

Food or Pharma: How our American Diet is Making us Sick

By Kathleen June Mullins



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She has had a varied career, working in dairy physiology, electron microscopy and cell culture as well as scientific illustration and graphic design. Her anatomy atlas, *Illustrated Anatomy of the Bovine Male and Female Reproductive Tracts: From Gross to Microscopic*, seeks to bridge the gap between gross anatomy and histology with a three dimensional interpretation.

The study of nutrition and bridging the link between diet and health has become another of her passions. Other interests include theology, artwork, reading, sewing and walking. She is presently chair of the Montgomery County 4-H board and belongs to the Guild of Natural Science Illustrators, Sigma Xi Science honorary, and is a past president of the Montgomery County Torch Club (2008-2009).

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In light of the declining state of health and the cost of healthcare in the U. S., it is time to take a critical look at our food choices. Heart disease, cancer and diabetes began to increase dramatically in the 1950s, and even though

death rates have declined due to improved medical intervention, disease rates (along with pharmaceutical use) have continued to increase. Prior to 1930, Coronary Heart Disease did not appear to be a major cause of death. How have our diets changed since then?

A graph from *The Great Cholesterol Con* by Anthony Colpo depicts mortality due to heart disease from 1900–1993, derived from the National Center for Health Statistics (5). It depicts a low death rate from Coronary Heart Disease until the 1920s, when a gradual increase is observed, followed by a dramatic surge in the 1950s. Our food in the early part of the century consisted largely of meat and potatoes, with fruits, vegetables and milk products becoming more important after 1912 as vitamins were discovered. However, the most striking development was the shift toward processed foods in the 1920s. Since housewives had previously prepared food from scratch at home, readily prepared foods, including Wonder Bread, Hostess Cakes and Velveeta Cheese, were a welcome option (1920-30.com).

Processed food is probably not the sole cause of the big jump in heart disease in the 1950s; improved diagnosis may have played a part, among other factors. Nonetheless, this was a period of rapid growth in the processed food industry. Period cookbooks and magazines tell us that simple meals prepared from pre-packaged goods were popular, and television came into our living rooms promoting it. The fast food industry also took off in the 50s, while the advent of pesticides, particularly

Atrazine, created a boom in corn production, and large-scale farms began to produce it in record amounts. In the mid-1950s, corn based sweeteners like high fructose corn syrup began to compete with the sugar industry.

Ignoring the impact of all these added processed carbohydrates, journal articles by J. W. Gofman and Ancel Keys came out in the early fifties linking dietary fat and serum cholesterol to heart disease. The American Heart Association, however, initially responded, "There is not enough evidence available to permit a rigid stand on what the relationship is between nutrition, particularly the fat content of the diet, and atherosclerosis and coronary heart disease" (Taubes 20). In December of 1960, though, with no new evidence, a new AHA report was released to the press officially supporting Key's cholesterol-dietary fat hypothesis, elevating high cholesterol to the leading heart-disease risk. In alliance with Keys hypothesis, president Eisenhower made an extreme effort to eliminate all saturated fat from his diet, replacing it with polyunsaturated fats—and went on to have six more heart attacks before his death at age seventy-eight (Taubes 3-5).

The Sydney Diet Heart Study (1966-1973), a randomized controlled trial which substituted polyunsaturated fats for saturated fats, found that total cholesterol and low-density lipoprotein cholesterol (LDL) were lowered in the polyunsaturated group, but all cause mortality (primarily cancer) was raised. Nevertheless, this study was important in establishing our current emphasis on vegetable oils. A recent

study in the *British Medical Journal* reanalyzed recovered data from the *Sydney Diet Heart Study* using updated meta-analysis. Surprising conclusions found that substituting dietary polyunsaturated fats for saturated fats not only increased death rates from all causes, but death rates from coronary heart disease and cardiovascular disease as well (Ramsden).

The Farmingham Heart Study began in 1948 in Farmingham, Massachusetts and is still ongoing. It is an all encompassing and valuable study of heart disease, establishing much of our basic understanding. After the first 40 years of the initial trial with about 6,000 people, the study found that those who weighed more and had abnormally high blood cholesterol levels were slightly more at risk for future heart disease. However, weight gain and cholesterol levels were *inversely* correlated with dietary fat and cholesterol, prompting the director, William Castelli, to say, “the people who ate the most cholesterol, ate the most saturated fat, ate the most calories—weighed the least and were the most physically active” (qtd. in Fallon 5).

