The Effects of a Vegan Diet on Human Health, the Environment, and Animal Welfare as Compared to a Traditional Omnivorous Diet

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It is a beautiful sunny day in Loma Linda California, and Marge just finished a seven mile ride on her stationary bike. She is about to begin her daily weightlifting routine, but what is so special about Marge? She lives in a Blue Zone, adheres to a plant-based diet, and is over 100 years old. Blue Zones are what Dan Buettner of National Geographic defines as parts of the world where people live the longest, happiest, and healthiest lives. Within these zones, people generally abstain from eating animal products, practice some sort of religion, and exercise regularly (Borer). Traditional omnivorous diets have been linked to health problems, negative impacts on the environment, and cruelty to animals, but adopting a vegan diet—which avoids animal products and byproducts—is a great way to positively impact your health, the environment, and the wellbeing of farm animals (Cox).

For those who are concerned with the conservation of planet Earth, a meat and dairy-free diet is an easy way to have a positive impact on the planet. When compared to omnivorous and vegetarian diets, vegan diets are the most eco-friendly option. In a study that was featured in the European Journal of Clinical Nutrition, beef was concluded to be the food with the greatest impact on the environment (Baroni). Methane and nitrous oxide emissions are major players in global warming; the agriculture business alone contributes two-thirds of methane emissions and three-fourths of the total nitrous oxide emissions in the United States (Masson 35). In our country, there is 130 times more animal waste than human waste produced. The Environmental Protection Agency has stated that factory farm run-off waste is a greater source of pollution of our rivers and lakes than all other industrial sources combined (Masson 36). Animal waste is usually held in large lagoon-type reservoirs that frequently break, leak, and overflow. When waste escapes from the lagoons, whether in vapor form or liquid form, the effects are extremely damaging and often irreversible. The gases are known to cause seizures, excessive coughing, headaches, shortness of breath, wheezing, diarrhea, and even death to those who breathe the toxic fumes. When groundwater is contaminated by animal waste, birthing problems such as blue baby syndrome and spontaneous abortions can occur (Pollution from Giant Livestock Farms Threatens Public Health).

In addition to the damage that animal waste causes to humans, imagine how the agriculture business has affected wildlife in surrounding areas. Wild animals do not survive any
better than humans do under toxic environmental conditions, and this has shown to be true over the past few decades. In Britain, 116 species of farmland birds have become scarce over the past twenty years due to the intensive farming practices occurring there (Masson 53). In areas where large numbers of cattle are bred and allowed to roam the land, wildlife suffers tremendously. Species such as elk, pronghorns, and bighorns have vastly decreased in number due to the fact that their grazing land has been destroyed by cattle farms in the area (Marcus 177). Natural predators such as black bears, bobcats, coyotes, foxes, mountain lions, prairie dogs, and timber wolves surrounding farmlands are also killed regularly to avoid lost profits (Masson 177). In a 2004 edition of World Watch magazine, the editors stated that “the human appetite for animal flesh is a driving force behind virtually every major category of environmental damage now threatening the human future—deforestation, erosion, fresh water scarcity, air and water pollution, climate change, biodiversity loss, social injustice, the destabilization of communities and the spread of disease“ (Masson 57).

A typical American diet consists of large amounts of animal protein, cholesterol, and saturated fat, but lacks sufficient amounts of essential nutrients found in fruits, vegetables, grains, nuts, and legumes. The convenience of this unhealthy lifestyle can be very alluring, but the risks can be dangerous and are often fatal. According to a study done in 2000 by The National Center for Health Statistics, the top three causes of death in the United States were directly related to diet and inactivity (see figure 1). Many people are already aware that heart disease is related to diet habits, but they are falsely led to believe that all types of cancer are giant, destructive monsters that are completely
unavoidable. Risks for contracting many types of cancer can be substantially lowered by simply following a vegan diet (Cox, Masson, Marcus, Berkow, Dairy Hazards). Figure 2 shows how intestinal cancer mortality rates increase nearly linearly with an increased intake of meat, with the United States being near the top. Also, the effects of heart disease have actually been shown to be reversed after switching to a vegan diet (Marcus 19). Since cholesterol is only found in animal products and byproducts, vegans have cholesterol levels that are 35% lower than the United States average. This low level can help alleviate clogged arteries and other problems associated with high cholesterol levels (Masson 14). In fact, the Framingham Heart Study in Massachusetts has been monitoring about 5,000 people since 1948 and has found that no one in the study (other than a few patients with severe overall health problems) with a blood cholesterol level below 150 has ever had a heart attack (Masson 10). Dr. Dean Ornish has seen many patients successfully reverse the damage done by meat and dairy by following his vegan program, and in 1998 he published results of his study in the *Journal of the American Medical Association*. His study compared twenty-eight of his patients to a group of individuals who followed the eating guidelines of the American Heart Association. The latter group experienced double the amount of cardiac events as his patients (heart attacks, bypasses, angioplasty procedures, etc.), but his group experienced a 91% drop in angina attacks, better cholesterol levels, better LDL and HDL cholesterol ratios, and they lost an average of twenty-four pounds (Masson 20). Because vegan diets are associated with reduced body weight, risks for contracting many obesity-related illnesses such as coronary heart disease, diabetes, hypertension, osteoarthritis, certain cancers, and many other health problems are severely lowered (Berkow 186).

