The TRUTH About CANCER
educate • expose • eradicate

HEROES AGAINST CANCER NEWSLETTER

Vol. 4 | Issue 4 | April 2018

In This Issue:

Iodine Deficiency and Cancer: What's the Connection?

By Ty Bollinger

As you probably know, there are certain fundamental nutrient compounds that the human body needs – but is unable to produce on its own – in order to stay alive. One of these is iodine, an essential element found primarily in the oceans of the world. Besides being a match made in heaven for the thyroid gland (more on that later), iodine represents a critical piece of the greater biological puzzle that makes up the human body.

Without iodine, our bodies would pretty much be doomed to failure. That's because most (if not all) critical bodily functions rely on this energetically-charged substance to fuel their performance as designed. Everything from hormone production to brain development to energy metabolism is contingent upon the presence of iodine, and a deficiency can lead to some serious health consequences.

Many people are under the false assumption that they're already getting enough iodine in their diets. That's because table salt – which is added to pretty much everything these days – typically comes "iodized" in accordance with government guidelines. But as you're about to learn, the type of iodine added to table salt isn't

continued on page 3

Message From Ty Bollinger

Greeting Heroes Against Cancer readers.

As I'm writing this message, the team and I are (frantically) putting the final touches on our *The Truth About PET Cancer* 7-episode series. By the time you get this newsletter, the dust will have settled and I hope you'll have watched and gotten great value from this latest TTAC effort.

We've already got our next docu-series in mind, and will be starting work on that very soon. All this, of course, is part of our ongoing effort to bring you the best and most up-to-date health information out there... for both you and your loved ones (whether 2- or 4-legged)!

While nothing that we share in the HAC newsletter should ever be construed as "medical advice," I highly recommend that you discuss the things you're learning with your trusted healthcare provider.

After all, nobody knows (or cares about) your body and the state of your health the way you do. And a doctor in a busy practice likely doesn't have the countless hours to spare that we pour into researching the latest in health research and what's being reported from clinical practice.

On that note, we've got three stellar articles for you this month along with three delicious new recipes that really support a healthy body.

In this issue I'm diving into the subject of iodine and cancer and Dr. Jockers is here with his recommendation for what he thinks is the ultimate anti-cancer diet. Plus you'll hear first-hand from a breast cancer coach about the top questions she gets from her clients.

Enjoy this month's issue and until next month...

Ty Bollinger

continued from page 1

really optimal for our bodies. Neither is it present in high enough quantities to keep our iodine stores at *optimal* levels.

The shocking truth is that rates of iodine deficiency in the developed world have dramatically increased more than *fourfold* over the past 40 years. As many as three out of every four "healthy" adults now show signs of having an iodine deficit in their bodies.[1] The vast majority, however, likely haven't made the connection between their symptoms and a lack of iodine because the issue is rarely, if ever, spoken of in mainstream medicine.

It really should be, though, seeing as how iodine deficiency has been scientifically linked to many types of chronic illness that are increasingly prevalent in our modern day. This includes:

- obesity
- heart disease
- cognitive impairment
- psychiatric disorders
- breast abnormalities
- a variety of cancers

In all honestly, iodine deficiency is arguably the most serious health epidemic of the modern age that's flying under the radar of most conventional health professionals – and public health is suffering as a result.

What Exactly Is Iodine, and How Was it first Discovered?

In its purest form, iodine exists as a gleaming, purplish-black, non-metal halogen substance that occurs naturally in solid form. However, it very easily sublimates (modifies) due to its high state of chemical reactivity. This means it can be easily transformed from a solid to a gas, bypassing the liquid state entirely.

This is actually how iodine was first discovered. A French scientist by the name of Bernard Courtois accidentally "created" it for the first time back in 1811 while burning seaweed ash as part of the manufacturing process for making gunpowder.[2] Courtois's combining of sulfuric acid with the seaweed ash caused the iodine locked inside it to basically escape as a purple-hued vapor, which subsequently condensed to form dark crystals.

Iodine would officially be named as such just two years later, as well as receive its first scientific paper outlining its effects on the body. Patients with a condition known as goiter were observed to benefit greatly from the consumption of seaweed. Putting two and two together quickly led to a scientific consensus that iodine was, indeed, the elemental nutrient inside these ocean plants that was responsible for this powerful prophylaxis.[3] [Note: Prophylaxis is action taken to prevent (a specific) disease.]

This is right around the time when iodine earned its "new element" status, eventually making its way onto the periodic table of elements. It sits alongside other well-known elements that are all harmful to the body – bromine, fluorine, and chlorine. But as 19th century scientists would quickly learn, iodine is a beneficial *trace mineral* with virtually limitless potential for *supporting* human health.

A quick rundown of some of iodine's major milestones in medicine throughout history include:

» **1833:** The discovery by French chemist Jean-Baptiste Boussingault that the prophylaxis, or healing, of goiter can be achieved simply by adding more iodine to one's diet.[4]

» **1851-52:** The publishing of a hypothesis by French chemist Adolphe Chatin that iodine deficiency is actually *the* cause of goiter.[5]

» **1883:** The finding by Dr. Felix Semon that cretinism, myxoedema, and cachexia strumipriva – which are really just different phases of the same form of thyroid disease – are all caused by a lack of iodine.[6]

» **1896:** The discovery by German researchers Eugen Baumann and E. Roos that the thyroid gland stores up iodine and uses it to produce vital hormones.[7]

It was somewhat early on during all of these discoveries when the famous Frenchman Dr. Jean Lugol came on the scene. He developed a standardized iodine solution that's still widely popularly today, known as Lugol's iodine. Dr. Lugol was the first to discover that iodine could be bonded with potassium to make it water-soluble. This created a type of iodine we now refer to as potassium iodide (KI) that effectively stabilized the iodine while also unlocking its antiseptic properties.[8]

Hungarian chemist and Nobel laureate Dr. Albert Szent Györgyi, the physician who first discovered vitamin C, encapsulated what was understood about iodine at the time when he stated:

"When I was a medical student, iodine in the form of KI [potassium iodide] was the universal medicine. Nobody knew what it did, but it did something and did something good. We students used to sum up the situation in this little rhyme: 'If ye don't know where, what, and why, prescribe ye then K and I.' "[9]

The arrival of the 20th century would bring about a progressively clearer understanding as to how iodine works within the human frame, forging an expansion of science throughout the rest of Europe and into North America. Scientists from both the U.S. and Switzerland would eventually be credited with solidifying iodine's use as an effective treatment for goitrogenic diseases in general. This led to iodine's widespread recognition later on as a vital element for supporting pretty much all aspects of human health.

Iodine, Hormones, and Biochemistry: A Full-Spectrum Nutrient

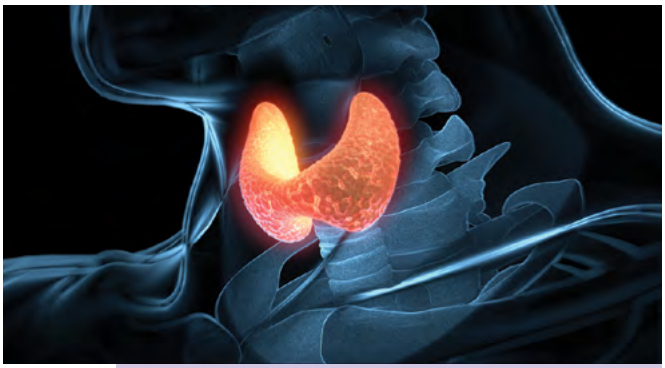
As I mentioned earlier, iodine's original claim to fame primarily centered around its role in preventing and treating goiter, which is basically just a fancy word for describing swelling of the thyroid gland. The vast majority of goiter cases are caused by *insufficient* iodine, science has definitively proven, which is easily remedied by simply taking more iodine.

But there's a whole lot more to iodine beyond just its ability to quell abnormal glandular growths. The thyroid gland, as you may already know, is a key part of the body's entire endocrine system, which is responsible for manufacturing the vital hormones that you need to stay healthy and strong. The thyroid gland *thrives* on iodine, using it to produce critical thyroid hormones like triiodothyronine (T3) and thyroxine (T4).[10]

T3 contains three iodine molecules combined with the amino acid tyrosine (hence the number three), while T4 contains four iodine molecules bound to tyrosine. Iodine merely functions as the base molecule, in other words, for the thyroid gland to produce these vital thyroid hormones. These hormones are constantly being released into the bloodstream and transported throughout the body to perform various functions.

While thyroid cells are the only cells in the body that are capable of absorbing iodine, the resultant hormones they produce are needed by *every single other cell in the body* to perform their respective duties. A lack of iodine in the thyroid gland inhibits not only its own production of thyroid hormones, but also many other bodily processes that rely on them to perform as designed.

Keep in mind that the thyroid gland is governed by the pituitary gland, a small, peanut-sized gland at the base of the brain that functions as the body's "master" gland. The pituitary gland is responsible for producing hormones like testosterone, human growth hormone (HGH), and dehydroepiandrosterone (DHEA), as well as thyroid-stimulating hormone, or TSH, which communicates to the thyroid gland to produce by T3 and T4.



The thryoid gland is a key part of the endocrine system. It thrives on iodine and uses it to make vital hormones, including T3 and T4

It's a complex process, but suffice it to say that problems arise when the pituitary gland produces TSH that the thyroid gland can't use because it doesn't have enough iodine to produce its own T3 and T4. Even worse is when the thyroid gland is polluted with iodine displacers like fluoride and bromide that block its functional capacity entirely. It's a cascading failure that affects every system from the top all the way down to the bottom, illustrating the vital importance of iodine for maintenance of the entire body.

Iodine's role in systemic bodily health is further illustrated by the fact that 70% of the body's iodine stores are found in extrathyroidal tissues – meaning outside of the thyroid gland.[11] Such tissues include the stomach mucosa, salivary glands, and lactating mammary glands, as well as the choroid plexus of the brain, the ciliary body of the eye, and the lacrimal gland, thymus, skin, placenta, ovary, uterus, prostate, and pancreas.[12]

Lactating mammary tissue is especially needy for iodine, as this is the vector through which a breastfeeding child receives iodine from its mother. Meanwhile, all the rest of the iodine found in other bodily tissues helps to provide comprehensive antioxidant, anti-inflammatory, anti-proliferative, antibacterial, pro-apoptotic, and pro-differentiating benefits – as long as the body has enough of it, of course.

