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NUTRITIONISTS

So who are these people? The most important thing to recognize is that there is nothing new here. Although the contemporary nutritionism movement likes to present itself as a thoroughly modern and evidence-based enterprise, the food guru industry, with its outlandish promises, moralizing, and sexual obsessions, goes back at least two centuries.

Like our modern food gurus, the historical figures of nutritionism were mostly enthusiastic laypeople, and they all claimed to understand nutritional science, evidence, and medicine better than the scientists and doctors of their era. The advice and the products may have shifted with prevailing religious and moral notions, but they have always played to the market, be it puritan or liberal, New Age or Christian.

Graham crackers are a digestive biscuit invented in the nineteenth century by Sylvester Graham, the first great advocate of vegetarianism and nutritionism as we would know it, and proprietor of the world's first health food shop. Like his descendants today, Graham mixed up sensible notions, such as cutting down on cigarettes and alcohol, with some other, rather more esoteric, ideas

that he concocted for himself. He warned that ketchup and mustard, for example, can cause "insanity."

I've got no great beef with the organic food movement (even if its claims are a little unrealistic), but it's still interesting to note that Graham's health food store—in 1837—heavily promoted its food as being grown according to "physiological principles" on "virgin unvitiated soil." By the retro-ferishism of the time, this was soil that had not been "subjected" to "overstimulation" . . . by manure.

Soon these food marketing techniques were picked up by more overtly puritanical religious zealots like John Harvey Kellogg, one of the men behind the cornflake. Kellogg was a natural healer and health food advocate, promoting his granola bars as the route to abstinence, temperance, and solid morals. He ran a sanatorium for private clients, using "holistic" techniques, including that modern favorite colonic irrigation.

Kellogg was also a keen antimasturbation campaigner. He advocated exposing the tissue on the end of the penis, so that it smarted with friction during acts of self-pollution (and you do have to wonder about the motives of anyone who thinks the problem through in that much detail). Here is a particularly enjoyable passage from his *Treatment for Self-Abuse and Its Effects* (1888), in which Kellogg outlines his views on circumcision: "The operation should be performed by a surgeon without administering an anesthetic, as the brief pain attending the operation will have a salutary effect upon the mind, especially if it be connected with the idea of punishment. In females, the author has found the application of pure carbolic acid to the clitoris an excellent means of allaying the abnormal excitement."

By the early twentieth century a man named Bernard Macfadden had updated the nutritionism model for contemporary moral values and so became the most commercially successful health guru of his time. He changed his Christian name from Bernard to Bernarr, because it sounded more like the roar of a lion (this is com-

history. By 1950 Hadacol's sales were over twenty million dollars with an advertising spend of one million dollars a month, in 700 daily papers and on 528 radio stations. LeBlanc took a traveling medicine show of 130 vehicles on a tour of thirty-eight hundred miles through the South. Entry was paid in Hadacol bottle tops, and the shows started Groucho and Chico Marx, Mickey Rooney, Judy Garland, and educational exhibitions of scantily clad women illustrating "the history of the bathing suit." Dixieland bands played songs like "Hadacol Boogie" and "Who Put the Pep in Grandma?" The senator used Hadacol's success to drive his political career, and his competitors, the Longs—descended from the Democrat reformer Huey Long—panicked, launching their own patent medicine called Vita-Long. By 1951 LeBlanc was spending more in advertising than he was making in sales, and in February of that year, shortly after he sold the company—and shortly before it folded—he appeared on the TV show *You Bet Your Life* with his old friend Groucho Marx. "Hadacol," said Groucho, "what's that good for?" "Well," said LeBlanc, "it was good for about five and a half million dollars for me last year." The point I am making is that there is nothing new under the sun. There have always been health gurus selling magic potions, and there always will be.

Let's look at just one: Dr. Gillian Mckeith—a prime-time TV celebrity in the UK, now a rising star on BBC America, and a best-selling author with an empire of products. To some she is a guru. To me she is, as we shall see, a menace to the public understanding of science. She has a mainstream television nutrition show, yet she seems to misunderstand not nuances but the most basic aspects of biology, things that a schoolchild could put her straight on.