Dr. John McDougall of *Lifestyle Magazine* believes that a starch-based diet full of fruits and vegetables is the best way to stay healthy and is much better for endurance than a diet rich in protein (*Getting Kids to Eat Healthier*). A common argument against veganism is that
humans are meat eaters and we require meat to be healthy. Critics say that our canine teeth and ability to digest meat prove that we are natural-born meat eaters. Unfortunately, this logic is faulty. Our two canine teeth do not make our mouths even come close to resembling the mouths of carnivorous animals such as cats and dogs. In fact, many other herbivorous animals also have canine teeth such as certain types of antelope, deer, horses, and camels. Concerning our ability to digest meat, humans are very adaptable creatures that can withstand the consumption of large amounts of harmful substances. Therefore, our ability to digest meat does not justify our need for meat anymore than our ability to digest alcohol justifies a dietary need for alcohol. There are also many other physical human features that indicate that we are natural herbivores such as our jaw structure, intestine length, stomach acidity, salivary glands, and nail structure (see figure 3). There may be a few small benefits associated with eating meat, but they are greatly outweighed by the threats.

In 1983 and 1990, studies were conducted in China that compared the health and eating habits of a total of over 16,000 Chinese people and their families—the results were eye-opening. The studies concluded that the more good-quality, plant-based foods that were consumed, the lower the risk became for common diseases such as cancer, cardiovascular disease, and diabetes (Cox 17). The studies also revealed that vegetables are a much better source of calcium than dairy products. In fact, although the Chinese consume only half the amount of calcium that the average American does, osteoporosis is extremely rare in China.

<table>
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<th>Characteristics of Herbivores and Carnivores</th>
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<tr>
<td>Herbivore</td>
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<tr>
<td>Hands/hoofs as appendages</td>
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<tr>
<td>Teeth flat</td>
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<td>Long intestines to fully digest nutrients in plant foods</td>
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<td>Sweats to cool body</td>
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<td>Sips water</td>
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<td>Vitamin C obtained solely from diet</td>
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<td>Exists largely on a fruit &amp; nut diet</td>
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Figure 3. Chart showing different characteristics of carnivores and herbivores (Cox 40-41)
According to Dr. T. Colin Campbell, a nutritional biochemist from Cornell University, “osteoporosis tends to occur in countries where calcium intake is highest and most of it comes from protein-rich dairy products (Cox 17).” When humans consume products rich in animal protein, the pH of their blood becomes somewhat acidic. In order to neutralize the acidity of the blood, calcium is pulled from the bones into the bloodstream and this process can lead to calcium deficiencies and osteoporosis. According to a study comparing randomly sampled Buddhist nuns (who were vegans due to religious restrictions) and omnivorous women, veganism did not negatively affect bone mineral density even though the dietary intake of calcium was lower for the Buddhist nuns (Ho-Pham). This would conclude that vegan calcium sources are just as good at providing sufficient calcium levels as dairy and meat products without adding any saturated fat or cholesterol to the diet. It is also interesting to note that the highest rates of osteoporosis can be found in the Eskimo population, even though it has the highest dietary calcium intake (mostly from fish bones) of any other population in the world (Mazess). With all of the evident pointing towards milk as the culprit of a mounting list of health problems, why do people still view it as a healthy food? Many people are unaware that the National Dairy Council is one of the primary sources of nutrition information for schools across the country—it is no wonder that milk is so heavily promoted in school cafeterias (Silverstein 85). Dairy production companies have been telling us that milk is good for us, and we have been listening without questioning their claims.

