

THE ESSENTIAL GUIDE TO LASTING HEALTH

PRO-
METABOLIC
PRINCIPLES



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For years, I clung to the belief that true health meant sacrifice. I thought being lean, satisfied, and genuinely happy all at once was impossible. In college, I chased every trend—keto, carnivore, endless fasting—believing I was on the path to health. But with each attempt, I found myself further from what I truly wanted: not just a body that looked good, but a life that felt good. It wasn't until I embraced pro-metabolic principles, guided by the insights of Dr. Ray Peat, that I began to understand real nourishment. That's when everything changed.

Some of these ideas in this guide might challenge mainstream thinking. If they feel unfamiliar or uncomfortable, it's worth considering whether your own preconceptions are holding you back from real health and understanding. Our culture has deeply ingrained beliefs about food and wellness. We're conditioned to trust trends, marketing, and long-held misconceptions rather than listening to the signals our bodies give us.

But nature operates independently of our opinions and societal norms. It doesn't bend to what we think to be true; it simply follows the rules granted upon us humans.

This guide combines personal experience with years of research, and here's what I've discovered: living a healthy life should feel natural, not like an uphill battle. It should be as effortless as sipping water. It's time to trust your body's biology instead of relying on willpower or falling for cultural myths.



Food:

Few things are as crucial to your health as what you eat. Just like animals fed an unnatural diet, when we consume foods that don't nourish us, illness is inevitable. Much of what we eat is shaped by cultural traditions, family influences, and trends passed down through generations. Our parents, influenced by societal norms, feed us what they were taught, continuing the cycle. But just because something is common doesn't mean it's good for your body.

Furthermore, the popular claim that "everyone is different" is often exaggerated. Do different breeds of dogs have different diets? No, they do not. While needs may vary slightly, humans thrive on the same basic foundation of foods.

Pro-metabolic principles are about fueling the body in ways that support optimal energy production, rather than depriving it or creating stress. When you eat to support your metabolism, you're essentially providing the raw materials your cells need to produce energy efficiently, keeping your body running smoothly, resilient to stress, and equipped to handle life's demands. Let's talk about the essentials.

Meat.

Many still believe that meat is unhealthy, even though it's one of the world's oldest foods. This belief has been pushed for too long, and breaking free from it is the first step towards better health. When we eat less meat, we often have to replace it with foods that aren't as beneficial like kale that's hard to digest, nuts high in anti-nutrients, or an excess of starchy foods.

Incorporating steak, cod, shrimp, oysters, and more into your diet will greatly improve your health. There are so many important benefits to meat. For one, Ray Peat explains that, "Protein deficiency itself contributes to the harm done by toxins since the liver's ability to detoxify them depends on adequate nutrition, especially good protein." Pretty much all sources of animal protein are good in different ways (except those high in PUFA like fatty fish and conventional pork (more on PUFA later)). Our bodies are designed to digest meat - we have one of the lowest stomach pHs in all of the animal kingdom. This helps us to break down and absorb nutrients in meat really well. Meat contains the most bioavailable form of these nutrients including all the essential amino acids (proteins), zinc, B vitamins, taurine, the list goes on.

When eating meat, it's important to consider gelatin. Derived from the collagen in the connective tissues, bones, and skin of animals, typically cows, pigs, and fish, gelatin has a unique amino acid profile, especially rich in glycine and proline. This is crucial because glycine helps balance the potentially inflammatory effects of amino acids like tryptophan and methionine found in muscle meats. If you're eating a large serving of muscle meat, it's ideal to consume 5 to 10 grams of gelatin alongside it. This supports digestive health, reduces inflammation, and promotes a more balanced protein intake, making it easier for the body to metabolize and use nutrients effectively. Homemade gelatin gummies are a great option.



Sugar.

How can we begin to dismantle the idea that sugar is the enemy, the ruin of health, the bane of existence? It's time to set the record straight. Sugar is essential to life. Without it, your body would shut down—let that sink in. You literally need sugar to survive. Your lungs, pancreas, and other vital organs depend on it to function properly. In fact, if you don't consume enough sugar, your body will find a way to produce it, often by breaking down non-fat tissues, including muscles, organs, bones, skin, and nails.

Back in the early 1970s, a scientist named Jacob E. Steiner at a dental school in Jerusalem conducted an experiment. He gave sucrose to 175 newborn infants, all of whom hadn't yet tasted a drop of their mother's milk. What did he see? Clear signs of contentment. The babies' facial muscles visibly relaxed, and their mouths formed what could only be described as a smile. This simple but powerful response shows that our bodies recognize and appreciate sugar from the very start.

What's also interesting about every "health" guru telling you sugar is ruining your life, is that sugar consumption has decreased significantly in the last 20 years, yet chronic diseases are on the rise. And here's something to think about: we have taste buds specifically for sugar! Some animals can't even taste it, but humans can—and there's a reason for that. We're biologically designed to enjoy and benefit from it.

Every cell in your body prefers to use sugar (glucose) for energy. In fact, many cells like brain cells, red blood cells, kidney cells, even hair follicle cells, require glucose and cannot use fat or ketones for energy. And when glucose is limited, as in a low-carb diet, the body prioritizes essential functions like brain activity over less essential processes like hair growth. That's why hair loss is a common side effect for many on low-carb diets: the body simply reallocates resources to where it's needed most.

Sugar is the body's most efficient form of chemical energy. And as a result, the body relies on it to fulfill essential reactions that keep everything running smoothly. When broken down, sugar produces more carbon dioxide (CO₂) than fat. Contrary to popular belief, CO₂ is not a waste product. It is an essential component of cellular function. CO₂ helps release oxygen into tissues, improving oxygen flow and boosting energy production. Because it produces more CO₂ than fat, sugar can actually speed up metabolism. And a healthy, high-functioning metabolism is crucial for nearly every process in the body.

Sucrose is what we think about when we say sugar. It's essentially table sugar. But it is structurally the same as the sugars found in fruit, maple syrup, and honey. It is composed of one glucose molecule and one fructose molecule. Sucrose is different from starches, which are made up of long chains of glucose molecules. These are found in foods like rice, potatoes, and grains. They contain no fructose.

Starches are often called "complex carbohydrates." Mainstream health advice suggests that we avoid sugar (sucrose) and eat these starches. However, breaking down starches into individual glucose molecules is much more difficult than just breaking down sugar. This process takes more time and requires multiple digestive enzymes, which can place more strain on the digestive system (more on this later). So when sugar is available, it's preferable to starches, and for those who struggle with processing carbohydrates (for example, those with insulin resistance or metabolic disorders), sugar is the better option.

One of sugar's key benefits is its fructose content.