I first noticed Dr. Gillian Mckeith when a reader sent in a clipping about her first series on Channel 4. Mckeith was styled, very strikingly, as a white-coated academic and scientific authority on nutrition, a "clinical nutritionist," posing in laboratories, surrounded by test tubes, and talking about diagnoses and molecules.

pletely true), and ran a successful magazine titled *Physical Culture*, featuring beautiful bodies doing healthy things. The pseudoscience and the posturing were the same, but he used liberal sexuality to his advantage, selling his granola bars as a food that would promote a muscular, thrusting, lustful lifestyle in that decadent rush that flooded the populations of the West between the wars.*

More recently there was Dudley J. LeBlanc, a Louisiana senator and the man behind Hadacol ("I hadda call it something"). It cured everything, cost \$100 a year for the recommended dose, and to Dudley's open amazement, it sold in the millions. "They came in to buy Hadacol," said one pharmacist, "when they didn't have money to buy food. They had holes in their shoes and they paid \$3.50 for a bottle of Hadacol."

LeBlanc made no medicinal claims, but pushed customer testimonials to an eager media. He appointed a medical director who had been convicted in California of practicing medicine with no license and no medical degree. A diabetic patient almost died

when she gave up insulin to treat herself with Hadacol, but nobody cared. "It's a craze. It's a culture. It's a political movement," said *Newsweek*.

It's easy to underestimate the phenomenal and enduring commercial appeal of these kinds of products and claims throughout

*Interestingly, Mactadden's food product range was complemented by a more unusual invention of his own. The Peniscope was a popular suction device designed to enlarge the male organ that is still used by many today, in a modestly updated form. Since this may be your only opportunity to learn about the data on penis enlargement, it's worth mentioning that there is in fact some evidence that stretching devices can increase penis size. Gillian Mckeith's Wild Pink and Horny Goat Weed sex supplement pills, however, sold for "maintaining erections, orgasmic pleasure, ejaculation . . . lubrication, satisfaction, and arousal," could claim no such evidence for efficacy (and in 2007, after much complaining, these seedy and rather old-fashioned products were declared illegal by the Medicines and Healthcare Products Regulatory Agency, or MHRA). I mention this only because, rather charmingly, it means that Mactadden's Peniscope may have a better evidence base for its claims than either his own food products or Mckeith's Horny Goat penis pills.

She was also quoted here saying something a fourteen-year-old doing GCSE biology could easily have identified as pure nonsense: recommending spinach and the darker leaves on plants, because they contain more chlorophyll. According to McKeith, these are “high in oxygen” and will “really oxygenate your blood.” This same claim is repeated all over her books.

Forgive me for patronizing, but before we go on, you may need a little refresher on the miracle of photosynthesis. Chlorophyll is a small green molecule that is found in chloroplasts, the miniature factories in plant cells that take the energy from sunlight and use it to convert carbon dioxide and water into sugar and oxygen. Using this process, called photosynthesis, plants store the energy from sunlight in the form of sugar (high in calories, as you know), and they can then use this sugar energy to make everything else they need, like protein, and fiber, and flowers, and corn on the cob, and bark, and leaves, and amazing traps that eat flies, and cures for cancer, and tomatoes, and wispy dandelions, and conkers, and chilies, and all the other amazing things that the plant world has going on.

Meanwhile, you breathe in the oxygen that the plants give off during this process—essentially as a by-product of their sugar manufacturing—and you also eat the plants, or you eat animals that eat the plants, or you build houses out of wood, or you make painkiller from willow bark, or any of the other amazing things that happen with plants. You also breathe out carbon dioxide, and the plants can combine that with water to make more sugar again, using the energy from sunlight, and so the cycle continues.

