

# NUTRITION: WHO CAN YOU BELIEVE?

Rosemary Stanton

The more you read about human nutrition, the easier it is to join the ranks of the sceptics. There are three levels where I think we would do well to remain sceptical:

1. Blatantly silly products and claims
2. More subtle, almost reasonable, claims about products and supplements
3. The subtle public relations approach applied to scientific research

## Blatantly stupid products and claims

If you have a few hours of spare time and you watch late night commercial TV or do an Internet search on health or slimming products, there are hundreds of examples of products making outrageous claims. Some are also sold through persuasive multi-level marketing schemes or as they prefer to be known, network marketing. Let's start with a few of the many hundreds of slimming scams.

### Cellulite

Cellulite cures are immensely popular. There's not a shred of evidence they work and no theoretical reason why they should, but they are big sellers. Two years ago, a product called Cellasene which was developed by a shrewd businessman in Italy and imported by a company called Bionix, hit Australian pharmacies and health food shops.

The first 50,000 boxes - at \$59/box - sold in a matter of hours and television news showed pictures of women knocking each other over in their quest to get some of the scarce supplies. The first few hours of sales brought \$2.95 million. The next eagerly awaited shipment of 40,000 boxes brought another \$2.36 million. The instructions stated that you needed to take the pills for two months to see any results, and this gave the manufacturers time to get to the bank before the failure of the products was apparent.

Other products soon piggy-backed on the idea. Bioglan gave us Zellulean, Select Foods offered Cetelaplus, Natural Nutrition sold Cellufree. A couple of products - Cellutone and Inatone - cashed in by offering virtually the same collection of ingredients for

only \$39.95 a box. They all sold well while more Cellasene was being shipped to Australia. One product even claimed that two of their products - Grapeseed Plus and Evening primrose oil with added omega 3s - would work just as well.

There was no proof that any of the products worked at all, but that wasn't needed. Just the thought they might work was enough for women to give them a try. Most cellulite pills and lotions have now been added to the weight loss offerings from major health food and multilevel marketing products. The next big sales will probably have to wait until there is a new market that doesn't remember that the last lot were a rip-off.

Dr Sandra Cabot also writes about cellulite. Her web site says the essential fatty acids found in "good fat foods" will keep your fat cells soft and flexible and your cell membranes healthy, to enhance energy flow inside and across them, and keep the metabolic rate inside the fat cells at a high level. This will prevent the fat cells from becoming swollen and hard with excessive fats, keeping them soft, flexible and of normal size so cellulite cannot develop.

The cellulite 'cures' show that women are desperate to do something about the "toxic wastes trapped beneath their skin" as the fat on thighs and bottom is called. The market was already set by lots of expensive creams, scrubs and even loofahs that had been claiming they could remove 'unsightly' dimpling, orange peel or hail damage fat. Beauty editors had promoted the idea that such fat, which almost all women have as gravity, thin skin and lack of muscle tone takes their toll, was somehow evil and undesirable. Renoir and other great artists clearly didn't agree, but regarded it correctly - without the benefit of science- as a sign of female fertility. From the health viewpoint, the most problematic fat on the body is an excess of upper body fat. Thigh fat is stable and safe.

In the United States, the Federal Trade Commission has now filed a consumer protection lawsuit against Rexall Sundown Inc, a Florida company that imports and markets Cellasene there. The suit seeks class action status.

### Clay & plastic wraps

If you have been disappointed by the failure of cellulite pills, another blatantly stupid scam has taken its place. Women are now being urged to smear themselves in clay and then be wrapped in bandages like



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a mummy. This treatment is supposed to remove the 'toxins' that supposedly cause cellulite.

On their web site, Slender wrap, an American company with distributors in many countries, including Australia, asks:

Need some help with your "double chin?" Try our Chin Contouring Cream, and wear our "compression wrap" overnight. It's the liposuction alternative. It's easy, affordable, and private. Results begin to appear in just 4 to 5 weeks. Takes 1 minute a day.

Slender wrap also features their 'signature product'—the Body Wrap Kit™ which provides Sea Clay in many sizes, for your convenience. Order the size you need, depending on how many wraps you want to do. You can also get a sauna sweat suit to use with your body wrap, or use alone "to melt away some extra pounds".

You may or may not be comforted by their credentials, which state - "We subscribe to the Code of Ethics of The American Body Wrap Association".