Iodine Deficiency: Its Causes and Symptoms

A shocking number of people, it turns out, are iodine deficient these days. The simple answer as to why is that many people simply aren't taking in enough iodine on a daily basis. There are a variety of reasons for this that we'll delve into shortly. Most people living in the industrialized world are also under attack from a constant barrage of chemical toxins that not only displace iodine from the body, but proceed to set up residence in its place.

It's a very serious problem pretty much everywhere except in coastal regions where native populations eat large quantities of seaweed and seafood – which is where the most abundant and biologically-available sources of natural iodine are found. Seaweed foods like kelp, arame, kombu, and wakame are all excellent sources of highly bioavailable iodine[13] – containing roughly 4,500 micrograms (mcg) of iodine per dried quarter-ounce, according to iodine expert Dr. Edward Group from the Global Healing Center.[14]

Seawater and the sea salt that it contains is also replete with iodine, though in much smaller quantities than what's found naturally in seaweed.[15] You'll also find iodine in sea creatures like scallops and shrimp, but again, not to the degree that it's found in seaweed.

For most people around the world seaweed and seafood just isn't on the everyday menu. This means that, apart from the trace amounts of iodine people are get-

ting from table salt and the occasional sushi roll, most of the population is lacking in this important nutrient. And while there was once a time when iodine was present in noteworthy amounts in growing soils, those days are long gone as well. Chemical pesticides and herbicides have all but completely stripped our once-fertile lands of their minerals, which has created widespread deficiency in iodine and other important nutrients.

If you suffer from symptoms like inexplicable emotional ups and downs, constant fatigue, slow metabolism, and undesired weight gain, you could have an iodine deficiency. "Brain fog," or an inability to think clearly, is another common symptom of too little iodine, as are symptoms like cold hands and feet, dry skin, insomnia, hair loss, poor immunity, forgetfulness, and drastic mood swings.

If you start to develop nodules around the thyroid, or any number of other cystic conditions such as polycystic ovary syndrome, fibrocystic breast disease, uterine fibroids, ovarian cysts, or fibromyalgia, you're almost *certain* to be suffering from an iodine deficiency.

Cold hands and feet, along with dry skin, insomnia, hair loss, poor immunity, forgetfulness, and drastic mood swings can all be signs of an iodine deficiency

The good news is that, in adults, such symptoms can often be reversed simply by taking in more iodine. But in young children, the consequences can be more drastic and permanent, as iodine is an important developmental nutrient that helps to prevent intellectual disability and low IQ. This is why women are often advised to eat more iodine-rich foods or take iodine supplements during pregnancy.

Iodine Helps to Clear the Body of Toxic Halides Like Bromide and Fluoride

Another major cause of iodine deficiency is chronic exposure to environmental and dietary toxins. Halides such as fluoride and bromide are some of the worst offenders in terms of how they interfere with iodine uptake, as they basically supplant iodine wherever it's being stored throughout the body. Halides tend to accumulate in cell tissue as well; oftentimes much faster than the body is able to safely and effectively eliminate them.

The minimal quantities of iodine that most people consume simply can't compete with chronic exposure to its biggest competitors, which include fluoride in water, pharmaceuticals (those that start with "fluor" represent the most common types) and toothpaste, and bromide in plastic products, vehicle interiors, mattress, and furniture. The end result is systemic chemical toxicity – not to mention the progressive depletion of iodine from the body.

And who could forget chlorine, that ubiquitous toxic halogen that's commonly found in pool water and household cleaning products. Unlike it's non-toxic counterpart chloride, chlorine is highly disruptive to the body's iodine balance. Like bromide and fluoride, it's everywhere and constantly competing for receptors in the body that are designed to house iodine.

Fluoride (found in many municipal water supplies and toothpaste), competes with receptors in the body that are designed to house iodine

It all sounds hopeless until you realize that the situation is easily reversible in many cases. Even though these toxic substances aggressively displace and deplete iodine from the body, that's only because there isn't enough readily available iodine to fight back. By adding more iodine into your diet, in other words, you can quickly and safely turn the tides and get back on track towards improved health.

Iodine Protects Against Free Radical Damage

Detoxification is just one of *many* health benefits to be gained from taking iodine. This relatively rare earth mineral has repeatedly been shown in the scientific literature to help improve serum antioxidant status. This means it possesses a powerful ability to fortify the body's natural defenses against disease-causing free radicals.[16]

Iodine in its molecular form – or what many refer to as atomic or nascent iodine (I2) – is so powerful in terms of its antioxidant potential that one study found it to be 10 times more potent than even vitamin C (in the form of ascorbic acid). This same study found that I2 is also 50 times more potent than potassium iodide (KI) in blocking cellular oxidation (though KI plays other important roles in the body that shouldn't be discounted).[17]

In the same vein, iodine possesses powerful anti-inflammatory properties that could help to protect against inflammation-related disease. One study found that a topical hydrogel containing liposomal (highly protected) iodine helped to improve outcomes in wound repair by minimizing the inflammatory actions that would have otherwise slowed or impaired the natural healing process.[18]

Iodine Helps to Balance Insulin and Blood Sugar Levels

Then there's diabetes, one of the most prevalent health conditions in the world today, and one that afflicts as many as half a billion people worldwide.[19] A cofactor to insulin, iodine has been shown to help keep this important hormone balanced and in steady supply as needed to modulate blood sugar levels. Observational research of patients taking high amounts of iodine has further shown that the element increases the sensitivity of insulin receptors; the effect being even more pronounced blood sugar control.

Dr. Jorge Flechas, one of the nation's top specialists in iodine therapy, observed that diabetic patients of his who took between 50 and 100 mg of iodine per day were able to dramatically reduce the amount and frequency of their insulin injections and other corresponding medications. Even better, a whopping half of them were able to come off of their medications entirely as a result of taking the iodine.[20]

Topical Iodine for Anti-Aging Skin Benefits

For all-natural skin care, there's arguably nothing better than simple I2 mixed with USP-certified vegetable glycerin. This safe concoction can be applied under the eyes, over "crow's feet," or anywhere else on your skin or body to help promote healthy rejuvenation and structural cell repair. It can also be applied to cuts, burns, and other more serious skin conditions to help promote more rapid healing while reducing scarring. (Tip: iodine can tem-

porarily stain the skin, so don't apply just before you're planning to head out to an important event!)

What makes this simple iodine "gel" even more special, in my opinion, is the fact that it can actually work *better* than all of the fancy-schmancy anti-aging cream products out there. Yet it's far less expensive to make and contains none of the plasticizing and other toxic chemicals so frequently found in store-bought body care products.

Iodine as a Remedy for Fibrocystic Breast Disease

Earlier, I touched on how iodine first gained recognition in the realm of human health for its ability to target goiter and cysts. And for women, this has had a particularly noteworthy impact on the way that breast conditions like fibrocystic breast disease are treated. What we now know is that iodine is a safe and easy solution for a number of different breast abnormalities, many of which are implicated in more serious conditions like breast cancer.

Research published back in 1993 by Dr. W.R. Ghent from Queen's University in Canada outlines in more detail how iodine can be used for this specific subset of ailments. After reviewing three separate clinical studies, the first of which began back in 1975, Dr. Ghent confirmed that iodine is a highly effective remedy for fibrocystic breast disease – with I2, as opposed to sodium iodide and protein-bound iodide, producing the best results.[21]

This makes sense, considering women's breasts need a tremendous amount of iodine to stay healthy, according to Dr. Ed Group. The uterus has a similar affinity for iodine, as does the prostate – demonstrating further that iodine is a vital component of both women's *and men's* health. The immune system loves iodine as well, as it's been shown to utilize iodine in its own production of disease-fighting white blood cells, which are critical for tackling perhaps the most dreaded disease of all: *cancer*.

Iodine and Cancer: What You Need to Know

Iodine is one of cancer's most feared arch enemies. It's proven itself to be a powerful weapon against breast cancer specifically, with demographic studies showing that high iodine intake is directly associated with low rates of breast cancer, and vice versa. Since we also know that diseases of the thyroid (which, again, acts as a sponge for iodine) are often associated with breast cancer, it becomes even clearer the important role that iodine plays in helping to stop the one from provoking the other.[22]

The thyroid acts as a sponge for iodine. Iodine deficiency is linked to thyroid deficiency, which is linked to breast cancer

In terms of which types of iodine work best, molecular iodine, or I2, appears to be best suited for targeting breast abnormalities, while iodides seem better equipped at supporting healthy thyroid function.[23] But they both serve a purpose, which is why many health practitioners will advise their patients to take both forms in tandem with one another for maximum protection against all types of disease.

As for I2 all by itself, a preliminary clinical study of 22 women with breast cancer who were given just 5 mg per day of I2 found that the element substantially increased expression of peroxisome proliferator-activated receptor type gamma, or PPAR-gamma. PPAR-gamma is

implicated in the growth and spread of cancer cells, and also plays a role in apoptosis (cancer cell suicide), decreased proliferation, and a decrease in estrogen's damaging cellular effects.[24]

Another study of 111 women with cyclic mastalgia found that 50% of those who took 6 mg per day of a combination of iodide and iodate, both of which were assumed would be converted in the stomach to I2, experienced significant reductions in their symptoms after just six months of supplementation.[25]

Both *in vitro* and *in vivo* studies have also shown I2 to be powerfully effective against breast cancer, as I2 is capable of directly inducing apoptosis in human breast cancer cells through a variety of mitochondrial mediated pathways. One rodent model found that I2, as opposed to potassium iodide (KI), helped to prevent mammary carcinogenesis from progressing via antineoplastic mechanisms.[26] This would explain why iodine levels are often found to be noticeably higher in cancerous breast tissue, where it's actively working to combat cancer cells, compared to healthy surrounding tissue.[27]

A rat model illustrated the cancer preventative benefits of taking iodine as well, as the simple addition of just 0.05 percent I2 into the animals' drinking water led to a 37.5% reduction in mammary tumor incidence, compared to no change in control rats. Expression of PPAR-gamma and pro-apoptotic caspase 2 – both cancer-fighting mechanisms – also increased in the rats who drank the water containing iodine, while both the vasculature of their tumors and their vascular endothelial growth factor expression saw major reductions.[28]

If you're a women, you should also know how iodine affects the body's production of estrogen with regards to receptor-positive breast cancer. Research conducted by Dr. Jonathan Wright from the famous Tahoma Clinic found that iodine helps to elevate levels of the anti-carcinogenic hormone estriol, which is beneficial in keeping breast cancer at bay, while simultaneously lowering levels of both estrone and estradiol – effectively creating a balance between these three in favor of cancer prevention.[29]

It's not just breast cancer that responds positively to iodine. One study that highlighted iodine's anti-inflammatory benefits found that taking it in therapeutic doses can effectively reduce the risk that peritoneal cancer cells will spread during abdominal surgery.[30] There's mounds of other research, much of which has been covered by iodine guru (and TTAC docu-series expert) Dr. David Brownstein. His work shows that iodine helps to support the cellular integrity of the ovaries, uterus, thyroid, pancreas, and prostate – all of which are increasingly prone to cancer in our iodine-deficient age.

