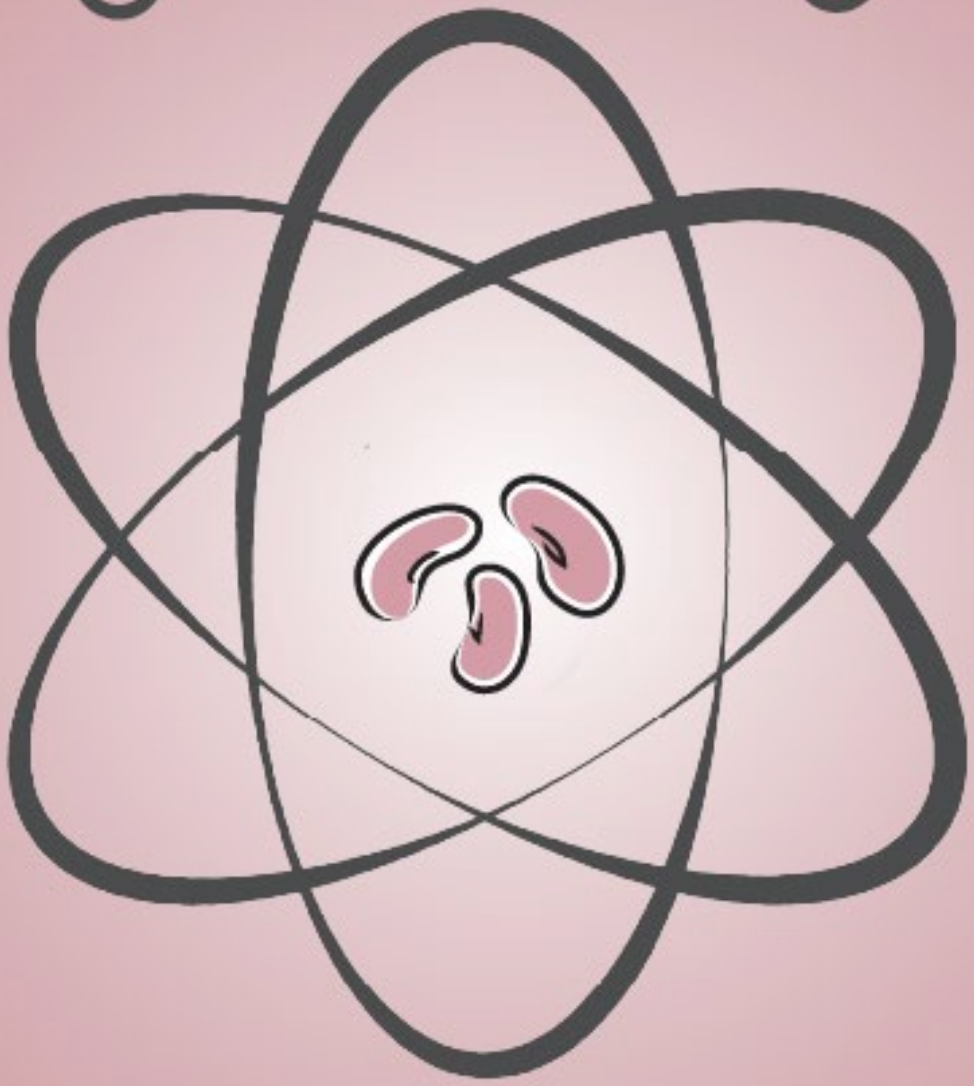
Nutrivore

GUIDE TO



Legumes

BY THE TEAM AT NUTRIVORE

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Introduction to Legumes

Legumes might not be the most colorful, flashy, or exotic foods of the bunch, but don't let their humble looks deceive you: this food group is a health-boosting powerhouse! What's more, their history is intertwined with humanity itself, having supported human populations for thousands of years.

Legumes were an important staple food for numerous ancient cultures, and every major civilization has included a legume as part of their food system. Lentils were eaten in Greece as far back as 13,000 years ago, while remains of garbanzo beans have been found in the Middle East that are about 7,500 years old. Meanwhile, lima beans and cranberry beans were cultivated in some of the very first Peruvian and Mexican civilizations around 3000 B.C.E!

