’s supply of CoQ, plus we get plenty more CoQ from a normal diet so that 100 pound bag you are buying from the Home Shopping Channel seems a bit superfluous. In the body, units of acetyl-CoA get made into mevalonate, then into farnesyl pyrophosphate. This latter molecule is the basic building block for CoQ, cholesterol, and other lipids.

Selenium. You need selenium in your diet [scramble an egg and put some spinach in it] to drive some of the glutathione peroxidase enzymes, key proteins in helping deal with hydrogen peroxide. The selenium molecules dangle down at the end of four chains of protein creating the enzyme active site. The glutathione peroxidase converts hydrogen peroxide to water by interacting it with the glutathione molecule, which gets oxidized to a disulfide form [GSSG]. Another enzyme, glutathione reductase, then takes a hydrogen from a NADPH donor molecule and converts the GSSG back to glutathione again. This type of “cycle” is very common in biochemistry.

5. Do we get anti-oxidants from our diet?

Yes.

Antioxidants we get from food can directly neutralize radicals, repair oxidized membranes, bind iron molecules needed by the enzymes that are making the radicals, or stimulate the production of lipids that then bind the radicals. Before the essential intervention of the Dietary Supplements industry our vitamins were obtained from
lots of types of fruit, seeds, nuts, green vegetables, and tomatoes. Trace elements, which help the enzymes work properly, include copper [cereals, vegetables, meat, oysters] manganese [nuts, wheat germ, green vegetables, beets, pineapple, and seeds] zinc [meat, liver, seafood, eggs] and selenium [grains, cereals, meats, eggs, milk, fruit, vegetables]. Coenzyme Q10 is found in meat and whey protein. Finally, flavonoids are ingested from berries, peanuts, apples, tea, and red wine. But none of these sound as delicious as those wonderful synthetic pills, do they? *Hairy Bollock Extract* is packed with these compounds.

But then again, there are *superfoods*. A hilarious article appeared in the British newspaper Daily Express [owned by noted pornographer Richard Desmond] written by Nikki Baker, who identified herself as a “Holistic Nutritionist and Organic Facialist”. A *what*? Apparently we need to eat olive leaf, chlorella, reishi, zeolites, and sea buckthorn oil. I went down to my local Walmart and couldn’t find any of these.

6. **Do we need to take these buckets of anti-oxidants provided by dietary supplements or now added to regular food and drinks?**

No. [WTF...Editor]. Sorry, I mean YES. If we don’t take our supplements we are all going to die horribly.

7. **What are the long term effects of taking anti-oxidants as supplements? Do they protect us from various diseases? Do we live much longer?**

There comes a moment when Healers such as myself need to step up and be counted. The scientific evidence is clear, if you don’t take your pills every day you will die very rapidly.

But, since I’m trying to be objective here, I will [magnanimously] just mention a very tiny minority of quite pitiful data that suggests there might be some very minor and unconvincing, poorly controlled evidence suggesting otherwise. I am of course referring to the about 40 well-designed clinical trials have looked at vitamin supplements, with only three of them observing positive benefits.

These studies do of course suggest that there are positive benefits of gobbling buckets of supplements, but just how important these are remains unclear. Vitamin E has been promoted as “cardioprotective”, for instance, although as more and more studies are done this looks much less likely. Oxidation of the “bad” LDL cholesterol by oxygen radicals facilitates LDL-C uptake by phagocytic cells which stick to blood vessel walls leading to the deposition of atherosclerotic plaques which give you heart attacks. Vitamin E may reverse this; this vitamin
binds to LDL-C as a means for the vitamin to be carried around in the blood, and in the process may absorb these radicals. CoQ may have some benefit in certain heart conditions as well. Selenium has been tested in cancer prevention, and a study in China suggested a benefit in a high-risk group. Another benefit may be protection against skin cancer. Finally, antioxidants are very important for eye function. The carotenoids lutein and zeaxanthin are found in the normal retina. Here they absorb light in the blue wavelengths while protecting the retina from lower wavelengths.

In fact it has long been ingrained in us that people who eat fruits and vegetables are thought to have a lower risk of cancer and other problems such as heart disease [cardiovascular disease, CVD]. A sticking point in the “whether antioxidants should be taken as supplements” argument revolves around the disconnect between trials that are “observational” and those that are “interventional”. A similar issue pertains to taking DHEA, dealt with elsewhere here. Observational trials tell us for instance that CVD is lowest in people with high levels of antioxidants in their blood [from diet, not pill taking], or that Tuscany has an unusually large number of people living to be 100 and they have high levels of these vitamins. The trap here is to then think that if I eat lots of antioxidants I will live to 100 as well. This isn’t true because of lots of other reasons, both physiological and genetic [most of which we don’t understand].

An intervention trial works differently. You take a bunch of people and put them onto supplements then follow them [often for years] to look for any benefits. While some benefits have been described, in the most stringently controlled trials either no benefits have been seen, and in some cases evidence of an increased risk have been observed. As one example of lack of benefit a trial in France involving 12,000 people has been ongoing since 1994 in which they took 120mg vitamin C, 30mg vitamin E, 6mg beta-carotene, 100ug selenium, and 20mg zinc. The effects on incidence of CVD…… none. Take home message: people with high levels of antioxidants often have low incidence of CVD, but you cannot turn yourself into one of these people simply by ingesting large amounts of the synthetic supplements. Similar results have also been observed in trials testing the ability of vitamins A and C to reduce the risk of cancer.

Several well designed trials have addressed beta-carotene supplements. One idea was to have smokers take this molecule to try to prevent lung cancer. Not only did this not happen but cancer rates were actually higher. This study, in 1994, was conducted in Finland; those taking carotene supplements had a higher risk of lung cancer [18%] and a higher death rate [8%]. A further study had similar results and had to be ended early because of this. Nobody knows why, but one suggestion was that under the doses given beta-carotene is actually pro-oxidant, which promoted tumor growth.
This is another rather unhappy twist in the tail. Mr Homeostasis has decided that our chemical processes often go both forward and in reverse. I won’t get into the complex chemical reasons, but in simple terms it means that depending on the local cell conditions molecules that are anti-oxidants can also function as pro-oxidants. For example, vitamin C is a popular dietary supplement because it is an antioxidant; it says this on the bottle, doesn’t it? However, in a study in 1998 people were given 500mg vitamin C each day for six weeks. The idea was that the anti-oxidant properties of the vitamin would reduce the oxidative damage of DNA that is slowly seen in normal people [the scientists measured this in DNA taken from blood lymphocytes in the volunteers]. But the reverse happened; the oxidative damage *rose* in these people but not in controls. In other words, vitamin C here was *acting as an oxidant rather than as an antioxidant*.

Given the large number of interventional trials it was only a matter of time before there was sufficient data available to allow Mr Meta-analysis in the door so that the whole lot could be crunched by sophisticated statistical methods to see what the “bottom line” actually is. This, unfortunately, is where things get scary, for us Healers at least.

One meta-analysis, from a group of scientists from Denmark, Serbia, and Italy, was published in the very influential Journal of the American Medical Association in early 2007. The analysis took the results of 68 randomized trials of supplementation with beta carotene, vitamins A, C, and E, and selenium. They found that 47 trials [180,000 people] taking anti-oxidants *significantly increased mortality*, and in another set of trials both A and E had the same effect. No risks were seen associated with Vitamin C or with selenium. The risk associated with taking Vitamin E, long touted for prevention of heart disease, may be a factor of taking higher doses. The authors concluded that their studies were highly contrary to observational studies, and noted that given the significant percentage of the population taking anti-oxidants, the “public health consequences may be substantial”. They also pointed out the “*intense marketing with a contrary statement*”. Soon after, another report appeared linking high blood levels of selenium with the induction of diabetes.

These results jived with an earlier meta-analysis performed at the Cleveland Clinic [big time heart center]. They concluded that Vitamin E did not decrease the risk of cardiovascular death, and that taking beta carotene actually *increased* the risk both of heart attack and all-cause mortality. Another meta-analysis from the prestigious Johns Hopkins Hospital in Baltimore looking at Vitamin E supplementation in 19 trials involving 135,000 people reached similar scary conclusions.

But before you all get scared to death by these results, we need to remember that these trials used *synthetic* supplements which could well differ from natural molecules in terms of their biological activity and
potency...you know, the stuff in vegetables, etc, i.e. if you eat these instead you could be fine. For example the type of vitamin E usually used in supplements, compliments of that big chemical vat, is alpha-tocopherol, but the most active molecule both in the blood and in the plant sources is gamma-tocopherol. But there is also an issue of dosage. If you are getting enough of an antioxidant in your regular food, and then you also take a supplement each day you need to consider that you are now ingesting very high amounts [or least in excess of all those nice fruits and veggies God provided for us] and we have no idea how this might affect absorption, metabolism, or excretion patterns of such molecules, and whether this could eventually have safety issues?

While on the subject of dosage, like every other body process nutrition is controlled by Mr. Homeostasis. For every item of food there is a safe range of intake. If you don't take enough vitamin C you get scurvy; too much Vitamin A from eating polar bear liver or gobbling Airborne and you might die. So how do you know if you are tipping the homeostatic mechanism by ingesting large amounts of supplements? The scary meta-analysis data suggests you are doing just that. Moreover, vitamins that are good for one person may not be good for someone else. Folic acid is absolutely essential for pregnant women [it prevents fetal neural tube defects] but masks the symptoms of anemia in older people who not getting enough vitamin B12. The Brits are planning on putting folic acid into bread, but this issue of anemia was raised. Folic acid was thought also to be beneficial in cardiovascular disease, but a recent meta-analysis performed at Tulane University on 17,000 patients given folic acid supplements saw no effects. As we discussed above depending on a combination of factors that almost certainly include dosage, not only can vitamin C [and A and E for that matter] act as pro-oxidants, but so can copper and selenium ions. Another example is zinc; it is an essential nutrient, but above 50mg/day it has damaging effects on the immune system.

Some adverse effects can occur depending on the form the material is taken. i.e. if it is in a concentrated form such as a pill, or in a bolus of regular food. Getting a vitamin all at once in a pill can upset the stomach [such as diarrhea after vitamin C]. Others are more serious; oxidized metabolites of retinol are cancer-causing for instance. Vitamin A taken during pregnancy can cause birth defects. Too much vitamin A causes decreased bone mineral density and fractures. If you like a nice bit of liver [plus bacon and onions of course] and then you eat vitamin A as a supplement you are getting a whopping dose of this vitamin. Another source could include fish oil [for omega-3 fatty acids], now all the rage, which will further jack up your daily vitamin A intake. Thus to get vitamin "intoxication" is easier than you may think.

I found a report of an NIH Conference that tried to answer the question as to whether a “healthy diet” is superior to taking multivitamins/supplements? Their conclusion was that this remains unproven. Well, that helps us decide, doesn’t it? They pointed out that even the very long trials that have been done [5-10 years]
are shorter than the gradual development of chronic diseases [10-20 years]. Does one have to take vitamins for life, they questioned, or just during certain life stages? This is a good point. There have been no systematic long term trials of these issues. Efficacy and safety data for multivitamins/supplements for prevention of chronic diseases is essentially totally missing, and whereas there may be benefits for people with poor nutritional status, they concluded that there was no obvious benefit from multivitamins/supplements for the prevention of a laundry list of major diseases.

It is interesting to note that the “medical” organizations, including the government agencies, don’t even recommend vitamins for children. So, if you actually feed them regular food, they will be fine. In fact, some educated folk think you don’t actually need vitamin supplements at all. You will notice that vitamins aren’t on the famous “Food Pyramid” [actually they are, in all those fruit and veggies]. This viewpoint is opposite to a wonderful infomercial run by my Dietary Supplement colleague at the Advanced Quack Center in Nutcase, Arizona flogging vitamins at perfectly reasonable massively inflated prices. “Educate your kids early in life in the importance of taking vitamins” the advert says. Call our 1-800 number to get our “kid’s kit” right now. The kit seems to consist of garlic and vitamin E. The latter is a staggering 400 units/day, which by my calculations should kill your kids when they are about 23 if the clinical data discussed above is accurate. Vitamins are only needed in low concentrations, and while the body needs to retain them it has only limited ways to do this, so if you chew down 5 grams of vitamin C a day you probably pee out 4.99 of them. So the issue is… are those of us taking a multivitamin each day deluding ourselves/peeing away our money? My apologies, I got distracted, of course you are not.

As we said the “food pyramid” [and now “food plate”] advised by the government does not include vitamins, for the simple engraved in marble scientific fact that if we follow this guide we DON’T NEED ANY. But let’s slide down the slope a bit. Our friend Jenny eats mostly right, gets exercise most of the time, but if we are to be honest, isn’t getting all those units of fruits and veggies she should be eating. So, and a lot of people think like this, there is nothing wrong with taking a multivitamin every day as a “top up”. Most nutritionists say it gets peed out but you at least are filling in those gaps, and what better way to fill that gap than with Hairy Bollock Extract!!.

But then there is Billy. He does not have malnutrition but boy does he eat crap. Green vegetables? Forget it. Here’s a guy that seriously needs vitamin supplements.

And then there’s the guy in the Darfur refugee camp. He just needs food, period.
I was in the toilet in a bar once and the guy next to me said “You don’t buy beer, you just hire it”. Still, I don’t think a TV advert for vitamin C based on this event would go down too well.

Of course, people who question the benefits of vitamins or supplements quickly draw the ire of the Council for Responsible Nutrition, who despite the official sounding name are actually the trade group for our vital Dietary Supplements industry. Their principle job is to review controlled clinical trials that conclude supplements don’t have any value, and pour massive scorn on them. How dare you say my Hairy Bollock Extract is pure crap!

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Antioxidants are labeled as influencing “immunity” but now they also appear in commercials for foods to “boost metabolism”. As we’ve seen, the only influence megadoses of anti-oxidants might have is to screw up the homeostatic system we’ve developed to generate superoxide to kill bugs. Just ask a kid with chronic granulomatous disease, in which they cannot make superoxide and die of fulminant infections as a result.

I have no idea where “increased metabolism” came from. I suspect however that it came from some marketing executive who failed High School Biology. There certainly are lots of compounds that can give your metabolic rate a jolt, caffeine for example [just ask those guys staggering about like zombies clutching their Starbucks cups with their eyes stuck out on stalks], but such rises are transient. This is because Mr. Homeostasis quickly notices, has a quick chat with the thyroid gland, and everything balances out again at your original metabolic rate level. People who have higher or lower metabolic rates than usual tend to have problems with their thyroid glands. Sorry, but Snapple won’t help.

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One potential promise behind the multivitamin/supplement field was effects on cancer incidence. Recent information regarding prostatic cancer is not good news however. Vitamins don’t cause it of course [I hope] but people taking them seem to be at greater risk of developing the more advanced [and fatal] forms. A 2007 study conducted by the National Cancer Institute followed 295,344 men to determine the association between multivitamin use and prostate cancer risk. The researchers found no association between multivitamin use and the risk of localized prostate cancer, but they did find an increased risk of advanced and fatal prostate cancer among men who used multivitamins more than seven times a week, compared with men who did not use multivitamins. The association was strongest in men with a family history of prostate cancer and men who also took selenium, beta-carotene, or zinc supplements. The medical journal also contained an editorial comment
saying that these results question the “beneficial value of antioxidant vitamin pills in generally well-nourished populations and underscore the possibility that antioxidant supplements could have unintended consequences for our health”. Yeah, you die.

The comment went on to say that there “are still many gaps in our knowledge of the mechanisms of bioavailability, biotransformation, and action of antioxidant supplements. How much fruit and vegetables do we have to eat to obtain an optimal amount of these nutrients? Why is it not possible to take a vitamin pill to obtain the same effect as a balanced diet? Antioxidant supplements in pills are synthetic, factory processed, and may not be safe compared with their naturally occurring counterparts. A possible explanation for the negative effects of antioxidant supplementation observed in trials is that the studies were conducted in middle- and high-income countries among populations already well saturated with vitamins and trace elements.”

As a healer I cannot of course agree, most Americans or other Westerners are dreadfully vitamin deficient, so we need more of them. Far more. Do oxidative mechanisms cause chronic disease and aging, or are they in reality the body’s response to them? As the above article stated... “Is it wise to artificially modulate the delicate balance [my italics] between oxidative stress and antioxidants in our cells? One way to extend our knowledge about the effects of supplemental vitamins on health would be to test for benefits and harms of supplements before they come to the market. This would entail fair testing of all commercial ingested products with claimed health benefits, as we intend to do with pharmaceutical drugs”. Yeah, sure, ha ha ha ha........

In 2008 a cancer prevention study using vitamin E and selenium had the plug pulled because of increased incidence of prostate cancer [17% increased risk]. The results of an international program [ProtecT] looking specifically at prostate cancer came out in 2010. This study wanted to know if there was any relation between cancer risk and levels of folate, vitamin-B12, or their metabolites in blood. This was a big trial, with 1500 participants with raised PSA numbers, and a similar number of controls. The results showed that higher B12 levels was associated with increased risk A 2010 study looked at prostate cancer risk in 9500 men. Lycopene, omega-3 fatty acids, vitamins D or E, or selenium, had no evidence of any association with risk. A 2011 study [Vitamins and Lifestyle, or VITAL] looked at supplement use and cancer risk in >32,000 men. Grapeseed supplements had a positive effect, reducing total cases of prostate cancer. Other supplements – chondroitin, Co-Q10, fish oil, garlic, gingko, ginseng, glucosamine, or saw palmetto – had no effects.

Meta-analyses of the possible benefits of anti-oxidants continue, I am very sad to report. A 2010 study, by workers at the University of Sheffield looked at twelve studies. In nine, in which taking anti-oxidants was compared to “not taking any” involving nearly 150,000 people, there were no differences seen in the incidence
of colon cancer. In one study, looking at various combinations, there was an increase in risk of adenomas in people taking Vitamin E or E plus beta-carotene.

Meta-analyses of the possible benefits of anti-oxidants continue. The Womens Health Initiative conducted a study in Arizona in 2008 looking at A, C, and E ingestion, as well as selenium, in 133,000 post-menopausal women to see if this changed the risk of ovarian cancer. It didn’t. Blood samples from women in the WHI program were also tested the following year in a study looking at breast cancer risks. Having lots of beta-carotene in your blood seemed to reduce the risk, but having lycopene and gamma-tocopherol [vitamin E] seemed to push your risk up. A study in Israel in 2009 concluded that people taking Vitamin-E supplements did not live as long as people who did not, and hence concluded that high dose vitamin E consumption was maybe not such a good idea.

More bad news appeared in 2014, when it was reported that a mixture of the anti-oxidants N-acetylcysteine and Vitamin E were given to mice that develop tumors, it made things far worse. Analysis of this showed that NAC/E turned down expression of the p53 gene, which usually turns off the cell cycle and allows DNA repair, or if the cell is too far gone, puts it to sleep by apoptosis.

There were some promising signs that vitamin B6 [which is a co-enzyme not an anti-oxidant] might reduce the risk of colon cancer, and a 2010 study in Sweden showed that the higher your blood B6 level, the less your risk. This is good news, for once.

The Women’s Health Initiative, which we talked about above, also published a 2009 study looking at general multivitamin use in older women. The authors described the $20-billion US Vitamin Industry, and made the usual snotty remarks about an industry that is “largely unregulated owing to the 1994 DSHE Act of Congress”, plus the usual whining about despite “the strong consumer beliefs about benefits, convincing scientific data to support efficacy are lacking”. I’m shocked.

Enrollment of the 161,000 women in the trial started in 1993, and data was collected through 2005. The study documented a laundry list of cancers [including breast, colon, and ovarian], cardiovascular diseases, and whether you actually lived longer if you took the multivitamins. The conclusion: “the study provides convincing evidence that multivitamin use has little or no incidence on the risks of common cancers, CVD, or total mortality”. Wow, Andrew Lessman can’t like that.
The paper also noted that long term use seemed to increase the risk for endometrial, stomach, and kidney cancer, but the good news was that such long term use didn’t push up the risk of CVD or make you die earlier. The authors then went on to say that their results were similar to other studies, including the Cancer Prevention II Cohort trial, but also acknowledged that other trials, such as the Nurse’s Health Study back in 1999 had seen weak but protective effects for breast cancer [but also an apparent increase in risk of lymphomas in women taking multivitamins for over 10 years].

Given all these data, our splendid Government as always plays chicken, making sure they don’t upset anybody by saying “insufficient evidence to either promote or discourage the use of multivitamins”. Home Shopping Network is ecstatic, as am I. If the Government ever comes after Hairy Bollock Extract, I’m going to have to take serious measures. [Bribery].

A bit unusually for a formal scientific paper, the authors muse for several paragraphs about vitamin use in general, which can be summarized as….”Despite the fact that we keep telling the American Public that these really aren’t necessary, and the long term benefits are vague at best [in fact there might be risks], why do these dumb frigging idiots continue to do so”. Er…, how about the onslaught of commercials and adverts we see 23-hours a day, maybe?

They also made another, a little more sinister point. They pointed out that if you eat a reasonable amount of food, and who doesn’t, take your vitamins when you get up, have a bite of zillions of “fortified/functional” food products now soaked in “needed anti-oxidants” and the like, guzzle down one of those Dannon yogurt shots, sip some Power Water, and pop an Airborne because you feel a cold coming on, then you’ve taken enough Vitamin-A to kill an elephant, and almost certainly exceeded what these authors describe rather calmly as the “tolerable upper intake level”. In other words, what happens [especially in the long term] if you take too much?

We all know about Vitamin A toxicity, but there are other examples. One such is a 2007 study of folic acid in 1000 patients that had been treated for colon cancer. They were given folic acid for six years and looked at to see if they got any more. The results showed that folic acid treatment did not decrease their risk of getting a new tumor, but there was also a suggestion that the incidence of new tumors was actually increased in these patients. One explanation put forward was that they had been given too much folic acid, because not only did they take the supplement but they were already getting daily doses in all our fortified food, like bread [which started in the 90’s]. This was consistent with a 2006 study that suggested that people with higher folate blood levels had decreased risk of colon cancer, but only if they did not also take multivitamins. Those that did, showed no decrease in risk. Bottom line, taking too much is bad for you.
It’s amazing isn’t it, how far medicine and biology has advanced over just the last 50 years. Our knowledge about food, vitamins, supplements, etc, has just exploded so that now we can make informed decisions about what we should eat. My father died when I was young and my Mom worked in a shop, so of course we were soaked in money. So we ate cheap; lots of potatoes, cabbage, brussel sprouts, carrots, corn, lettuce, tomatoes. Sometimes chicken, sometimes pasta. I always looked forward to Sundays, because after church we often had our one source of red meat, usually a small roast beef [all we could afford]. I had to go across town on the public bus to get to school, so usually I walked or ran, and usually got there quicker anyway because of the traffic.

Now, fifty years later, I can finally enjoy our modern healthy lifestyle. I can have a steak anytime I like, or hamburger or pizza. French fries are my favorite vegetable. I get in my car to go down to the grocery store two blocks away. I try to “work out” but usually I’m too busy at the office. No wonder that earlier generation was so unhealthy, and now today we can look forward to a much brighter life. [Er…are you sure about this? Editor].
NONE OF WHAT FOLLOWS IS TO BE TAKEN SERIOUSLY. ARE WE CLEAR???

I don’t mean going clear, like a Scientologist on his way to the planet Zogg to release a vast army of zombie Thetans……. Sorry, I don’t know where that came from….

Anyway, I’ve tried to be objective and factual, and I’m sure you will forgive my occasional promotion of Hairy Bollock Extract. Sadly, a whole bunch of unqualified people have leashed a completely unwarranted attack on our Healing Industry.

In December 2013 four leading experts from the USA and the UK had the massive gall to publish an article in the Annals of Internal Medicine entitled “Enough is enough: stop wasting money on vitamin and mineral supplements”.

Appalling. The article had the nerve to say that all the studies on [just] 450,000 normal healthy people with nothing wrong with their nutrition showed no clear evidence of any beneficial effect of supplements on all-cause mortality, cardiovascular disease, or cancer. Similarly, studies on nearly 6,000 men over 65 followed for 12-years showed no benefit of taking supplements in terms of cognitive ability. In a third study in 1700 people who had already had a heart attack, taking multivitamins had no influence of the subsequent incidence of a second event.

The article went on to argue that multiple other trials had usually shown no benefits whatsoever, and even caused harm. A huge trial, we may have mentioned it in passing above, showed that beta-carotene, vitamin-A, and vitamin-E, actually significantly increased mortality. Despite all these “null” results, thankfully our population in the USA gobbles down $28-BILLION dollars of supplements per year [2010 figures]. The article concluded that the fact that their use is not justified and they do nothing beneficial, is not only ignored, but a reverse message is relentlessly pushed by our wonderful Food Industry. Hooray!!
ZAT VICH DOES NOT KILL YOU MAKES YOU STRONGER.