According to Dr. Brownstein, nearly all cancers start out as iodine deficiency. It typically starts with cystic formations, he says, which eventually harden and become nodular. If left to run their course, these cellular abnormalities then turn into hyperplastic tissue, which represents a precursor to cancer.[31]

In TTAC's *A Global Quest*, iodine expert Dr. Brownstein shared that he had tested over 6,000 patients and found over 96% of them to be low in iodine

Not only does iodine help destroy these cystic growths before they're able to initiate the cancer life cycle, but it also causes any lingering cancer cells to basically die, a process that was demonstrated in a 2003 study on lung cancer.[32]

What About Thyroid Drugs Like Synthroid?

Because of how prominent they are these days, thyroid issues – which as I've demonstrated often lead to cancer – typically result in conventional doctors prescribing their patients drugs such as Synthroid. These drugs are claimed to replenish the thyroid gland with hormones, which is supposed to fix problems like *hypothyroidism* (underactive thyroid) and *hyperthyroidism* (overactive thyroid).

But these drugs don't actually work as intended because the artificial hormones they contain are inactive, which means they're basically dead on arrival. Synthroid in particular contains a "dead" form of T4 that requires a healthy, well-functioning liver and gallbladder in order to become usable by the body. But that's just it: many people who suffer from thyroid issues also suffer from fatty or congested vital organs, which means these drugs provide little or no benefit.[33]

While taking Synthroid alongside selenium, a vital trace mineral, has been shown to help with this conversion process, it's still insufficient. The goal is not to simply add synthetic hormones into the body and leave the thyroid "broken," but rather to "jumpstart" the thyroid to begin producing hormones as it's supposed to. This is a process that can only be accomplished with natural iodine.

Alcohol vs. Vegetable Glycerine: Which Is the Better Base for Iodine?

When it comes to which form of iodine is the best, my personal choice is I2 (aka atomic or nascent iodine), as I believe it's the most comprehensive and effective form for attaining maximum health benefits. But keep in mind that iodides and I2/iodide blends also have value, as some research has suggested that the thyroid prefers iodide slightly more than iodine in molecular form.[34]

Identifying Deficiency With an Iodine Loading Test

Aside from identifying the symptoms I outlined earlier, another way to effectively determine whether or not your body is deficient in iodine is to take what's known as an iodine loading test. This can be done either through an endocrinologist or natural healthcare practitioner, or you can do one at home by following this simple protocol:

- Stop taking all of your vitamins and supplements for four days
- On the fourth day after your first urination, take 50 mg of iodine (preferably I2)
- Over the next 24 hours, save your urine and test it for iodine content (you'll need a kit for this that contains testing strips and equipment).
- If the amount of iodine in your urine is high (i.e. you eliminate 40 of the 50 mg of iodine you took), your body is probably already "saturated" with iodine and doesn't need much more. If the amount of iodine in your urine is low (i.e. you eliminate only 5 out of the 50 mg of iodine you took), then your body needed most of what you consumed and likely requires even more.

My family and I take I2, but we prefer varieties that are blended into a base of all-natural vegetable glycerine as opposed to alcohol, the latter of which you'll find in most I2 supplements. Our reasoning for this is that alcohol tends to have a drying, "puckering" effect that counteracts whatever it's mixed into from being fully absorbed into the body. Conversely, vegetable glycerine tends to have a moisturizing and hydrating effect due to it being a humectant, which actually increases its absorption properties.

When consumed, glycerine-based iodine will actually cause the mouth to produce more saliva, which means more of the necessary enzymes that your body needs to fully absorb it. Alcohol, on the other hand, dries the mouth and turns off saliva production, which is the exact *opposite* of what you want to happen when consuming pretty much everything.

As far as its preservative properties, glycerine is also preferable in that it gently encapsulates iodine into its molecular matrix, helping to fully preserve its unique traits for maximum potential. Alcohol has the opposite effect, denaturing iodine by altering its cell structure. Not to mention the fact that alcohol is a known endocrine disruptor.

Alcohol is cheap to produce, which is why it's found in many iodine supplements. It's also only able to capture about *half* of the iodine extraction. When manufactured correctly, natural vegetable glycerine is capable of rendering between 70-90% of blended iodine, while alcohol is only able to capture about 40%. In other words, glycerine-based iodine is far more potent than alcohol-based iodine.

"Alcohol is a harsh and rigid solvent that disrupts cell membranes in DNA," says Dr. Group, noting that alcohol-based iodine products are further prone to evaporation, sublimation, and oxidation, which can occur as soon as six months after production. "Glycerine has unparalleled micro-encapsulating qualities that fully capture complete constituents and compounds in its matrix. This reduces ingredient inversion and evaporation," he says.[35]

You may be familiar with glycerine as an ingredient used to make soap. It's a clear, odorless liquid produced from plant oils including palm, soy, and coconut oil

How Much Iodine Do You Need for Good Health?

So how much iodine should you be taking every day? The answer, of course, depends on how deficient you are in iodine (which is why it's important to get tested). If you're deficient, Dr. Group recommends starting out with between 25,000 to 35,000 mcg (25 to 35 mg) per day to get yourself up to snuff, and taper down from there.

There are differing schools of thought on this, as some doctors recommend starting out slow with iodine and working your way up over time. But I tend to agree with Dr. Group's "loading" philosophy, which seeks to "saturate" the body in iodine right off the bat. Once achieved, a person can then reduce iodine intake to as low as 450 to 650 mcg (0.45 - 0.65 mg) per day for regular maintenance.

Since there's always some risk of experiencing an iodine "allergy," it's important to always take iodine with its necessary cofactors, which include selenium. Dr. Group recommends taking 200 mcg of selenium to help mitigate any potential side effects of iodine, which he says aren't even caused by iodine, but rather by the toxins that it's removing from the body.

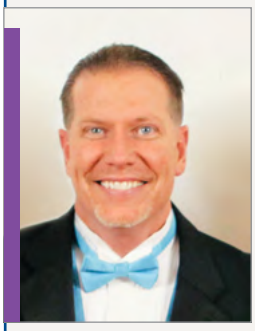
Tyrosine is another important cofactor that, as I mentioned earlier, represents the other "half" of what composes thyroid hormones. Adding in magnesium and chlorophyll supplementation is also beneficial, as both of these nutrient compounds help to support the effective use of iodine throughout the body. This is especially true with chlorophyll, which functions as a "sponge" inside the intestinal tract to absorb halides and other toxins for rapid excretion.

The most important thing is to listen to your body and respond to whatever it's telling you. For instance, too much of a good thing can sometimes be a bad thing. If you suffer from autoimmune conditions like Hashimoto's, they can actually worsen if you take too much iodine. According to Dr. Chris Kresser, studies have shown that taking too much iodine can exacerbate autoimmune disease by causing the thyroid gland to produce less of an enzyme known as thyroid peroxidase, or TPO, which the body needs to produce adequate levels of thyroid hormone.[36]

One study in which Hashimoto's patients restricted their intake of iodine actually resulted in 78% of them seeing a reversal of their hypothyroidism symptoms.[37] While this was probably due to the fact that they weren't taking selenium and other necessary cofactors along with the iodine, it still illustrates the importance of keeping the beat with your body's healing rhythms and adjusting accordingly.

As a closing note, it's important to emphasize that if you have cancer, iodine is in no way any type of standalone treatment. Rather, it is a critical nutrient that when taken in the correct amounts can have a positive effect on your overall health. As always, the very best course of action is to work with a knowledgeable healthcare provider who can provide you with the testing and guidance you need to make the best decisions for your healing journey.

About Ty Bollinger



After losing several family members to cancer (including his mother and father), Ty Bollinger refused to accept the notion that chemotherapy, radiation, and surgery were the most effective treatments available for cancer patients. He began a quest to learn all he possibly could about alternative cancer treatments and the medical industry.

Ty has now made it his life's mission to share the most remarkable discovery he made on his quest: the vast majority of all diseases (including cancer) can be easily prevented and even cured without drugs or surgery.

Ty is a happily married husband, the father of four wonderful children, devoted Christian, best-selling author, medical researcher, talk radio host, health freedom advocate, former competitive bodybuilder, and also a certified public accountant.

Sources:

1. Piccone N, "The Silent Epidemic of Iodine Deficiency," *Life Extension*. Retrieved from www.lifeextension.com/magazine/2011/10/The-Silent-Epidemic-of-Iodine-Deficiency/Page-01

2. Leung A et al. "History of U.S. Iodine Fortification and Supplementation." *Nutrients* 2012;4(11):1740-6. DOI:10.3390/nu4111740

3. Zimmerman MB, "Research on iodine deficiency and goiter in the 19th and early 20th centuries." *The Journal of Nutrition* 2008;138(11):2060-3.