Over time, legumes became the centerpiece of a number of iconic national dishes—such as hummus from the Middle East, dal from India, feijoada (bean and meat stew) from Brazil, fasolada (bean soup) from Greece, ful medames (stewed fava beans) from Egypt, and many more.

It's no wonder legumes took our plates by storm as soon as humans learned how to cultivate them. Along with having a long shelf life and extreme versatility, legumes were enhancing the nutrient density of diets long before we even knew what a "nutrient" was! In fact, legumes are among the most nutrient-dense starchy plant foods available.

Without further ado, let's spill the beans on this amazing food group!

What Are Legumes?

Botanically speaking, legumes are members of the pea family (Fabaceae or Leguminosae)—an absolutely massive plant family with nearly 20,000 known species. Although "legumes" technically encompasses everything from the dried, hard beans we see in bulk bins to the garden-fresh snap peas we eat straight off the plant, edible-podded legumes are more commonly classified as vegetables. So, for the sake of discussing legumes a food group, we'll be honing in on pulses—the starchy, dried seeds of legume plants.

Per this definition, legumes include a number of familiar faces, such as:

- ADZUKI BEANS
- BLACK BEANS
- BLACK-EYED PEAS
- CANNELLINI BEANS
- CRANBERRY BEANS
- FAVA BEANS (BROAD BEANS)
- GARBANZO BEANS (CHICKPEAS)
- GREAT NORTHERN BEANS
- KIDNEY BEANS
- LENTILS
- LIMA BEANS
- LUPINS
- MUNG BEANS
- NAVY BEANS (WHITE BEANS)
- PIGEON PEAS
- PINTO BEANS
- RUNNER BEANS
- SOYBEANS
- SPLIT PEAS

(As you might notice, a particularly famous legume member is excluded from this list: peanuts! While technically a legume, peanuts have more in common nutritionally with nuts and seeds, so we'll be discussing them within that food group instead.)

What Makes Legumes So Great?

As far as beneficial compounds go, legumes are the whole package: they're rich in phytonutrients, bioactive peptides, essential micronutrients, and fiber—all of which contribute to their wide-ranging health effects. Here's a rundown of the goodies we ingest every time we eat legumes!

Phenomenal Phytonutrients

Legumes contain a diverse array of phytonutrients! And at the top of that list is their high content of of polyphenols—a phytonutrient class known for their health-protective activities, including reducing the risk of cancer, heart disease, diabetes, asthma, osteoporosis, neurodegenerative diseases, and other conditions associated with oxidative stress. As a result of their antioxidant properties, polyphenols also boost the immune system and protect against both chronic and infectious diseases.

Polyphenols are particularly concentrated in the outer seed coat of legumes. In fact, the specific colors and patterns on legumes are a product of their different polyphenol compositions! For example, legumes that are red, black, or pink tend to be high in anthocyanins—a type of polyphenol that has anti-inflammatory and neuroprotective effects, could improve glucose tolerance, may reduce the risk of chronic diseases like heart disease and cancer, and may even have pain-relieving properties (due to an affinity for certain "pain-sensation" cell membrane receptors in the brain). Similarly, legumes that are light yellow or pink in color (like black-eyed peas and lentils) tend to be particularly high in tannins—a type of astringent polyphenol known to improve blood lipids, reduce blood pressure, help fight microbial infection, and even benefit dental health (by combatting harmful oral bacteria and inhibiting plaque formation).

Additional polyphenols in legumes include:

- CAFFEIC ACID (found in pinto beans, adzuki beans, mung beans, peas, navy beans, lupins, garbanzo beans, fava beans, and black beans), which has been shown to have anti-inflammatory and anti-cancer properties, as well as potentially fighting metabolic syndrome through its effects on lipid metabolism and blood sugar regulation.
- CATECHINS (found most abundantly in fava beans, but also in lentils, cranberry beans, broad beans, kidney beans, mung beans, and pinto beans, black beans), which act as antioxidants as well as boost the activity of antioxidant enzymes. Catechins are also anti-inflammatory, modulate the immune system, exert anti-bacterial activity, have anti-cancer properties, and can boost metabolism and promote healthy weight loss.