“Do you feel lucky? Well, do yer?”

Are you going to eat that tub of DHEA or not?

I made the very smart decision to stay away from DHEA. There’s none in Hairy Bollock Extract [I think, we never actually looked], nor do we supplement it with DHEA [it cures just about everything anyway, so why bother?]. I mean let’s not seriously piss off those gumbas in Utah.

Dehydroepiandrosterone [DHEA] and its sulfated form DHEA sulfate [DHEAS] is far from being a natural herbal formulation. It is a molecule found in the body, and indeed in terms of the hormone-like molecules, has the highest blood levels of all of them. DHEA and DHEAS interconvert and so to avoid getting all complicated we’ll just use the abbreviation DHEA to refer to both of them.

DHEA is a prohormone, not a hormone. It is the precursor of the androgens and estrogens [the “sex hormones”] and appears to act as a reservoir for their production. DHEA is made from cholesterol by two P450 enzymes. Cholesterol is cleaved to pregnenolone inside mitochondria, and then into DHEA by an alpha-hydroxylase and a lyase enzyme working together in the endoplasmic reticulum. The availability of cholesterol for this pathway is controlled by a regulatory protein [steroidogenic acute regulatory protein]. To make the sex hormones DHEA is first converted to androstenedione [the baseball home-run hormone] by an enzyme called 3b-hydroxysteroid dehydrogenase and then into testosterone by 17b-hydroxysteroid dehydrogenase or into estradiol by an aromatase enzyme [you’ll note all enzymes in the body are called “-ase”, don’t ask me why]. These enzymes are found in cells all over the body.

Humans and other primates make tons of DHEA, whereas mice and rats and other creatures in which the effects of DHEA are actually tested only make very tiny amounts. It is of course completely up to you if you decide to take DHEA based on the mouse/rat data. Unless of course you are a mouse or a rat.

Lots of peripheral tissues can make hormones from DHEA, allowing local tissues to control how much of these they need to produce depending on need […says Mr. Homeostasis]. The science of the brain or big glands making hormones is called “endocrinology”, so the term “intracrinology” has been coined to describe local
tissue production of hormones in contrast. This whole system is completely different to that in mice, rats, etc, where sex hormone production is exclusively in the gonads.

DHEA clearly is pleiotropic, meaning it seems to influence lots of things including bone formation and density, adiposity, muscle metabolism, skin integrity, sex drive, well being, as well as contribute to the homeostatic control of insulin and glucose levels. DHEA levels in the blood are far higher than the hormones that are produced from this molecule; at least 100 times higher than testosterone, and at least a thousand times higher than estradiol. The fetus churns out DHEA, and this continues through puberty, with humans reaching peak levels at around 20-30 years old. Then it slowly drops, so that at 70 it is about 10-20% of the peak levels you previously reached. The problem is that nobody knows what this all means exactly, or why it declines with age. It may be a central molecule [although the data doesn’t support this] or just an intermediate step in biochemical pathways controlling the generation of testosterone or similar molecules. As we said above, it looks to be just a precursor reservoir for these molecules, dropping as you get older simply because you don’t need them.

In fact, there are three ways to look this latter event:

1. The gradual loss of DHEA in the bloodstream is a natural, normal, physiological event fully in keeping with the way Mr. Homeostasis wants it to be. It reflects something along the lines of… lets not waste energy by continuing to make this stuff because we no longer need it.

2. The gradual loss of DHEA is a basic irrelevance because other hormones like testosterone, of which you’ve got plenty, do much the same thing, plus this whole herd of similar hormones are highly redundant so that DHEA isn’t even missed.

3. Loss of DHEA with age is a hormone deficiency and we should replace it so that everything functions properly again.

The problem with #3 is that if you believe in evolution or at least something similar, why would humans evolve to lose this hormone if it was that important?

DHEA has had several reincarnations since it first appeared. As we said, it was noticed some time ago that this pathway declines and DHEA levels drop as you get older. This has been regarded by some as a “problem” which must be addressed by supplementing DHEA, despite the fact that there is no hard evidence for this. In his book “Healthy Aging” Andrew Weil blithely talks about recommended daily doses for old people. My take on
this is that DHEA levels drop for a reason [possibly that we’ve passed the age for successful mating or some similar evolutionary throwback], so it is quite possible, in fact in my opinion a certainty, that the drop is a purely natural physiological event; i.e. they are *supposed* to drop.

Given that this hormone declined with age, scientists pumped old mice with DHEA and measured its effects on immune function. Lo and behold some simple, mostly nonspecific responses increased. Hence DHEA was first regarded, and still is by most of Utah’s vast supplement Industry, as an “anti-aging, immunity boosting” drug.

I actually know somebody, an expert on the effects of aging on the immune system, who worked for a while on DHEA, and he told me about his studies. First, he told me, pure DHEA is almost impossible to dissolve, so how much DHEA actually gets inside you after you ingest the pill is a major question. [He eventually got it semi-dissolved in a light oil formulation]. Secondly, he did not measure a quick type of immunity, but something more complex and important that takes several days to develop. In that time most of the male mice he had treated, and even some of the females, suddenly indulged in mass fighting. So, in the end, most of his results were worthless because most of the “subjects” had killed each other. Aggression is a side-effect occasionally seen in people.

Then DHEA appeared for a while as an adjunct to muscle building [anabolic steroid-like activity]. Of course when you put on muscle mass your weight increases. Then it reappears as the new wonder molecule for weight loss. Huh?

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There are thousands of papers in PubMed that talk about DHEA, although only a percentage are about using DHEA as a “supplement”. Most are about “what it does”, therapeutic use, that sort of thing. This is an interesting topic, of that there is no doubt, but the novice would have a hard time of it because I ended up with about three independent piles consisting of papers who thought that DHEA was useful, some that were non-committal, and some suggesting that you should run away very rapidly. If there is any trend, it would be that the more data we accumulate about DHEA, as well as better trials, the more it looks like DHEA, as a supplement at least [as opposed to using it to treat adrenal gland insufficiency], has no real benefits. We should absolutely not be talking about DHEA as “anti-aging” or “fountain of youth” because that stuff is frigging imbecilic.
There is no doubt however that we have undergone a major demographic transformation; just watch Willard on the Today show with all those 100 year birthdays. But as we age we get lots of chronic medical problems. Hence it would be great if somebody could find a “fountain of youth”. They’d get rich. Of course, people have gotten rich just pretending they’ve found one.

[By the way, the Fountain is in St. Augustine, Florida].

So, what about the actual science? In a study in Birmingham England, scientists looked at this putative role as an 'anti-aging' hormone while noting that it was “not clear that the age-associated, physiological decline in DHEA secretion represents a harmful deficiency”. They concluded that while DHEA clearly had beneficial effects in patients with adrenal insufficiency, in healthy elderly subjects current evidence from randomised, controlled trials did not justify the use of DHEA. These trials found no “major beneficial effects” and cautioned that “potentially adverse effects” might occur, such as the stimulation of tumor growth [prostate, breast] in old people.

Another group in Denver looked at 140 elderly people, given DHEA for 12 months. Fat levels were completely unaffected, but bone mineral density levels were raised by a small amount [about 2%]. Bone cell lines obtained from mice respond to DHEA by dividing, which might explain these effects.

A group at Washington University in St Louis addressed the conflicting results in the literature regarding DHEA and muscle mass/strength in the elderly. Such people were given DHEA for 10 months and for the last four they did “resistance training”. Over the first 6 months DHEA did not affect strength or muscle mass but once the patients started weight training DHEA had a positive effect. I guess resistance wasn’t futile after all.

While on this topic however, a joint study at Tufts and Emory suggested that if you still had a reasonable level of DHEA then taking this as a supplement didn’t actually confer any extra benefit in terms of strength. Instead, you might be increasing your risk of other annoying side effects including increased hematocrit [more red cells in your blood, this increases blood viscosity and the heart doesn’t like this], increased sleep apnea, edema, gynecomastia [men grow big boobs], and prostate problems. Don’t you hate when that happens?

What about frailty in old people? A group in Holland looked at 100 men over 70 years of age and compared DHEA with a drug that increases testosterone levels. Lean body mass, muscle strength, fat mass, and the subjects’ own assessment of “quality of life” were measured over the study period of 36 weeks. DHEA had no
effect on any of these. No evidence of muscle building or “fat burning” in older people was further noted by a review from a group at the University of Nebraska.

What if you combined DHEA with other supplements like Vitamin-D and calcium? A 2009 study at Washington University looked at people 65-75 years old who took Vit-D/calcium for two years, with half of them then adding DHEA for all of year two. In women, bone density in the spine improved, but no benefit was seen in men.

A study from the Mayo Clinic in 87 elderly men and 57 elderly women showed increased serum DHEA over a 23 month study but this had no effect on body composition, physical performance, or quality of life, although some women saw an increase in bone mineral density. Both men and women had reductions in high density [i.e. “good”] cholesterol. They noted the risk of prostate cancer and progression of benign prostatic hypertrophy in men taking DHEA. They concluded that when/if DHEA had favorable effects in old people, these effects were clearly not sustained, and that “they [argued] strongly against the use of these agents”.

Other studies have looked at the effects of DHEA on memory/thinking [cognitive function]. A 2008 study at the University of Oxford analyzed the results of multiple trials of DHEA on cognition in otherwise normal older adults. No benefit of DHEA was identified. This study also stated however that there might be “neuroprotective effects” but the only way we are going to find out is to conduct trials of much longer duration, and with enough people for adequate statistical power [i.e. get around the annoying Mr Variance]. A small study [27 elderly women] in Japan in 2010 had a better outcome; here, DHEA given to women who had moderate cognitive impairment was thought to allow them to cope better with daily living, and improve their verbal fluency.

A study at Mayo in 2008 took 31 sedentary postmenopausal women [average age 64] and persuaded them to undergo a 12-week exercise training regimen, plus DHEA or a sugar pill. As you might imagine, the exercising had positive effects on body composition, insulin sensitivity, and improved their LDL particle size [this is a new whizzo test for “bad” cholesterol], but adding DHEA had no additional benefits.

It has been suggested that DHEA does have some influence on “mood” in older people. It is known in fact that DHEA acts as a “neuroactive steroid”. Where nerves talk to each other is at their ends, which is called the synapse. Excitatory signals are mediated by release into the synapse of glutamine, and inhibitory signals are mediated by the release of a molecule called GABA. By fooling with this homeostatic balance certain drugs mediate sedation, or inhibition of anxiety, pain, or sleeping problems. In this grand scheme DHEA binds GABA receptors and sends a negative signal. Is this the cause of the putative improvement in mood? Nobody knows,
because although DHEA can be produced all over the place there’s no direct evidence it happens in this area of the brain, nor is it clear it can be produced in anywhere near the concentrations needed to truly mediate receptor inhibition. Consistent with this, a meta-analysis published in 2006 of previous studies in which the effects of DHEA on “cognitive function” were measured found no evidence for an effect of DHEA.

A synthetic DHEA, called prasterone, has been produced and while the Food and Drug Administration won’t let it be used widely, they have at least permitted it to be tested for reversing bone density loss in an autoimmune disease called systemic lupus, where DHEA seems to be effective. Such restricted use is called “orphan drug status”.

Women going through menopause often have a very rough time of it. In our house we had to hide the kitchen knives. A study in Italy gave 12 months of DHEA to women just before, during, and after menopause. Treatment restored DHEA blood levels, and with it adrenal gland activity increased, but activity of the cortisol pathway was significantly depressed. Because there is an intimate homeostatic balance between the DHEA pathway and the corticosteroid pathway it is hard to know if this large change in the DHEA/cortisol ratio is actually good for you. As yet there are no “long term studies…”

A 2007 review from University College London talked about possible benefits of DHEA for osteoporosis, but also noted possible links between cardiovascular risk and low DHEA blood levels, as well as breast cancer risks in women with high levels of DHEA. In this regard, these workers drew interesting analogies between problems with DHEA supplementation and those encountered with conventional hormone replacement therapy. This review concluded that DHEA had no general benefits for post-menopausal women, other than those with very low DHEA levels, or in those with significant problems with osteoporosis.

Another 2007 study, at Monash University in Australia, looked at supplementation for sexual function and well-being, but could not conclude very much because the trials that addressed this were short and had inconsistent outcomes. As a result, they recommended that DHEA only be considered in treating women with adrenal gland problems. In Canada, in 2009, DHEA was tested in men with sexual dysfunction, and again no benefit of taking DHEA was found.

The University of Pennsylvania looked at this in a 2011 review. They concluded that women taking DHEA supplements pushed their blood levels back up to “20-year old” levels, but this did not seem to influence artherosclerosis or cardiovascular risk factors, and noted the drop in “good” HDL cholesterol. There seemed to be a benefit for women in terms of bone density, as well as possible effects in older women with moderate
cognitive impairment [but not in people with normal cognition]. The review concluded that there was “no role for DHEA in healthy post-menopausal women” and that while certain benefits have been noted, longer term studies are needed to confirm these benefits, as well as verify the safety of DHEA. A 2010 review from the University of Pisa reached essentially the same conclusions.

In fact, Mr. Homeostasis likes to have a nice balance between the DHEA pathway and the glucocorticoids [cortisol and friends]. To remind ourselves, corticotropic hormone gets made in the pituitary gland and goes to the hypothalamus to tell it to make ACTH. This then jumps into the blood and goes to the adrenals to tell them to secrete cortisol. This hormone tells the liver and muscle cells to chop up glycogen into glucose to deal with “stress”, i.e. run away from the tiger, or losing your shirt in Vegas.

Cortisol does lots of other things, like dampening inflammation of the joints so we run away from the tiger better, and by dampening the immune response which gets all hot under the collar when inflammation is present. DanActive yogurt reverses this, as we all know. As we age cortisol reduces muscle mass and redistributes fat, something that DHEA may counteract to some degree. 7-hydroxy-DHEA can be turned into 7-oxo-DHEA by 11-hydroxysteroid dehydrogenase, the key enzyme involved in the production of cortisol. There is some speculation that the 7-hydroxy-DHEA might bind to cell receptors for cortisol, blocking them. Of course, if the cortisol pathways and the DHEA pathways are indeed intertwined, then over-loading one side of this equation with supplemental DHEA may end up making Mr.Homeostasis very unhappy.

At the end of the day, everybody agreed that a proper trial of DHEA with adequate numbers of people and a proper trial design was needed. One such trial, the DHEA and wellness trial or DAWN trial at the University of California San Diego, looked at bone density and began to produce results in 2007. This looked at 225 healthy adults, aged 55 to 85, taking DHEA for a year. The study results were that they saw a modest improvement in bone mineral density in women, but no benefit in men.

More data from this Program appeared in 2008, looking at cognition and general well-being in 110 men and 115 women [55-85 in age] taking DHEA or a sugar pill for a year. This trial was completely blind, and when the code was broken, it was found that DHEA had no effects at all. Similarly, a 2010 study at the University of Connecticut also looked at this in “frail” women in their mid-70’s, and found that DHEA supplements seemed to increase lower extremity strength when these ladies did mild exercise [chair exercises or gentle yoga]. No effect however was seen on bone mineral density.
Why are there hotspots in the world where a greater than average number of people live to be 100? One would speculate nutritional habits, social behavior, and probably most important, genetics, all contribute.

I was staying at a hunting lodge in Tuscany with my wife. The whole place was saturated in flowers of all colors, in boxes under each window, and in big tubs by the doors. The air was heavy with their scent. I nibbled at some cheese, salami, and freshly baked bread. Up on the hill side some tall poplar trees stood in linear attention. I took a gulp of my sensationally good Chianti and settled back in my chair. Down the valley a field of yellow sunflowers swayed gently in the breeze. Why do people in this region live so long, I thought? I’ve no idea.

Can DHEA help your heart? Again, it depends who you ask. The observational trials certainly send mixed messages. Older people with higher DHEA levels tend to have lower body fat levels, potentially reducing their risk for cardiovascular disease. And it depends on whether you are a man or a woman; in eight studies in women seven showed no relationship at all. At the mechanistic level the association between DHEA and obesity and body fat are not at all understood. One possibility is that the blood levels are irrelevant, because DHEA is highly fat soluble and androgen production occurs in local tissues when needed. So, DHEA could be modulating local adipose tissue physiology without affecting blood levels, making the measurement of DHEA in the blood a complete irrelevance.

Despite that caveat, seven major trials have measured DHEA in the blood and looked for aspects of CVD over periods of time from 3 to 18 years. In two cases lower DHEA levels were associated with read-outs [heart disease, death], suggesting higher DHEA is cardioprotective, but in another trial the reverse was seen, and in the other four no significant differences were seen at all. As before, there are major differences between men and women, and the best that can be said is that blood levels of DHEA are a weak predictor of CVD in men, and of no value in women.

But then there’s the Dark Side. One early marker of CVD is the attachment of white cells [macrophages] to the surface of the artery walls [maybe trying to eat off the lipid plaques that are forming]. Once attached, they accumulate a lipid, cholesteryl ester, which makes them look bloated and foamy [“foam cells”]. This is considered a bad sign of things to come. Human macrophages treated with DHEA turned into foam cells. The
group who showed this, from Australia, made the usual snotty remarks about the “rapid increase in unsupervised self-administration [of DHEA in the US], despite the fact that none of its purported benefits have been proven in the context of [proper] trials, and the almost complete lack of data about vascular effects”.

This paper makes several interesting points. They suggested for instance that inconsistent findings in studies of DHEA and CVD looked mainly at older patients, by which time the damage was already done. In a reanalysis of a big study in Finland as an example, men in their 40’s that had higher DHEA levels, thought to be protective, in fact had an increased risk of heart attack. In another study [a monster trial called the Rancho Bernardo study which followed 1000 men for up to 19 years] the initial data supported the popular idea that higher DHEA meant lower risk of CVD, but a more recent analysis showed that if the men were broken up into 5 year blocks, men dying before 70 had higher DHEA levels than age matched survivors, but the reverse was seen in men over 70 years of age. The picture in women was more clear; DHEA levels did not predict CVD in any way.

Another risk factor as we age is arterial stiffness. There is a Doppler method to test this, and when they did this to me they put a blood pressure cuff around my calf [with the detector on my ankle artery] and my leg nearly fell off. But anyway, a 2009 study at Cardiff University looked at people with adrenal gland deficiency in which this risk is raised. DHEA had no effect.

What about DHEA and control of body weight? Plenty of studies have looked at this, at least in terms of body adiposity and blood lipid levels. Again, a problem is that many of these are of only a short duration, like 4-8 weeks; I found only two that went a year. Of fifteen trials I found 7 that reported modest improvements in blood lipids, and 8 that did not. For adiposity, 3 saw an improvement, 1 saw a reduction in skin thickness, but 10 trials saw no improvement.

I found a rather dodgy paper from a group in the Czech Republic. The reason I found it a bit strange was its emphasis on the thermogenic properties of DHEA. This is only a step away from “ultimate fat burning” and it talked about the 7-oxo-DHEA metabolite being even better than DHEA. It talked about the anti-obesity effects of DHEA in rats, even though rats make tiny amounts of DHEA compared to humans. I’m sure rats everywhere are impressed, after all many rats worry about their weight.
Another study, from the VA Center in Minneapolis, treated [mostly] women in their late 30’s on average for three periods of seven days each with 7-oxo-DHEA, with a natural herbal formulation [calcium, green tea, vitamin C, etc], or a placebo, with each following a diet. There were no changes in body weight between any of the groups, with all three losing about half a kilogram on average, but with the metabolic rate of the group getting the natural herbal formulation increasing 3.3% and the 7-oxo group increasing 1.4%. In each case the spread or variance however was 6%, meaning none were statistically different. Despite this, the authors concluded these supplements “may benefit” obese individuals.

A study from the University of Wisconsin fed DHEA and derivatives to rats and measured induction of enzymes associated with energy production that created heat [i.e., “thermogenic”]. Both DHEA and the 7-oxo derivative induced these, potentially explaining weight loss in rats. The study was funded by an “anti-obesity” company called Humanetics, who hold several patents on DHEA.

I saw this advert in my local paper. It was for a product called PatentLean, a wonder drug for weight loss. The jist of the advert [which I shall be applying to Hairy Bollock Extract] was that you could order this by phone, in fact you had to, because this drug was so fantastic the local drug stores were going to be sold out of PatentLean in just minutes after opening. What a brilliant idea!

This obviously implies that PatentLean is one of the most popular weight loss products on the market. I found this wonderful testimonial on the Web, paraphrased as follows. “You are right to be cautious regarding… PatentLean. My husband purchased 3 bottles of this product over the counter [believing] the marketing hype of it being "effective, trusted and that clinical results showed no negative side effects when used as directed". After approximately one week of…. taking 2 capsules a day of 100mg, I started to suffer palpitations and intense headaches. My husband who is usually very good natured, became bad tempered and aggressive in his attitude. After researching this product more fully…. I was appalled that the product claims are based on very little scientific evidence”. [How about… none…]

The Federal Trade Commission seems to agree. Reviewing a bunch of adverts they found many of them made "clinically proven" claims about products that contained ingredients already evaluated by the FTC in the context of past law enforcement actions challenging specific weight loss claims. These ingredients included chromium, L-carnitine, chitosan, psyllium, 7-keto-DHEA, hydroxycitric acid, seaweed, konjac root, garcinia cambogia and glucomannan, which the Federal Trade Commission had “insufficient scientific evidence to support weight loss claims”. I’m shocked! They added that the “scientific evidence for using 7-Keto as either an anabolic agent or for promoting weight loss is quite weak…and that many of the claims
for 7-Keto are based on petri dish studies, animal research and cell line studies, thus the data and findings cannot be carried over to the human model”.

The April 2002 issue of Pharmacist's Letter told pharmacists to advise patients to avoid products containing the following "natural weight loss" ingredients, especially if they are combined with caffeine, guarana, cola nut, mate, 7-keto DHEA (in PatentLEAN, 7-Keto Fuel, 7 Keto Lean….because little is known about its long-term safety), our good friend hydroxycitrate (in Citrimaxx, CitriLean, Diet Fuel, Herbalife), and bitter orange or country mallow. In the intervening ten years those users whose livers have exploded know this now all too well.

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Although thought to be generally safe, DHEA use is associated with side effects. In women DHEA is metabolized into testosterone, so they sometimes grow facial hair or even stop menstruating. DHEA is also converted into estradiol, a serious risk factor in post-menopausal women for breast and uterine cancers. Also, if you dig deep enough into older studies, hair loss, priapism, testicular atrophy, and increased aggression have occasionally been associated with DHEA. Women can also make too much androgens. As well as men they have testosterone, although at levels of only one-tenth. After menopause testosterone levels remain where they are, but estrogen levels plummet, changing the ratio between them. The outcome from this is not known.

Because of its metabolism into androgens and estrogens, DHEA could be risky in terms of promoting breast cancer [as newer data seems to suggest] and prostate cancer. But until long term studies are done, nobody knows. DHEA can cause an early spike in PSA [the test for possible prostate cancer] but the good news is that this quickly comes back to normal and men taking DHEA for 12 months didn’t encounter any prostate problems.

Can DHEA protect women from breast cancer? Again, hard to say. Protective effects have been seen against cancer cell lines, but as we said above DHEA gets turned into molecules that might promote cancer [breast, prostate].

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DHEA can help you if you are climbing Everest.
DHEA is used for blood flow problems because it gets turned into estrogen which in turn influences nitric oxide production and blood vessel relaxation. The fancy name is hypoxic pulmonary hypertension, which is what you get when you live at sea-level and think a bicycle trip to the Trailridge Road at the top of the Rocky National Park would make a nice day out. It’s even worse at higher elevations. Apparently there is now a big pile of bodies on the slopes of Everest caused by this.

DHEA is a known pulmonary vasodilator. People think it works by opening potassium channels in blood vessel muscle cells, relaxing them and allowing more blood to flow through. Both directly, and after conversion to estrogen, DHEA causes an increase in NO production and this then mediates the production of the cellular messenger cyclic GMP by the enzyme guanylate cyclase, making the artery wall relax [and become even more responsive to NO], reducing the pulmonary hypertension. [For this reason, it is now thought that the drug Viagra could be useful in treating this condition]. In fact, there is evidence DHEA can influence several different functions of cells making up the walls of blood vessels, and this might explain some “cardioprotective” effects some studies have proposed.

Perhaps the most impressive effects with DHEA have been seen in people with adrenal insufficiency. It is important to realize that while DHEA levels in older people are much lower than 20-year olds, they are still much higher than those in people with adrenal insufficiency. In one meta-analysis however, by endocrinologists at a major medical center in Los Angeles, it was concluded that DHEA is useful in treating adrenal insufficiency, but also stated that the available data for other diseases had not provided consistent findings. This included lupus, as well as HIV, Alzheimers, advancing age, sexual dysfunction, depression, and cardiovascular disease. A group in Geneva added muscle function, bone metabolism, or cognitive ability to this list.