Some benefits of fructose:

- Fructose reduces stress hormone production. By providing a quick and efficient source of energy, fructose can help lower the body's need to produce stress hormones like cortisol and adrenaline, which are often elevated when glucose is poorly processed or energy is scarce.
- Fructose requires less insulin secretion. Unlike glucose, fructose doesn't trigger a large insulin response. This is beneficial for those with insulin resistance or trying to manage their blood sugar levels because it reduces the strain on insulin production.
- Fructose is stored as glycogen. Fructose is primarily metabolized in the liver, where it can be converted into glycogen for storage. This is particularly important for maintaining stable blood sugar levels because liver glycogen serves as a quick reserve of energy when blood sugar drops.

- Fructose bypasses the first steps in glycolysis. Fructose takes a shortcut in the metabolic pathway, bypassing the initial steps of glycolysis. Unlike glucose which requires a small ATP "investment" to get started, fructose skips this and enters the energy cycle further along. This allows your body to generate energy from it without the same upfront cost. But why does this matter? Why focus so much on the different pathways of energy? It's because energy and structure in the body are closely linked. Imagine your body as a large power grid that fuels everything from physical movement, brain function, and digestion as well as ongoing processes like cell repair and hormone production. Quick-access fuels, like glucose and fructose, act like direct energy sources. They keep everything flowing smoothly and help maintain structural integrity of the cell. Now, think about what happens if the body runs mostly on fat, which is a slower-burning fuel. It's like relying solely on a sluggish power source. The energy flow is slower, making it hard to meet sudden demands, and it takes longer to power high-energy tasks. This is why the body prefers quick sources like glucose and fructose. By delivering energy more readily, sugar helps the cell function properly, boosts metabolism, restore energy production, and even help reduce stress.

Many people think that insulin resistance and high fasting blood sugar are caused by eating too much sugar. But keep in mind, the data shows we are now eating less sugar than ever before, and yet diabetes is still sky rocketing! In reality, problems arise from the body's inability to use sugar. This problem stems from chronic stress and elevated stress hormones (cortisol, estrogen, etc.), lack of sunlight, nutrient deficiencies (especially thiamine), and a diet high in polyunsaturated fats (PUFAs).

When we're stressed, our body produces adrenaline and then cortisol. These hormones provide quick energy during stress by releasing fatty acids into the bloodstream when blood sugar is low. But if this happens too often, the constant flow of fatty acids disrupts how the body uses sugar. As a result, diabetics are primarily oxidizing fat. The fatty acids block sugar from being processed for energy, causing glucose to stay in the blood instead of fueling our cells. This is known as the Randle Cycle, and it leads to higher blood sugar levels. So lowering stress hormones is one of the most effective ways to improve the body's use of sugar.

Let's say you cut out sugar for good and go full keto warrior. At first, your blood sugar levels will drop. The body perceives this as an energy emergency. It drives up stress hormones, again, to increase energy levels. Cortisol is secreted in response to low blood sugar to stimulate a process called gluconeogenesis. Gluconeogenesis is your body's way of creating glucose from non-carbohydrate sources, specifically from amino acids or proteins. Cortisol will use proteins from any of our tissues. This includes muscle, bone, and organs. Over time, without sufficient dietary glucose, this can cause serious damage to the body. Gluconeogenesis takes place in the liver, so constantly restricting sugar and relying on this process can be an excessive burden, inhibiting liver function.

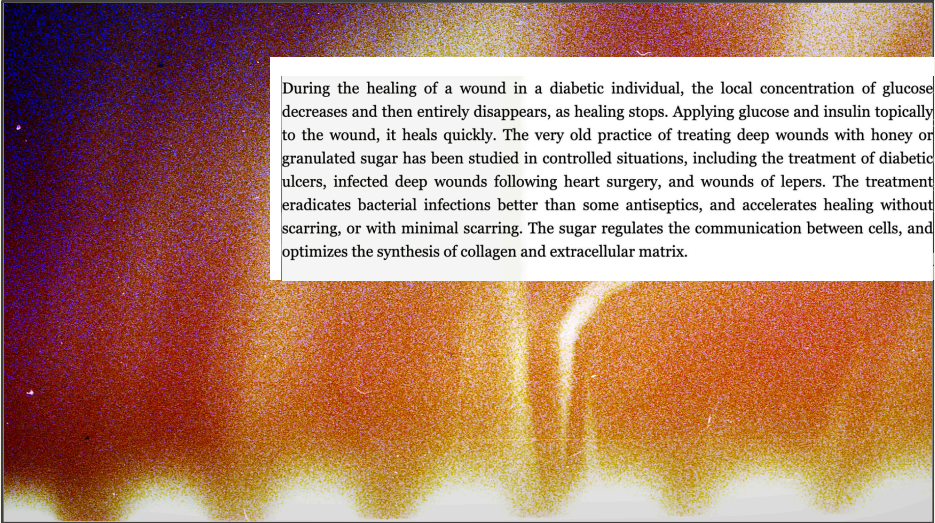
Even if you're not eating carbs, your body still needs glucose for vital functions, especially for the brain, which only runs on glucose. The stress from restricting glucose can be so damaging that it disrupts the body's ability to properly process sugar. High stress hormones, circulating fatty acids, and reliance on gluconeogenesis create a perfect storm for disease. And gluconeogenesis means that even if you completely restrict carbohydrates, blood sugar levels may still be chronically high. So think you're saving your health by cutting out sugar? Joke's on you —your body makes around 150 grams of glucose every day, whether you eat it or not! By avoiding sugar, you're actually forcing your body into the stressful process of gluconeogenesis to create the glucose it needs. Instead of simply fueling up, you're making things harder on your system.

This is also why crash dieting is a terrible idea. When we finally start eating enough again, the body will not be able to properly process sugar. It will, instead, store glucose as fat to protect us in case of another energy or nutrient shortage, creating a vicious cycle. Again, DIETARY sugar is essential!



Now that we've uncovered some of the complexities behind sugar, let's clear up a few more common misunderstandings.