- FERULIC ACID (found in garbanzo beans, peas, navy beans, fava beans, cranberry beans, cannellini beans, adzuki beans, mung beans, lentils, pinto beans, and black beans), which is a particularly potent antioxidant that can reduce inflammation, prevent cancer, reduce toxicity associated with chemotherapy and radiation, protect against diabetes, lower cardiovascular disease risk factors, and even help prevent neurodegenerative disease.
- KAEMPFEROL (found in black beans, pinto beans, kidney beans, mung beans, fava beans, garbanzo beans, lentils, and pinto beans), which can reduce inflammation, regulate the immune system, protect against cancer, act as an antimicrobial, prevent diabetes, reduce cardiovascular disease risk factors, prevent neurodegenerative diseases (like Alzheimer's disease), improve bone health, and aid weight loss.
- MYRICETIN (found in black beans, lentils, lupins, adzuki beans, fava beans, garbanzo beans, and mung beans), which can help protect against neurodegenerative diseases (like Parkinson's and Alzheimer's), glaucoma, diabetes, inflammation, liver damage, cardiovascular disease, photoageing, thrombosis, allergies, and hypertension.
- QUERCETIN (found in black beans, lupins, adzuki beans, mung beans, pinto beans, lentils, fava beans, garbanzo beans, and kidney beans), a flavonoid that's been shown to reduce blood pressure, enhance insulin sensitivity, reduce inflammation, support wound healing, and even boost immunity. These activities give it protective effects against diabetes, cancer, cardiovascular disease, arthritis, and even neurodegenerative diseases like Alzheimer's disease!

Legumes are also important sources of phytosterols—fat-soluble compounds with structural similarity to cholesterol, giving them the ability block absorption of cholesterol in the gastrointestinal tract. In fact, consuming 2 grams per day of phytosterols can inhibit up to 40% of the cholesterol in the digestive tract from being absorbed or reabsorbed! As a result, phytosterols are supremely effective at helping lower LDL cholesterol, in turn reducing atherosclerosis and heart disease risk. What's more, phytosterols also have antioxidant and anti-inflammatory properties, improve blood sugar regulation and insulin sensitivity, and improve the composition of the gut microbiome. Soybeans, garbanzo beans, lentils, peas, and kidney beans are particularly high in phytosterols!

And, legumes are abundant in saponins—chemical compounds that can reduce cholesterol levels, protect against oxidative stress, inhibit tumor growth, improve lipid metabolism, support immunity, and even protect against obesity! Saponins are distributed in all the cells of legume plants, but are particularly high in kidney beans, soybeans, chickpeas, pinto beans, runner beans, and navy beans.

Lastly, legumes are rich sources of phytic acid. While often often considered a phytonutrient due to its ability to bind to minerals and inhibit their absorption, phytic acid also possesses important antioxidant properties—including potentially protecting against DNA damage, reducing the risk of cardiovascular disease and insulin resistance, reducing the toxicity of mycotoxins, and even helping protect against cancer!

Powerful Peptides

Legumes are sources of bioactive peptides—strings of amino acids derived from protein breakdown (such as during digestion, or fermentation by gut bacteria). A variety of studies show that legume peptides possess important health properties, including protecting against many diseases!

Perhaps the most famous legume peptides are lectins, a group of carbohydrate-binding proteins with similar molecular structures. Although lectins are often viewed negatively due to their potential to stimulate immune responses and block the absorption of some nutrients, they've also been linked to lower rates of obesity, cardiovascular disease, and type 2 diabetes—with a number of in vitro and animal experiments also showing they possess a variety of anti-cancer mechanisms. (In general, lectin consumption from whole-food legumes appears safe and beneficial, provided the legumes are thoroughly cooked!)

Other legume peptides have a pronounced impact on blood sugar regulation and pancreatic function, giving them anti-diabetic effects. Some of these peptides include:

- AGLYCIN, which has been shown to help control hyperglycemia, improve the insulin signaling pathway, enhance glucose uptake, and restore impaired pancreatic function and insulin secretion.
- VGLYCIN, which has been shown to lower blood glucose levels and increase insulin sensitivity.
- SOYMORPHIN-5, which demonstrates blood sugar-lowering activity, as well as helps improve glucose and lipid metabolism.
- γ-CONGLUTIN, which helps regulate glucose metabolism, reduce blood sugar levels, and regulate muscle energy metabolism.

