

Is Switching from Beef to Chicken Really Improving Our Health?

In our culture, chicken is considered to be a health food, but is switching from beef to chicken really improving what we put on our plates? Let's take a look at what sound, scientific studies demonstrate:

- All mammals have relatively the same amount of cholesterol in their bodies, and one of the places we find cholesterol is in the walls of all of our cells. So replacing beef or other meat with chicken will not likely improve our cholesterol profile, and since it is not concentrated in one place, like animal fat is under the animal's skin, it is not something we can shave off before cooking.
- Chicken is the largest source of heterocyclic amines in the U.S. diet. Heterocyclic amines are carcinogenic substances that form in the muscle when it is heated. The longer and hotter the meat gets, the more heterocyclic amines are created. There is no getting around this unless we stop cooking our meat, but then we have to worry about fecal bacteria contamination like campylobacter, salmonella, listeria, E. coli, and MRSA. In fact, campylobacter is most commonly found in chicken breasts. Extra intestinal E. coli infections have the potential to invade the bloodstream and cause fatal sepsis, or blood poisoning, and urinary tract infections in women. They most often come from chicken, and infection risk in the chicken is directly linked to the overcrowding on factory farms. Chicken ranks the highest in terms of having the greatest food borne disease burden in the U.S., primarily due to the prevalence of campylobacter and salmonella in poultry.
- A heterocyclic amine abbreviated PhIP, formed when meat is cooked, stimulates breast cancer cells almost as much as pure estrogen, promotes breast cancer cell invasion more than straight estrogen, and can infiltrate the ducts where most breast cancers arise.
- Place chicken on the grill and the fat dripping off of the meat and into the fire creates another carcinogenic substance, polycyclic aromatic hydrocarbons, that find their way onto the surface of the grilled meat.
- Chicken is also the largest source of glycotoxins, also known as advanced glycation end products or AGEs. AGEs suppress sirtuin activity, which is closely associated with the accumulation of the plaques and tangles in the brain that's characteristic of Alzheimer's disease.
- Chicken does not contain any fiber, antioxidants, and other phytonutrients, which exist only in the plant kingdom, and the meat on our plates crowds out other healthful options that could be providing us with these essential components.
- Chicken does contain saturated fat and cholesterol which can contribute to a host of chronic, degenerative diseases including our number one killer, heart disease.
- Chickens are bled of only about half of their blood, and the remaining residual can be a powerful promoter of fat oxidation. The buildup of oxidized fat is considered the hallmark of fatty streak formation, the earliest manifestation of atherosclerotic plaques.
- All meat, milk, and eggs, but particularly chicken and fish, contain high concentrations of methionine, an essential but highly acidic sulfur-containing amino acid. Our bodies need to maintain a slightly alkaline pH in our blood and body tissues and we create a very acidic environment when we consume meat, dairy products, and eggs. Our body neutralizes this

acid by buffering it with material from our bones. This repeated buffering not only robs our bones of precious structural components, but once it has brought our pH back into balance, this bone material must be excreted through our kidneys and into our urine. This extraordinary flow of material through the kidneys can provide the building blocks for kidney stones. This also places a strain on our kidneys. Per John McDougall, MD, in healthy people with no apparent diseases, it is estimated that they lose about 1/3 of their kidney function by the time they reach the age of 70 because of the high protein nature of the rich, American diet. It is much safer to obtain this essential amino acid from seeds, nuts, and grains, and as long as you are meeting your energy (calorie) needs with a variety of plant foods, meeting your methionine needs should not be an issue.

