



# WE ARE FRUGIVORES

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## Our Biological Diet

The widespread prevalence of diet-related health problems suggests that humans are not eating in a manner compatible with their biology. Regular meat consumption is one of the leading causes of cancer, diabetes, cardiovascular disease, Alzheimer's, osteoporosis, multiple sclerosis, and erectile dysfunction. Dairy products contain a protein called casein, which the groundbreaking China Study states is "the most relevant carcinogen that humans ingest." Eggs are loaded with cholesterol and increase our risk of heart attack, stroke, and death. Grains contribute to leaky gut, autoimmune disease, mood disorders, osteoporosis, and cardiovascular disease. And yet, the often-neglected fruits and vegetables only contribute to good health.

### **Are We Carnivores?**

Animals that live on other animals usually eat raw meat, straight from the carcass. They devour most of the animal when they kill it, consuming the muscle meat, the organs, and lapping up the warm fresh blood and other bodily fluids. They delight in the guts and their partially digested contents, and even crush, split, and eat the smaller bones and their marrow. Most humans are revolted by the sight of blood, intestines, and raw flesh and can't tolerate hearing the screams of animals being ripped apart. The bloody reality of killing and eating animals is innately repulsive to us.

Below are some of the fundamental differences between humans and carnivores.

	<b>Humans</b>	<b>Carnivores</b>
<b>Tongues</b>	Humans have smooth tongues.	Only carnivores have rasping (rough) tongues.
<b>Claws</b>	Our lack of claws makes ripping skin or tough flesh extremely difficult.	Carnivores have claws to help catch their prey and tear it with the help of their canines.
<b>Teeth</b>	Our molars are primarily flat, for grinding and mashing food. Our "canine" teeth bear no resemblance to true fangs.	Carnivores have sharp incisors and pointed canine teeth that are perfectly designed for tearing at meat.
<b>Opposable Thumbs</b>	Our opposable thumbs make us extremely well equipped to collect a meal of fruit in a matter of a few seconds.	The claws of carnivore allow them to catch their prey in a matter of seconds as well.
<b>Intestinal Length</b>	Our intestinal tracts measure roughly 12 times the length of our torsos (about 30 feet). This allows for the slow absorption of sugars and other water-borne nutrients from fruit.	The digestive tract of a carnivore is only three times the length of its torso. This is necessary to avoid rotting of flesh inside the animal.
<b>Vision</b>	Our sense of vision responds to the full spectrum of colour, making it possible to distinguish ripe from unripe fruit.	Carnivores do not typically see in full colour.

<b>Meal size</b>	A few pieces of fruit is enough to make a meal, leaving no waste.	Carnivores typically eat the entire animal when they kill it, also leaving no waste.
<b>Drinking</b>	Should we need to drink water, we can suck it with our lips, but we cannot lap it up.	Carnivores' tongues protrude outward so they can lap water when they need to drink.
<b>Vitamin C</b>	For humans, vitamin C is an essential nutrient that we must get from our food.	Carnivores manufacture their own vitamin C.
<b>Jaw movement</b>	Our ability to grind our food is unique to plant eaters.	Carnivores have no lateral movement in their jaws.
<b>Tolerance for fat</b>	Humans do not handle more than small quantities of fat well.	Carnivores thrive on a high-fat diet.
<b>Saliva and urine pH</b>	All plant-eating creatures (including early humans) maintain alkaline saliva and urine most of the time.	The saliva and urine of the meat-eating animals is acidic.
<b>Diet pH</b>	Our preferred foods are all alkaline-forming. An acid-forming diet is deadly to humans.	Carnivores thrive on a diet of acid-forming foods.
<b>Stomach acid</b>	The pH level of the hydrochloric acid that humans produce in their stomachs generally ranges from about 3 to 4 or higher.	The stomach acid of carnivores can be as low as 1 but usually runs in the 2s. This protects them from the harmful pathogens that can be found in raw meat.
<b>Sugar metabolism</b>	The glucose and fructose in fruits fuel our cells without straining our pancreas (unless we eat a high-fat diet).	Carnivores do not handle sugars well. They are prone to diabetes if they eat a diet that is predominated by fruit.
<b>Cleanliness</b>	We are the most particular of all creatures about the cleanliness of our food.	Carnivores are the least picky, and will eat dirt, bugs, and debris, along with their food.
<b>Natural appetite</b>	Our mouths water at the sight of produce, our natural source of sustenance, while the smell of animals usually puts us off.	Carnivores' mouths water at the sight of prey, and they react to the smell of animals as though they sense food.

Carnivores thrive on an acid-forming diet of meat and eggs, but an acid-forming diet is deadly to humans. If our bodies are in a constant state of over-acidification, we suffer conditions such as osteoporosis, arthritis, muscular weakness, nutrient deficiencies, ligament damage, strokes, heart disease, and cancer. We do much better eating a diet of fruits and vegetables which are alkaline in their metabolic end products. The body readily excretes excess alkalis whereas it must neutralize objectionable acids by leaching calcium from our bones and glutamine from our muscles.

The addition of modest amounts of meat to the early human diet came with the discovery of fire, which allowed us to lower the risk of being sickened or killed by parasites and bacteria in meat. This didn't turn our ancestors into carnivores but instead, let them survive during periods in which plant foods were scarce.

### **Are We Herbivores?**

Herbivores typically have wide, flat teeth, and mouthparts adapted to rasping or grinding grass, leaves, stalks, stems, tree bark, and other plant material. This diet would be extremely difficult for humans to digest as we do not have the appropriate microorganisms to break down cellulose as these animals do. Humans consume some herbage such as lettuce, kale, and celery, but if we had to rely on herbage exclusively, we'd be eating all day.

### **Are We Granivores?**

Granivores live on grass seeds such as wheat, oats, rye, barley, and rice. In their raw state, humans can neither chew or digest these seeds and will gag on a spoonful or two. Examples of granivores include guinea pigs, capybaras, squirrels, muskrats, hamsters, groundhogs, rats, and birds.

### **Are We Frugivores?**

Genetically speaking, chimpanzees and bonobos are our closest living relatives, and they are known as omnivorous frugivores. A frugivore is any type of herbivore or omnivore where fruit is the preferred food type. Apes take the greatest proportion of their daily diet from plant foods – new leaves, ripe fruits, seeds, and honey – and although they “fish” for ants as well as hunt and eat invertebrates, such foods tend to make up only a small percentage (2–6%) of their annual diet. Overall gut anatomy and the pattern of digestive kinetics of apes and humans are very similar.

“Relative to body weight, the average wild monkey or ape takes in far higher levels of many essential nutrients each day than the average American. The recommendation that Americans consume more fresh fruits and vegetables in greater variety is well supported by data on the diets of free-ranging monkeys and apes. Such data also suggest that great attention to features of the diet and digestive physiology of non-human primates could direct attention to important areas for future research on features of human diet and health.”

**– Katharine Milton, PhD**

With its sweet flavours, delightful aromas, and bright colours, no other food in its raw state attracts our senses quite like fruit does. It is without a doubt the most beneficial and life-giving food that humans can eat and comes closer to satisfying our nutritional needs more than any other food. Fruit also leaves no toxic residue behind, requires far less digestive energy, and contains all the vitamins, minerals, amino acids, and fatty acids that our bodies require. Many people on a fruit-based diet experience clearer sinuses, less mucous, better sleep, improved breathing, fewer aches, clearer skin, increased energy, heightened mental clarity, and permanent weight loss.

## The Acid / Alkaline Balance

When a food is ingested, digested, and absorbed, each component of that food will present itself to the kidneys as either an acid-forming compound or a base-forming one. Foods are often measured with a potential renal acid load score that describes the level of acid load they present to the kidneys. The standard American diet of meat, eggs, dairy, corn, wheat, and refined sugars is highly acid-forming, overwhelming the body's mechanisms for removing excess acid. At the same time, the diet is notably deficient in alkalizing fruits and vegetables.

Acidified body cells become weak and lead to various unhealthy and low-grade body tissue conditions and diseases such as:

- Chronic acidosis
- Nutrient deficiencies
- Bone diseases
- Arthritis
- Muscular weakness
- Ligament damage
- Strokes
- Heart disease
- Colon disease
- Cancer

A cancerous cell is acidic. If your body is in a constant state of over-acidification, it becomes impossible for healthy cells to regenerate. Cancer cells thrive in an overly acidic environment. Eating a diet of at least 80% alkaline-forming foods will make it harder for cancer cells to grow.

A study published in the December 2002 edition of the *American Journal of Clinical Nutrition* found that modern diets contain much more acidic foods and less bicarbonate alkaline salts than our ancestral pre-agricultural diets. This imbalance between acid and alkaline foods was due to "the displacement of high-bicarbonate-yielding plant foods (green leafy vegetables, fruits, roots, and tubers) in the ancestral diet, by cereal grains and energy-dense, nutrient-poor foods in the contemporary diet."

Since the body must operate at a stable pH at all costs, any dietary acid load must be neutralized by one of a number of homeostatic base-producing mechanisms. The consequences of your body's attempt to maintain a constant pH in the face of an acidic environment are:

**The leaching of calcium from bone:** Calcium is a strong base, and the bone contains the body's largest calcium store. Metabolic acidosis causes a release of calcium from bone, working as a buffer system to maintain a constant pH. As a result, bone degrading activity increases and bone building activity decreases.

**Loss of muscle protein:** Glutamine acts much like calcium to neutralize the body's acidosis. Since the skeletal muscle contains the body's largest glutamine store, metabolic acidosis causes muscle breakdown to liberate glutamine from the muscle. The amino acids from this muscle breakdown are excreted, causing a net loss of muscle protein.

### **Alkalizing Foods**

- All fruit (except blueberries, and cranberries)
- All vegetables
- Fresh vegetable juice
- Raw coconut water
- Chestnuts, almonds
- Pumpkin seeds
- Apple cider vinegar\*
- Sea salt\*

\*Not recommended

### **Acid-Forming Foods**

- All meat
- All fish
- All dairy
- All eggs
- All grains and grain products
- All beans and legumes (except green beans)
- All vinegar besides ACV (white, balsamic, red wine)
- Alcohol
- Chocolate
- Drugs
- Peanuts, peanut butter
- Walnuts, brazil nuts, pecans, cashews\*
- Blueberries, cranberries\*

\*Just like there are some unhealthy alkaline-forming foods, there are also some healthy acid-forming foods. Just keep them under 20% of your total calories for the day.

## Food Combining and Recommended Foods

*“The assertion recently widely publicized that the stomach cannot tell one food from another and digests one mixture of foods as well as it does another is not good chemistry and is even worse physiology. Either the maker of the statement is grossly ignorant or dishonest. Either way, such an individual should not pose as an authority in the field of human nutrition and presume to advise millions about proper eating.”*

– **Herbert M. Shelton**

The easiest meals to digest and the ones that provide optimal absorption of nutrients are mono meals. Eating one type of food at a time ensures the full and proper digestion of that food without fermentation caused by incompatible meal combinations. The resulting toxins created by improper food combining contribute to gas, heartburn, belching, foul breath, colds, headaches, sinus problems, diarrhea, and constipation.

Different foods require different bodily enzymes and juices for digestion. Some need an alkaline environment such as starches, and some need an acid environment such as nuts and seeds. The stomach cannot be acid and alkaline at the same time, so when protein and starches are eaten together, the starches will ferment, and the proteins will rot. This is because if food stays in the stomach too long without adequately being digested, it will begin to be broken down by bacteria. Most every traditional meal in our modern society mixes proteins with starches such as meat and potatoes, pasta and cheese, bread and lunch meat, and cereal and milk.

Aside from mono meals, the next best option is a properly combined meal. This means eating foods that digest well together based on their rate of digestion and enzyme requirements. I’ve categorized the different plant foods I recommend into their specific food groups so that you can learn which digest well together. While not all fruit varieties are listed, all are recommended.

Overt fats should make up only about 5–10% of your overall daily calories, which translates to a small handful of nuts/seeds or ½ of an avocado.

### **FATS**







**FLAX SEED**



**HAZELNUT**



**HEMP SEED**



**MACADAMIA NUT**



**PECAN**



**PINE NUT**



**PISTACHIO**



**PUMPKIN SEED**



**SUNFLOWER SEED**



**WALNUT**

Consume all nuts and seeds raw, never roasted. Roasted nuts have been found to be a significant source of acrylamide which has been shown to induce cancer in rats and is classified as a probable human carcinogen. Peanuts are not recommended since they often grow a mold that produces aflatoxin – a known carcinogen associated with liver cancer.

Always include some chia or flax seeds in your salad dressings or smoothies to boost your omega-3 levels for the day. Avocados, nuts, and most seeds are high in omega-6 and low in omega-3. Your ratio of omega-3 to omega-6 should be anywhere from 1:1 to 1:4.

### **SWEET FRUITS**



**BANANA**



**CHERIMOYA**



**DATE**



**FIG**



**JACKFRUIT**



**PERSIMMON**



**PLANTAIN**



**RAISIN**



**SAPOTE**



**SWEET GRAPES**

### **SUB-ACID FRUITS**



**APPLE**



**APRICOT**



**BLUEBERRY**



**CHERRY**



**GRAPE**



**GUAVA**



**KIWI**



**LYCHEE**



**MANGO**



**MULBERRY**



**NECTARINE**



**PAPAYA**



**PEACH**



**PEAR**



**PLUM**

## **ACID FRUITS**



**BLACKBERRY**



**CARAMBOLA**



**CLEMENTINE**



**CRANBERRY**



**GRAPEFRUIT**



**KUMQUAT**



**LEMON**



**LIME**



**ORANGE**



**PINEAPPLE**



**POMEGRANTE**



**POMELO**



**RASPBERRY**



**STRAWBERRY**



**TOMATO**

## **DURIAN**



Regarded by many people as "the king of fruits," I recommend eating this fatty fruit on its own for optimal digestion.

## MELONS (ALL VARIETIES)



**HONEYDEW**



**CANTALOUPE**



**WATERMELON**

## NON-STARCHY VEGETABLES



**ARTICHOKE**



**ASPARAGUS**



**BASIL**



**BEEF**



**BELL PEPPER**



**BOK CHOY**



**BRUSSELS  
SPROUTS**



**BROCCOLI**



**BROCCOLI  
SPROUTS**



**CABBAGE**



**CELERY**



**CUCUMBER**



**EDAMAME**



**EGGPLANT**



**ENDIVE**



**GREEN BEANS**



**GREEN PEAS**



**ICEBERG**



**KALE**



**OKRA**



**PARSLEY**



**PEA SHOOTS**



**RED LEAF**



**ROMAINE**



**SNAP PEAS**



**SNOW PEAS**



**SPINACH**



**SUNFLOWER  
SPROUTS**



**SWISS CHARD**



**ZUCCHINI**

**While these are the vegetables I focus on, feel free to experiment with others.**

## STARCHY VEGETABLES



CARROT



CAULIFLOWER



CORN



PUMPKIN



RUTABAGA



SWEET POTATO



ALL SQUASH



TURNIP

Always buy organic corn since most non-organic corn is a GMO product.

I don't recommend regular potatoes as they score very high on the glycemic index. Sweet potatoes are just as tasty and won't spike your blood sugar levels.

### Food Combining Guidelines

A lot of people pay no attention to proper food combining and get along just fine, but if you regularly experience stomach pain or excess gas, you may want to pay closer attention to these guidelines. For optimal digestion, it is best to combine fruits in the same category as each other such as sweet fruits with other sweet fruits (dates with bananas), and acid fruits with other acid fruits (oranges and pineapple). Sub-acid fruits combine reasonably well with either sweet fruits or acid fruits, however, acid fruits and sweet fruits don't get along so well.

**ACID FRUITS** ← COMBINE WELL → **SUB-ACID FRUITS**  
**SUB-ACID FRUITS** ← COMBINE WELL → **SWEET FRUITS**  
**SWEET FRUITS** ← COMBINE POORLY → **ACID FRUITS**

All fruits combine well with lettuce and celery, so these are good vegetables to add to your fruit smoothies or snacks. I don't recommend fruit be eaten directly before or after a cooked meal. It's best to have your cooked meals at the end of the day after your salad and not to have any fruit until the next morning.

**ALL FRUITS** ← COMBINE WELL → **LETTUCE, CELERY, CUCUMBER**  
**ALL FRUITS** ← COMBINE POORLY → **COOKED VEGETABLES**

The only time that I eat from the fat category is when I'm having my raw salad at night and include some avocado or flax/chia seeds in my dressing.

**FATS** ← COMBINE WELL → **LETTUCE, CELERY, CUCUMBER, TOMATO**  
**FATS** ← COMBINE WELL → **NON-STARCHY VEGETABLES**  
**FATS** ← COMBINE POORLY → **FRUITS**

All types of vegetables digest well together.

## **STARCHY VEGETABLES ← COMBINE WELL → NON-STARCHY VEGETABLES**

Certain foods are better eaten on their own.

**MELON → EAT ON ITS OWN**

**DURIAN → EAT ON ITS OWN**

Drinking during a meal or directly after will dilute stomach acids and enzymes and disrupt the digestion of the food. For this reason, I also don't recommend using a lot of water in your fruit smoothies – I find this causes hours of bloating for me. It's always better to hydrate before your meals.

**WATER → 10 MINUTES BEFORE A MEAL OR 2 TO 3 HOURS AFTER**

### **Getting Enough Calories**

On average, men require about 2,500 calories per day to maintain their weight, and women need about 2,000. Use CRON-O-Meter to track your daily caloric intake to make sure you're eating enough ([cronometer.com](http://cronometer.com)).

Below are some typical meals that one might enjoy on a fruit-based diet which should give you a better idea of how much fruit and vegetables you need to be eating to hit your recommended daily calories. I like to start the day off with high-water fruits such as melons and citrus and move on to sweeter fruits later in the day. Since vegetables are typically much lower in calories, you need to make sure you eat enough calories from fruit during the day.