A specific legume peptide found in lupins, called deflamin, has also been shown to inhibit tumor growth and metastasis. And a variety of additional legume-derived peptides have shown promise for helping protect against cardiovascular disease, acting as angiotensin I-converting enzyme (ACE) inhibitors (giving them a role in lowering blood pressure) and serving important antioxidant and anti-thrombotic functions (that is, reducing blood clotting). Some have even shown antimicrobial and immune-modulating activity!

Magnificent Micronutrients

Legumes are great sources of essential vitamins and minerals! Although different legumes vary in their exact micronutrient composition, on the whole, they contribute significant amounts of the following nutrients to our diet:

- COPPER, a trace mineral involved in glucose and cholesterol metabolism, gene expression, free radical scavenging, red blood cell production, and the growth, development, and maintenance of various organs (including the heart and brain). Adzuki beans, soybeans, and garbanzo beans contain 30 to 40% of the DV per ½ cup cooked, while cannellini beans, cranberry beans, fava beans, black-eyed peas, Great Northern beans, pigeon peas, navy beans, lupins, pinto beans, kidney beans, lima beans, and black beans all contain between 20 and 30% of the DV.
- IRON, a mineral needed for the function of numerous proteins involved in electron transport, energy metabolism, oxygen transport and storage, DNA replication and repair, free radical scavenging, and oxidative processes. Soybeans are among the highest legume sources of iron, containing 25% the DV per ½ cup cooked! Other good sources (containing 10 to 20% of the DV per ½ cup) include lentils, cannellini beans, pinto beans, adzuki beans, black beans, cranberry beans, lima beans, navy beans, Great Northern beans, kidney beans, garbanzo beans, and black-eyed peas.
- MAGNESIUM, an essential mineral that acts as an electrolyte and structural component in cells and bone tissue, and that serves as a cofactor for hundreds of different enzymes (giving it a role over 300 metabolic reactions!). Most legumes contain 10 to 20% of the DV per ½ cup cooked, including adzuki beans, mung beans, lima beans, soybeans, navy beans, pinto beans, black beans, lupins, cannellini beans, black-eyed peas, and Great Northern beans!
- MANGANESE, a mineral that serves as a cofactor and component of numerous enzymes—giving it roles in carbohydrate metabolism, amino acid synthesis, gluconeogenesis, detoxification, lipid processing, free radical defense, bone and collagen formation, and wound healing. Per ½ cup cooked, lima beans contain just under half the DV for manganese, while garbanzo beans contain 37%. Soybeans, adzuki beans, lentils, lupins, and cannellini beans all contain between a quarter and a third of the DV. Additional good sources (10 to 20% of the DV) are black beans, Great Northern beans, black-eyed peas, cranberry beans, kidney beans, pinto beans, mung beans, pigeon peas, navy beans, and fava beans!
- POTASSIUM, an electrolyte mineral with roles in a wide variety of life-sustaining processes such as heart function, muscle contraction, nerve impulse transmission, blood pressure control, blood pH, and fluid balance. Adzuki beans, cannellini beans, and lima beans all contain between 10 and 20% of the DV per ½ cup.
- VITAMIN B9 (folate), an essential B vitamin that plays roles in blood cell production, the formation of genetic material (including DNA), cell growth, cardiovascular health, cancer protection, and cognitive and neurological health. Most legumes provide substantial folate, but the richest

sources are lentils and cranberry beans, supplying nearly half the DV per ½ cup serving, and mung beans, supplying 40% of the DV! Other stand-out sources are adzuki beans, pinto beans, garbanzo beans, navy beans, and kidney beans (about a third of the DV), as well as fava beans, pigeon peas, and Great Northern beans (just shy of a quarter of the DV)! Cannellini beans, soybeans, lupins, split peas, all contain between 10 and 20% of the folate DV per serving.