There are also people who will wrap women in a type of plastic Gladwrap. Some women apparently pre-paid \$2,000 to \$16,000 each to the Swiss Slimming and Health Institute which operated at the Skygardens Centre in Pitt Street, Sydney. Fortunately, the Australian Competition and Consumer Commission took action against this company, but alas, its American managing director, Gerhard Hassler, had already taken off overseas with his girlfriend. The liquidator was at least able to auction off a carton of Special Wellness tea, some skin care exfoliating cream, intensive firming gel and nine cartons of Golightly Sugar-free Candy.

### **Slimming soap**

Much less expensive - only \$40 - is Aqili Seaweed Soap - "The Amazing Slim Soap That Works After 5 Days!!" Made from "the elixirs of undersea plants, including rare seaweeds, the soap provides defatting agents which penetrate to fat cells". It also contains

...many kinds of trace elements, vitamins and minerals which reduce the accumulation of serous fluid and astringe the skin. Given some time, you will be surprised to find that your body has become slender and your skin more tender. It makes your weight control simple, convenient, and relaxed.... allowing rapid fat loss reduction.

You may also be pleased to know it will also:

...enhance your skin texture, add richness to your hair, harden your nails and it has no known side effects.

They could have added - and no evidence of efficacy.

### **Lose weight while you sleep**

Or you can lose weight while you sleep with several products, including Protecol, a dietary supplement that requires no special diet and no exercise. Like most of these products, it is endorsed - by Ms TW from the Gold Coast, Mr RH from Nambour and several other equally well-known Queensland characters.

Like most of these products, this supplement contains a range of ingredients that might sound authentic - *collagen hydrolysate*, *L carnitine*, *sodium pyruvate*, *chromium picolinate* and others. In fact, contrary to the claims made, there is no evidence that any of these substances will cause weight loss. The product was developed by

Dr Andrew George Lavrent, a Doctor of Engineering from Berlin. The fine print about Protecol says it must be taken on an empty stomach before bed. In other words, the protocol means you will need to skip dinner. No real magic there and they further protect themselves by stating you must take the product for at least three months for it to be effective. By that time, you may well be sick of skipping dinner.

### **Magic water**

Before we leave these blatantly silly schemes, perhaps the strangest is for Infinity Ultima Thule Forms of Yellow Remember. (Yellow relates to the vibration of the earth realm.)\*

Located in Hunters Hill, Brisbane, Byron Bay and Madison USA, this company sells different 'empowered' waters for \$US40, vials, or any one of 150 different pendants for \$125 - \$500 that you can tap on a glass of water to initiate energy. They also offer a wand (which might come in handy for a bit of magic), and this will set you back another \$120, or you can get a pair of wands for \$200. There are testimonials from a range of people, including alternative health practitioners and one medical doctor who unfortunately does not include any contact details.

According to the many brochures, a book and a website ([www.infinity-formsofyellow.com](http://www.infinity-formsofyellow.com)):

this is an innovation so great that the mind shatters at its mere contemplation. Technology so vast that standing in awe is the only true response. An Age of Miracles Is Here.

There is also a claim that:

the products of Infinity are not the essentially empty promises of those that would beguile us with 'mysterious substances' and 'odd Practices.... Infinity delivers miracles. Initiate the 'touch of the hand of God' with the Divine instruments of Infinity.

There is also a cop-out if it doesn't work.

How anyone responds to that 'touch' is an unfathomable mystery and a matter of God's business. The limitation is not in the product, the limitation is in the reception. The products of Infinity are all perfect and would have a perfect result if there was perfect receptivity.

So if they don't work, don't blame us. You just weren't receptive enough.

Ultima Thule, by the way,

...is that place beyond which you cannot go.... It is a Universe 5,000 billion light years across, still growing as the need may arise, perched on the event horizon of a black hole that is to be found in the Heart of mankind on the right side, coincident with the pacemaker of the Heart. Ultima Thule is a way of Healing, by lifting an individual beyond the realm of the physics of their disease. Ultimately Ultima Thule may replace the entire cosmos, thus lifting everything to a New Age of Enlightenment.

### **More subtle areas where scepticism is needed**

There is a widespread belief fostered by those selling supplements that we can no longer rely on the food supply for nutrients. It is true that more people are suffering from obesity and diabetes than ever before, and

some cancers are increasing, but these are not caused by a lack of specific nutrients, although all may be related to poor choice of foods and lack of physical activity. The way to fix such problems is to choose foods wisely and move more. Supplements won't help.

