

Cindy & Erica's Obsession to Solve Today's Health Care Crisis: Autism, Alzheimer's Disease, Cardiovascular Disease, ALS and More

Stephanie Seneff

This book is cast in the form of a novel. However, it is a novel that would require a reader with a PhD in biochemistry and a strong background in statistics to understand.

It is set up as a dialogue among a group of married couples. The protagonists, Cindy and Erica, are married to a couple of guys named Steve and Bob. They are doctors and computer scientists in the Boston area. One of the delightful aspects of the book is how well the author, herself a scientist, is able to capture the everyday lives in conversations of highly educated urban professionals. Her dialogue is pitch-perfect. The reader readily identifies with the characters and appreciates their insights, their enthusiasm and their foibles.

One of the foibles, a leitmotif running through the book, is a weakness for baseball. This is something I observed living in the shadow of NIH in Bethesda. It seems crazy to me that such intellectual people who are so far removed from physical activity for the most part themselves can be so captivated by professional sports. But it's absolutely the way the world is. One of my older son's playmates, son of a major children's cancer researcher at NIH, became a number cruncher for the LA Padres.

The book is tremendously ambitious in the number of diseases it addresses and the number of causes it assesses.

The diseases and conditions include:

- Autism
- Hypertension
- Accelerating instances of childhood allergies
- Increasing incidence of autoimmune diseases
- Alzheimer's and Parkinson's
- Decreased fertility
- Muscular weakness
- Diabetes
- Gastrointestinal Reflux Disease

The suspected causes include:

- Vaccines, especially the use of aluminum as an adjuvant (rejuvenator), or strengthening elements in vaccines and coding dead viruses.
- Aluminum-based skin lotions; sun blocks
- Statins – cholesterol reducing drugs
- Glyphosate – broadleaf weed killer found in Monsanto's Roundup herbicide.
- GMO's – not for their inherent bad qualities, but because they enable the use of Roundup resistant herbicides

The major fictional characters of the book all have extensive scientific backgrounds, and the level of conversation will be well beyond that of the average lay reader. Each chapter lays out a scientific argument replete with a number of chemical terms, reactions, reagents, enzymes and so on. They constitute hypotheses each of which could be the subject of a scientific investigation.

Not mentioned in this book – perhaps because the topic is too simple – are the principles of scientific method. They would include the following:

- Come up with a hypothesis that A causes B. The hypothesis should be supported by statistical evidence. There is a correlation between A and B.

- Define a plausible mechanism by which A could cause B. Correlation is not causation: the researchers must demonstrate that A probably causes B, not that they merely go together. A case in point: the use of chopsticks often correlates with having an epicanthic fold in one's eyelids. However eating with chopsticks does not cause one to look like a Chinese or Japanese, or vice versa. It is merely a coincidence.
- Perform a controlled experiment, or a series of controlled experiments, to demonstrate that A causes B by the mechanism described.
- Statistically analyze the results.

When dealing with medicine, one must always compare what happens with and without the treatment in question. They need a control group. In any group of people suffering from any sort of illness some will get better and some will worsen and die. The question is whether people being treated have more favorable outcomes than those who are not.

The field of statistics uses measures of certainty. There is always the chance that the observations that appear to confirm a correlation happened merely by random chance. The p value of a statistical analysis is a measure of the likelihood that the given observations occurred by chance. In social science they like this number to be less than 5%. In medicine they almost always demand a figure less than 1%. The book cites a large number of academic journal articles showing the kinds of correlations that make their argument.

One of the most powerful sections of the book is the author's demolition of phony statistical reports. In one instance concerning vaccines, the placebo used for the supposedly untreated group also contained aluminum – the factor that Seneff considers to be one of the main causes of problems with vaccines. The fact that it did not contain virus may well be incidental.

In a study involving comparing the death rates of people taking statins and those not taking them, they included people who had stopped taking them in the group that did not take them. In fact, upon investigation, the mortality rate among those who had stopped taking them was 2 1/2 times greater than those who had never taken them. The researchers came to the false conclusion (per the book) that statins were unrelated to heart failure.

