



DOES NUTRITION SCIENCE SUPPORT OLD TESTAMENT DIETARY PRINCIPLES?

By Jim Painter | December 2022

Do the dietary prescriptions in the Old Testament have a basis in science? If so, should we consider them when choosing our meals today and what benefits might we derive from them? This paper will demonstrate the scientific support for the original dietary prescriptions in Genesis 1, the dietary food laws in Leviticus 11, and fasting. This demonstration adds to the scientific case for the Bible’s credibility.

ORIGINAL DIETARY PRESCRIPTION FOR HUMANS

Though theologians have offered differing interpretations of Genesis 1:29–31, one could argue that the first dietary prescription for humans is found in Genesis 1:29: “Then God said, ‘I give you every seed-bearing plant on the face of the whole earth and every tree that has fruit with seed in it. They will be yours for food.’” Accordingly, the original human diet consisted of vegetables, fruits, grains, nuts, and seeds.

The United States Department of Agriculture (USDA) seems to affirm this dietary prescription and recommends a daily intake for each category (table 1).

TABLE 1 <i>Food groups / servings per day</i>	
Vegetables (.5 cups)	5
Nuts and seeds	1.5
Grains (oz or equivalents)	6
Whole grains	≥3
Refined grains	<3
Fruits (.5 cups)	4

Table created from data published in USDA Dietary Guidelines for Americans 2020–2025.