4. Ibid.

5. Leung A et al. "History of U.S. Iodine Fortification and Supplementation." *Nutrients* 2012;4(11):1740-6. DOI:10.3390/nu4111740

6. Lindholm J & Laurberg P, "Hypothyroidism and Thyroid Substitution: Historical Aspects." *Journal of Thyroid Research* 2011;2011:809341. DOI:10.4061/2011/809341

7. Carpenter K, "David Marine and the Problem of Goiter." *The Journal of Nutrition* 2005;135(4):675-80. DOI:10.1093/jn/135.4.675

8. Group E, "Everything You Need To Know About Iodine Webinar by Dr. Edward F. Group," *Global Healing Center*. Retrieved from www.globalhealingcenter.com/natural-health/free-iodine-webinar/

9. "The Great Iodine Debate," *The Weston A. Price Foundation*. Retrieved from www.westonaprice.org/health-topics/modern-diseases/the-great-iodine-debate/

10. Sargis R, "How Your Thyroid Works: Controlling Hormones Essential to Your Metabolism." *EndocrineWeb*. Retrieved from www.endocrineweb.com/conditions/thyroid/how-your-thyroid-works

11. Venturi S & Venturi M, "Iodine in evolution of salivary glands and in oral health." *Nutrition and Health* 2009;20(2):119-34. DOI:10.1177/026010600902000204

12. Riesco-Eizaguirre G & Santisteban P, "A perspective view of sodium iodide symporter research and its clinical implications." *European Journal of Endocrinology* 2006;155(4):495-512. DOI:10.1530/eje.1.02257

13. "Iodine: Fact Sheet for Health Professionals," *National Institutes of Health: Office of Dietary Supplements*. Retrieved from https://ods.od.nih.gov/factsheets/Iodine-HealthProfessional/

14. Group E, "Everything You Need To Know About Iodine Webinar by Dr. Edward F. Group," *Global Healing Center*. Retrieved from www.globalhealingcenter.com/natural-health/free-iodine-webinar/

15. Zava TT & Zava DT, "Assessment of Japanese iodine intake based on seaweed consumption in Japan: A literature-based analysis." *Thyroid Research* 2011;4:14. DOI:10.1186/1756-6614-4-14

16. Winkler R et al. "Effect of iodide on total antioxidant status of human serum," *Cell Biochemistry and Function* 2000;18(2):143-6. DOI: 10.1002 (SICI)1099-0844(200006)18:2<143::AID-CBF857>3.0.CO;2-#

17. Aceves C et al. "The extrathyronine actions of iodine as antioxidant, apoptotic, and differentiation factor in various tissues," *Thyroid* 2013;23(8):938-46. DOI:10.1089/thy.2012.0579

18. Beukelman C et al. "Anti-inflammatory properties of a liposomal hydrogel with povidone-iodine (Repithel) for wound healing in vitro," *Burns* 2008;34(6):845-55. DOI:10.1016/j.burns.2007.11.014

19. "Global Report on Diabetes," *World Health Organization*. Retrieved from http://apps.who.int/iris/bitstream/10665/204871/1/9789241565257_eng.pdf

20. Flechas J, "Orthoiodosupplementation in a primary care practice," *The Original Internist*, 2005;12(2):89-96. Retrieved from www.hakalalabs.com/media/wysiwyg/pdf_resources/Flechas_OI_Jun05.pdf

21. Ghent WR et al. "Iodine replacement in fibrocystic disease of the breast." *Canadian Journal of Surgery* 1993;36(5):453-60.

22. "The Great Iodine Debate," *The Weston A. Price Foundation*. Retrieved from www.westonaprice.org/health-topics/modern-diseases/the-great-iodine-debate/

23. Thrall KD & Bull RJ, "Differences in the distribution of iodine and iodide in the Sprague-Dawley rat." *Fundamentals and Applied Toxicology* 1990;15(1):75-81.

24. Kaczor T, "Iodine and Cancer: A summary of the evidence to date," *Natural Medicine Journal* 2014;6(6). Retrieved from www.naturalmedicinejournal.com/journal/2014-06/iodine-and-cancer

25. Kessler JH, "The effect of supraphysiologic levels of iodine on patients with cyclic mastalgia." *The Breast Journal* 2004;10(4):328-36. DOI:10.1111/j.1075-122X.2004.21341.x

26. Garcia-Solis P et al. "Inhibition of N-methyl-N-nitrosourea-induced mammary carcinogenesis by molecular iodine (I2) but not by iodide (I-) treatment: Evidence that I2 prevents cancer promotion." *Molecular and Cellular Endocrinology* 2005;236(1-2):49-57. DOI:10.1016/j.mce.2005.03.001

27. Eskin BA et al. "Human breast uptake of radioactive iodine." *Obstetrics and Gynecology* 1974;44(3):398-402.

28. Kato N. "Suppressive effect of iodine preparations on proliferation of DMBA-induced breast cancer in rat." *Journal of the Japanese Society for Cancer Therapy* 1994;29:582.

29. Wright J, "Iodide – One Mineral Can Help A Myriad Of Conditions From Atherosclerosis To "COPD" to Zits," *Tahoma Clinic*. Retrieved from http://tahomaclinic.com/2011/01/iodide/

30. Moore K et al, "Iodine released from the wound dressing Iodosorb modulates the secretion of cytokines by human macrophages responding to bacterial lipopolysaccharide." *The International Journal of Biochemistry & Cell Biology* 1997;29(1):163-71.

31. Brownstein D, "The Epidemic of Breast Cancer and Thyroid Disorders: The Common Link." *Dr. Brownstein's Holistic Medicine*. Retrieved from www.drbrownstein.com/the-epidemic-of-breast-cancer-and-thyroid-disorders-the-common-link/

32. Zhang Ling et al. "Nonradioactive Iodide Effectively Induces Apoptosis in Genetically Modified Lung Cancer Cells," *Cancer Research* 2003;63(16):5065-72.

33. Group E, "Everything You Need To Know About Iodine Webinar by Dr. Edward F. Group," *Global Healing Center*. Retrieved from www.globalhealingcenter.com/natural-health/free-iodine-webinar/

34. Donaldson M, "Recent Advances in Iodine Nutrition." *Research Gate*. Retrieved from https://www.researchgate.net/publication/301626224_Update_to_Recent_Advances_in_Iodine_Nutrition

35. Group E, "Everything You Need To Know About Iodine Webinar by Dr. Edward F. Group," *Global Healing Center*. Retrieved from www.globalhealingcenter.com/natural-health/free-iodine-webinar/

36. Kresser C, "Iodine for Hypothyroidism: Crucial Nutrient or Harmful Toxin?" *ChrisKresser.com*. Retrieved from https://chriskresser.com/iodine-for-hypothyroidism-like-gasoline-on-a-fire/

37. Yoon SJ et al. "The effect of iodine restriction on thyroid function in patients with hypothyroidism due to Hashimoto's thyroiditis." *Yonsei Medical Journal* 2003;44(2):227-35. DOI:10.3349/ymj.2003.44.2.227

Ask the Expert: Alternatives to Tamoxifen & Aromatase Inhibitors and Is it Safe to Eat Soy & Flax?

With Elyn Jacobs

Editor's Note: Elyn Jacobs is a breast cancer coach and health writer for TTAC who overcame her own challenges with breast cancer in 2007 and again in 2014. For this edition of *Ask the Expert* we asked Elyn to share the top two questions she receives from her clients.

Q: Is there a natural alternative to tamoxifen and aromatase inhibitors?

A: As a holistic cancer coach, I get asked this question constantly. While I wish this were a simple yes or no answer, it isn't. There is no one natural substance that you can label as such. The replacement is really an overall lifestyle approach – including diet, exercise, stress management, avoidance of toxins, hormone balance, and the support of herbs and supplements.

Lifestyle changes influence estrogen, notably foods and other natural substances. For example, cruciferous vegetables (such as broccoli, Brussels sprouts, cabbage, cauliflower, and kale), and quercetin-rich foods (such as onions and apples) aid in the removal of excess estrogen (and other toxins) from the body.

Diindolylmethane (DIM), a phytonutrient and plant indole found in cruciferous vegetables, and another supplement, calcium d-glucarate, also support estrogen metabolism. DIM, pumpkin seeds, button mushrooms, and flaxseed are natural aromatase inhibitors.

We also know that phytoestrogens (plant estrogens) contain compounds that act more like SERMS (Selective Estrogen Receptor Modulators) such as tamoxifen. By

docking on estrogen receptors in the body, phytoestrogens help prevent activation of these receptors by estradiol, estrone, and xenoestrogens (highly aggressive estrogens that are created in the body by foreign toxins), reducing net estrogenic effect.

For example, when the lignans in phytoestrogens such as flaxseed are consumed, intestinal bacteria convert them into enterolactone and enterodiol, weak estrogens. They attach to estrogen receptors, stimulate them weakly, and block estrogen binding (like tamoxifen). This prevents more harmful estrogens from attaching to the estrogen receptors and strongly stimulating them. Importantly, this makes breast tissue more resistant to environmental toxins.

Flaxseed also helps starve tumors of their blood supply, just like tamoxifen, and therefore can significantly reduce tumor growth. A landmark study led by lignan expert Dr. Lilian Thompson, a professor in the Department of Nutritional Sciences at the University of Toronto, showed that just two tablespoons (25 grams) of flaxseed daily can significantly reduce tumor growth. The researchers further concluded that the effect of flaxseed on cancerous cells was comparable to that of tamoxifen, without the side effects.[1]

Vitamin D also plays a significant role in managing estrogen. Research done in 2016 at the Fred Hutchinson Cancer Research Center found that those with the greatest increase in vitamin D blood levels had the greatest reductions in blood estrogens. The randomized, controlled, clinical trial involved over 200 women who had insufficient D levels. At the end of the year-long study, those whose D levels rose the highest had a corresponding reduction in estrogen levels. This study suggests that vitamin D supplementation may be a practical alternative to estrogen-lowering drugs, such as aromatase inhibitors.[2]

Hormone balance is also critical. Even if our estrogen levels are low, we can still be estrogen dominant. The body aims to maintain a balance between estrogen and progesterone (which is actually breast cancer protective). Progesterone balances out estrogen and puts the brakes on cell proliferation.

As we age, both our estrogen and progesterone levels fall, but progesterone falls more significantly, especially if we are under great stress. Stress challenges adrenal function and significantly raises estrogen levels and depletes progesterone. The solution for this is engaging in stress-reducing activities such as yoga, dance, meditation, and sound therapy.

Some women use bioidentical creams to increase progesterone, but that can be expensive. Vitamin E, magnesium, zinc, vitamin B6, and various foods help boost progesterone levels, and can be helpful in an anti-cancer protocol.

Lastly, it is imperative to avoid unnecessary exposure to hormone-influencing toxins. Be aware that most commercial home, garden, and beauty products contain hormone-like compounds in them. Purchase safer, chemical-free products, and do not use plastic containers or plastic wrap. Avoid BPA and BPS exposure as much as possible.