- Are post-meal blood sugar spikes really an issue? A rise in blood sugar after eating is as natural as a dolphin swimming. It's simply how the body works. Every meal triggers an increase, just as every breath keeps us alive. While significant spikes can indicate issues like elevated stress hormones or a challenge in sugar processing, it's more nuanced than "high numbers are bad." They can indicate high stress hormones or that your body is struggling to process sugar properly. But this guide will show you how to manage your meals to keep those levels balanced, effortlessly supporting your body's natural rhythm. If you are concerned with spikes, pairing carbs with protein and fat or going for a quick walk after a meal can help stabilize blood sugar.
- Is high fructose corn syrup healthy (HFCS)? HFCS is not the same as fructose in its natural form. It is man-made and contains unnaturally high amounts of fructose, and some research suggests it is often contaminated with toxins like mercury from the manufacturing process. Fructose in nature never occurs in isolations so stick to natural sources of fructose.
- Should I just eat all sugar then? Fructose doesn't cover all the vitamins, nutrients, and minerals your body needs. In fact, we need certain nutrients like B vitamins, potassium, magnesium, etc. to properly metabolize and process sugar. Fruits contain a lot of these nutrients which makes them so beneficial. But we also need a balance of macronutrients and micronutrients that cannot be found from sugar alone.
- How can I eat sugar if I have insulin resistance or blood sugar imbalances? The first step is to reduce your intake of polyunsaturated fatty acids (PUFAs). As mentioned, PUFAs interfere with how the body processes sugar. It's also helpful to start slow and eat protein along with sugar (like fruit and cheese) to slow the absorption of glucose into the bloodstream.
- Does eating protein alone raise blood sugar? Eating protein alone can raise blood sugar, especially when there isn't enough carbohydrate available. When we eat a meal, the body releases insulin to help glucose enter cells for energy. However, if there's not enough glucose in the bloodstream, the body may keep insulin elevated and shift to gluconeogenesis, producing glucose from protein. This process requires the release of stress hormones like cortisol and adrenaline, which can be taxing over time. Ensuring an adequate intake of both protein and carbohydrates supports the body's energy needs without over-relying on gluconeogenesis. A balanced food like milk, with a natural mix of protein and carbohydrates, helps maintain stable blood sugar and makes it easier for the body to use nutrients properly.
- Does this mean baked goods are healthy? When most people think of sugar, their minds jump to cookies, cakes, and other sweet treats. But when we say "sugar is healthy," we're not talking about baked goods loaded with seed oils and other questionable ingredients. We're referring to sugar in its purest form. It's important to make that distinction—sugar on its own can have benefits, but that doesn't mean all sugary baked goods are healthy!
- Does sugar make you fat? Not quite. Consider fruitarians—they're often remarkably slim, and that's partly because sugar can actually boost metabolic rate. The availability of sugar signals a time of plenty, prompting the body to respond by increasing the metabolic rate.



During the healing of a wound in a diabetic individual, the local concentration of glucose decreases and then entirely disappears, as healing stops. Applying glucose and insulin topically to the wound, it heals quickly. The very old practice of treating deep wounds with honey or granulated sugar has been studied in controlled situations, including the treatment of diabetic ulcers, infected deep wounds following heart surgery, and wounds of lepers. The treatment eradicates bacterial infections better than some antiseptics, and accelerates healing without scarring, or with minimal scarring. The sugar regulates the communication between cells, and optimizes the synthesis of collagen and extracellular matrix.

Starches.

Oh, the allure of a salty potato chip. When it comes to starches, context is everything. In nature, fruits grow perfectly ripe on the vine, honey comes straight from the comb, and maple syrup flows from trees, all naturally sweet and needing no extra preparation to be enjoyed. Our attraction to these natural sugars is no accident: they're ready-to-eat sources of energy that don't demand much from our bodies to digest. Contrast this with starches. Raw grains or tubers aren't exactly appetizing on their own, and they require cooking or processing to become digestible. Without proper preparation, starches can wreak havoc on our system.

Biologically speaking, sugar is often a better choice than starch. As Ray Peat points out, "Per calorie, sugar is less fattening than starch, partly because it stimulates less insulin, and, when it's used with a good diet, because it increases the activity of thyroid hormone."

Although sugar is often a better choice, starches found in grains, beans, and vegetables have been a key part of the human diet for thousands of years. They can provide glucose for energy and essential vitamins and minerals. For example, potatoes have an almost perfect amino acid profile and high levels of potassium and magnesium. There is something so comforting about a hearty serving of potatoes, a warm bowl of rice, or freshly baked bread. But it's good to know the ins and outs of how food impacts our biology. Starch stimulates fat synthesis by increasing insulin secretion, which can, over time, lead to metabolic imbalances. Starch can feed endotoxins in the gut, which in turn increases serotonin and estrogen levels—both of which can contribute to inflammation and other health issues.

One of the more concerning aspects of starch consumption, as noted by Gerhard Volkheimer, is the phenomenon of "persorption," where whole starch grains can pass through the intestinal lining into the bloodstream. This can cause tiny blockages in small blood vessels, leading to localized cell death in tissues. This could explain why some people experience a range of inflammatory responses after eating starchy foods. Ray Peat suggests that well-cooked or processed starch, especially when combined with a good source of fat, can reduce this persorption, making it more acceptable for consumption.

Opt for traditionally prepared and listen to what your body feels best on. Traditional methods like sprouting, soaking, and fermenting grains make them more digestible by breaking down anti-nutrients and improving nutrient availability. Unfortunately, these practices are lost in modern food processing, so many people struggle to properly digest starches. Making sure they are prepared properly is essential.

Best sources:

- Potatoes: Great amino acid profile.
- Organic masa harina: Corn flour that's easily digestible due to nixtamalization.
- Sprouted organic oats: Slow to digest, rich in prebiotic fiber.
- Einkorn flour: Perfect for pancakes, crackers, and bread.
- Organic white rice: Quick, easy energy.
- Sprouted buckwheat: Nutrient-packed flour for baking.
- Organic spelt flour: An heirloom grain, fantastic for bread.

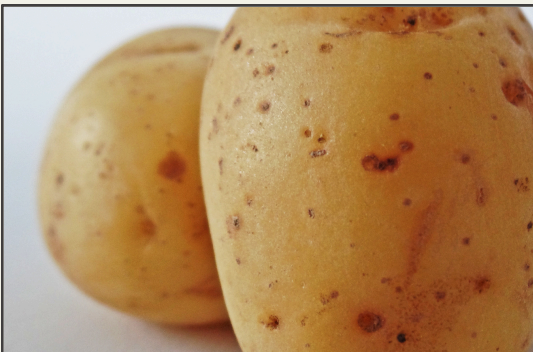
Nixtamalization is a traditional Mesoamerican technique that involves cooking maize in an alkaline solution to improve its nutritional value and make it more digestible.

Improved nutrition

- Nixtamalization increases the bioavailability of niacin and calcium, and it also improves the amino acid balance and protein quality of maize.

Reduced mycotoxins

- Nixtamalization removes fumonisins and aflatoxins, which are mycotoxins that can contaminate maize.



Dairy.

Milk, cheese, crème fraîche, and the likes are nutritional powerhouses you shouldn't shy away from. Dairy is one of the best sources of bioavailable calcium, essential for proper cell function. Without enough dietary calcium, the body has to pull it from our bones. This process raises parathyroid hormone, which directly suppresses thyroid function and metabolism. As calcium is pulled from the bones into the blood, it can build up in soft tissues and arteries, causing calcification. Eating enough bioavailable calcium prevents this. Contrary to what your doctor might tell you, calcium prevents cardiovascular disease.

Milk is a beautiful, perfect food. The populations with the highest dairy consumption like Finland, Sweden, and Switzerland have historically had better health outcomes, including lower rates of cardiovascular diseases and osteoporosis. They are also the tallest in the world. It's no surprise, milk contains bioavailable protein, potassium, B vitamins, etc. As with all animal products, quality is key. Organic from grass-fed cows is ideal.



