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# Anti-Cancer Diets: Revolution or Ruse?

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### Anti-Cancer Diets: Revolution or Ruse?

Still half asleep, you blindly reach over to the nightstand and hit the snooze button just one last time before you have to get up and go through the motions once again. Lunchables, complete with juice boxes and cookies for dessert, are thrown into the three brown bags atop the kitchen counter for the kids. After dropping them off at school, you slide into the office five minutes late as usual. Your day is jam-packed, but the planner sprawling across the desk reminds you about your appointment over the lunch hour. McDonald's will have to suffice yet again because you cannot be late to receive these test results. The nurse calls you back, and you are suddenly paralyzed from head to toe. "You have cancer," the doctor utters. The three words no one should ever have to hear hit you like a train barreling down the tracks, full steam ahead. *Why me? What did I do to deserve this? Am I going to succumb to this monster?* Cancer has a tendency to sneak up, uninvited, on people's blind side. However, the way we treat our bodies has a stronger correlation than we think to whether or not we will ever have to swallow those three traumatizing words.

The general population will eat and drink just about anything if it looks good, tastes good, and is convenient. As the individual in the hypothetical story above showed, it is typically easier to pack a lunch full of processed foods or grab food on the go during the hustle and bustle of our lives. The consequences from what we consume are often pushed to the back of our minds because we can always just exercise to stay healthy, right? Wrong. "You beat cancer by how you

live, why you live, and in the manner in which you live” (qtd. in Castillo). Stuart Scott, an ESPN anchor, coined this quote during a speech he gave at the ESPYs while receiving the Jimmy V Perseverance Award. Although he passed after a seven-year battle with appendiceal cancer, his words resonate around the world. Cancer is a scary disease, but one’s chances of being diagnosed significantly decrease if one is conscientious of what one eats. In addition, patients who are in the process of fighting can pair an anti-cancer diet with treatment to help the odds lean in their favor. Yes, genetics do play a role in a handful of cancer cases, but the choices we make play a larger role in the formation of the disease than we think. As Scott suggested, cancer can be beaten—and potentially averted—by *how* we live. The way we treat our bodies, the environment we surround ourselves with, and what we consume all contribute to how we choose to live our gift of life. Properly following an anti-cancer diet has the power to reduce, but not eliminate, one’s risk of being diagnosed with cancer.

To fully comprehend the idea of anti-cancer diets, it is imperative to understand how cancer is formed and its possible causes. Physician, scientist, and writer Siddhartha Mukherjee described cancer as “a distorted version of our normal selves” in his book *The Emperor of all Maladies: A Biography of Cancer* (Mukherjee 335). There is a possibility we all have cancerous (mutated) cells resting inside of us, but it is how they act that will determine if cancer actually has the chance to develop. The organs in our bodies are constantly creating defective cells; the rapid, uncontrollable, endless duplication of those cells is how tumors develop (Servan-Schreiber 7). Tumors set up camp on tissues of organs and the surrounding areas. The unrecognizable mass begins dominating what it invades which results in failure of that region of the body (Khayat 28). Referring back to Mukherjee’s words, cancer is created when our bodily processes cease to act normal. Mounting evidence suggests no one can avoid being a host to defective cells, but how

they act is the final determinant in whether or not one will be predisposed to cancer. Throughout the course of a day, approximately seventy million deoxyribonucleic acid (DNA) helix replications occur and about ten thousand of those are mutations (Khayat 30-31). This means everyone runs the risk of forming cancer ten thousand times per day! Luckily, however, our bodies are highly functioning machines where internal defense mechanisms reside to combat these defective cells from becoming rapidly dividing more so than not. So what is it that causes these cells to deviate from the norm and act in such a wild fashion?

Whether it be from genetics or environmental factors, all cancer is formed in the same manner; cell mutations lead to rapidly dividing cells that form tumors. A miniscule five to ten percent of all cancers are a result of genetics, which are classified as “beyond our control” since we do not hand-pick our genes. In opposition, more than ninety percent of all cancers are linked to environmental factors and personal choices (Anand et al. 2097). Every human being has a unique genome which contains the entire collection of his DNA. DNA must be copied each time a cell divides, rendering it susceptible to replication errors that ultimately result in cell mutations. DNA is replicated by attaching adenine (A) to thymine (T) and cytosine (C) to guanine (G). If just one of these letters does not attach to its respective counterpart, a mutation has occurred (Khayat 27-33). Our DNA replication is *nearly* perfect, but in the event of even one unfortunate substitution, cancer has the potential to form. Therefore, only five to ten percent of cases are dubbed “beyond our control” because they are the result of genetic defects. We have to live with the genes we are born with from day one whether we like them or not, and thus a small number of cancer cases are unfortunately inevitable. On the contrary, one might proclaim, “Well, *all* cancer diagnoses have to be out of our control. We cannot tell our bodies what to do and what not to do!” Despite the fact that there is truth in this statement which was verified above, we