#### **Sample Breakfast options:**

- 1 large watermelon = 1355 calories (could cover breakfast and lunch)
- 10 oranges + 6 apples = 1165 calories
- 4 cups of grapes + 6 mangoes = 955 calories
- 10 large oranges = 860 calories
- 4 containers of blackberries + 4 containers of blueberries = 680 calories
- 6 cups of raw coconut water + 1 medium honeydew melon = 630 calories
- 1 pineapple = 450 calories
- 2 medium cantaloupes = 375 calories

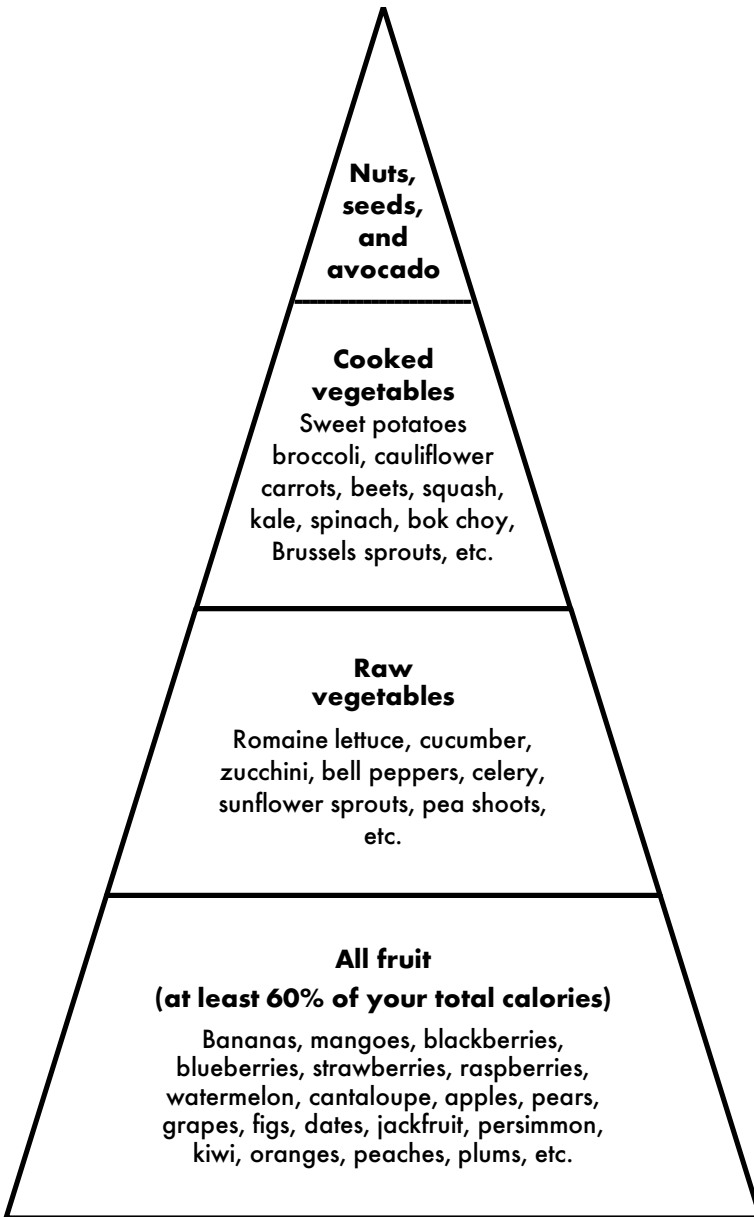
#### **Sample Lunch options:**

- 4 large bananas + 10 medjool dates = 1145 calories
- 4 cups of jackfruit + 1 cup of dried figs = 990 calories
- 1 durian = 885 calories
- 1 bag of dried mulberries (227 g) = 720 calories
- 2 cups of dried apples + 2 large pears = 685 calories
- 8 persimmons + 2 large bananas = 520 calories

**Sample Dinner options:**

- 1 head of lettuce with red pepper dressing (5 large peppers, ¼ cup of sun-dried tomatoes, 2 large celery stalks) = 410 calories
- 2 medium sweet potatoes + 2 cups of broccoli = 340 calories
- 2 cups of spaghetti squash + 2 cups of Brussels sprouts + 16 asparagus spears = 265 calories
- ½ bag of frozen edamame (250g) = 305 calories
- 2 cups of beets + 2 cups of carrots = 255 calories
- 2 cups of cauliflower + 2 cups of kale = 135 calories

## My Food Pyramid



Eat fruit for breakfast, lunch, and as a snack before dinner. For dinner, have a salad followed by some steamed veggies.

## **Are Grains Healthy?**

Anthropologists have recorded that humans have been walking the Earth for nearly ten million years without any use of grains. Modern man has only been cultivating grains for about ten thousand years, approximately the same period which he has used fire. In the essay, "The Worst Mistake in The History of The Human Race," by evolutionary biologist Jared Diamond, he describes how the farming of grains led to the demise of entire human populations. Diamond explains that early farmers began growing just one or two starchy crops, which were then relied upon as the main fuel source for an entire population. This created a situation in which calories were easily acquired without much expenditure of energy, but the result was inadequate nutrition.

Raw grains are unpleasant and bitter, even when they are sprouted. More often, they are inedible or poisonous if eaten raw. Even birds, the only natural grain eaters, feed their young on insects as grains are deficient in protein and nutrients. Humans are classified as anthropoid primates and there is not one example in nature of an animal with anatomy and physiology like ours that consumes grains. All the anthropoid primates thrive on a diet composed almost exclusively of fruits, vegetables, nuts, and seeds.

The fiber in grains is what nutritionists refer to as insoluble fiber and acts as an irritant in our system. Irritation of the mucosa of the intestine is considered a risk factor for many different diseases including ulcers, Crohn's, colitis, irritable bowel syndrome and colon cancer. Humans have delicate digestive systems that require the soft, soluble fiber found in fruits and tender greens. Insoluble fiber causes food to move through the bowels more rapidly than normal, reducing our nutrient absorption. Grains also contain substantial quantities of acid-forming minerals, such as phosphorus and magnesium, and the body must take calcium (an alkaline mineral) from the bones in order to neutralize the acidity of the grains. Eventually, people on a high-grain diet run low on calcium, resulting in osteoporosis.

### **Wheat and Gluten**

Since wheat is the most harvested crop in the world, we are stuck on the idea that it needs to be an essential part of our diets. The food pyramid created by the USDA which recommends 6-11 servings from the "Bread, Cereal, Rice & Pasta Group," is not based on nutritional science or clinical observations. Since it is such a cheap crop, wheat and wheat byproducts are in everything, and it is because we are gorging ourselves on wheat that we are seeing many of the health problems we are today.

American cardiologist and author of *Wheat Belly*, William Davis, found that when he removed wheat from his patient's diets their symptoms of acid reflux disappeared, cramping and diarrhea of IBS was gone, their energy improved, they had greater focus, sleep was better, rheumatoid arthritis pain improved,



asthma symptoms were reduced, rashes disappeared, and athletes reported more consistent performance.

Gliadin, the gluten protein that is in wheat, has been shown to damage the lining of the intestines and cause leaky gut. When your gut starts to leak undigested protein molecules into the bloodstream, it triggers what medical doctors call an autoimmune reaction. During an autoimmune reaction, your immune system mistakes your body's healthy cells and tissues as invaders and then repeatedly attacks them. Our increasing obsession with wheat may explain our increasing rates of celiac disease, non-celiac gluten intolerance, diabetes, joint pain, headaches, coronary artery disease, eczema, dementia, cancer, and even schizophrenia. Don't listen to those who tell you that you only need to avoid gluten if you have celiac disease, which affects only 1% of the population. No part of the body is immune from the damaging effects of gluten, and that's because no part of the body is excluded from the mechanism of inflammation.

I've tested negative for celiac disease twice over the past ten years, but I still get severe muscle stiffness and pain in my neck any time I eat gluten. The last two times this happened were when I made homemade vegan pizzas with ShaSha bakery's Spelt Pizza Crust. They make their crust the traditional way through slow fermentation and its only ingredients are organic spelt flour, water, organic sprouted spelt, organic honey, and sea salt. It's the healthiest pizza crust you'll find in Toronto and yet it still causes me to have an autoimmune reaction due to the gluten. The muscle stiffness in my neck typically lasts at least 2 to 3 days before returning to normal.

### **Schizophrenia's Link to Wheat**

During World War II, psychiatrist Dr. Dohan observed that the men and women of Finland, Norway, Sweden, Canada, and the U.S. required fewer hospitalizations for schizophrenia when food shortages made bread unavailable. When wheat consumption resumed after the war, the number of admissions for schizophrenia steadily increased. Dohan observed a similar pattern in the hunter-gatherer Stone Age culture of New Guinea. Before the introduction of wheat, schizophrenia was virtually unknown, diagnosed in only 2 of 65,000 inhabitants. As cultivated wheat products, beer made from barley, and corn were introduced, the incidence of schizophrenia shot up sixty-five-fold.

In the 1960s, Dr. Dohan and his colleagues at the Veterans Administration Hospital in Philadelphia decided to remove all wheat products from the schizophrenic patients' diets without their knowledge or consent. Four weeks without wheat and there were significant improvements in the number of auditory hallucinations, fewer delusions, and less detachment from reality. They then added the wheat products back into the patients' diets, and all the previously mentioned symptoms returned.

There have since been many reports of complete remission of the disease, such as a 70-year-old schizophrenic woman who was relieved of her delusions, hallucinations, and suicidal desires within eight days of stopping wheat.

## Dairy

*"We do not need cow's milk any more than we need the milk of a giraffe or rat."*

**– Dr. Michael Klaper**

The regular practice of drinking animal milk as a part of our adult diet is only a few hundred years old. Giving cow's milk to children in place of the mother's milk is also a relatively new practice that dates back only about two hundred years. No other animal in nature drinks the milk of another species; they know instinctively that the milk from their mother is the perfect food to support their rapid growth and to provide the precise nutrient mix they require.

Humans are designed by nature as sucklings, but only for the first couple of years of life, and only on their own mother's milk. Every other creature on earth stops consuming milk past the weaning age; it is only humans that continue this dietary perversion into adulthood. If all dairy products were discontinued today, millions of people would rid themselves of disease within a short period. Cow's milk is about 50% fat and has high concentrations of protein, growth hormones, sodium, and other nutrients to sustain the rapid growth of a 60-pound calf to a 600-pound cow in less than eight months. It's good stuff if you're a baby calf, but if you are a human trying to create a lean, healthy body, it will not "do a body good" as the commercials claim.

In Harvard's Physicians Health Study, that included more than 20,000 male physicians, those who consumed more than two servings of dairy per day had a 34% higher risk of developing prostate cancer than men who consumed little or no dairy products. Although the body needs some calcium, a high calcium load results in a lowering of blood levels of activated vitamin D. In the case of prostate cancer, where vitamin D is thought to be protective, high dairy intake could therefore have a harmful effect.

Galactose, a component of the milk sugar lactose, has been under study as a possible culprit for ovarian cancer. A recent analysis of 21 studies that have investigated the link between dairy product consumption and ovarian cancer risk found that for every 10 grams of lactose consumed per day (the amount in one glass of milk), ovarian cancer risk increased by 13 percent.

In Asia, where whole grains, vegetables, fruits, tofu, soymilk, and other soy products are commonly consumed, and milk is not a regular part of the diet, people are generally healthier, and breast cancer is much rarer than in the United States and Europe. The breast is a hormone-responsive organ, and when you stimulate it every day by consuming bovine estrogens in milk, you substantially increase your risk of breast cancer.

Casein, the protein in cow's milk, has been associated with medical conditions such as asthma, acne, cancer, and type-1 diabetes in children. This protein is even more concentrated in cheese. When the body attempts to digest casein, it is

converted into what is known as casomorphins. These are opiates. Just like any opiate, they are highly addictive, and when people try to refrain from eating them, they can have withdrawal symptoms.

The dairy industry has created an obsession over calcium that, in turn, has become a major contributor to the suffering and death of more than one billion people annually. The National Dairy Council refers to their products as “Nutritious and Delicious,” but they are loaded with sugar and salt and most likely wouldn’t be consumed otherwise. No matter how you transform or disguise it, it’s still the lactation secretion of a large bovine animal you’re drinking.

“The following was a TV commercial; it was just black text on a milky white screen: ‘Calcium is good for strong bones’ Next screen: ‘Milk has plenty of calcium’ Next screen: ‘Got milk?’ Notice the dairy industry never said, ‘Milk is good for strong bones,’ because they can’t, and they know they’d be taken to court in a heartbeat if they said it was, so they never say that. But this doesn’t stop them from letting you draw that conclusion from the two truthful statements they did say. In the advertising trade, it’s described as letting you make the association. I call it indirect lying.”

– Don Bennett, DAS

The RDA for calcium is set to 800 mg, which is over twice as much as someone eating a healthy alkaline diet needs. Bantu women in Africa get along very well on about 300–400 mg of calcium per day and suffer no osteoporosis, while their American counterparts take in 1,000 and still have bone-density problems. This is due to much of the calcium intake of Americans being from mineral supplements or in a deranged state in cooked foods. Our bodies much prefer calcium from raw leafy greens and fruits such as oranges, dried apricots, and dates.

To force cows into producing milk, factory farm operators typically impregnate them using artificial insemination. Calves are taken from their mothers within a day of birth and the mothers can be heard calling for them for days. The mother cows are then hooked up to milking machines two or more times a day, and drugs are often used to force them to produce even more milk. The average cow today produces more than four times as much milk as cows did in 1950. A cow’s typical average lifespan is about twenty years, but cows used by the dairy industry are often killed after about five years because their bodies wear out from constantly being pregnant or lactating.

## Eggs

Eggs are acid-forming in the body, produce excess mucus, and clog our lymphatic system, intestines, and colon with their concentrated proteins, saturated fat, and cholesterol. One egg yolk contains approximately 215–240 mg of cholesterol, which exceeds the RDA of 200 mg. This is more cholesterol than a bacon cheeseburger with  $\frac{1}{3}$  lb of beef, three slices of cheese, and four strips of bacon.

In a study published in the *New England Journal of Medicine*, researchers found that those who consumed the most eggs increased their risk for cardiovascular disease by 19%, and for those who already had diabetes, their risk for developing heart disease spiked to 83%. New research suggests this may be due to the high concentration of choline in eggs that increases one's risk of a heart attack. Eggs also foster the growth of bacteria that convert choline into TMA (Trimethylamine), which can be oxidized into TMAO (Trimethylamine N-Oxide). Researchers at the Cleveland Clinic found that the more TMAO people had in their blood, the greater the odds they had heart disease, and the worse their condition was.

Eggs also have been shown to raise the risk of certain cancers such as colon and prostate cancer. A study published in the *International Journal of Cancer* found that people who consume just 1.5 eggs per week have five times the risk for colon cancer compared with those who consume less than 11 eggs per year. Another study by the National Institute of Health concluded that men who consumed 2.5 or more eggs per week had an 81% increased risk of lethal prostate cancer compared with men who ate less than 0.5 eggs per week. The idea that we should “eat everything in moderation” to be healthy is a dangerous notion that is not supported by science. Even a few eggs per week can eventually kill you.

The egg industry kills millions of newborn baby chicks every day, more than 260 million every year in the U.S. alone. Male chicks are sorted and either tossed in trash bags to suffocate or ground up alive in giant macerators. This is because they don't lay eggs and are not the breed sold for meat. The female chicks have the ends of their beaks cut off with a hot blade so that they don't hurt each other during their intense confinement. There are often 5 to 11 hens in each tiny wire cage which are usually stacked on top of one another allowing urine and feces to fall onto birds in lower cages. Because of these terrible living conditions chickens often die in their cages and are sometimes left to rot in the same space with the living birds. After about two years, those who have survived are sent to a slaughterhouse. At the slaughterhouse, they are shackled and hung upside down, electrocuted, throats cut, and often scalded to death.

I've experimented with adding and removing eggs from my diet multiple times over the years and found that both raw and cooked eggs give me significant chest pain. Two small quail eggs or  $\frac{1}{2}$  of a chicken egg is all it takes.

## Meat

*“Meat is not man’s natural food since he is neither a carnivorous nor an omnivorous animal – whatever the physiologists may say. Every argument drawn from comparative anatomy, from physiology, from chemistry, from experience, from observation and when rightly used, from common sense, as well as the arguments from agricultural, the hygienic, the ethical and humanitarian standpoints – all agree in proving that man is not a meat-eating animal and that if he does indulge in this practice, it is to his own detriment being such an unhealthful, unnatural and abnormal habit.”*

**– Dr. Hereward Carrington**

According to a report published in the November 1995 issue of *Preventive Medicine*, meat eating results in as much as \$61 billion in annual healthcare costs due to increases in heart disease, hypertension, cancer, diabetes, gallstones, obesity-related problems, and food-borne illness.

Many people in their effort to “get enough protein” tend to eat large amounts of animal foods which displace plant foods rich in fiber, antioxidants, and phytonutrients. The Institute of Medicine recommends that men consume 38 grams of fiber per day, but the average adult only eats about 15 grams – less than half the recommended amount. According to the USDA, 95% of Americans do not get an adequate amount of dietary fiber. High fiber intake is associated with a lower risk of cancer, ulcerative colitis, Crohn’s disease, and constipation.

Unlike other animals that include meat in their diet, humans are unable to break down uric acid due to a lack of the necessary enzyme uricase. This inability to break down uric acid leads to an increased possibility of its accumulating in the body when animal products are eaten. High levels of uric acid in the blood can cause solid crystals to form within joints, which causes a painful condition called gout. More recently, hyperuricemia (excess of uric acid in the blood) has been associated with coronary heart disease, hypertension, stroke, metabolic syndrome, and other disorders.

Heterocyclic amines (HCAs) and polycyclic aromatic hydrocarbons (PAHs) are chemicals that are formed when meat is cooked using high-temperature methods, such as pan frying or grilling directly over an open flame. The most concentrated sources include grilled/charred meats and fish. HCAs are genotoxic, meaning that they are capable of damaging DNA – causing mutations, deletions, and insertions. Studies have found this to be relevant to the cancer risks involved with exposure to these compounds. HCAs and PAHs have also been linked to cardiovascular disease, diabetes, osteoporosis, multiple sclerosis, Alzheimer’s, and erectile dysfunction.

In 2015, The World Health Organization reported that processed meats such as bacon, sausages, and hot dogs can cause cancer. A group of 22 scientists reviewed the evidence linking red meat and processed meat consumption to

cancer, and concluded that eating processed meats regularly increases the risk of colorectal cancer. There is also evidence of links with pancreatic cancer and prostate cancer. According to the most recent estimates by the Global Burden of Disease Project, about 34,000 cancer deaths per year worldwide are attributable to diets high in processed meat.

A high percentage of all the flesh from chickens, turkeys, cows, fish, and pigs butchered every year in the U.S. is contaminated with *E. coli*, *Campylobacter*, *Listeria*, or other dangerous bacteria that live in the intestinal tracts, flesh, and feces of animals. Eating contaminated meat can cause symptoms ranging from stomach cramps and diarrhea to organ failure and death. Every year in the U.S., there are 75 million cases of food poisoning, 70% of which are caused by contaminated flesh, and 5,000 of these cases are fatal.

### **The Treatment of Animals on Factory Farms**

Mother pigs spend most of their lives in tiny gestation and farrowing crates so small that they can't even turn around. They are impregnated again and again until their bodies give out and are then sent to slaughter. Piglets are torn away from their distraught mothers just a few weeks after birth. Their tails are chopped off, the ends of their teeth are snipped off with pliers, and the males are castrated. When pigs are forced onto transport trucks headed to the slaughterhouse, many of them die from heat exhaustion in the summer or arrive frozen inside the truck in the winter. Many pigs are still conscious when they are dumped into tanks of scalding-hot water, which is intended to remove their hair and soften their skin.

To mark cows for identification, they are restrained and stamped with fire irons causing them third-degree burns. The testicles of the male calf are typically cut from their scrotums or tightly clamped so that they atrophy. Their unnatural diet of grains and corn causes their stomachs to become so full of gas that breathing becomes impaired because of compression in their lungs. Some may suffer from a severe increase in stomach acid causing ulcers to form. Moreover, they receive very poor, if any veterinary care, resulting in sickness, infection, and death.

More chickens are killed for food than all other land animals combined, yet not a single federal law protects them from abuse. In the U.S., approximately 9 billion chickens are killed for their flesh each year, and 205 million hens are used for their eggs. Baby chicks on factory farms are never allowed contact with their parents, let alone be raised by them, and spend most of their lives in total confinement, deprived of sun and fresh air. They're drugged to grow so large so quickly that their legs and organs can't keep up and this results in heart attacks, organ failure, and crippling leg deformities.

### **What About Fish?**

A lot of harmful pesticides that were in heavy use in the 1980's and prior are still present in the bottom sediment of all kinds of water bodies. Fish come into direct contact with these pesticides in the water or through bioaccumulation (consuming

smaller fish with pesticide poisoning). Aldrin/dieldrin is considered one of the most dangerous pesticides for fish and humans and has been linked to tumors, convulsions, liver damage, and nervous system problems. DDT was banned in 1972 but persists in the oceans today and is associated with premature births, low birth weight, spontaneous abortion, and nervous system failures.

Fish are like sponges for mercury, absorbing it from water as it passes over their gills. Larger fish, like tuna, have higher levels of mercury because they feed on smaller mercury-contaminated fish and therefore are exposed to higher concentrations of it. Extended exposure to mercury can damage the brain, kidneys, and central nervous system. Mercury is transported to the brain where it interferes with cell differentiation and division by binding to our DNA/RNA. Direct results can be mental retardation and other neurological problems.