The scientific proof that British physical degeneration was environmental and not inherited came in 1926. The Medical Research Council's controlled clinical trial gave one pint of milk daily to boys age 7-11, who in the next two years became fit, high spirited and irrepressible. They almost doubled their gain in height (5.2 inches) and weight (13.2lb) compared with a control group (3.6 inches and 8.1 lb).^{297 298} Similarly in the USA schoolboys of 1927 exceeded those of 1877 by 2½ inches,²⁹⁹ and recruits in 1943 were taller than those in 1917.²⁹⁵

Fat.

Stop eating seed oils. The concern around seed oils isn't a fad, they are seriously contributing to many diseases we see in modern life. Oils like canola, soybean, and sunflower are now staples in many kitchens, but they're high in polyunsaturated fats (PUFAs), which can be extremely damaging to your body over time. When your favorite health influencer says "stop eating seed oils." What he really means is, "stop eating PUFA" whether he knows it or not.

To be clear, we need some fat to survive. Fats make up our cell membranes and are especially important for hormone balance. All fats contain some PUFA, but when we eat according to pro-metabolic principles, the body can handle the small, natural amounts found in foods like dairy and meat. However, constantly consuming oils and foods with high a PUFA content can have toxic effects.

The goal is to minimize your intake by choosing foods that are lower in PUFAs. And this principle applies to more than just oils, rather all the foods you consume. PUFAs are highly unstable, prone to oxidation, and can promote inflammation in the body. They damage cell membranes and mitochondria. Over time, high levels of PUFA in the blood and tissues can contribute to hormonal imbalances, metabolic suppression, and even long-term issues like heart disease and cancer.

When PUFAs are heated (through cooking) or metabolized in our body, they produce reactive oxygen species (ROS) and aldehydes. ROS are unstable molecules that damage DNA, proteins, and fats, speeding up aging and increasing inflammation. Aldehydes, toxic byproducts of this process, cause further damage by disrupting normal cell functions, which can lead to cell death, inflammation, and even mutations. Aldehydes are carcinogens linked to serious conditions like atherosclerosis, neurodegenerative diseases (such as Alzheimer's), and cancer.

Excess PUFA intake doesn't just affect cells; it impacts hormones, too. PUFA can mimic estrogen, which can throw off your body's hormonal balance. They have been demonstrated to directly suppress thyroid function by inhibiting the conversion of T4 into T3, the active form of the thyroid hormone and damage thyroid hormone receptors on cell membranes. This combination directly disrupts the body's metabolism and ability to process sugar.

It's not just about ROS, estrogen, or thyroid dysfunction, using fats for energy is simply less efficient. The body needs to use more ATP (energy) to break down fats than it does for sugar. This extra energy demand makes fat processing more taxing for the body. PUFAs in particular generate less carbon dioxide (CO₂) compared to carbohydrates. Lower CO₂ levels reduce the body's capacity to release oxygen to tissues, which can slow our metabolic rate and place additional strain on the body's ability to produce energy over time.

When it comes to optimizing your metabolism, fat isn't as crucial as protein and sugar. The body can synthesize the fats it needs from carbohydrates, which makes fat intake less essential than most people think. It might be good to know that the fats synthesized by the body are almost entirely saturated. If you decide to lower your fat intake, particularly PUFA, your body will adjust by making its own fat from the sugars you eat. That's why focusing on protein and carbohydrate-rich foods (especially those that are low in PUFA) can be a game-changer for your metabolic health. Also, Dr. Peat wrote that a fat-free diet virtually guarantees lack of cancer. (That may be because without ingesting any fat, one would not be ingesting any PUFA.)

When choosing fats, it's best to stick to saturated. Saturated fat contains vitamins (K, A, D, E), protects the liver (search for articles on 'saturated fat' and 'liver'), and, in the case of coconut oil, also raises thyroid hormone (T₄) production and its conversion into T₃. But Dr. Peat says that in general, he suggests low-fat (especially milk fat). Metabolically speaking fat is not as crucial as protein and sugar. If it's PUFA, it's obviously bad due to its hormone-like negative effects (i.e. mimics estrogen). And if it's saturated, then it has some benefits but if a person decides to go fat-free in terms of diet, the body will probably synthesize whatever fat it needs from sugar. I think in general people associate fat with the synthesis of hormones, but it is the cholesterol we need for that and one can get cholesterol even on a very low-fat diet.

Best oils to eat and cook with:

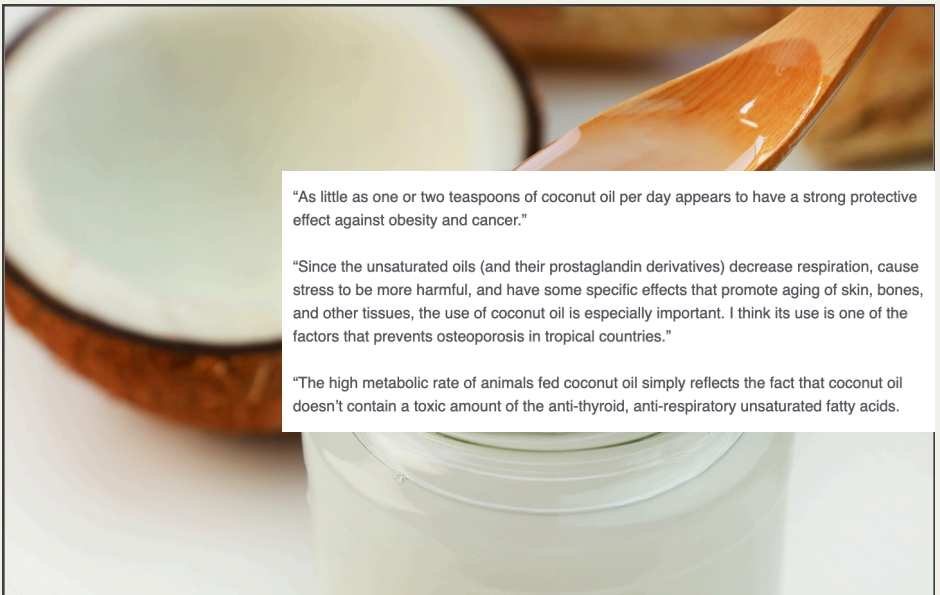
- Coconut oil
- Olive oil
- Ghee
- Butter
- Lard
- Tallow

Fats to avoid:

- Canola oil
- Rapeseed oil
- Grapeseed oil
- Cottonseed oil
- Sunflower oil
- Safflower oil
- Soybean oil
- Sesame oil
- Corn oil
- Rice bran oil
- Peanut oil
- Flaxseed oil
- Margarine
- Vegetable shortening
- Fish oils (supplements)

Other high sources of PUFA:

- Nuts: walnuts, peanuts, pecans, pine nuts
- Ahi tuna
- Salmon
- Cod liver oil
- Flaxseed
- Tofu and soy products



"As little as one or two teaspoons of coconut oil per day appears to have a strong protective effect against obesity and cancer."