One question that always seems to arise is “where do you get your protein?” Many people are under the impression that, in order to get an adequate amount of protein in your diet, you must eat animals. Protein is composed of eight essential amino acids, and these amino acids can be found in a very large range of foods. When we combine these eight amino acids by eating a variety of healthy foods, our bodies form what is called a complete protein. Complete proteins can be made by our bodies using amino acids, or they can be consumed directly by eating meats, beans, nuts, most types of vegetables, and other foods (See Appendix A – Protein Sources).

Another common concern regarding vegan nutrition is adequate B-12 intake through vegetable sources. This concern is valid, because there are serious symptoms associated with
B-12 deficiencies such as anemia, moodiness, poor memory, delusions, hallucinations, confusion, and overt psychosis (Cox 165). B-12 is a vitamin that is most-often produced by bacteria inside the guts of animals, and vegan sources of the vitamin are often limited. For this reason, it is highly recommended that all vegans take a B-12 supplement and/or buy foods that are fortified with B-12 to make sure that they get enough of the vitamin. The interesting thing about B-12 is that it is needed in very small doses, and deficiency cases occur mostly in the meat-eating population (Cox 165). Although meat contains large amounts of B-12 and meat-eaters are still experiencing deficiencies, the problem seems to be that many people have trouble absorbing the vitamin. Either way, vegans should still make sure to include B-12 in their diets to avoid the serious health problems associated with deficiencies of the vitamin.

For many, the choice to omit animal products from their diets is related to concerns regarding the welfare of farm animals. Author Nicolette Hahn Niman said it best when she stated the following:

“Most people share at least the following traits: they want to be healthy; they like animals; and they value clean air and water. Yet relatively few Americans connect those concerns with their food. As more people start making the link (especially if they've seen graphic video footage of industrial animal operations), many decide it's time to stop eating foods from factory farms.”

Pleasant farms located on beautiful, rolling hills with plenty of fresh green grass to munch on are things of the past. The truth is that in the USA, hardly any of the meat supplied to grocery stores comes from traditional, outdoor farms. So, were does the meat come from? It comes from *factory farms*. These “farms” are places that raise animals for their meat and/or by-products (milk, eggs, fur, etc.). Most of the animals raised in factory farms never see sunlight or breathe fresh air until they are on their way to the slaughterhouse to be killed.

Since male chickens do not produce meat as efficiently as female chickens, they are killed immediately after they have broken through their shells. The most cost-effective way to “dispose” of these newly hatched chicks is either to throw them into plastic garbage bags and allow them to slowly suffocate, or to throw them into large grinders and allow their bodies to be crushed (Marcus 102). Even with this considered, perhaps their lives are not nearly as pain-
filled as the lives of the female chicks who go on to become broiler hens. The average broiler hen inside of a factory farm facility has about half of a square foot of cage floor space to herself—not even enough room to stretch her wings ("Factory Farms"). Moving conveyor belts below the stacks of cages carry urine and feces to large pits where they are disposed of. To keep the fly population of the manure pits down, the chickens are often fed pesticides so that their feces is literally toxic. *Force molting* is a routine practice on factory farms where the chickens are starved for fourteen days in order to induce an extra laying cycle. The cramped conditions, toxic air, lack of sunlight, forced starvation, and untreated wounds causes extremely high stress levels in the birds which usually leads to cannibalism and de-feathering of other birds in the cages. To discourage these unprofitable behaviors, factor farm operators decided that baby chicks should be *de-beaked* upon arrival to the factory. This painful process involves chopping off about one-fourth of the birds’ beaks without any anesthetics or painkillers using a mechanical de-beaking machine (see figure 4). The blunt, nerve-entangled tips of the beaks remain sensitive throughout the life of the birds and cause unfathomable discomfort. Many of these birds die of starvation because the pecking action is so severely painful that it prevents them from picking up food morsels off the ground. After living their short, miserable lives at the factory farm as egg-producing machines, the chickens are transported on trucks to slaughterhouses in extreme weather conditions without any food or water. Since they are exempt from the Humane Slaughter Act, they endure incredible suffering and many birds are sent to the de-feathering tank completely conscious to be scalded alive.