Polychlorinated Biphenyls (PCBs) are toxic chemicals that were used as fire retardants, insulators, and plasticizers because of their high-burning temperatures. They are most often exposed to the environment through leaky equipment, illegal dumping, and waste oil from electrical equipment. When the troubling health effects were discovered in workers using PCBs, Congress banned their production in 1976 as part of the Toxic Substances Control Act. However, PCBs are still prevalent due to their existence in old electrical fixings and their persistence in waste. The composition of PCBs change when they are released into the environment and the types that exist in our soils and water today are said to be more toxic than the PCBs workers were originally exposed to. The greatest risk for human exposure to PCBs is through eating tainted fish. Fish swim in waters polluted with PCBs, and it accumulates in their fatty tissue. Most often, the effects of PCB exposure result in liver cancer in humans. Other tests performed on Rhesus monkeys (who have a similar makeup to humans), showed that PCBs weaken the immune system and cause changes in thyroid hormone levels.

## Protein

Both plant and animal proteins are made up of about 20 amino acids. Amino acids are required for the synthesis of body protein, and other important compounds such as creatine, peptide, hormones, and some neurotransmitters. Nine amino acids – histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan and valine – are not synthesized by mammals, and are essential to get from food. We evolved in this way because it saves us valuable energy. The less amino acids our body has to make itself, the more energy we have left for other functions.

Some of the largest and strongest mammals on the planet such as the hippopotamus, elephant, buffalo, rhinoceros, and gorilla all get their protein from plants, yet no one is worried about them getting enough protein. Why then, is the number one question vegans get asked: “Where do you get your protein?” We really should be more concerned about consuming too much protein, since high protein foods such as meat, dairy, and eggs have been linked to obesity, cancer, heart disease, arthritis, kidney disease and liver failure. Next time someone asks you where you get your protein, ask them where they get their fiber.

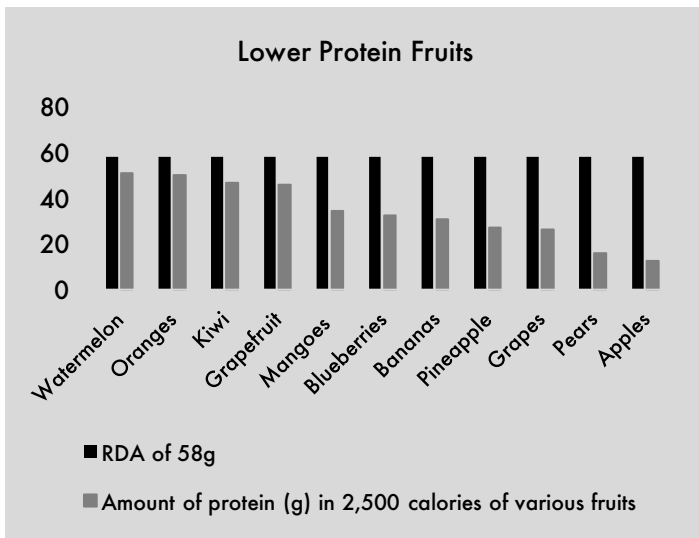
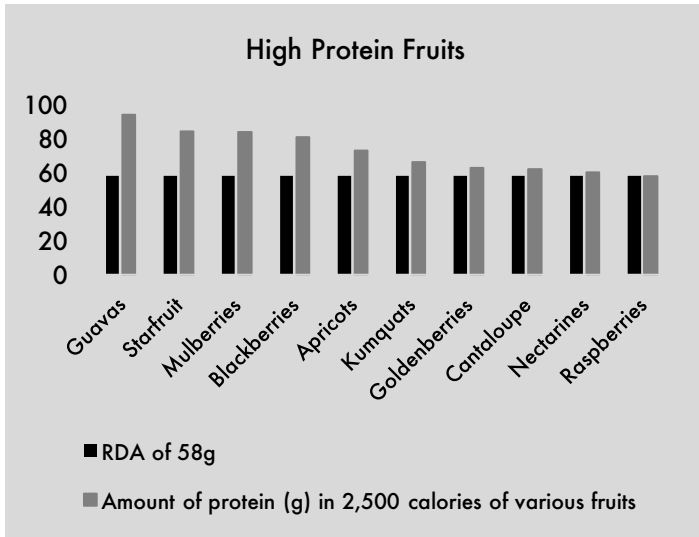
Our need for protein has been so overstated that fear of protein deficiency has become a major deterrent for people when considering adopting a plant-based diet. The fact is, protein deficiency is so rare worldwide that there is no medical term for it. Protein deficiency rarely occurs as an isolated condition and usually accompanies a deficiency of dietary energy and other nutrients resulting from insufficient food intake. The symptoms are most commonly seen in deprived children in poor countries where protein intake is exceptionally low. Physical signs include stunted growth, poor musculature, thin and fragile hair, and skin lesions. Deficiency of this severity is very rare in the first world countries except as a consequence of pathologic conditions and inadequate medical management of the acutely ill.

Infants have the highest need for protein because they have the fastest rate of growth. Therefore, the protein density of mother’s milk should provide a reasonably good idea of the high-end of human protein requirements. Mother’s milk typically contains about 6% of its calories as protein. The Recommended Dietary Allowance for protein is 0.8 grams of protein per kilogram of body weight. This amounts to 56 g per day for the average sedentary man and 46 g per day for the average sedentary woman. That’s 10% of our total calories from protein, which is about 2x more than we need as full grown adults. It makes sense that they include a safety margin, as they do for most nutrients – the dangerous part is that most people get that 10% (or more) from animal sources.

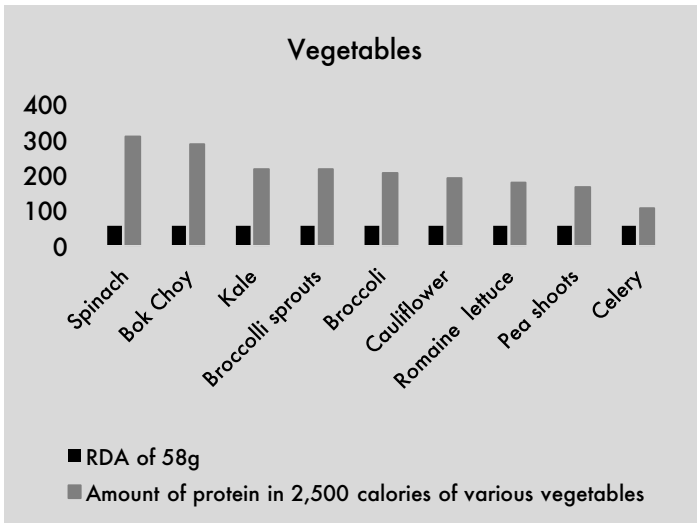
What a lot of people don’t realize is that plants have protein too. I get an average of 84 g per day without including any beans, grains, or vegan protein powders in my diet. I eat fruit all day, and have a big salad and some steamed vegetables at night.



The next three charts show how various fruits and vegetables stack up against the Recommended Dietary Allowance of 58 g of protein.



As you can see, some of the more popular fruits are a bit lower in protein. However, even a banana-based diet that supplies around 30 g of protein per day should provide an adequate amount of protein for an adult human. This is because 30 g per day is 6% of your calories from protein – the same percentage as mother’s milk. The reason I encourage you to have a meal of vegetables every night has more to do with their mineral content than needing the extra protein.



### What About Legumes for Protein?

Legumes contain “antinutrients” that interfere with the body’s ability to absorb essential micronutrients. The most prevalent antinutrient found in legumes is phytic acid which can bind to and prevent the absorption of certain minerals including iron, zinc, calcium, magnesium, and manganese. Lectins are another type of antinutrient found in legumes which can bind to receptor sites on your intestinal mucosal cells and interfere with the absorption of nutrients across your intestinal wall. Phytohaemagglutinin is a lectin found in legumes that is toxic in high amounts, and several cases of fatal poisoning have been reported after consumption of raw or improperly cooked beans.

### Fruits and Vegetables Provide Plenty of Protein

We can easily meet our protein requirements eating a diet of fruits and vegetables as long as we are consuming an adequate number of calories. For athletes and those wishing to build muscle mass, slightly higher protein consumption may be necessary. However, this should be achieved by an increase in total food consumption, not by increasing the ratio of protein to carbohydrates. Use a calorie tracking app such as CRON-O-Meter ([cronometer.com](http://cronometer.com)) to make sure you’re eating enough calories and getting enough protein for your gender, age, and activity level. Your macronutrient calorie ratio should be around 80% carbs, 10% protein, and 10% fat.

## Fat

Fat is an efficient source of energy for humans that supplies us with essential fatty acids, omega-3, and omega-6. One ounce of fat contains twice the stored fuel energy of an ounce of carbohydrates or protein. In the human body, fat acts as an insulator to protect the body from exposure to cold temperatures and reduces the trauma caused to organs during excessive force. Dietary fats are also essential for the proper functioning of the endocrine glands responsible for producing the body's hormones, maintaining healthy skin, and delivering the fat-soluble vitamins A, D, E, and K.

Too much fat in our diet is unhealthy, and we should aim to eat anywhere from 5 to 10% of our total calories from healthy fats. Your healthiest fatty food options include chia seeds, hemp seeds, flax seeds, avocado (as well as homemade guacamole) and limited amounts of nuts. Animal fats contain millions of times more cholesterol per bite than plant foods and are also high in adrenaline and stress factors secreted by the animal during its life. Even though plants contain small amounts of cholesterol, there is more cholesterol in one hamburger than one would consume from an entire lifetime of eating a diet of plants. The percentage of fats found in fruits and vegetables is typically about 5–20%, compared to the 70–90% saturated fat found in most animal products.

Dietary fats are divided into two major categories: saturated and unsaturated.

**Saturated fats**, such as lauric acid found in coconut oil, are solid at room temperature and do not spoil quickly. Excessive consumption of saturated fats is associated with atherosclerosis (hardening and narrowing of the arteries) which is the usual cause of heart attacks, strokes, and peripheral vascular disease. Saturated fats are commonly found in butter, whole milk, meat, peanut butter, margarine, cheese, vegetable oil, and fried foods.

**Unsaturated fats**, such as those found in flax seeds, are liquid at room temperature and spoil more quickly. Unsaturated fats increase High-Density Lipoprotein (good cholesterol) and decrease Low-Density Lipoproteins (bad cholesterol). These fatty acids may also help reduce the risk of type-2 diabetes. Monounsaturated fats, such as oleic acid found in olive oil, contain only one double bond whereas polyunsaturated fats, such as chia seeds, contain more than one. There are two polyunsaturated fatty acids considered essential because our bodies don't make them and must be obtained from food. These two fatty acids are ALA (alpha-linolenic acid), an omega-3 fat, and LA (linoleic acid), an omega-6 fat.

**ALA (omega-3)** is the building block for other members of the omega-3 family known as EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid). EPA is well known for its ability to lower inflammation, while DHA allows metabolically active tissues such as the brain, retina, adrenals, and testes to function properly.

**LA (omega-6)** is the building block for other members of the omega-6 family

known as DGLA (di-homo-gamma-linolenic acid), and AA (arachidonic acid). AA is well known to promote inflammation, which can lead to tissue damage, arthritis, and cancer.

### **Balancing Omega-3 and Omega-6**

The standard American diet has a very high ratio of omega-6 to omega-3, with an average of 15:1, but sometimes as high as 30:1. Even vegans who eat a lot of nuts, avocados, and vegetable oils are going to be getting too much omega-6 in their diet. A ratio of 2:1 to 4:1 (omega-6 to omega-3) is ideal for optimal health.

There are only a limited number of foods that are higher in omega-3 than omega-6. Many foods that claim to be high in omega-3, such as hemp seeds, actually have much higher levels of omega-6. Chia seeds, flax seeds, and vegetables such as romaine lettuce, cauliflower, zucchini, and kale are your best options for increasing your omega-3 levels. Just one tablespoon of flax seeds has 2.4 g of omega-3 or 150% of the RDA. Chia seeds are the second highest source with one tablespoon containing 1.8 g of omega-3 or 111% of the RDA.

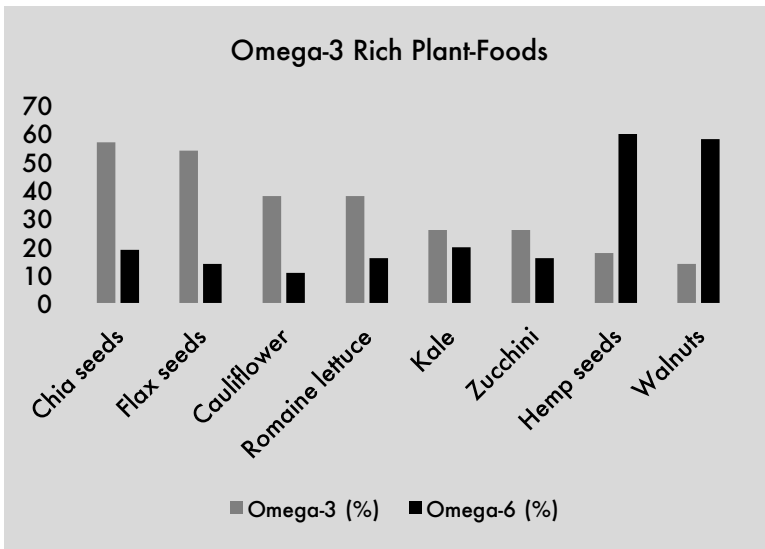
### **Conversion of ALA to EPA and DHA**

According to a study published in the *American Journal of Clinical Nutrition*, the conversion of plant-based omega-3 ALA to long-chain EPA and DHA may be increased in vegans who don't eat fish. Despite having significantly lower intakes of EPA and DHA, blood levels in vegans were approximately the same as fish eaters. The average EPA level in fish eaters was 64.7 micromoles per liter, compared with 50 micromoles per liter for vegans, and the average DHA level in fish eaters was 271 micromoles per liter, compared with 286.4 micromoles for vegans. The results indicate that when people don't consume adequate levels of EPA and DHA from foods, their bodies respond accordingly by increasing the conversion of ALA to EPA.

### **Cooking Fats**

Once fats have been cooked, they quickly go rancid – at which point they become carcinogenic. Many high-temperature methods of cooking (deep frying, broiling, roasting, barbecuing to a char, etc.) cause fats to produce carcinogenic substances including acrolein, hydrocarbons, nitrosamines, and benzopyrene which is one of the deadliest carcinogens known to man. Heating fats also reduces the functional value of their antioxidant properties.

Frying temperatures range from about 400 to 1,000° F. When unsaturated vegetable fats and oils are heated to such temperatures, their naturally occurring "cis" bonds are converted to "trans" bonds, creating trans fatty acids. Trans fats are recognized as one of the most dangerous health hazards of our time.



As you can see, hemp seeds and walnuts, which are promoted as being high in omega-3, are actually much higher in omega-6.

### Vegetable, Nut, and Seed Oils

All oil is 100% fat, void of fiber, and stripped of nutrients. The oil extraction process removes all the proteins, vitamins, minerals, and other phytochemicals that are found in the whole food. Refined fat in a bottle cannot be considered a health food any more than a bag of pure sugar. Since oils coat the cells in our body, it causes insulin resistance by interfering with glucose transport into the muscles. The best way to reduce insulin sensitivity is to reduce fat intake. Unfortunately, the American Diabetes Association isn't really helping this matter since their website promotes the use of canola oil, olive oil, peanut butter and peanut oil.

### What About Coconut Oil?

A few studies have shown that coconut oil is only slightly better than butter in terms of raising LDL cholesterol levels. Coconuts contain 85 to 90 percent saturated fat. Even reduced-fat coconut milk contains about 10 g of saturated fat per 100 ml, compared to about 2.3 g per 100 ml in reduced-fat cow's milk. One study looked at the number of deaths from heart disease between residents of Singapore and Hong Kong and found that they were around three times higher in Singapore. The researchers blamed these findings on their higher consumption of coconut and palm oil. Both the American Heart Association and the National Heart Foundation recommend avoiding the use of coconut oil for cooking.

# Vitamins

Vitamins are organic substances found in very small amounts in various foods, necessary for normal metabolic function and provided only through our diet. Vitamins are classified as either fat-soluble (vitamins A, D, E, and K) or water-soluble (vitamins B and C).

## **Fat-Soluble Vitamins**

Fat-soluble vitamins are absorbed in fat globules that travel through the lymphatic system of the small intestines and into the general blood circulation within the body. These fat-soluble vitamins are then stored in body tissue and remain there for quite some time. This means that it's possible, through the use of supplements, for a person to consume toxic levels of the fat-soluble vitamins. You can also become deficient in the fat-soluble vitamins if your dietary fat is too low, or if your fat digestion is compromised.

### **Vitamin A**

**Function:** Vitamin A (also called carotene) is involved in regulating the growth and specialization of virtually all cells in the human body. It has important roles in embryonic development, organ formation during fetal development, normal immune functions, and eye development and vision.

**Deficiency:** Vitamin A deficiency is a major cause of preventable blindness in the world and is prevalent among pregnant women and children in developing countries. Other individuals at risk include those with impaired fat digestion and those with inflammatory bowel diseases such as Crohn's. Vitamin A deficiency is also associated with increased susceptibility to infections and skin disorders.

**Supplement warning:** Vitamin A in supplement form has been shown to increase the risk of cancers and reduce bone mineral density.

**Food sources:** The vitamin A content of foods is measured in *retinol activity equivalents* (RAE). The recommended daily intake for males is 900 RAE, 700 RAE for females, and 1300 RAE while breastfeeding.

- 1 cup of fresh carrot juice = 2,256 RAE
- 1 cup of cooked carrot = 1330 RAE
- 1 cup of cooked squash = 1,114 RAE
- 1 medium sweet potato (cooked) = 1,096 RAE
- 1 medium cantaloupe = 934 RAE
- ½ cup cooked spinach = 472 RAE
- ½ cup of cooked kale = 442 RAE
- ½ cup of cooked broccoli = 120 RAE
- ½ cup of dried apricots = 80 RAE

## Vitamin D

*"All life on the planet relies on the sun. Even the forms of life that are not directly exposed to the sun are still dependent on the sun. The plants that give us oxygen to breathe could not do so without the sun. The photosynthesis that happens within the plants is powered by sun energy. That photosynthesis carries a variety of nutrients, including antioxidants which we rely on for healthy tissues and to experience vibrant health."*

**– John McCabe (Sunfood Diet Infusion)**

Vitamin D is a hormone synthesized from exposure to sunlight, shown to influence about 10% of all the genes in our bodies. D vitamins are steroid compounds that absorb and transfer calcium, phosphorus, and magnesium through the intestines and work to deposit these minerals in the bones. A lack of vitamin D results in rickets, a condition of under-mineralized bones and teeth. Vitamin D also plays a part in maintaining a healthy kidney, proper immune cell function, and for steady mood and restful sleep.

Sunscreen companies and dermatologists have done an excellent job of scaring people away from the sun with their warnings of skin cancer. Unfortunately, sunscreen works so well against UVB rays that an SPF of 30 decreases vitamin D synthesis by more than 95%. Most sunscreens also have chemicals in them that you don't want to absorb into your skin. These chemicals have been found to accumulate in fatty tissue and breast milk with the capability of inducing hormone changes such as problems in sexual development and adult sexual function.

If you live in a colder climate, the best thing you can do is make a few trips to a warmer destination a few times throughout the winter. Another option is purchasing a full body narrowband UVB light. If you suffer from eczema or psoriasis, these lights may help control your condition as well. Solarc Systems ([solarcsystems.com](http://solarcsystems.com)) based in Minesing Ontario have clinically proven narrowband UVB devices. Take vitamin D2 (2,000 IU per day) in the winter months if taking a trip or a UVB light aren't good options for you.

Below are some other causes of vitamin D deficiency.

**Darker Skin:** Lighter skin has less melanin than darker skin. Melanin can absorb UVB radiation from the sun and reduce the skin's ability to produce vitamin D by 95–99%. People with naturally dark skin require about three to five times longer sun exposure to make the same amount of vitamin D as a person with a lighter skin tone.

**Limited sun exposure:** We are spending more and more time indoors both at work and during our leisure time.

**Weight:** Being overweight may put you at risk for vitamin D deficiency since multiple studies have shown an association between lower levels of vitamin D in people with a higher BMI (body mass index).