"Since the unsaturated oils (and their prostaglandin derivatives) decrease respiration, cause stress to be more harmful, and have some specific effects that promote aging of skin, bones, and other tissues, the use of coconut oil is especially important. I think its use is one of the factors that prevents osteoporosis in tropical countries."

"The high metabolic rate of animals fed coconut oil simply reflects the fact that coconut oil doesn't contain a toxic amount of the anti-thyroid, anti-respiratory unsaturated fatty acids."

Veggies and more.

Certain vegetables are fantastic for complementing a meal. Carrots, potatoes, onions, and mushrooms (well-cooked), are all great. Raw carrot salad of course!

But many vegetables that are often promoted as 'health foods' can actually slow down the metabolism. These include broccoli, cauliflower, cabbage, kale, brussel sprouts, and soy products. Contrary to their reputation as nutritional powerhouses, these vegetables contain compounds that interfere with thyroid function. In fact, before the trend took off, Pizza Hut was the largest buyer of kale—using it as decoration, not food, in their restaurants.

These vegetables are called goitrogens and inhibit the thyroid's ability to uptake iodine and enzymes that are needed for proper thyroid function and metabolism. Like grains, they are not palatable in their natural state and should be cooked to remove the goitrogens - steamed, boiled, fermented, etc. They contain compounds that inhibit nutrient absorption, like phytic acids and oxalates, making their health benefits negligible. It's time to let go of the long-held belief that we have to eat only plant foods to be healthy.

Probiotics.

Stop eating so many "probiotics." Sure, every health guru is telling you to load up on them for "gut health," but let's dig deeper. All bacteria, even the ones in probiotics, produce byproducts—and not all of these are friendly. One of the key offenders is lactic acid, especially the type produced by bacteria. It's actually much more toxic than the lactic acid our own cells create when we're under stress.

Excessive lactic acid, especially from bacterial sources, is linked to the development of autoimmune conditions like lupus, rheumatoid arthritis, and multiple sclerosis. This principle goes for probiotics too! Lactic acid is one of the most overlooked factors that can negatively impact your health. When intestinal bacteria produce large amounts of D-lactate, it can contribute to the formation of harmful substances like methylglyoxal, which is a key player in the glycation of proteins. Glycation accelerates aging and tissue damage, further linking the consumption of fermented foods to long-term health risks. And guess where else lactic acid shows up—cancer! Lactic acid is one of the main byproducts and drivers of cancer so if this is something you are consuming every day, I would seriously reconsider.

Coffee.

Lots of coffee. With milk and sugar. Is there anything better in life? Coffee is one of the most universally loved beverages, and it's no mystery why. Beyond being a comforting ritual, it's also one of the most effective tools for supporting a healthy metabolism. The warmth, the aroma, the energy boost—it's like a hug in a mug that can fuel your day in all the right ways.

Coffee contains large concentrations of B vitamins like riboflavin and niacin and minerals like magnesium. It's a rich source of antioxidants that protect against oxidative stress, a key factor in aging and disease. Coffee helps maintain normal thyroid and progesterone production by helping to clear toxins from the liver and increasing metabolic rate. There is evidence that coffee protects the liver from damage, such as fatty liver disease, cirrhosis, and even liver cancer.

In my coffee, I prefer a little honey or maple syrup. I've found it's best to eat something first before diving into your cup. Coffee on an empty stomach can lead to that jittery, anxious feeling, which isn't exactly the boost we're looking for. And please, don't drink it black. Not only is black coffee hard on your system, but pairing it with some carbs and healthy fats helps your body handle the caffeine better, making the experience both enjoyable and nourishing.

The potential downsides of coffee don't come from the coffee itself. They stem from what's going on in your body, like running low on carbs or skipping meals. When you've got your nutrition dialed in, coffee is a metabolic ally, not an enemy. The key is giving your body the support it needs to make the most of it.

Alcohol.

Alcohol has been part of human culture for thousands of years. It is woven throughout biblical stories and ancient rituals and has played a role in daily life across countless societies. The Greeks and Romans didn't just sip wine; they embraced it as a staple in their everyday routine. Some sources even suggest that a bottle per man each evening was the norm, even for soldiers who stayed strong and battle-ready into their later years. This history raises questions about modern assumptions: if alcohol were universally harmful, could it have persisted as a daily tradition among civilizations renowned for their endurance and strength? I've also personally noticed that a thoughtfully crafted margarita brings more than just pleasure, it has a relaxing, grounding effect.

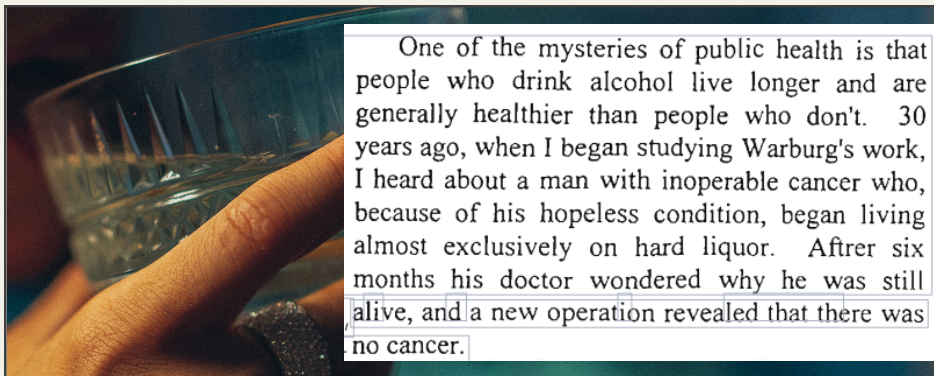
Ray Peat offers insights challenging the blanket notion that alcohol is inherently damaging. "In the absence of polyunsaturated fats, alcohol doesn't produce cirrhosis," he notes, suggesting that alcohol's effects may vary significantly depending on the overall diet. Peat further argues that alcohol can play a beneficial role in metabolism and immunity, helping to spare protein, balance hormones, and even support immune function in certain circumstances. "The stigma attached to alcohol has prevented its adoption as a most useful drug/nutrient," he explains. Peat views this stigmatization as part of a broader cycle of fear-based narratives around potentially beneficial substances, an "unhealthy exaggeration" that keeps us from appreciating alcohol's nuanced effects.

Perhaps, then, alcohol—when approached with respect, awareness, and the right context—has a place in a balanced lifestyle.

Some things to note when drinking alcohol.