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We all know that anabolic steroids are very bad for you if abused. But the good news is that you can hit a baseball two hundred miles with a bit of androstenedione in you, or throw that ball so ferociously hard that your arm breaks halfway up. But after a while “Andro” use got out of hand, with High school kids turning into the Incredible Hulk and having their testicles fall off, not to mention a pro baseball player dropping dead, so an Act passed in 2004 banned Andro and at least 30 other products with known anabolic activities.
But, somehow….er…. DHEA got left off the list. According to chemists, according to physiologists, according to pharmacologists, and so on, it is an anabolic steroid. It starts the pathway that leads to testosterone and dihydrotestosterone, very powerful anabolic steroids, right?

Obviously not, at least in Utah or in Congress. You see, first, it is a FOOD. And second, all those nasty things the anabolics do, well, DHEA …er.. doesn’t do them, does it?

So a bunch of scientists at ze Laval University en Montreal did a very clever little experiment [admittedly in mice, but that’s okay, it makes the point]. You know by now of course that DNA technology has exploded over the past decade [just ask OJ], and one benefit of this has been the “DNA microarray”. I won’t bore you with the details but when you need to read a gene off your DNA the DNA unzips and you read the gene by making RNA. You can isolate this RNA from cells and using a clever machine you can turn it back into a strip of DNA [it’s called reverse transcription and you end up with what is called complimentary DNA]. You place this on top of a slide containing little dots, each of which are “primers” that are specific for a particular gene. The cDNA sticks to this [hybridizes] and its presence is then detected by further probes that have fluorescent dyes on them. You read these slides in another fancy machine and based on the color coming back from each spot you can determine if a specific gene was turned on or not by whatever treatment you gave, and to what extent [this is called gene expression profiling]. Smart, huh?

The Montreal boys and girls read virtually all the genes in the mouse genome [about 30,000] expressed by cells from mice exposed to a known and very potent anabolic steroid, DHT, and compared this to genes tickled by DHEA. And guess what? The gene expression patterns in mice given DHT were extremely similar to the genes turned on by DHEA. But, of course, thanks to our wonderful politicians, DHEA is not an anabolic steroid, it is a FOOD. Bon appetit mes amis!

This all of course makes certain people a bit worried about DHEA. So, should people take it? The claims made by the supplement makers is that this prohormone could be beneficial [they actually say “is” but let’s not split hairs] in a series of age-associated conditions. Virtually all studies to date have been small, often relatively short, and full of discrepancies. For this and other reasons, not everybody thinks taking DHEA is that good an idea.

I found a nice review by a urology group, who quite often get asked by patients about DHEA. They made some very interesting points. They pointed out that DHEA is sold in the US as a nutritional supplement without prescription. This, they argued, resulted that “the financial incentive is small for the pharmaceutical industry to
perform large-scale clinical trials and obtain registration” [i.e. from Food and Drug Administration as a drug rather than a FOOD] “which may not crystallize into profound return on investment”. As a result “studies… applying the standards of evidence-based methods are rare and limited in number, size, and duration of treatment”. Take home message, BigPharm isn’t going to take the chance of doing proper long term [expensive] clinical trials to find out just how effective and safe DHEAS really is, when you can buy it in bulk at Wal-Mart. Plus BigPharm reads the medical journals like everyone else and may have noticed those “no evidence of benefit” publications.

A 2005 editorial in a respected journal dealing with hormones in medicine was a bit scathing. It was about the Food and Drug Administration and it reminded us that by its quick and forceful actions this organization saved many children from the horrors of thalidomide in the 1960’s. Then it pointed out that as a result of the DSHE Act of 1994 “a range of potent pro-steroid hormones, including androstenedione” [a molecule that allows you to hit a baseball as far as Paris] escaped Food and Drug Administration oversight, even though an earlier Act [Anabolic Steroid Control Act, 1990] made most illegal. As a result, DHEA and “Andro” were classified as FOODS, a decision that “remains inexplicable to medical researchers, who mostly regard this as a colossal mistake”. Then the article had the gall to say “by definition, foods lie beyond the reach of drug regulatory scrutiny, a boundary under continual challenge by the creeping fraudulence of most nutriceutical claims”.

Creeping fraudulence, how dare they! It then says “the 1994 Act created a huge, unregulated over-the-counter market for pro-steroids like DHEA and Andro, with ample cash flows to ward off regulation”. That this is an anomaly was evidenced by the fact that “deregulation of pro-steroids was not emulated in any [other] developed country”. The “careful clinical evidence appears not to hinder in the least the proliferation of websites brimming with wildly unreliable hype on DHEA as an anti-aging and health tonic”.

I’m appalled by the implications in this editorial. We took the androgenic molecules out of Hairy Bollock Extract last weekend and we’ve never claimed anything that hasn’t been clinically proven. My Aunt Betty has the data, …er…somewhere…

A group in Belgium reviewed the use of the androgens in elderly men, and concluded that administration of these drugs should only be to men with obvious testosterone deficiency. They felt that “until the long-term risk-benefit ratio…is established….in trials of longer duration” this should not be attempted. They pointed out that “DHEA supplementation has been advertised in the media as an anti-aging, re-juvenating medication without…much scientific justification”. At least they said “much”.

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There is no doubt that some of the laboratory animal data is promising. But what concerns scientists is the fact that the DHEA pathway in rodents is obviously totally different to that in humans, especially the fact that humans have sky high levels of DHEA and rats do not. In addition, and if you are a scientist this is a major red flag, some early poorly designed trials featuring minimal numbers of people claimed “remarkable” effects on “physical and psychological well-being”; not only did the actual numbers reported not show this, but better designed trials failed to confirm these conclusions.

But you see, if it gets reported that DHEA causes “remarkable effects on physical and psychological well-being” then sign me and my Aunt Betty up! My Aunt Betty is getting a bit arthritic and so she likes the idea of a new wonder drug improving her well-being. If later more careful scientists fail to confirm these results then [a] this has little impact because scientists disagree all the time, don’t they, and [b] she doesn’t read any of the medical journals so she’s unlikely to read the stuff about “long term use might cause cancer” anyway. And what’s more, DHEA is a FOOD, so it’s both nutritious and healthy, isn’t it?

The problem is, there are multiple clinical trials that have found no effects of DHEA on physical or psychological well-being, libido, sexual function, blood lipids, weight, bone turnover, body composition, exercise capacity, cognition, mood, or immune function. This led the Belgium group to conclude that “the data on DHEA supplementation of healthy elderly males do not show convincing evidence for any beneficial effect on any physical or psychological parameter”. But they did at least say that, in the short term at least, the drug is safe. Well, that’s good then….

These Belgium guys are darn good writers. It must be that fruit they put in their beer. How about this, for example? “Given the yet-unresolved issues [of androgen] requirements in elderly men…it seems wise not to label androgen administration….in the elderly as ‘substitutive treatment’. Indeed, the latter implies that a hormonal deficit has been established, that [the treatment reestablishes physiological levels] and by doing so corrects or prevents documented clinical consequences of such a deficit”. Well done Ghent!

They go to point out that we lack the “knowledge base” [maybe the boys in Utah know this stuff but are keeping it hidden]. They also point out that certain trials were performed in men that still had reasonable serum testosterone levels, rather than deficient [this hormone is made from DHEA, remember], and that the “scale of the studies [done] to date would not allow for establishing [a] clinical benefit, and, even less so, long-term safety”. As we said, these guys have obviously forgotten DHEA is a FOOD, and therefore completely safe.
Some lads from Germany go even further, stating that the claims made for DHEA were based on studies in rodents in which there is “a fundamentally different DHEA physiology”, that such studies employed DHEA doses “far beyond the physiological [level]”, and hence “cannot serve as a sound basis for promoting DHEA [use]”. People who have adrenal insufficiency certainly benefit from taking DHEA, but people with declining DHEA levels show “little benefit” from taking DHEA.

This group however pointed out that even with the benefits seen in patients with adrenal insufficiency, not all parameters recover. Several studies found no change in insulin sensitivity, body composition, and a drop in fact in “good” cholesterol in women. Despite that, women who have problems with their pituitary gland and thus have secondary problems with their adrenals do benefit from DHEA, with spouses reporting improved alertness, stamina, and initiative after six months of therapy.

A big issue, obviously, is whether we can believe the animal data? Can the studies in animals which have very different levels of DHEA to humans be extrapolated? If so, then does DHEA under certain conditions have potential benefits? If they are misleading us, we may be potential screwed if we take DHEA for its “anti-aging” effects [to use a generalization] for any extended period of time. Weight loss studies in rats for example do not reflect human studies for instance.

In some studies DHEA seemed to have a positive effect. But before you get carried away, you men at least, remember the story regarding the anti-oxidants. Observational trials do not dovetail with interventional trials. In that case healthier older people had higher blood levels of vitamin A and gang, but feeding these anti-oxidants to people did not make them healthier. In fact, the evidence suggests some considerable degree of harm. Given the popularity of DHEA I sincerely hope the same thing does not apply, and that long term use of DHEA does not turn out to be harmful.

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So, what does our government recommend? According to the National Institute of Aging, most medical experts try to discourage people from self-medicating with these types of products. They point out on their webpage that these products are dietary supplements, and therefore are not regulated by the Food and Drug Administration in the same way as drugs. Hence the product does not need FDA approval nor does it need to prove that its products are safe and effective. Also, there is no specific guarantee that the substance in the container is authentic or that the indicated dosage is accurate. [In most countries there are no pharmaceutical grade preparations available [for quality control] and you’ve no idea if a particular manufacturer uses GMP
production [very expensive]]. Therefore, the NIA “does not recommend taking any supplement, including DHEA and melatonin, that is touted as an “anti-aging” remedy because no supplement has ever been proven to serve this purpose. More importantly, the influence of these supplements on a person’s health is unknown, particularly when taken over a long period of time”. But what do they know. BigPharm bought them years ago.

The NIA page goes on to say that some proponents of these products claim that DHEA supplements improve energy, strength, and immunity. DHEA is also said to increase muscle and decrease fat. Right now there is no conclusive evidence that DHEA supplements do any of these things in people, and there is little scientific evidence to support the use of DHEA as a “rejuvenating” hormone. Although the long-term (over 1 year) effects of DHEA supplements are only now starting to be studied, there are early signs that these supplements, even when taken briefly, may have several detrimental effects on the body, including liver damage.

The website also made a point I hadn’t myself uncovered, namely that some people’s bodies may make more estrogen and testosterone from DHEA than others. There is no way to predict who will make more and who will make less. In fact, a mistake we may be making is to assume that DHEA, when it does do something, will affect everyone, when reality may be that it only affects a small subset of the population as a whole. Moreover, even under the best of circumstances, DHEA can only delay or correct age-related disorders to a degree. In general, though, changes or alterations in the sex hormone pathways, natural or synthetic, are very slow processes. Men’s prostate glands don’t enlarge overnight, nor did synthetic female hormones trigger breast cancer the next day. These pathways respond very slowly, and so conclusions about effects take a long time to be evident. Just ask women who took hormone replacement therapy for the uglier effects of menopause.

Reading the NIA recommendations I was struck by how careful scientists are. They say the effects of DHEA “are not certain”, that “longer and better designed trials are needed”, the “safety is still not clear” and so on. I think that there should be a rule that if adverts appear on the Web saying “anti-aging, fat burning, brain expanding, longevity doubling, wonderdrug” then scientists should be allowed to say “this drug, sorry .FOOD, will make your balls fall off”. I mean, fair’s fair.

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We get old and then we die. Sorry. Our muscles get weaker, we get fatter, and our poor women-folk go through menopause. Men lose the diurnal rhythm that makes them horny in the mornings. Our insulin doesn’t work as well as it used to.
There is no pill to reverse this. Some advances are being made in understanding potential genes involved in longevity, but this is mainly in a worm model. Worms everywhere are delighted.

You can believe the boys in Utah and guzzle down the DHEA. Some of you who do will indeed feel better. Plar See Bow.

But in a sense, that’s the answer. The real issue is not anti-aging or reversing aging as the entire cosmetics industry and for that matter many of our natural herbal formulation producers would have you believe, but successful aging.

This means “eat right”. Don’t under-eat or buy this ridiculous crap being pushed right now about “calorie restriction”. It does indeed work in mice, but the guy in the Biosphere who tried this nearly killed himself. Good grief, if you’ve made this far, enjoy life, don’t starve yourself or live on nuts and berries. Eat a good steak once [but not twice] a week, have a glass of a good Merlot [50 million Frenchmen can’t be wrong]. Ten bucks says that all those guys making millions on their books about anti-aging are all doing this on the quiet when they think nobody is looking. All those Grannies I saw in Tuscany were eating good and bashing the Chianti; some of them even smoked! I know for a fact each one of these ladies are using Hairy Bollock Extract religiously.

But here for once I agree with the spiritual loonies. A good attitude is terribly important. Use your brain as best you can. Studies show that people who just do something simple like do the crossword puzzle every day benefit from this. Enjoy your family. Get a dog. Travel, go see the Taj Mahal. Have fun.
HERE FISHY FISHY FISH.

We emerged from the primeval slime, lost our fins and grew legs, became cavemen and got a TV commercial, became hunters and gatherers, then evolved into Homo Sapiens and finally Homo Cellphonesurgicallyattachedtoaneurus.

We store “fat” in the form of lipids. Lipids are made from fatty acids, which are carbon chains with hydrogen molecules attached. But we also use these fatty acids for lots of reasons, stabilizing and constructing our cell membranes, synthesizing prostaglandins as part of homeostasis, and so forth.

Some fatty acids lack hydrogens in certain positions, and instead have carbons linked by a double bond instead of a single. These are called “poly-unsaturated fatty acids”. The left end carbon is called the ω position [omega] and then you count to the right along the carbons until you get to the first double bond. If this is “carbon six” then you have an ω-6 fatty acid. This particular one is called linolenic acid. We ingest this in food.

The ω-6 form can be further desaturated [this means putting in more double bonds] to make the ω-3 form, or alpha linolenic acid. Homo cellphonus cannot do this because we lack the specific desaturase enzyme, but plants can do so. But we can use other desaturase enzymes to convert these molecules into the ω-6 molecule arachidonic acid, the key precursor of prostaglandins and leukotrienes, as well as the important ω-3 molecules eicosapentaenoic acid [EPA] and docosahexaenoic acid [DHA], major components of all the cell membranes in our body. We can also turn EPA into DHA if need be.

Also note that these two critical pathways derive from the same source, and that we eat that source. So our production of these key molecules depends not only on our diet, but in which direction Mr. Homeostasis decides to push the metabolic pathways that make them.

Where do these fatty acids including linoleic acid come from? Oils from plants are one important source, including sunflower, safflower, soy, corn, canola, flaxseed, linseed, rapeseed, etc. Many of us eat margarine made from these. Most of the fatty acids are linoleic acid [ω-6], with smaller amounts of the alpha form [ω-3]. Cereals, eggs, poultry, whole grains, some green veggies, also contain these “essential fatty acids”. Another useful [but not essential, we can make it] fatty acid, oleic acid [ω-9], is found in olive oil. We can also get arachidonic acid from our diet, in meat, eggs, shrimp, etc.
By the way, I love the TV ad where the impossibly skinny ultra-fit looking actress says she must take omega-3s for her heart [as if her coronary artery is about to clog up any second], and needs a product she can trust. Eat a piece of fish once a week you anorexic idiot I yell at the screen, but of course she can't hear me.

We get lots of EPA and DHA from fish. Here fishy fishy fish [apologies to Monty Python]. Basic rules, oily fish good, lean fish not as good. High levels of EPA/DHA can be found in salmon, herring, anchovy, sardines, trout, white tuna, mussels and oysters. Sounds good to me. Lowest levels are in catfish, cod, mahi mahi [Flipper], and justforthehalibut.

One tiny caveat. Fish contain toxins; mercury [actually, methymercury after it reacts with seawater], dioxins, and polychlorinated biphenyls. Mercury comes from man-made sources, such as water dumped from power plants, mining operations, etc. Natural sources include volcanos [don't eat fish on the big Island of Hawaii]. A ton of mercury was dumped into Minimata Bay in Japan in the 1950's, resulting in severe neurological problems in the local fishermen and their families. Mercury accumulates in long-lived fish, like shark and swordfish, and is much lower in short-lived fish such as salmon and shrimp.

Japanese eat fish by the ton. Their EPA/DHA levels are sky high and their rate of death from heart disease is very low. I went to a fancy fish restaurant in Kyoto once and I admired a huge fish tank full of carp we passed as we were led to our seats. Part of my meal consisted of pieces of fish meat so fresh it was still twitching. Oh no, surely not…

You can also eat “designer eggs”. This idea began at the University of Nebraska. Nebraska is that big brown empty thing you fly over on the way to the west coast. The college farmers there [i.e. most of the student body] found that if they fed flaxseed to chicks [as well as canola oil and sea algae] the eggs they squirted out had a seven-fold increase in \( \omega-3 \) fatty acids. This sounds great, but a caveat is that they have seven-fold more vitamin E as well, so if you have scrambled eggs for breakfast, take your Flintstones, have a mouthful of antioxidants, sip FruitO2-immunity in the car on the way to work….then you get all those wonderful benefits of vitamin E.

As we saw elsewhere, many cell types involved in the inflammatory process use arachidonic acid to make PGs and LTs; hence they tend to be loaded with \( \omega-6 \) fatty acids and far less \( \omega-3 \) [mostly EPA]. People who ingest lots of fish, Eskimos for instance, get absolutely tons of EPA and DHA as a result, and it is thought that this tips the homeostatic balance away from the arachidonic acid pathway. [The \( \omega-3 \) molecules may be switching on factors that tell genes in the cell nucleus to jam up the \( \omega-6 \) pathway as well]. As a result you have less
available to make all the laundry list of pro-inflammatory PGs, LTs, etc. You can still make some, but the ones produced are thought to be far less potent.

Less inflammatory mediators, less inflammation, and maybe, just maybe, less cardiovascular disease...less PGs, less sticky platelets, less plaque formation in your arteries, etc. We'll get to this in a minute. But blame those fish chewing Eskimos. In a study in 1972, the boys in Greenland were found to have far lower cholesterol levels, especially the “bad” type, providing the first clues that fish, or more precisely the oils in the fish, were good for you.

So, no PGs, no ability to make inflammation when we actually need it? Well, no. We now know that the COX-2 enzyme can take EPA and turn it into a group of molecules called resolvins, and COX-2 can turn DHA into other mediators called docosatrienes and neuroprotectins. These are anti-inflammatory molecules as well. PGs attract neutrophils [phagocytes] into sites to chew up any bacteria that may have arrived, but when the PGs are blocked or not made, metabolites of EPA can do this function equally well. Mr. Homeostasis is jolly clever, isn't he? He's taken one pool of precursors, and from them he can make both pro-inflammatory and anti-inflammatory molecules that are mutually antagonistic.

Some derivatives of DHA are conjugated triene structures, called neuroprotectins. These get produced in the retina of the eyes in response to oxidative stress, and in the brain after stroke or in Alzheimer’s patients, and are thought to protect these tissues from excess inflammation. A similar molecule, protectin D1 [PD1], is thought to be a protective molecule in asthma, and so has drawn the attention of BigPharm. In animal models instillation of PD1 after an induced asthmatic attack more rapidly resolves the adverse symptoms.

Asprin helps this process along. In addition to shutting down the arachidonic acid pathway, this drug acetylates the COX-2 enzyme switching its action to enable it to make di- and tri-hydroxy-docosanoids, the anti-inflammatory resolvins mentioned above. I'm not sure, but I think the name comes from the idea that these molecules help turn off, resolve, the inflammatory response. When Mr. Homeostasis turns something on, he likes to also turn it off.

The type and content of fatty acids in the membrane of each of our cells determines their rigidity and fluidity. As an important example, when cell membranes become more rigid the number of insulin receptors on the surface drops, and those remaining lose their affinity for the insulin molecule. This is the basis of “insulin resistance” seen in obese people with diabetes. If the amount of unsaturated fatty acids in the membrane is
increased, fluidity increases and rigidity decreases, and this resistance can be reversed. People with type II diabetes who lose weight by diet and exercise have this happen to them.

EPA and DHA seem to have major effects on membrane properties. How molecules interact with receptors, how signals from the membrane get transmitted by signaling molecules to the nucleus, the activity of ion channels in the membrane that affect the electric charge across the membrane, and so forth, all seem to influenced by how much EPA/DHA is in them.

The $\omega$-3 and $\omega$-6 molecules are in human milk, so when you get born you start to ingest these. This is critical, because at this stage in life your brain is growing and making lots of new neuronal connections ["mom..ah"] so lots of new cell membranes are needed. About 50% of fatty acids in your brain are DHA. Many neuronal disorders may be triggered during this critical developmental period if the kid is malnourished, particularly learning disorders. The fatty acids in Mommy-milk also help protect the gut, because bacteria do not like these acids and can be killed by them. [I should also note here that said milk is packed with the IgA antibody molecule which coats baby's tummy and protects it]. When you get grown up, the fatty acids are essential in maintaining your brain cell membranes, and loss of this process may underlie dementia and perhaps Alzheimer's. They may also help maintain “memory” although this is far from proven, except in the minds of Bayer.

The essential fatty acids block cytokines released by lymphocytes and macrophages, dampening their pro-inflammatory activity. Also, they promote nitric oxide production. This molecule has anti-microbial activity, but mainly it is involved in relaxing blood vessels and is implicated in preventing the atherosclerotic process.

Lately, this has all got more complicated. What confused patients, and their Doctors for that matter, was the vague relationship between cholesterol numbers and outcomes [i.e. did you drop dead or not]. My cholesterol [prior to Lipitor] was in the low 200’s, and I can barely get up the stairs, and my friend Pat’s cholesterol was 400-plus, and he can run marathons. A new explanation has emerged when cholesterol is further analyzed for the actual size of particles in your blood. In some people, regardless of their actual number, particles were quite large and of moderate density, whereas in other people they were more likely to be small and much denser. The current explanation is that if you have the smaller particles there is a greater chance these get stuck to blood vessel walls, especially the tight junctions between the endothelial cells that make up these vessels, raising your risk of arterial disease. Unfortunately, while the statins can reduce cholesterol levels, they cannot change the particle size distributions. The good news is that diet and exercise can do this [make larger,
less dangerous particles, and reduce levels overall], plus it favors HDL “good” levels, so that HDL can persuade it’s LDL cousins to disassociate from the artery wall ["reverse cholesterol transport"].

Will fish oil correct this? The answer, right now, is no. But, the good news is that triglyceride levels, which act in concert in the nasty LDL, drop quite significantly in people taking fish oil. In other words, if you are “at risk” take statins for your cholesterol and fish oil for your TGLs, and you have a fighting chance to get your birthday announced by Willard Scott.

Another issue is that not only do we probably not get enough essential fatty acids in our diet, the actual food “processing” itself can destroy these, including just the way you cook things. Even worse, they get converted to the artery clogging “trans fats”. Herring is very good for you, but if you cook it in the microwave you generate these trans fats.

The fall in ingestion of ω-3 fatty acids over the last several decades may be an important factor contributing to the rise in incidence of atherosclerosis, heart disease, obesity, maybe even cancer. The essential fatty acids are important for your eyes as well. There is good evidence that they help prevent age-related macular degeneration, especially in conjunction with the plant molecules lutein and zeazanthine.

One highly referenced trial was conducted in Italy. The GISSI-Prevenzione trial enrolled 11300 patients and gave some of them small amounts of ω-3 fatty acids; a second lot got vitamin E, a third both, and a fourth neither [just kept to their normal diets]. Three years later, all-cause death risk was down 20%, and sudden death by 45%. Vitamin E had no benefit [see antioxidant chapter].

Okay, heart disease. There is now excellent evidence that long chain ω-3 fatty acids protect us from cardiovascular disease. Hooray, we’ve finally found something we should actually be taking. Er, other than Hairy Bollock Extract that is….

It is thought that EPA and DHA protect against arrhythmias, reduce blood pressure, reduce platelet aggregation, and help balance cholesterol levels. Of the two, the evidence is that DHA is the actual bioactive cardiovascular protective ingredient. I should warn the reader that many trials to date are flawed, too much ω-3 intake or not enough, small test groups, supplements not given long enough, the usual criticisms, but the overall data certainly indicates a positive effect. A recent meta-analysis by groups in Boston and Kansas City
studied the results of multiple clinical trials concentrating on the effects of EPA/DHA on cardiovascular disease. This analysis indicated that consumption of just one fish meal a week can reduce your risk as much as 15%.