entice cancer a lot more than we would like to think. Environmental factors contributing to ninety percent of cancer cases include, but are not limited to, the following: certain lifestyles people choose to live, carcinogens which can come from smoking or burnt foods, and radiation from cell phones and the sun's ultra-violet rays. The "lifestyles" category is a large umbrella which covers areas such as drug and alcohol use, physical fitness, and diet (Anand et al. 2099-2110). In particular, the foods and beverages we consume have a stronger correlation to the formation of cancer than we think. Advancements in nutritional sciences have allowed for new and informative studies about the power of anti-cancer diets. As a result, the validity and utility of anti-cancer diets have become a heavily contemplated issue which has given rise to the ultimate question—anti-cancer diets: revolution or ruse?

Studying the combination of dietary habits and demographics provides a good starting point to this controversy. It is by the nature of our being that we as humans have a tendency to conform to the society we live in and to those who surround us on a daily basis. On a demographic level, each group has its own identity which ranges from cultural rituals to social status to food consumption. With that being said, studies have been performed to test if a scientific correlation exists between cancer rates and the environment, specifically diets, in different parts of the world. T. Colin Campbell, a nutritional biochemist, along with his son Thomas, compiled a book titled *The China Study* in which they dissect various studies regarding cancer and diets. In 1970, Chou Enlai, the premier of China at the time, was on a mission to find out more about cancer rates and distributions during his own battle with the disease. Enlai's survey reached 880 million people in over 2,400 Chinese counties. The findings of this study produced a color-coded map of China to show where certain cancer rates were the highest and where they did not exist. The more densely populated Eastern areas of China had a greater

number of cancer cases as opposed to the Western region. A wide variety of cancers were detected including esophageal, stomach, liver, colorectal, lung, and breast. The Campbell's were able to rationally conclude that the probable cause of this diverse array of cancer cases reported were mainly attributed to environmental factors since China has a fairly homogenous genetic background. In addition to the Premier's research, the Campbell's themselves ran a study to understand why cancer rates in China were much smaller than overseas in the United States. "In America, fifteen to sixteen percent of our total calories comes from protein and upwards of eighty percent of this amount comes from animal-based foods. But in rural China only nine to ten percent of total calories comes from protein and only ten percent of the protein comes from animal-based foods." This study emphasizes the idea that one's risk of cancer increases when consuming diets favoring animal-based foods. As a result, anti-cancer diets promote natural plant-based products (Campbell and Campbell 69-75). There is *not* a cure for cancer, but there are preventative measures that can be taken through the dietary choices one makes.

The general population tends to have a love-hate relationship with food. We love the taste of delicious fatty foods, but we hate the impacts it has on our health. We love the idea of eating foods that prevent against cancer, but we hate preparing the meals and actually following through. Amy Wigmore, a health practitioner and whole foods nutritionist during the mid to late-1900s, penned these wise words: "The food you eat can either be the safest and most powerful form of medicine or the slowest form of poison" (qtd. in Markey 137). Contrary to popular belief, weight gain is not the only negative affect a poor diet can inflict upon us. The demonizing and obnoxious disease of cancer is heavily connected to our diets. According to Michael Pollan, a *New York Times* bestselling American author, all of the scientific studies performed in regards to dietary fat and cancer produced similar findings: higher cancer rates are strongly correlated

with animal-based diets that contain an abundance of saturated fats. This broad category of dietary consumption can be anatomized into simple sugars (refined grains) and processed foods—two heavy contributors to the provocation of malignant cells (Pollan 10-11, 25). At this point, you might be mumbling to yourself, “Cancer is greedy enough. How do the cells have a preference of what they eat, too?”

Just like all living organisms, cancerous cells need nutrients to grow. Hal Hodson, a writer for the magazine *New Scientist*, proclaims “cancerous cells are particularly glucose-hungry and, unlike other cells, don’t have the ability to switch fuel sources.” He then goes on to explain how cancer cells’ supply lines would be cut off if people eliminated simple sugars (which are broken down into glucose) from their diets (Hodson 11). Not only does consuming too much simple sugar ultimately encourage cancer cells to rapidly divide, but there is a strong relationship between obesity and cancer. When simple sugars (refined grains) are consumed, they are absorbed into the bloodstream and sugar levels sky rocket. To counteract this bodily function, insulin—a hormone that resides in the pancreas—is released to remove glucose from the blood and deliver it to the cells to be used for energy. On the contrary, complex sugars (whole grains) are absorbed at a much slower pace which result in a more gradual increase in blood sugar (Khayat 102-105). If one consumes too much simple sugar and the pancreas becomes overwhelmed by the rapid release of insulin, chronic health problems have the chance to surface. Among issues such as diabetes and heart disease, one life threatening problem that results from overdosing on sugar is obesity. If one consumes significantly more simple sugar than they burn off through physical fitness, it will turn into fat. Obesity increases one’s risk of being diagnosed with cancer because fat tissues have a tendency to produce inflammation and certain hormones that are directly related to tumor formation (“Obesity and Cancer Risk”). A