- Many human cancers, including leukemia and some tumors of the colon, breast, ovary, prostate, and skin, have what's called absolute methionine dependency. These tumors generate gaseous sulphur-containing compounds with it. You may have heard about dogs that are trained to detect these gases. In the NIH-AARP Cohort, a large prospective cohort study, both smoking and total meat intake were associated with an increased risk of AML, a rare but deadly blood cancer. The study found that eating 2 boneless chicken breasts increases risk as much as smoking 10 cigarettes. Another study found that for every ¼ of a chicken breast consumed, the risk for lymphoma increases up to 3 times.
- Our exposure to drugs given to turkeys and chickens may be one reason why poultry consumption has been associated with significantly higher lymphoma and leukemia risk. The largest forward looking study ever on diet and cancer (following 500,000 people for over 10 years), the EPIC study, found that poultry had the most significant association with developing lymphoma.
- The opportunity for fecal bacteria cross contamination is greater than most of us think. One study wanted to measure how well the average cook was at preventing the inadvertent spread of the bacteria and how well they eliminated any contamination once the kitchen was cleaned up. The researchers didn't need to contaminate the chicken specimens to be used in the study. They knew that there would be more than adequate fecal bacteria present on any chicken that they purchased from the grocery store, and they were right. More than 90% of turkey and chicken and almost 75% of ground beef is contaminated with the fecal pathogen *E. coli*. Skinless chicken breast was particularly likely to have fecal traces and both organically and conventionally produced meat was found to be frequently contaminated. At the end of the study, researchers found more fecal bacteria in the kitchen than is commonly found on toilets, even after everything in the kitchen had been bleached twice. It is perfectly legal to sell chicken products tainted with bacteria. The latest comprehensive analysis of sources for food borne illness outbreaks found that chickens were the premiere cause overall.
- Just handling, not even eating, chicken can lead to the colonization of our colon with antibiotic resistant *E. coli* from cross contamination that may result in bladder infections in women. Within days of handling the chicken, multi-drug resistant *E. coli* becomes a major part of the fecal flora in our gut. Fortunately, once colonized, we are not colonized for life. In the study, the fecal flora appeared to thrive for about 10 days. Unfortunately, people eat chicken so regularly that their colons remain colonized. This rectal bacteria can creep into the vaginal area and infect the urethra and subsequently the urinary tract. Therefore, urinary tract infections can be zoonotic, meaning they are communicable from animals to humans. The strains are often multi-drug resistant due to the imprudent use of antibiotics in animal agriculture. In fact, up to 70% of antibiotic use is for agricultural animals that aren't sick and

is increasingly blamed for the growing resistance to antibiotics among disease-causing bacteria. These drugs are routinely used to enhance growth, to improve feed efficiency, and to prevent disease in animals subject to the squalid conditions on factory farms.

- Salmonella was ranked the food poisoning bacteria with the greatest public health burden in our country, the leading cause of food poisoning hospitalization, and the number one cause of food-related death by the Emerging Pathogens Institute in 2012. According to the FDA, 142,000 Americans are sickened every year by eggs contaminated with salmonella. That's an egg-borne epidemic every year. In terms of getting salmonella poisoning from various U.S. foods, eating chicken may be 8 times riskier than eating eggs.
- People infected with the fecal pathogen salmonella can trigger Reiter's Syndrome, which results in chronic, debilitating arthritis for the rest of their lives.
- Campylobacter is now the suspected cause of up to 25% of cases of irritable bowel syndrome and is currently the number one bacterial cause of food poisoning, sickening millions of Americans every year. The bacteria in a single drop of chicken "juice" is enough to make one sick and can persist on a cutting board for hours.
- One of the most feared, long-term complications of food poisoning is Guillain-Barré syndrome, a neurological condition definitively caused by an infectious agent in poultry. Infection with campylobacter, a bacteria contaminating up to 98% of retail chicken meat in the US, can lead to being paralyzed for months on a ventilator. It is a brutally rapid, life threatening, autoimmune attack on the nervous system. It is like multiple sclerosis in fast forward. If the person can get to a ventilator in time, they have a chance. After about two weeks, the immune system backs off, however, if the person survives this, he/she may be left with severe, lifelong disability. With the virtual elimination of polio, poultry products are now the most common cause of acute flaccid paralysis in the developed world.
- Every year, the FDA releases a report on pathogens in meat products and how many are resistant to antibiotics. In 2013, the FDA found that 74% of bacterially tainted chicken products harbored germs that were resistant to 1 or more types of antibiotics and more than 25% of the salmonella-contaminated retail chicken breasts were found to be resistant to 5+ classes of antibiotic treatment drugs. The report noted that 30.3 million pounds of antibiotics were sold and used in livestock feed, a 2.1% increase from 2010. Over 90% of these most resistant bacteria were isolated from chicken carcasses or retail chicken meat. In a recent study, 100% of conventionally-raised chicken products and 84% of organic chicken products were found to have multi-drug resistant bacteria. Organic chicken contamination could occur because day old chicks coming from the hatcheries may already be contaminated or cross-contamination could occur because both groups of chicken are killed in the same slaughterhouses. Factory farms are also dumping antibiotics and antibiotic-resistant bacteria-laden chicken manure out into our environment. Antibiotic-resistant genes have been found in the soil around factory farms.
- A chicken virus spread by feces, adenovirus, appears to pack on abdominal fat while consuming the same number of calories. It led to the term infectobesity. It may be a contributing factor in the multi-factorial model of obesity (overindulgence, lack of exercise, lifestyle, food habits, environment, stress, heredity, and genetic factors) and may explain why poultry consumption is most closely tied to obesity.
- Chicken feces can harbor round worms, hair worms, tape worms, bilirubin, and other digestive products, chemicals and drugs excreted by the liver, and leftover food, as well as the remains of insects and larvae ingested by the chicken. While thorough cooking kills