Crisco was introduced in 1909 and began to replace lard as the baking fat of choice by convincing people that it was “good for you and digestible too” (NPR.org). Thus began the trans-fat era. Just as Crisco became a substitute for lard, margarine became a substitute for butter. The manufacturing process for margarine and shortenings, far from being “good for you,” includes a high temperature, high-pressure extraction followed by removal of the oils, using solvents and leaving them rancid. The oil is then steam cleaned, removing all vitamins and anti-oxidants but not the pesticides and solvents. Soap-like emulsifiers are then mixed in and the emulsified fats are steam cleaned to remove the horrible odor. The gray color is removed by bleaching and then artificial flavors, synthetic vitamins and natural



Art by Kathleen June Mullins

color added before packaging and promoting as a health food (realfood wholehealth.com). A similar chemical process is used to extract most of our vegetable oils, unless they are expeller pressed or cold pressed.

Heart disease is not our only problem, though. Let’s take a look at the incidence of cancer in the past century. A graph published in 2002 by Örfjan Hallberg and Olle Johansson in the *Journal of the Australian College of Nutritional and Environmental Medicine* shows cancer death rates in ten countries from 1950 to 2000. The graph shows an across the board steady increase in cancer mortality during this time frame (Hallberg and Johansson 3-8). British scientist John Yudkin, author of *Pure, White and Deadly*, first professed that sugar was bad for our health in 1972. Yudkin found that the five nations with the highest breast-cancer mortality in women in the late 1970s had the highest sugar consumption, while those with the lowest breast cancer mortality rates had the lowest sugar consumption. Other researchers also found sugar intake in international comparisons to be positively correlated with both the incidence of and mortality from colon, rectal, breast,

ovarian, prostate, kidney, nervous system and testicular cancers. Sugar, however, continued to increase in our processed food market (Taubes 211-12).

In addition to heart disease and cancer, we have to look at the rise in obesity and diabetes, which are rapidly becoming epidemic. Dr. Richard Bernstein, one of the foremost experts on diabetes and its complications and author of *Diabetes Solution, the Complete Guide to Achieving Normal Blood Sugars*, recommends a very low carbohydrate diet even while the American Diabetes Association and others stress a high carbohydrate low fat diet. Bernstein, himself a sixty-year survivor of Type I diabetes, has been able to eliminate degenerative conditions and dramatically improve his own health, and that of thousands of his patients, with a very low carbohydrate diet.

Thomas Cleave argues in *Diabetes, Coronary Thrombosis and the Saccharine Disease* (1966) that all the common chronic diseases of Western societies, including heart disease, obesity, diabetes, peptic ulcers, and appendicitis, have resulted from a single,

primary disorder that could be called the “refined carbohydrate disease.” In a recent article in *Nature* entitled “The toxic truth about sugar,” Robert Lustig agrees, saying that added sweeteners pose dangers to health that justify controlling them like alcohol. He further points out that nature made sugar hard to get, while man has made it easy (27-29).

According to Gary Taubes in *Good Calories, Bad Calories*, the fructose in our diet—which comes from the breakdown of sucrose, high fructose corn syrup and fruits—goes directly to the liver to be metabolized, where it is then converted into triglycerides. For this reason, fructose is referred to as “the most lipogenic carbohydrate”. Furthermore, far from being safe for diabetics, fructose can induce insulin resistance as well as contribute to high blood pressure, a condition called “fructose-induced hypertension” (197-200).

Most studies of saturated fat and cholesterol have ignored dietary carbohydrates even though numerous studies have found that diets high in carbohydrates (regardless of dietary fat) decrease heart protective HDL levels while increasing triglycerides. Why then has a high-carbohydrate, low-fat recommendation persisted? It has done so principally because the processed food industry, big agriculture, and the pharmaceutical industry compose a large slice of the US economy and have a big voice in the legislature via lobbying. Essentially, it seems, they are too big to fail or to be told what to do.