Like most things in the story the natural sciences can tell about the world, it's all so beautiful, so gracefully simple, yet so rewardingly complex, so neatly connected—not to mention true—that I can't even begin to imagine why anyone would ever want to believe some New Age “alternative” nonsense instead. I would go so far as to say that even if we all are under the control of a benevo-

lent God, and the whole of reality turns out to come down to some flaky spiritual “energy” that only alternative therapists can truly harness, that's still neither so interesting nor so graceful as the most basic stuff I was taught at school about how plants work.

Is chlorophyll “high in oxygen”? No. It helps make oxygen. In sunlight. And it's pretty dark in your bowels; in fact, if there's any light in there at all, something's gone badly wrong. So any chlorophyll you eat will not create oxygen, and even if it did, even if Dr. Gillian McKeith, Ph.D., stuck a searchlight right up your bum to prove her point, and your salad began photosynthesizing, even if she insufflated your guts with carbon dioxide through a tube, to give the chloroplasts something to work with, and by some miracle you really did start to produce oxygen in there, you still wouldn't absorb a significant amount of it through your bowel, because your bowel is adapted to absorb food, while your lungs are optimized to absorb oxygen. You do not have gills in your bowels. Neither, since we've mentioned them, do fish. And while we're talking about it, you probably don't want oxygen inside your abdomen anyway. In keyhole surgery, surgeons have to inflate your abdomen to help them see what they're doing, but they don't use oxygen, because there's methane fart gas in there too, and we don't want anyone catching fire on the inside. There is no oxygen in your bowel.

So who is this person, and how did she come to be teaching us about diet? What possible kind of science degree can she have, to be making such basic mistakes that a schoolkid would spot? Was this an isolated error? A one-off slip of the tongue? I think not.

Actually, I know not, because as soon as I saw that ridiculous quote, I ordered some more McKeith books. Not only does she make the same mistake in numerous other places, but it seems to me that her understanding of even the most basic elements of science is deeply, strangely distorted. In *You Are What You Eat* (page 211) she says: “Each sprouting seed is packed with the nutritional energy needed to create a full grown healthy plant.”

This is hard to follow. Does a fully grown, healthy oak tree, a hundred feet tall, contain the same amount of energy as a tiny acorn? No. Does a fully grown, healthy sugarcane plant contain the same amount of nutritional energy—measure it in “calories” if you like—as a sugarcane seed? No. Stop me if I’m boring you, in fact, stop me if I’ve misunderstood something in what she’s said, but to me this seems like almost the same mistake as the photosynthesis thing, because that extra energy to grow a fully grown plant comes, again, from photosynthesis, in which plants use light to turn carbon dioxide and water into sugar and then into everything else that plants are made of.

This is not an incidental issue, an obscure backwater of McKeith’s work, nor is it a question of which “school of thought” you speak for: the “nutritional energy” of a piece of food is one of the most important things you could possibly think of for a nutritionist to know about. I can tell you for a fact that the amount of nutritional energy you will get from eating one sugarcane seed is a hell of a lot less than you’d get from eating all the sugarcane from the plant that grew from it. These aren’t passing errors or slips of the tongue (I have a policy, as it were, of not quibbling on spontaneous utterances, because we all deserve the chance to fluff); these are clear statements from published tomes.

If you watch McKeith’s TV show with the eye of a doctor, it rapidly becomes clear that even here, frighteningly, she doesn’t seem to know what she’s talking about. She examines patients’ abdomens on an examination couch as if she were a doctor and confidently announces that she can feel which organs are inflamed. But clinical examination is a fine art at the best of times, and what she is claiming is like identifying which fluffy toy someone has hidden under a mattress (you’re welcome to try this at home).

She claims to be able to identify lymphedema, swollen ankles from fluid retention, and she almost does it right; at least, she kind of puts her fingers in roughly the right place, but only for about half a second, before triumphantly announcing her findings. If you’d

like to borrow my second edition copy of Epstein and de Bono’s *Clinical Examination* (I don’t think there were many people in my year at medical school who didn’t buy a copy), you’ll discover that to examine for lymphedema, you press firmly for around thirty seconds, to gently compress the exuded fluid out of the tissues, then take your fingers away and look to see if they have left a dent behind.