**Malabsorption:** People with fat malabsorption syndromes are often unable to absorb enough of this fat-soluble vitamin.

**Age:** As we age our body has a decreased ability to synthesize vitamin D from exposure to the sun. As much as a 25% reduced production over the age of 70.

### Vitamin K

**Function:** Vitamin K helps prevent internal bleeding and hemorrhages, build strong bones, optimize your insulin levels, and help your blood clot properly. Several studies have shown that vitamins K1 and K2 are also effective against cancer. Vitamin K1 is found naturally in plants, especially green vegetables, and goes directly to your liver and helps maintain healthy blood clotting. Vitamin K2 is made by the bacteria that line your gastrointestinal tract and helps prevent hardening of the arteries. Fermented foods such as natto typically have the highest concentration of vitamin K2.

**Deficiency:** Vitamin K deficiency is uncommon in healthy adults since it is widespread in foods, our bodies conserve it, and bacteria that inhabit our large intestine synthesize it. Those at risk for deficiency include individuals with significant liver damage or individuals with fat malabsorption disorders. Vitamin K deficiency results in impaired blood clotting, easy bruising and bleeding, nosebleeds, bleeding gums, blood in the urine, blood in the stool, tarry black stools, or extremely heavy menstrual bleeding.

**Food sources:** The daily adequate intake level for vitamin K is 120 mcg for males, and 90 mcg for females.

- 1 cup of cooked Swiss chard = 573 mcg
- 1 cup of kale = 547 mcg
- 1 cup of cooked broccoli = 220 mcg
- 6 large kiwi = 220 mcg
- 1 cup of cooked Brussels sprouts = 218 mcg
- 1 cup of spinach = 145 mcg
- 4 containers of blackberries = 134 mcg
- 4 containers of blueberries = 131 mcg
- 1 cup of dried prunes = 104 mcg
- 2 cups of romaine lettuce = 96 mcg

### Vitamin E

**Function:** Vitamin E plays an essential role in protecting cell membranes from free radicals and helps protect our hearts by decreasing the oxidation of LDL cholesterol.

**Deficiency:** Severe vitamin E deficiency results in impaired balance and coordination, injury to the sensory nerves, muscle weakness, and damage to the retina of the eye. Cigarette smoking is thought to increase the utilization of



vitamin E such that smokers might be at increased risk of deficiency compared with nonsmokers.

**Supplement warning:** A paper published in the *Journal of American Medical Association* in 2011 concluded that dietary supplementation with vitamin E significantly increased the risk of prostate cancer among healthy men by about 18%. This is why I don't recommend supplements, especially when it comes to the fat-soluble vitamins. Get your vitamin E from whole foods, the way nature intended.

**Food sources:** The Recommended Dietary Allowance for vitamin E is 15 mg for adults, and 19 mg while breastfeeding.

6 mangoes = 13.8 mg  
¼ cup of almonds = 9 mg  
4 small containers of blackberries = 8.2 mg  
6 large kiwi = 7.8 mg  
¼ cup of sunflower seeds = 3.8 mg  
1 cup of cooked spinach = 3.7 mg  
2 medium sweet potatoes = 2.8 mg  
1 avocado = 2.7 mg

### Water-Soluble Vitamins

Water-soluble vitamins dissolve in water, which means these vitamins and nutrients dissolve quickly in the body. Unlike fat-soluble vitamins, our bodies cannot store water-soluble vitamins in our tissues. Any excess amounts of water-soluble vitamins simply pass through our body, so we need to make sure to consume these vitamins on a regular basis.

#### Vitamin B1

**Function:** Vitamin B1 (also known as thiamin) is involved in several enzyme functions associated with the metabolism of carbohydrates, amino acids, and fatty acids.

**Deficiency:** Vitamin B1 deficiency leads to beriberi, a disease that affects multiple organ systems, including the central and peripheral nervous systems. Chronic alcohol consumption is the primary cause of this deficiency.

**Food sources:** Beets, brazil nuts, leafy greens, okra, oranges, spinach, pecans, cantaloupe, and sunflower seeds.

#### Vitamin B2

**Function:** Vitamin B2 (also known as riboflavin) is involved in the metabolism and activation of other nutrients such as vitamin B6, B3, iron, and folate. It

indirectly helps keep cells from being damaged by free radicals, because of its role in regenerating the antioxidant glutathione.

**Deficiency:** Vitamin B2 deficiency has been linked to preeclampsia in pregnant women, which is the presence of elevated blood pressure, protein in the urine, and edema (significant swelling) during pregnancy. B2 deficiency symptoms include sores on the outside of the lips and at the corners of the mouth, inflammation and redness of the tongue, and dermatitis.

**Food sources:** Almonds, avocado, bananas, carrots, grapefruit, kelp, broccoli, spinach, and sunflower seeds.

### Vitamin B3

**Function:** Over 400 enzymes require niacin for energy-producing reactions involving the degradation of carbohydrates, fats, and proteins, and for the synthesis of fatty acids, steroids, and building blocks for other macromolecules. Niacin is also involved in DNA repair activities, and critical for genome stability.

**Deficiency:** Pellagra is the disease of severe niacin deficiency and is characterized by symptoms affecting the skin, the digestive system, the nervous system, and can lead to death if untreated.

**Schizophrenia:** Canadian biochemist, physician, and psychiatrist Dr. Abraham Hoffer educated clinicians for over 50 years about the use of niacin for schizophrenia, and successfully treated thousands of patients. Hoffer proved B3's ability to cure schizophrenia with the very first double-blind, placebo-controlled studies. Check out his book *Niacin: The Real Story* for more info.

**Good plant-based sources:** Passionfruit, avocado, almonds, yellow tomatoes, mushrooms, dates, and baked potatoes.

### Vitamin B5

**Function:** Vitamin B5 (also known as pantothenic acid) is a precursor in the synthesis of coenzyme A which is essential to many biochemical reactions that sustain life. Coenzyme A is required for the biological activity of several proteins including the acyl-carrier protein involved in fatty acid synthesis.

**Deficiency:** Naturally occurring vitamin B5 deficiency in humans is very rare and has been observed only in cases of severe malnutrition. When World War II prisoners experienced numbness and painful burning in their feet, their symptoms were relieved by B5 supplementation.

**Food sources:** Avocado, mushrooms, sweet potatoes, cauliflower, broccoli, romaine lettuce, cashews, and bananas.

## Vitamin B6

**Function:** Vitamin B6 (also known as pyridoxine) helps in the formation of proteins used in the body for structural and functional purposes. B6 is essential for the synthesis of serotonin and dopamine, histamine, heme (a major component in red blood cells), and the amino acid taurine.

**Deficiency:** Alcoholics are thought to be most at risk of B6 deficiency due to low dietary intakes and impaired metabolism of the vitamin. In the early 1950s, seizures were observed in infants as a result of severe vitamin B6 deficiency caused by an error in the manufacturing of infant formula.

**Food sources:** Cauliflower, kale, broccoli, romaine lettuce, avocados, bananas, and red bell peppers.

## Vitamin B9

**Function:** Vitamin B9 (also known as folate) is critical for methylation reactions and in the metabolism of nucleic acid (DNA and RNA) precursors and several amino acids.

**Deficiency:** Inadequate folate intake during early pregnancy increases the risk of congenital disabilities, so it is essential for expecting mothers to eat their leafy green vegetables. Severe lack of folate in the diet can lead to anemia (low red blood count) which causes fatigue, weakness, and shortness of breath.

**Supplement warning:** Supplemental folic acid may increase the risk of breast, prostate, and colorectal cancers. Get your folate from fresh fruits and vegetables.

**Food sources:** Spinach, collard greens, romaine lettuce, broccoli, oranges, papaya, grapefruit, grapes, bananas, cantaloupe, strawberries, and avocados.

**Pregnant women:** If you're pregnant or breastfeeding you should also take one scoop of Pranin's Purefood B Powder ([pranin.com](http://pranin.com)) per day.

## Vitamin B12

Vitamin B12 is a waste product of bacteria that can be found in and on the foods we eat. It also is produced in the intestine and the mucosa of healthy humans. A time long ago, humans eating a fruitarian diet received the small amount of B12 they needed from bacteria on the food. Better hygiene, washing, antibiotics, alcoholic beverages, spicy foods, garlic, onion, and mustard are just some of the things that now interfere with our absorption and production of B12. Vitamin B12 deficiency has been observed in 5-20% of older adults and up to 40% of older adults have low serum vitamin B12 levels due to food-cobalamin malabsorption.

Most doctors will tell you that the primary cause of B12 deficiency is following a strict vegan diet. However, two of my family members who both eat a lot of dairy, eggs, and meat are B12 deficient and need to get regular B12 injections.

This is due to a lack of intrinsic factor, a glycoprotein produced by the parietal cells of the stomach that is necessary for the absorption of B12 from foods. Lack of intrinsic factor is said to be caused by an autoimmune reaction in which your immune system mistakenly attacks the stomach cells that produce it.

About half of the B12 that most people are consuming in the standard American diet also comes from fortified foods. However, a less active form of B12 (cyanocobalamin) is often used since it is cheaper to make. The amount of B12 present in fortified foods is only enough to prevent us from severe deficiency. We want to be supplementing B12 in its methylcobalamin form, and in doses significantly higher than the tiny amounts we get from fortified foods.

Initial symptoms of B12 deficiency can include weakness, lightheadedness, faulty digestion, lower or no appetite, weight loss, diarrhea, nausea, abdominal pain, shortness of breath, sore mouth, loss of taste, and numbness in the fingers and toes. Neurological manifestations that may occur when the deficiency increases include mild depression, nervousness, hyperactive reflexes, muscle tremors, confusion, difficulty thinking, impaired balance, poor coordination, impaired memory, and behavioural changes.

The preferred test for checking your B12 levels is a uMMA (urinary Methylmalonic Acid) test. A high methylmalonic acid value indicates vitamin B12 deficiency with a high degree of sensitivity. The only two B12 supplements that I recommend are Pure Vegan B-12 Spray and Pure Advantage B-12 Spray from iHerb (iherb.ca). They are both the same formula so buy whichever is on sale. If you have been vegan for a while and haven't been taking any B12, buy the spray and use it once a day for at least a few weeks. Afterwards, use it a couple of times per week.

## Vitamin C

**Function:** Two major functions of vitamin C are as an antioxidant and as an enzyme cofactor. It is necessary for repairing blood vessels, wound healing, the production of stress hormones, and the biosynthesis of collagen. Vitamin C works to protect molecules in the body such as proteins, fats, carbohydrates, and DNA from free radical damage and reactive oxygen species. Vitamin C also increases the bioavailability of iron from plant foods by enhancing intestinal absorption of non-heme iron.

**Chronic disease prevention:** Higher intakes of vitamin C from the diet are associated with a reduced risk of coronary heart disease and stroke since vitamin C can help decrease atherosclerotic plaque. Observational studies indicate that higher blood levels of vitamin C are associated with lower risk of death from all causes, including cancer.

**Deficiency:** Vitamin C deficiency has been known for many centuries as the potentially fatal disease scurvy. When sailors were at sea for many months and would run out of fresh fruits and vegetables, symptoms of scurvy would set in

which included severe and easy bruising, slow-healing wounds, hair and tooth loss, bulging eyes, and joint pain and swelling.

**Supplement warning:** Vitamin C in ascorbic acid form increases the incidence of arterial plaque buildup and gallstones.

**Food sources:** Red bell peppers, camu camu powder, guava, kiwi, and citrus fruits such as oranges, pineapple, strawberries, and grapefruit. One teaspoon of camu camu powder provides 1180% of the RDA for vitamin C.

## Minerals

Minerals originate in the Earth and cannot be made by living organisms. Plants obtain minerals from the soil and most of the minerals in our diets come directly or indirectly from plants. Although only small amounts of minerals are required in the diet, they have many important functions in the body including bone structure and regulating body fluids.

### **Copper**

Copper is involved in many processes including the formation of red blood cells, absorption of iron, strengthening connective tissue, protection from free radical damage, neurotransmission, and energy production. Copper deficiency can result from malnutrition or excessive zinc intake, and symptoms include bone and connective tissue abnormalities, and neurologic disorders.

**Food sources:** Sesame seeds, almonds, hazelnuts, cashews, guava, shiitake mushrooms, durian, and walnuts.

### **Chromium**

Chromium helps prevent hypoglycemia by helping the body use insulin properly. Potential chromium deficiency cases have been associated with symptoms resembling diabetes and increased insulin requirements.

**Food sources:** Beets, walnuts, broccoli, green beans, bananas, and apples.

### **Manganese**

Manganese is an important element in a number of physiologic processes and is a cofactor for many enzymes. A number of manganese-activated enzymes play essential roles in metabolism of carbohydrates, amino acids, and cholesterol. Signs of manganese deficiency include impaired growth, impaired reproductive function, skeletal abnormalities, impaired glucose tolerance, and altered carbohydrate and fat metabolism.

**Foods sources:** Pineapple, almonds, hazelnuts, pumpkin seeds, pecans, walnuts, macadamia nuts, spinach, sunflower seeds, and blueberries.

### **Phosphorus**

Phosphorus plays a major role in the structural framework of DNA and is necessary for every cellular process that uses energy. Phosphorus helps to build strong bones and teeth, filter out waste in our kidneys, repair tissue and cells, maintain a regular heartbeat, and reduce muscle pain after exercise. Since phosphorus is so widespread in food, dietary phosphorus deficiency is usually only seen in cases of near-total starvation. The effects of severe phosphorus deficiency may include loss of appetite, anemia, muscle weakness, bone pain,

difficulty walking, numbness and tingling in extremities, respiratory failure, and an increased susceptibility to infection.

**Food sources:** Pumpkin seeds, almonds, brazil nuts, sunflower seeds, chia seeds, sesame seeds, dried apricots, raisins, dried bananas, and dates.

### Calcium

Calcium is the most abundant mineral in the body and needed for proper nerve transmission and vascular contraction and vasodilation. However, less than 1% of total body calcium is required in order to support these critical metabolic functions; the remaining 99% is stored in our bones and teeth where it supports their structure and function.

**Food sources:** Broccoli, kale, dried figs, black currants, blackberries, oranges, artichoke, bok choy, and almonds.

Every time I've had my calcium levels checked while on this diet they've been right down the middle of the ideal range, and I've been without dairy for about ten years. Got plants?

### Potassium

Potassium is beneficial for soothing nerves and muscle cramps, relieving diarrhea, and transporting wastes for elimination. Deficiency symptoms include fatigue, muscle weakness and cramps, and intestinal paralysis which may lead to bloating, constipation, and abdominal pain.

**Food sources:** Avocados, bananas, acorn squash, spinach, sweet potato, dried apricots, dried plums, raisins, artichoke, pomegranate, and coconut water.

### Magnesium

Magnesium plays a vital role in nerve transmission, muscle contraction, the activation of over 300 enzymes, calcium metabolism, blood coagulation, bone and cell formation, and DNA synthesis. Magnesium is the central atom in the chlorophyll molecule, making leafy green vegetables rich sources of this mineral. Severe deficiency can impede vitamin D and calcium homeostasis and has been associated with increased risk of cardiovascular disease, osteoporosis, and metabolic disorders including hypertension and type-2 diabetes.

**Food sources:** Green sprouts, almonds, bananas, pumpkin seeds, brazil nuts, artichoke hearts, figs, avocados, okra, hazelnuts, and butternut squash.

### Selenium

Selenium is critical for the thyroid gland, immune system, metabolic pathways, reproductive health, DNA production, eyesight, and soothes redness and

swelling in the body. Signs of deficiency include fatigue, brain fog, goiter, cretinism, and recurrent miscarriage.

One brazil nut contains roughly 90 mcg of selenium, so a lot of vegans eat one per day (or every other day) to hit the RDA of 55 mcg. I recommend buying shelled brazil nuts and keeping them in the freezer so they don't go rancid. Unshelled brazil nuts generally contain less selenium and are more likely to be contaminated by chemicals, odors, or molds. Brazil nuts should be ivory white. If they have turned yellow, don't eat them. If you're not sure, take a bite and focus on the after-taste. It should be sweet, never bitter or rancid.

Selenium toxicity can occur with ingestion of over 400 mcg per day and symptoms include nausea, vomiting, nail discoloration, hair loss, irritability, and foul breath odor (often described as "garlic breath"). Eating too many brazil or paradise nuts on a regular basis has shown to cause alopecia in some individuals.

### **Iron**

Iron is an essential component of hundreds of proteins and enzymes that support essential biological functions such as oxygen transport, energy production, and DNA synthesis. Anemia (low red blood cells) occurs when the body's iron stores are so low that hemoglobin synthesis and red blood cell formation are severely impaired.

Two different kinds of iron exist – heme and nonheme. Heme iron is primarily found in animal foods and has a high rate of absorption. Nonheme iron, as is found in plant foods, gets absorbed more selectively by our bodies; absorbing more when our iron stores are low, and absorbing less when our iron stores are high. Focusing on nonheme iron foods helps protect against high iron levels in the blood which can lead to life-threatening conditions such as liver disease, heart problems, and diabetes.

**Food sources:** Sundried tomatoes, tomatoes, dried apricots, dried peaches, dried prunes, spinach, and other dark leafy green vegetables.

### **Zinc**

Zinc is essential for the activation of over 200 enzymes. It is extremely important in immune function, cell regulation, DNA synthesis, digestion, lipid metabolism, and fertility. Those with low zinc are often malnourished or do not absorb their food well, such as individuals with Crohn's disease, anorexia, and the elderly. The use of zinc treatment for anorexia has been advocated since 1979, with at least 15 clinical trials showing zinc improved weight gain in anorexics. Zinc deficiency has also been claimed to be the cause of stunted growth in one-third of the world's population.



Signs of deficiency include acne, eczema, impaired wound healing, oral ulcerations, sores at the corner of the mouth, hair loss, white spots on the fingernails, respiratory infections, depression, diarrhea, and chronic inflammation.

The Recommended Dietary Allowance for zinc is 8 mg for adult women and 11 mg for adult men.

**The best vegetable and fruit sources of zinc are:**

- 1 cup of cooked napa cabbage = 4.0 mg
- 1 cup of edamame = 2.1 mg
- 1 cup of cooked green peas = 1.9 mg
- 1 durian = 1.7 mg
- 1 avocado = 1.3 mg
- 1 cup of dried apricots = 1.2 mg
- 1 cup of sun-dried tomatoes = 1.1 mg
- 1 cup of prunes = 1 mg
- 1 pomegranate = 1 mg
- 1 cup of corn = 1 mg
- 1 cup of okra = 1 mg
- 1 cup of broccoli = 0.8 mg
- 1 cup of dried figs = 0.8 mg
- 1 cup of blackberries = 0.8 mg

**The best nut and seed sources of zinc are:**

- ¼ cup of poppy seeds = 2.8 mg
- ¼ cup of sesame seeds = 2.5 mg
- ¼ cup of pumpkin or squash seeds = 2.3 mg
- ¼ cup of cashews = 1.9 mg
- ¼ cup of chia seeds = 1.9 mg
- ¼ cup of flax seeds = 1.8 mg
- ¼ cup of sunflower seeds = 1.7 mg

Phytates, which are commonly found in plant foods, can reduce zinc absorption, and some researchers have suggested that this increases the zinc needs of vegetarians by up to 50%. Sprouting nuts and seeds helps break down their phytate content and increases the bioavailability of zinc. Sprouts made from any of the high zinc seeds listed above are some of the healthiest sources of plant-based zinc. The most common one you'll find in health food stores is sunflower sprouts, which I eat daily.

Zinc is one supplement that I do recommend when signs of deficiency are present. My favourite is Zinc Picolinate by Thorne Research (available from [iherb.ca](http://iherb.ca)). I like it's a lower dose of 15 mg compared to many zinc supplements that are 25–50 mg. I recommend a modest dose of one capsule every other day. Re-test your serum zinc levels after a few months to see if that did the trick.