If you choose a diet of jelly beans, potato chips, Coca Cola and fast foods, your diet will be inadequate in many ways. But it is not correct to claim today's fruits and vegetables no longer provide minerals and vitamins. Nor is it true that the stresses and strains of modern living mean we all need to take supplements.

Vitamin and mineral supplements are useful at times, for example, when someone is unable to consume normal foods because of genuine allergies, and in those recovering from starvation, alcoholism or the physical stress of surgery or severe injury. But analyses from university, government and private laboratories in many countries shows that fresh foods still contain nutrients. The variety of fresh foods now available actually makes it easier to choose a diet which provides all the body's nutritional needs.

But that won't sell supplements, so we have statements such as this:

Did anyone in your family ever develop a debilitating illness, or die with a recognised illness? If so, why risk waiting until you get to that stage of your own life to take action, when you could take steps to protect your health now?" (Nutraceutical *Health Bulletin* No 99-4cc).

In this bulletin, the solution was Tahitian noni juice, but many network marketers use similar arguments to sell vitamins, minerals, powdered prawn shells, brindleberry extract and various herbal concoctions.

There are also quizzes, such as this one from a NSW Doctor of Medicine who recommends and sells a range of supplements. Let's see how you rate. She asks if you suffer from:

- hormonal imbalances and deficiencies?
- chronic fatigue?
- mental fatigue?
- an overloaded immune system?
- poorly functioning cells?
- mood disorders?
- stress?
- menopausal problems?
- adrenal gland exhaustion?
- deficiencies of nutrients vital to the immune system?
- fibromyalgia?
- rapid ageing?
- or-are you simply slowing down and don't know why?

At least the questions asking if you have foggy brain, cravings for sweet foods, body odour, or an intolerance to alcohol seem to have been removed from the web site quiz.

Such ways to determine if you need a supplement would probably catch almost everyone, especially after a late night, and you are then a candidate for whatever the salesperson is offering.

Most of the spruiking for supplements of all kinds is sprinkled with lots of facts, making it difficult for the layperson to see where the facts stop and the fiction starts. Some of the pseudoscience offered sounds con-

vincing. For example, distributors of Mannatech gyconutritionals talk about 'cell-to-cell communication', and imply that it can't occur without their products. They discuss eight known monosaccharides and proceed to claim that only two of them - glucose and galactose - are included in nutrition texts because the other six are not overly abundant in today's typical modern diet. In fact, the monosaccharides Mannatech claim as essential components of their expensive supplements are produced in the body during the normal metabolism of carbohydrates and its conversion to a source of energy. There is current research into the value of certain oligosaccharides, especially those found in breast milk, but there is currently no known advantage of supplying monosaccharides ready-made in supplements.

The vast amount of printed and website material that accompanies these supplements sounds convincing and the founder of the laboratories that makes Mannatech products has a PhD in immunology and microbiology (although not nutrition). I have no doubt he believes in his supplements, but none have been subjected to properly controlled clinical trials published in regular peer-reviewed journals. Some are published in journals put together by like-minded people where studies have not use a placebo control or been double blind. The sales material may contain a formidable list of references, but if you examine these, most relate to statements of the type 'the incidence of diabetes is increasing in Australia' or even a general review of oligosaccharides. They do not relate to the use of the supplement in question.

I noticed that at least one of the authorities quoted for Mannatech products claims to be a member of the American Association of Nutritional Consultants. So was my late old English sheepdog, for whom I filled out the necessary name and address and paid the required fee some years ago.

For some products, sales people have been convinced by someone higher up the multi-level marketing chain that studies have been done. For example, capsules containing Juice Plus freeze-dried fruit and vegetable extracts were promoted in Australia with quotes from the *American Medical Review*, which the product distributors no doubt believed was a valid source of information. The 'studies' quoted to the sales people gave no details of the subjects, the methodology, the actual results or the name(s) of the researchers. It may sound authentic, but there is no such real journal. The same distributors were also given proof in the form of results of a pilot study on 15 people, with one of the researchers being a principal of the company selling the supplement. It was a particularly poor study with no control group, no blinding of researchers or participants and proved nothing except that the researchers did not seem to realise they would need to examine the participants' diets. Had any of them eaten a meal containing tomato paste or carrots, the results claimed would have been invalid. Those who publish material in the journal in question - *Current Therapeutics Research* - also pay a publication fee per page printed.