However, the topic of phytoestrogens brings me to the second most frequently asked question I receive.

Q: Is it safe to eat flaxseed and soy if I have estrogen-sensitive breast cancer?

A: Many doctors tell their patients to avoid flaxseed and soy as they are concerned that these plants may *act* like estrogen. In actuality, as mentioned in question 1, they are phytoestrogens – plant-derived estrogens that can act like weak estrogens or *can even act as antagonists* (opposers) *of estrogen.*

Contrary to popular belief, there is nothing to fear from our own healthy natural sources of mild estrogen – and that goes for the mild "estrogen-mimicking" effects found in phytoestrogens as well. This is because plant-based phytoestrogens help flush out xenoestrogens, which can be carcinogenic.[3]

Phytoestrogens populate estrogen receptor sites with the mildest form of estrogen (mostly estriol). With no place to go, xenoestrogens (and the more aggressive estrogens) are flushed out of the body. In other words, phytoestrogens actually help reduce estrogen's effects. Keep in mind that natural estrogen is essential for many bodily functions, and ultimately, our survival. We just want to keep the more aggressive forms off the receptor sites.

So, let's take a look at these two plants. Aside from blocking cancer-promoting estrogens from attaching to the estrogen receptors on breast cells, soy has been shown to stop tumor growth, prevent metastasis, and shut off new blood vessels in growing tumors.[4] Pretty impressive!

Fermented soy, such as tempeh and miso, is preferred over unfermented versions such as tofu. The fermentation process increases free radical scavenging activity and removes the nutrient-blocking effect that soy can have.

The phytic acid in unfermented soy can block absorption of key minerals such as magnesium and zinc (as can nuts, seeds, beans, legumes, and grains). Soy in a highly processed form (like soy protein isolate, soy protein concentrate, soy cheese) should be avoided. Due to the fact that most soy is genetically altered, it is highly recommended to consume only *organic* soy.

Importantly, there is the concern that some people do not readily convert soy isoflavones into equol, the compound that binds to the estrogen receptors. Certain cultures, such as the Japanese, more readily make this conversion than most of the American Caucasian population. Therefore, not everyone will reap the same level of benefit.

Key Benefits of Flaxseed

- Decreases cell proliferation rates
- Significantly reduces tumor growth
- Decreases angiogenesis and increases apoptosis
- Influences ER-negative and ER-positive tumors by decreasing insulin-like growth factor-1 (IGF-1), epidermal growth factor receptor (EGFR), HER2, and the vascular endothelial growth factor (VEGF) which supports angiogenesis
- Reduces metastasis of ER-negative breast tumors
- Rich in Omega-3s with have been found to positively influence the tumor suppressor genes
- Radio-protective (consuming flax can help prevent the body from damaging mammograms, radio-therapy, CT and PET scans)

If you consume soy, make it organic (non GMO) fermented soy such as tempeh and miso, and avoid processed soy and soy products that come packaged in plastic

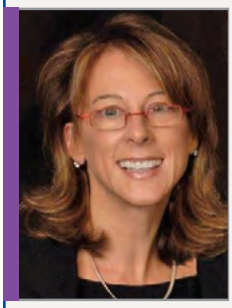
Another issue with soy is the packaging. Tempeh is typically shrink-wrapped and tofu sold in plastic tubs, with the fatty tofu soaking up the harmful chemicals in the plastic.

Regarding flax, be sure to purchase whole organic flaxseed, refrigerate it after opening, and grind it fresh before use. Flax goes rancid rather quickly when exposed to air. Flax oil does not contain the lignans and therefore does not block the estrogen receptors or otherwise offer all of the same benefits.

Interestingly, soy and flax are not the only dietary phytoestrogens. Sesame seeds are an excellent source that rivals flax. Other good sources are the spice fenugreek, oat, beans, eggplant, lentils, yams, beans, apples, carrots, pomegranates, licorice root, mint, fennel, red clover, and more. But you don't hear your doctor warning you not to eat sesame seeds or apples, right? Yet I get those questions as well, especially regarding licorice root and red clover.

Regular consumption of phytoestrogens helps prevent breast cancer, reduces tumor growth, and inhibits the progression of the disease. Evidence is accruing that phytoestrogens have protective action not only against breast cancer, but also cardiovascular disease and osteoporosis.

About Elyn Jacobs



Elyn Jacobs is a breast cancer survivor and holistic cancer strategist who helps people make better, healthier, non-toxic choices. She emphasizes the critical nature of addressing the root cause of cancer and not just its symptoms, i.e the tumor.

In a caring, relaxed, and friendly manner, she helps people fast track healing by providing leading edge resources to mitigate side effects and maximize efficacy of treatment.

Elyn brings a plethora of knowledge to her practice and will help you think outside the box so you can incorporate every lifeline you may need for long term survival. Her website is ElynJacobs.com.

Sources:

1. Thompson LU et al. "Dietary Flaxseed Alters Tumor Biological Markers in Postmenopausal Breast Cancer." *Clinical Cancer Research* 2005;11(10):3828-35. DOI:10.1158/1078-0432.CCR-04-2326
2. Woodward K, "High blood levels of vitamin D linked to reduced estrogen – and potentially lower breast cancer risk," *Fred Hutch*. Retrieved from www.fredhutch.org/en/news/center-news/2016/02/vitamin-d-linked-to-reduced-estrogen-and-breast-cancer-risk.html
3. Fucic A et al. "Environmental exposure to xenoestrogens and oestrogen related cancers: reproductive system, breast, lung, kidney, pancreas, and brain." *Environmental Health* 2012;11(Suppl 1): S8. DOI:10.1186/1476-069X-11-S1-S8
4. Kaczor T, "Soy and Breast Cancer." *Natural Medicine Journal*. Retrieved from www.naturalmedicinejournal.com/journal/2017-06/soy-and-breast-cancer

Charlene's Cancer-Fighting Kitchen

Spinach With Balsamic Vinegar & Sesame Seeds

This is a quick and simple, yet highly nutritious side dish, that be served alongside your choice of protein. The balsamic vinegar and sesame seeds give plain spinach a little extra zing and crunch.

Rich in chlorophyll and carotene, spinach is powerful when it comes to breast, kidney, lung, prostate, stomach, and many other cancer types. As spinach is a low-carb, leafy green veggie, it's also a perfect choice for anyone following a ketogenic diet.

Olive oil promotes heart health and healthy bones. It contains oleocanthal, which a recent study shows has the ability to kill malignant cancer cells and lower the risk of Alzheimer's disease and the cognitive decline that comes with aging.

Sesame seeds are a rich source of plant-based calcium and protein. They help lower blood pressure and oxidative stress, and reduce diabetic neuropathic pain and inflammation. Importantly, the lignans in sesame seeds rival those in flaxseed, known to reduce the risk of hormone-related cancers.

Yield: 6 servings
Preparation Time: 10 minutes

Ingredients:

- 3 ½ pounds fresh spinach (preferably with large crinkly leaves, not baby spinach), tough stems discarded
- ¼ cup extra-virgin olive oil
- 2 tablespoons balsamic vinegar
- Finely ground Celtic sea salt, to taste
- Freshly ground black pepper, to taste
- 2 tablespoons untoasted sesame seeds

Directions:

1. Bring a large pot of salted water to a boil. Add spinach, stir gently and cook, uncovered, 3 minutes.
2. Drain in a colander, pressing gently with the back of a large spoon to remove excess water.
3. Transfer spinach to a large serving bowl and toss with the oil and vinegar.
4. Season with salt and pepper. Sprinkle sesame seeds on top and toss gently.
5. Serve and enjoy!

For all recipes, please use fresh, organic, locally-grown ingredients whenever possible, including organic, non-irradiated spices. This will give you the maximum cancer-fighting benefits.

Celery & Bone Broth Soup

This healthy, high-protein soup is made from an entire pound of celery and its leaves. Celery contains natural compounds that have antibacterial, anti-viral, anti-inflammatory, and immune-boosting effects. These compounds also help reduce toxicity in the body and inhibit cancer tumor formation.

Celery leaves are high in vitamin A. The stems are an excellent source of vitamins B1, B2, B6, and C, with rich supplies of potassium, folate, calcium, magnesium, iron, phosphorus, and sodium. Celery supports liver and digestive health and helps lower high blood pressure.

Bone broth provides around 14 grams of protein per cup and plenty of calcium and potassium to support optimal bone and heart health. However you can also swap out the bone broth for a quality vegetable broth for a vegetarian soup.

Green onions support healthy bones with their high vitamin C and K content. They are also loaded with carotenoids that play an important role in healthy vision.

Yield: 4 servings
Preparation Time: 35 minutes

Ingredients:

- 1 teaspoon coconut oil
- 6 green onions, sliced
- One-pound sliced celery stalks with leaves (about 4 cups)
- 4 cups chicken bone broth OR vegetable broth
- 2 medium white-skinned potatoes, peeled and cut into 1-inch pieces OR substitute cauliflower florets for a low carb (keto-friendly) option
- ¼ teaspoon celery seeds
- ¼ cup loosely packed chopped herbs (tarragon, basil, or parsley)
- 5 tablespoons plain coconut yogurt, divided
- Finely ground Celtic sea salt and freshly ground pepper
- 1 teaspoon minced fresh herbs for garnish

Directions:

1. Heat 1 teaspoon oil in a large pot over low heat. Add the green onions, sauté 2 minutes. Add the sliced celery and leaves, bone broth, potatoes or cauliflower, and celery seeds. Bring to a boil; reduce heat to medium. Cover and simmer until vegetables are tender, about 15 minutes. Add ¼ cup chopped herbs.
2. Using an immersion blender, blend soup until smooth. Stir in 3 tablespoons coconut yogurt. Season to taste with salt and pepper.
3. Mix remaining 2 tablespoons yogurt and 1 teaspoon herbs in a small bowl. Rewarm soup, if needed. Divide among 4 bowls. Drizzle each serving with the herb/yogurt sauce. Garnish with herb leaves and serve.

Flaxseed Toast With Smoky Cashew Cream and Avocado

This plant-based "toast" can be enjoyed as tasty snack or along with a soup or salad for lunch or dinner. Flaxseed inhibits breast cancer whether the tumor is estrogen receptor positive or negative. Flax decreases cell proliferation rates, reduces tumor growth, decreases angiogenesis, and increases apoptosis.