In case you think I’m being selective, and quoting only McKeith’s most ridiculous moments, there’s more: the tongue is “a window to the organs—the right side shows what the gallbladder is up to, and the left side the liver.” Raised capillaries on your face are a sign of “digestive enzyme insufficiency—your body is screaming for food enzymes.” Thankfully, Gillian can sell you some food enzymes from her website. “Skid mark stools” (she is obsessed with feces and colonic irrigation) are “a sign of dampness inside the body. If your stools are foul-smelling, you are “sorely in need of digestive enzymes.” Again. Her treatment for pimples on the forehead—not pimples anywhere else, mind you, only on the forehead—is a regular enema. Cloudy urine is “a sign that your body is damp and acidic, due to eating the wrong foods.” The spleen is “your energy battery.”

So we have seen scientific facts—on which Dr. McKeith seems to be mistaken. What of scientific process? She has claimed, repeatedly and to anyone who will listen, that she is engaged in clinical scientific research. Let’s step back a moment, because from everything I’ve said, you might reasonably assume that McKeith has been clearly branded as some kind of alternative therapy maverick. In fact, nothing could be further from the truth. This doctor has been presented, consistently, up front on television, on her website, by her management company and in her books, as a scientific authority on nutrition.

Many watching her TV show quite naturally assumed she was a medical doctor. And why not? There she was, examining patients, performing and interpreting blood tests, wearing a white coat, surrounded by test tubes, “Dr. McKeith,” “the diet doctor,”

giving diagnoses, talking authoritatively about treatment, using complex scientific terminology with all the authority she could muster, and sticking irrigation equipment nice and invasively right up into people's rectums.

Now, to be fair, I should mention something about the doctorate, but I should also be clear: I don't think this is the most important part of the story. It's the funniest and most memorable part of the story, but the real action is whether McKeith is capable of truly behaving like the nutritional science academic she claims to be.

And the scholarliness of her work is a thing to behold. She produces lengthy documents that have an air of "referenciness," with nice little superscript numbers, that talk about trials, and studies, and research, and papers . . . but when you follow the numbers, and check the references, it's shocking how often they aren't what she claimed them to be in the main body of the text, or they refer to funny little magazines and books, such as *Delicious*, *Creative Living*, *Healthy Eating*, and my favorite, *Spiritual Nutrition and the Rainbow Diet*, rather than proper academic journals.

She even does this in the book *Miracle Superfood*, which, we are told, is the published form of her Ph.D. "In laboratory experiments with anemic animals, red-blood cell counts have returned to normal within four or five days when chlorophyll was given," she says. Her reference for this experimental data is a magazine titled *Health Store News*. "In the heart," she explains, "chlorophyll aids in the transmission of nerve impulses that control contraction," a statement that is referenced to the second issue of a magazine titled *Earthletter*. Fair enough, if that's what you want to read—I'm bending over to be reasonable here—but it's clearly not a suitable source to reference that claim. This is her Ph.D., remember.

To me this is cargo cult science, as Professor Richard Feynman described it more than thirty years ago, in reference to the similarities between pseudoscientists and the religious activities on a few small Melanesian islands in the 1950s:

During the war they saw aeroplanes with lots of good materials, and they want the same thing to happen now. So they've arranged to make things like runways, to put fires along the sides of the runways, to make a wooden hut for a man to sit in, with two wooden pieces on his head as headphones and bars of bamboo sticking out like antennas—he's the controller—and they wait for the aeroplanes to land. They're doing everything right. The form is perfect. It looks exactly the way it looked before. But it doesn't work. No aeroplanes land.

Like the rituals of the cargo cult, the form of McKeith's pseudo-academic work is superficially correct: the superscript numbers are there, the technical words are scattered about, she talks about research and trials and findings; but the substance is lacking. I actually don't find this very funny. It makes me quite depressed to think about her, sitting up, perhaps alone, studiously and earnestly typing this stuff out.