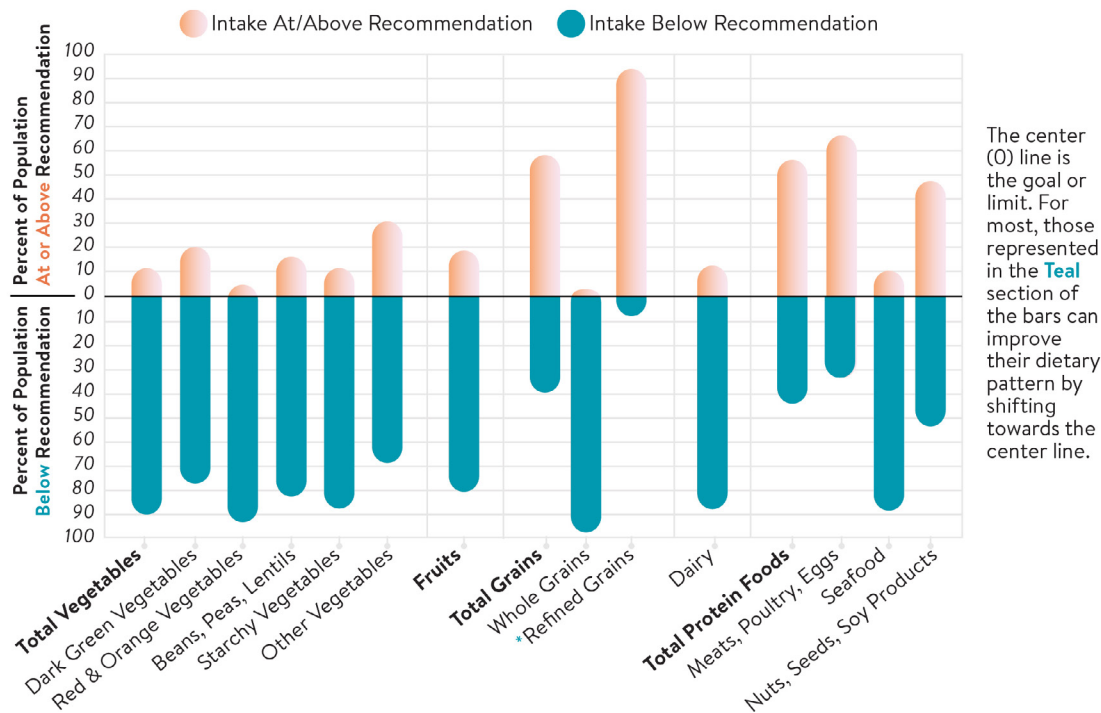
Source of Essential Nutrients

Each of these food groups provides essential nutrients that are required for human bodies to function. Green plants, although not calorie-dense, provide great benefits. One cup of romaine lettuce, approximately 1 ounce (8 calories), provides only .5% of the calories we need daily, yet it provides enormous amounts of nutrients: 40% of vitamin K, 23% of beta-carotene for vitamin A, and 16% of folate.¹ Not consuming the recommended amount of these food groups may result in illness. Beta-carotene is important for eye health and may be beneficial as an antioxidant that reduces oxidative stress seen in heart disease, cancer, and Alzheimer’s.

The USDA Dietary Guidelines for Americans (DGAs) recommends 9 servings of fruits and vegetables each day. The Bible appears to support such guidelines (Genesis 1:29), but most Americans aren’t meeting the recommendations.

As shown in table 2, only 20% of the population consumes the recommended daily amount of green vegetables, and only 5% get enough red and orange vegetables. Only about half of the population gets the required number of nuts and seeds, while over 90% of Americans consume more than the recommended level of refined grains. We are greatly overconsuming processed foods (e.g., refined grains) and under-consuming the foods in God’s dietary prescription. As a dietician, I suggest that consuming more of the foods God created and less of the foods that humans have made would greatly benefit our health and make us more productive for the kingdom of God.

TABLE 2
DIETARY INTAKES COMPARED TO RECOMMENDATION:
Percent of the U.S. Population Ages 1 and Older Who Are Below and At or Above Each Dietary Goal



***NOTE:** Recommended daily intake of whole grains is to be at least half total grain consumption, and the limit for refined grains is to be no more than half of total grain consumption.
Data Source: Analysis of What We Eat in America, NHANES 2013-2010, ages 1 and older, 2 days dietary intake data, weighted. *Recommended Intake Ranges: Healthy U.S. - Style Dietary Patterns* (see Appendix 3).

Adapted from USDA Dietary Guidelines for Americans 2020-2025.

Source of Phytonutrients

In addition to nutrients (vitamins and minerals), fruits and vegetables supply dozens of phytonutrients required for optimal health and well-being. Phytonutrients are biologically active compounds that are required for health but do not result in a specific disease if not consumed. The body just doesn’t perform optimally without them. Figure 1 shows that rosemary reduces the incidence of tumors in mice and there is a dose-specific response.² (Due to their genetic similarity, mice have often been used in research as proxies for humans.) Additional rosemary produces fewer tumors.

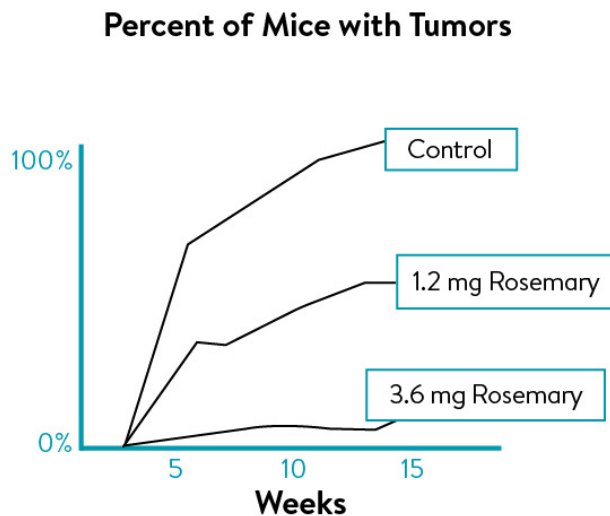


Figure 1: Adapted from Mou-Tuan Huang et al., “[Inhibition of Skin Tumorigenesis by Rosemary and Its Constituents Carnosol and Ursolic Acid](#),” *Cancer Research* 54, no. 3 (February 1, 1994): 701–708.