Chia seeds are an excellent source of antioxidants and omega-3s, especially cancer-busting ALA (alpha lipoic acid). They help stabilize blood sugar levels and are considered a complete protein as they contain all the essential amino acids.

Avocados are a favorite of people following a ketogenic diet as they are an excellent source of healthy fats. They're also a good source of carotenoids, minerals, phenolics, and vitamins. Studies show that avocados may kill cancer stem cells, the cancer cells that can metastasize.

Herbs such as dill, cilantro, mint, parsley, basil, and oregano offer anti-inflammatory, antibacterial, and overall cancer-fighting abilities. For this recipe use whatever fresh herbs you have on hand.

Yield: 4 servings
Preparation Time: 45 minutes + soaking time for cashews

Ingredients:

- 1 cup raw cashews
- ¼ teaspoon smoked paprika
- ⅛ teaspoon Celtic sea salt + more for seasoning
- 4 tablespoons whole flaxseed
- 2 tablespoons chia seeds
- ¼ teaspoon ground fenugreek seed
- ¼-½ teaspoon ground cumin seed, to taste
- ⅛ teaspoon cayenne pepper
- 1 cup chopped mixed herbs (parsley, cilantro, mint, basil, rosemary, dill, oregano, chives, etc.
- Filtered water
- 1 ripe avocado for garnish

Directions:

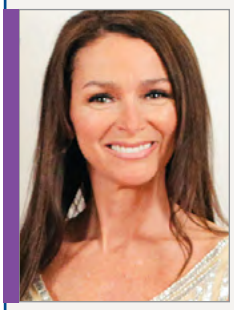
1. To prepare the cashew cream place 1 cup raw cashews in a medium bowl and add 2 cups filtered water. Set aside uncovered at room temperature for 10 to 12 hours.
2. Discard the soaking liquid. Rinse and add cashews to blender along with ½ cup filtered water, 1/8 teaspoon Celtic sea salt, and ¼ teaspoon smoked paprika. Blend on high speed until completely smooth, 2-3 minutes. Scrape down the sides of the blender and blend for 1 minute more.
3. Use cream immediately or store in a glass airtight container and refrigerate for up to one week. Season with additional salt, if desired.

4. To prepare the "toast" preheat oven to 375 degrees. Grind flaxseed with a mortar & pestle or in a coffee grinder.
5. Add the rest of the ingredients, except for the water. Mix well. Add enough water to make the mixture spreadable but somewhat wet. Spread mixture onto a small (8" x 10") parchment-lined rectangular baking pan, keeping straight edges.
6. Bake 30 minutes; cool slightly and cut into four pieces. Use right away or store cooled toast wrapped in parchment or in an airtight container.

Serving Tips:

Toast can be served cold or reheated in a toaster oven. Spread each slice with a liberal amount of cashew cream and top with avocado slices or diced avocado (use ¼ of an avocado per serving). Sprinkle with additional sea salt to taste.

About Charlene Bollinger



Charlene Bollinger is a devoted Christian, happily married wife, joyful mother of 4 beautiful home-educated children, health freedom advocate, co-founder of TheTruthAboutCancer.com and Organixx.com along with Ty and their partner, Jonathan Hunsaker. She is a former model/actress/fitness buff, and lover of healthy food and healthy living.

After losing various family members to conventional cancer treatments, Charlene and Ty learned the truth about cancer and the cancer industry, and together work tirelessly helping others to learn the truth that sets them free to live healthy, happy lives.

Charlene speaks at various conferences and is a guest on various health related radio shows together with Ty, helping people to learn that cancer does NOT have to be a death sentence. Together they host a biweekly internet news show program, *TTAC Global Health News*.

The Little-Known Nutrient for Powerful Thyroid Support...

available to you today!

If you struggle with fatigue, even when you've had enough sleep… If you have foggy thinking and lots of "senior moments"… And if weight loss is nearly impossible… It could be due to a small gland in your body.

Your thyroid gland is a delicate, butterfly-shaped organ that sits at the front of your throat, just below your "Adam's apple." When it's not working properly, you'll experience fatigue, foggy thinking, and weight gain.

One of the main culprits that causes a problem with your thyroid is a lack of a forgotten nutrient from the sea. Iodine.

Iodine has been used as a form of medicine as far back as 1811. Now scientific evidence shows how your thyroid uses iodine to create thyroid hormones T3 and T4. Without enough iodine, your thyroid may become underactive.

That's why getting enough iodine is essential for optimal thyroid function and overall health.

If you want to boost your energy levels, renew your sharp thinking, and whittle your waistline, it's critical to support and promote your thyroid health. Pure nascent iodine has been scientifically proven to help do that.

The Organixx Difference

Our brand new nascent iodine formula is sourced from 300 million-year-old salt deposits located more than 7,000 feet below the earth's surface. Extremely pure, you'll get 650 micrograms of concentrated, clean iodine with every drop.

Iodine from **Organixx** offers you pure nascent iodine in a convenient liquid form that's easier to absorb than iodine capsules. It effectively delivers this essential nutrient for maximum healing and powerful detoxification from toxins like fluoride and radiation. And it's USDA Certified Organic.

One Year 100% Satisfaction Money-Back Guarantee

To experience these health-boosting benefits for yourself, try **Organixx Iodine** today. Only 3 drops a day provides powerful thyroid support. Remember you are covered by our 100% Satisfaction One Year Money-Back Guarantee. So order RISK FREE today!

To Order Online Go To: **ORGANIXX.COM/IODINE**

The Benefits of a Plant-Based Ketogenic Diet for Cancer Prevention & Treatment

By Dr. David Jockers

As rates of cancer rise, people are beginning to take charge of their health and look to non-traditional therapies for treatment. Whether someone chooses conventional or non-traditional therapies, it is critical to have a nutrition action plan in place to optimize the body's ability to fight off cancer. A plant-based ketogenic diet is a powerful strategy to use in the fight against cancer.

In addition to the robust nutrient density of a plant-based ketogenic diet, this nutrition plan puts cancer cells at a disadvantage and aids the body in fighting cancer cells. A plant-based ketogenic diet trains the body to use fat for fuel, alleviating the mechanisms that allow cancer to grow.

This article discusses the aspects of the plant-based ketogenic diet, how this diet is therapeutic in the fight against cancer, the key cancer mechanisms that can be influenced by a plant-based ketogenic diet, and the top cancer-fighting foods.

Why the Ketogenic Diet for Cancer?

The ketogenic diet is a powerful tool in the fight against cancer. The ketogenic diet is a high healthy fat, low carbohydrate, and low to moderate protein nutrition plan. The ketogenic diet puts cancer cells which feed off sugar at an energetic disadvantage by depriving them of their preferred fuel source.

Cancer cells are much different from normal cells. Pioneer researchers, including Otto Warburg and Dr. Thomas Seyfried, discovered that cancer cells have abnormal mitochondria.[1] Mitochondria produce energy for cells by taking either sugar or ketones (from fat) and turning them into adenosine triphosphate (ATP). ATP is the energy currency of the body.

Most energy production takes place in the mitochondria, but a small amount occurs in the fluid, or cytosol, of the cell. Mitochondria and other smaller organelles float in the cytosol. Energy production in the cytosol can only occur with sugar as the source, not ketones.

Dr. Thomas Seyfried, researcher and author of the book *Cancer as a Metabolic Disease,vv* addresses the audience at TTAC LIVE in Orlando, Fl, in Oct, 2017

Energy production in the cytosol is inefficient and produces high amounts of toxic byproducts that damage the cell. Cancer cells have damaged mitochondria and can only produce energy from sugar in their cytosol.

Cancer cells also have more insulin receptors than normal cells. The increased number of insulin receptors gives cancer cells the ability to rapidly absorb glucose and potentially steal it away from healthy cells. A high sugar, carbohydrate-rich diet feeds cancer cells their preferred fuel source while a ketogenic diet deprives cancer cells of their preferred fuel source.

How a Plant-Based Diet Fights Cancer

While the ketogenic diet is powerful, **the best nutrition plan to combat cancer would combine a plant-based diet with the ketogenic diet**. A plant-based diet can be potent to fight cancer because numerous plant compounds have been shown to act on different pathways in the body to downregulate cancer growth.

Curcumin is a great example of a plant compound with therapeutic benefits for cancer. Curcumin is the active compound in the spice turmeric. It has been shown to act on the COX and LOX enzyme systems, which are inflammatory pathways in the body.[2] Elevations in these inflammatory pathways are associated with the aggressive progression or cancer.[3] Using compounds such as turmeric may downregulate these inflammatory pathways, having a therapeutic effect on cancer.

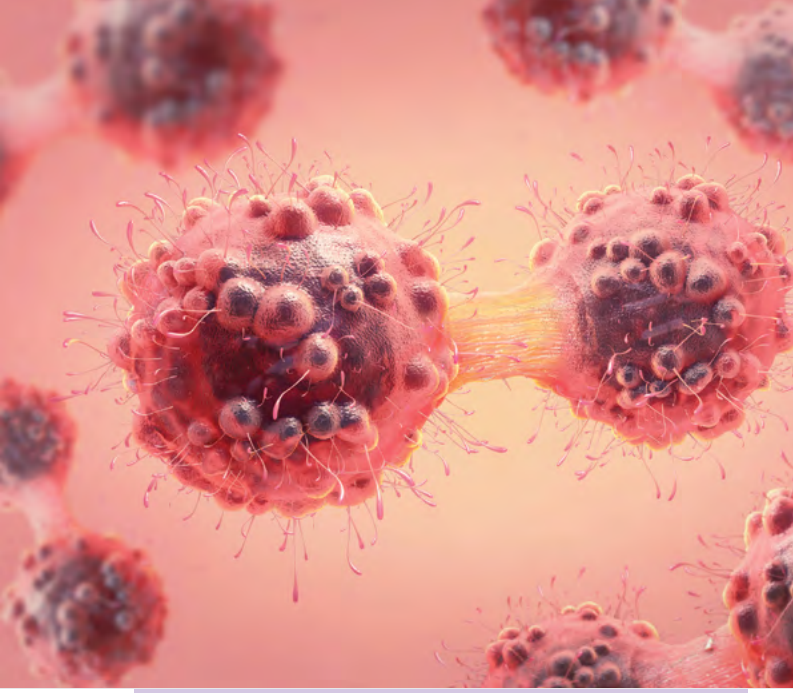
In addition to curcumin, there are numerous other plant compounds that target different pathways in the body. These anti-cancer nutrients perform similar functions while each providing their own unique benefits to the body.