## Sodium

Sodium is used by our bodies to stabilize water balance. It plays an intricate part in nervous system functioning, is a component the body uses to create digestive juices, helps keep the nerves and muscles functioning properly, and works to keep calcium and other minerals soluble in blood.

The best natural sources are fresh celery juice, celery, carrots, beets, artichokes, spinach, tomatoes, sweet potatoes, and sea asparagus powder (olakaihawaii.com). A diet based on whole natural foods will adequately supply about 1000–1200 mg of sodium per day.

Stay away from all salt including the “healthy salts” being promoted such as Celtic Sea Salt, and Pink Himalayan Salt. Sodium-chloride has a physical bond that our digestive system and our liver cannot break down. If the body can’t break it down, it can’t use it and needs to eliminate it. When the body has more than what can be eliminated, it stores it in the body and results in dehydration of the cells. This eventually leads to a hardening of the tissues, degeneration of organs, and even cancer. Other maladies that have been associated with salt consumption include high blood pressure, premenstrual syndrome, gout, and psychological disorders.

## Iodine

*"Iodine deficiency has been not only present in today's world, it is occurring at epidemic levels, and it is associated with a plethora of illnesses including thyroid disorders, chronic fatigue, fibromyalgia, and cancer. I believe that properly evaluating and treating iodine deficiency will not only help people improve the functioning of their immune system, it will also play an integral role in helping people achieve optimal health."*

**– David Brownstein, MD**

The main function of iodine is the synthesis, storage, and secretion of thyroid hormone. Thyroid hormones regulate a number of physiologic processes including growth, development, metabolism, and reproductive function. Iodine deficiency has become a public health crisis because it's so vulnerable to displacement by environmental toxins – bromide, fluoride, and chloride – and is lacking in our soils due to erosion and poor farming techniques.

More than 96% of over 5,000 patients tested were iodine deficient in a clinical study conducted by Dr. David Brownstein. The *National Health Nutritional Examination Survey* reported that iodine levels have decreased by 50% in the last 30 years, and according to the World Health Organization, iodine deficiency affects 72% of the world's population.

Japan and Iceland have a higher intake of iodine and a lower incidence of breast cancer. The U.S., Mexico, and Thailand have a lower intake of iodine and a higher incidence of breast cancer. The Great Lakes Basin has the lowest iodine levels and one of the highest breast cancer rates in the world. Mainland Japanese men also have 10x less prostate cancer than U.S. men due to their high iodine intake. In African countries like Zaire, there are areas where both iodine and selenium are very scarce in the soil; consequently, a high percentage of the people have goiters and hypothyroidism.

In Iceland in the early part of the century, leftover fish parts were ground up and given to the dairy cows as part of their feed. As a result, the mammary glands of the cows concentrated the iodine from the left-over fish into the milk. The milk of Icelandic must have been high enough in iodine to saturate the thyroid gland. That means all the young people, especially the young women, would have had high iodine intake at the time of breast development. As a result, the breast cancer rate was as low or lower than the Japanese. A rate no other country has ever accomplished.

### **Conditions Treated with Iodine**

- ADD/ADHD
- Asthma
- Headaches
- Hypertension
- Infections

- Keloids
- Liver diseases
- Ovarian cysts
- Salivary gland stones
- Sebaceous cysts
- Fibrocystic breast disease
- Cancer
- COPD (Chronic Obstructive Pulmonary Disease)
- Diabetes
- Excess mucus production
- Hemorrhoids
- Thyroid disorders

### **Iodine and Apoptosis**

Apoptosis refers to the programmed death of a cell that occurs in multicellular organisms. Between 50 and 70 billion cells die each day due to apoptosis in the average human adult. Apoptosis is essential to growth and development and for destroying cells that represent a threat. Cancer cells are examples of cells that do not undergo apoptosis, which results in uncontrolled cell proliferation. Iodine promotes apoptosis of cancer cells, without toxicity to other cells.

### **Iodine and Pregnancy**

Physiological changes in pregnancy result in increased iodine demand by about 50%. As a pregnant woman is the only source of thyroid hormones for her child during early gestation, iodine deficiency-induced hypothyroxinemia may have damaging effects on fetal development. Even mild iodine deficiency during pregnancy may be associated with lower intelligence in children. Iodine deficiency in the mother has also been associated with miscarriages, stillbirth, congenital abnormalities, premature delivery, and learning disabilities.

### **The Toxic Halides: Bromine, Fluorine, and Chlorine**

Iodine is part of a class of elements known as the halogens. The halogens are a family of elements that form similar salt-like compounds in combination with sodium and most metals. The halogens are bromine, chlorine, fluorine, iodine, and astatine. Astatine is never encountered outside of nuclear facilities or research laboratories, so there is no real need to discuss it here.

### **Bromine**

Bromine lies just above iodine in the periodic table. Because the size and weight of bromine is very close to iodine, these two items can compete with one another for binding in the body, especially in the thyroid gland. When bromine binds to iodine receptors in the thyroid gland it disrupts normal thyroid functioning. Bromine toxicity (bromism) leads to a plethora of thyroid problems including Graves' disease, Hashimoto's disease, as well as hypothyroidism. Bromism has been shown to cause delirium, psychomotor retardation, schizophrenia, and

hallucination. Bromine can also cause severe depression, headaches, and irritability.

Bromine (or its reduced form – bromide) is used as an antibacterial agent for pools and hot tubs, a fumigant for agriculture, a dough conditioner called potassium bromate, and as a fire retardant for fabrics, carpets, upholstery, and mattresses. Toxicity of bromine has also been reported from the ingestion of carbonated drinks such as Mountain Dew, AMP Energy Drink, and some Gatorade products which contain brominated vegetable oils. Those using hot tubs regularly are absorbing bromine through their skin as well as through their lungs from the steam.

### **Fluorine**

For nearly 50 years, the American Dental Association has advocated the addition of fluoride to drinking water as a preventative measure against dental caries. However, there is much evidence to suggest that fluoride added to the water supply is ineffective at preventing caries. A study in New Zealand found there is no difference in tooth decay rates between the fluoridated and the non-fluoridated areas. The fluoridation of water is based on terrible science and is causing much more harm than good. Fluoridation has been linked to hip fractures, bone cancer, lowered intelligence, and kidney toxicity.

### **Chlorine**

Every time we turn on the tap we are getting both fluoride and chlorine in our drinking water. I recommend consuming only distilled or reverse osmosis water, free of these harmful toxins. It would also be wise to install a chlorine filter in your shower since this is another way that it can be absorbed into our bodies. Avoid chlorinated swimming pools whenever possible.

### **Can We Get Enough Iodine from Sea Veggies?**

Unfortunately, seaweeds pick up arsenic, heavy metals, oil spill dispersants, radiation, or other contaminants from our now-polluted seawater. The Fukushima nuclear reactor explosion seems to have contaminated much of the world's sea water as well as the oil spills in the US Gulf that have migrated far out. Maine Coast Sea Vegetables are currently your best option for purchasing seaweed since the northeastern end of the Gulf of Maine is still relatively unindustrialized and unpolluted. If you want to go the whole food route for iodine, include  $\frac{1}{4}$  a cup of Maine Coast's dulse in your salad dressings daily and make sure you're also eating your daily Brazil nut for selenium. Rinse the dulse with distilled or reverse osmosis water before using.

### **The Selenium + Iodine Connection**

Iodized salt programs in Brazil, Sri Lank, Turkey, and Greece were reported as increasing the incidence of Hashimoto's autoimmune thyroid disease. These countries have selenium deficient populations, and these early studies were done

before the importance of selenium was known. Later studies in animals evaluated both selenium and iodine levels showing that selenium protected mice from developing autoimmune thyroid disease.

Here are the main reasons why selenium is crucial to take along with iodine:

- Selenium + iodine reduces goiter and inflammation of the thyroid gland.
- Selenium + iodine increases the regulatory immune cells which prevent the development of autoimmune diseases.
- Selenium is necessary for the body to produce glutathione peroxidase, which protects thyroid cells from damage by hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) produced by the thyroid cell.

When there is an iodine deficiency and attempts to supplement with selenium occur, the selenium will magnify the iodine deficiency causing it to become worse. The reverse is also true. If there is a selenium deficiency and attempts are made to supplement with iodine, the iodine will exacerbate the selenium deficiency causing it to worsen as well.

### **My Experience with Iodine**

Before I took iodine, I had a golf-ball-sized cyst on my lower back and a smaller lump under my left breast. The cyst on my back had been there for about five years without showing any signs of change. When I started taking iodine, the cyst started to become inflamed and painful. I believe that this was an attempt by my body to isolate the large cyst and push it outwards rather than reabsorb it and deal with it internally. I say this because the smaller cyst under my left breast dissolved on its own, but I had to have the larger cyst surgically removed just before it felt like it was about to burst. When I got my mother off dairy and started giving her iodine, the breast lumps she had for years shrunk half an inch in diameter in only two months and were gone after a year.

Our daily dose of iodine ranged from 12.5 mg to 50 mg. The only brands of iodine I recommend are Iodoral ([optimox.com](http://optimox.com)) and Lugotabs ([hakalalabs.com](http://hakalalabs.com)). Start low by breaking a 12.5 mg pill in half for the first week (6.25 mg per day). Always take 200 mcg of selenium and 200 mg of magnesium daily with iodine. I recommend Bluebonnet's Selenium Glycinate and their Buffered Chelated Magnesium ([iherb.ca](http://iherb.ca)). I don't recommend relying on brazil nuts for selenium when taking iodine in supplement form.

### **Recommended Reading**

*Iodine: Why You Need It, Why You Can't Live Without It* – Dr. David Brownstein  
*The Iodine Crisis* – Lynne Farrow  
*Breast Cancer and Iodine* – Dr. David Derry

## **Probiotics, Prebiotics, and Fermented Foods**

Probiotics are healthy bacteria that live symbiotically in the colon of our digestive systems. We have ten times more bacteria in our digestive system than cells in our entire body. The health of our flora determines how efficiently we can synthesize and absorb nutrients. Healthy colon flora helps discourage the overgrowth of bad bacteria and yeast, and protects us from deadly viruses and infections. Since large quantities of neurotransmitters are manufactured in the gut, our GI tract is responsible for our mental wellbeing as well. In most cases, healthy colon flora will develop on its own after switching to a healthy diet of raw fruits and vegetables, rich in prebiotics.

Prebiotics are a form of fiber which our bodies can't fully digest and become a food source for good bacteria in our large intestine. In general, raw foods have more prebiotic fibers than cooked foods. Examples of food sources that contain prebiotics are:

- Onions
- Leeks
- Carrots
- Flax and chia seeds
- Under-ripe bananas
- Chicory Root
- Dandelion Greens
- Jerusalem Artichoke
- Jicama
- Asparagus
- Cabbage
- Sweet potatoes
- Wild blueberries
- Spinach
- Apples
- Raw honey

A lot of individuals have dysbiosis (microbial imbalance) due to antibiotic use, fast-food, simple carbohydrates, saturated fats, high-fructose corn syrup, and inadequate fiber. The consumption of wheat products also triggers acid reflux, inflammatory bowel disease, and damages our gut health. Signs that you have too much bad bacteria in your gut and not enough good bacteria include constipation, excess gas, diarrhea, bad breath, candida infection, PMS, hormonal problems, prostate trouble, anemia (deficiency of red blood cells), lactose intolerance, vitamin B deficiencies, high cholesterol, neurological issues, severe bruising, vaginal infections, bladder infections, chronic skin conditions, and osteoporosis.

Recent data suggests that children and adults with autism often have higher amounts of gut pathogens and have more gastrointestinal problems. The connection between the gut microbiome and the development and function of the

nervous system is clear. Difficulties with feeding and digestive issues are virtually ubiquitous in autism spectrum disorders (ASD). The possibility of therapeutic approaches with probiotics and dietary manipulations may offer hope to patients and families living with ASD, but further research still needs to be done.

Biologists at California Institute of Technology suggest that microorganisms play a role in the onset or progression of multiple sclerosis (MS). In 2010, the team of biologists conducted studies on mice to determine how profoundly gut microbes affect the immune system's inflammatory response and thus create conditions that could allow the disease symptoms of MS to develop. The study showed that specific bacteria in the intestines can affect the central nervous system during an attack of MS. The researchers concluded that when the composition of gut bacteria becomes imbalanced, this can result in dysbiosis, which disrupts the balance between pro-inflammatory and anti-inflammatory bacteria and leads to diseases like MS.

For some, a diet high in fibrous prebiotic foods may not be enough to correct dybiosis and they may need additional support through probiotic supplements. When looking for a probiotic, you want one that is enteric coated, which means it won't dissolve in the gastric environment of the stomach and will be released in the upper tract of the intestine. It should also be dairy free, egg free, gluten free, soy free, and vegan. The only probiotics I currently recommend are Nova Probiotics Vegan line ([www.novaprobiotics.com](http://www.novaprobiotics.com)).

### **Problems with Fermented Foods**

- (1) When foods ferment, certain waste products are produced by the bacteria which break down the food. Some of these byproducts include vinegar, alcohol, ammonia, and lactic acid – all of which are harmful to our body and kill healthy blood cells.
- (2) According to research, levels of vitamin B12 may be reduced by fermented foods.
- (3) Fermented foods can be a migraine trigger.
- (4) Many fermented foods are heavily salted.
- (5) The effects of fermented foods on intestinal bacteria may only be transitory at best. According to a study reported in the *American Journal of Clinical Nutrition*, even eating two pounds Bulgarian yogurt daily "failed to elicit a response in the fecal flora."
- (6) The increase in intestinal motion is wrongly associated with beneficial digestive or laxative properties of the fermented food, while in reality, the body is trying to eliminate a substandard food.
- (7) If you are fermenting veggies at home, you have little control over what



bacteria you are growing and usually grow just as much pathogenic bacteria as good ones.

(8) Fermented foods are high in histamine.

## **Histamine Intolerance and Allergies**

Histamine is produced by basophils and mast cells as part of our body's immune response to foreign pathogens. Once released from its granules, histamine produces many effects within the body. Some of these effects include the contraction of smooth muscle tissue of the lungs, uterus, and stomach; the dilation of blood vessels, which increases permeability and lowers blood pressure; the stimulation of gastric acid secretion in the stomach; and the acceleration of heart rate. Histamine also serves as a neurotransmitter, carrying chemical messages between the blood cells.

Not everyone degrades histamine at the same rate due to variations in genes that directly affect histamine breakdown (such as a slow DAO enzyme). A buildup of histamine can trigger headaches, rashes, nasal congestion, and leave you feeling miserable. While some people can eat as many strawberries as they want while hanging out in a house with cats, others can't handle even a little bit of either of those histamine triggers. Once you learn your histamine tipping point and which foods are the most significant triggers for you, life isn't so bad.

In my teens, when I used to eat the typical standard American diet, I would break out in full body hives regularly and need to be on anti-histamines fulltime. If I forgot to bring my Benadryl to school or work one day, the itching would start, and I'd have to leave immediately to get to the nearest Shopper's Drug Mart. Even while on anti-histamines all day every day, I'd still have a hard time being in a house with cats or around certain breeds of dogs such as huskies. The non-drowsy brands of anti-histamine, unfortunately, did nothing for me, and Benadryl had me falling asleep both at work and in school.

My severe allergies and dependence on anti-histamines lasted into my late twenties until I decided to try eating a raw vegan diet rich in fruits and vegetables. Giving up alcohol and all fermented foods made a big difference, and so did switching to a diet high in vitamin C and quercetin – nature's anti-histamines. I was finally able to wean myself off Benadryl and even got my own cat. However, I still avoid strawberries and many of other foods listed below.

### **Histamine-Rich Foods**

- Alcoholic beverages: wine, champagne, beer
- Fermented foods: sauerkraut, vinegar, soy sauce, kefir, yogurt, pickles
- Cured meats: bacon, salami, pepperoni, lunch meats, hot dogs
- Soured foods: sour cream, sour milk, buttermilk, soured bread
- Dried fruit: apricots, prunes, dates, figs, raisins
- Nuts: walnuts, cashews, peanuts
- Vegetables: avocados, eggplant, spinach, tomatoes
- Most citrus fruits and berries (blackberries are ok)
- Aged cheese including goat cheese
- Mayonnaise
- Smoked fish

## **Histamine-Releasing Foods**

- Alcohol
- Bananas
- Chocolate
- Cow's milk
- Nuts
- Papaya
- Pineapple
- Shellfish
- Strawberries
- Tomatoes
- Wheat germ
- Many artificial preservatives and dyes

## **Common Symptoms of Histamine Intolerance**

- Headaches/migraines
- Difficulty falling asleep, easy arousal
- Vertigo or dizziness
- Accelerated heart rate
- Difficulty regulating body temperature
- Anxiety
- Nausea, vomiting
- Abdominal cramps
- Flushing
- Nasal congestion, sneezing, difficulty breathing
- Abnormal menstrual cycle
- Hives
- Fatigue
- Tissue swelling

## **DAO Enzyme**

Diamine Oxidase (DAO) is an enzyme in our bodies responsible for breaking down histamine. Last year, my family and I had a genetic profile done through 23andMe (a saliva-based DNA service), and one of the things that we found was that both my mother and I have a homozygous DAO. This means that our ability to degrade histamine from foods is significantly impaired and therefore we suffer histamine reactions far more easily and frequently than someone without a slow DAO. Strawberries are by far the worst offender for both of us.

Many legumes (peas, beans, lentils) produce DAO as the seed germinates to form a seedling. Among the different types of legumes, pea shoots provide the highest levels of DAO. Growing them in the dark seems to increase their DAO significantly. I eat them regularly to help boost my DAO levels naturally.

DAO blocking foods include alcohol, energy drinks, black tea, and green tea.

## **Leaky Gut Syndrome**

Intestinal permeability creates major inflammatory stress in the body which can contribute to poor DAO function. Leaky gut syndrome is when the small intestine has been damaged and thus allows undigested food particles into the bloodstream. Once this process has commenced, an autoimmune process ensues which manifests into conditions like eczema, psoriasis, and allergies. One of the main causes of leaky gut syndrome is grain consumption.

### **Vitamin C**

Vitamin C is a natural anti-histamine and helps increase DAO activity. The problem is that a lot of vitamin C rich fruits are also high in histamine. Red bell peppers, on the other hand, are one of the richest sources of vitamin C and are also low in histamine. I recommend eating them daily if you're not sensitive to nightshade vegetables. Raw camu camu powder provides 1180% of the RDA for vitamin C in only one teaspoon, and I add it to my smoothies and salad dressings all the time. Pranin Organic ([pranin.com](http://pranin.com)) also sells a whole food vitamin C powder made from moringa leaves and amla berries.

### **Quercetin**

Quercetin is another natural anti-histamine found in plant foods that can help stabilize the release of histamine from mast cells. Quercetin is what gives some fruits and vegetables their deep, dark colour such as red onions, blackberries, blueberries, dark cherries, red grapes, apples, kale, and red leaf lettuce. Before I even learned about quercetin, I instinctively gravitated towards a diet rich in blackberries, blueberries, red grapes, and apples, which significantly helped with my allergies.

# Diabetes

Currently, more than 29 million people in the United States have diabetes, and more than 3 million in Canada – this is close to 10% of the population. People with diabetes are over three times more likely to be hospitalized with cardiovascular disease, 12 times more likely to be hospitalized with end-stage renal disease, and over 20 times more likely to be hospitalized for a non-traumatic lower limb amputation compared to the general population. It is estimated that one of ten deaths in Canadian adults is attributable to diabetes.

**Type-1 diabetes**, or childhood-onset diabetes, generally occurs earlier in life. The beta cells in the pancreas which produce insulin are wrongfully targeted and killed off by specific antibodies created by the body's immune system.

**Type-2 diabetes**, or adult-onset diabetes, is the most common type, where the individual produces near-normal levels of insulin, but the body is resistant to it, so the level of blood sugar rises. Insulin works less effectively when people eat fatty foods or gain weight.