Turmeric is a phytonutrient found in plants. It’s a yellow food coloring that makes up 25% of curry. Turmeric contains a group of compounds called curcuminoids that may provide many positive health benefits for humans. Figure 2 shows results from a study in the journal *Clinical Cancer Research* in which curcumin inhibits human breast cancer metastasis to the lung in a mouse xenograft model.³ Macroscopic lung metastases were seen in 96% of mice in the control group. When these mice were given a therapeutic cancer drug, Taxol, cancer incidence was reduced to 75%. Cancer development was reduced to 50% when curcumin was administered. If curcumin and Taxol were given together, cancer development reduced to 20%. It seems reasonable to assume—given the genetic similarity between humans and mice—that such benefits would accrue to humans as well.

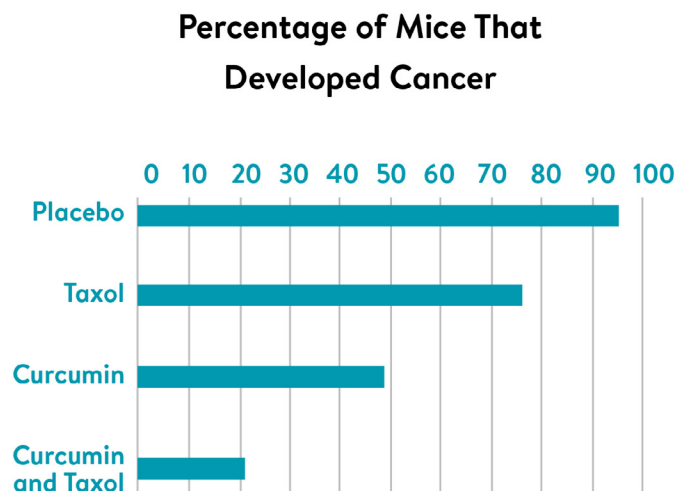


Figure 2: Adapted from Bharat B. Aggarwal et al., “Curcumin Suppresses the Paclitaxel-Induced Nuclear Factor- κ B Pathway in Breast Cancer Cells and Inhibits Lung Metastasis of Human Breast Cancer in Nude Mice,” *Clinical Cancer Research* 11, no. 20 (October 15, 2005): 7490–7498.

Studies That Affirm Biblical Dietary Prescriptions

At least four recent scientific studies have shown that fruits and nuts in the dietary prescription are beneficial.

Researchers Edward Bitok and Joan Sabaté estimated an 8.3% reduction in the risk of coronary heart disease (CHD) death from each 1-ounce weekly serving (≈ 30 g) of nuts.⁴ In another study, rats were given NMBA, a cancer-causing agent, and one of the following: freeze-dried black raspberries, blackberries, or strawberries. All three berry types were found to inhibit the number of esophageal tumors in NMBA-treated animals by 24%–56% relative to NMBA controls.⁵

A third research team reviewed intervention studies that investigated the effects of acai berries, black currants, bilberries, boysenberries, blueberries, cranberries, raspberries, strawberries, and wolfberries in subjects with cardiovascular disease (CVD) risk factors. The most significant outcomes in these clinical studies show an increase in plasma or urinary antioxidant capacity, a decrease in low-density lipoprotein (LDL) oxidation and lipid peroxidation, a decrease in plasma glucose or total cholesterol, and an increase in high-density lipoprotein (HDL) cholesterol following berry intervention. Nine of 20 studies involved measures of postprandial (after a meal) status, where berry consumption was shown to significantly decrease postprandial oxidative stress, especially lipid peroxidation.⁶

Finally, a fourth team of epidemiologists studied grapes as a possible reason for the French paradox: why French people consume a high-fat diet and yet show low incidence of CVD. The team found that grape polyphenols can reduce atherosclerosis by inhibiting LDL oxidation and platelet aggregation, improving endothelial function, and lowering blood pressure.⁷

To summarize these studies, current science supports the dietary food prescription in Genesis 1:29. It appears that eating fruits, vegetables, nuts, and seeds provides many health benefits. In this way, the Bible is timeless in its wisdom for healthy eating.