Incorporating a variety of these compounds into the diet can provide a multifaceted approach to creating an internal environment that does not favor the growth of cancer. This approach should be considered as a natural cancer-fighting strategy to give the body the best chances to overcome the disease.

Plant-Based vs. Vegan Diets

For optimal health, it is important to include certain animal products in the diet for their unique health benefits. A plant-based ketogenic diet with a small amount of animal foods is ideal for transforming your health.

While there are certain aspects of a vegan diet that are very therapeutic, there are numerous potential health risks associated with a vegan diet. These health risks



A high sugar environment stimulates aggressive cancer cells and helps them to grow faster.

include: vitamin and mineral deficiencies, blood sugar dysregulation, low complete protein and fat intake, and more. For these reasons, it is best to include limited amounts of animal products in the diet.

What We Know About Cancer

It is critical to recognize two important aspects of cancer to understand how a plant-based ketogenic diet is therapeutic. These are: how cancer cells are fueled and the epigenetic influences of cancer.

The first important aspect of cancer is that cancer cells thrive in a high-sugar environment. As discussed above, the mitochondria of cancer cells are damaged and use only sugar for energy. By following a ketogenic diet, cancer cells are placed at an *energetic disadvantage* because the body burns fat rather than sugar for fuel.

The second important aspect of cancer is that cancer has epigenetic influences. Cancer is generally a result of faulty DNA leading to poorly functioning cells (genetics). The thought was that these DNA mutations were completely random and conditions like cancer simply "run in the family."

We now know that there are several epigenetic pathways in the body that are associated with cancer growth. Epigenetic influences, such as diet, lifestyle, and environmental factors, can largely dictate whether these faulty DNA sequences will occur or not. A plant-based ketogenic diet can alter the epigenetic pathways to improve your chances of overcoming cancer.

Understanding 4 Key Cancer Mechanisms

The four primary pathways in the body for cancer are AMPK, IGF-1, mTOR, and the p53 gene. It is important to understand these key cancer mechanisms and how a plant-based ketogenic diet can impact them.

1 | AMPK

AMPK (Adenosine Monophosphate-activated Protein Kinase) is an energy-regulating molecule that signals ATP production. Upregulation of the AMPK pathway can help the body fight cancer.

As ATP is broken down for energy within cells, phosphate groups are removed to form ADP (Adenosine Diphosphate) and AMP (Adenosine Monophosphate). When the ratio of AMP to ATP is increased, this is a sign that energy is getting low. AMPK is activated and signals the upregulation of ATP production.

AMPK activity can be upregulated with carbohydrate restriction and numerous plant-based compounds. Upregulation of the AMPK pathway helps the body fight cancer by diverting sugar from cancer cells to healthy cells. This limits the fuel supply to cancer cells.[4]

2 | IGF-1

IGF-1 (insulin-like growth factor) is a growth-stimulating hormone that regulates the reproduction and regeneration of cells. It is normal for children in the rapid developmental stages of life to have high levels of IGF-1.

However, elevated IGF-1 can be a catalyst for cancer growth for those not in a rapid developmental stage of life. Protein restriction, fasting, exercise, curcumin, resveratrol, and many other plant-based compounds can inhibit the production of excess IGF-1.

3 | mTOR

mTOR (mammalian target of rapamycin) is a physiological pathway that regulates cell growth and replication. mTOR is necessary for a healthy body. However, cancerous tissues have an elevated activation of the mTOR pathway. This can contribute to the rapid cell division found in cancer.

Insulin is one of the primary activators of the mTOR pathway. A high-sugar diet leads to high levels of insulin which may contribute to cancer by elevating mTOR activity. Excessive protein consumption can also stimulate this pathway. A plant-based ketogenic diet with limited amounts of protein can be a great strategy to prevent these pathways from contributing to cancer growth.

2 | The p53 Gene

The p53 gene regulates what happens to damaged DNA sequences before they lead to problems in cell development. When functioning properly, the p53 gene responds in two ways to disorderly cells. If the defective DNA can be repaired, the p53 gene allows the cell to go back into its normal cycle of growth and reproduction. If the defective DNA cannot be repaired, the p53 signals for cellular apoptosis (programmed cell death), halting the potential for cancerous growth.[5]

This critical gene is *inactive* in many cancers. A high-sugar diet and certain nutritional deficiencies, such as zinc deficiency, contribute to the inactivity or mutation of the p53 gene. There are numerous plant-based compounds that can help restore proper p53 function.

Protein Requirements: How Much Protein Should You Consume?

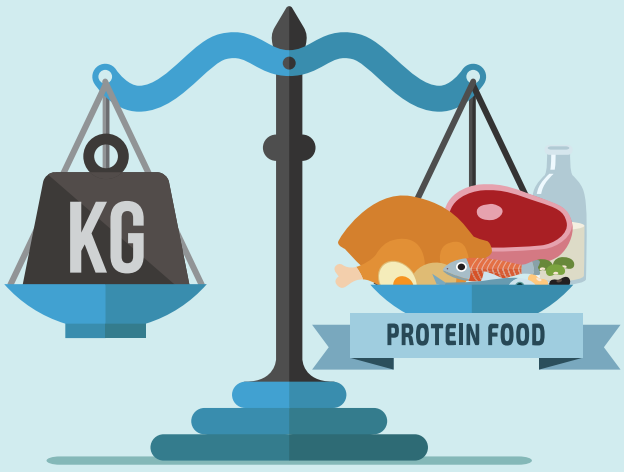
Overall protein consumption is an important component of the ketogenic diet. *Overconsumption* of protein can result in the stimulation of insulin levels and the protein being converted to glucose.

The rule to follow for protein consumption on a ketogenic diet is generally about 1 gram of protein per kilogram of body weight for an individual who is inactive. For example, a 160-pound individual would compute their protein requirement as follows:

Divide weight by 2.2 lb/kg to calculate body weight in kilograms, Body weight in kilograms is daily protein requirement:

160 LBS / 2.2 KG
= 73 GRAMS OF PROTEIN PER DAY

For an individual who is very active and looking to add muscle, this amount can be increased to 100–120 grams of protein on training days (1.3–1.6 grams of protein per kg).



Low Protein Plant-Based Ketogenic Diet for Cancer

Daily protein consumption on an anti-cancer nutrition plan should be *lower* than for a healthy, active individual following a keto diet or someone dealing with an autoimmune condition other than cancer. A higher amount of protein can overstimulate the mTOR pathway and IGF-1 which are often hyperactive and stimulate out of control cell reproduction processes.

To reduce the mTOR pathway and IGF-1 expression, it is important to consume around 0.5 g/kg of protein. To use the same weight as the example above, a 160-pound person would consume only about 36 grams of protein per day.

For individuals consuming this reduced amount of protein it is important to hydrate throughout the day, increase fat intake, and increase overall vegetable content for increased fiber. This will help the individual stay full while consuming low amounts of protein.

In addition to the low protein, plant-based ketogenic nutrition plan, intermittent and extended day fasting is highly recommended. Fasting will help slow down mTOR and IGF-1 expression, improve AMP-K expression, and stabilize the p53 gene. [Editor's note: See the January 2017 edition of the HAC newsletter for an in-depth article by Dr. Jockers on the benefits of fasting.]

12 Top Cancer-Fighting Foods to Include in Your Ketogenic Diet

While following a plant-based ketogenic diet, it is important to incorporate specific foods that have powerful anti-cancer effects. Following are the top cancer-fighting plant foods as well as select animal products with unique cancer-fighting benefits. [Note: It's important to consume organic/no-spray versions for all of these foods in order to achieve the full range of benefits.]

1 | Berries

Berries are low-glycemic fruits that contain quercetin and abundant antioxidants. Anthocyanins are a unique class of purple pigmented antioxidant compounds in berries. Anthocyanins may promote AMPK activation while inhibiting mTOR.

Berries and anthocyanins target cancer stem cells and upregulate tumor suppression genes. The antioxidant activity of berries acts to prevent cancer by protecting DNA from damage and to slow the development of cancer. Wild blueberries are one of the best sources of anthocyanins.

Anthocyanins are cancer-fighting plant compounds that also give certain berries their deep purple-blue color. Wild blueberries are an excellent (and tasty) source of anthocyanins

2 | Alliums

Garlic and onions are allium vegetables. Allium vegetables contain allicin, selenium, and naturally occurring glutathione. These act as powerful antioxidants in the body to alleviate free radical damage and protect against cancer.

Alliums are an important cancer-fighting food through numerous mechanisms.[6] One of these mechanisms is the protective effect of alliums over the p53 gene. The p53 gene helps to maintain the body's ability to detect and eradicate defective cells before they develop into cancerous growths.

3 | Cruciferous Vegetables

Cruciferous vegetables have amazing health benefits including anti-cancer effects. Cruciferous vegetables help to activate the NRF2 pathway, a powerful antioxidant system in the body with strong cancer-fighting implications.

In addition to a wide array of nutrients, broccoli and Brussels sprouts contain quercetin and sulforaphane which have anti-cancer effects.[7] Sulforaphane is a sulfur compound called an isothiocyanate that plays an important role in maintaining p53 function. Sulphoraphane also assists the liver in the detoxification of excess estrogen in the body. This can help in the treatment of hormone-sensitive cancers such as breast cancer.

Quercetin and sulforaphane are cancer-fighting chemicals found in certain kinds of vegetables including broccoli, cabbage, cauliflower, and Brussels sprouts

4 | Green Tea

Green tea is one of the healthiest beverages you can consume. It contains EGCG and quercetin, two potent anti-cancer compounds. These compounds act as powerful antioxidants that upregulate AMPK activity, inhibit IGF-1 and the mTOR pathway, and protect the p53 gene. Through these mechanisms, green tea has been shown to inhibit cancer cell growth and promote cancer cell apoptosis (programmed cell death).

Green tea also helps to promote the production of the antioxidants glutathione and superoxide dismutase (SOD). These antioxidants drastically lower inflammation in the body.

5 | Leafy Green Vegetables

Leafy green vegetables are some of the most nutrient-dense foods available. Kale, arugula, collard greens, mustard greens, spinach, and Swiss chard are all leafy greens that are loaded with vitamins, minerals, and chlorophyll.