Both types of diabetes accelerate aging, promote the development of cardiovascular disease, and destroy the kidneys and other body systems. Diabetes is the leading cause of blindness in adults and is the leading cause of kidney failure. People with diabetes have higher levels of triglycerides and LDL (bad cholesterol) than the general population, and many insulin-dependent type-1 diabetics die of a heart attack before their 50th birthday.

## **Risk Factors for Type-1 Diabetes**

**Viral infections:** Enteroviruses have been recorded at higher levels in pregnant mothers of children that go on to develop type-1 diabetes. Higher frequencies of enterovirus infections have also been detected in children with type-1 diabetes when compared with siblings that have not developed the condition.

**Low vitamin D:** Researchers have noted that countries with the highest incidences of type-1 diabetes tend to be located further from the equator. The UK, Canada, and Australia have notably higher rates of type-1 diabetes because of their lower levels of vitamin D.

**Increased insulin demand:** A study published in 2008 by the University of Colorado showed that a diet with high glycemic index (GI) foods could speed up the progression of type-1 diabetes in children. Some examples of high GI foods include bread, potatoes, crackers, rice, pretzels, candy, donuts, french fries, popcorn, Gatorade, and many brands of breakfast cereal.

**Cow's milk:** Early introduction of cow's milk could also be a factor linked with development of type-1 diabetes, which researchers believe is due to the bovine insulin within the milk.

## Risk Factors for Type-2 Diabetes

**Diet:** Many think that diabetes is caused by an excess intake of sugar and candy starting from a young age. While eating artificial sweeteners and drinking soda does increase your risk for developing insulin resistance, in most cases diabetes is caused by excessive fat in the diet. A wealth of evidence supports the concept that insulin resistance results from the accumulation of excess fatty acids in tissues that are not designed to store fat, such as the liver and muscle. As these tissues accumulate fat over time, they experience cellular distress and mitochondrial dysfunction, which then results in a significantly impaired ability to respond to insulin.

**Genetics:** Several genes influence our blood sugar levels, including where we distribute fat on our body and how well our muscles take up glucose from the blood. A variation in just one gene which plays a part in metabolism can increase the risk of having difficulty with controlling blood sugar levels.

**Medication:** Many medications have been linked with increased risk of type-2 diabetes. Some of these medications include corticosteroids, thiazides, beta-blockers, and statin drugs.

**Stress:** Stress causes the body to release hormones including the natural steroid hormone cortisol. Stress hormones prepare the body for action by raising blood pressure, blood sugar levels, stiffening muscles, and temporarily suppressing the immune system and digestive process. Research indicates that there is a significant link between chronic stress and insulin resistance. In February 2013, a Swedish study of 7,000 men showed a 45% increased risk of type-2 diabetes amongst those that were suffering chronic stress.

**Pollution, chemicals, and plastics:** Traffic pollution, beauty product chemicals, and chemicals found in plastics have all been linked to increased diabetes risk.

## Less Insulin Needed for Type-1 Diabetics

When type-1 patients adopt a low-fat plant-based diet, they still will require some insulin, but often only about half as much as they did prior to eating healthy. Their blood sugar levels no longer swing wildly up and down, and since they are using less insulin, they have less chance of having hypoglycemic episodes. People with type-1 diabetes have an increased risk of cardiovascular disease, so it's even more crucial they protect their blood vessels by eating a low fat, plant-based diet, free of cholesterol.

## A Cure for Type-2 Diabetes

When you remove meat, dairy, eggs, oil, nut butter, and other fatty foods from a type-2 diabetics diet, they can become nondiabetic in as little as a week. Contrary to popular belief, eating too many carbs is not the problem. The real cause of type-2 diabetes is a buildup of particles of fat inside the muscle cells and liver cells. The cells can no longer get the glucose in and become insulin resistant.

When fat in the diet is removed, the fat particles dissipate, and the cells sensitivity to insulin is restored. Then the cells start pulling sugar out of the blood, and the cause of diabetes goes away.

In 1980, populations in rural Japan who were eating a high carbohydrate diet saw diabetes rates as low as 1 to 5% in adults over 40. Just ten years later, westernization of their diet increased diabetes rates to 11 to 12%. In the U.S., that number is 40%, or 2 out of every 5 Americans.

## **Cancer**

*"I have had some great success with nutrition and cancer. Just last month, a lady I have been working with who had breast cancer which metastasized to her liver, bones, and brain was given a diagnosis of full remission. This totally surprised her oncologist who was ready to tell her to go home and wait for death. Nutrition can be a real life-changer."*

**– Dr. Tim Trader**

More and more people are healing themselves of cancer naturally by avoiding conventional treatment and adopting a raw, plant-based diet. This approach focuses on removing the cause of the disease, which is a diet high in toxic animal protein, grains, and other acid-forming foods. Since I've already discussed the carcinogenic effects of meat, eggs, and dairy in their individual chapters, I won't bother repeating that information here. Chris Beat Cancer ([chrisbeatcancer.com](http://chrisbeatcancer.com)) is an excellent resource for many inspiring stories of people healing various types of cancers through nutrition and I've included a few in this chapter. The first story is about a woman who I met at a raw food event in Toronto selling copies of her eye-catching book "Raw Can Cure Cancer."

### **Janette Murray-Wakelin**

In 2001, at age 52, Janette Murray-Wakelin was diagnosed with highly aggressive carcinoma breast cancer and "given" six months to live. The tumour was 3 cm, and the cancer had spread into the chest wall and the lymph nodes. It was recommended that she undergo conventional chemotherapy and radiation treatment, which she was told may extend her life a further six months. A mother of two and grandmother of one, she was not willing to accept this prognosis.

Although Janette had been vegetarian and vegan for most of her life, she decided that if she was going to "give it 100%," she would also eliminate all cooked food, thereby getting the maximum amount of nutrients from all foods she consumed. "My nutritional intake took a huge leap. I started juicing in earnest. It made sense that I could consume more nutrients by juicing because I just wouldn't be able to eat that amount of food. If it takes 4 cups of carrots to produce 1 cup of juice, and I could drink 4 cups of juice per day, I knew I was way ahead of the game," she said. "I think I was close to consuming a truckload of carrots every week during those six months! My hands turned carrot-coloured, but I didn't care! I was alive and running!"

After six months of eating 100% raw and juicing every day, she received a clean bill of health. There was no longer any sign of cancer cells in her body. In 2013, Janette (64) and husband Alan (68) rose at 4 am each day and ran 366 consecutive marathons with no days off, covering almost 10,000 miles as they ran around the Australia mainland and the island state of Tasmania. The pair ate up to 30 bananas each day as they completed their trek.



### **Megan Sherow (Brain Cancer)**

At one of the first annual Woodstock Fruit Festivals, a seventeen-year-old named Megan Sherow shared her story of how she healed brain cancer at age thirteen by adopting a raw vegan diet and getting rid of her personal care products that were filled with harmful chemicals. Her mother also made sure that she had daily sun exposure, had less stress in her life, and got regular exercise. Megan now eats about two pounds of fruits and vegetables every day and says that she is full of energy and doing great.

### **Tyler Hook (Brain Cancer)**

Tyler Hook was diagnosed with stage 4 brain cancer at three years old. After six weeks of radiation and five months of chemotherapy treatments failed to cure him, he was given three weeks to live and sent home on hospice to die. He is now six years old and cancer free after his mother used nutrition and natural therapies to help heal him.

### **Woman Treats Lymphoma Through Fasting**

Recently, TrueNorth Health Center in California had an article published in the *British Medical Journal* on the successful treatment of lymphoma cancer with fasting and a vegan, SOS-free diet (sugar, oil, and salt-free). The 42-year-old woman underwent a medically supervised, 21-day water-only fast, after which her enlarged lymph nodes were substantially reduced in size. She then adopted a diet of minimally processed plant foods free of added sugar, oil and salt, and has remained on the diet since leaving TrueNorth. At six and nine-month follow-up visits, her lymph nodes were non-palpable, and she remained asymptomatic.

### **Pilar Davila (Ovarian Cancer)**

In 2010, Pilar Davila was diagnosed with stage 3 ovarian cancer and had a complete hysterectomy. In 2014, she found out the cancer had spread to her liver, pelvis, and colon. That's when she refused any more conventional treatments and chose nutrition and alternative therapies. As a result, Pilar has had a dramatic cancer reversal in less than two years.

### **Bailey O'Brien (Melanoma)**

In 2011, Bailey was diagnosed with stage 4 inoperable melanoma and believed to have just a few months to live. Her doctors told her there was nothing they could do, but she wasn't ready to give up. After changing her diet, which now includes lots of raw vegetable juice every day, she's been seven years cancer free.

### **Fiona Shakeela (Leukemia and Sarcoma)**

In 1976, Fiona Shakeela Burns was diagnosed with leukemia and sarcoma at eleven years old and was cured with Gerson Therapy (vegetable juice and coffee

enemas). Thirty-one years later, in 2007, she was diagnosed with stage 4 cervical cancer that had metastasized to her ovaries and brain. She refused conventional treatment and healed that too.

### **Candice-Marie Fox (Thyroid Cancer)**

Candice-Marie Fox was diagnosed with stage 3 thyroid cancer in 2011 at age twenty-eight. After surgery and radiation, it spread. Then she adopted a plant-based diet (mostly fruit), changed her life, and her body healed. But the internet got her story wrong and posted a bunch of dumb headlines like “Woman ditches ‘toxic’ husband and beats cancer.”

### **Felicity Corbin-Wheeler (Pancreatic Cancer)**

Felicity Corbin-Wheeler is a former British Red Cross nurse and Houses of Parliament researcher. In 2003, she was diagnosed with pancreatic cancer and given six weeks to live, but she healed it with a body-mind-spirit-environment program based on the diet found in Genesis 1:29-30, and Daniel 1 (fruits, leafy greens, and root vegetables).

### **Iodine’s Role in Cancer Treatment**

We presently have an epidemic of breast cancer with one in seven women suffering from it. One of the main reasons we see such an increase in breast disease is due to iodine deficiency. Iodine’s primary function in the body is to maintain the normal architecture of the glandular tissue – that includes the ovaries, uterus, prostate, thyroid, pancreas, and the breast. We are seeing epidemic increases in diseases – including cancer – in all those tissues. Cysts are the first manifestation of iodine deficiency. Next, if iodine deficiency continues, the cysts become hard and nodular. The final step in the iodine deficiency continuum is cancer.

Studies that were done in Japan, where they have the lowest incidence of breast cancer in the world, found an average iodine intake of 12.5 mg per day. In the United States where iodine intake is low, we see the highest incidence of breast cancer in the world.

### **Alcohol and Tobacco**

Alcohol use has been linked with cancers of the mouth, throat, voice box, esophagus, liver, breast, colon and rectum. The harmful chemicals in alcohol are damaging to our body’s tissues and affect our body’s ability to absorb folate and other nutrients. Even a few drinks a week is linked with an increased risk of breast cancer in women. This risk may be especially high in women who do not get enough folate in their diet or through supplements. Alcohol can also raise estrogen levels in the body, which may explain the increased risk. Cutting back on alcohol may be an important way for many women to lower their risk of breast cancer.

Smoking accounts for about 30% of all cancer deaths in the United States, including about 80% of all lung cancer deaths. Not only does smoking increase the risk for lung cancer, but it's also a risk factor for cancers of the mouth, voice box, throat, esophagus, kidney, cervix, liver, bladder, pancreas, stomach, colon, and rectum. Each year smoking causes about 1 out of 5 deaths in the U.S., which is more than alcohol, car accidents, HIV, guns, and illegal drugs combined. It also causes many other lung diseases that can be nearly as bad as lung cancer such as COPD, chronic bronchitis, and emphysema.

### **Cancer and Vitamin D**

Studies have shown sufficient vitamin D levels are linked to a reduced risk of a variety of cancers. The *American Journal of Public Health* reported that researchers searched the PubMed database and found 63 observational studies of vitamin D status in relation to cancer risk dating from 1966 to 2004. Thirty of those studies focused on vitamin D and colon cancer, 13 on breast cancer, 26 on prostate cancer, and seven on ovarian cancer. After their review, the researchers concluded that the majority of the research demonstrated a protective relationship between sufficient vitamin D levels and a lower risk of cancer.

### **Telomere Length**

Telomeres protect our DNA by acting as buffers at the ends of chromosomes. They have been compared to the plastic caps on shoelaces that keep the lace from fraying. Telomeres function as shoelace caps do, but they protect genes instead. The average cell divides between 50 and 70 times before cell death, and each time the cell divides, the telomeres on the end of the chromosome get shorter. As a cell begins to become cancerous, it divides more often, and its telomeres become very short. If its telomeres get too short, the cell may die. Cancer patients have a high percentage of critically short telomeres.

Many studies have shown that plant-based diets are associated with longer telomeres. One study in the *European Journal of Nutrition* looked at the diets of 3,600 U.S. adults and found that carotenoid-rich diets were linked to longer telomeres. Carotenoids are the organic pigments responsible for the bright colours of many fruits and vegetables.

Foods high in fiber and vitamins are strongly related to longer telomeres. According to research led by Dr. Dean Ornish, and published in *The Lancet Oncology*, men who adopted a low-fat, plant-based diet were shown to have significantly increased telomere length compared to the control group who made no lifestyle changes and experienced a decrease in average telomere length. What was it about the plant-based diet that made it so protective? The key may be avoiding saturated fat.

Saturated fats like palmitic acid, the saturated fat in salmon, which is also in meat, eggs, and dairy, can be toxic to cells. This has been demonstrated in heart cells, bone marrow cells, pancreatic cells, and brain cells. Lifelong low

cholesterol levels have been linked to longer telomeres and slower biological aging.

An unhealthy diet and lifestyle that promotes inflammation, oxidation, damage, and dysfunction is continually hacking away at our telomeres. At the same time, an antioxidant-rich diet, moderate exercise, and stress reduction are constantly rebuilding them.

### **Bras and Breast Cancer**

Bras limit circulation in the breast tissue, specifically, the circulation of the lymphatic system. Lymphatic vessels are easily constricted by external pressure, such as that applied to the breast tissue regularly by the brassiere. It is compression of these lymph vessels which prevents the proper draining of the breast tissue, leading to fluid accumulation in the breast. This fluid accumulation leads to breast tenderness and pain, and ultimately the fluid develops into cysts. Over time, the cysts become hard, and fibrocystic breast disease develops. Within days or weeks of ending breast constriction by bras, the breast tissue can flush out this excess fluid.

Studies have shown that:

- Women who wear bras 24 hrs/day have a 3 out of 4 chance of developing breast cancer.
- Women who wear bras more than 12 hrs/day, but not to bed, have a 1 out of 7 risk.
- Women who wear their bras less than 12 hrs/day have a 1 out of 52 risk.
- Women who wore bras rarely or never had a 1 out of 168 chance of getting breast cancer.
- The overall difference between 24-hour wearing and not at all is a 125-fold difference.

### **Rebounding**

Rebounding (jumping on a mini trampoline) creates an increased G-force resistance and positively stresses every cell in your body. As a result, it strengthens your entire musculoskeletal system including your bones, muscles, connective tissue, and organs. Rebounding promotes lymphatic circulation by stimulating the millions of one-way valves in your lymphatic system.

You have about three times more lymphatic fluid than blood. Your blood brings oxygen to the cells, and the lymph removes the waste, debris, and disease components. Muscle contractions in your body encourage the lymphatic fluid to circulate through a series of one-way valves in your body. So, the more you move your body, the more you move your lymphatic fluid and get the waste products out.

## **Vegetable Juice**

While I don't recommend following a strict juice-only diet to battle cancer as The Gerson Therapy does, I believe having a vegetable juice every night before your salad is a great way to get some added nutrients into your diet. It is especially helpful for those who may be having trouble consuming such large quantities of fruits and vegetables on a daily basis. It is best to keep the fiber in our foods since we want to experience regular bowel movements for optimal health. Focus on vegetable juices that include carrot, celery, cucumber, romaine, and kale, and stay away from juicing fruits.

## **Vitamin B12**

A prospective epidemiologic study found a threshold level for serum vitamin B12, below which an increased risk of breast cancer among postmenopausal women was observed. This is the first observation to suggest that B12 status may influence breast carcinogenesis and therefore may be a modifiable risk factor for breast cancer prevention. While the observational studies on cancer and B12 are limited and inconclusive, we know that adequate B12 levels are required for optimal health.

## **Vitamin C**

Intravenous vitamin C therapy has become a pretty popular low-cost alternative treatment for fighting cancer, and has been shown to slow the growth and spread of prostate, pancreatic, liver, colon, and other types of cancer cells. However, this is not as effective as a diet rich in vitamin C foods. Make my red bell pepper salad dressing every night for a mega dose of vitamin C (find the recipe in the Staples in My Diet chapter).

## Heart Disease

Coronary artery disease (CAD) remains the number one killer of men and women in western civilization despite 40 years of aggressive drug and surgical interventions. Each year approximately 1.25 million Americans suffer a heart attack, and more than 400,000 of them die as a result. Every single one of those heart attacks is a tragedy as it could have been avoided. Surgery can be lifesaving during a heart attack, but such interventions show little protection from future heart attacks since they do not target the cause of the disease. The standard American diet of oils, meat, dairy, and processed foods injure and impair endothelial function after each meal.

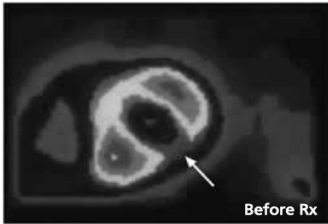
Studies have shown that animal protein's effect on blood cholesterol levels is significant even if you're avoiding red meat and focusing on low-fat dairy and white-meat chicken. The only way to see a dramatic drop in your cholesterol levels is to avoid animal protein altogether. Chicken has about the same amount of cholesterol as beef, and studies indicate that chicken is almost as dangerous as red meat for the heart. The best bet for overall health is to eliminate all types of meat – red or white.

Nation-by-nation mortality data collected by the World Health Organization shows that poorer countries, which invariably consume small amounts of animal products, have less than 5% of the adult population dying of heart attacks. In the United States, that number is 46%. The China Project also found that there were virtually no heart attacks in populations that consume a lifelong near-vegetarian diet (less than 10% of their calories from animal protein). These studies show that the major risk factors associated with heart diseases are animal product consumption, eating processed food, and physical inactivity.

The Wellness Institute of the Cleveland Clinic in Ohio followed 198 patients for an average of 3.7 years who were counseled in plant-based nutrition. Out of twenty-one patients who did not adhere to the diet plan, thirteen of them experienced at least 1 adverse event – 2 sudden cardiac deaths, 1 heart transplant, 2 strokes, 4 PCIs with stent placement, 3 coronary artery bypass graftings, and 1 endarterectomy for peripheral arterial disease – for a patient event rate of 62%. In the group of 177 adherent patients, 93% experienced improvement or resolution of symptoms during the follow-up period. Radiographic test results were available for 39 of these patients, all which documented the reversal of the disease. For 135 of the patients for whom body weight was available, the average weight loss was 18.7 lbs. Only one major cardiovascular event (stroke) was related to disease progression in the 177 patients adherent with the dietary intervention. This is a recurrent event rate of 0.6%. Thus, 99.4% of adherent patients avoided major cardiac events.

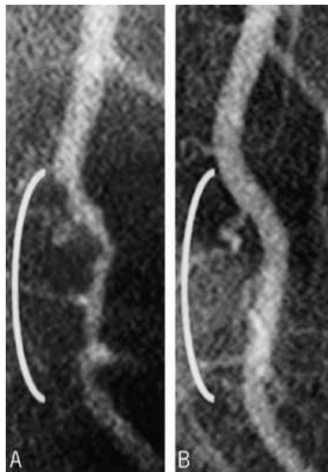
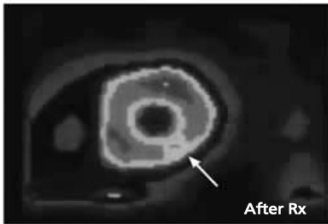
Dr. Caldwell Esselstyn, author of *Prevent and Reverse Heart Disease: The Revolutionary, Scientifically Proven, Nutrition-Based Cure*, recommends cardiac patients avoid animal products, oils, soybeans, nuts, avocados, and most seeds.