In studies of the secondary prevention of heart disease [i.e. EPA/DHA given to people already suffering from this] fish oil supplementation reduced all-cause mortality, cardiac death, or subsequent heart attacks. No effect on strokes were seen. Other meta-analyses have reached identical conclusions. Studies did see adverse effects, usually tummy ache, but these were minor.

A study in Japan in 2007 involving over 18,000 patients compared EPA versus a statin drug in a 5-year follow-up design. EPA reduced heart attacks significantly, and lowered “bad” cholesterol levels. Sudden cardiac death was not influenced however.

Unfortunately, a bit of a wrinkle in this field was a report from India of a fish-oil study that had spectacular results more reminiscent of snake-oil. The scientific credibility of the study was “questioned”, a nice way of saying “we think it was faked”. I’m mentioning this because such results get jumped on by natural herbal formulation makers to promote their ideas, regardless of their actual validity. And who can blame us, we have to get the science from somewhere.

Just for fun, let me explain this further. The paper, from a group in India, appeared in the prestigious medical journal the Lancet. The authors studied what they called the “Indo-Mediterranean” diet, consisting of grains, aloo gobi, fruit, veggies, and nuts [very high in alpha linoleic acid]. The results were felt by many observers to be “too good to be true”. The authors recruited and intensively followed 1000 test subjects over four years. Hercules couldn’t do that. Within a year of starting the trial huge numbers of people on the diet were winning marathons and the controls were half dead. When asked by the Lancet to provide the hard copies of the actual data, the response was “it was eaten by termites”. This is the Indian version of “the dog ate my homework”.

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The desaturase enzyme systems we use to metabolize the essential fatty acids are, as usual, under the control of Mr Homeostasis. Their activity can be strongly influenced by other factors, not always for the good. For instance the enzymes dealing with the ω-6 fatty acids can be inhibited by the saturated and trans-fatty acids that are bad for us, and also by alcohol, epinephrine, and cortisol. [Users of Relacore take note]. People who have fat-free diets have enhanced activity in contrast.
There appears to be a complex homeostatic mechanism relating body fat, cholesterol, and the beneficial effects of the ω-3 fatty acids, but it is far from clear. It seems to involve the amounts of ω-3 you ingest, complex systems involving nuclear transcription factors, cholesterol binding substances such as sphingomyelin, caspases, and key enzymes such as hydroxyl-methylglutaryl coenzyme-A synthase. I now have a headache. Where's the HeadOn?

EPA and DHA have been shown to reduce the oxidative damage to lipids in general, although it is not known how as yet. In a study conducted at the University of Western Australia patients with type II diabetes were treated with EPA and DHA and their lipid oxidation levels [measured as isoprostanes in their urine] dropped 20% over six weeks.

A lot of this oxidative damage occurs inside our cells. As we discussed elsewhere, lots of oxygen radicals get generated in our mitochondria in our cells as a natural consequence of the respiratory chain system using oxygen to generate the energy molecule ATP. One thing Mr. Homeostasis came up with to try to reduce this process are called “uncoupling proteins”. These line the surface of the inner membrane of the mitochondrion and they interfere with the neighboring electron transport chain enzyme complexes by messing up the hydrogen pumping the latter are doing. This influences the energy locally available to make the oxygen radicals inside the cytochrome oxidase complex we talked about earlier. It is now thought that the essential fatty acids block this process somehow by modulating the activity of the uncoupling proteins. People with atherosclerosis have low EPA levels. Arterial smooth cells have up-regulated uncoupling protein expression in people who died from atherosclerosis associated with a high-fat diet, plus they can make a ton of oxygen radicals if triggered. Big arteries from people who “ate right” have loads of essential fatty acids, those who died a few juicy hamburgers short of a million have very little.

We mentioned above the complex relationship between essential fatty acids and lipids. Lipids get stored in adipose tissues. When we get cold the activity of the uncoupling proteins causes the leakage above which allows dissipation of the associated energy process as heat [thermogenic proton leakage]; this is the major role of “brown adipose tissue” in our bodies. We have at least three types of uncoupling proteins, UCP1-UCP3. In contrast to UCP1, which dissipates energy forming heat, UCP3 seems to be associated with cellular fatty acid metabolism. The highest levels of expression of UCP3 have been found in muscles, and people on high-fat diets produce more UCP3, particularly in muscles that have a low fat oxidative capacity. If you exercise very hard this also up regulates UCP3, increasing plasma fatty acid levels. In contrast, regular physical activity, which increases fat oxidative capacity, reduces UCP3 content. Based on these observations it has been postulated that UCP3 functions to export those fatty acids that cannot be oxidized from the mitochondrial
matrix, in order to prevent fatty acid accumulation inside the matrix. Based upon a variety of studies, it has been suggested that UCP3 has an important physiological function in moving fatty acids out of the mitochondrion, thereby protecting this organelle from lipid-induced mitochondrial damage. Maybe this how HydroxyCut works with its “Doctor formulated mitochondrial thermogenic fat burning”…er…whatever?

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Nutritionists point to a relatively dramatic change in our diets in the past century whereby our ingestion of $\omega$-3 fatty acids has severely declined, and our ingestion of $\omega$-6 has greatly increased. If you've been following the gist of this chapter so far you’ll translate this as… pro-inflammatory artery clogging precursors UP, protective anti-inflammatory precursors DOWN. And remember that bit about “competing for the same precursor molecules”, our change in diet has tipped the balance way in favor of the $\omega$-6 gang.

Primarily due to Mr. Agribusiness, you get only about a tenth of the EPA/DHA you need. We should be ingesting a 1:1 ratio of $\omega$-3 to $\omega$-6 but the actual current ratio has been calculated to be about 1:15. We’ve moved from eating mammoth, wild plants, fish, nuts and berries, to processed chicken, power water full of caffeine and sugar, double lattes, Big Macs, and [my favorite] Nestle Crunch bars. One of God's practical jokes was to remove the desaturase enzyme from us so we can't change $\omega$-6 into $\omega$-3 to right the ship.

There are certain diets that are supposed to be at least a bit like those we consumed centuries ago. They are not “new”, like the South Beach diet, which only works if you live in Miami and go to the disco every night, or the Atkins diet, which apparently killed its inventor. I mean instead “diets that have stood the test of time”.

[On the topic of the Atkins diet, many scientists pointed to the low fruit and veggie content of this diet. A noted research center in Scotland recently showed that certain gut bacteria [see boosting chapter] are dramatically reduced in people on this diet. These particular ones produce a substance called butyrate, which is thought to help prevent colorectal cancers. Butyrate is actually a fatty acid, produced as a side product when bacteria munch on carbohydrates. So, if you buy into these low carb diets…..]

One that has stood the test of time is the “Swedish diet”. You eat herring, pureed herring, fried herring, herring cutlets, herring stuffed with ground herring, and you get to go to the hot tub with Inga.
But the most discussed is the “Mediterranean diet”. This offends the Greeks, an excitable lot, who claim it should be called the “Grecian diet”. This offends the inhabitants of Crete, who claim it should be called the “Cretan diet”. Tell me, do you like gladiator movies?

The Mediterranean diet is probably a bit of a misnomer. It probably should be extended to cover the entire lifestyle. You get plenty of exercise, nice wine, plenty of olives, its sunny most of the time, you’re rude to German tourists, etc. You eat plenty of olive oil, salads, fruit, beans, cereals, etc, all rich in ω-3, but much less dairy products, and very little red meat. Very little of your diet is “processed” in any way.

Eat sensibly. A piece of fish like salmon once a week is perfect. Don’t eat too much. Too much Vitamin A is probably really bad for you, and then there’s the mercury… You can of course take the fish oil supplements; I did a quick perusal of the Internet and they seem to be in the recommended dose ranges [about 500mg/day], although about half of them did not state the dose at all [run away], but in general I think it is now safe to say that the fish oil caplets, etc, are now pretty well made. Also bear in mind that if you switch to a seafood diet [I see food, I eat it] you may be displacing other food groups you would otherwise eat. This is not actually bad, if you stop eating meat and cheese for instance, your intake of saturated fat will drop. So, when you ask Mom what’s for dinner and she says sardines on toast, don’t pull a face.

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All you have to do is turn on the TV to see that the “omega-3” frenzy has become very big money. As noted above, my fave is the advert featuring this impossibly skinny and obviously super-healthy model saying she needs to take omega-3s for her heart, as if she could feel that artherosclerosis slowly creeping up her vena cava.

But recently I found an even better one. I got up unusually early one Sunday and turned on the TV. Here were a couple of older granny-like ladies sitting on a sofa with two rather slimy looking males. The older of the two ladies was telling the audience that one of her staff had a headache and wanted to go home but instead took this pill –holds up bottle of “Omega-XL” – and almost immediately got better. At this point there was rapturous applause from the audience. The other lady said something about joint pain, and said Omega-XL fixed this in just three hours. More applause. Then one of the greasy males, apparently the manufacturer, explained why this was the best product ever made. Intense applause.
There was something rather homely about this, both the ladies were very nice, but also something creepy. I was almost waiting for Granny to start speaking in tongues. Apparently the shady TV evangelical Randy White and his wife Paula are behind all this, but if they were in the advert I’m not certain [I don’t know what they look like]. “Unsaturated fatty acids blessed by the Lord…”?

Anyway, you take Omega-XL and you get cured. What of, I’m not sure, the emphasis was on pain, but there’s no way fatty acids suddenly prevent this, not at least so rapidly. Another thing, I couldn’t figure out the actual dose of the two major omega-3s despite going through their website, although I did find another site that said the amounts in Omega-XL were way too low.

This might be deliberate, because the Omega-XL site emphasizes “potency”, which is meaningless. The Omega-XL webpage is very informative on this. It tells us that their product is a “super concentrated fish oil supplement formulated with PSCO-524”. So, that’s clear then. This “patented marine lipid extract comprises a unique complex of 30 different non-polar lipids and Omega-3 polyunsaturated essential free fatty acids, DHA and EPA, which are extracted from the New Zealand green-lipped mussel (Perna Canaliculus) by way of a patented supercritical fluid extraction process using liquefied CO2”. The “resulting stable marine lipid extract is one of the richest known sources of all-natural omega-3 essential fatty acids”. So, instead of fish oil, after this fabulous and sophisticated extraction process [by the way, what the hell is liquefied CO2?], you end up with….er….fish oil. We are also told that this “diverse combination of fatty acids is what makes Omega XL so unique and is backed by over 25 years of multiple clinical studies”. This is sneaky of them, because while there’s been lots of research on omega-3 fatty acids, I doubt if the actual Omega-XL product has ever been in a clinical trial.

The webpage also includes a video by Dr. Derrick M Desilva endorsing the product. Strangely, Dr Desilva’s important research on fatty acids has been omitted by the National Library of Medicine – I could only find one paper, in 2005, entitled “Sustainable management of leakage from wastewater pipelines” –which doesn’t sound too relevant.

We are reassuringly told that Omega-XL has no side effects. Other sites [including a couple of Universities] warn that Omega XL fish oil may cause abdominal bloating and gas, that you better be really careful if you have shellfish allergies, and that fatty acids can interfere with blood coagulation systems so that you could bruise and bleed more easily.

Further useful information comes from another site I found, featuring a Linda Huxtable, called “Medicine People”. This tells us that “Linda brings her training as a Naturopathic Doctor and Certified Rofler to an
integrated system of healing that includes nutrition, homeopathy, herbs, bodywork, and energy medicine”. I’ve haven’t the first frigging clue what a “rolfer” is. Energy Medicine only works on me when I’ve spent a little too much time at my local pub.

Linda explains that this product works to treat inflammatory disorders by inhibiting the 5-lipoxygenase pathway and thus influencing cell-membrane bound arachidonic acid, which is converted into other compounds in the body that are potent inflammation-supporting substances. Er…well, not exactly. The omegas are the precursor both of arachidonic acid and the EPA and DHA molecules we now think are so important. Arachidonic acid can be turned into leukotrienes [by 5-lox] or prostaglandins. In fact it is becoming increasingly evident that certain populations, Eskimos for instance, get tons of EPA and DHA as a result of all that fish, and this tips the homeostatic balance away from the arachidonic acid pathway, as noted above. Maybe that’s what Linda means?

Any question that Omega-3 is the best thing ever was finally dispelled in the Spring of 2014 when Larry King “investigated” this product. Translation: he was paid big cash to push it unmercifully. But, most people thought his reputation was in the toilet already anyway. He didn’t mention the recent study [the SELECT trial] that showed that men with high levels of omega-3 fatty acids had an increased risk of prostate cancer.

The other good thing about fish is that it contains vitamin D. In fact, fish are one of the very few “natural” sources of vitamin D; we get most of it from fortified foods, such as milk, cereal, yogurt, and bread. So you get most of it at breakfast.

Problem is, we almost certainly don’t get enough of it.

Vitamin D is actually a family of molecules, the most important of which are D2 [ergocalciferol] and D3 [cholecalciferol]. You get D2 from certain plant sources, and D3 from fish and some other animal sources. In addition, a body molecule, 7-dehydrocholesterol, gets converted into D3 in your skin by exposure to sunlight; the energy provided by the ultra violet rays in sunlight break open a bond in the 7DC forming an intermediate which undergoes a bit of twisting around [isomerizes] to form D3.

Once we’ve got some, vitamin D is converted by our liver and kidneys to a bioactive form, 1, 25-dihydroxyvitamin D. This is released into the blood. Once it is in a target cell it binds to a receptor than is not on the cell membrane, but in the cell nucleus. The job of 1, 25-dihydroxyvitamin D is to work with hormones to
control calcium and phosphorus levels in the blood, which in turn has major effects on bone formation and integrity.

Not surprisingly then, the main symptoms of vitamin D deficiency are bone density problems such as rickets and, in older people, osteoporosis.

After the Second World War lots of Indians and Pakistanis moved to England. A hot spot for Pakistani immigration was Bradford, in the north of England. It was gradually noticed that their kids were getting rickets. Their diets were mostly okay, but they didn't go out much other than go to school, mainly due to the fact that it rains in Bradford most of the year, so they were getting almost zero sunlight.

A place that does get plenty of sun is one of my favorite places in the world, Australia, [where men are men, and half the women are men as well], and New Zealand, where all vowels are over-expressed. I bought a nice present for my wife and the sales lady said is this a “gee-iiff-ff-tt?”

The other thing about Oz is its wildlife. I visited a winery in the Barossa Valley outside Adelaide and as I was approaching my car a snake passed right by me. At the next winery I told the lady serving me samples about this and she asked me to describe it. Just long, slender and brown, I replied. “Oh...brown snake” she said happily “second most venomous snake in the world”.

Anyway, to get to the point, even Oz and Kiwiland are advising their citizenry to ingest more vitamin D, or at least get a bit of sun. They are outside a lot, playing that interminable cricket, but because of fears of melanoma [high there] they have this slip a hat on, slap on some sun cream advisory campaign, and this reduces their skin production of vitamin D. Still, last time I saw their rugby team, all of whom are bigger than the average door, osteoporosis didn’t seem a problem.

Women who don’t have enough vitamin D often have babies with low birth weight, and they may also have defective baby teeth [can’t make enough enamel]. As kids grow up, bone mineral density becomes a problem if they don't get enough D, especially if you live in the Artic Circle [or Bradford].

Vitamin D is strongly associated with osteoporosis and bone density problems, but this also involves adequate intake of calcium, exercise, diet, and potentially genetic factors. Drugs such as corticosteroids, blood thinners, methotrexate for arthritis, etc, can also decrease vitamin D levels.
Be careful if you are one of those Starbucks creatures. High caffeine intake may accelerate bone loss because caffeine is thought to inhibit the vitamin D receptors, thus limiting absorption. One study found that elderly women who drank coffee a lot lost more bone in the spine than other women.

In a test tube, vitamin D can kill cancer cells. Recent meta-analyses of vitamin D in various types of cancer such as colon and breast cancers suggest a beneficial effect. People who get treatment for cancer in the summer, or who live at higher altitudes [Rockies for example], and get more sunlight as a result, may do better. This is an area of active research. In this regard, epidemiologic studies have suggested that a higher dietary intake of calcium and vitamin D may correlate with a lower incidence of cancer. This is best documented for colon cancer. A study reported in May 2007 also suggested a benefit for vitamin D and calcium intake and the risk of breast cancer. This data arose from a big clinical trial on another subject in which over 30,000 women were asked to fill in a questionnaire about diet, including how much vitamin D and calcium they usually ingested. Those taking the most had a 30% lower risk of breast cancer compared to those women taking the least, especially in terms of the more aggressive forms of this cancer.

A 2010 study reported a meta-analysis of supplement trials involving nearly 150,000 people taking vitamins A, C, E, plus selenium and beta-carotene. No effect on the incidence of colon cancer was seen. In fact, there is increasing evidence that folate supplements worsen advanced colon cancer substantially. Good news, if there is any, is that there appears to be an inverse relationship between high vitamin-D serum levels and lower risk of colon cancer.

1, 25-dihydroxyvitamin D is involved in helping your immune response as well [no, it doesn’t boost it]. Macrophages in test tubes that are infected with the tuberculosis bacterium can kill these more efficiently if 1, 25-dihydroxyvitamin D is added. It is a bit hard to connect the dots yet, but Africans are susceptible to TB and because of their black skin they make less vitamin D in their skin, some to the point of being vitamin deficient. [This why people moving from Africa to more northern climes evolved to be lighter skinned].

Does vitamin D protect us from cancers? Effects of Vitamin-D on rates of breast cancer remain ambivalent, not so much because there is or is not a protective effect, but more because of the way the studies are actually done. The main problem is that you cannot simply measure 25-hydroxy-D in blood daily over lots of years just in case the person gets breast cancer. Often as not, 25-OH-D levels were measured years before, so you don’t know if they’ve gone up, down, or what? Most likely, the person will have her 25-OH-D levels measured only
after she has been diagnosed. Hence you get published meta-analyses were “there might be” an inverse relationship between Vit-D levels and colon cancer, but others in which there was none. Same applies for breast cancer, or prostate cancer. Until we find much better ways to monitor and measure this, the jury is out.

We need about 40-50 nanograms of 1, 25-dihydroxyvitamin D in each milliliter of our blood. To get this we should ingest 200 units a day if we are kids, 400 units for adults, and 600 units if we are over 70 years of age. Some Doctors now think we should increase these doses by ten-fold, to at least 2000. Get some sun if you can [take a walk; avoid those tanning salons, they will fry you and give you melanoma, something that commercial with the cartoon woman with the deep German accent won’t tell you, plus what’s with that stoopid accent?]. If you use a supplement be warned that some contain vitamin A as well, which antagonizes the actions of vitamin D.

This has become big business, Vitamin D sales rising from $50MM in 2005 to $600MM in 2011 [a little of it out of my own pocket].
BEWARE OF THE DARK SIDE LUKE.

Do you remember that Eastwood movie, one of the one’s where he’s the Man with No Name single handedly reducing the population at the high rate of about a dozen bodies a reel? The one where instead of two gunslingers facing off there were three. I thought this was cool the first time I saw it. Who was going to shoot whom? We all knew Clint would win, but this was a clever twist.

[Please get to the point. Editor].

Yes, anyway. So you’ve got BigPharm on one side, and my fellow Healers in the natural herbal formulation makers on the other. But wait a minute. Here comes the third gunslinger, sadly we now realize, the biggest and fastest of them all. The Food Industry.

I used to eat food because I was hungry. Fifteen pints of lager after a brutal rugby game, then that scorching vindaloo curry, then that interesting visit to the bathroom next morning. But now, I eat for health reasons. I don’t mean if you don’t eat you get malnourished and die. I mean I eat Gino’s Spaghetti Sauce with added vitamin H because Harvard studies show that Vitamin H reduces the risk of developing myeloid intercessant encephalic myasthenia gravis by 21%. In fact, just about every food group is now marketed for “health reasons”, making us older folk yeam for the old days when you ate cornflakes or frosted flakes “BECAUSE THEY TASTE GREAT!” I really really like Kellogg’s cornflakes and I don’t know anybody who doesn’t. Then times changed and instead we got the spin that they “GIVE YOU FIBER SO YOU DON’T GET COLON CANCER”. Hence we got lots of ads with old people chowing down their Raisin Bran [I tried this once but it tasted of cardboard and gun shot] until this idea was disproven. But now you eat them to prevent cardiovascular disease. The ad I saw featured this very healthy looking attractive brunette with a very scary deep voice chowing down her “Heart Smart” from Kelloggs. Low sodium, low potassium…blah blah blah… “to reduce blood pressure”. Huh? First this woman certainly doesn’t look like she has blood pressure problems. Most people who do so have “essential hypertension”, your Doctor’s way of saying “you’ve got high blood pressure and we don’t know why”. But certainly some people develop blood pressure problems from ingesting too much sodium through table salt [would you like a bit of steak with your salt madam?]. So Heart Smart has low sodium, which is good, but I challenge Kelloggs to show even a shred of evidence that eating their product will lower their blood pressure, as their ads imply. What happens if Miss Deep Scary-Voice has these flakes for breakfast then a steak with tons of salt on it for lunch?
The young man climbs to the very peak of the Great Wall of China to ask the Master why Snapple Green tea is so good. Because it contains ECGC from green tea as an antioxidant and to boost energy, he is told. Er…it can’t do both, surely…? If you can climb to the very top of the Great Wall I think that you have enough energy to start with.

V8 [the veggie drink lots of people like] now has added anti-oxidants, presumably because they want you to die sooner…

Benefiber now has added B vitamins to “support your heart”. You see, you are constipated because you don’t eat vegetables that contain more B vitamins than you will ever need. But Benefiber helps you to have a monster dump, which makes you feel really good, reducing your stress levels and hence putting less pressure on your heart.

Hooray for Kraft foods, who now bring us “Fruit2O” flavored water. “Immunity” blend contains vitamins A, C, and E anti-oxidants so we live longer. Er…no, wait…. You can also get water called “Hydration”, puzzling to say the least since water …er…hydrates you. Or “Relax”, which seems to be a bit like a natural herbal formulation in mostly water. Or “Energy”, you guessed it, loaded with caffeine. I asked Kraft why they were adding antioxidants to water since we get plenty anyway and they replied that these additives were “safe”. Of course they are, they’re FOOD.

Just to provide some competition, Coca Cola have purchased Glaceau, makers of “vitamin water”. Kevin Trudeau is right, there is a conspiracy. Sugar drinks cause obesity in our children; this causes diabetes; so then kids drink water instead packed with vitamins A and E; then they die sooner. Kev is a genius.

It is very strange, at least to me. The primary innate immune mechanism in the body for killing bacteria is a pro-oxidant mechanism, so food manufacturers are now putting antioxidants into food and labeling them “IMMUNITY”.

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But whereas the mainstream food industry is slowly getting their feet wet, the cosmetics industry dove in and sank in the deep end long ago. The other night I found my wife applying her redensifying M’bongoland mushroom complex anti-aging serum [serum?!] revealing younger looking skin while providing age-defying anti-oxidant activity as well as blocking enzymes that cause collagen breakdown at least on the bits your Botox
injections haven’t already frozen. I resisted the temptation to point out that she was slapping the $150 per ounce goo onto the top of several layers of mostly dead skin cells. Maybe the anti-oxidants were bringing them back to life? No, that can't be right…

At the end of the day, cosmetics are designed to make women look good. They do, and I’m all for it. If it makes shallow vain women who think they are getting ugly as they get older when they are actually becoming more beautiful think they look better, that’s okay too.

And by the way, some of the “nanoparticle delivery systems” now touted contain titanium dioxide. This is a potent trigger of what immunologists call the “inflammosome”, which in turn triggers oxygen radical production and lots of other swell things. Look it up Ladies. Er…no, on second thoughts don’t….

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But life is becoming more complicated. Distinctions are blurring. Goalposts are being moved. Evil BigPharm is starting to muscle into the game, buying up Dietary Supplement companies, or at least producing similar product lines.

Let me introduce you to Dr Helmut Muller. Dr Muller studied Chemistry at the prestigious Heidelberg University, then did his PhD degree in pharmacokinetics at the Max Plank Institute in Berlin. Given his brilliance, Bayer hired him.

Helmut lives in a nice house, and drives to work every day in his BMW twin-turbo. And what of his job at Bayer? He hates it.

Why? Because he was trained as a scientist, and scientists don’t make stuff up.

Okay, I made all this up. But I wonder how many “Dr Muller”s exist at Bayer. Quite a few, I suspect.