The living conditions are not any better for other types of farm animals. Dairy cows have some of the hardest lives imaginable, and many people do not realize how much these animals are suffering due to the very effective ads put out by dairy companies. For example, the “happy cow” ads from California depict pleasant images of “happy” cows frolicking in green pastures, but what most people don’t know is how wrongly the living conditions of the animals
are portrayed. In fact, the next ten “happy cow” ads that the California Milk Advisory Board plans to produce will actually be filmed in New Zealand—more than 6000 miles away from California (Gilbert). The average cow produces approximately one gallon of milk naturally for its offspring, but the average hormone-injected, over produced factory farm dairy cow produces about ten gallons of milk per day from its swollen udders. After being artificially inseminated, dairy cows carry their calves from about nine months and then their offspring are ripped from them within minutes of being born. When a male calf is born, it is sent on to live another sixteen weeks before it is slaughtered and sold as veal. To keep the veal tender, the calf is not allowed to exercise its muscles and must be confined to a tiny wooden crate—not much wider than its shoulders—to prevent movement (see Figure 5). In order to produce the pinkish-white meat that veal is known for, the calves are forced into anemia by being fed cheap, iron-free milk replacer that is packed with powerful antibiotics (Marcus 130).

After hearing about the horrible living conditions and slaughter practices found on factory farms, one has to wonder: who would want to work there, and why? The truth is that most slaughterhouse workers do not want to be there, and killing an average of 1,100 animals per hour can drive them to lose feeling and emotion for the animals that they are slaughtering (Cox 132). Author Peter Cox describes some of the stories heard by workers at slaughterhouses across the country:

“... frustrated stunners, shackleers, and stickers were beating pigs with pipes, poking their eyes out, chasing them into the scalding tank alive, crushing their skulls. They stuck electric prods up animals’ butts and in their eyes and held them there. They dragged disabled animals with meat hooks in their mouths and anuses until their
intestines ripped out. . . They allowed disabled animals to freeze to concrete floors, and then stay there for days; they chain-sawed hogs alive into pieces for rendering” (133). Slaughterhouse jobs have the highest on-the-job injury rates in the United States, and the dangerous working conditions and inhumane job responsibilities cause a turnover rate of about 12% per month (Marcus 144). The largest slaughterhouse in the world is the Smithfield Hog Processing Plant in Tar Heel, North Carolina. Tar Heel is a very economically depressed area, and Smithfield has no problem shamelessly exploiting the residents of the area. Workers are bused in from a 100-mile radius around the plant with a large number of these workers being illegal immigrants who can’t find work anywhere else. One worker stated that Smithfield had the “same mentalities towards the hogs as the workers,” treating them all as “short-term employees” (Food, Inc.). There is a very strategic veil that has been placed between us and the places where our foods are coming from, and it is time that people started taking more responsibility to find out exactly what is going on. Many people choose to turn a blind eye to the conditions under which animals are raised and slaughtered, but these animals are suffering tremendously and they deserve to be noticed. In many states, meat production companies are working to get laws passed that would make it illegal to publish any photos of the food production process taking place (Food, Inc.). They don’t want to you to see what is going on, because if you saw it, you might not want to eat it anymore.

By making a few changes in our eating habits, we can positively impact our health, the health of animals, and the condition of our planet. Humans don’t need animal products to be healthy, so why eat them? Meat and dairy products should be avoided because they have been linked to certain cancers, heart disease, diabetes, hypertension, osteoarthritis, obesity, bed wetting problems, asthma, rashes, ear infections, diarrhea, stomach cramps, gas, high blood pressure, and Rheumatoid Arthritis (Dairy Hazards, Cox, Berkow, Tanday). For those who can’t imagine life without the taste of meat, there are now many delicious substitutes that are readily available, and are completely cholesterol free! By eating nutrient-dense, plant-based foods, many people are choosing to live longer, happier, and healthier lives (Walford). Also, choosing to live compassionately towards other creatures can help to bring a new sense of mental peace and clarity to people who choose to do so. Animals are capable of complex
emotions and should not be exploited as commodities that are unable to feel pain or sadness. Just because everyone else eats meat doesn’t mean that it is the best thing to do. If it were, I doubt that 60% of Americans would be obese or that heart disease would be the number one cause of death in the United States. As we learn more about the consequences of consuming animal flesh, it is very likely that eating meat will eventually become an out-dated tradition of the past.
Works Cited