Seneff has constructed the book in such a way that she is wide open to criticism. She is tackling a vast number of sacred cows, all at once. This is dangerous for two reasons. First of all, some of her hypotheses are bound to prove to be false, or at least not entirely true. Secondly, she is engaging a broad range of powerful enemies. These include the GMO and herbicide companies such as Monsanto and Syngenta, the big pharmaceutical companies, the American Medical Association, and of course the cadre of lobbyists and legislators who depend on the above for contributions. To the extent that anybody pays attention to her at all, the publicity she receives is bound to be rather negative. The precedent for dealing with such iconoclasts has been to attempt to ignore them as long as possible. That is how the antismoking crusaders, automobile seatbelt advocates, and now global warming deniers were all handled initially. This book was written in 2012 and only published in 2017.

Searching for the topics of discussion on the Internet – which the author would certainly advocate that any reader do on their own – shows that there is considerable skepticism about Monsanto and its products and the pharmaceutical industry. The vaccine industry and the National Institutes of Health as well as other such governmental organizations go out of their way to pooh-pooh criticism such as this. There are a lot of ad hominem arguments, attacks on the integrity and capability of researchers such as Seneff. In rhetoric one would say that they are often arguing from ethos, their presumed position of authority, rather than logos, facts. Considering how often the government does this, defending deficit spending, foreign wars, the central banks, sex education, global warming and every other topic under the sun, the reader should always maintain a natural skepticism. The government may be right, but they are not right just because they are the government. The intelligent reader owes it to him or herself to do exactly what Seneff advocates, read the literature and make up their own mind.

One of Seneff's *bête noires* is glyphosate, The active ingredient in Monsanto's Roundup herbicide. Most of the GMO seed that Monsanto sells are for Roundup resistant crops. These allow farmers to spray their fields with a broadleaf weed killer supposedly without hurting the crops. It also allows homeowners to kill the dandelions in their lawn. Needless to say, the herbicide finds its way into the foods we eat.

Monsanto's claim is that Roundup works by interfering with plants' shikimate pathway, preventing their growth. Animals have no shikimate pathway. Therefore it can't affect us. Seneff notes that animal metabolism depends on legions of gut bacteria to support our digestive process. No animal could survive without them. Moreover, these bacteria are plants and they do have the shikimate pathway. Her thesis is that glyphosate destroys beneficial gut bacteria causing the condition known as leaky gut. It is well described in **digestive wellness**.

Leaky gut, in turn, is a phenomenon by which molecules that are so large they should ordinarily be prevented from entering the bloodstream do so. These include a good many things that are detrimental to us, either causing or suspected to or contribute to a good many of the numerous conditions named in Seneff's bill of indictment.

It is hard to believe that Seneff herself originated the incredibly rich collection of topics to be researched that appear in the book. I, the reviewer, offer my own hypothesis. Seneff is a tenured professor at MIT (NB: wrong about the tenure, I learn), highly respected. Assuming that she does not want additional money from corporate sources, she is in a rare and privileged position to offer ideas that the establishment does not want to hear. My guess is that she is in contact with a number of other dissidents who do not share her invulnerability. She has probably incorporated ideas from a number of different sources to give them some exposure in the hope that some group of researchers somewhere may be sufficiently free from the influence of money to give these hypotheses an unbiased assessment.

One often reads a book like this in search of guidance that is applicable to one's own life. That is certainly the case for me. My situation is unusual. I am the 74-year-old father of a six-year-old and a newborn. As such I am interested in both her geriatric advice and her advice on vaccines. The take-home advice for me pretty much simply confirms what I'm already doing:

- Get lots of sunshine
- Get lots of exercise
- Don't worry about diet, and especially don't worry excessively about natural fats and cholesterol. Don't embrace food fads. She has a diet-related theory about Steve Jobs' pancreatic cancer.
- Don't take pills just because the doctor tells you. Over the past 20 years I have been prescribed dozens of pills for this and that that they would have me take on an ongoing basis. They include blood thinners, proton pump inhibitors, antidepressants and a raft of other things. I take none of them. I have instead made lifestyle changes to deal with the issues they were supposed to address.