McKeith's Ph.D. is from Clayton College of Natural Health, a nonaccredited correspondence course college, which, unusual for an academic institution, also sells its own range of vitamin pills through its website. Her master's degree is from the same august institution. At current Clayton prices, it's \$6,400 in fees for the Ph.D., and less for the master's, but if you pay for both at once you get a \$300 discount (and if you really want to push the boat out, Clayton has a package deal: two doctorates and a master's for \$12,100 all in).

On her CV, posted on her management website, McKeith claimed to have a Ph.D. from the rather good American College of Nutrition. When this was pointed out, her representative explained that this was merely a mistake, made by a Spanish work experience kid who posted the wrong CV. The attentive reader may have noticed that the very same claim about the American College of Nutrition was also in one of her books from several years previously.

In 2007 a regular from my website—I could barely contain my pride—took McKeith to the Advertising Standards Authority, complaining about her using the title “doctor” on the basis of a qualification gained by correspondence course from a nonaccredited American college, and won. The ASA came to the view that McKeith’s advertising breached two clauses of the Committee of Advertising Practice code: “substantiation” and “truthfulness.”

Dr. McKeith sidestepped the publication of a damning ASA draft adjudication at the last minute by accepting—“voluntarily”—not to call herself doctor in her advertising anymore. In the news coverage that followed, McKeith suggested that the adjudication was concerned only with whether she had presented herself as a medical doctor. Again, this is not true. A copy of that draft adjudication has fallen into my lap—imagine that—and it specifically says that people seeing the ads would reasonably expect her to have either a medical degree or a Ph.D. from an accredited university.

She even managed to get one of her corrections into a profile on her in my own newspaper, *The Guardian*:

Doubt has also been cast on the value of McKeith’s certified membership of the American Association of Nutritional Consultants, especially since *Guardian* journalist Ben Goldacre managed to buy the same membership online for his dead cat for \$60. McKeith’s spokeswoman says of this membership: “Gillian has ‘professional membership,’ which is membership designed for practicing nutritional and dietary professionals, and is distinct from ‘associate membership,’ which is open to all individuals. To gain professional membership Gillian provided proof of her degree and three professional references.”

Well. My dead cat Hettie is also a “certified professional member” of the American Association of Nutritional Consultants. I

have the certificate hanging in my bathroom. Perhaps it didn’t even occur to the journalist that McKeith could be wrong. More likely, in the tradition of nervous journalists, I suspect that she was hurried, on deadline, and felt she had to get McKeith’s “right of reply” in, even if it cast doubts on—I’ll admit my beef here—my own hard-won investigative revelations about my dead cat. I mean, I don’t sign my dead cat up to bogus professional organizations for the good of my health, you know. It may sound disproportionate to suggest that I will continue to point out these obfuscations for as long as they are made, but I will, because to me there is a strange fascination in tracking their true extent.

If you contact the Australasian College of Health Sciences (Portland, Oregon), where McKeith has a “pending diploma in herbal medicine,” it says it can’t tell you anything about its students. If you contact Clayton College of Natural Health to ask where you can read her Ph.D. it says you can’t. What kinds of organizations are these? If I said I had a Ph.D. from Cambridge, U.S. or U.K. (I have neither, and I claim no great authority), it would take you only a day to find it in their library.

For me the most concerning aspect of the way she responds to questioning of her scientific ideas is exemplified by a story from 2000, when Dr. McKeith approached a retired professor of nutritional medicine from the University of London. Shortly after the publication of her book *Living Food for Health*, John Garrow wrote an article about some of the bizarre scientific claims Dr. McKeith was making, and his piece was published in a fairly obscure medical newsletter. He was struck by the strength with which she presented her credentials as a scientist (“I continue every day to research, test and write furiously so that you may benefit . . .” etc). He has since said that he assumed—like many others—that she was a proper doctor. Sorry: a medical doctor. Sorry: a qualified, conventional medical doctor who has attended an accredited medical school.