- Avoid PUFAs. Pairing alcohol with high-PUFA foods can stress the liver. Both require processing in the liver, and they end up competing for detoxification, which can slow down its ability to neutralize toxins effectively. Interestingly, research has shown that coconut oil, which is entirely saturated, can protect the liver from alcohol induced damage (Gopalakrishnan, 2021).
- Consume with fructose. "Consuming fructose post-drink helps prevent toxicity by increasing liver metabolism of alcohol by up to 80%. This can significantly reduce the impact of alcohol on important bodily systems such as the thyroid" (Holtorf Medical Group, 2020). Fruit juices with clear liquors are a good option, for example, pineapple juice and tequila, vodka and cranberry juice, rum and orange juice, etc.
- Consume with caffeine if possible. Caffeine is another protective substance. Caffeine activates enzymes that aid in liver detoxification and acts as an antioxidant to neutralize free radicals. Espresso martinis are more than just a trendy cocktail.
- Choose high quality sources. Opt for pure, high-quality spirits. Many common brands contain toxic additives. Choosing naturally distilled options like organic vodkas, tequilas made from 100% agave, or wines without added sulfites can make a noticeable difference, allowing you to enjoy your drink with fewer additives for the liver to process.

In short, alcohol isn't inherently bad—it's harmful if your diet is full of junk.



Grocery List Essentials.

- Beef, lamb, liver, bone marrow, shrimp, cod
- Milk, butter, cheese, crème fraîche
- Orange juice, coconut water
- Coffee with cream and honey
- Coconut meat, honey, pollen, royal jelly
- Oranges, melons, dates, pineapple, cooked apples and pears
- Potatoes, yams, sweet potatoes
- Sourdough, oatmeal, einkorn, masa harina
- Caviar, oysters
- Carrots, well-cooked mushrooms
- Salt
- Coconut oil

Breakfast.

- Raw carrot salad
- Fresh orange juice
- Sourdough with pastured eggs
- Potatoes and meat
- Egg omelet with cooked mushrooms
- Masa harina pancakes with maple syrup
- Smoothies (milk and fruit)

Lunch & Dinner.

- Meat and potatoes
- Corn tortillas with meat or cheese quesadilla
- Beef, tomatoes, and cucumbers
- Shrimp with rice fried in coconut oil
- Grass-fed meatballs

Desserts.

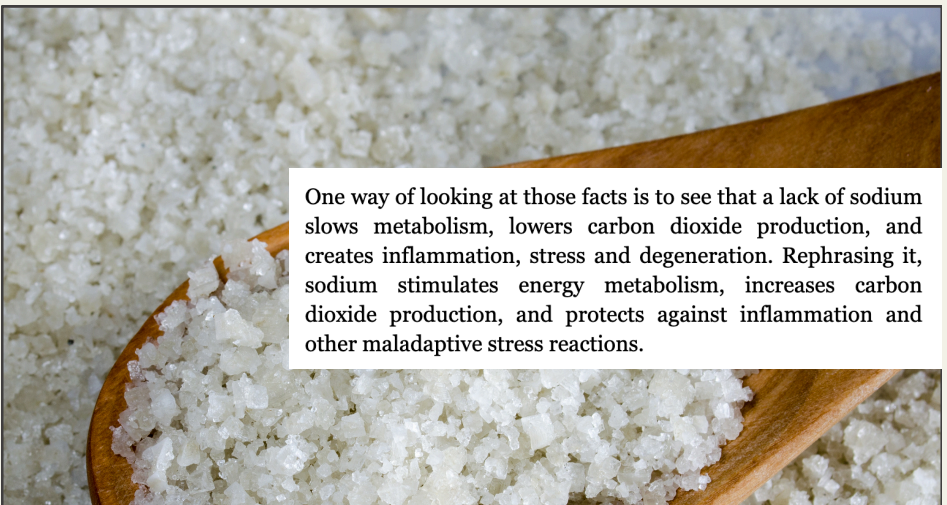
- Vanilla ice cream (from brands like Strauss)
- Glazed pears with homemade whipped cream
- Strawberries and cream
- Creme brûlée

Snack Wisely.

Gelatin fruit gummies
Homemade marshmallows
Cheese with fruit or honey
Potato chips fried in coconut oil or tallow
Oysters with lemon juice or Tabasco
Chocolate milk (Strauss)
Cheese with orange marmalade

General ingredients to avoid.

Carrageenan
Citric acid
Any gums
Artificial/natural flavors
Any food dyes
Corn syrup
BHT, BHA, & sodium benzoate
MSG
Seed oils
Titanium dioxide
Artificial sweeteners
Nitrates/nitrites



One way of looking at those facts is to see that a lack of sodium slows metabolism, lowers carbon dioxide production, and creates inflammation, stress and degeneration. Rephrasing it, sodium stimulates energy metabolism, increases carbon dioxide production, and protects against inflammation and other maladaptive stress reactions.

How to eat.

Eating is more than just survival; it's an emotional experience, especially for women. We're inherently connected to food, even on a biological level. Think about it—we literally produce food from our bodies when we breastfeed. This deep connection can sometimes lead us to obsess about food in ways that distract us from finding our natural, healthy weight.

Here are a few practices to help you reconnect with your true hunger and stop letting food control your thoughts:

1. Eat only when truly hungry. It's nearly impossible to gain unwanted weight if you eat only when you're truly hungry. The challenge is learning to pause and ask yourself, "Am I really hungry, or am I just eating because it's convenient or habitual?"
2. Don't stomp out hunger. When your hunger level is mild—a 2 out of 10—there's no need to eat like you're starving. Eat just enough to satisfy your hunger, then stop. The goal isn't to overdo it. It's about meeting your needs without using food as a fix for stress, boredom, or other emotions. Overcorrecting can lead to overeating.
3. Let hunger brew. When you feel that first twinge of hunger, resist the urge to immediately jump up and satisfy it, let it sit for a bit. Finish what you're doing, take a moment to think, and ask yourself what you really want to eat. Hunger enhances the eating experience.
4. Stop fasting. At a basic level, why would fasting even be considered healthy? In ancient times, going long periods without food meant you were a poor hunter. When you don't eat for extended periods, your body shifts into conservation mode to preserve energy, which means your metabolism slows down. Who wants that? Your metabolism is your life force. When you're young, it's fast, hence the common saying, 'He can eat anything and not gain weight!' This state of a fast metabolism represents ideal youth and boundless potential. So why would anyone want to trigger a 'starvation mode,' associated with stress and scarcity? It's actually one of the worst things you can do for your health—mentally, emotionally, physically.

When you go long periods without eating, your body runs out of quick-access energy, known as glycogen, which is glucose stored in the liver and muscles. To keep your body running, your adrenal glands kick into gear, secreting adrenaline to break down more glycogen into glucose. But once those glycogen stores are depleted, your body turns to fat for energy, specifically fatty acids stored in your fat tissues. If your diet has been high in PUFAs (common in seed oils like canola, soybean, and sunflower oil), your fat stores are likely packed with these unstable fats. When your body starts liberating these fatty acids during fasting, those PUFAs flood your bloodstream, triggering a self-amplifying stress response.