Comparison of Human and Animal Diet

In Genesis 1:30 God says: “And to all the beasts of the earth and all the birds in the sky and all the creatures that move along the ground—everything that has the breath of life in it—I give every green plant for food.’ And it was so.” Thus, humans and animals both have been given the green plant to eat. But only humans have explicitly been given fruits, seeds, and nuts.

Although not mentioned in this portion of Scripture, in opposition to herbivores and humans, carnivores eat only meat. Carnivores don’t have the dental structure to consume plant fibers nor the salivary amylase to start digesting carbohydrates. And as would be expected, the digestive tracts of each group are different. Fazale Rana provides a more complete review of carnivorous activity in [“Animal Death Prevents Ecological Meltdown,”](#) but considering the different food prescriptions, we should expect to see differences in the anatomy and physiology between humans, herbivores, and carnivores.

Although humans have been given green plants, they’re not the main source of our sustenance as they are with some herbivorous animals. Why is this so? Humans don’t have the enzymes to break down cellulose, the main structural carbohydrate in green grasses and leaves. If we tried to live by eating only green plants as some animals do, we would soon perish because we couldn’t derive enough food energy from them. Many herbivores can get the calories they need with the help of bacteria that break down plant fibers. These animals eat large volumes of green plants and ferment the grasses—some in the foregut like cows, and some with the hindgut, like horses. And rabbits that ingest some of their feces (cecotropes) can, with the help of bacteria, obtain almost all of the calories from the cellulose in

the green leafy plant that we cannot.

The digestive tracts of herbivores and carnivores are very different. The length of carnivores’ digestive tracts is 3–6 times their body length while herbivores’ are 10–12 times their body length. Meat is much easier to digest compared to plant fibers. The short digestive tracts in carnivores are all they need to get nutrients from meat. However, herbivores need more time and surface area to extract the calories from plant fibers.

This dietary prescription matches the physiology of the animal. In the case of humans, we’ve been given greater diversity of plant life. Seeds and nuts are high in fats, oils, and protein. Fruits are high in easily digested sugars, for which we have the enzymes to digest and gain the calories. Unlike herbivores and carnivores, our digestive tract is specifically designed to eat this wide variety of foods.

BIBLICAL ADDITION OF MEAT TO THE HUMAN DIET

Genesis 9:1–2 records the time when the flood had receded and Noah and his family were leaving the ark. For a second time, God commands humans to be fruitful and multiply and fill the earth. He puts the fear of man on every beast of the field, bird of the sky, and everything that creeps on the ground. God once again gives humans authority over all the creation. In Genesis 9:3 God says, “Everything that lives and moves about will be food for you. Just as I gave you the green plants, I now give you everything.” If this passage is understood as a dietary guideline, it leads to the question: Why is meat added to the human diet in Genesis 9:3?

We find part of the answer in Genesis 9:1, where God commands humans to fill the whole earth. If humans were going to fill the colder regions of the earth, they would need to eat meat as the Inuit people do in Northern Canada. The Inuit diet comes primarily from the meat of aquatic mammals and fish. The original diet was given in a warm, temperate climate in the Middle East where a variety of edible plant life could grow. But as humanity moved into colder regions that didn’t have the abundance of plant life, they needed to eat different food. Meat allowed them to thrive in cold climates. There may be additional reasons why meat was added to the human diet, but consumption of meat provided a way to fulfill the command of God.

The USDA Dietary Guidelines also have a recommendation for meat consumption. As seen in table 2, 70% of Americans are consuming the recommendation for meat but only 10% are consuming the recommendation for fish. With virtually any kind of food readily available, it seems that most of us could benefit from eating more fish.

TABLE 3 <i>Food groups / servings per day</i>	
Meat, poultry, eggs (oz equivalent/day)	3.5
Seafood (oz equivalent/day)	1

Adapted from the US Department of Agriculture’s Dietary Guidelines for Americans, 2020–2025.