The JuicePlus product contains added vitamins, and as such may have some value, although regular vitamins cost only a fraction of the JuicePlus product. There is no evidence the supplement has enough fruits and vegetables to provide an alternative to the real thing.

Nor do I know why we need an alternative to fruits and vegetables. Part of their benefit is their bulk, which is filling and can displace junk foods. No pill can ever hope to fulfil this role.

To catch parents, JuicePlus also offers gummy bears, also called phyto bears - sweets that contains fruit and vegetable extracts. Their main ingredient is glucose syrup. The second ingredient is sugar. They are, as you might guess, expensive. But the sellers line is "Isn't your child's health worth it?" It can sound convincing to a parent whose child will undoubtedly prefer a phyto bear to a Brussels sprout.

There are also many modern slimming diets that sound convincing, especially when they tell you your excess weight is the fault of your liver or your metabolism or even your blood type. The Liver Cleansing Diet takes the blame away from those who have over-eaten and under-exercised and puts it on the liver.

The Eat Right 4 Your Type Diet says it's all due to your blood group and tries to convince readers they should abstain from certain foods for this reason. Its author Peter D'Adamo is a naturopathic physician who developed the theory with his brother James after 40 years of observation and research - none of which appears in any recognised scientific publications.

If you have blood group O, you are a descendant of the original hunters and gatherers and you should eat meat and foods rich in protein and fat. Blood group A only developed with the development of agriculture some 10,000 years ago, so they can add grains and carbohydrate foods. There is, of course, no proof for these crazy beliefs, but they 'work' because whatever your blood group, your diet is restricted in some way. You therefore eat less and lose weight.

A similar thing happens with the Dr Atkins Diet where you are allowed to eat unlimited amounts of fat, as long as you avoid carbohydrates. I'm not sure how you eat all the permitted butter and cream when everything you would normally put under such ingredients is prohibited - no bread, potatoes, desserts - not even any fruit is allowed. Because Atkins is a doctor of medicine, many people think he must be right. Atkins has also hopped onto the supplement bandwagon, which will probably bring in some cash which he might need to defend himself in the lawsuits which Americans will almost certainly bring against him when their health is damaged by his unbalanced recommendations.

The latest gimmick for dieters and everyone else are bars. You can get your breakfast in a bar, your snacks in a bar, your perfect Zone balanced diet in a bar (to match the Zone diet), Herbalife in a bar and Twinlab ironman bars in case you fancy yourself as an athlete. The ingredients in these bars don't cost much - they're largely stuck together with sugar syrup, but they're very profitable and will soon become as ubiquitous a fashion accessory as the water bottle.

### **The subtle public relations approach invades science**

Scientific research was once funded by government and scientists could publish their results without fear or favour. Increasingly, big business and its subtle PR machine is taking over laboratories and scientists

throughout the world. This makes many sceptics uncomfortable - with good reason it seems.

Academic-industry ties are common, and there is evidence that financial considerations bias the research record. The *Journal of the American Medical Association* has just published results of a study into possible conflicts of interest at 89 out of 100 of the major biomedical research institutions in the United States. Policies varied widely with 55% of policies requiring disclosures from all faculty members and the remaining 45% requiring them only from principal investigators. Most policies on conflict of interest lacked specificity about the kinds of relationships with industry that are permitted<sup>1</sup>.

The same issue of *JAMA* also carried results of an assessment of personal financial relationships between researchers and industry from the University of California between 1980 and 1999<sup>2</sup>. By 1999,

- 7.6% of faculty investigators reported personal financial ties with sponsors of their research
- 34% of disclosed relationships involved paid speaking engagements (range of payment \$250 - \$20,000/year)
- 33% involved consulting agreements between researcher and sponsor (range, <\$1000 - \$120,000 per year)
- 32% involved the investigator holding a position on a scientific advisory board or board of directors
- 14% involved equity ownership
- 12% involved multiple relationships.

When researchers are involved in financial relationships with their research sponsors, there may be no problems, but any sceptic worth his or her salt would consider the issue.