One cannot blame Bayer of course, sales of aspirin were way down for a while when HeadOn was kicking their ass. So now new products from Bayer are topped up with all those supplements, antioxidants, etc, designed to support your heart, eyes, liver, and ex-wife.
Bayer make various vitamin products. Until I realized I was spending money on supplements I could actually spend on beer I used to take Flintstones, because at heart I’m still a kid. Another product, their “One-A-Day” multivitamins, are now designed to “energize you both mentally and physically all day”. The magic ingredient is “Guarana”, a plant extract utterly loaded with caffeine which is added to soft drinks [mostly in Brazil and surrounding countries] to give you a “Coke-like” buzz [Coca-Cola, not cocaine!]. It forms a powerful combination with ephedra, causing dangerous increases in blood pressure, as well as screwing up glucose metabolism, so throw away any of those illegal weight loss products you bought from North Korea over the Internet. Some studies suggest an improvement in short term cognitive ability using guarana, better concentration and so forth, but others studies have failed to see any effects at all. I’m not sure about this, but apparently because “guarana” is packed with caffeine it is only supposed to be used, in the US at least, as “flavoring”. One A Day, I assume, is made in Germany. Then they came up with Memory One a Day aimed at older people. It’s packed with ginkgo. Good to see that the boys at Bayer are reading the current medical literature [see below].

In fact there are now a bunch of supplements, designed to undercut the economy of Utah. These supplements have labels such as “Vital and Sharp Mind”, and “Heart Vitality”. Ingredients include lycopene “for prostate health”, policosanol for “cholesterol”, folic acid and calcium for blood pressure, ginkgo and omega-3 fatty acid for “healthy brain function, memory, concentration, and mental sharpness”, and so forth.

Regarding Bayer’s use of lycopene, an analysis by an Australian University recently looked at lycopene and green tea drinking in China, and concluded the combination might reduce prostate cancer risk. In test tubes, lycopene can indeed cause tumor cells to die. One has to be very careful about extrapolating this type of data, because in the body it’s got to reach its target cell and in sufficient concentration to be effective, even assuming it works. Another study however, at the prestigious Mayo Clinic, showed no effect of a lycopene-rich diet in patients with prostate cancer. This observation was further confirmed by a study of 28,000 older men published in May 2007; in this trial the blood concentration of lycopene had no correlation with protection from prostate cancer.

Then there’s policosanol “for cholesterol”. A study in Italy using a mixture of compounds that included policosanol [a molecule in sugar cane] found a 20% reduction in “bad” LDL cholesterol, but a study at the North Carolina Medical Center saw zero effects of policosanol in patients over eight weeks of treatment. In fact, I found several trials over the past few years all of which concluded that policosanol had no effect on cholesterol levels. One rather snotty Harvard article called policosanol “a sweet nothing for high cholesterol”. In another study, in Germany in 2006, policosanol was tested for its lipoprotein-lowering properties because as the
scientists stated ….“given multiple reports from another Institution that were highly promising”. The study looked at a total of 143 patients, but found no statistically significant difference between policosanol or a placebo. In none of the measures, namely total cholesterol, high-density lipoprotein cholesterol, or very low-density lipoprotein cholesterol, were there any significant effects from taking policosanol. And, oh yes, that other Institution where everybody’s cholesterol levels plummeted, it is in Havana Cuba. And the major export of Cuba is….cane sugar…the source of….policosanol.

What about folic acid “for blood pressure”? If you look at the very small print flashed up on the TV advert for a millisecond or so you will read “in people with blood pressure in the normal range”. Er….if your blood pressure is in the normal range to begin with….er….why do you need a supplement to keep it normal? What happens to people with high blood pressure who take this product?

How does folic acid influence blood pressure? Nobody knows. I found a study from Australia in which drug-induced hypertension in rats was reversed by folic acid, but another study in humans in Spain reported no changes in blood pressure from a concoction of vitamins including folic acid, although other high risk factors for heart disease were reduced. Folic acid seems to be involved in a complicated relationship with serum homocysteine levels, a molecule associated with damage to the cardiovascular system, and indeed children with good folic acid intake have lower levels of this molecule.

Folic acid is one of the B vitamins. The vitamin B complex is involved in multiple functions in the body, but its role in “controlling your blood pressure/supporting the heart” is starting to crumble a bit in this age of the dreaded meta-analysis. As we said elsewhere blood homocysteine levels are thought to be a marker of increased risk of heart disease. Since B vitamins, particularly folic acid, were known to reduce levels of homocysteine in the blood, supplementation of these vitamins has been tried in multiple trials. It has been shown that large amounts of B vitamins do indeed reduce levels of homocysteine in the blood; however, some studies have questioned whether the supplementation of the B vitamins is directly responsible for the reduction of major cardiovascular events in patients with vascular disease. In this regard, in a meta-analysis published in late 2006 trials involving over 16,000 heart disease patients taking folic acid for at least six months were evaluated. Folic acid supplementation did not reduce the risk of cardiovascular diseases or all-cause mortality among these participants. Moreover, in a trial involving over 3500 patients published in 2004, high doses of folic acid, pyridoxine [vitamin B6], and cobalamin [vitamin B12] were given to lower total homocysteine levels in patients that had previously had a stroke to see if this might reduce the risk of them getting another stroke during a 2-year follow-up period, compared with low doses of these vitamins. The vitamins did indeed lower the total homocysteine levels but this had no effect on incidence of further strokes.
For the past decade or so our bread has been “fortified” with folic acid, in order to prevent neural tube disorders in babies; an approach that seems to have been very effective. But at least half of us aren’t women, and we not making babies, so is this really necessary? Moreover, some clever people have pointed out that folic acid intake can mask deficiencies in other vitamins, notably vitamin B-12. Hence, if there is a risk associated with folic acid, why are we exposing our entire population to prevent what is actually a fairly rare event in newborns? On the flip side, folic acid drives down our levels of homocysteine, a known risk factor for heart disease.

Very recently, a trial was performed in Ireland, where bread is not fortified. People [average age 64] took folic acid for six months and this effectively dropped homocysteine levels. In another trial, this time in Holland, a longer trial showed similar effects if taken for 3-years. In this second study however the investigators also looked specifically at carotid thickness and arterial stiffness; unfortunately the folic acid regimen had no benefit.

Where Bayer totally dropped the ball a few years ago was the “vital and sharp mind” product, which is utter nonsense. The ad they ran [now mercifully disappeared] showed an older guy flying a small plane, the implication being that the Bayer supplement allowed him to point it properly and the put the wheels down before he landed. Let’s face it, hundreds of small planes crash every day, right? The two magic ingredients allowing him this capacity were supposedly ginkgo and omega-3, both of which are nonsense.

Gingko comes from the leaves of the Maidenhead tree. There are lots of products available and the active components are thought to be flavonoids, terpenoids and terpene lactones which are believed to exert a variety of beneficial effects on blood flow and neurotransmission. A 2009 meta-analysis however indicated that most early trials of ginkgo were typically “small, of poor quality and raised concerns about publication bias”.

Unfortunately, most properly conducted trials of ginkgo, both in normal aging people and people with dementia, have showed it to be useless. The claims are well-known and flogged by TV ads featuring celebrities with Ph.D. degrees in Neurocognitive pharmacology. Ginkgo improves memory, mental focus, concentration, counting cards in Vegas casinos, and so forth. There is some evidence that ginkgo might improve certain parameters in people with mental deficiencies, but even that was controversial. But where it is less controversial is in normal people, with the evidence suggesting there is little or no benefit. I should stress this evidence comes from properly designed randomized double-blind trials, not the “I had a brain the size of an ant and then I took ginkgo and designed the first Warp drive” type of trials the natural herbal formulation producers like to cite. Other than me, that is.
As an example of the first type, a group in Vermont studied 203 people over the age of 60 and gave them a whole bunch of 14 different neuropsychological tests measuring a variety of things like memory, ability to concentrate, attention span, etc. This included their own assessment of their performance as well as that of observers [spouses, friends, etc]. [This is a very important measure, because the test subject can sometimes have a different perspective on their performance]. Half of the participants took ginkgo and the others an identical looking tablet. None of the participants knew what they were taking, and neither did the scientists until after all the data had been crunched.

Ginkgo did nothing. Nothing at all. Learning, memory, naming, verbal fluency, attention, concentration, nothing was any different.

These authors pointed out that other trials had seen beneficial effects, but because the Vermont group were in the pocket of BigPharm [Bayer excepted] they rather uncharitably noted that these other studies had found such effects to be “inconsistent”. Often as not an observed improvement was in a single parameter, like attention or such, but not in anything else that was measured. In some cases “improvements” reported by the test subject were not noted by the care-giver or by family members. Some smaller studies for memory enhancement have had promising results, but a trial sponsored by the National Institute on Aging of more than 200 healthy adults over age 60 found that ginkgo taken for 6 weeks did not improve memory. The NIH is conducting a large clinical trial of ginkgo with more than 3,000 volunteers. The aim of the study is to see if the herb prevents the onset of dementia and, specifically, Alzheimer’s disease. If it works or at least provides a bit of benefit to people suffering from Alzheimer’s then this yet again illustrates a natural product having an effect on some sort of deficiency or problem [such as saw palmetto in BPH] or omega-3 on neurological damage…i.e. it is only useful when you’ve got something wrong with you, but it is not preventative. Ginkgo is also being studied by the NIH for other potential benefits, but also the potential for gingko to interfere with prescription drugs.

There have in fact been lots of trials of ginkgo. A 2008 multi-center study gave gingko to 118 patients who were over 85 in age. Both people getting gingko and those getting sugar pills showed a decline in memory function, and this did not differ between the two groups. There was some suggestion of a slight reduction in dementia, but the trial did not have enough people enrolled to be certain. Rather scarily, there was an increase in strokes in the group that took ginkgo [too few though, to point any fingers as yet]. A huge trial in 2009 studied 3069 people aged 72 to 96, and was conducted at six major centers in the USA, and included people with both normal cognition or mild cognitive impairment. Gingko had no effect. As you might imagine
Alzheimer’s is a particularly important target, but, as we’ve seen time and again, how trials are actually constructed and run differs enormously, and so meta-analyses of these have to be regarded somewhat cautiously. A 2009 analysis tried to carefully weigh these issues, and found no predictable benefit for people with dementia or cognitive impairment. No benefit, in addition, was seen in nine trials for Alzheimer’s disease.

Could ginkgo help the “normal” subject if taken for long periods? Maybe, but nobody knows. Plus, although generally safe, ginkgo can cause headache, nausea, gastrointestinal upset, diarrhea, dizziness, and allergic skin reactions. Ginkgo can also increase bleeding risk, so people who take anticoagulant drugs [such as the aspirin regimen many of us older folks use] need to be very careful. Moreover it is becoming less and less likely ginkgo will be further studied, especially because trials are now concentrating on the new cholinesterase inhibitors such as Aricept [donepezil] which are now becoming established treatments for mild to moderate Alzheimer’s.

The elderly are particularly vulnerable to scams, be they dietary supplements or Nigerian Emails. A GAO report published in 2010 described investigations they had conducted in which sales staff at various chain stores had told elderly customers that various products could cure or prevent various conditions including high cholesterol or Alzheimer’s disease. But it gets worse, because they also had evidence of sales staff telling customers you could take gingko with aspirin. No problem there, except for the stomach bleeding and death. In fact, the GAO documented tons of deceptive marketing ploys, including garlic for cardiovascular disease and reducing high blood pressure [it does neither], gingko for Alzheimer’s, depression, and impotence, or ginseng to cure cancer. The last one is really hilarious, since ginseng can inhibit certain anti-cancer drugs.

So, next, the GAO goes out to Walgreens and gang and buys lots of the supplements older people swallow in droves, such as Echinacea, St John’s wort, chamomile, gingko, ginseng, and so on. And I bet you are thinking I’m about to tell you that they set up clinical trials.

Nope. They did something far more scary, they analyzed these supplements for content. And guess what they found? Arsenic. Cadmium. Lead. Mercury. Several other chemicals I won’t even go near. But [because of DSHEA] these are “foods”. Yum yum.

I love this. I shop at Whole Foods, despite all those granola-heads and Rasta-hairstyles that populate the place. So, you go in and buy some vegetables, because they are orghhannic and produced without those
nasty chemical pesticides. Then, you go round to the several hundred yards of “supplements” and buy stuff contaminated with arsenic. Makes sense to me.

The bottom line, as GOA rather woefully points out, is that DSHEA means that FDA are shafted, and FTC cannot touch you as long as the “dietary supplement presents a significant or unreasonable risk”, i.e. you die of arsenic/lead/mercury” poisoning [I would also note that people who eat this crap scream about mercury being in vaccines!]. In other words, as long as the product is safe you can plug it as curing any disease you can think of. I know, let’s put sugar in a bottle and flog it as a cure for influenza. Oh SHIT, Oscillococcinum beat us to it…!

Unfortunately for us Healers we are now in the era of DNA technology. A 2013 study had the gall to state that herbal medications were frequently contaminated or contained plant products that were obviously a substitute for the plants listed on the label [you know, the one they made us put on….]. The study obtained 44 herbal remedies from 12 separate companies in Canada. Using DNA fingerprinting [“barcoding”] 59% of the products contained plants not listed on the label. Two thirds had plants put in as substitutes for the real one [shades of Hoodia here] and at least a third had fillers, usually rice, wheat, and alfalfa [“not as an accident” said the study].

A product labeled as St John’s Wort, a scam in itself, actually contained Senna, a potent laxative [it also contains glycosides that can screw up immune cells in the gut as well], and others contained feverfew, which cause abdominal problems and bleeding problems. Shockingly, and I’m sure erroneously, most products were described as of “poor quality”.

I feel a bit bad about bashing Bayer. They make excellent products ranging from aspirin to the fluoroquinolones [about the best antibiotics out there]. I know we have to feel sad because of what HeadOn has done to them, but watching an elite member of BigPharm turning into makers of natural herbal formulations is disturbing. Does Bayer really think these supplements will improve health, or is the real reason either [a] these natural herbal formulation bastards are kicking our ass so we’d better start competing with them, or [b] our market experts now tell us that there are billions of people who now swallow this natural herbal formulation bullshit so we should jump on the bandwagon.

But is this really bad? First, you still get the regular vitamins along with your policosaneoil or whatever, and unlike a sad percentage of the natural herbal formulationists Bayer knows what the terms “safety” and “toxicity”
actually mean. Second, unlike companies that just shovel the shit into the tablet maker, you can be certain Bayer is making these things properly, under GMP conditions, and if they say there’s 43mg of Vitamin T in their product you can be sure this is accurate. Conclusion: letting BigPharm muscle in on areas where there might be at least…maybe… a grain of truth and having them make these things properly is not such a bad thing. Plus they don’t live in Utah.

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Of course, you could just wear a watch. I saw this extraordinary brochure for a watch, made by “Philip Stein” and called Teslar. The watches are beautiful and tell you the correct time in New York, London, Paris, and Mick’s Bar in Wellington New Zealand. But it does much more than that. It generates two energy fields that combine to make a third, a Teslar Scalar field. When you wear it the field reduces pain, improves concentration, boosts your immune response, and increases cardiovascular fitness. Well that takes care of that then.

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We live in the new era of functional foods. A percentage of the population recoil in abject horror when they learn that something they ate was irradiated or came from a cloned cow, or from a rice plant engineered to protect it from fungi, and rush to the bathroom mirror to see if they’ve grown a third eye yet, but have no qualms about all these synthetic chemicals being added to our regular diet. When they start adding “needed antioxidants” to beer I’m leaving the planet.

Did I mention that Hairy Bollock Extract contains a proprietary formulation [recommended daily dosage not yet determined] of Wheredidiparkthecarus moneymakus, the well know M’bongoland herbal remedy, which clinical trials have shown dramatically improve the expression of those …er… gooey mate receptors? It also contains ground elephant excrement, because as you know, elephants never forget!
A responsible scientist cannot say or write “cheese cures acne” or “eggplant is good for arthritis” without giving references to the clinical trial that proved it, how the study was constructed, what the placebo was [cauliflower dipped in purple dye to make it look like eggplant], etc. But our alternative medicine gurus like Garry Null can do so as part of their infomercials PBS are more than happy to run. Garry takes full advantage of this; “buy my juicer…it is seven times better than Cuisinart and…er… seven times more expensive…” If Garry states that cheese cures acne he doesn’t have to give you any data to prove this or describe the clinical trial, all he has to do is to stare intensely into the camera. One reason is that of course there never was such a trial. Garry just came up with his pronouncements “from his own research” as a gift to cutting edge educational PBS television.

We cannot be too nasty about Garry, however, he already has tons of critics. In fact, Garry is a regular feature on my PBS station on “fund raising” weeks, and we should be very grateful to him for supporting this very worthy cause. “Please send a donation so we can continue to bring you these informative and cutting edge presentations”. The problem is that often as not Garry goes “off-script”. The pretty blond Gusher oozes love all over Garry and he springs off down some endless tangent. His usual stuff is mostly incomprehensible to begin with, but once he starts to free-form he becomes more and more hilarious.

That’s not to say Garry is a complete nutcase. He emphasizes proper nutrition, nuts and berries, etc, the importance of exercise, and so on. All these are admirable sentiments. More recently, he emphasized a good mental attitude as well, snarfing this from bedfellows like Chopra and Weil. To emphasize the spiritual connection he once spouted this stuff out with overwhelming back lighting, so this actually created an aura around him, as if he was an Angel ascending to Heaven.

In fact, it was first on PBS that I became aware of Garry. A tall, thin, rather gaunt looking man was staring intensely into the camera and talking about how nutrition affects the body. I listened with great interest but within a couple of minutes I realized that much of what this man was saying was absolute nonsense. Sadly, Garry falls into that rather disturbing group of nutcases who believe that BigPharm is out to kill us all and once stated that HIV is not the cause of AIDS but the symptoms are caused by the powerful drugs given to kill the otherwise completely harmless HIV virus. This puts him in good company with a recent President of South Africa, who had once said that it up to individuals if they wish to take these worthless retroviral pills, but if so they should check with a true health care professional first [by this he meant the village witchdoctor]. But on bleated Garry, his faithful gusher by his side beaming up at him. “I saw this patient with bronchial asthma….put her on eggplant…eggplant is very good for asthma”. Now, first, why would a man with an apparently somewhat
dodgy Ph.D. on the effects of coffee drinking on urine pH [a measure of acidity] have a “patient” in the first place? He cannot diagnose or treat anybody [this is called “practicing medicine without a license”, not that that seems to stop our Garry]. Second, I’m not an allergist but I do know that bronchial asthma is a very serious condition that can kill you in a few minutes. It is mediated by an immune mechanism that floods the body with histamine that causes blood vessels to relax [so you get flushed] and the airways to collapse [bronchoconstriction, a feeling that Denver Bronco fans usually get early in the playoffs] so you croak. The only way to reverse this is to give the patient an intravenous injection of the hormone norepinephrine which antagonizes these effects. Chopping up the eggplant to get it into the syringe just takes too long.

But Garry is entertaining at least, and where I absolutely collapsed was where Garry described a cat. Yes, that’s right, a cat. Hey, cats need nutritional guidance as well you know. “This cat….had 12, 13 maybe, palpable tumors….so I put it on my system, apples and celery, celery is particularly good…and the tumors went away”. They did! You think? Funny, last time I looked cats were carnivores not herbivores, plus try feeding celery to my herd of spoiled felines. I suppose you could push the stick down their throats. In reality of course cats with a dozen tumors are about to head for the Elysian Fields where piles of fish heads are delivered on demand on silver platters born by toothless but smiling dogs. Another time Garry was talking about…er, I’m not sure, it was utterly incomprehensible, but I noticed a bunch of people sitting behind him at desks taking notes. I wonder to this day what they were writing down?

PBS locally won’t give up on him [although I understand several stations have] plus this gets shown in Boulder Colorado which has a high density of “natural medicine” believers who love to swallow this crap. I try to avoid watching, but not so long ago Garry was pushing the “meat causes inflammation” canard. This has been around for a decade or more, but Garry presented it like his “research” had “discovered” this. As he often does, he then went off script and told a story that he had presented this at a major conference “and a thousand Doctors gave him a standing ovation”. Really? I go to such things myself and one with 1000 is a monster one to say the least, at least a National meeting and far more likely an International one [very few Convention Centers could handle this many]. Every real “Doctor” I personally know has a rather dim view of Garry, plus I’ve never seen anyone get a standing ovation for presenting research data…this simply isn’t done. And if 1000 “Doctors” did so, what were they doctors of? Scientology?

As I said we should not begrudge Garry for helping PBS. It is after all a good cause. If you pledge $50 we’ll send you Garry’s latest book says the Gusher, almost fainting with admiration, for $100 two books, and for over $250 three books and Garry’s video “How to cure HIV, Malaria, and Tuberculosis with my Juicer”. This always reminds me of the old joke, paraphrased here: “Our Grand Prize… an afternoon with Paris Hilton.
Second Prize, a weekend with Paris Hilton. Third Prize, a whole week with Paris Hilton”. You get the idea. Sorry, I’m not good at telling jokes.

But where Garry at least tries to sound convincing and knowledgeable, Kevin Trudeau wears his total lack of knowledge as a badge of honor. Trudeau, an ex-used car salesman [good training] and convicted criminal [fraudulent use of credit cards [so, he took American Express for six figures, what’s bad about that?]; a bank fraud swindle; excellent training] is not related to Trudeau, the one-time Canadian Prime Minister, or the Trudeau family of Saranac Lake NY, the current patriarch of which is the brilliant cartoonist Garry Trudeau. His late father formed the world famous Trudeau [biomedical] Institute, and his great-grandfather Edward Livingstone Trudeau started the first sanatorium in the US to treat tuberculosis. What a great shame this remarkable family shares the same last name with one of the worst charlatans on the planet.

MTV used to run an amazingly funny British Sitcom called “The Young Ones”. In one show Mr. Belofski, the landlord and local mobster, turns to Mike [one of the show’s primary characters] and asks him if he needs a “moat-er” i.e. a car [geddit?]. “I got a lovely little Trident” says the gangster. [I’ve seen one of these, it had two back wheels and just one in front in the center, a bit like a motorized tricycle. It was a fiberglass deathtrap that is thankfully no longer being produced]. So Mike says “A Trident…that’s a three-wheeler, isn’t it?” “Well……usually” says the gangster.

But Kevin soon tired of selling cars, and turned his considerable talents to selling natural herbal formulations. He began to make a whole slue of products, each capable of curing ..er…whatever. He also appeared on a very dodgy show hawking the useless but very expensive “coral calcium” where he acted as the Gusher for a change, throwing out the slightly skeptical but mostly powder puff “questions”.

There must be a dartboard at the Federal Trade Commission with Kevin’s face on it. Something really pissed them off; the $20 million yacht maybe? Anyway this evil government agency in the pockets of BigPharm went ballistic and turned all their big guns on poor Kevin.

So, what upset the FTC? Well there was Eden’s Secret Nature’s Purifying Product, a wonderful natural herbal formulation which balances your body’s pH, and helps you to lose lots of weight. Then there was Doctor Callahan’s Addiction Breaking System, a videotape showing you how to stop smoking, boozing, gambling [Kev checked into a suite in Vegas to study this], cocaine, and [of course] helping you to lose lots of weight.
Then there was the Mega Memory System “developed while working with blind and mentally handicapped students” to give you a photographic memory. For this ground-breaking work Kev was given a Gold Medal from the American Memory Institute. Sadly, this product didn't help you to lose lots of weight.

My favorite however was the Howard Berg's Mega Reading system, a home study program that restored brain function after you were dead.

So Kevin was fined $2M [a fleabite to the poverty unchallenged Kev] by the Federal Trade Commission and told not to be naughty anymore and not to sell any natural herbal formulation medical breakthrough or cancer cure ever again, especially that coral calcium shite. But Kevin is a GENIUS and here's why. Because of his First Amendment right to “free speech” [i.e. including the right to make up anything you like] Kevin is still allowed to write books.

So this is exactly what this GENIUS did. Despite having zero knowledge about how the body works, something he freely admits and is brazen about, he produced one of the greatest works of fiction in the last century entitled “Natural Cures...what “they” don’t want you to know about”, the “they” of course being evil BigPharm. More recently he’s produced a second, something about natural diet secrets and how yet again evil BigPharm is silencing this. Hope he checked this out with Iovate. Now, I’m reliably told, he’s produced a similar opus where he’s replaced the word “drug” with “money”, and is blaming the Banks, not BigPharm. Apparently this has something to do with “free money”. Free for him, at least.

One wonders about his conversation with the publisher? “So let me see now, you are a known criminal with no understanding of biology whatsoever, plus you have this paranoid delusion that the government wants to get you, plus you have this utterly preposterous notion that the pharmaceutical companies are hiding vital information about lots of diseases, and so you want to write a book about clinical nutrition? Okay, go right ahead!” We can consider the publisher to be equally a genius to Kevin, because they sold a gazillion copies.

