



What a Giant Squid Can Teach Us About Preventing Cancer

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In late September 2005, the New York Times ran an article about the giant squid, a creature so elusive that some scientists had doubted its existence until now. Thought by many to be a mythical creature like the Loch Ness Monster, the squid was finally photographed by Japanese scientists using cutting-edge marine photography technologies.

In that same day's news, New York Times health writer Gina Kolata reported that scientists can find no link between diet and cancer. While eating fruits and vegetables can't hurt, her sources conclude, there's no solid evidence that eating well can lower your risk of the dreaded C-disease.

Is the fact that these stories appear on the same day merely coincidence? Perhaps. But together, they highlight a lie that contributes to the deaths of hundreds of thousands of people a year. To find the connection, read on...

How Science is Done

How do scientists know what they know? Through two activities: observing nature and conducting experiments.

Observing nature used to be highly regarded. Leonardo DaVinci, Galileo, Isaac Newton, Charles Darwin, and many others whose work shapes our modern world basically looked longer, harder and more thoughtfully than others and used their observations to tell us how things are.

These days, observational science is a poor step-child to experimental science, in which the scientist manipulates the world to discover cause and effect, or "how things work." That's because observation can lead only to association, whereas experiments can provide proof. More on this soon...

Of course, most scientists engage in both kinds of activities. Before they can construct experiments, researchers must spend time looking at things in their natural state. For example, before you can devise an experiment to determine if river mussels mate more readily under the influence of 18th century chamber music or soft rock from the 1970s, you need to watch the mussels and figure out when, where and how they mate naturally. Otherwise, you won't know what to observe when you run the experiment.

In the case of health research, the same process is followed. Researchers study human biology and the cancer development process by observation. When a particular therapy or prevention strategy seems like it might work, they conduct experiments.

The Gold Standard of Scientific Research



The difference between association and causality may seem like wordplay, but to researchers it's the most crucial distinction in the world. Association means that two things are related, but we don't know if one causes the other. For example, Mercedes Hood Ornaments are related to wealth, but they probably don't cause wealth. Donating Mercedes hood ornaments to poor African nations will not lift them out of poverty.

Causality means, like it sounds, that one thing causes another. Scientists have a list of requirements for declaring causality. In order to say definitely that A causes B, the following must be true:

1. A happens before B happens
2. B always happens after A happens
3. There's no hidden C that is related to A that is actually causing B
4. There is a demonstrated mechanism by which A causes B

Real proof of causality- the "Gold Standard" of research -means that you conduct an experiment in which you control everything except the variable you're studying.

In the mating mussels example, this means that you make sure the mussels listening to chamber music and those listening to rock would be treated exactly the same except for type of music.

The temperature of their tanks, the amount of sunlight they receive, the volume and duration of music, you name it. Otherwise, you can't be sure that some other factor ("C") isn't causing the change in mating behavior that you attribute to the music.

And then you'd conduct the experiment several times to make sure that the same thing happens every time.

The controlled experiment that proves causality is the gold standard of scientific research.

Human Behavior Clinical Trials: Gold Standard or Fool's Gold

When scientists look at the relationship between diet and cancer, they find overwhelming observational evidence that what we eat can have a huge impact on whether we develop cancer or not. But because it's "just" observational, the rules of science prevent them from saying that "diet causes cancer."

In order to do that, they need to conduct experiments. But there are four big problems with conducting experiments on human beings.

1. Control Freaks



First, there's the problem of controlling all the variables except the one you're studying. If you could take people and put them in a lab, you could make sure they all had the exact same experience except for the food you give them. Group A would live on Big Macs, while Group B would have a diet of fruits and vegetables. After 10 or 20 years in the lab, you simply count the number of cancers in each group. If one group gets a significantly greater number of cancers than the other, then you've proven that cancer can be influenced by diet.

That scenario obviously ain't gonna happen. It's not practical or ethical to treat people like lab rats. The real world is always going to be messier and less controllable than the laboratory. Because of this one problem, it's already nearly impossible to prove a causal relationship between diet and cancer.

And people are also different from each other before the experiment. What if Group A were all Olympic athletes and Group B were coal miners with a pack-a-day cigarette habit?

2. Randomization: A Solution that's No Solution

The solution is to randomly throw people into Group A or Group B. Randomization theoretically takes care of both the innate differences of the experimental subjects and their different experiences during the experiment. The problem is, people don't want to be randomized into different behaviors. Imagine trying to get the Olympic athletes to go on the MacDonald's diet.

Also, randomization on behaviors makes the experiment almost irrelevant to the real world. People choose behaviors and lifestyles based on preference, convenience, and resources. Randomly assigning a lifestyle to a person who would or could not choose that lifestyle in real life turns the clinical trial into a parlor game.