He only allows 1–2 tablespoons of flax seeds or chia seeds daily for omega-3. However, Esselstyn still recommends grains, which I find odd since they're an autoimmune trigger, promote inflammation, and are high on the glycemic index. Dr. William Davis tells a story in his book *Wheat Belly* of a patient who came to him with mild heart failure, and after getting him off wheat products, he no longer showed any evidence of the disease. He also reported relief from joint pain, improved breathing, and could now jog short distances and play a game low-key of basketball – things he had not done in years. Eventually, Davis got him off his heart medications as well.



### Restoration of myocardial perfusion

Positron emission tomography performed on a patient with coronary artery disease shows an area of myocardium with insufficient blood flow (top). Following only three weeks of plant-based nutritional intervention, blood flow was restored (bottom).



### Reversal of coronary artery disease

Coronary angiography reveals a diseased left anterior descending artery (A). Following 32 months of a plant-based nutritional intervention without cholesterol-lowering medication, the artery regained its normal configuration (B).

## Water Fasting

*“The traditional medical practice of treating the symptoms of a disease with medicine or surgery does not remove the causes. Inevitably these causes left unchecked, allow the disease process to advance. By contrast, therapeutic fasting, supported by a healthy life-style, removes the causes of disease and accelerates the healing process. This can allow the disease sufferer to reclaim a normal life, free of a lifetime of medicines and further suffering.”*

**– Joel Fuhrman, M.D.**

*“In the past 30 years, I have witnessed the effect of medically supervised, water-only fasting in over 8,000 patients. There is nothing that is more effective than fasting when it comes to treating the consequences of dietary excess. Not every condition will respond to fasting. Genetic disorders and certain types of kidney disease, for example, may not respond. But many of the most common causes of premature death and disability respond, and often spectacularly.”*

**– Alan Goldhamer, D.C.**

Therapeutic fasting is not new. It dates back thousands of years to the days of Socrates, Plato, and Hippocrates, who all recommended fasting for the healing of various conditions. Our biological ability to fast is how our species has survived for the past 400,000 years. Through periods of famine, food scarcity, and natural disaster, our bodies can function normally for quite a long time when only water is ingested. During this time of complete rest from the digestion and assimilation of food, we can expect some fantastic results as the body can now utilize all its energy towards healing. After about three days of fasting, our bodies go into a state of ketosis wherein they switch from burning glucose for fuel to burning ketones (a byproduct of fat metabolism).

Modern society is sick because of dietary excess and poor lifestyle choices, suffering from conditions that used to be so rare that they used to be known as the diseases of kings. The wealthy used to be the only ones that could eat in such a way that would cause cardiovascular disease, cancer, diabetes, and other inflammatory conditions. Today, it's so easy to eat like kings, and as a result, we are sicker than ever. Luckily, all the conditions that are the result of poor dietary and lifestyle choices are the ones that respond the best to fasting. Fasting gives the body a chance to mobilize and eliminate these accumulated metabolic products, toxins, and imbalances that are created because of dietary excess.

Although most conditions do respond reasonably well to changes in diet alone, therapeutic fasting is a much more powerful intervention that will kick-start the process. Fasting lets the body do what it does best – heal itself. We just need to get out of its way and allow this process to happen.

The reason fasting is a not popular treatment is because it's not very profitable for the medical industry. The results of fasting are very predictable and very



consistent, but you can't make much money giving people water compared to drugs.

### **Who Benefits from Fasting?**

Some of the most common conditions that respond well to fasting include:

- Obesity
- Diabetes
- Drug addiction (Nicotine, caffeine, alcohol, prescription, recreational)
- Arthritis
- Lupus
- Colitis
- Crohn's disease
- Asthma
- Eczema, psoriasis
- Environmental allergies
- Fatigue
- Depression
- High blood pressure

### **Starvation vs. Fasting**

Contrary to what many people believe, fasting is not starvation. Starvation begins when abstinence is continued beyond the time when the body's stored reserves are used up or have dropped to a dangerously low level. During the fasting stage, the body supports itself from the stored reserves within its tissues. When food is eaten at normal intervals, the body stores sufficient amounts of nutritive matter to last for a rather long time during later periods of abstinence. Even thin people carry a reserve of nutrients in their tissues to tide them safely over a period of fasting.

The body will not starve or even be hungry while fasting because it actually is eating. It is consuming the substances the individual ate last week, last month, and last year that have been converted into body tissue. In fact, the symptoms of hunger generally disappear by the second day of the fast. This illustrates that the body has entered a fasting, and tissue-sparing metabolism. Of course, there is a limit to the body's reserves. When they have been used up, specific symptoms occur that indicate the fast should not be continued. The time required for a fast to reach completion varies from individual to individual. The trained physician can easily denote symptoms that indicate the ending of the fasting period and the beginning of starvation. In the vast majority of fasts, the physician will end the fast many weeks before the nutrient reserves of the body have been exhausted. The average individual (not overweight) would have to fast approximately 40 days or more to deplete nutrient reserves.

## **Intermittent Fasting**

Intermittent fasting may be a good option for those hesitant to try a longer fast. Your body never enters ketosis, so you don't quite see the same results, but it is beneficial nonetheless. One example of intermittent fasting is eating within a six-hour window, and fasting the remaining eighteen hours of the day. Alternatively, some people choose one day every week to fast and see great results.

### **Fasting Tips**

- Even though fasts lasting 21 to 40 days are most often safe and require no medical intervention, it is best to have professional supervision when fasting longer than 2 to 3 days, at least for your first time so you know what to expect. TrueNorth Health Center in Santa Rosa California is the safest and most renowned fasting facility in the world and the only one I recommend.
- Those who are on medications from their doctors such as blood pressure pills will need help being weaned off them as they begin a healthy diet or a fast. As the patient becomes healthier and their need for their medication diminishes, continuing to take them can be dangerous and cause problems such as hypertension and low blood sugar.
- Drink only distilled or reverse osmosis water during the fast.
- Be sure to get plenty of rest during your fast, don't overexert yourself, and be careful of lightheadedness when standing up.
- When you begin "refeeding," you need to be careful not to eat too much too soon. Start off with high water content fruits that digest fast and easy (such as melons), and wait at least a few days before having any cooked food.
- Be prepared for some of the symptoms of water fasting such as terrible tastes in your mouth, body odor, headaches, nausea, vomiting, diarrhea and skin eruptions. These all are related to the increase in your body's eliminative activities during the fast.
- Try a coconut water fast instead. Use only fresh, unpasteurized coconut water (mostly all coconut water brands are pasteurized). I get raw coconut water from a juice bar near my house, but you may need to buy the coconuts yourself if there's no juice bar doing this in your area. Most people can safely fast for a few weeks on raw coconut water no problem. Drink as much as your body desires.

## **Other Aspects of Healthful Living**

### **Sleep**

The functional efficiency of your cells depends both upon caloric energy that comes from food and the electrical energy that comes from sleep. There are different stages of sleep, and we go through them in cycles. A cycle lasts about 90 minutes. We start with stage one, which is very light, then stage two, which is a little deeper, and then stage three, which is associated with delta wave brain activity (the slowest, most relaxed brain wave activity). Stage four is our deepest stage of sleep. We spend anywhere from 20–45 minutes in stage four, and then gradually come back through stage three, stage two, and stage one. Then we have an episode of REM (rapid eye movement) sleep, where even though our eyes are closed, they are moving under our eyelids.

At the deepest levels of sleep, the body releases its most important healing hormones, including growth hormones and testosterone. The release of these hormones is inhibited during sleep stages one and two, and when we are awake. Healing and body repair occur mostly during sleep, and when you don't get enough rest, your immune system does not function as well. Those with poor sleep habits are more prone to infection and have impaired cognitive function.

### **Exercise**

One of the top benefits of exercise is a strong heart and circulatory system. A well-conditioned heart can pump more blood with fewer beats and grows more blood vessels to carry oxygen and nutrients to its walls. As a result, blood pressure is lower, and blood does not clot as easily, so heart attack risk goes down. HDL (good cholesterol) levels go up and LDL (bad cholesterol) levels go down. Exercise even appears to be able to postpone the aging process in the heart.

Another beneficial effect of an active lifestyle is better regulation of your blood sugar levels. Exercise increases the body's sensitivity to insulin, which is an important factor in reducing the risk of diabetes. Along with proper diet, exercise can help people with type-1 diabetes decrease their need for insulin injections, and people with type-2 diabetes can often eliminate the need for artificial insulin altogether.

Exercise also strengthens muscle, and even more importantly, bone. Strong muscles help protect joints and enable you to do more work with less fatigue. Strong bones are less likely to break with an accidental fall or other injuries. This is most important for women because they are more susceptible to osteoporosis, especially as they age. The combination of an alkaline-based diet and regular weight-bearing exercise is essential in preventing this debilitating condition.

## Minimizing Toxin Exposure

Stop drinking tap water. It's contaminated with heavy metals and other chemical compounds, many of which are toxic to us. The purest water available to us is distilled, followed by reverse osmosis. Most bottled water labelled and sold as "spring water" is just poorly filtered tap water, and is contaminated with microplastic particles. Your best bet is to buy a glass jug and get it filled with distilled water at a local filling station. We also absorb the harmful chemicals in tap water through our skin when we shower. For this reason, you may want to install a chlorine filter.

Sunscreen contains toxic endocrine disrupting chemicals, inhibits vitamin D hormone formation, and may increase your chances of skin cancer. Find other ways to avoid sunburn like finding some shade or putting on a hat or shirt.

Many cleaning products give off fumes that you should not breathe in. Use all-natural cleaners for your countertops, sinks, floors, and bathroom. Mix 2 cups of water with ½ cup of vinegar for a natural and effective DIY cleaner that is good at removing mildew and grease. Lemon juice works well as a glass cleaner and deodorizer.

Seventh Generation and Nature Clean make my favourite all-natural dish and laundry soaps.

Gasoline vapours at gas stations are terrible to breathe. But, thankfully electric cars are becoming more common, and we are moving toward a cleaner future. In the state of Oregon, it's illegal to pump your own gas. The reasons listed for the ban were "Exposure to toxic fumes is a health hazard," and "Toxic fume exposure is heightened for pregnant women." The state of California lists gas stations under the state's air toxic "hot spots" due to the health risks associated with gas emissions. Inhaling benzene and toluene fumes that are given off when you pump gas can increase your likeliness of leukemia. Use the nozzle's hold-open latch to pump gas continuously and stand upwind.

Regular use of air fresheners can increase your risk of developing asthma by 30 to 50%. Air fresheners are also filled with phthalates, and regular exposure to phthalates may increase your chance of experiencing reproductive, endocrine, and developmental problems. Most air fresheners on the market also emit significant amounts of terpene, a dangerous compound that can react with naturally occurring ozone to create formaldehyde – a known human carcinogen.

The majority of candles contain paraffin – a sludge waste product from the petroleum industry that releases carcinogenic chemicals when burned. Some scented candles even carry lead in their wicks, which results in high amounts of lead being released into your home and absorbed into your body.

Avoid wearing perfume. Manufacturers are not required to disclose their ingredients since they are considered part of their "trade secrets." This means that when you spray on perfume, there are potentially dozens of harmful

chemicals that are being absorbed through your skin or inhaled into your respiratory system. Perfumes can induce headaches, watery eyes, skin rashes, and even asthma. If I enter an elevator that reeks of perfume, I make a quick exit and take the stairs.

Choose a fluoride-free toothpaste. I use Tom's of Maine Simply White ([tomsofmaine.com](http://tomsofmaine.com)).

## **Raising Healthy Children**

Most parents are feeding their children foods which the World Health Organization classifies as group-1 carcinogens such as bacon, sausage, hot dogs, ham, salami, chicken fingers, and pepperoni. Studies show that American children consume less than 2% of their diet from natural plant foods such as fruits and vegetables. Shockingly, roughly 25% of toddlers between the age of one and two eat no raw fruits and vegetables at all. By the age of 15 months, the most common vegetable consumed is french fries. The bulk of their diet is made up of processed meats, milk, cheese, ice-cream, cake, cookies, pasta, white bread, and sugary cereals – is it any wonder they are so frequently ill?

Kids often suffer from frequent ear infections, runny noses, stomach aches and headaches, and are then treated with antibiotics by their doctors. Although this scenario may be considered “normal,” it is not the way it has to be. Every day parents are inflicting harm on their children’s sensitive little bodies without even realizing it. The standard American diet that most children are being fed lays the groundwork for cancer, diabetes, and cardiovascular disease to develop at a later age. What children eat during their first ten years of life has such a profound effect on their future health.

Because people tend to be comforted by foods they ate when they were kids, changing to a healthful diet can take a good deal of effort. A lot of people blame the diseases that run in their family on bad genes, but a lot of it has to do with dietary traditions passed down through generations. Genes play an insignificant role in disease causation for an individual eating the natural human diet of raw fruits and vegetables. However, if heart disease runs in your family, and you are consuming a diet of animal products and processed foods, you will most likely get heart disease as well.

The good news is that kids naturally love raw fruits and vegetables, and are typically more willing and able to change their dangerous eating habits than adults. When kids are educated about the health risks of eating animal products, they often become very enthusiastic about eating healthy and learning about plant-based recipes. Children are hungry for knowledge, especially when it applies to their health and the well-being of animals and the planet.

In Dr. Joel Fuhrman’s practice (author of *Disease-Proof Your Child*), he has seen remarkable results transitioning kids to a plant-based diet. Children recover from common illnesses such as asthma, allergies, ADHD, digestive disorders, ear infections, skin conditions, frequent infections, and juvenile rheumatoid arthritis.

### **Breast Feeding and Proper Food Introduction**

I didn’t receive a drop of breast milk as a child since my mother’s milk never came in. I went straight to cow’s milk formula, which I believe to be the cause of my severe ear infections, allergies, and asthma as a child. As an adult, I’ve struggled with dermatitis, impaired digestion, and many food sensitivities. One of my friends who was raised on

soy milk formula also has skin issues and digestive problems. Another friend who was only breastfed for a week and then was switched to cow's milk formula deals with severe sinus problems and has bad acne too. There seems to be a pattern.

Exposure to DHA-rich breast milk while the brain is rapidly growing assures that your child will develop his full intelligence potential. Even after food is introduced at six months, continue breastfeeding past their first birthday for maximum disease prevention, immune function, and brain development. Although breastfeeding for two years might be considered a long time by today's standards, this practice offers significant protection against childhood diseases such as allergies, and asthma. This is because the child's immune system is still underdeveloped until the age of two, which is when the digestive tract begins to seal the spaces between cells that allow the mother's immunoglobulins (antibodies) access to the bloodstream.

For the first six months, delay feeding of all food except breast milk. The foods you choose to introduce after six months are very important and should be added gradually, one by one. This allows parents to detect food sensitivities more easily. Dr. Joel Fuhrman recommends that your baby's first food be banana mashed with breast milk. The next week add some avocado mashed with a banana and continue to add new foods gradually over the next few months. Focus on peeled and pureed fresh fruit such as apples, pears, peaches, papayas, apricots, kiwi, mango, and melon. It is recommended to delay feeding strawberries and other citrus fruits until twelve months of age.

Whole nuts should not be given until the age of two and a half because they're a choking hazard, although ground nuts should be fine after twelve months. At about nine months, you can alternate the fruit feedings with steamed vegetables such as green peas, carrots, squash, zucchini, and string beans. Don't feed babies anything with added salt, sugar, or honey. Giving honey to a baby younger than one can cause infant botulism (muscle weakness and breathing problems) due to the Clostridium bacteria spores that their digestive systems can't handle yet.

### **Type-1 Diabetes**

Children who consume dairy and wheat products at an early age also have a higher risk of type-1 diabetes. This is because grains irritate the stomach lining and cause leaky gut, which allows undigested milk proteins to get into the bloodstream. The body sees these milk proteins as foreign invaders and makes antibodies against them. Unfortunately, these antibodies will also attach to similar looking proteins on our own body tissue. Milk protein has a similar amino acid structure to the insulin-producing beta cells of the pancreas. So, when antibodies are created against the milk protein, they also attack the beta cells and destroy them. This creates a situation where the body can no longer produce and secrete insulin and is the cause of type-1 diabetes.

### **Ear Infections**

Ear infections are the most common medical problem for children in the U.S., and it is the most common reason physicians prescribe antibiotics to infants and children. Nine out of ten children develop at least one ear infection each year, and one-third of these children develop chronic congestion with fluid in the

middle ear that can lead to hearing loss. Studies show that most ear infections in early life are viral, not bacterial. Antibiotics should only be used when there is persistent drainage, fever, or persistent pain since 85% of the time the majority of them resolve on their own. One study that followed physicians who practice the rule of not prescribing antibiotics irresponsibly found that out of 168 children with ear infections, only ten (less than 6%) were recommended antibiotics. No serious complications were observed in the children who abstained from their use.

### **Cow's Milk**

Casein, the protein found in cow's milk, is the leading cause of food allergies in children. Casein is even more concentrated in cheese and butter, which are two foods Americans encourage their kids to eat. Diseases with strong links to cow's milk protein include allergies, childhood-onset type-1 diabetes, chronic constipation, Crohn's disease, ear infections, heart attacks, multiple sclerosis, and cancer.

### **Getting Your Kids to Eat Healthy**

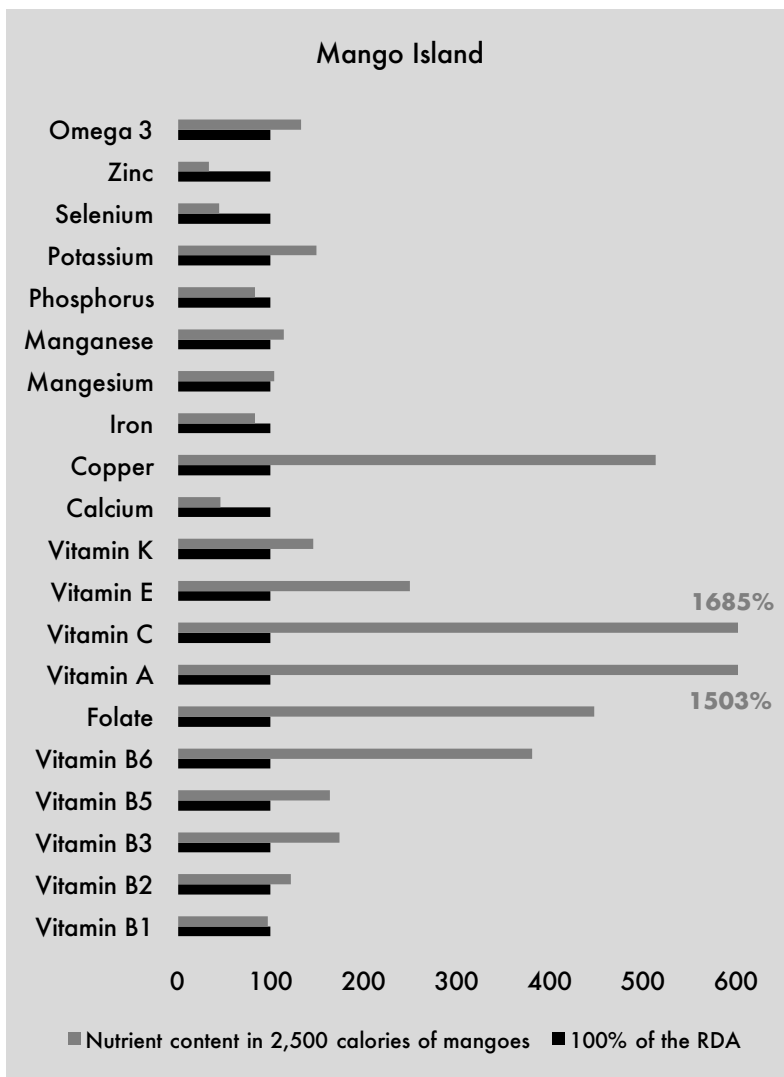
1. Keep only healthy foods in the house. Every person in the household should have the same food choices available.
2. Offer and feed a diversity of natural foods – vegetables, raw nuts and seeds, avocados (one of the best sources of fat for children), and all fresh fruits.
3. Don't micromanage your kid's caloric intake; they are smart enough to do this on their own.
4. As parents, demonstrate proper respect for your own bodies if you expect your children to. Educate them on the importance of eating healthy and continue to reinforce their learning as they grow.