JEWISH DIETARY FOOD LAWS IN LEVITICUS 11

The Old Testament distinguishes between “clean” and “unclean” foods. Yet, in the New Testament Jesus seems to say that no foods are unclean when he says “Do you not understand that whatever goes into a man from the outside does not defile him” (Mark 7:18). Elsewhere in the New Testament we read that “all things are lawful, but not all things are profitable” (1 Corinthians 6:12). Why, then, do we find prohibitions in the Old Testament? Is there wisdom in the Old Testament food laws, not for ceremonial or spiritual reasons but for health?

In Leviticus 11, God places restrictions on which types of animals are allowed for food. In Leviticus 11:3, God gives guidance: “You may eat any animal that has a divided hoof and that chews the cud.” Animals that have one of these characteristics but not the other are forbidden. Animals that chew the cud but do not split the hoof are unclean. The pig divides the hoof but doesn’t chew the cud; therefore, it is unclean. One reason why God gave these laws seems to be so that Israel as a culture would be separated from the people of the land they were entering. Another reason may be similar to the instructions given to Adam and Eve in the garden where they were permitted to eat from all except one tree. That tree was probably not nutritionally harmful to them as a food source; nevertheless, God forbade them from eating of it. Animals that walked on paws were also considered unclean. Could there be health reasons in addition to these directives that were part of God’s plan?

Carnivore and Herbivore Design Differences

What anatomical or physiological differences might we find in these animals by looking at the morphology (form, structure) on the outside that the Israelites could observe? Those animals that have paws are carnivores, eating other animals. Those that chew the cud and have split hooves are strict herbivores. The two groups are more different on the inside than they are on the outside. Herbivores (ruminants) are clean animals that have four stomachs. The first stomach holds plant material for many hours, and the plant material is broken down by bacteria. In cows, their first stomach, or rumen, can hold up to 25 gallons, which could weigh more than one hundred pounds. They’re able to eat only green grasses that are full of carbohydrates called cellulose that humans can’t digest.

Modern science offers good reasons for these laws. Pigs will eat almost anything. They also have a great tendency to carry parasitic and bacterial diseases that are rarely seen in ruminant animals. Even pork produced under good animal husbandry in this country has potential parasitic organisms like trichinosis. For this reason, humans don’t eat rare pork. The USDA food preparation guidelines in this country call for thoroughly cooking pork to 145° to kill the parasites. But beef is frequently consumed rare.

Carnivores that eat other animals can build up more toxins than ruminant grass-fed animals. Ruminants consume a completely plant-based diet their whole life. Yet carnivores eat other animals that have toxins in them. For apex predators at the top of the food chain, the toxic load can increase. In addition to toxins that build up, animals like bears can build up so much vitamin A in their liver that it can become toxic for human consumption.

The clean animals include goats, sheep, deer, and cattle. This small, homogeneous group of ruminants has a symbiotic relationship with bacteria that allows them to eat the grasses and leaves, regurgitate them, swallow them again, and let the bacteria break the plants down. In addition to the spiritual reasons that God had for creating these food laws for consuming animals, he evidently included food safety reasons.

Aquatic Animals

The next set of laws in Leviticus 11:9–12 refers to aquatic animals that the Jews could eat.

Of all the creatures living in the water of the seas and the streams you may eat any that have fins and scales. But all creatures in the seas or streams that do not have fins and scales—whether among all the swarming things or among all the other living creatures in the water—you are to regard as unclean. And since you are to regard them as unclean, you must not eat their meat; you must regard their carcasses as unclean. Anything living in the water that does not have fins and scales is to be regarded as unclean by you.

So, what makes these fish with fins and scales different from the fish that don't have fins and scales? Once again God provided exterior features that the Israelites could see to determine what food to eat. We know now that fish with fins and scales tend to be smaller, short-lived fish, and fish without fins and scales tend to be larger, carnivorous fish that eat other fish. This is not always the case, but it's a good guideline. As with animals, carnivorous fish that eat other fish tend to build up toxins like mercury in their bodies.