group of 60,000 French women were observed over the course of ten years during which their daily sugar intake was recorded. At the end of the study, the scientists concluded that being overweight is strongly correlated with the diagnosis of breast cancer. Although they did not find a direct connection between sugar and cancer, sugar is a leading cause of obesity which is a detrimental factor when it comes to cancer (Khayat 104-105). Majority of processed foods are home to more sugar than we know what to do with, so it is a fair to assume that those are a big red flag as well.

The twenty-first century is unarguably the era of convenience-seekers; we tend to not have patience for things that *actually* matter—our health being one of them. Lunchables, which are pre-packaged “lunches,” might be easier to pack than it would be to make a turkey sandwich on wheat bread, but what is in that pink slimy disc they call meat? Sugar, thiamine, folic acid, modified cornstarch, smoke flavor, high fructose corn syrup, sodium phosphate, sodium benzoate ... You get the point. According to Pollan, one should not consume products if one does not know, let alone know how to pronounce, more than five ingredients on a food label. Foods are considered processed when they have been altered from their natural states (Pollan 149-150). Anti-cancer diets exclude all things processed, especially altered meat. This realm of foods tends to be high in refined grains and saturated fats but low in fiber and nutrients (Turkington and LiPera 122). In accordance with the American Cancer Society, the International Agency for Research on Cancer (IARC) suggests there is an association with processed meat and cancer because of its carcinogenic nature. 800 studies were used by two scientists as support for this statement. “They found that eating fifty grams of processed meat every day increased the risk of colorectal cancer by eighteen percent. For red meat, there was evidence of increased risk of colorectal, pancreatic, and prostate cancer” (Simon). While not all red meat should be

eliminated from diets assuming it is cooked correctly, it should be consumed in moderation. As for processed meats and really anything chemically modified, one should part ways with those as quickly as possible.

If sugar and saturated fats lead to obesity and we must also steer clear of processed foods, then what on God's green earth are we supposed to eat? Anything unprocessed, or in its raw form, is essentially considered part of an anti-cancer diet. The lifestyle choice of consuming an anti-cancer diet focuses on foods that help fight, as opposed to feed, cancerous cells. As discussed before, maintaining a healthy weight tremendously helps reduce one's risk of being diagnosed with this illness. According to the 2010 Dietary Guidelines for Americans (DGA), one can have the scale land right where it should by consuming the appropriate number of calories through a diet of fruits, vegetables, nuts, and whole grains. Consuming these products results in lower bodily inflammation and ebbs vascular disorders (Casari and Falasca 2312-2314). All of these food groups are unprocessed and contain very low amounts of saturated fats, which is why they are main components of anti-cancer diets. A study published in 2013 by the *New England Journal of Medicine* discovered "...individuals who consumed a twenty-eight-gram portion of nuts two or more times per week were associated with a significant diminished risk of developing pancreatic cancer" (Casari and Falasca 2313). Unfortunately, we do not have a cure for cancer right now and will most likely never live to see one. However, there are so many alterations one can make to one's daily life to reduce the risk of becoming a part of that ninety percent. Food and beverage consumption is at the top of the list, and the contents of that list are much longer than just fruits, vegetables, nuts, and whole grains.

Aside from a plant-based diet, experts suggest eating an abundance of foods containing antioxidants to lower one's risk of having to hear a doctor utter those three unpleasant words.

The main goal of an antioxidant is to “destroy the naturally occurring toxic molecules called free radicals that can cause extensive damage to the body’s cells.” Damage to the cells, usually resulting in mutations, is highly connected to the development of cancerous masses. Antioxidants are found in unprocessed and raw foods. Some of the forms in which they are present are vitamin C, vitamin E, beta-carotene, and selenium. Branching off of the four main groups mentioned previously, antioxidants are primarily found in citrus fruits, leafy and bright colored vegetables, seafood, potatoes, and whole grains, just to name a handful (Turkington and LiPera 121). As far as beverages go, majority of accessible drinks are not part of anti-cancer diets. Alcohol, pop, juice, energy drinks, and sports drinks all contain copious amounts of sugar. Even diet beverages are harmful because of all of the chemicals added to replace the sugar that magically “disappears”. A few drinks you cannot go wrong with are water, milk, and antioxidant-packed unsweetened green tea. The Nutritional Prevention of Cancer Study Group at the Arizona Cancer Center carried out a study with 1,312 Eastern United States participants to determine how efficient selenium, an antioxidant, is in preventing the relapse of non-melanoma skin cancer. Each participant was treated daily over the course of five years with a high-selenium baker’s yeast tablet weighing half of a gram. At the end of the study, the group concluded the following: “Prostate cancer incidence was significantly reduced by selenium supplementation; lung cancer incidence showed a nonsignificant twenty-six percent reduction; colorectal cancer incidence exhibited a marginally significant reduction of fifty-four percent” (Duffield-Lillico et al. 630-633). In summary, this group supported the idea that antioxidants of various kinds, specifically selenium in this case, have the power to diminish cancer risks primarily in men. Albeit heavy evidence suggests the effectiveness of anti-cancer diets, skepticism never fails to come out of the wood work.