In this book McKeith promised to explain how you can “boost your energy, heal your organs and cells, detoxify your body, strengthen your kidneys, improve your digestion, strengthen your immune system, reduce cholesterol and high blood pressure, break down fat, cellulose and starch, activate the enzyme energies of your body, strengthen your spleen and liver function, increase mental and physical endurance, regulate your blood sugar, and lessen hunger cravings and lose weight.”

These are not modest goals, but her thesis was that they all were possible with a diet rich in enzymes from “live” raw food—fruits, vegetables, seeds, nuts, and especially live sprouts, which are “the food sources of digestive enzymes.” She even offered “combination living food powder for clinical purposes,” in case people didn’t want to change their diets, and explained that she used this for “clinical trials” with patients at her clinic.

Garrow was skeptical of her claims. Apart from anything else, as emeritus professor of human nutrition at the University of London, he knew that human animals have their own digestive enzymes, and any plant enzyme you eat is likely to be digested like any other protein. As any professor of nutrition, and indeed many high school biology students, could tell you.

Garrow read McKeith’s book closely, as have I. These “clinical trials” seemed to be a few anecdotes about how incredibly well her patients felt after seeing her. No controls, no placebo, no attempt to quantify or measure improvements. So Garrow made a modest proposal in a fairly obscure medical newsletter. I am quoting it in its entirety, partly because it is a rather elegantly written exposition of the scientific method by an eminent academic authority on the science of nutrition, but mainly because I want you to see how politely he stated his case:

I also am a clinical nutritionist, and I believe that many of the statements in this book are wrong. My hypothesis is that any benefits which Dr. McKeith has observed in her

patients who take her living food powder have nothing to do with their enzyme content. If I am correct, then patients given powder which has been heated above 118°F for twenty minutes will do just as well as patients given the active powder. This amount of heat would destroy all enzymes, but make little change to other nutrients apart from vitamin C, so both groups of patients should receive a small supplement of vitamin C (say 60mg/day). However, if Dr. McKeith is correct, it should be easy to deduce from the boosting of energy, etc., which patients received the active powder and which the inactivated one.

Here, then, is a testable hypothesis by which nutritional science might be advanced. I hope that Dr. McKeith’s instincts, as a fellow-scientist, will impel her to accept this challenge. As a further inducement I suggest we each post, say, £1,000, with an independent stakeholder. If we carry out the test, and I am proved wrong, she will of course collect my stake, and I will publish a fulsome apology in this newsletter. If the results show that she is wrong I will donate her stake to HealthWatch [a medical campaigning group], and suggest that she should tell the 1,500 patients on her waiting list that further research has shown that the claimed benefits of her diet have not been observed under controlled conditions. We scientists have a noble tradition of formally withdrawing our publications if subsequent research shows the results are not reproducible—don’t we?

Sadly, McKeith—who, to the best of my knowledge, despite all her claims about her extensive “research,” has never published in a proper “Pubmed-listed” peer-reviewed academic journal—did not take up this offer to collaborate on a piece of research with a professor of nutrition. Instead Garrow received a call from McKeith’s lawyer husband, Howard Magaziner, accusing him of defamation and prom-

ising legal action. Garrow, an immensely affable and relaxed old academic, shrugged this off with style. He told me, "I said, 'Sue me.' I'm still waiting." His offer of one thousand pounds still stands.

But there is one vital issue we have not yet covered. Because despite the way McKeith seems to respond to criticism or questioning of her ideas, the unusually complicated story of her qualifications, despite her theatrical abusiveness, and the public humiliation pantomime of her shows, in which the emotionally vulnerable and obese cry on television, despite her apparently misunderstanding some of the most basic aspects of high school biology, despite doling out "scientific" advice in a white coat, despite the dubious quality of the work she presents as somehow being of "academic" standard, despite the unpleasantness of the food she endorses, there are still many who will claim: "You can say what you like about McKeith, but she has improved the people's diet."