The chart from the *Dietary Guidelines for Americans* (table 4) shows that fish (like salmon) that have fins and scales contain a large amount of EPA and DHA. These are beneficial omega-3 fatty acids found in fish. Yet they only have two micrograms of mercury in a 4-ounce serving. Carnivorous fish like sharks, which have fins but no scales, also contain a high amount of EPA (1250 micrograms). However, they also have 151 micrograms of mercury. Tuna is a larger fish that has fins and scales, and it does tend to contain more mercury. But the amount is nowhere near the amount of mercury that's in fish without scales like swordfish and sharks. So, by imposing strict guidelines, God gave the Israelites a way to determine which fish would be safe for them to eat.

TABLE 4 <i>Estimated EPA and DHA and Mercury Content in 4 Ounces of Selected Seafood Varieties</i>		
Common Seafood Varieties	EPA + DHA mg/4 oz	Mercury mcg/4 oz
Salmon: Atlantic, Chinook	1,200 - 2,400	2
Trout: Freshwater	1,000 - 1,100	11
Tuna: White (Albacore)	150 - 350	31 - 49
Sardines	1,100 - 1,600	2
Swordfish	1,000	147
Shark	1,250	151

Credit: US Department of Agriculture and US Department of Health and Human Services, "Estimated EPA and DHA and Mercury Content in 4 Ounces of Selected Seafood Varieties," appendix 11.

Modern science confirms that there are good reasons to eat fish. The long-chain omega-3 fatty acids that are only found in fish are extremely beneficial. Omega-3 oils may lower blood pressure, reduce triglycerides, and reduce inflammation. Reducing one or all of these would help alleviate many chronic health conditions like heart disease, cancer and Alzheimer's. However, only 10% of the US population consumes the recommended 8 ounces (see table 2) per week. Following that guideline would be beneficial for our health—even more so if we eat fish low in mercury (those with fins and scales) and avoid fish high in mercury (like sharks).

Birds

Leviticus 11:13–19 describes the laws for consuming birds. The same principle seen with animals and fish applies here. The birds that are listed as unclean are all carnivorous birds like eagles, buzzards, and kites. Scripture doesn't mention clean birds, but Jewish rabbis have declared that many noncarnivorous birds are clean, and I think that's a fair assumption from the text. What can be surmised from the text is that it appears there are food safety and nutritional benefits that people can still obtain by considering these dietary laws when making food decisions.

Meat Cooked in Milk

One apparently odd Jewish food law in Exodus 23:19 states, "Do not cook a young goat in its mother's milk." Jewish tradition has turned this command into one of the main food laws where milk and meat are not allowed to be eaten together in the same meal. But is that what the text says? It only says not to boil a young goat in its mother's milk. For that matter, it doesn't say you can't boil a baby goat in the milk of another goat. Nor does it forbid boiling a baby goat in the milk of a cow. I think the interpretation that Jewish thinkers hold on this verse isn't accurate, and it's not a food law at all.

Why, then, did God issue this edict? It may be for aesthetic reasons. Why take the life-giving sustenance of milk that was going to be given to this baby goat for nourishment and boil the goat in it? Some rabbis have said it's unseemly to take something that nourishes animals and then mix it with dead meat. Though I don't understand the reason for forbidding the boiling of a young goat in its mother's milk, it doesn't seem fair to the text to expand this one sentence to mean that meat and milk can't be eaten in the same meal.

When we consider the food laws for meat, fish, and birds given to the Israelites so long ago, we can conclude at least two things: the food safety restrictions and the dietary prescriptions remain relevant and beneficial today.

BENEFITS OF FASTING

Dietary principles on fasting in the Old Testament may be the most pertinent to us today. In the New Testament we find no command to fast. In Matthew 6:16 Jesus simply said, "When you fast, do not look somber as the hypocrites do." At that time the whole Jewish community fasted and Jesus only affirmed that they continued to do so. When Jesus was asked why his disciples didn't fast, he answered that while they're with the bridegroom (Jesus) they don't fast, but when the bridegroom is taken away (Jesus's ascension), they will fast.