3. The Placebo Problem

There's another huge problem with human experiments. We have these big honking cerebral cortexes, the area of the brain that specializes in most of the stuff that makes us human. We have the gift of higher thought, and that always gets in the way of science.

Humans are suggestible. If we believe something to be true, the very cells of our body will act as if it's true. Researchers call this the "placebo effect." If I believe that this inert sugar pill is a powerful chemotherapy agent, I'll get nauseous and my hair will fall out when I take it.

In order to counter the placebo effect, scientists have added a two-pronged safeguard to the controlled experiment: double blinding.



In a double-blind clinical trial, neither the patient nor their doctor knows which group the patient is in. Drug studies are all conducted this way. Group A gets the standard drug, Group B gets the new experimental drug, and the two groups are studied to see if one drug is more effective or more safe than the other. But the drugs look the same, so the patient can't know whether they're getting the new wonder drug or not. And the doctor can't subtly communicate their expectation that Ms. Jones will be cured because she's taking the wonder drug while Mr. Smith will not because he's getting the old drug.

4. The Reductionist Fallacy

Nutritional trials based on the drug trial model suffer from an additional problem: they expect individual nutrients to function the same way whether isolated in a supplement, or as part of the foods in which they are naturally found. You may recall the big deal a few years ago over the discovery that tomatoes may protect against certain cancers. Researchers immediately started slicing and dicing the tomato, looking for the single nutrient that was responsible.

They settled on lycopene, and immediately began synthesizing it and sticking it everywhere they could, in complete disregard of the complexity of the interaction between a living organism (us) consuming another living organism (a tomato).

To think that Nature, God, the Cosmos – whatever you want to call it – isn't as smart as the chemists working for ConAgra and Monsanto and Archer Daniels Midland – is riding the reductionist fallacy all the way down the track to hubristic insanity.

That's why we hear about Vitamin E, the wonder drug, proving ineffective in dietary trials, and beta carotene being dangerous in large quantities. Whenever a single chemical is removed from its natural state (so it can be patented, branded, and sold at a huge profit), it's predictable that it will be ineffective or dangerous in its side effects.

Proving Anything: A Tall Order

Because of the need for control, randomization, blinding and reductionism, it's bleeping hard to prove anything about human health that doesn't involve pills or injections. That's great for drug companies who get to say that their products are "proven" to treat diseases, but not so great for ordinary people who are dying due to the lack of true health information.

How in the world can we construct "gold standard" studies on the relationship between diet and cancer? How can researchers randomly throw people into one group or other? Would *you* agree to be in the "SuperSize Me" group? If you were put in the fruits and vegetables group, would you be able to "stick with the program?" If not, you'd screw up the experimental protocol and mess up the results.



And how can we "blind" people to what they're eating? Put the Happy Meal and Veggie Plate into the blender until they're both mush and put clips on their noses while they eat? Feed them intravenously with blindfolds on?

Here's the big problem of science: the closer you get to a perfect experiment, the less it resembles the real world. Perfect experiments that provide airtight proof are irrelevant to life.

Why Studies Can't Prove What's True

Here's the truth: "Eating a diet very high in whole plant foods - fruits and vegetables, whole grains, raw nuts and seeds, beans and legumes - and very low in animal products and processed foods will almost guarantee that you won't get cancer."

This is a true statement, as you'll see, despite the inability of research scientists to prove it.

If one person goes on a whole plant-based and their incurable cancer goes away, scientists dismiss that as "anecdotal," meaning "That's weird, it's an exception, and maybe it didn't even happen, and it doesn't mean anything."

If a group of people eat a whole plant-based diet and don't get cancer, that's just an association. It's not proof. That group is going to be very different from the rest of the American population not just in eating habits, but in a whole bunch of other things - occupations, exercise, education, income, etc. If you can't control for those differences, you haven't got proof.

Scientists figure that they can't force a randomly selected group of experimental subjects to eat a diet considered that extreme. So instead they look at trivial differences in eating habits and declare that diet doesn't cause or prevent cancer.

Do you see what they're doing? They're like the person searching under the street lamp for their lost wallet because the light is good, not because that's where they think they lost the wallet.

Women's Health Initiative: The Behemoth of Bad Studies

The biggest studies trying to prove a diet-cancer link have compared Americans eating a really horrible diet to Americans eating a slightly less horrible diet. One of the biggest, most expensive, and least informative was the nutrition study conducted by the Women's Health Initiative, comparing women on a low-fat (29% of total calories from fat) with a medium-fat (37% of total calories from fat) diet. And the differences in fat were not due to significant differences in diet – just skim milk and skinless chicken, more or less. That's like comparing the effects of smoking eight or nine packs of cigarettes a day. And so –



surprise! – the researchers found little difference in health outcomes between the two groups.