Think of anti-cancer diets as a brand new infomercial for the latest gadget. The main question people have after seeing one of these advertisements is “Well, does it work?” Simply scratching the surface of anti-cancer diets does not provide one with enough information to fully understand the biology of them. As a result, it is easy for those in the general population who lack a strong science background to not buy into the preventative measure of anti-cancer diets. They are more likely to “believe it when they see it [work]” as opposed to openly adopting scientists’ suggestions from the beginning. However, if skeptics look at the research provided, conducted by scientists all around the world, they will be introduced to fairly basic evidence that indicates these diets *do* have the power to reduce one’s risk of being diagnosed with cancer. Eating healthy foods allows one’s bodily processes to work in harmony which helps prevent cells from rapidly dividing (Altman and Sarg 89). It is important to remember that following a diet of this nature does not guarantee you will never have a form of the disease. In the unfortunate event that cancer does arise in one’s body, do these diets also have the potential to bolster treatment? Making such a drastic lifestyle change at such a stressful time (while receiving treatment) can decrease the effectiveness of the chemotherapy and/or radiation because of the high demands already placed upon the body—even though the correct foods have the potential to work along *with* the toxic drugs. Dr. David Servan-Schreiber, a French physician, neuroscientist, and author of the book *Anticancer: A New Way of Life*, lived with a brain tumor for twenty years before passing from it. Although he was receiving treatment to shrink the tumor, he dedicated changing his entire lifestyle to reduce the advancement of his malignancy. He strongly believed his combination of treatment along with an anti-cancer diet prolonged his life (Servan-Schreiber 221). Conventional medicine has been used for a long time with supplements, such as diets, for a reason—they typically work.

While some cynics do not believe in anti-cancer diets to prevent or aid in treatment, they promote a controversial and trendy holistic approach instead. Holistic treatment, also known as alternative medicine, is a route some patients choose to take instead of being treated with a typical modern regime because they are weary of the chemicals invading their bodies. Popular forms of this treatment include natural herbs, acupuncture, and juice cleanses. Maureen Salamon, a writer for the Memorial Sloan Kettering Cancer Center, warns people in one of her articles that “these cancer therapies should be regarded with great caution because most are unsupported by evidence” (Salamon). In opposition, anti-cancer diets *are* supported by numerous studies and should be taken more seriously. Regardless of what one supports, however, cancer is always uninvited and extremely life-altering, but never life-defining.

At first you are speechless, and then the thoughts flood your mind until you cannot even think straight. You try to process the three words the doctor just solemnly spoke, “You have cancer.” After a couple of weeks go by, you are past the denial stage and come to terms with the fact that you are sick. You never want to have to see your children, or anyone for that matter, endure anything like this, so you put your foot down right here and now. No more Lunchables, no more McDonald’s, and no more excuses even though you are the ringmaster of this very hectic circus you call life. A lifestyle change is in order to promote a healthy body full of rich and natural foods. Properly following an anti-cancer diet has the power to reduce, but not eliminate, one’s risk of being diagnosed with cancer. There is not a cure for cancer because each type is specific to each host. However, it has been scientifically suggested that consuming foods in their natural states, items packed with antioxidants, and plant-based products all contribute to lessen one’s risk of developing cancer (Altman and Sarg 88). Cancer cells want to be fed certain things; by eliminating those from our diets, we not only starve them but also increase our overall

health which reduces the risk of cancer (Servan-Schreiber 36). People will always voice their opinions if they have even the slightest doubt regarding the exponential leaps and bounds nutritional science has taken in the past couple of decades. Although cancer would not become extinct if everyone followed a diet of this nature, anti-cancer diets *are* a revolution nonetheless. Since this lifestyle change is extremely beneficial to us as human beings, it should be promoted more enthusiastically. Being touched by cancer on any level changes us, there is no arguing that. But it is up to us to decide what that change will mean in our lives, and ultimately who we will become and how we will live as a result. Will *you* partake in the protective measure of an anti-cancer diet in an effort to avoid hearing those three numbing words—“You have cancer”?

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