In this book Professor Trudeau explains extremely important things like “The sun doesn't cause cancer, and Australia is wasting its time with that silly wear sunscreen ad campaign when we all know they get cancer because they play too much cricket”, and so forth. I’m sure those pre-cancerous thymidine dimers in your sun-burnt skin are rolling in amusement. I’m even told that he talks about his role in the US Government when he was Head of the CIA, and because of this there is this monstrous conspiracy involving the Food and Drug Administration and the Federal Trade Commission, funded of course by BigPharm, in order to get him.
I can only watch Kevin’s TV commercials for his wonderful book [now books!] for a minute or so without screaming, but my attention did perk up when he started to talk about type II diabetes. I myself remember that deep, empty feeling when my doctor told me my urine was full of glucose. Not a happy moment. So then I was literally forced by those evil bastards at BigPharm to take their poisonous medications, thus driving my resting blood sugar down to a pathetic barely functioning 100 mg/dl level. Bastards! I should have known better and looked on the internet for a natural herbal formulation, like the extract of the Friggerrus glucosus tree.

But I listened carefully to health-giver Kev. They’ve known a natural cure for diabetes at the University of Calgary for over twenty years, he explained, but a conspiracy between the government and BigPharm has squashed this. [Huh? Kevin rants about the American government, but I looked on a map and Calgary is in …er.. Canada]. I wouldn’t like to be the receptionist at the University of Calgary having to answer all those calls. “You’re the ninetieth person to call this morning, eh. We have no idea what Mr. Trudeau is talking about, eh”.

But then again, neither does the reader, because apparently the book doesn’t actually tell you what this Canadian Rockies magical natural herbal formulation happens to be. Maybe it’s Molsen Light Beer; that would shut down anybody’s pancreas.

Kevin’s central premise is that BigPharm is an evil conglomerate that has conspired together to withhold vital information about natural herbal formulations so that we all remain sick and need their pills just to stay barely alive. Just look at Vioxx, I’m sure Kevin would say, made purposely by Merck just to kill people.

Needless to say, this book has been condemned by every legitimate medical group on the planet, by just about everybody with a brain larger than a pea, and, somewhat ironically, by lots of people who actually bought this magnificent tome. I’m told there is a room at Amazon.com where the people who have to take the orders for this opus can wash themselves down with sheep dip at the end of each day.

I have not read this book myself, and I would disembowel myself with a meat hook before making myself do so. I will not give this man a penny of my money. But many have done so, and reactions range from “packed with cutting edge alternative “natural” medicine” [it’s probably part of the curriculum at all those dodgy places that produce “Doctors” of “Naturopathic Medicine”] to “all those things you said you would tell us in the book, are not actually in the frigging book”. Oh, our mistake, says Kev’s minders, we actually meant to say “…the actual information is in the newsletter you are invited to subscribe to [just send shipping and handling] rather than in the book itself”. Kevin charges about $70 for the newsletter subscription, and then a further $9.95 a
month. Because he knows you are dying to get these important publications he just goes ahead and charges them to your credit card without permission, since he knows you will love him for it.

Good old Kev can explain this further:

“I would like to give you the cures for every disease; I would like to tell you the natural treatments available that can eliminate your symptoms and, at the same time, address the cause instead of suppressing the symptom. However, as I began to write this book, the Federal Trade Commission and the Food and Drug Administration took unprecedented action. I am forbidden to give you specific cures in this book. The Federal Trade Commission has ordered me not to give you any specific product recommendations, or say where you can acquire the cures and receive treatment. This entire chapter has been censored by the Federal Trade Commission.”

Huh?

Anybody follow this? I thought that the Federal Trade Commission still allowed him to write books? How did they even know he was doing this….[“as I began to write this…”]? There’s obviously a Food and Drug Administration/Federal Trade Commission mole in Kevin’s organization. Why would the Federal Trade Commission block information about “where you can acquire the cures”; if Kev’s conspiracy theory is correct it would be the Food and Drug Administration doing this, not the Federal Trade Commission? But this clearly proves Kevin’s point, that evil BigPharm is bribing the entire government, not just the Federal Trade Commission, to suppress these important healing medical breakthroughs only Kevin knows about. Maybe they are in his next book? Must read it.

The scary thing is that lots of people actually believe this and hence swallow Kev’s book verbatim. Are members of BigPharm angels in white coats? Absolutely not. Have they indulged in price-fixing on occasion? Yes they have. Have they screwed up analysis of safety data on occasion? Damn sure they have. Do they spend more money on advertising than on drug development. Apparently, shockingly, appallingly, the answer is yes, in fact big time [just watch the network evening news programs… restless leg syndrome…and then my doctor said… “….hypocondriac!”], not to mention those idiots sitting in their individual bath tubs]. It is hard to criticize the Dietary Supplements industry for saturating Washington with lobbyists designed to shove stacks of cash under the snouts of politicians to push forward the 1994 Bill that cut the legs completely off the Food and Drug Administration, and not to point to the atrocious act of Representative William Tauzin and Medicare boss Tom Scully who in 2004 pushed through a bill that sent BigPharm into howls of delight in view of the stacks of money they were going to make as result. As reported on “Sixty Minutes” even while Scully was promoting this
Bill he was negotiating a job with a high-powered Washington law firm, where…guess what guys… he became a lobbyist with the pharmaceutical industry. And guess what Tauzin does these days now that he’s retired from Congress. That’s right… you got it in one… he is now a major lobbyist in Washington for BigPharm making a mountain of moolah.

But to truly be an Evil Empire, BigPharm has to be populated with evil people willing to fudge data, especially in the safety/toxicity area, with a blind eye turned by directors only interested in driving the stock prices way up. This is why the population of the world has dropped precipitously since BigPharm came onto the scene [...]er…are you sure about this? Editor].

The evil people at BigPharm make vaccines and drugs, both materials being designed specifically to make you feel ill for most of your life. A great deal of thought goes into their strategy. For instance by making vaccines and vastly reducing childhood mortality to polio, diphtheria, whooping cough, childhood diarrhea, cholera, and the rest of the laundry list of ailments that kills little children in mostly disgusting horrible ways, you’ve kept them alive into their adult years where now they can develop hypertension, diabetes, arthritis, and so forth that will require drug therapy for the rest of their lives. But they have to be careful here, by providing drugs that keep you alive but don’t actually cure you. Cure means “no more money” as BigPharm has long realized. This then is the disgusting depths to which BigPharm has sunk, exposed in glorious detail by the Very Reverend Archbishop Trudeau.

I suspect FTC hold a “Kevin Trudeau Celebration Week” and draw straws for who goes after him. All this ends up in court, obviously, and ended up with a poor old District Judge named Gettleman who had to put on the rubber gloves and decide whether the ads for Kev’s books were crossing the line by providing “cures” [which obviously they don’t…you have to get the newsletter…]. In 2007 Gettleman ordered him to cough up $37MM for milking all those idiots who bought his book, but I’ve no idea if he ever actually paid. But Kev has real style, which is why we love him, and he got his supporters [apparently there are some] to deluge His Honor’s email system with complaints. The Judge was far from amused, and in 2010 banged him up for contempt. So, Kev did what anybody would do, and appealed [to the Seventh Circuit Court] and they agreed with him that it was all a little bit of harmless fun, and let him dun a runner.

You can find the actual judgement on line, but it is written in Klingon. If I’m correct however, one of the things that really pissed off Gettleman and the FTC was Kev’s description of using HCG for dieting. A very long time ago a British physician, Dr. Albert Simeon, studied unusually thin children in India where he worked, and noticed HCG in their urine. This led him to think that if you made too much HCG it would cause you to be
underweight. This connection was reasonable at the time, but never substantiated, [and six properly controlled clinical trials in latter years showed HCG had no effect whatsoever]. This did not prevent the emergence of the idea at the time that if you took HCG you would lose weight. The problem was that HCG is a big protein, so if you cannot take it by mouth because your stomach protease enzymes will just chop it up into amino acids. Hence, to take HCG, it had to be injected. As a result clinics opened up in the USA to do just this. These were just rip-offs, and the US government shut them down in the 1970’s.

A study at UCLA in 1977 put this to bed for good. In a double-blind randomized trial there was no difference between people taking HCG and a control group, and HCG once and for all was shown to be ineffective as a weight loss treatment.

None of this did anything to prevent the arrival of the splendid Kevin, who in his fact-filled book argued that HCG is “an absolute cure for obesity discovered almost fifty years ago,” but “suppressed” by medical experts and the FDA. According to Kev [and Simeon for that matter] it won’t work unless you also stick to a very low calorie diet. This is good for you, and the only risks are gallstone formation, electrolyte imbalance, and heart arrhythmia. Plus you have no energy and feel like shit.

This of course has unleashed yet another round of “HCG and lose weight” crap appearing in newspaper adverts [I’m sure Kev’s not involved]. You call a 1-800 number and they send you “homeopathic drops of HCG”. This is a sophisticated molecule that has the formula H2O. That’s right, those frigging homeopathic “imprints” again. In other words, you drop water in your mouth and you lose 30 pounds a day. Easy.

Regarding Kev’s allegations against our pharmaceutical industry, I’ve never worked for BigPharm but I know a lot of people who have done so. I once met the head of Glaxo SmithKline, a tall balding very elegant man. A good friend worked for the then Glaxo Wellcome company and he told me what really goes on. Once through Security you had to change into black robes, and just as Kevin has long suspected and tried to warn us about, cut up a goat while standing in a pentagram drawn on the floor. This causes you to grow horns and an enormous tail which you wrap around your waist. You then say a few prayers praising Satan then go into the laboratory to start making pills to sicken the world, using vampire bat bladder extract, bovine thymus gland, Devil’s Bloodroot plant extract, and Newt’s eyeballs. Actually, I seriously doubt my friend’s veracity about this last bit, because all those ingredients are regularly used in natural herbal formulations!

But let’s finish with good old Kev. I know, it’s easy to bash this guy, but its fun. Plus he’s a multimillionaire, and his “readership” are not.
"I'll never get cancer, because I check the pH of my urine every day….every person who has cancer has an acid pH", says Professor Trudeau in one of his cutting edge infomercials.

This would make a good exam question for High School Kids or first year college students. How many things are wrong about the above statement?

Here’s my shot at it…

1. At a simple grammatical level, this means that just the **act** of measuring the urine pH will prevent cancer, at least in Kevin.
2. The pH of the urine is essentially constant in human beings, but not in Kevin. So this means that Kevin is an alien.
3. Mr. Homeostasis is seriously pissed at Kevin.
4. Why would the presence of cancer change the body pH?
5. Why would **every person** who has cancer take a pee, measure the pH, and send this result to Kev? Does he have a big wharehouse somewhere full of bottles of piss?

Okay, and no offence here, I would never wish cancer on anybody. But what if Kevin did get cancer? I’m sure he’d refuse all those medical breakthroughs in chemotherapy, immunotherapy, tumor sequencing gene mapping specific therapy, chimeric antigen receptors, etc, now developed by evil BigPharm, and opt instead for the “natural cures” he revealed [or rather, didn’t] in his books. Good for him.

...Kevin does a runner......

As we noted above, His Honor District Judge Gettleman told Kevin he’d fleeced the American public sufficiently with his decades of false claims and needed to cough up $37MM over misleading television ads for his weight-loss book in which he “sells hope” to people dumb enough to believe him. I had no idea what happened next, but more recently people at ABC News decided to take a look.

What they found was that Kev was stony broke, not a penny Your Honor, empty pockets, sorry nothing left. The FTC people found this a bit difficult to swallow and felt instead that Kevin was “engaged in lucrative business ventures and spending freely. The government contends Trudeau has masked his ownership and
control of companies that are funding a lavish lifestyle, replete with luxury automobiles and stately homes”. He still had one massive mansion in Chicago, but it was empty. ABC however eventually found Kev living in opulence in Zurich, one of the most expensive cities in the world. Kev told ABC “I have to live someplace. Should I live on the street? Should I sleep on a park bench?”

ABC also found that Kev recently dropped $30K on a carpet, and another $110K on furniture. Then, there are the cigars. Well, one has to keep up appearances.

The FDA decided that Kev “was embarking on a sophisticated plan to hide his wealth and income, working with a Chicago law firm that specializes in asset protection. Trudeau has gone to extraordinary lengths to shelter or conceal significant assets,” the FTC said in court documents, by “transferring them offshore…keeping his name off corporate records and bank accounts” and “transferring funds through multiple bank accounts to conceal their origin.” Way to go Kevin.

So, how to hide $37MM?

Kevin solved this by falling in love. The more uncharitable have suggested that he looked up those “Russian Women wanting to meet you” bride mail-order ads you find at the back of sleazy magazines [so I’m told], but in June 2008, five months after the Government started to get nasty, he married 22-year old Nataliya Babenko, a native of the Ukraine, at the time a student at NYU.

The government alleges that Trudeau then proceeded to install her as an owner or executive of several of his companies, in other words turning over all his huge assets to her so he appeared penniless. Smart huh?

Nat takes care of her hubby however, as any good wife should, despite the massive strain on their relationship, he being in Zurich and she in New York. Her companies pay Trudeau’s substantial American Express and Diner’s Club bills…after all these are “business expenses”. Her companies also cover Kev’s Bentley automobiles, private jet travel and the rent on the 14,000-square-foot mansion in Illinois. ABC also came up with a video, taken in a casino, where Natty has established credit. She gets lots of chips but plays virtually none of them, then returns and cashes out in actual cash, which then disappears into Kevin’s trousers. Nicely laundered trousers.

You can’t keep a good man down, so Kevin is now involved in GIN, owned by Natty. This stands for the Global Information Network, which is billed as a private wealth, health and success-building club, boasting of thousands of members in more than 150 countries. [Neophyte wannabes take note: if he had claimed hundreds of thousands in 200 countries nobody would believe him]. The foundation was created in the
Caribbean nation of St. Kitts and Nevis in 2009, and is run by a secret council of 30 people, including billionaires, royals, high-level members of secret societies, and of course, Kevin Trudeau. All are anonymous, except Kev. Strange that.

You remember those old get rich quick infomercials, usually based on dodgy real estate dealings? You went to a free seminar somewhere, and got a motivational speech, then you could buy expensive “how to” videos on the way out. The people making this crap got rich, you didn’t.

Trudeau is GIN’s chief promoter and the star attraction at GIN events worldwide. If you subscribe on the Internet Kevin will provide you with insider knowledge available to only the elite. All you do is put $1000 down and pay a fee of $150 per month to be told their secrets. And it works! Nearly 2000 fools people attended his last GIN meeting. The more money you cough up the more you get told about the higher levels at GIN, you might even reach the mysterious “Level 3” or even beyond. If this sounds exactly like Scientology dogshit to you, I agree [and he has been vaguely associated with them in the past, which makes sense since they are both in exactly the same game]. Shame on ABC for daring to suggest that “GIN is his personal piggy-bank”.

Think about it. If you join GIN this will [possibly even has, Nat ain’t talking] make Kevin rich again, so he can pay the $37MM back and keep everyone happy. Also, think of the entertainment value when Kev decides it’s time for Natty to go back to the Ukraine and he somehow has to get control of his companies and assets back. Should be fun to watch.

The other way we can all make money hand over fist, according to one of Kev’s latest’s schemes, is by playing baccarat. He is more than happy to teach you and all you have to do is pay him $15,000 or just buy his videos for $997. Also, you have to sign a disclosure that once you’ve won your first $100,000 you send him a tribute of $30,000.

….and yet more fun……

In September 2013, and one must assume Kev came back to the USA voluntarily, he appeared before the unhappy Judge Gettleman. You see, despite Kev being destitute, it seems he has a bank account in Australia he forgot to hide that slipped his mind. Using a debit card from this account he spent $894 at a liquor store [which takes some doing, my wife yells at me for spending $30 at Wilburs, Nattie is obviously more forgiving], $359 for two haircuts at Vidal Sassoon [just two!], $1,057 for meats ordered online and $920 on cigars [ah yes, those cigars]. There was also an $18,642 transfer from the Australian account that was paid to a lawyer who worked on Trudeau’s taxes, which happened without the judge’s approval.
By this time apparently the court had told an LA-based firm to marshall his assets [if they could find any, ha ha ha] and take control over his businesses. Huh? Don’t they mean Nattie’s businesses?

Back in front of His Honor, ABC News reported that he begged for mercy.

"I am penniless. I am homeless. I surrender. I am at your mercy," Trudeau told the court. "I will do anything you ask." Gettlem is obviously a nice old fellow and gave him another week to prove he was cooperating.

ABC then reported that Kev met with a receiver and the FTC in the nick [prison] and they both expressed "concerns" about Trudeau's “vague recollections and sketchy memory”. This is ENTIRELY the fault of the FTC, who obviously prevented Kev from taking his product the “Mega Memory System” which you will remember Kev “developed while working with blind and mentally handicapped students” to give you a photographic memory. Although the receiver stopped short of saying Trudeau was being dishonest, he told the judge he found his lack of detail and memory "questionable and troubling."

You think?

And then, tragedy. The Judge not only seized Kev's assets [or at least tried to] but placed in receivership the companies “owned” by Nattie as well. Somehow he wasn’t convinced that she was a "successful businesswoman in her own right." No idea why.

Inevitably, Nattie smartly dun a runner back to her home in Kiev, Ukraine. I was wondering above how he would get shot of this little problem her, but I’m sure the $380,000 mortgage payment on an apartment in Kiev for Nat and her mother, which somehow he managed to fix under the table, had no impact. Shame on the FTC for forcing these two lovers apart. As for her other assets, overseas trust accounts, and tens of thousands of dollars in designer clothing, jewelry and furniture, etc, these might be seized as well.

GIN got it in the neck too. They may get liquidated, the receiver has already fired many of the GIN employees, and Kev is barred from speaking at any of the company’s events, even if he spoke for free.
The happy couple....

.....banged up in the Big House...

In March 2014 Kevin appeared in front of District Judge Ronald Guzman in a Chicago court, his fake wife shipped off to a safe distance and his various millions nicely squirreled away in foreign banks [this includes $100K in gold bars, apparently he’s “forgotten” where he buried put them]. But Ron was in a bad mood, portraying Kev as a “habitual fraudster most of his life, even stealing his mother’s security number for one scam”. C’mon Ron, at least he didn’t sell her.

So, anyway, Kev got 10-years in the Nick, with Ron saying he was "deceitful to the very core".

Addressing the judge in a 10-minute statement, Trudeau apologized and said he had become a changed man [he had developed a new pill to achieve this and was making an infomercial]. He had meditated, prayed [to Satan presumably] and read self-help books, he said, while locked up at Chicago's Metropolitan Correctional Center.

"I have truly had a significant reawakening," said Trudeau, who was dressed in orange jail clothes. "If I ever do an infomercial again … I promise: no embellishments, no puffery, no lies." All of us can’t wait.

Asking for a sentence of less than two years for his client, defense attorney Tom Kirsch said the harm Trudeau caused was minor compared with frauds in which people are cheated out of their life savings.

Unfortunately Ron considered this to be total dogs bollocks, angrily saying that Trudeau had “thumbed his nose at the justice system by violating multiple court orders since the 1990s”. This was a bit harsh, all Kev had done was to ignore a 2004 Court Order saying he couldn’t run ads about his fact-filled book, and he only ran a
few infomercials anyway [32,000] and he only sold 850,000 copies of this high grade toilet paper and only made $37MM from them.

Kevin, we will miss you.

….and the runners up are……

I long ago gave up on the Today show, after they changed from news to Kardashian promos and then screwed the gorgeous Ann Curry. But a low point was reached when NBC were covering the flu epidemic and their usually trustworthy Dr Snidermann wasn’t available, so they instead trotted out Dr Oz. The oily Matt started by saying “Well, Dr Oz, I guess we now all think of you as…” wait for it…. “America’s Doctor”.

VOMIT VOMIT VOMIT VOMIT VOMIT VOMIT VOMIT VOMIT VOMIT

I continued watching like a zombie, perhaps because he was going to mix up bacteria and viruses [he didn’t], and he told America what any nurse with basic training would, wash your hands….etc etc.

As we all know, Oz is a cardiovascular surgeon who occasionally turned up on the Oprah show, where he did some entertaining things like showing you what your turds look like. Somehow, some idiot TV producer thought this could be translated into a full hour long daily show.

For a while it worked, but after not too long it was obvious that [a] they’d run out of ideas, and [b] Oz’s true calling as an alternative medicine/naturopath/mystic was starting to take over. This also extended to his guests, which included ultraquack dangerous lunatic Joseph Mercola. This twat believes for instance that eggplant cures cancer [I think he stole that one from Null?], the amalgams in our fillings leak out mercury and screw with our brains, but this is easily cured by eating algae, and that connecting your feet with wires to the floor while you sleep, “grounding”, improves your health. He tells audiences not to take pills for blood pressure, statins, or flu shots [that's me done for, then…].

For all this Dr Oz has now twice been awarded the Pegasus Award for disservices to the TV community by promoting quack medical practices, reflecting not just Mercola, but some guy who talks to dead people [I can
too, but it takes about eleven pints of Fat Tire], and for promoting faith healing and energy medicine [see below].

There have apparently been even more crazy guests since then, but I’m not an expert because I never watch. I do look at the info listings on the cable system however, and most of his shows are now all about weight loss remedies. They obviously cannot think of anything more to talk about.

Sadly however on 10/29/12 I made the massive mistake of accidentally tuning into the Dr Oz show on our local ABC station. The good Doctor was plugging Garcinia as a wonder weight loss product [even better than HBE] and an “expert” [a little Chinese girl in a white doctor coat] was telling the audience [a bunch of star-struck women] to “make sure it slays at least 50% HCA on the label”. Translation: take a product that is worthless, and make sure it contains hydroxycitric acid so you die of liver failure. Thank you Oprah.

In 2014 in Oregon an otherwise healthy 35-year old woman turned up at the local hospital with sky high blood pressure and a racing heart beat. She was stuttering and had clonus [violent muscle contractions]. It turned out she had taken Garcinia [60% HCA to get its healing effects as Dr Suzy Wong above recommends]. That night in hospital she had multiple visual hallucinations, but improved after a day or so on happy pills. It’s unclear as yet but it seems Garcinia can mess with your serotonin levels [making you feel less hungry], given that the symptoms look like seritonin toxicity.

Returning to Ozzie, I found this description on the Web:

“Dr. Mehmet Oz is America media’s newest tragedy. His story is tragic because he started as an honest physician until greed outweighed his need to tell the truth. Logic and rational thought have escaped from this one man conglomerate, to be replaced by a habitual liar. Oz appears to have very little respect for himself because his representations denigrate what physicians attempt to overcome every day. Baseless diets and ineffective medicinal products are at the core of this charlatan’s pitch. Deified by Oprah as America’s Physician, Oz is far removed from that title when one examines his work product. Exemplified by two commercial endeavors, Oz is an embarrassment to the medical profession. Raspberry Ketone purported by Oz to help lose weight has no validity in any medical literature review. Green Coffee Bean Extract another of Oz’s dubious backings for weight loss is supported by anecdotal stories from his hard core groupies not hard research. Oz has backed many products most have had a meteoric rise, but fell to earth with a quick thud. Second to none for getting his face on magazine covers, each representation carries a new discovery, diet or product that Oz backed or created but carries little substance when one looks below the pitch. Dishonesty is
the mainstay of a media that is starved for icons. Oz from all his bios is a very good surgeon, but as a diet specialist he is the proverbial disaster. Nearly every week he announces some new revelation or result of a personal study, yet as the ultimate sophist these news releases have minimal foundation. Oz came to my attention because of my prior involvement with weight loss programs and medications to help people lose extra pounds. Patients are the best teachers and they had noted minimal results from this media icon’s exhortations. My question to Dr. Oz is: How many people detoured from legitimate diet programs and medications to try your baseless diets and therapies? Further, are you representing shame products that may do more harm than good in order to continue a fame that is not deserved? Dr. Oz’s maneuvers through the world of the media can be summated in a few words; fake, phony and fraudulent. In the event he has backed products and diets that have worked they are clouded out by all the deceit he spews daily”.

Ouch.

More recently I hear Oz has got shirty about people pushing dogshit like raspberry ketones and green coffee beans stating he endorsed these on his show. The fact he spent an entire hour telling his stupid audience how well these work, doesn’t seem to count. Maybe he’s upset he’s not getting a commission. I’ve sent him some HBE to cheer him up.

By complete coincidence, as I was writing this I got a spam email about “Liquid Raspberry Ketone Burn”. This is the only weight loss system to be “approved, recommending [sic] and endorsed by Dr Oz”. Average results “based on studies approved by Dr Oz” are 56-80 pounds over 8 weeks [is that all?]. Wow, gotta get some.

On June 17th 2014 Congress invited the Great and Powerful Oz to Congress. To educate them on coffee bean green tea Garcinia wonder weight loss perhaps? No. I have an extremely low opinion of Congress, like most of us, but in fact they wanted to ask Oz why he promoted such complete SHITE.