Let's look at two examples. The first is genetically modified foods. I don't know if they are good or bad, but I would be surprised if they are *all* good or all bad. Like most things, there are probably some that are truly useful to consumers and farmers and others that may be profitable for the companies that produce them, but create further inequities in world food supplies and some environmental costs. It is clear that GM crops have been introduced with subterfuge and lies, and with lots of company-sponsored tests - but not necessarily the right ones. Some well-meaning scientists may think of GM foods as a way to solve world food problems - as well they could. A sceptic might think a large company that exists to make profits for its shareholders would be more likely to sell rice with added beta carotene or iron to a company that will put it into a high-priced snack bar complete with health claims for consumers who can afford to pay high prices. The malnourished villager in East Timor who can't afford to pay is unlikely to benefit.

The huge agribusinesses that stand to make enormous profits from GM foods spend millions of dollars on public relations campaigns when a few tests that would set many people's minds at rest would cost a fraction of that. I am sceptical about why they keep coming back to the 1992 ruling from the FDA - whose commissioners incidentally have a 'revolving door

policy' with Monsanto executives - that said GM foods did not need toxicological testing because they were substantially equivalent to other foods. They may well be so in some cases, which makes me wonder why the companies stifle normal scientific debate as well as belittling any scientists who dare debate the issue from a different viewpoint. Some scientists who would prefer to take their research more slowly and who genuinely want to produce GM crops that would be truly useful for third world farmers are being hustled to produce particular crops that are profitable for animal feed in wealthy countries (where the money is). The rush is so the company funding their research can sign a contract with farmers for exclusive purchase of seeds and herbicides before their competitors.

Another example where we now need to remain sceptical concerns scientific papers on various foods or nutritional ingredients which are generated and funded by companies who stand to make a profit out of the results. The research may yield good results that favour the product involved. If so, the scientists will be expected (and often paid) to do the full PR campaign to plug the products. If their results are negative, they will not be published.

Some scientists will publish their papers in journals whose policy is to disclose financial arrangements. But when these same papers are quoted by other scientists or industry groups, the original financial disclosure is no longer mentioned. This occurs with reports funded by the sugar, artificial sweetener, dairy, edible oils and some cereal companies. A minimum 30% of CSIRO's funding comes from industry and 'he who pays the piper calls the tune'.

In some cases, research is replaced by a round table conference with the PR company present, seeking to generate a 'review paper' to use in a media campaign for a particular product. This happened recently in Australia with plant-based food guidelines for cancer followed by a review of colon cancer and red meat. No prizes for guessing who organised the 'review'.

In many cases, such research and the publicity that results may be genuinely useful. But as a sceptic, I want the funder identified.

I also want to know the affiliations of various organisations with valid sounding names. For example, it may help to know that the National Nutritional Foods Association represents the health food industry; the Associates for Research Into the Science of Enjoyment (ARISE) was set up by the tobacco industry; and the Council for Responsible Nutrition is a group of supplement manufacturers. Such fronts are not restricted to nutrition as we see in the Forest Protection Society, who are likely to cut down forests rather than save them or Clean Food Australia, which was set up by the Agricultural and Veterinary Chemicals Association.

There are many levels on which our sceptical antennae should be extended. I hope I have given you cause for thought - and some healthy scepticism.

## Notes

1. Cho MK, Shohara R, Schissel A, Rennie D. Policies on Faculty Conflicts of Interest at US Universities. *JAMA*. 2000;284:2203-2208

2. Boyd EA, Bero, LA. Assessing Faculty Financial Relationships With Industry A Case Study. *JAMA*. 2000;284:2209-2214.

## \* Editor's Note:

Some years ago Australian Skeptics was invited by *Today Tonight* (Ch7), to test claims made for this "magic" water, specifically that its use caused a rise in skin temperature. Readers may recall watching the unedifying sight of several prominent Skeptics, including the Editor of this journal, sitting stripped to the waist while ingesting "empowered" water, under the scrutiny of an infra red camera. These claims made by the company were supported by a (then) associate professor at Southern Cross University, whose field was sports physiology, and who had a PhD in a relevant subject.

Our skeptical antennae became fully aroused when we learned that the water would be "empowered" by placing a container of tap water near a computer terminal which was then connected to the Ultima Thule web site. We didn't believe that this was meant by the phrase "the power of the web".

The trial was conducted double blind, and showed that no one's skin temperature varied significantly after taking treated or untreated water. This appeared not to concern either the company representative, nor the associate professor, but it was a simple test of an extraordinary claim, and the result certainly did not surprise any of the Skeptics. We are somewhat nonplussed that such claims continue to be made and believed, when they have been so thoroughly exposed as arrant nonsense.