Chlorophyll can help the body detoxify carcinogenic substances by binding and eliminating them in the digestive tract. Chlorophyll also helps to support liver detoxification.[8]

Like cruciferous vegetables, the leafy green kale contains sulforaphane. Sulforaphane is the powerful isothiocyanate that reduces cancer cell replication and boosts the immune system.

6 | Sprouts

One of the most commonly overlooked cancer-fighting foods is the sprout. Sprouts, such as broccoli sprouts or kale sprouts, are nutritionally magnified versions of the food. For example, broccoli sprouts contain up to 100 times the antioxidant raw material of broccoli.

In addition to activating antioxidant pathways, sprouts have cancer-fighting enzymes to protect the body from carcinogens.[9] Great ways to incorporate sprouts into the diet include adding to salads, wraps, or green smoothies.

7 | Herbs

Chronic inflammation is strongly associated with aggressive cancer growth. Consuming antioxidant-rich foods is one of the easiest and most effect ways of lowering inflammation on a daily basis. Herbs are some of the most antioxidant-rich foods available.

Oregano, basil, rosemary, and milk thistle are all herbs with their own unique compounds to assist the body in fighting cancer growth. These herbs should be used abundantly to boost the nutrient density and antioxidant potential of meals.

8 | Turmeric

Turmeric is an Indian spice that is rich in a variety of healing compounds. The compound in turmeric that has received the most attention for its healing properties is curcumin. Curcumin has powerful antioxidant and anti-inflammatory properties which may help prevent the development of cancer.[10]

Curcumin has also been shown to prevent the spread of tumors and support apoptosis (cell death). Curcumin can target cancer stem cells to aid in preventing the recurrence of cancer. Many conventional treatments do little to kill cancer stem cells, which is why cancers often reoccur more aggressively after conventional treatments.

9 | Butter/Ghee

Butter and ghee are excellent sources of cancer-fighting nutrition. Butter contains the fat-soluble vitamins A, D, and K, in addition to two important healing compounds, butyrate and conjugated linoleic acid (CLA).

Butyrate is a short-chain fatty acid and is typically produced by the bacteria in the gut. When butyrate from butter is consumed, it has anti-inflammatory and gut-healing properties. With gut inflammation being one of the leading causes of inflammation throughout the body, it is essential to use nutrients like butyrate to help heal the gut.

Many people who are dairy-intolerant do well with ghee. Ghee is a clarified butter made by heating butter and removing the milk solids

CLA is an amazing nutrient that boosts metabolism and has anti-inflammatory and anti-cancer properties. CLA may activate genes responsible for suppressing tumor growth. Only small amounts of CLA are needed for the benefit of its cancer-fighting properties.[11]

10 | Bone Broth & Collagen

Many cancer patients, especially those who have undergone chemotherapy or radiation treatments, have numerous digestive issues. This is due to inflammation in the gut as a result of conventional treatments.

For people with gut inflammation, it is important to get easily digestible protein into their bodies. Two excellent sources of easily digestible protein are bone broth and collagen protein.

Bone broth is super easy to digest and helps soothe and heal inflamed tissues in the gut. The immune system will also improve as digestive issues are often the root cause of chronic inflammation and autoimmunity.

Collagen protein has similar benefits to bone broth. Both bone broth and collagen protein can be made at home or purchased in liquid or powdered form. It is very important to only consume bone broth or collagen protein from grass-fed sources.

11 | Pasture-Raised Eggs

Pasture-raised eggs are an excellent addition to a plant-based ketogenic diet. Eggs from pasture-raised chickens provide a wide array of nutrients including carotenoid antioxidants, vitamins D, E, and K, fatty acids EPA, DHA and CLA, choline, and lecithin. These eggs may be the most nutritionally complete food on the planet and are great to include in the cancer-fighting diet.

Eggs from pasture-raised chickens are one of the most nutritionally-complete foods available and an ideal choice when following any type of ketogenic eating plan

12 | Organ Meats

Organ meats, particularly heart and liver, are some of the most nutritionally dense foods you can consume. Organ meats have much more nutrition than the muscle meats most people consume.

Two of the healthiest organ meats are liver and heart. Liver is full of B vitamins, vitamin A, zinc, and selenium. These nutrients are critical for energy production and immune function.

Heart is rich in CoQ10 in addition to zinc, selenium, and B vitamins. CoQ10 is essential for good mitochondrial function. Individuals with chronic diseases such as cancer are frequently deficient in CoQ10.

It is important to only consume organs from grass-fed, pasture-raised animals. The recommended intake of organ meat is only one to two times per week.

13 | Omega-3 Fatty Acids

Chronic inflammation is common for individuals battling cancer. Increasing omega-3 fatty acid intake and decreasing omega-6 fat intake can have a powerful impact on inflammatory pathways in the body.

The best sources of omega-3 fatty acids are wild-caught sockeye salmon, sardines, anchovies, herring, wild-caught cod, and light tuna. Purified fish oil supplements are also a good source of omega-3 fatty acids.

Omega-6 fatty acids are found in processed oils. It is imperative to reduce the intake of these fats to reduce inflammation in the body.

Conclusion

Implementing a plant-based ketogenic diet is essential in the fight against cancer. This nutrition plan addresses two important aspects of cancer: 1) Cancer thrives on sugar; and, 2) Cancer is influenced by several epigenetic mechanisms.

Employing the following guidelines will optimize your diet for preventing and fighting cancer:

- Consume most of your calories from healthy fats.
- Reduce carbohydrate intake to 5% or less of daily calories.
- Restrict protein consumption to around 0.5g/kg of body weight to reduce mTOR expression.
- Consume a variety of plant-based foods, such as leafy greens, berries, herbs, turmeric, alliums, cruciferous vegetables, and sprouts.
- Consume green tea, bone broth, collagen, grass-fed butter/ghee, pasture-raised eggs, organ meats, and omega-3 fatty acid sources.
- Consider a daily intermittent fast, alternate day fasting, or periodic multiple day fasts to further boost AMPK and reduce mTOR expression.

The plant-based ketogenic diet provides a foundational nutrition and lifestyle program for anyone that is dealing with any stage of cancer to follow. Please note that this plan should be used as an *adjunct* to (meaning along with) more advanced natural and conventional cancer healing approaches.

About Dr. David Jockers

Dr. David Jockers is a functional nutritionist, corrective care chiropractor, exercise physiologist, and certified strength & conditioning specialist.

He runs one of the hottest natural health websites: DrJockers.com and is the author of *SuperCharge Your Brain*, the complete guide to radically improve your mood, memory, and mindset, and the *SuperCharged Healthy Recipes* book with over 180 full-color recipes to help you take back control of your health. He is a regular contributor to thetruthaboutcancer.com and has well over 1,200 professionally published natural health articles on the web and in print magazines.

Dr. Jockers is a sought after speaker around the country on such topics as weight loss, brain health, functional exercise, natural detoxification, and disease prevention. He currently owns and operates Exodus Health Center in Kennesaw, Georgia.

Sources:

1. Seyfried TN, "Cancer as a mitochondrial metabolic disease." *Frontiers in Cell and Developmental Biology* 2015;3:43. DOI:10.3389/fcell.2015.00043
2. Chikara S et al. "Oxidative stress and dietary phytochemicals: Role in cancer chemoprevention and treatment." *Cancer Letters* 2018;413:122-134. DOI:10.1016/j.canlet.2017.11.002
3. Shi XM et al. "Expression of LOX in Colorectal Cancer Tissues and Its Relationship with Progress and Prognosis." *Sichuan Da Xue Xue Bao Yi Xue Ban* 2017;48(4):566-569.
4. Shackelford DB & Shaw RJ, "The LKB1-AMPK pathway: metabolism and growth control in tumour suppression." *Nature Reviews. Cancer*. 2009;9(8):563-75. DOI:10.1038/nrc2676.
5. Adimoolam S & Ford JM, "p53 and regulation of DNA damage recognition during nucleotide excision repair." *DNA Repair (Amst)*. 2003;2(9):947-54.
6. Bayan L et al. "Garlic: a review of potential therapeutic effects." *Avicenna Journal of Phytomedicine* 2014;4(1):1–14.
7. Vasanthi HR et al. "Potential health benefits of broccoli- a chemico-biological overview." *Mini Reviews in Medicinal Chemistry* 2009;9(6):749-59.
8. "Chlorophyll and Chlorophyllin." *Oregan State University*. Retrieved from http://lpi.oregonstate.edu/mic/dietary-factors/phytochemicals/chlorophyll-chlorophyllin
9. Fahey JW et al. "Broccoli sprouts: An exceptionally rich source of inducers of enzymes that protect against chemical carcinogens." *Proceedings of the National Academy of Sciences USA* 1997;94(19):10367–10372.
10. He Y et al. "Curcumin, inflammation, and chronic diseases: how are they linked?" *Molecules* 2015;20(5):9183-213. DOI:10.3390/molecules20059183
11. Lee KW et al. "Role of the conjugated linoleic acid in the prevention of cancer." *Critical Reviews in Food Science and Nutrition* 2005;45(2):135-44. DOI:10.1080/10408690490911800

The Heroes Against Cancer (HAC) newsletter is a publication of **TTAC Publishing, LLC.** The owners, publisher, authors, and editor are not responsible for errors and omissions. Rights of reproduction and distribution of this newsletter are reserved.

Any unauthorized reproduction or distribution of information contained herein, including storage in retrieval systems or posting on the Internet, is expressly forbidden without the consent of TTAC Publishing. For permission, fill out a support ticket at support.thetruthaboutcancer.com

For email or physical address changes, fill out a support ticket at support.thetruthaboutcancer.com with your old and new address.

All information presented in the HAC newsletter is for informational purposes only. Nothing contained within is specific health or medical advice for any individual. All information presented in the HAC newsletter should not be construed as health advice or instruction.

You should take no action solely on the basis of this publication's contents.

Readers are advised to consult a knowledgeable health professional about any issue regarding their health. While the information found in the HAC newsletter is believed to be sensible and accurate based on the editor's and authors' best judgment, readers who fail to seek counsel from appropriate health professionals assume risk of any potential ill effects. The opinions expressed in the HAC newsletter do not necessarily reflect those of TTAC Publishing.

© 2018 TTAC Publishing, LLC. All rights reserved.