On this, let me be very clear, for I will say it once again: anyone who tells you to eat more fresh fruits and vegetables is all right by me. If that were the end of it, I'd be nutritionists' biggest fan, because I'm all in favor of "evidence-based interventions to improve the nation's health," as they used to say to us in medical school.

Let's look at the evidence. Diet has been studied very extensively, and there are some things that we know with a fair degree of certainty: there is reasonably convincing evidence that having a diet rich in fresh fruit and vegetables, with natural sources of dietary fiber, avoiding obesity, moderating one's intake of alcohol, cutting out cigarettes, and taking physical exercise are protective against such things as cancer and heart disease.

Nutritionists don't stop there, because they can't; they have to manufacture complication, to justify the existence of their profession. These new nutritionists have a major commercial problem with the evidence. There's nothing very professional or proprietary about "Eat your greens," so they have had to push things further. But unfortunately for them, the technical, confusing, overcomplicated,

tinkering interventions that they promote—the enzymes, the exotic berries—are very frequently not supported by convincing evidence.

That's not for lack of looking. This is not a case of the medical hegemony's neglecting to address the holistic needs of the people. In many cases the research has been done and has shown that the more specific claims of nutritionists are actually wrong. The fairy tale of antioxidants is a perfect example. Sensible dietary practices, which we all know about, still stand. But the unjustified, unnecessary overcomplication of this basic dietary advice is, to my mind, one of the greatest crimes of the nutritionist movement. As I have said, I don't think it's excessive to talk about consumers paralyzed with confusion in supermarkets.

But what can you do? There's the rub. The most important take-home message with diet and health is that anyone who ever expresses anything with certainty is basically wrong, because the evidence for cause and effect in this area is almost always weak and circumstantial, and changing an individual person's diet may not even be where the action is.

What is the best evidence on the benefits of changing an individual person's diet? There have been randomized controlled trials, for example, in which you take a large group of people, change their diets, and compare their health outcomes with another group, but these have generally shown very disappointing results.

The Multiple Risk Factor Intervention Trial was one of the largest medical research projects ever undertaken in the history of mankind, involving over 12,866 men at risk of cardiovascular events, who went through the trial over seven years. These people were subjected to a phenomenal palaver: questionnaires, twenty-four-hour dietary recall interviews, three-day food records, regular visits, and more. On top of this, there were hugely energetic interventions that were supposed to change the lives of individuals, but which by necessity required that whole families' eating patterns were transformed: so there were weekly group information sessions

for participants—and their wives—individual work, counseling, an intensive education program, and more. The results, to everyone's disappointment, showed no benefit over the control group (who were not told to change their diet). The Women's Health Initiative was another huge randomized controlled trial into dietary change, and it gave similarly negative results. They all tend to.

Why should this be? The reasons are fascinating, and a window into the complexities of changing health behavior. I can discuss only a few here, but if you are genuinely interested in preventive medicine—and you can cope with uncertainty and the absence of quick-fix gimmicks—then may I recommend you pursue a career in it, because you won't get on television, but you will be both dealing in sense and doing good.

The most important thing to notice is that these trials require people to turn their entire lives upside down and for about a decade. That's a big ask; it's hard enough to get people signed up for participating in a seven-week trial, let alone one that lasts seven years, and this has two interesting effects. First, your participants probably won't change their diets as much as you want them to, but far from being a failing, this is actually an excellent illustration of what happens in the real world: individual people do not, in reality, change their diets at the drop of a hat, alone, as individuals, for the long term. A dietary change probably requires a change in lifestyle, shopping habits, maybe even what's in the shops, how you use your time; it might even require that you buy some cooking equipment, change how your family relates to one another, change your work style, and so on.

Second, the people in your "control group" will change their diets too; remember, they've agreed voluntarily to take part in a hugely intrusive seven-year-long project that could require massive lifestyle changes, so they may have a greater interest in health than the rest of your population. More than that, they're also being weighed, measured, and quizzed about their diet, all at regular

intervals. Diet and health are suddenly much more at the forefront of their minds. They will change too.