In a healthy state, like in children, stress hormones are naturally balanced. Saturated fats in the bloodstream help limit stress by sending negative feedback to reduce the production of adrenaline and cortisol. However, if your fat stores are loaded with PUFAs, your body doesn't get that natural feedback. Instead, the stress hormones like ACTH, cortisol, adrenaline, and glucagon stay elevated, keep your body in a state of stress and making the situation worse. This leads to a vicious cycle: more PUFA release, more stress, and a greater metabolic suppression.

The fats stored in your body dictate how your body responds to stress. In the presence of PUFAs like linoleic acid and arachidonic acid, the stress hormones never get the signal to stop. Fasting amplifies this process, making it more likely that your body will remain in a prolonged state of stress, with harmful consequences.

Over time, this stress leads to:

- Increased cortisol levels, which can break down muscle tissue and slow down metabolism.
- Higher adrenaline levels lead to feelings of anxiety, jitteriness, and poor sleep.
- A disruption of blood sugar regulation, makes you feel fatigued and irritable.

When fasting becomes part of your routine, these stress responses can become chronic, wearing your body down and affecting everything from your energy levels to your mood.

Eat Like a Child.

Instead of fasting, a better approach is to eat like a child. Have you ever noticed how kids eat? They snack when they're hungry, stop when they're full, go play, and then come back for more when they need it. This natural rhythm aligns with how our bodies are meant to function. You don't need to put yourself through long periods of hunger to be healthy.

Stop Taking Random Supplements.

The wellness industry has done some real damage. It's not just about supplements, it's a whole system of marketing products that can do more harm than good. Suddenly, substances like omegas and black cohosh are hailed as miracle cures, when in reality, they are doing more harm than good. So it's time to stop mindlessly taking supplements just because a \$500/hour naturopath or the latest wellness trend recommends them. Many of these products are loaded with hidden xenoestrogens, fillers, and other additives that can disrupt your body's natural balance. Being more mindful about what we put in our bodies is essential to truly supporting our health.

For example:

- Turmeric – High in oxalates, can contribute to kidney stones and mineral deficiencies.
- Red Clover – Contains phytoestrogens, which mimic estrogen and can disrupt hormonal balance.
- Chasteberry (Vitex) – Another phytoestrogen that may cause hormone imbalances if overused.
- Indole – Acts as a potent estrogen agonist, potentially increasing estrogen activity.
- Borage Oil – Inhibits thyroid function, can slow metabolism and cause fatigue.
- DHA – Levels increase with aging; breakdown products linked to dementia and neurodegeneration.
- Soy – High in phytoestrogens, can disrupt estrogen balance and thyroid function.
- Flaxseed – Contains lignans, which are phytoestrogens that may interfere with hormone levels.
- Fish Oil – High in PUFA, prone to oxidation, and increases inflammation over time.
- Evening Primrose Oil – Rich in gamma-linolenic acid (GLA), a type of PUFA, has estrogenic properties, and can disrupt hormonal balance.
- Ashwagandha – Can boost serotonin levels, which when too high, increases the stress response, suppresses metabolism, and interferes with thyroid function.
- Spirulina – Contains compounds that interfere with proper mineral absorption, especially iron.
- Aloe Vera (oral) – Can cause gastrointestinal distress and electrolyte imbalances in high doses.
- Licorice Root – Contains glycyrrhizin, which acts as a xenoestrogen and can disrupt hormonal balance, potentially leading to issues with cortisol regulation and estrogen dominance if used excessively.
- Black Cohosh – Contains compounds that act as xenoestrogens, disrupting natural hormonal balance.
- Probiotics – Increases lactic acid production, which can lead to digestive imbalances.

Omegas require their own paragraph. Omega-3s have to be one of the most aggressively marketed "health foods" ever, and it's a massive scam. For years, they've been promoted as heart-healthy, brain-boosting miracles, but the truth is far more complicated. Omega-3s, especially from fish oil, are loaded with polyunsaturated fats (PUFAs), which, when consumed in excess, can actually lead to oxidative stress and inflammation—the very problems you're trying to prevent. Consider bears. They gorge on nuts and fish rich in omega-3s leading up to hibernation because the high levels of PUFA help slow their metabolism and store fat. This metabolic slowdown allows them to survive the winter months in a state of dormancy. Unless you're preparing for hibernation (which you aren't), omega-3s might be doing more harm than good. Excessive PUFAs can make your cells more prone to oxidative damage, which is counterproductive for overall health.

Not only that, but when you open the bottle and smell that horrible fish smell, the oil is already rancid. This means that by the time you're swallowing those capsules, you're ingesting damaging free radicals that directly harm tissues and contribute to disease. Steer clear.

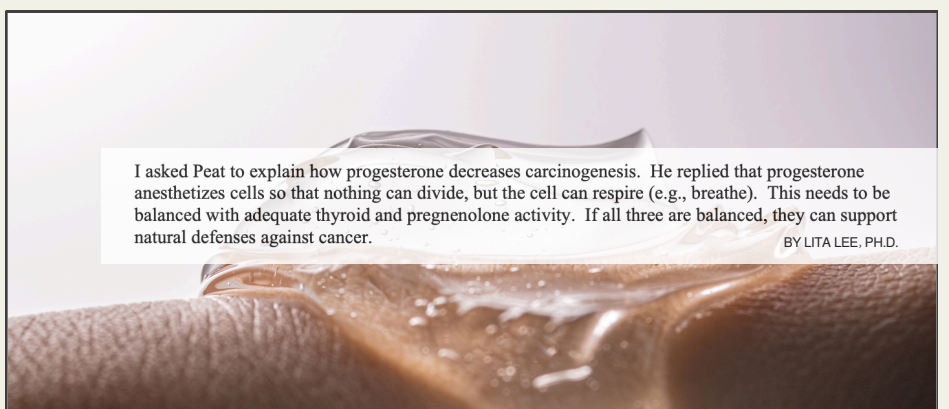


Hormones.