The advice for my children would be similar.

- Lots of sunshine and exercise
- Don't smoke; moderate alcohol
- Stick with natural foods. Be careful about the amount of the trans-fats, sugars and foods known to be grown with lots of Roundup herbicide (viz, GMO corn) you consume.
- Be skeptical of doctors, drugs and vaccines. Always do an Internet search before blindly following doctor's orders.

Seneff's case for exposure to sunlight is interesting. The thesis is that the body is able to convert hydrogen sulfide in the air into sulfate, which combines to form cholesterol sulfate. It has been well established that cholesterol sulfate is essential to animal reproduction. Seneff hypothesizes that it has vastly more of a role than is usually imagined. Another chemical in the body that most biologists have considered to be inert and rather useless is taurine. Seneff hypothesizes that it becomes very important when the body is under extreme duress. These appear to be testable theses. If they are not, or have already been disproven, Seneff's detractors should at least say why not.

Before reading this book I had been encouraging my wife to get our six-year-old vaccinated. She has no background in science, but has been concerned by the scare stories going around the Internet. I had investigated it and not given them

too much credence. My mind is changed. The most deadly diseases, smallpox and polio, are pretty much contained. My son has benefited for six years from herd immunity benefits with regards to standard childhood diseases: measles, mumps, chickenpox and so on. No child we know has ever had even one of them, and I know from my own childhood experience that they are generally not that dangerous in the first place. Seneff repeatedly makes the point that a good deal of the improvement may be simply due to improved nutrition and all-around health. Meanwhile, we do know children who are affected by autoimmune diseases. We also note that autism appears not to be nearly as common, or at least as commonly discussed, here in Ukraine as in the United States. The decision whether or not to have your child vaccinated balances dangers on both sides. This book has shifted my assessment of that balance.

Timing of vaccines is rarely discussed. Autism usually appears fairly early. Seneff makes a good case that it has to do with neural wiring, the pruning of unneeded synapses mostly in the first two years of a child's life. The process depends on enzymes, and vaccines and/or glyphosate interfere with those enzymes. Hypothesized result: kids' brains are overwired, and hence inflexible. Measurable observations: (1) autistic kids have more of the other symptoms Seneff describes, such as leaky gut, allergies and so on, and (2) their brains are bigger, perhaps because less gets edited out. In any case, delaying vaccines would seem to alleviate the problems.

Seneff's take on most subjects is nuanced. She concedes the great victories that vaccines have brought with smallpox and polio. She makes some concession to the herd immunity argument; although she points out that it must be made individually for each disease according to its characteristics.

The shots against which she most emphatically argues are MMR - measles mumps rubella, HPV and the flu shot for seniors. She has a different argument against each. MMR involves both live and dead virus vaccines. The dead virus vaccine uses aluminum as a rejuvenating agent. She argues that the combination of aluminum with live virus is especially dangerous. She argues that flu shots are only moderately effective at preventing the flu in elderly people, and they may well bring on Alzheimer's and Parkinson's. The HPV shot often has adverse side effects. Although Seneff does not dwell on the fact, the disease against which it protects is associated with lifestyle. A woman who is leading a healthy life (i.e., relatively chaste and choosy) probably doesn't need it.

If the book has a weakness, it is a lack of graphics. Most of the processes she describes could be much better explained using diagrams. Richard Feynman became famous for his use of diagrams to explain physics – Seneff could do the same for medicine.

And that is the sum of the book. The medical establishment makes its money from treating sick people, not making people well. The food industry makes its money from pandering to our appetites, not by providing what we need. The problem is that good health and good food don't need to be that expensive. The chemical companies make their money from selling chemicals, and they have no vested interest in public health. Because there is no money in it, there are no loud advocates for common sense, restraint, and skepticism. Those qualities are the essence of this book.