The splendid Daily Beast got hold of this quickly, their reporter writing…”If I were a member of the United States Senate, there are a number of people whose opinions I would not solicit about how to handle various pressing problems. I wouldn’t ask Donald Sterling for
tips on improving race relations. Rick Perry wouldn’t be my first call when seeking information about combatting LGBT intolerance. And of course, I’d know better than to ask Jenny McCarthy for the facts about vaccines.

When contemplating how to solve a problem, seeking counsel from people who are *making the problem worse* doesn’t make a lot of sense. So why is Senator Claire McCaskill inviting Dr. Mehmet Oz to testify about weight-loss diet scams? Is she looking for tips in how to sell them?

According to a statement from Sen. McCaskill’s office, the cardiologist and Oprah Winfrey protégé will testify this coming Tuesday about sham obesity remedies, specifically green coffee. It seems that shortly after the product was featured on his show, a purveyor of this miracle weight-loss treatment started hawking it at $50 for a one-month supply.

The Beasties, obviously reading my splendid text here, pointed out that “Dr. Oz’s involvement with sham obesity treatments isn’t just limited to green coffee. He is also quite happy to shill for garcinia cambogia, which he calls the “newest, fastest fat-buster.” Never mind that no studies have shown a weight-loss benefit after 12 weeks of taking it, and several studies have demonstrated no such benefit at all. The only thing that seems supported by reliable evidence is that it probably won’t hurt you, which I guess is reason enough for Dr. Oz to fall all over himself promoting it”.

Our friends at the Beast continued….”The unmitigated claptrap that Dr. Oz promotes doesn’t stop at weight-loss treatments, either. He’ll help you choose “the right cleanse for your body type.” (Correct answer: none of them.) He’ll give you tips about creating a homeopathy starter kit, despite homeopathy being a preposterous pile of pseudoscientific malarkey. He’s featured Dr. Joseph Mercola, a man who (among other things) urges parents to skip the vitamin K shot that will prevent a potentially devastating bleeding disorder in their infants. Hey, wait a minute, I pointed that out at least a year ago…!

Dr Oz is a very smart man. When hauled up in front of the Congressional committee, he cleverly apologized for the latest dogshit – green coffee extract—and said he was sorry the FDA was forced to file a complaint against the companies pushing, *despite the fact that he himself had caused the problem in the first place*. Now that takes serious balls.

In fact, since his anointment by the kind and generous but sadly brain dead Oprah he quickly went off the rails, pushing questionable [er, no, let’s rephrase that, total shite] weight-loss treatments he’s described as “miracles”.

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Missouri Senator Clair McCaskill, Chair of the Senate Committee on Commerce, Science, and Transportation’s Subcommittee on Consumer Protection, led the discussion on the false and deceptive advertising of weight-loss products, as follows:

“When you feature a product on your show, it creates what has become known as ‘Oz Effect,’ dramatically boosting sales and driving scam artists to pop up overnight using false and deceptive ads to sell questionable products,” the Senator explained. “I’m concerned that you are melding medical advice, news and entertainment in a way that harms consumers.”

In his very carefully prepared opening comments, Dr. Oz said that even though he never mentions specific products or tells his millions of viewers what to buy, unscrupulous scammers use his words and likeness to peddle their often questionable products. “It’s a problem I have spent immeasurable time, effort, resources and money to combat,” lied said the doctor ingenuously. “I’m chagrined to say the problem has only increased exponentially… I am forced to defend my reputation every single day.”

Dr. Oz openly admitted that the weight-loss treatments he mentions on the show are frequently “crutches… You won’t get there without diet and exercise,” and that while he believes in the research he’s done, the research done on these treatments would probably not pass FDA muster. In other words, he has reservations about the science, whereas a kid with high school biology would regard the “science” as 100% made up. Since there essentially no research on the worthless Garcinia, one has to wonder why Oz stated “I believe in the research”. Of course, he believes Julius Oben as well [see above].

“If the only message I gave was to eat less and move more — which is the most important thing people need to do — we wouldn’t be very effectively tackling this complex challenge because viewers know these tips and they still struggle,” said the doctor. “So we search for tools and crutches; short-term supports so that people can jumpstart their programs.”

Sen. McCaskill quoted three statements that Oz had stated on his show: [1] that coffee beans are a “magic weight loss” for every body type. [2] that raspberry ketones are the “number one miracle”, and [3] Garcinia is the simple solution to bust your body fat for good [….not bad for a mild appetite suppressant…]

“I don’t get why you say this stuff, because you know it’s not true,” said McCaskill. “So why, when you have this amazing megaphone, and this amazing ability to communicate, why would you cheapen your show by saying things like that?”
Oz took great issue with the Senator’s assertion that he doesn’t believe in the treatments he endorses.

“I don’t think this ought to be a referendum on the use of alternative medical therapies,” said the doctor. “I’ve been criticized for having people coming on my show to talk about the power of prayer. As a practitioner, I can’t prove that prayer helps people survive an illness.”

Countered McCaskill, “It’s hard to buy prayer… prayer’s free.”

“I do personally believe in the items that I talk about on the show,” responded Dr. Oz, who acknowledged that statements he’s made in the past have encouraged scam artists and others looking to make a quick buck on people looking for an easy way to lose weight. He went on…”I intensively study them. I have given my family these products. … If you can lose a pound a week more than you would have lost by using them, it jumpstarts you and gets you going. I think it makes sense.”

Okay….whooooa….stop right there. So, Oz believes the science behind raspberry ketones and other nonsense. Moreover, he “intensely studies them”. What studies, there aren’t any, at least ones you wouldn’t wipe your arse with? Conclusion, he’s an idiot, and a fraud….

“I do think I’ve made it more difficult for the FTC,” he continued in a vast understatement. “In the intent to engage viewers, I use flowery language. I used language that was very passionate that ended up being not very helpful but incendiary and it provided fodder for unscrupulous advertisers.”

I use flowery language also. You are a wanker, Oz. Admittedly, now a very rich one.

The doctor says his show has curbed the use of such language in recent years. He also says there are products that he believes in but that he’s yet to discuss on the show, “because I know what will happen.”

The Senator was unmoved…. “The scientific community is almost monolithic against you in terms of the efficacy of the three products that you called miracles,” she told the doctor. “And when you call a product a miracle and it’s something that you can buy and it’s something that gives people false hope, I just don’t understand why you need to go there.”
“Why don’t you say... there isn’t magic in a bottle, that there isn’t a magic pill, that there isn’t some kind of magic root or acai berry or raspberry ketone that is going to all of a sudden make it not matter that you’re not moving an eating a lot of sugar and carbohydrates.”

In response, the doctor said he tells his audience that information all the time. “Then why would you say that something is a miracle in a bottle?” asked the Senator.

“My job, I feel, [squirmed Oz] on the show is to be a cheerleader for the audience and when they don’t think they have hope, when they don’t think they can make it happen, I wanna look — and I do look — everywhere… for any evidence that might be supportive to them, and gives [them] the confidence to keep going....”

Thanks to the good doctor, in fact the FTC has had to chase several makers of “green coffee extract” claiming that they allegedly violating the law by making unsubstantiated weight loss claims, failing to disclose that endorsers were paid for their positive feedback, and faking news articles and comments on their sites. According to the FTC’s complaint, shortly after the Dr. Oz piece the people behind Florida-based dietary supplement “Pure Green Coffee” began pumping out webpages selling their product, which provided misleading and unfounded weight loss claims in the form of faked news stories and bought-and-paid-for testimonials. One, called “WomensHealthPlus” not only pilfered the logo of the well-known Women’s Health Magazine, but also featured a report from “Staff reporter Helen Hasman,” who then gives a detailed rundown of just how much weight she lost using a green coffee extract. According to the lovely Helen, “Like us, here at WomensHealth, you might be a little doubtful about the effects of this diet, but you need to try it for yourself; the results are real. After conducting our own personal study we are pleased to see that people really are finding success with it (myself included).”

This is where it gets fun. The endorser, Helen Hasman, looks really cute in her photo. Problem is, the photo is actually that of a well known French newswoman --Mélissa Theuriau-- who has nothing to do with this scam whatsoever.
Decide for yourself….

But Dr Oz “believes the research”, as he said to the Senators. So, let’s go look at the research. One properly done trial was at Columbia in NYC, not so far from Oz’s hangout. 135 subjects were enrolled in a randomized, double-blind placebo-controlled trial. They either got HCA or sugar pill for twelve weeks and were kept on a high fiber low energy diet. Both groups lost weight over the 12-weeks, but there was no difference in body weight or body fat mass between the two groups. Obviously, Ozzie didn’t get around to reading/intensely study this particular research.

Suitably chastened, Dr Oz then appeared on the cover of “First for Women” magazine in August 2014 pushing Garcinia and promising 287% fat burning activity. I’m sure he checked this with Sen McCaskill first.

**More Ozisms, update 2015.**

As we noted above, Ozzie loves the word “miracle”. In simple medical parlance, such things happen maybe once a century, but on the *Dr Oz Show* they occur almost weekly. The most prominent rubbish was green coffee beans, the pathetic Garcinia, and raspberry ketones, but he also used the same word to describe other total shite including linoleic acids, safflower oil, hot pepper jelly [burns away fat, …burns… gettit…?]...reminiscent of *horny goat weed* in all those double the size of your penis supplements], and red palm oil [the miracle of 2013] apparently.

You’d think Ozzie’s colleagues would be delighted in his fame, and the fact he was Faculty at their University. In fact, great minds across the country would be equally proud of their physician colleague. Er…no…
Patting Ozzie on the back, they said that “manifesting an egregious lack of integrity by promoting quack treatments and cures in the interest of personal financial gain” was, you know, …er…, naughty, not cricket, etc……and called for his removal.

You’d think, being called out by, …well …. just about everybody…. Oz would go hide under a rock for a little while, go to a Fijian isle and spend some of the vast wealth his TV show has lined his trouser pockets with, but no. Instead, he struck back. He would “not be silenced” and “not give in”. Straight away his PR guys [he has the cash to buy the best, you should remember] said this was a conspiracy of scientists who do not like his view that GMO foods will cause all our children to be born with the heads of cows [drawing on the famous Dr Pearson who opposed Jenner’s use of the cowpox vaccine to cure smallpox [as it did, so I’m told]]. He followed this up by trashing all these detractors on his show. I didn’t watch.

One of the things Ozzie had peddled relentlessly was “green coffee bean extract”, the consumption of which turns you almost overnight into an emaciated stick very quickly. To help him, he invited an expert, a naturopath called Lindsey Duncan, onto his TV show. The good “Dr” Duncan provided websites where people could get more information, and if they wished, buy the GCBE products. Duncan sold about $50-million worth of GCBE, minus the $9-MM the FTC later fined him. That’s about $41-MM profit for a worthless product, a nice little earner. By the way, I’m being respectful addressing him as “Dr”, since he graduated from Clayton College, an institution the State of Texas lists as suppliers of “fraudulent and substandard degrees”. [Texas, like most States, also sensibly does not recognize “Doctors of Naturopathic Medicine” at all actually, plus the State publically stated Duncan is a massive charlatan whose only motivation is “to sell products in which he has a financial interest”].

The FTC uncovered some rather interesting emails. In one the Oz show people, by now desperate for anything to construct a show around, asked Duncan’s outfit if he knew anything about green coffee beans and if they had any effect on weight loss, and could Duncan appear on the Oz show as an expert? Duncan knew jack-sht nothing at all, but agreed anyway.

So, what do you think good old Lindsey did next?

He went straight out and bought a ton of GCBE raw material. Then, soon after the TV show ran, he sold it as a “miracle” [Oz’s words] as a weight loss supplement.
The FTC report had dug further. The Ozzie boys had made no effort whatsoever to make sure Duncan was legitimate and had appropriate training in medicine, nutrition, minor issues like that. [So, why did Oz contact him in the first place?]. The FTC thinks Duncan manipulated the script for the Oz show so that it emphasized the wonderful GCBE products out there [no doubt being frantically stuck in pill boxes at high speed in a Mexican garage somewhere by Duncan’s lackeys], so no conflict of interest there, obviously. He carefully emphasized the word “pure” and “400mg recommended dose” so anyone putting these key words into Google would hit his websites. He set up several others, linking to his primary site [which puts you on “page one” when you search Google apparently]. Having cornered the market ahead of time by buying up all the green coffee beans he could find, he quietly contacted Walmart, warning them ahead of time of the vast number of idiots seekers people who would suddenly want his products [the “Oz effect”] and they should be ready to put up the floor displays.

Despite the fact that Duncan knows as much about medical science as my goldfish, on the Oz show [4/26/2012] he said that the weight loss data for GCBE “has truly amazed me”. [In fact, the splendid no diet or exercise needed “clinical trial of coffee beans” Duncan promoted was utter dogshit – people on placebo lost as much weight as those eating GCBE -- and full of nonsense. Later, it was found to be completely fraudulent and the toilet scientific paper retracted]. [Remember also Ozzie’s testimony before Congress that he “passionately studies” the crap he promotes].

Sales of GCBE went through the roof.

But why stop there? Glowing reviews appeared on Amazon [people paid by Duncan]. Video testimonials were released featuring happy consumers [actually, his employees].

Breaking the first rule of natural herbal formulations in 2013 Ozzie did a clinical trial with his audience [he forgot to tell clinicaltrials.gov]. No statistical weight loss was seen. The same year a trial of GCBE by a Florida company was published that the FTC found was completely made up. This company was not associated with Oz, but highlighted his show showing similar benefits. In other words, muscling in on Duncan.

Ozzie has revealed to us at least 16 wonderful ways to easily shed the pounds. And yet, we are all getting fatter. [Me included]. One of us is lying.
Dr Oz’s biggest breakthrough of course is *Garcinia*, a magical breakthrough in medical science that is approved by Oprah, contains a very dodgy key chemical ingredient which seriously fucks with can interfere with the Krebs cycle in your mitochondria and can kill you, and which has no effect on weight loss whatsoever. What, you are pissed because you bought this crap medicinally incredible African wonderplant and you saw no benefit? And you got tummy ache as well? You obviously weren’t using it properly.

**Alien Oz Versus Predator Null.**

You could not find more opposite people on the planet than Oz and Null. Oz has had the finest medical training, and despite the fact he went into surgery, he must have spent a semester or so at Med School learning basic physiology, biochemistry, and physiology. And yet he pushes some of the most worthless crap on the planet, and still has the balls to say that he “studies them” and believes in them “passionately”. When finally confronted by his peers he imperiously struck back.

In contrast, Null went to a very dubious “College” where he got his PhD in guys taking a piss after drinking too much coffee. One can listen to his nonsense on Public Television and realize [in just a minute or so] that he knows essentially nothing about biology. Even worse, given Wikiwhatists today, he could learn all this stuff quite quickly if he could actually be bothered. But to his credit he does emphasize proper nutrition and exercise, and other than pushing his “blender” and his rather benign books, I cannot remember him ever pushing worthless crap in the vein of Garcinia, raspberry ketones, coffee beans, or all the other worthless donkeyshit advice Ozzie provides.

What can we make of this? I simply do not know. Oz is highly trained, and yet pushes the most disgusting rubbish after being anointed by the lovely Oprah. Can we really criticize him here? He’s making tons of cash as a surgeon, and while I’ve no idea what he is making from his really awful TV show, you could probably add at least a zero to his income. But TV shows, the utterly wonderful Ellen show aside, only have certain half lives, and I’m sure the marketing guys at ABC [or whoever] are noticing [a] the fact that his producers are becoming more and more desperate to find anything new to talk about, and [b] the increasing criticism, including from his scientific peers, as well as Senator Claire McCaskill’s committee, who roasted him alive.
Dr Oz has apparently [I cannot force myself to watch] has finished his shows berating our wonderful *natural herbal formulations* industry for taking his advice and selling products that …er… do nothing. His objective is to disseminate new cutting edge information to help people, and he never himself makes any money doing this.

I honestly do not know how to comment on this. One suspects that he must be getting some serious kick-backs [my Italian New York wife who understands these things far better says, *hey, is he stooopid??*], but there is no evidence of this as far as I know. It is one thing for me to stock-pile *hairy bollock extract*, then go on his show and mercilessly promote it for penile enlargement, then flood the internet and sell $40-50MM worth. You can get away with this once, maybe, but the “Oz effect” goes on almost continuously. Even if he’s not paying attention, surely his TV paymasters are? The more uncharitable amongst us might think that the whole lot of them are all in on this *very lucrative* scam.

*Rookie of the Year Award* goes to the splendid *Food Babe*, as she calls herself. Her actual name is Vani Hari, a telegenic 35-year old self-styled food “blogger and activist”. She has a BS degree in computer science, but clearly knows nothing whatsoever about chemistry or biological sciences, but this has not stopped her terrorizing the Food Industry, demanding that all sorts of preservatives or additives be removed. She even went after beer for chrisake. Apparently, her yardstick for whether a chemical in food is harmful or not comes down to whether she can pronounce its name. No, really. She goes after big companies and demands that all sorts of things be removed, and howls at the moon if they stand up to her. A writer recently came up with a term for this: “Quackmail”. Another dubbed her the “Jenny McCarthy of the food industry”. Ouch.

Before leaving, we should also mention the wonderful *Deepak Chopra*, who went off the rails decades ago with his quantum energy pretty lights transcendental meditation body mind *dosha* Ayurvedic aromatherapy living aura rubbish – quantum physics meets Hindu mysticism meets taking that bad acid everybody warned you about. Actually, I thought he was dead, but he showed up on Larry King the night after Michael Jackson got topped and told Larry he was Michael’s closest friend, guru, surrogate father, and confidant. Yes, of course he was. Some friend, letting this twerp fill Michael up with so much propofol he nearly embalmed him while still alive. And the Doc was on a $100K/month retainer! Holy crap. Talk about killing the Goose that laid the Golden Egg.
The whole idea of Indian “mysticism” is/was very attractive to Westerners in general. I remember my interest growing when the Beatles [who I was so lucky to grow up with] visited the ashram of Maharishi Al-Shifti Makeshlotsofmoney Yogi, who taught them all about levels of enlightenment while their cash followed like water into his ample wallet. The bubble soon burst however, particularly for Lennon, a very smart man who figured out that the Holy Man’s behavior was not that holy at all [including supposed celibacy]. The end came when the good Yogi demanded a tithe, specifically 25% of their next album’s profits, into his rather dodgy Swiss bank account. When asked by the Yogi why he was leaving John said “you’re the cosmic one, you should know…” [Chopra apparently came out of the Yogi’s program].

Regarding India, if you think that horseshit infomercials are solely the territory of the USA, think again. Last time I was in Bangalore I watched this TV show that featured this very slimy front-man [looking very much like the “baddie” in Bollywood movies] flogging this elixir for arthritis. In rolls Granny in her wheelchair and tells her tale of woe. The Greaser gives her a few drops of elixir and within minutes she’s tap dancing around the room [really], at which point the [fake] audiences goes into raptures. Rather more conventionally, I then saw a commercial where you drink green tea and instantly lose half your body weight, using a really huge woman in an ugly sari and a tiny, very pretty girl in a lovely sari as the required “before and after” photos. Namaste....
AN AFTERNOON WITH MY AUNT

I went to visit my Auntie; she was watching the Home Shopping Network. Good old Andy was on, selling phosphatidyl serine for healthy “brain support” at $184 for a big bottle. Andy was explaining that this compound has been shown in numerous studies to help support positive mood, promote learning and concentration, help support memory and overall cognitive function and also help support the body’s natural response to certain forms of stress. I explained to my Aunt that these “numerous studies” did not appear to actually exist [none in PubMed for example], that phosphatidyl serine is a component of normal cell membranes, that the body can make it when it needs it, and finally since every cell in the body has a cell membrane I’m not shelling out $184 for this compound to end up in the membrane of a cell in my toenail. Plus the connection with “stress” is totally beyond me. But my Aunt doesn’t care what I think and is going to buy it anyway. It’s on the telly, so it must be true, plus wouldn’t the Food and Drug Administration stop Andy if he was twisting reality even just a little bit?

She just loves HSC. She was watching it one day and I noticed they were selling telescopes. Just little 2-inch refractors with poorly made objective lens no doubt churned out in China somewhere, plus rickety wooden tripods, just complete crap. But the gusher then pole-axed me, holding up a highly detailed picture of the Sombrero Galaxy in Virgo he “had taken with this scope last night”. With no autoguider, anything? That’s impossible. Then I realized where I’d seen the photograph. It was one taken by the Hubble Space Telescope. Way to go, HSC!

[HSN are at least marginally better than QVC, one of the world’s largest multimedia retailers, who recently paid the FTC a fine of about $7MM, who were miffed about over 200 “shows” in which those splendid ladies sold a whole ton of worthless weight loss products. I suspect however that this was a flea-bite to QVC].

My Aunt loves her little dog. She believes that the Food and Drug Administration and USDA and those other agencies that keep our food chain “safe” would never allow dog food to be dangerous, plus she spends that extra bit of money to get dog food rich in protein to maintain vitality and support the immune system. I’m not going to tell her that many of the competitive dog foods are all made in the same factory in Canada, or that to make them high in protein they were “accidently” loaded with melanine and cyanuric acid [the latter a compound used to disinfect swimming pools], compounds rich in nitrogen. I’m not going to tell her that the arcane 13th century medieval assay the USDA uses to measure total protein in food actually measures total nitrogen instead of protein so that there could no protein in it and nobody would know. Well, nobody would have known if those dogs and cats didn’t grow crystals full of these two contaminants in their kidneys and promptly died. I’m not going to tell her that the Chinese company “accidently” mislabeled the wheat gluten it was supplying the dog food factory and all those chicken farms in the US, when it was really just wheat flour.
I’m sure adding melanine to the flour to make it look like it was “protein-rich” gluten was a total accident as well.

My Aunt feels the same way about all these supplements she gets at Wal-Mart, Walgreens, all those Vitamin Cabins/Shoppes/etc, or stores selling “orh-gharn-hic” Brussels’ sprouts. They must work, and they must be safe, or they wouldn’t sell them, would they? She often tells me to stop making fun of organic foods. Personally, I think my rendition of the Kaliforyah Arkhsent is pretty accurate, but I have to admit I myself buy organic products, although I don’t go out of my way for them. In fact, I find the whole thing rather paradoxical. Okay…so you’ve got Farmer A who is part of BigAgribusiness and he sprays his crops with pesticides, thus running up his production costs. Farmer B leaves everything completely to nature, and hence his production costs are lower. But at the store organic veggies are twice the price of regular. Shouldn’t it be the reverse? What I certainly will not tell my Aunt is the recent story where a bunch of chemists in England got hold of organic milk and regular milk. They subjected the two samples to all sorts of biochemical analyses but came to the conclusion that the two samples were completely identical in every conceivable way. Well, all except one. The organic milk was twice the price.

My Aunt always carefully reads the labels. She knows that there are hundreds of years of medical knowledge behind all those Chinese herbs. She gets upset with me when I joke that the study of the beneficial effects of plants and other naturally occurring biological materials is called “homeopathy”, an ancient and venerated field. The word comes from Latin meaning “use highly diluted sugar water at your home until you drop dead and the pathologist has to slice up your liver to see what killed you”. She is admittedly is a bit confused about the “Recommended Daily Dietary dosage not determined” stuff but is sure the manufacturers have figured out the precise dosage that she needs to take, and that this exact dose is in the tablet. She doesn’t believe this nonsense in the article I showed her that just because it is on the label that doesn’t mean it is actually in it. Of course it’s in it, it must be. So I didn’t bother to show her the report from the respected Consumers Lab organization that tested 13 ginkgo products and found the correct ingredients in only 6 of them. Three also contained lead. Okay, so you turn a little puce color.

Nor does she care that in 1976 a law came into play allowing the DS industry to put high doses of vitamins in their supplements without the Food and Drug Administration being able to stop them. She knows nothing about the studies showing anti-oxidant vitamins can kill you, for the simple reason that she reads Oprah magazine rather than the Journal of the American Medical Association. She has no clue that the Dietary Supplement Health and Education Act of 1994 was a descent into madness and opposed by just about everybody on the planet with an M.D., Ph.D., or nursing degree. Or that most of the rest of the world thought we had finally lost
our collective minds. She likes and trusts politicians and knows they would never do anything that could cause us harm, nor does she know that this Act was put up in opposition to an earlier proposal, written after people died horribly from taking the amino acid tryptophan as a supplement [to cure insomnia], or that its success was primarily due to Senator Hatch of Utah. If Hurley’s book on this is accurate, serious piles of cash moved over Utah table tops to facilitate this Act. The initial legislation was designed to make it illegal to make false claims on the label, MOST ULTIMATE FAT BURNER, etc, which is a bit strange because, as my Aunt strenuously pointed out to me, the makers of all the natural herbal formulations she buys would never lie, never make up testimonials, never cite “clinical trials” or “numerous studies” when in fact there were none. These people are HEALERS.