## Staples in My Diet

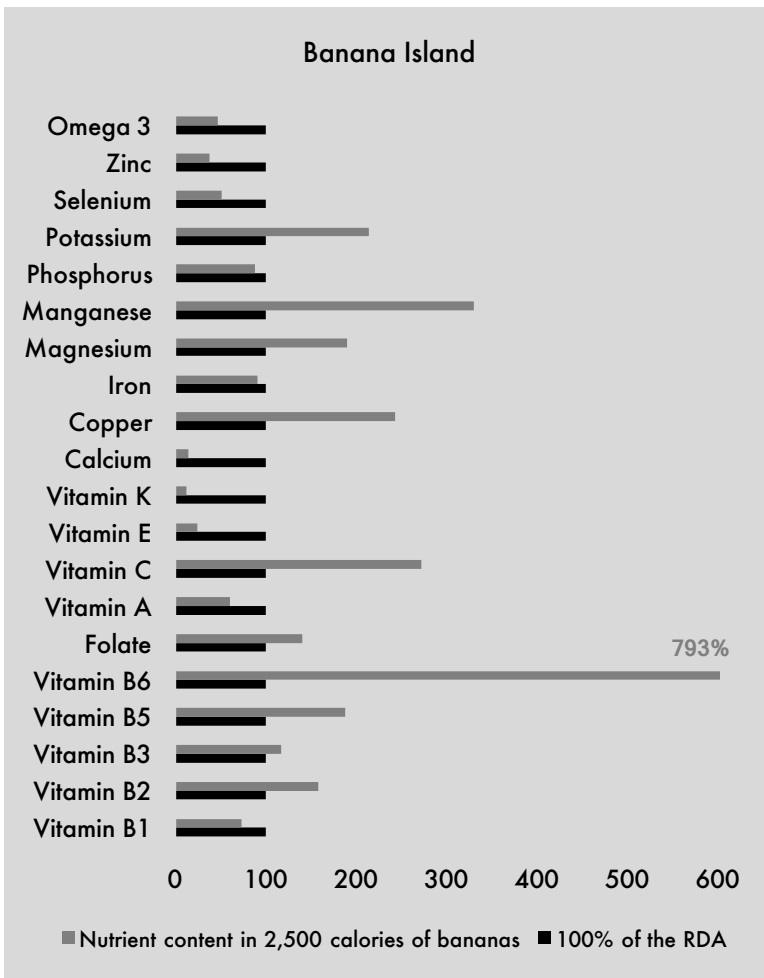
### Mangoes

Mangoes are so packed full of vitamins, minerals, amino acids, omega-3, and water that you'd do very well surviving on them alone if you ever found yourself stranded on a mango tree island. The chart below shows what a day of eating only mangoes would look like in terms of nutrient coverage.



## Bananas

Just like mangoes, bananas are very nutritionally balanced and are the primary staple for many raw foodists – mainly because they are the best calorie bang for your buck. A lot of stores will sell perfectly ripe bananas at hugely discounted prices since most people think that once they're spotty, they're only good for baking. The fact is, this is when they are at their nutritional peak, and their starches have turned to sugars. You can buy discounted bananas and eat them in a day or two or freeze them for later use in banana "nice-cream." Let's take a look at how we'd do living on banana island, which I don't think is as impressive as mango island, but still pretty solid. 2,500 calories works out to be about 23 medium-sized bananas.



## Chia Seeds and Flax Seeds

Just one tablespoon of flax seeds has 2.4 g of omega-3 or 150% of the RDA. Chia seeds are the second highest source of plant-based omega-3 with one tablespoon containing 1.8 g of omega-3 or 111% of the RDA.

In 2003, French researchers sampled red blood cells of 246 older people, finding that those whose cell membranes were rich in omega-3 fats were more likely to maintain their cognitive functions compared with other people.

## Sprouts

**Broccoli sprouts:** A great source of glucoraphanin, which creates sulforaphane when chewed or swallowed. Sulforaphane accelerates the body's ability to detoxify from various pollutants. Just 4 cups of broccoli sprouts a day may exceed the safe dose of sulforaphane, so don't go crazy on them.

**Pea shoots:** Pea shoots produce DAO as the seed germinates to form a seedling. Consuming them regularly can help reduce your histamine levels.

**Sunflower sprouts:** One of the best plant-based sources of zinc.

## Watermelon

The highest water content fruit that contains some of the purest water to be found on Earth. An excellent source of vitamin A, vitamin C, copper, B5, B6, B1, iron, magnesium, and potassium.

## Dulse

Great source of iodine. Currently, the only brand on the market that seems safe from pollutants is Maine Coast Sea Vegetables. I put about a ¼ cup in my salad dressing every night. Rinse with distilled or reverse osmosis water first.

## Dried Figs

Just 2 cups of dried figs provide 480 mg of calcium or roughly 48% of the RDA.

## Avocado

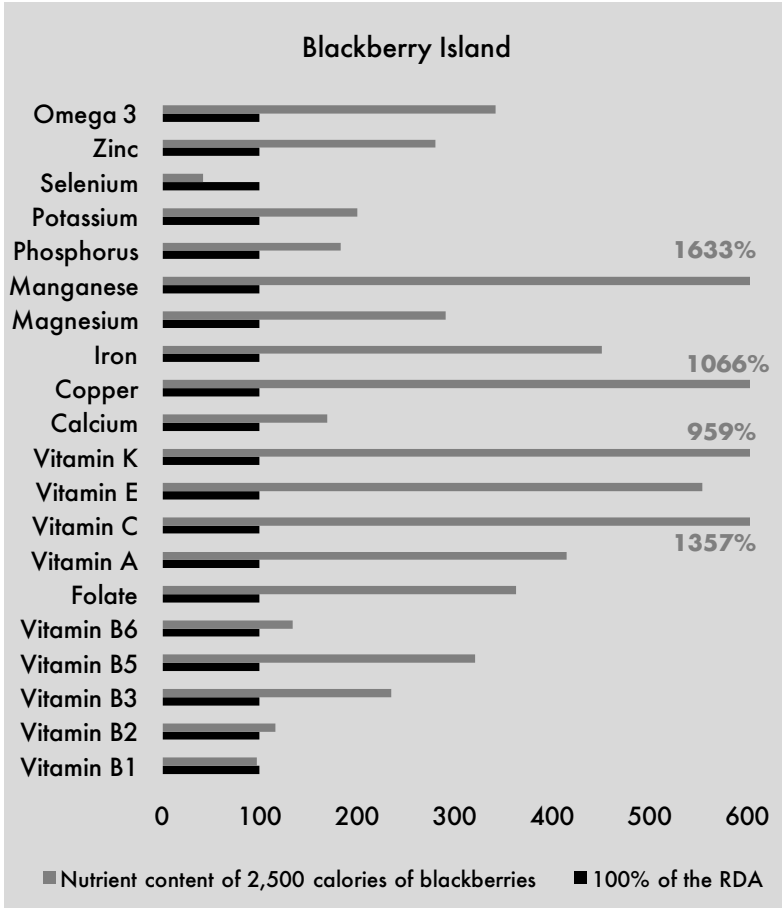
A great source of plant-based fat that is helpful for people transitioning from the standard American diet. They won't miss animal foods as much if they include some satisfying plant fats in their diet such as avocados. However, they are high in omega-6, so be sure to balance out your day with omega-3 seeds.

## Dates

Undried dates that are still soft and gooey are one of nature's sweetest treats and I enjoy them in large quantities when I can find them.

## Blackberries

A low histamine berry loaded with protein, omega-3, vitamin C, vitamin K, manganese, copper, iron, magnesium, zinc, vitamin E, vitamin A, and folate. The nutrient profile of a day on blackberry island is quite impressive.



## Brazil Nut

Enjoy one per day or every other day for selenium. Remember that in the case of selenium, more is not better.

## Apples and Red Grapes

These fruits are both high in quercetin – nature’s anti-histamine. I have a snack of 4 apples almost every day, and red grapes are one of my favourite mono meals.

## **The Big Salad**

Every night I have a family-sized salad to myself. I use a full bag of three romaine hearts, cut up some cucumber and celery to go in it, and this is my favourite dressing:

- 4 to 6 red bell peppers
- ½ cup of sun-dried tomatoes (not the oil-packed kind)
- 1 to 2 stalks of celery
- 2 tbsp of chia seeds or flax seeds
- ½ tsp of camu camu powder
- 2 to 4 leaves of fresh basil
- 1 scoop of Pratin's Purefood B Powder (optional)

Blend ingredients in a strong blender.

## **Celery / Celery Juice**

Celery is one of the best sources of plant-based sodium. When you eliminate salt from your diet you need to remember to eat sodium rich vegetables like celery, beets, carrots, artichokes, and Swiss chard. I eat 2–4 large stalks of celery every day and my blood sodium levels are always in the ideal range.

## **Pineapple**

Just 2 cups of pineapple provide you with 262% of the RDA for vitamin C and 76% of the RDA for manganese (essential for strong bones and connective tissue). Pineapples also contain significant amounts of the protein-digesting enzyme bromelain that helps reduce inflammation and aids in digestion.

## **Kiwi**

A serving of kiwi has more dietary fiber than a bowl of bran flakes, twice the vitamin C of an orange, and ounce for ounce as much potassium as a banana.

## **Sweet Potatoes**

The Okinawans have the highest number of centenarians (people living over 100) in the world and they eat more sweet potatoes than anyone – sometimes accounting for as much as 75% of their total calories. Sweet potatoes are a great source of vitamin A and vitamin E. I have some almost every night.

## **Camu Camu Powder**

Camu camu is an evergreen tree fruit found in the Amazon rainforest that has more vitamin C than any other food on the planet. Just one teaspoon gives you an astounding 1180% of the RDA for vitamin C. I use one teaspoon of it per day in my salad dressing, which is probably one of the reasons why I never get sick.

## Pranin PureFood B Powder

As you can see from the Nutrition Facts label below, one tiny scoop of this whole food powder provides all your vitamin B needs for the day. Its ingredients are organic guava, lemon, holy basil, and spirulina. No synthetic vitamins or fillers, just raw plant power. I add one scoop to my smoothies daily.

<b>Nutrition Facts</b>	
<b>Valeur nutritive</b>	
Per 1 scoop (1.5 g) pour 1 mesure (1,5 g)	
<b>Amount</b>	<b>% Daily Value</b>
<b>Teneur</b>	<b>% valeur quotidienne</b>
<b>Calories / Calories 5</b>	
<b>Fat / Lipides 0 g</b>	<b>0 %</b>
<b>Sodium / Sodium 10 mg</b>	<b>0 %</b>
<b>Carbohydrate / Glucides 1 g</b>	<b>0 %</b>
<b>Protein / Protéines 1 g</b>	
Vitamin A / Vitamine A	15 %
Iron / Fer	2 %
Thiamine / Thiamine	1180 %
Riboflavin / Riboflavine	1220 %
Niacin / Niacine	100 %
Vitamin B <sub>6</sub> / Vitamine B <sub>6</sub>	800 %
Folate / Folate	180 %
Vitamin B <sub>12</sub> / Vitamine B <sub>12</sub>	100 %
Pantothenate / Pantothénate	280 %
Not a significant source of other nutrients.	
Source négligeable d'autres éléments nutritifs.	

## All Other Fruits & Vegetables

Those are just some of the plant foods I eat most regularly, but throughout the week I eat a wide variety of other fruits and vegetables as well. Some of my other favourite fruits include oranges, peaches, jackfruit, cantaloupe, honeydew, dried mulberries, and blueberries. Other vegetables that I eat a couple of times per week include broccoli, beets, carrots, edamame, Brussels sprouts, kale, green beans, green peas, and bok choy.

## **A Diet to Save The Planet**

Climate change, ocean dead zones, species extinction, deforestation, and a multitude of other environmental problems that we are facing all share one common cause – animal agriculture. Our reliance on meat and dairy is the most significant contributor to these pressing global issues, but unfortunately, there are few policies in place addressing these effects. The good news is that not only does a plant-based diet provide us with optimal nutrition and prevent us from disease, it also has the potential to save the planet.

### **Greenhouse Gases**

Livestock and their byproducts account for at least 32,000 million tons of carbon dioxide per year or 51% of all worldwide greenhouse gas emissions. This is more than the combined exhaust from all transportation (road, rail, air, and water). Emissions for animal agriculture are projected to increase 80% by 2050.

Livestock is responsible for 65% of all human-related emissions of nitrous oxide, a greenhouse gas with 296 times the global warming potential of carbon dioxide, which stays in the atmosphere for 150 years.

Cows produce 150 billion gallons of methane per day. Methane has a global warming potential 86 times more destructive than carbon dioxide on a twenty-year time frame. Reducing methane emissions would create noticeable benefits almost immediately.

### **Water**

- Animal agriculture water consumption ranges from 34–76 trillion gallons annually.
- Growing feed crops for livestock consumes 56% of water in the US.
- 2,500 gallons of water are needed to produce 1 lb of beef.
- 477 gallons of water are required to produce 1lb of eggs.
- 900 gallons of water are needed for 1lb of cheese.
- 1,000 gallons of water are required to produce 1 gallon of milk.
- Animal agriculture is responsible for 20–33% of all freshwater consumption in the world today.

### **Land Usage**

Livestock and livestock feed occupies 1/3 of the earth's ice-free land, and 2–5 acres of land are used per cow. 1.5 acres can produce 37,000 pounds of plant-based food, while 1.5 acres can produce only 375 pounds of meat.

### **Waste**

- Every minute, 7 million pounds of excrement are produced by animals raised for food in the US.

- A farm with 2,500 dairy cows produces the same amount of waste as a city of 411,000 people.

### **Oceans**

- 3/4 of the world's fisheries are exploited or depleted.
- We could see fishless oceans by 2048.
- 90–100 million tons of fish are pulled from our oceans each year.
- For every pound of fish caught, up to 5 pounds of unintended marine species are caught and discarded.

### **Rainforests**

- Animal agriculture is responsible for up to 91% of Amazon destruction.
- 1–2 acres of rainforest are cleared every second.
- Up to 137 plant, animal, and insect species are lost every day due to rainforest destruction.
- 1,100 land activists have been killed in Brazil in the past twenty years.

### **Feeding the Hungry**

- The U.S. could feed 800 million people with the grain that livestock eat.
- Worldwide at least 50% of grain is fed to livestock.
- 82% of starving children live in countries where food is fed to animals, and the animals are eaten by western countries.

### **Land Required to Feed 1 Person for A Year**

- Vegan: 1/6th acre
- Vegetarian: 3x as much as a vegan
- Meat eater: 18x as much as a vegan

A person following a vegan diet produces the equivalent of 50% less carbon dioxide, uses 1/11th oil, 1/13th water, and 1/18th land compared to a meat-lover. Per year, that person also saves 1,100 gallons of water, 45 pounds of grain, 30 square feet of forested land, and one animal's life.



## **References**

Andersen, Kip, and Keegan Kuhn. *Cowspiracy: The Sustainability Secret*. N.p.: A.U.M. Films/First Spark Media, 2014. Print.

Bennett, Don. *Preventing Degenerative Disease*. KayLastima Publishing Company, 2006. Print.

Bennett, Don. *What You Know That Isn't So*. KayLastima Publishing Company, 2014. Print.

Bowthorpe, Janie A., et al. *Stop the Thyroid Madness. How Thyroid Experts Are Challenging Ineffective Treatments and Improving the Lives of Patients*. Laughing Grape Pub., 2014. Print.

Brownstein, David. *Iodine: Why You Need It, Why You Can't Live Without It*. West Bloomfield, MI: Medical Alternatives Press, 2014. Print.

Campbell, T. Colin, and Howard Jacobson. *Whole: rethinking the science of nutrition*. Dallas, TX: Benbella, 2014. Print.

Campbell, T. Colin. *The China Study*. Dallas, TX: BenBella, Inc., 2016. Print.

Carrington, Hereward, and Herbert M. Shelton. *The history of natural hygiene: the basic teachings of Doctors Jennings, Graham, Trall & Tilden*. Mokelumne Hill, CA: Health Research, 1964. Print.

Davis, William. *Wheat belly: lose the wheat, lose the weight and find your path back to health*. London: Harper Thorsons, 2015. Print.

Derry, David M. *Breast cancer and iodine*. Victoria, BC: Trafford, 2001. Print.

Diamond, Harvey, and Marilyn Diamond. *Fit for life*. New York: Wellness Central, 2010. Print.

Dina, Karin, and Rick Dina. *The Raw Food Nutrition Handbook*. Summertown, TN: Healthy Living Publications, 2015. Print.

Enders, Giulia. *GUT: The Inside Story of Our Body's Most Underrated Organ*. Canada: Scribe Publications, 2017. Print.

Fanny, Paul R. *The Acid, Alkaline, Association Diet. The AAA Diet*, 2014. Print.

Farrow, Lynne, and David Brownstein. *The Iodine Crisis: What You Don't Know About Iodine Can Wreck Your Life*. Devon Press, 2013. Print.

Fry, T. C., and David Klein. *The Vibrant Diet and Study Guide*. Paia, Hawaii: Vibrant Health & Wealth Publications, 2014. eBook.

Fuhrman, Joel. *Eat to Live*. New York: Little, Brown and Co, 2011. Print.

Fuhrman, Joel. *Fasting and Eating for Health*. New York: St. Martins Griffin, 1998. Print.

Fuhrman, Joel. *Super Immunity*. New York: HarperOne, 2012. Print.

Gerson, Charlotte, and Morton Walker. *The Gerson therapy: the proven nutritional program for cancer and other illnesses*. New York: Kensington, 2006. Print.

Graham, Douglas N. *The 80/10/10 Diet: Balancing Your Health, Your Weight, and Your Life One Luscious Bite at a Time*. Key Largo, FL: FoodnSport, 2010. Print.

Graham, Douglas N. *Nutrition and athletic performance: a handbook for athletes and fitness enthusiasts*. Key Largo, FL: FoodnSport, 2008. Print.

Graham, Douglas N. *Grain damage: rethinking the high-starch diet*. Decatur, GA: Foodnsport Press, 2008. Print.

Hoffer, Abram, Andrew W. Saul, and Harold D. Foster. *Niacin: The Real Story*. Laguna Beach, CA: Basic Health, 2012. Print.

Jacoby, Jesse J. *The Raw Cure: Healing Beyond Medicine: How Self-empowerment, a Raw Vegan Diet, and Change of Lifestyle Can Free Us from Sickness and Disease*. Fort Bragg, CA: Soulspire, 2012. Print.

Klein, David. *Self-Healing Colitis & Crohn's*. Maui, HI: Colitis & Crohn's Health Recovery Center, 2011. Print.

McCabe, John. *Sunfood Diet Infusion*. Santa Monica, CA: Carmania, 2012. Print.

Rawlings, Deirdre. *Fermented Foods for Health: Use the Power of Probiotic Foods to Improve Your Digestion, Strengthen Your Immunity, and Prevent Illness*. Beverly, MA: Fair Winds, 2013. Print.

Shelton, Herbert *Fasting Can Save Your Life*. Tampa: American Natural Hygiene Society, 1978. Print.

Linus Pauling Institute, [lpi.oregonstate.edu](http://lpi.oregonstate.edu)

Cowspiracy, [cowspiracy.com](http://cowspiracy.com)

PETA, [peta.org](http://peta.org)