This is not to rubbish the role of diet in health—I bend over backward to find some good in these studies—but it does reflect one of the most important issues, which is that you might not start with goji berries, or vitamin pills, or magic enzyme powders, and in fact, you might not even start with an individual's changing his or her diet. Piecemeal individual life changes, which go against the grain of your own life and your environment, are hard to make and even harder to maintain. It's important to see the individual—and the dramatic claims of all lifestyle nutritionists, for that matter—in a wider social context.

Reasonable benefits have been shown in intervention studies—like the North Karelia Project in Finland—in which the public health gang have moved themselves in lock, stock, and barrel to set about changing everything about an entire community's behavior, liaising with businesses to change the food in shops, modifying whole lifestyles, employing community educators and advocates, improving health care provision, and more, producing some benefits, if you accept that the methodology used justifies a causal inference. (It's tricky to engineer a control group for this kind of study, so you have to make pragmatic decisions about study design, but read it online and decide for yourself: I'd call it a large and promising case study.)

There are fairly good grounds to believe that many of these lifestyle issues are in fact better addressed at the societal level. One of the most significant "lifestyle" causes of death and disease, after all, is social class. To take a concrete example, in the Bronx of New York City, a poor multiracial borough where the average salary is around \$35,000, 25 percent of the population is obese and 27 percent have serious health problems. Just across the East River in Manhattan, where the billionaire Michael Bloomberg lives, surrounded by other wealthy and middle-class people, just 15 percent are obese and 20 percent have serious health problems.

The reason for this phenomenal disparity in health is not that the people in Manhattan are careful to eat goji berries and a handful of Brazil nuts every day, thus ensuring they're not deficient in selenium, as per nutritionists' advice. That's a fantasy and in some respects one of the most destructive features of the whole nutritionist project; it's a distraction from the real causes of ill health, but also—do stop me if I'm pushing this too far—in some respects, a manifesto of right-wing individualism. You are what you eat, and people die young because they deserve it. *They* choose death, through ignorance and laziness, but *you* choose life, fresh fish, olive oil, and that's why you're healthy. You're going to see eighty. You deserve it. Not like *them*.

Back in the real world, genuine public health interventions to address the social and lifestyle causes of disease are far less lucrative, and far less of a spectacle, than anything a vitamin pill peddler, or a nutritionist, would care to engage with. Who puts the issue of social inequality driving health inequality onto our screens? Where's the human interest in prohibiting the promotion of bad foods, facilitating access to healthier foods by means of taxation or maintaining a clear labeling system?

Where is the spectacle in "enabling environments" that naturally promote exercise, or urban planning that prioritizes cyclists, pedestrians, and public transport over the car? Or in reducing the ever-increasing inequality between senior executive and shop floor pay? When did you ever hear about elegant ideas like walking school buses, or were stories about their benefits crowded out by the latest urgent front-page food fad news?

I don't expect nutritionist, or pill peddlers, or anyone in the media to address a single one of these issues, and if you're honest, neither do you.

8

THE DOCTOR WILL SUE YOU NOW

This chapter did not appear in the original British edition of this book, because for fifteen months leading up to September 2008 the vitamin pill entrepreneur Matthias Rath was suing me personally, and *The Guardian*, for libel. This strategy brought only mixed success. For all that nutritionists may fantasize in public that any critic is somehow a pawn of big pharma, in private they would do well to remember that like many my age who work in the public sector, I don't own an apartment. *The Guardian* generously paid for the lawyers, and in September 2008 Rath dropped his case, which had cost in excess of \$770,000 to defend. He eventually paid \$365,000, leaving *The Guardian* with a large shortfall. Nobody will ever repay me for the endless meetings, the time off work, or the days spent poring over tables filled with endlessly cross-referenced court documents.

On this last point there is, however, one small consolation, and I will spell it out as a cautionary tale: I now know more about Matthias Rath than almost any other person alive. My notes, references, and witness statements, boxed up in the room where I am sitting right now, make a pile as tall as the man himself, and what