In the Old Testament, there are many admonitions to fast for various reasons. Fasting was often associated with repentance and humbling oneself. In Joel 2:12 the Lord declares "return to me with all your heart, with fasting and weeping and mourning." The psalmist writes "Yet when they were ill, I put on sackcloth and humbled myself with fasting. When my prayers returned to me unanswered" (Psalm 35:13).

Isaiah 58 describes many benefits of fasting. Fasting is associated with recovery, and with our light being able to

shine. The Lord says that he will loose the chains of injustice and remove the yoke from our midst (verses 6–7). Fasting seems to put us in a better place where we can hear from the Lord. The right kind of fasting leads to this:

Then your light will break forth like the dawn, and your healing will quickly appear; then your righteousness will go before you, and the glory of the Lord will be your rear guard. Then you will call, and the Lord will answer; you will cry for help, and he will say: “Here am I.” (Isaiah 58:8–9)

Thus, it seems beneficial to continue the act of fasting even though it’s not specifically commanded for us to do so in the New Testament.

In our contemporary context, there are also health benefits to fasting. Figure 3 shows how intermittent fasting provides a multitude of benefits for our physical bodies.⁸

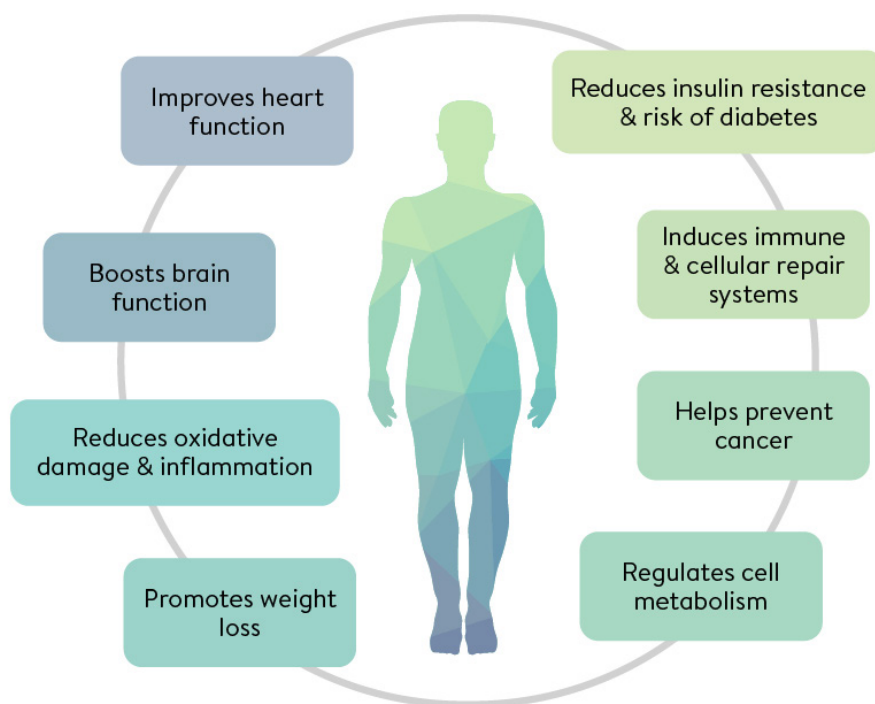


Figure 3: Adapted from Ferah Armutcu, “Fasting May Be an Alternative Treatment Method Recommended by Physicians,” *Electronic Journal of General Medicine* 16, no. 3 (May 16, 2019): em138.

Why is this so? When we spend an extended period not eating, our body starts the process of autophagy, or automatically “eating ourselves.” However, our body doesn’t eat the healthy parts, only the broken and old parts that interfere with the body’s normal metabolism. When calories are not being consumed, the body starts cleaning house. There’s no correct way of eating that applies to everyone in every situation. But if something comes close, it’s fasting.