She doesn’t know that the DSHE Act was developed in a time honored way. Just like the legislation on oil exploration was written by lobbyists for the oil industry, or prescription drug legislation was written by lobbyists for the Pharmaceutical Industry, DSHEA was written by the boys from Utah. This resulted in supplements being regarded as FOOD, not as a drug. As a concession, the FDA bit about “not evaluated by the Food and Drug Administration” or “not designed to treat or cure” stuff was to be added to all the bottles of Hairy Bollock Extract, etc, and that the supplement could not claim to treat any disease. The latter constraint lasted about a microsecond and is abused almost universally. Most of the time it is subtle, implied, but every now and again a natural herbal formulation maker steps over a [very generous line] and somebody at the Food and Drug Administration or Federal Trade Commission finally gets pissed.

This takes the intellect of a pea to get around, given the state of the rules. Hairy Bollock Extract helps sustain healthy cholesterol, supports joint function, gives you an “impressive swelling of pride”, gives you bigger boobs, supports a healthy heart, etc [what are called structure/function claims] but since I’m not claiming that Hairy Bollock Extract cures sub-acute sclerosing endomyelopathy, none of you wankers at the Food and Drug Administration can touch me. You don’t know what’s in Hairy Bollock Extract and I’m not telling you, plus I’ve got “Dietary Supplement” written on the label so you can all piss off…..

My Aunt is sure that all those deaths from ephedra products were accidental and that they must have been caused by something else, like these guys using it along with Andro or something. Ephedra had been used for hundreds of years in Chinese Medicine with no problems, and these guys really know their stuff compared to those asses at evil BigParm. I didn’t bother to tell her that even the guy behind the DSHE Act thought it was too risky, or that the guys behind Metabolife, which sold a zillion dollars worth, were convicted methamphetamine makers and dealers, because she’d probably say that all that indicated was that they were good at chemistry. She votes Republican, and those nice young lads down at Metabolife were helping out her
Party with some needed cash. It was too bad they went bust and got sold to a company whose VP is Tony Robbins, the motivational speaker with the nine hundred shiny teeth who tells us to feel good about ourselves. Easy for him to say. I wonder if his company is now responsible for the hundreds of law suits Metabolife incurred after all those heart attacks and strokes [it subsequently came out that the makers had withheld over 14,000 reports of adverse events with this wonder product]. Probably not.

My Aunt loves baseball. I don’t. I respect the athleticism, but it’s the only game in the world slower than cricket. She was sad when that pitcher dropped dead in 2003, after taking ephedra to lose some weight. As the wonderful late Molly Ivins used to say “that’s the price of bidness”. Baseball is of course a game in which if you reach the top, you can be paid over $100M to hit that little ball with your little stick [3 out of 10 times]. And most of the time you do virtually nothing at all, other than stand around, gob, spit, scratch testicles, and try to maintain your neck posture with all those gold necklaces weighing you down. And if you need a little “enhancement”, that’s okay. After all they are FOODS. I used to play rugby, and I was good, but Barry Bond’s arms were bigger than my legs! [More recently, I read that everything in fact in Barry got much bigger. All except his testicles, which shrunk. Can’t think why?]. I remember the suspicions arising when all those East German female Olympic swimmers started to look like defensive ends on the New York Giants Football team. When I was a kid I used to run the 100m and 200m, so I loved the Olympics. But my bubble burst when that Canadian guy, Johnson, beat Carl Lewis in the 100m final. The photos showed the only black guy on the planet with bright yellow eyes. His body was so loaded with anabolic steroids his jaundiced liver was coming out of his ass. My Aunt takes DHEA so she will live longer, and doesn’t believe me when I say that this is an anabolic drug as well.

She points out, and here she has some justification, that she is far more convinced by ads run by the *natural herbal formulation* makers because it is so obvious these products are completely safe and have no side-effects. In contrast, pick a BigPharm ad on the telly at random...."do you suffer from chronic pain? Ask your Doctor if Wangollia is right for you…?" Cue picture of patient looking happier already. And then..."Wangollia is not right for everybody....do not take Wangollia if you are pregnant or expect to get pregnant, or if you are nursing. Certain bleeding problems have been reported. Do not use Wangollia if you are taking NSAIDS, are on an aspirin regimen, use fluoroquinolones, or take inhalants for asthma. If you experience mood changes, depression, or commit suicide, call your Doctor immediately". As she rightly notes, 95% of the entire ad talks about stuff that would instantly make you decide you don’t want to take these medications after all, plus the commercials have to be 45-sec long just to get all the side effect warnings in!
My Aunt has no clue that the entire medical infrastructure is going to hell in a hand basket. BigPharm is quietly getting out of the antibiotics business because it takes them $500M to develop a new drug and ten years to get it past the Food and Drug Administration and then people only take it for eight days or so. At a time where you get drug-resistant strep just by going to your local hospital, and when a new TB strain has appeared in Africa that is totally drug resistant and kills you in about three minutes, not to mention the guy who kindly flew it back to the US on a commercial airline so we can all enjoy it as well, this is splendid news. More and more companies are getting out of the vaccine business because of the risk that one in half a million kids will have an adverse reaction and then every ambulance chasing lawyer in town is banging on the door. The NIH can’t help in making new vaccines and drugs because they’re broke; they only have enough cash to fund one in about fifteen grants because a previous government decided that sending some of our finest young people to the Middle East to have their limbs blown off is far more important. Back in the year 1999BB [before Bush] the NIH spent $456M on funding 1761 new grants [20% success rate] and another $554M on 1772 grants [55% success rate] from established programs. In 2005 this had dropped to $351M for 970 new grants [9%] and $496M for 1262 established grants [30%]. Numbers for 2006 and 2007 were even further in the garbage can, and things had just about completely disintegrated by 2013 [NIH funding at 6-percentile]. 2014, well don’t even go there… Admittedly, Obama tried to turn things around with the ARRA grants at the NIH. I reviewed a couple of dozen of these myself, and was thoroughly pissed to then find out that the pay-line for these grants was 2.9-percentile. What a total friggling waste of my [and all the other reviewer’s] time. So the old guys with the knowledge to make new drugs are all throwing in the towel and retiring, and the bright young kids are disappearing off into industry. As for BigPharm, drugs either fall off the back of the truck or get illegally synthesized in China. These end up on the Internet where a ten year old can get a supply of Xanax without a prescription so he can get through fourth grade, so BigPharm is starting to question why they are spending $500M on drugs when they just fall off the back of the truck.

My Aunt thinks what Merck did with Vioxx was terrible but has little to say about products full of ephedra or synephrine. Vioxx was developed as a specific COX-2 inhibitor that would avoid the stomach upset problems other drugs have. Vioxx went through years of extensive safety and toxicity testing, to the satisfaction of the Food and Drug Administration, but a small number of people taking Vioxx for two or more years started to have heart problems. Without the time machine/cloning system [see Hoodwinked chapter] there is no way of knowing if these people would have had heart problems anyway, but this of course does not stop the lawyers. Forget the fact that Merck has prevented about a zillion childhood deaths by producing vaccines, they are EVIL and MUST BE PUNISHED. In contrast, I suspect Metabolife had zero “extensive safety and toxicity testing”, avoided the Food and Drug Administration because it is FOOD, and took no notice of the increasing reports of heart problems in its users. But look who is vilified the more.
My Aunt does not know that that the Food and Drug Administration only gets to hear about maybe 1% of adverse effects associated with dietary supplements. If she herself ever got a reaction to the veritable herb garden she consumes she’d blame it on the milk going stale instead. In fact, she is under the impression for some reason that the Food and Drug Administration does supervise these products. Like a lot of people she’s happy with her doctor, but has only limited medical insurance, so she’s pleased that all these additional natural products are available at the neighborhood Wal-Mart or Whole Foods. She’s a big believer in “self-medication”, but she doesn’t tell her doctor this in case he gets upset.

She is skeptical when I tell her that because of the DSHE Act makers of natural herbal formulations do not have to register their product with the Food and Drug Administration or get approval before selling it. The makers are responsible for safety, not the Food and Drug Administration, and the FDA can only act when people’s legs starting falling off. Let’s rephrase that… when sufficient legs have fallen off that the Food and Drug Administration can make an iron-clad case it was due to the natural herbal formulation. Of course by then you are down to one leg. Taking action is difficult; people take more than one product, and each is packed with multiple herbs and chemicals, so figuring out what actually is damaging you is not easy. This is why people refer to the FDA as a “tombstone” agency.

My Aunt merely points to the claims on the bottle. The natural herbal formulation is the “ultimate fat burner, advanced thermogenic technology, etc, more powerful than anything else ever made”, that “it boosts and stabilizes your immune system”, and that this is backed up by “numerous studies” and “extensive clinical trials”. She sniffed when I said that synephrine, the ephedra “replacement”, had already killed seven people. She showed me a webpage packed with glowing testimonials… “see”… If these were untrue the government would never allow them, would they?

She also pointed out to me that the natural herbal formulation labels are usually devoid of any scary possible adverse effects, proving even further that they are safe. In contrast, cigarette packets have stuff on them saying “you will die slowly and painfully in a very horrible and ugly way” but 25% of the population regard this as Food and Drug Administration guff. These people, she pronounced to me, “have the right to be wrong”.

She always buys one particular brand, mainly because it is cheaper. I pointed out to her that this was probably because the ingredient was below the recommended dose, in fact only 40% of products contain this and are more expensive as a result, but she was not impressed. I told her about a study in Canada in 2003 where they tested 54 brands of St.Johns Wort, one of her favorites, and found that only two products had actual levels of
the active ingredients even remotely close to what was claimed on the label. Another study the same year found that only half of Echinacea products had levels consistent with the label, and that six out of 59 products had no Echinacea in them at all. I reminded her about poor Anna Nicole Smith, who was taking human growth hormone as a “longevity drug” [that worked well then], and who was a spokesperson for TrimSpa, a natural herbal formulation weight loss remedy containing the appetite suppressant Hoodia. When it was subsequently found that TrimSpa contained zero Hoodia, the lawyers went into a frenzy of delight.

My Aunt strongly believes in celebrities. If Larry King or Paul Harvey endorses something it must be good. When I point out that Suzanne Sommers doesn’t actually have a Ph.D. in Reproductive Phytopharmacology and that shoving materials up your vagina on a daily basis doesn’t help anybody, she just smiles and says I don’t understand. I remember Tom Cruise bleating at Matt Lauer on the Today show about Scientology [Matt was very restrained, I’d have dropped the atrocious little wanker]. “You’ve not studied psychiatry, Matt, I have”. Maybe Tom went to Medical School on the planet Zarquon? I was waiting in anticipation for Tom to stick an E-meter on Matt and audit him. But my point is, why when a “celebrity” makes a pronouncement about something way beyond any possible stretch of their intellect, do lots of people believe everything they say? Not so long ago the part-carbon part-silicon lifeform Jenny McCartney railed against vaccines because she thinks they cause autism, so a bunch of Mom’s in Marin county stopped giving their babies DPT. Guess what next? The “P” got lose [pertussis] and killed lots of babies, something completely preventable. Measles is now on the rise as well….huge epidemic in Wales and parts of the UK because of the Wakefield nonsense, not to mention one of those looney [but very lucrative] Texas megachurches where vaccination gets sent by Satan.

My Aunt doesn’t realize that our government is overwhelmed. New natural herbal formulations come out almost daily. And they sell, just look at all the infomercials. Many keep “under the radar”, which as I explained above is a Golden Rule.

A classic case of not keeping under the radar was “Seasilver”. Seasilver was a “balanced whole food nutritional supplement”, with nutrients in a “natural liquid form your body recognizes”. Better I guess than a natural diesel form. The makers used a Proprietary Processing Technique that reduced Seasilver’s surface tension to enhance nutrient absorption [Huh?]. Just so you didn’t worry about this, Seasilver was Kosher and Vegan Certified. Hooray! The ingredients were aloe vera, a bunch of sea vegetables [seaweed, I guess], stuff called Pau D’Arco Herbal Extract [apparently a remedy for “smoker’s cough” [expectorant?] and grape and cranberry juice.
As you can see about the only use for this would be to liven up a margarita, but unfortunately the clowns at this *natural herbal formulation* company stated that it was clinically proven to treat or cure 650 diseases, including cancer and AIDS, and caused rapid, substantial, and permanent weight loss without dieting. Sorry, but only *Hairy Bollock Extract* can do that. The Federal Trade Commission alleged that the claims were false and unsubstantiated. Well, duh!

The FTC case was settled for $3M, but the owners only coughed up $1M, triggering a suspended $120M in fines. So now the company is $119,237,000 in the hole, plus interest. Silly, silly, silly. Know when to *do a runner* is a golden rule. So, Seasilver is gone, banned, completely unavailable, right? Well not quite. I looked a couple of years ago and I could only find 50,000 web hits on Google.

When I arrived I noticed Auntie had thrown out her toothpaste. She had seen the Sensodine adverts where it said that if you eat oranges or other citrus fruits the enamel on your teeth would dissolve and your teeth would fall out. The commercial featured lovely young ladies with beautiful teeth sitting in front of a carefully positioned bowl of citrus fruit. I tried to point out that we as a species have been eating these fruits for several millennia, plus the evidence for the toothpaste ads was where they got enamel cut off extracted teeth and soaked them in serious acid for a few days. The enamel slowly dissolved. Duh.

My Aunt has gotten to the age where she can’t remember where she put the car keys [and I’m going that way myself]. As a result she has signed up for the “Lumosity” brain-training programs, based on the science of “neuroplasticity”, and in addition has started taking Prevagen to support brain health and get really smart again. She’s not impressed when I tell her that Lumosity is “just games” – and really silly ones at that, there are far more challenging and fun game Apps available at the Apple Store. As for Prevagen, this is one of those times where you just sigh in exasperation. The makers claim that the active ingredient is a protein from jelly fish that improves mental sharpness when you take it [actually, the stuff in the pill is a recombinant protein made in a big vat]. Sadly, any 16-year old who knows the tiniest bit about biology would ask that if it’s a protein how does it get through your stomach without being digested into individual amino acids [the reason, for example, why you can’t take insulin protein orally], plus anybody with slightly more knowledge would ask that if by some miracle it actually survived and got into your blood, by what further miracle could it then cross the “blood-brain barrier” and actually get into your central nervous system. I told Auntie to stockpile her supply, because I have a feeling it will not be long before these crooks get shut down.

In fact, you have to sort of admire Mark Underwood, the genius behind Prevagen. He was sent a “warning letter” by the FDA nearly three years ago pointing out that it was naughty of him to suggest that Prevagen kept brain cells from dying, reversed brain damage after serious accidents, and prevented the early symptoms of
Alzheimer’s [way to go Mark]. The FDA were also a tiny bit peeved that over 1000 reports of adverse reactions – minor things like seizures, strokes, worsening of MS, heart arrhythmias, vertigo, fainting – were not reported. Still, that hasn’t stopped Prevagen from saturation advertising in 2015 – often at peak times on major stations [where’s the money coming for this I wonder?]

As one might imagine, the claims made by Lumosity has twisted the knickers of professional psychologists who have collectively pointed out that studies on “working memory training” provide no evidence that such approaches work. Up steps the dreaded meta-analysis, in this case crunching the results of 23 different studies. The conclusion of this analysis was that "the programs produced reliable short-term improvements in working memory skills. For verbal working memory, these near-transfer effects were not sustained at follow-up, whereas for visuospatial working memory, limited evidence suggested that such effects might be maintained. More importantly, there was no convincing evidence of the generalization of working memory training to other skills (nonverbal and verbal ability, inhibitory processes in attention, word decoding, and arithmetic). The authors conclude that memory training programs appear to produce short-term, specific training effects that do not generalize”. This study triggered the usual finger pointing, with the manufacturers playing the inevitable “if it doesn't work for, you are doing it wrong…”

Both my Aunt and I like a glass of wine. I prefer New Zealand white wines, she likes reds from Europe. This, she tells me, is because red wine contains a molecule called resveratrol which has wonderful health benefits, plus you can get more as a tablet at Whole Foods [it was just $89 a bottle, but this has dropped due to events below]. Early studies showed that this molecule could extend the lifespan of yeasts [yeasts everywhere delighted, etc] so it quickly got promoted as “anti-aging”, further established by its ability to lengthen the survival of fish by a few days [I’m not sure if wine was poured into the bowl or the fish dropped in the wine glass]. The field then exploded, primarily thanks to Dipak Das at the University of Connecticut, whose research [over 100 papers] showed not only multiple health benefits, especially on the cardiovascular system, but did much to explain the underlying mechanisms whereby resveratrol was actually working. Problem is, he made it all up. Still, this is one area I won’t stir things up with Auntie, because there are lots of other studies that suggest that resveratrol might, might, have beneficial effects. Actually, who really cares? I love wine, even the Mongolian vintages United serves up in their supposed “First Class”.

Soon after, I took a bit of a look at the literature. A 2014 study looked at old folk in Italy over a nine year period and related resveratrol metabolites in urine to overall health including CVD and cancer. There was no correlation. This paper was accompanied by an editorial commentary with the great title “Red wine and the French paradox: another beautiful theory murdered by the ugly facts”, which included a discussion about the
fact that our Gallic friends “ingest alcohol [moderately] continuously all day, every day”….. [the rest of us binge apparently].

My Aunt explains to me that I need to stop thinking of natural herbal formulations as “drugs by any other name”, not only because they are legally FOOD, but also because I’m locked into the “drug as a compound” context. These are usually plant extracts, often as not grown in some developing country, which contain multiple compounds. It’s the combination of these, she believes, that are the healing properties. If they need to use hexacyanomethane to extract these healing materials, that’s fine. She doesn’t believe me when I say that some producers have minimal or no quality control procedures [which would require that they buy expensive equipment] or attempt to detect and remove contaminants. Lots of plant extracts from India are loaded with heavy metals for example. I showed her a line from Hurley’s book: “the greatest danger…may lie not in the ingredients listed [on the labels] but those that are not”.

My Aunt is of course correct here, because legally dietary supplements and natural herbal formulations are FOOD. But the whole thing is a paradox to me. If natural herbal formulations have biological activity, then doesn’t that by definition make them drugs? But safety claims for natural herbal formulations are essentially based upon their minimal biological activity. Huh? If biological activity is minimal, how then could they even remotely work? How can they possibly be ultimate fat burners, for instance? This is classic having one’s cake and eating it.

She scoffs when I talk about “evidence-based” science. I tell her I’d be the first to congratulate natural herbal formulation makers if I thought they actually did proper trials, or if these claims they make are really true. But just look at the difficulty. People do lose weight, sometimes lots of it, from proper diet and rigorous exercise. Maybe there is a magic herb out there that is effective, but unfortunately it would be lost in the ultimate thermogenic weight loss without diet or exercise alligator filled swamp. In the end, only the Dietary Supplements industry that got us into this mess in the first place can get us out. After all, they’ve got the cash to “re-educate” our politicians – having bought them in the first place.

There are people out there that do try to educate the public. One such example is the “Healthy Weight Network” which releases its list of “winners” for the Annual Slim Chance Awards [in 2012, the 24th]. It’s really fun stuff to read, and I suggested to my Aunt that she should look it up.

I know she would be shocked…..shocked…but in the category of Worst Claim, the Slim Chance Award went to Dr. Oz [who else comes close] who touted raspberry ketone on The Dr. Oz Show as “the number one miracle in a bottle to burn your fat.” Dr. Oz claimed the product regulates the hormone adiponectin so fat in cells is
“broken up” more effectively to enable “fat burning.” This claim is of course massive bollocks, which of course then unleashed vast numbers of raspberry ketone products on the internet. Are there this number of raspberries on the planet?

One has to hand it to HWN, they certainly pick some good ones. In recent years they have skewered some real lulu’s. “Worst gimmick” recently went to one of those silly energy bracelets. This one was called the “Pure Energy Weight Loss plus Energy Band” accompanied with a testimonial that “I lost 83-pounds” This is only possible if you buy the one coated with HBE.

Of course an easy sitting target was our pals at Sensa, as we noted earlier. As we know the Sensa website and TV promos tell us we can lose an average of 30 pounds in six months without dieting, exercise, food restrictions or drastic lifestyle changes—by merely sprinkling these weight-loss crystals on our food. It claims that Sensa has been “clinically proven”, and we know this is the case given the 1400-plus clinical trial that…er…nobody….can actually find. Inevitably, class-action suits have been filed in California and Texas against the marketers of Sensa, and genius neurologist Hirsch. The California complaint states that (a) there is no competent and reliable scientific evidence to substantiate these claims and (b) an expert who reviewed Sensa’s main clinical study judged it “beyond worthless.” Seriously? Look at those 1400 people who lost all that weight…!

A Worst Product award, again almost inevitably, went to QuickTrim, who tout various products such as capsules, drinks, and so forth which detoxify, cleanse, and burn calories. Not mentioned on the labels are the kilograms of laxatives and tons of caffeine. A class action lawsuit against the makers alleges 28 different misrepresentations, but the really fun bit is the list of defendants, including lower primate Kim Kardashian and her sisters Khloe and Kourtney, who did the testimonials for this crap. If this goes to court and they get summoned, I’m certainly showing up!

My Aunt has heard of the ancient Chinese medical technique of Plar See Bow. You want a good example, she says, wagging her fingers at me… “You”, she says cynically. And she’s right. About fifteen years ago I had my knees scoped and repaired from all those years of kicking those rugby and soccer balls, not to mention kicking those players with the ball sadly making the fatal error of trying to go past me. As I described above, somebody recommended glucosamine and chondroitin tablets and so I started taking them. After six months or so I ran out and was too busy to get more so I stopped. I was asked if I felt they had helped. “You know what, I really think they did” was my response. Of course I didn’t have the cloning and time machine to actually prove this, but I sincerely felt that I had benefited. I tried to explain to my Aunt Betty that it is well established that the Plar See Bow effect is one of the most powerful psychological effects known, and that now, as more and more data
is finally accumulating, the benefits of glucosamine and chondroitin are starting to be seriously questioned, but she intends to start taking this if her knees get any worse. After all ..."you did".

She has read all those books about ancient, traditional and holistic alternative medical principles, and she loves the idea. She thinks Deepak Chopra is a very handsome man. She asks me why the two disciplines can’t be integrated? This is actually one of her cleverer ideas. She doesn’t believe me when I say that this has happened, in a sense at least. What I mean by this is that the general opinion of most laypeople is that you have BigPharm way over in left field making synthetic drugs while the Dietary Supplements and natural herbal formulation people are miles away in right field relying on the “healing power of soy” and so forth. This perception is absolutely not true at all. All members of the BigPharm community worth their salt have since time immemorial have had a division called Natural Products. In these labs scientists sort through millions of naturally occurring molecules made by plants, fungi [where penicillin comes from], bacteria, you name it, to see if any have any promise as antibiotics, cancer agents, the whole enchilada. A great example is Taxol, from the bark of a tree; another good example is ivermectin, used in animals and humans against parasitic diseases. The active ingredient in my blood pressure medication was isolated from the venom of a South American viper. So as you can see BigPharm does not discount “natural products” or “natural cures” in the very least. They merely hold them to very high standards, including efficacy, safety, toxicity, metabolism, effects on DNA, adverse interactions with other drugs, effects of long term usage and so on. Because these tests are very stringent, very few compounds make the finishing line. Do makers of Dietary Supplements do this? In fact, many of them do, it’s the ones that don’t that you have to worry about.

My Aunt is not impressed when I point out that one form of integration, so called “naturopathic medicine”, is totally fakery. This is a throw-back to a 19th century movement espousing the “healing power of medicine”. “Doctors” of naturopathic medicine would like you to believe they are real doctors [see above] but they cannot diagnose or treat [in the conventional sense] and most of our States don’t even recognize them. An article I found on PubMed described their “scientific literature” as ineffective, unethical, and potentially dangerous. My Aunt scoffs…”so then why are they called Doctor”?

She asked me why I was so insistent my kids got vaccinated. Her friend, a homeopath, is very dubious about doing this, while naturopaths consider it “unnatural, unnecessary, and elitist” [huh?]. He believes that “homeopathic immunization”, in which the actual agent is highly diluted and then stuck in you, works better. Obviously loves Oscillococcinum then. I point out that even if you diluted a solution of smallpox out until only one was left, it would still kill you, but she won’t believe me. I do know of a case where a girl used this
technique to protect her against malaria prior to going on vacation to an area full of those annoying mosquitos. Guess what happened to her?

My Aunt firmly believes in natural remedies, and that's that. The end. It's a bit like creationism versus evolution. The evangelicals despise the scientists, and the scientists cannot understand why the other lot completely refuse to accept the totally compelling data right in front of them. Any debate between them is an utter waste of time. But I still love my Auntie.