According to a 2006 U.S. Department of Commerce Industry Report on Food Manufacturing, the food industry is one of the largest manufacturing sectors, with 28,000 establishments. The value of food shipments in 2006 was \$538 billion (U.S. Department of Commerce Industry Report). Big Agriculture has been called the Queen of Corporate Welfare

as the 2012 Farm Bill is estimated to spend \$969.2 billion over the next 10 years—a 60% increase—and is an industry that provides 23 million jobs. A 2009 MIDAS report stated that the pharmaceutical industry plays a major and growing role in the U.S. economy, with U.S. consumption of pharmaceutical drugs in 2009 valued at \$300 billion. As a result of pressure to maintain sales, according to the World Health Organization, there is now “an inherent conflict of interest between the legitimate business goals of manufacturers, the social, medical and economic needs of providers and the public’s right to select and use drugs in the most rational way” (*The Pharmaceutical Industry*). In the recent book *Salt Sugar Fat: How the Food Giants Hooked Us*, *Time* magazine writer Michael Moss reports how food industry leaders have said, unabashedly, that they will continue to offer high sugar foods that taste good and therefore sell well, regardless of known negative health effects.

The way out towards health and pharmaceutical freedom, obviously, involves wise food choices, and what we choose to eat is only half of the equation; there are also foods we should avoid. Udo Erasmus, in his *Fats that Heal and Fats that Kill*, talks about our bodies functioning as a “life battery” where the negative pole consists of oils rich in essential fatty acids and the positive pole consists of good proteins, rich in essential amino acids. Life currents, produced by the metabolism of carbohydrates and other molecules, flow between these two poles, but only when the circuit of essential nutrients is complete. There are no essential carbohydrates. We can live without carbs, but not without essential oils and essential amino acids from proteins. Proteins and oils are the two most abundant substances in our cells. We find them together in cell membranes, in lipoproteins that carry fats and cholesterol in our blood, and protecting the neurons of our brains (186-187).

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Erasmus goes on to say that altered fats (including hydrogenated oil products like shortenings, margarines [hard and soft], vegetable oils and partially hydrogenated vegetable oils) do not fit into the precise molecular architecture of our bodies. Altered fats are linked to mutations, cancers, atherosclerosis and degeneration of cells, tissues and organs. Used widely in chips, crackers, bakery products, candies, French fries and fried or deep fried foods, altered fats are almost inescapable in our society. Nonetheless, Erasmus advises us, avoid them. He likewise urges that we avoid oxidized fats, which occur in cured, processed, and aged foods, including meats, sausages, cheese, fried convenience foods, and stored foods. Oxidized fats, he claims, can cause arterial damage leading to the plethora of cardiovascular problems that have been wrongly blamed on cholesterol (404).

So, what to fix for dinner? We can look to healthy populations, past and present. Weston A. Price in *Nutrition*

and *Physical Degeneration* demonstrated how primitive cultures eating traditional foods had wide perfect dental arches without tooth decay, until they were introduced to modern processed foods. Catherine Shanahan's *Deep Nutrition* talks about the "four pillars of world cuisine," based on common features of traditional diets from around the world: (1) meat on the bone, (2) fermented and sprouted foods, (3) organs and other "nasty bits," and (4) fresh, unadulterated plant and animal products (121-165). The Julia Childs of the ancient world learned to extract every last bit of nutritional content from the edible world around us and folded a great diversity of nutrients into human evolution.

Meat on the bone. Other than our Thanksgiving turkey, our commercial meats ejected those pesky bones years ago, along with their marrow and much of the fat and skin – all filled with flavor and essential nutrients. Bones are a rich source of bio-available calcium and glycosaminoglycans for our bone and cartilage health. Grass fed beef also provides a source of fat relatively high in omega-3 fatty acids that are not present in feed-lot beef from corn fed animals.

Fermented and sprouted foods. Fermentation is a lost art that deserves to be rekindled. Fresh, uncooked sauerkraut and fermented pickles or other vegetables are available in many health food stores or can be made at home. They help to repopulate our "biosphere" with healthy microbes – single cell vitamin factories that are necessary for digestion and general health.

Sprouted grains are also a great addition to a healthy diet. Soaking and then sprouting grains releases stored proteins, fats and minerals for easy digestion. Sprouted grain breads and cereals are also available commercially as Ezekiel® and probably other brands –

usually in the health food area at your local supermarket.

Organs and other "nasty bits." This is one that many people today have more trouble with! Liver, which used to be seen commonly on the dinner table, smothered in onions or in pâtés, has fallen from grace over the last fifty years. It is, however, a nutrient dense food that offers a powerful resistance to disease, especially when obtained from a healthy grass-fed, or organic animal.