By analogy we can envision a store that’s stocked with food and is never cleaned. The empty boxes build up and it’s hard to get to the food on the shelf, which is cluttered with trash. When we eat, our body spends a lot of energy digesting, absorbing, and turning the food into energy. It’s only when we stop eating that our body has the time

and resources to clean out the broken pieces and repair the system. If we have breakfast at 7 AM and a snack before bedtime at 11 PM, our body has only 8 hours to clean and repair. What if we switch that pattern and eat for 8 hours (9 AM to 5 PM) and clean and repair for 16? Our bodies were designed by God to be able to go without food for periods.

In modern culture, for the first time, most people can eat all they want, all the time. It has never been that way in history except for some ruling classes. There were always times of plenty and scarcity. Fasting for short periods has historically allowed the body a chance to use the God-given mechanisms to work for our benefit.

EATING TO THE GLORY OF GOD

In the Old Testament, the Spirit of God dwelled in the temple and the Spirit came upon the people of Israel periodically. Now the Spirit of God dwells inside of believers and we can receive direction straight from the Spirit of God and the Word of God. My encouragement as a nutritionist and a fellow Christian is to allow the Spirit of God and his Word to guide us on what's most personally beneficial concerning the dietary admonitions in the Old Testament.

To be sure, believers are not required to follow the Old Testament laws, guidelines, and dietary prescriptions. But the Scripture *does* require believers to listen to the Spirit of God and be led by him in whatever we do. "So whether you eat or drink or whatever you do, do it all for the glory of God" (1 Corinthians 10:31).

Considering how current scientific data affirms what God prescribed in the Old Testament, it would be to our advantage to read these dietary principles and ask the Spirit of God to help us make wise food decisions that lead to healthy, God-honoring habits and lifestyles. What a wonderful opportunity we have to take something we do multiple times each day to fulfill the admonition to be led by the Spirit of God. "Do you not know that your bodies are temples of the Holy Spirit, who is in you, whom you have received from God? You are not your own; you were bought at a price. Therefore honor God with your bodies" (1 Corinthians 6:19–20).

Endnotes

1. Foundation Foods, FoodData Central, U.S. Department of Agriculture, https://fdc.nal.usda.gov/docs/Foundation_Foods_Documentation_Apr2021.pdf.
2. Mou-Tuan Huang et al., “[Inhibition of Skin Tumorigenesis by Rosemary and Its Constituents Carnosol and Ursolic Acid](#),” *Cancer Research* 54, no. 3 (February 1, 1994): 701–708.
3. Bharat B. Aggarwal et al., “[Curcumin Suppresses the Paclitaxel-Induced Nuclear Factor- \$\kappa\$ B Pathway in Breast Cancer Cells and Inhibits Lung Metastasis of Human Breast Cancer in Nude Mice](#),” *Clinical Cancer Research* 11, no. 20 (October 15, 2005): 7490–7498, doi:10.1158/1078-0432.CCR-05-1192.
4. *Dietary Guidelines for Americans, 2010*, 7th ed. (Washington, DC: U.S. Government Printing Office, December 2010).
5. Edward Bitok and Joan Sabaté, “Nuts and Cardiovascular Disease,” *Progress in Cardiovascular Diseases* 61, no. 1 (May–June 2018): 33–37, doi:10.1016/j.pcad.2018.05.003.
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7. Arpita Basu, Michael Rhone, and Timothy J. Lyons, “[Berries: Emerging Impact on Cardiovascular Health](#),” *Nutrition Reviews* 68, no. 3 (March 1, 2010): 168–177, doi:10.1111/j.1753-4887.2010.00273.x.
8. Ferah Armutcu, “Fasting May Be an Alternative Treatment Method Recommended by Physicians,” *Electronic Journal of General Medicine* 16, no. 3 (May 16, 2019): em138, doi:10.29333/ejgm/104620.