And just to get your blood boiling, this study took over 12 years and cost over one billion dollars.

Because the norm in America is a toxic diet, scientists cannot conduct clinical trials that prove anything other than, “nothing prevents cancer.” And it’s true: there isn’t a single variety of the standard American toxic diet, comprised of over 50% highly processed junk foods (many of which masquerade as health foods), over 40% factory-farmed animal products laced with hormones, pesticides and antibiotics, and under 10% plant foods, that can prevent cancer.

So Gina Kolata, a very influential reporter who doesn’t understand the fundamentals of scientific research, can tell us to eat whatever we want, because none of it turns out to matter.

Is There a Nutritional Giant Squid?

Is a cancer-preventing diet just a legend, like the Loch Ness Monster? Or, like the giant squid discovered this year, is it real, but inaccessible to our limited scientific method?

I’m happy to report that in 2005, a book was published that documents, beyond any doubt, the relationship between diet and cancer, among more than a dozen other diseases and conditions. It’s been ignored by the mainstream media, attacked by the food conglomerates, and slowly spreading by word of mouth into the consciousness of a national of eaters who know they’re being conned, and now they’re discovering how and why.

The China Study

The book is called *The China Study*, by T. Colin Campbell and Thomas M. Campbell II. It explains in everyday English the findings of the Oxford-Cornell-China Study, which I’ll list in a minute. First, though, you need to understand why this study is so important, and why it contradicts most other nutritional studies, and why it’s right and they’re wrong.

In the early 1970s, Chinese Premier Zhou Enlai was diagnosed with bladder cancer. In an attempt to find a cure, he marshaled the vast resources of the Chinese state to create a “cancer atlas,” mapping out cancer mortality rates in counties across China. The researchers found dramatic, shocking differences in death rates from one county to another – often as high as several thousand percent.

Several hundred-fold! Holy Cow! To put that in perspective, the rates of breast cancer deaths in the US range from a low of 21.3 per 100,000 in Vermont to a high of 34.3 in the District of Columbia. And that difference is explained almost totally by the difference



between the rates for Whites (24.9) and Blacks (34.1) across the US. Mathematically it's a 61 percent difference between lowest and highest. Now, as big and shocking and outrageous as that difference is, the differences found in China make it seem very tiny indeed:

Table 1: Range of Cancer Rates in Chinese Counties

Cancer Site	Males			Females		
	Low	High	Difference	Low	High	% Difference
All cancers	35	721	1960%	35	491	1303%
Nasopharynx	0	75	Infinity	0	26	Infinity
Esophagus	1	435	43,400%	0	286	Infinity
Stomach	6	386	6333%	2	141	6950%
Liver	7	248	3443%	3	67	2133%
Colorectal	2	67	3250%	2	61	2950%
Lung	3	59	1867%	0	26	Infinity
Breast	-	-	-	0	20	Infinity

*Age-adjusted death rates, representing # cases/100,000 people/year

Source: Campbell, T.C. and Campbell, T.M., *The China Study*, p. 71.

What does this table mean? For an example of how to interpret the data, look at the “Stomach” row, first four columns. The county with the lowest rate of stomach cancer in men reported 6 deaths per year for every 100,000 inhabitants of the county, compared with 386 deaths in the county with the highest rate. (These numbers were adjusted to be able to compare the two counties fairly, in case one county had a lot more old folks than the other – that’s what “age-adjusted” means.) According to my calculator, that’s a difference of 6333 percent (the next column) – ten times the spread in the US example.

Continuing along that row, we see the spread for women’s stomach cancer is even more extreme: a low of 2, a high of 141, and a difference of 6950 percent.

A Living Laboratory for Human Nutrition

At the time the study was conducted, in the 1980s, 90% of the Chinese population spent their entire lives within a few miles of their birthplace. The Chinese population is fairly homogeneous, meaning you would not expect to find huge genetic differences between inhabitants of different counties. 87% of the population are from the Han ethnic group. Also, at the time the study was conducted food distribution was close to nonexistent, so people ate whatever was locally produced.

Now that’s what I call a living laboratory.

To recap: huge differences in cancer death rates from one part of the country to another, minor differences in the people themselves, and huge differences in diet and lifestyle. If you could figure out which differences were important, and which weren’t, you could then construct a theory on how to prevent cancer.



That's just what Campbell and his colleagues from Cornell, Oxford University and the Chinese government set out to do. They looked at hundreds of variables (things that might make a difference) and identified the “vital few” – the ones that truly determined rates of disease. They went far beyond the very iffy “self-report,” in which study participants are asked to remember and tell the truth about what they ate. The researchers collected blood and urine samples, checked out local markets to see what was available, and threw in analysis of dietary contaminants such as pesticides and heavy metals, and geographic and climatic factors as well.