What You Don't Want:

1. **Low Thyroid:** A few grams of thyroid makes the difference between an idiot and an Einstein.” – Broda O. Barnes. Thyroid is that diva. Sitting right at the center of your neck, this small but mighty gland controls your entire metabolism. When thyroid hormones dip, you're not just facing sluggish metabolism and low energy, you're dealing with a cascade of issues: poor hormone production, fatigue, weight gain, and brain fog, etc. And if left unchecked for too long, low thyroid function can increase the risk of more serious conditions, like cancer. This gland may be small, but it runs the show!
2. **Low Progesterone:** If you want to do one simple thing to boost your mom's health, get her on some progesterone. When progesterone is low, it opens the door to a host of issues: increased cancer risk, poor sleep, cognitive decline, and chronic fatigue. Progesterone is the key to balancing those hormonal storms, and without it, things can get messy fast. Its affordable, accessible, and could prevent countless cases of breast cancer—yet remains one of the most under utilized substances in healthcare.
3. **High Estrogen:** People think it's the ultimate female hormone, but it's actually a stress and growth hormone. Sure, it spikes during ovulation, but it's not the "feminine" hormone everyone assumes. Without progesterone to keep it in check, estrogen can trigger inflammation, increase cancer risk, and create hormonal chaos. While estrogen is necessary for tissue growth, too much of it causes problematic growth and it's notorious for messing with thyroid function, explaining why so many women are hypothyroid compared to men.
4. **High Serotonin:** Let's shatter the serotonin myth. Serotonin isn't the "happy hormone" it's often made out to be, it can actually lead to cancer. Does that sound happy? Elevated serotonin levels contribute to inflammation, digestive issues, and sleep disturbances.
5. **High Prolactin:** Prolactin is typically associated with breastfeeding (thyroid and progesterone protect against it's negative effectives), but it's also a stress hormone. When prolactin levels rise, it disrupts reproductive health, lowers libido, causes menstrual irregularities, and even suppresses dopamine, leading to feelings of depression. To top it off, high prolactin contributes to estrogen dominance, further fueling hormonal imbalance.
6. **Low DHEA:** As we age, DHEA levels plummet and it's a big deal. DHEA is found in higher concentrations in the brain than in the blood, making it crucial for mental clarity and energy. Low levels of DHEA are linked to aging, reduced libido, low energy, and weakened immune function. Fortunately, in the U.S., DHEA is available over the counter, unlike in many other countries where it's a controlled substance.
7. **Low Pregnenolone:** Like progesterone, pregnenolone is another hero hormone that drops with age. It plays a critical role in opposing estrogen and supporting overall health. Low pregnenolone levels can lead to brain fog, mood swings, fatigue, and a decline in cognitive and physical performance. It's one of those hormones you don't think about until it's gone.

When hormones like estrogen, nitric oxide, cortisol, prolactin, and serotonin become chronically elevated, they act as a direct assault on mitochondrial function, reducing your cells' ability to produce energy efficiently. Minimizing these hormonal imbalances is key to living your healthiest life. It's really that simple.



I asked Peat to explain how progesterone decreases carcinogenesis. He replied that progesterone anesthetizes cells so that nothing can divide, but the cell can respire (e.g., breathe). This needs to be balanced with adequate thyroid and pregnenolone activity. If all three are balanced, they can support natural defenses against cancer.

BY LITA LEE, PH.D.

The Path to Balance:

Sunlight. Sunlight is a required nutrient so before slathering on sunscreen only to spend your day under fluorescent lights in an office, it's worth rethinking your relationship with sunlight. Sunlight is more than just warmth and light, it's absolutely necessary for even the microbes in your gut.

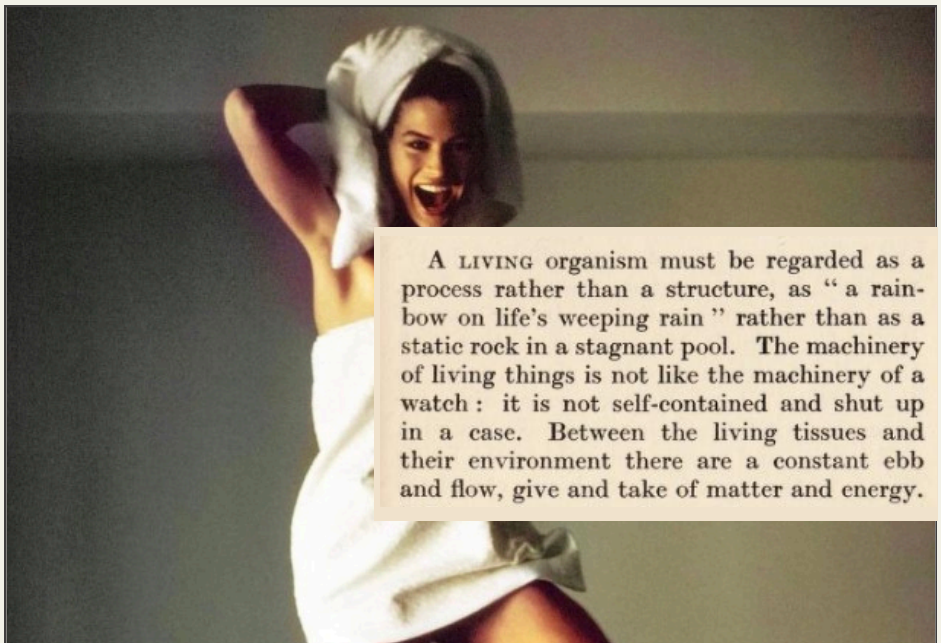
Step outside and soak up natural sunlight. Let it energize your body and reconnect you with the Earth. If you're concerned about skin aging, consider focusing on tanning your body instead of your face, and keep in mind that aging varies greatly from person to person and is largely influenced by diet and lifestyle.

Connection. Hugs, love, touching, kissing, laughing. We're wired for connection. Animal experiments have demonstrated that without social connection, we will suffer not only emotionally but also physically.

In the 1950s, psychologist Harry Harlow conducted a study with rhesus monkeys to examine the role of comfort and bonding. Harlow's experiment showed that baby monkeys, when given the choice between a wire "mother" that provided food and a soft, cloth-covered "mother" that offered no food but comfort, overwhelmingly chose the soft mother for warmth and connection. This demonstrated that physical touch and social bonding were more critical to the monkeys' health than food alone. Monkeys deprived of social connection developed severe emotional and physical health issues. Without connection, we face increased stress, immune dysfunction, and a higher risk of disease. Social connection is not just a luxury, but a fundamental part of our health.

Mind. The worst thing you can believe is 1. that illness is random, that you have no control, no agency over your own life. 2. That the so-called experts always know best. 3. That what "everyone" says is true.

But here's the thing: with just one new truth, your mind cracks open, revealing a completely different way of living. Suddenly, there's a new path to walk, one that wasn't visible before. Only those who are hungry for knowledge, open to change, and willing to stay flexible can even begin to grasp what it means to truly win. "The simplicity of things such as supplementing thyroid, progesterone, and sugar, avoiding an excess of phosphate in relation to calcium, and avoiding polyunsaturated fats, makes it possible for people to take action themselves, without having to depend on the medical system." The power to transform is in your hands.



A LIVING organism must be regarded as a process rather than a structure, as "a rainbow on life's weeping rain" rather than as a static rock in a stagnant pool. The machinery of living things is not like the machinery of a watch: it is not self-contained and shut up in a case. Between the living tissues and their environment there are a constant ebb and flow, give and take of matter and energy.