Fresh fruits and vegetables. The fourth pillar of fresh whole foods is much easier to embrace. Enjoy fresh fruits and vegetables in salads, raw, steamed, roasted or stir-fried with healthy (not processed) oils such as olive, butter or coconut oil. Fresh vegetables and fruits, all rich in antioxidants, are a delicious way to establish a healthy lifestyle that can eliminate the need for pills and their side effects.

Try reducing refined grains and sugar while increasing vegetables and fruits. Include healthy grass fed or organic meats and bone broths in your diet, and replace processed oils with olive oil, coconut oil or animal fats. You may find, like I did, that you have fewer aches and pains, a better blood profile, more energy, and lose a few pounds in the process. It's time to send a message to our food processing industry that health needs to be considered in their business plan—not just profits. America deserves to return to a healthier diet!

Works Cited

- 1920-30.com. "In the 1920's food production, storage and availability improved significantly." <http://www.1920-30.com/food/>
- Bernstein, Richard K., MD. *Diabetes Solution, Revised and Updated: the Complete Guide to Achieving Normal Blood Sugars*. 1997. NY: Little, Brown, 2007.
- Cleave, T.L. *Diabetes, Coronary Thrombosis and the Saccharine Disease*. Bristol, UK: John Wright and Sons, 1966.
- Colpo, Anthony. *The Great Cholesterol Con*. N.p.: Lulu.com, 2012.
- Erasmus, Udo. *Fats that Heal, Fats that Kill: How Eating the Right Fats and Oils Improves: Energy Level, Athletic Performance, Fat Loss, Cardiovascular Health, Immune Function, Longevity and More*. 1986. Burnaby, B.C., Canada: Alive Publishing, 2004.
- Fallon, Sally. *Nourishing Traditions: The Cookbook that Challenges Politically Correct Nutrition and Diet Dictocrats*. Washington, D.C.: NewTrends, 1999. Revised Second Edition, 2001.
- Goffman, J.W. and F. Lindgren. "The Role of Lipids and Lipoproteins in Atherosclerosis." *Science* 111 (Feb. 17 1950):166-86.
- Hallberg, Örfjan, and Johansson, Olle. "Cancer Trends During the 20th Century." *Journal of the Australian College of Nutritional and Environmental Medicine* 21:1 (2002), 3-8.
- Keys, Ancel. "Atherosclerosis: A Problem in Newer Public Health". *Journal of Mount Sinai Hospital* 20:2 (1953), 118-39.
- Lustig, Robert H., Schmidt, Laura, and Claire D. Brindis. "The Toxic Truth About Sugar." *Nature* 482:7383 (Feb 2, 2012), 27-29.
- Moss, Michael. *Salt Sugar Fat: How the Food Giants Hooked Us*. New York: Random House, 2013.
- NPR.org. Planet Money Podcast: "Who Killed Lard?" <http://www.npr.org/blogs/money/2012/02/03/146356117/who-killed-lard>
- The Pharmaceutical Industry: an overview of CPI, PPI and IPP Methodology*. U.S. Bureau of Labor Statistics, Office of Prices and Living Conditions. Oct. 2011.
- Price, Weston A., DDS. *Nutrition and Physical Degeneration*. 1939. N.p.: Price-Pottenger Nutrition Foundation, 2011. Accessible online at http://journeytoforever.org/farm_library/price/pricetoc.html
- Ramsden, Christopher et al. "Use of Dietary Linoleic Acid for Secondary Prevention of Coronary Heart Disease and Death: Evaluation of Recovered Data from the Sydney Diet Heart Study and Updated Meta-Analysis." *BMJ* 346:e8707 doi:10.1136/bmj e8707, 2013:1.
- realfoodwholehealth.com. "Why Vegetable Oils are Dangerous to Your Health." <http://www.realfoodwholehealth.com/2011/01/why-vegetable-oils-are-dangerous-to-your-health/>
- Shanahan, Catherine, and Luke Shanahan. *Deep Nutrition – Why Your Genes Need Traditional Food*. Lawai, HI: Big Box Books, 2009.
- Taubes, Gary. *Good Calories, Bad Calories: Fats, Carbs, and the Controversial Science of Diet and Health*. New York: Anchor Books, 2007. 20,3-5, 211-12, 197-200.
- U.S. Department of Commerce Industry Report: Food Manufacturing NAICS 311.
- Yudkin, John. *Pure, White, and Deadly: How Sugar Is Killing Us and What We Can Do to Stop It*. NY: Penguin, 1972.