They set themselves three questions:

- Why was cancer so high in some rural Chinese counties and not in others?
- Why were these differences so incredibly large?
- Why was overall cancer, in the aggregate, less common in China than in the U.S.?

Before disclosing the findings, I have to remind you: this study “proves” nothing. There was no control group, no double blinding, no randomizing Chinese peasants into one village or another, and no reductionism of variables into a single nutrient or foodstuff. It's simply a snapshot of a time and place that can never be recreated, and it's the purest and best nutritional information the world of humans has ever known.

Key Findings of *The China Study*

Ready to meet the “giant squid” of cancer research?

Here's the number one reason cancer rates were so high in some counties and so low in others:

- The more animal products eaten by the Chinese, the higher their cancer rates.
- The fewer animal products, the lower the cancer rates.

The above is true not just for colon, lung, breast, brain, stomach, liver, blood, and childhood cancers, but also for coronary heart disease, and diabetes. In other words, the biggest killers in the Western world are directly related to consumption of animal fat and animal protein.

The differences were so large because in China, unlike the U.S., there was true variety in diet. The Women's Health Initiative researchers looking for meaningful relationships between diet and disease were comparing the standard American diet to the standard American diet, and scratching their heads at the absence of different results. In China, on the other hand, a large number of people were eating an extremely health-promoting diet, largely because they couldn't afford or couldn't gain access to animal products.



The Chinese got fewer cancers, had fewer heart attacks and suffered less from diabetes than Americans because their “less affluent” diet, high in plant foods and low in animal products, protected them from those diseases.

Here’s the sentence to paste onto your fridge door and tattoo on your forearm:

For your best chance at a long, healthy, active life, choose a whole-food, plant-based diet with small amounts of animal products and processed foods.

The Conspiracy of Confusion

Campbell doesn’t stop there in *The China Study*. He reports on experiments conducted in his lab and in others throughout the world that pinpoint the actual mechanisms by which animal protein in particular wreaks havoc on the human organism. And he fearlessly takes on big business, big government, big pharma, big media and big science, all of whom have an economic and political interest in keeping the truth from reaching the public.

If you’re so confused by all the different studies that say one thing and then another, *you’re supposed to be*. That’s the point – all that confusion is meant to make you throw up your hands and eat what’s cheap and normal – processed foods, insanely subsidized meat and dairy – without taking a step toward freeing yourself from the Matrix.

The Food Revolution

But for the first time in a long time, there’s hope. Our eating habits have gotten so bad, and the quality of the standard American food supply has become so degraded, our ill health is getting too expensive, even for us. Big companies are pushing wellness programs so they can get their health care costs low enough and their productivity high enough to stay competitive in the world economy.

As more and more people discover the benefits of a plant-based diet, others are looking at them and wondering how they stay so lean, healthy and energetic. As they spill the beans (and greens), the message spreads. Nothing, after all, succeeds like success. And nothing gives people the confidence to ignore the lies and mixed messages spewed by ignorant reporters parroting corrupt scientists like a few living, breathing examples to the contrary.

So rejoice – after hundreds of years, the giant squid has been found, thanks to advances in marine photography technology and a bit of luck. And the scourge of cancer, which has proven immune to half a century of research and “races for the cure,” turns out to be at least 90% preventable (and that’s conservative), thanks to a study designed to capture truth rather than proof.



So, what will you do with this information, now that you know the best way to prevent cancer (and heart disease, diabetes, and obesity) in yourself and your loved ones? I'd like to suggest three next steps:

1. Read *The China Study* and share it with friends and loved ones. It will give you the confidence and resolve you'll need to weather the well-meaning doubters and self-serving liars who can make you question your commitment to a healthy lifestyle.
2. Make friends with someone who already eats a whole-foods, plant-based diet and invite yourself to their house a lot around suppertime. All the cookbooks and videos in the world can't compare with the experience of having a "co-pilot" as you begin to navigate this new world of eating.
3. Join or form a community of like-minded people to support and inspire each other. If you are a parent, consider joining the Fit Family Institute's online community, www.FitFam.com. We provide support and wisdom to parents and kids seeking to live fit and healthy lives together, despite our crazy world. You'll learn about the three pillars of family health – Wheee!, Ahhh!, and Yummm! – and have a great time engaging with other members and the FitFam.com parent-experts.

With knowledge comes responsibility. You now have the knowledge to eradicate cancer – not through miracle drugs or other Nobel-worthy breakthrough, but through old-fashioned good eating. What you do with this knowledge – act on it and share it, or file it and forget it – will have huge implications for your life and the lives of those around you. If you've ever seen anyone suffer with cancer – the victim and their family – you understand the importance of the load that I've just dropped on you.

My parting wish is that you carry it well, carry it strongly, and carry it joyfully.