bacteria, it does not eliminate feces - it simply cooks it. Intestinal contents can spread from bird to bird as intestines are torn out of the carcasses. When the carcasses go through a water bath, the feces tend to mix together in what is referred to in the industry as "fecal soup". Chicken producers do not want to stop using the water bath system because chickens are very absorbent animals. When put into the water bath to chill them, they gain a little weight which is beneficial to the producers that sell them by the pound.

- 2 million pounds of arsenic-containing chemicals are fed to chickens annually in the United States to kill their internal parasites, increase their growth rates, and give their carcass a pinkish tinge, which consumers apparently prefer. As we recently saw in the news, contamination from chicken factory farms is one explanation for arsenic in rice and other plant foods. These arsenic-containing drugs intentionally added to poultry feed are apparently converted by cooking into carcinogenic inorganic arsenic compounds. Nearly 2 million pounds of arsenic per year has been poured into the environment by the US poultry industry alone. It is contaminating rice and brown rice syrup. Arsenic has been deliberately fed to chickens for 70 years. Based on the USDA estimates of arsenic levels in the U.S. chicken supply, the prestigious Medical Letter on the Centers for Disease Control and the Food and Drug Administration concluded, "Chicken consumption may contribute significant amounts of arsenic to total arsenic exposure of the U.S. population...Levels of arsenic in chicken are so high that other sources may have to be monitored carefully to prevent undue toxic exposure among the population."
- Chicken is one of the top sources of arachidonic acid in the diet, an omega 6 fatty acid involved in our body's inflammatory response. We do need some arachidonic acid but our bodies make all that we need. The purported role arachidonic acid plays in brain inflammation could explain why eliminating chicken may improve symptoms of mood disturbance, depression, anxiety and stress within two weeks. Oxidized cholesterol, like that from fried chicken, is one of the most potent inflammatory insults.
- Men who ate the most meat in a recent study had 21 times the odds of essential tremor, a neurological disorder that causes rhythmic shaking.
- The early onset of puberty in girls associated with animal protein consumption may be due to endocrine disrupting chemical pollutants such as flame retardant chemicals in the meat supply and the stimulatory effect that animal protein has on the secretion of the growth hormone, insulin-like growth factor-1 (IGF-1). Flame retardant chemicals have also been found in poultry.
- When the vagina becomes more acidic than it should, pathogenic bacteria being to flourish and bacterial vaginosis can result. Consuming more fruits and vegetables has been found to prevent it and a high fat intake, particularly saturated fat, has been found to encourage it by raising the vaginal pH.
- Our environment is so polluted that endocrine disrupting xenoestrogens, from manmade chemicals, come down in the rain and then accumulate up the food chain. In our diet, they are found predominantly in chicken.
- Fish allergies might not actually be allergies to fish but to living or dead worms within the fish, like anisakis. This is a widespread problem and those with this allergy may even have a reaction from the parasitic fish worm eating chicken that have been fed fishmeal. Anisakis worms are found particularly in cod, anchovies, and squid and can cause chronic hives and intractable chronic itching.

So how does the animal agriculture industry respond to some of these discoveries?

- Bacteria-eating viruses called bacteriophages have been approved as meat additives to reduce the food safety risks associated with processed meat and poultry products. There is a concern, however, that viruses fed to chickens could spread toxin genes between bacteria. Viruses are also being fed directly to the animals by being placed in their feed for the same effect.
- Another innovation the industry is considering in order to minimize fecal contamination is gluing shut the rectal cavities of turkeys and chicken broilers in the slaughter plants before they hit the scalding tanks. There are concerns, though, about glue residues contaminating the final product. Other ideas for sealing up the birds' rectums include some type of mechanical plug or stapling technology.

So instead of switching from beef to chicken, why not consider crowding out the meat on your plate with plenty of whole grains, legumes (beans, peas, and lentils), vegetables, and fruit. All of the nutrients essential to our health abound in the plant kingdom and can be used to create simply irresistible, easy-to-prepare meals.

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