- ZINC, an essential trace mineral that serves as a cofactor for over 300 enzymes and 1000 transcription factors, giving it important roles in immune function, sensory organ function, reproduction, gene regulation, DNA synthesis, wound healing, and the metabolism and activity of multiple other nutrients! Adzuki beans, lentils, black-eyed peas, and lupins all contain between 10 and 20% of the DV per ½ cup cooked.

Fabulous Fiber

Lentils are absolute rockstars in the fiber department! Although not officially labeled as essential, fiber is absolutely fundamental for our health—helping regulate gut motility (promoting regularity), modulating gastric hormones, and supplying our gut bacteria with fermentable substrate (i.e., food!) so that important microbes can flourish and remain diverse.

High fiber intake also reduces the risk of cardiovascular disease and of many forms of cancer (especially colorectal cancer, but also liver cancer, pancreatic cancer, and others), and promotes overall lower inflammation. High-fiber diets reduce the risk of mortality in cases of kidney disease and diabetes, and can even reduce your risk of dying from an infection!

What's more, some of the fiber content of legumes comes in the form of resistant starch—one of the most famous and beneficial prebiotic carbohydrates. This highly fermentable fiber "resists" the action of human digestive enzymes, due to its molecular structure. Rather than being fully broken down in the small intestine like most starches, it passes on to the colon to become food for important gut microbes (which then ferment the starch to produce short-chain fatty acids like acetic acid, propionic acid, and butyric acid—all of which have awesome health properties of their own!).

Both human and animal studies have shown that resistant starch (and its SCFA metabolites) can improve intestinal barrier function, reduce the production of colon cancer precursors, help regulate macronutrient metabolism, increase insulin sensitivity, lower blood sugar responses after high-carb meals, reduce hunger, increase satiation, improve blood lipids, and help combat obesity. There's even evidence that resistant starch helps boost immunity, due to its influence on immune cell production and inflammatory compounds in the gut!

On top of that, the SCFAs produced via bacterial fermentation serve as the main food source for intestinal epithelial cells, giving them a huge role in promoting gut health. These unique fats have also been shown to reduce the risk of inflammatory diseases, maintain a healthy gut barrier, and aid in the absorption of important minerals (including copper, calcium, magnesium, iron, and zinc).

The resistant starch content of legumes varies based on cooking time and storage (more resistant starch forms with extended cooling!), but in general, legumes contain about 2g of resistant starch per ½ cup serving after being cooked. Navy beans, red beans, and cranberry beans tend to be particularly high!

And as far as overall fiber content goes? Any legume is a win! Per ½ cup cooked serving, legumes contain the following amounts of fiber:

- ADZUKI BEANS: 8.4g
- BLACK BEANS: 7.5g
- BLACK-EYED PEAS: 5.6g
- CANNELLINI BEANS: 5.6g
- CRANBERRY BEANS: 7.6g
- FAVA BEANS (BROAD BEANS): 4.6g
- GARBANZO BEANS (CHICKPEAS): 6.2g
- GREAT NORTHERN BEANS: 6.2g
- KIDNEY BEANS: 6.5g
- LENTILS: 11.6g
- LIMA BEANS: 4.6g
- LUPINS: 2.3g
- MUNG BEANS: 7.7g
- NAVY BEANS (WHITE BEANS): 9.6g
- PIGEON PEAS: 5.6g
- PINTO BEANS: 7.7g
- SOYBEANS: 5.2g
- SPLIT PEAS: 7.5g

Health Benefits of Legumes

Given their outstanding phytonutrient, peptide, micronutrient, and fiber profiles, it's no shocker that legumes show wide-ranging health benefits and protection against a number of diseases. Here's a peek into the many ways they've been scientifically shown to benefit our health!

Reduced blood pressure:

Studies show legumes may have important blood-pressure lowering effects! A 2023 meta-analysis of randomized controlled trials found that for people with overweight/obese BMI, legume consumption significantly reduced systolic blood pressure. And, a 2023 cross-sectional study of people with type 2 diabetes and hypertension found that among this population, eating at least three servings of legumes per week was associated with significantly lower systolic and diastolic blood pressure values.

Improved blood lipids:

Legume consumption supports healthy blood lipid profiles, due in large part to their lipid-lowering saponins, phytosterols, and fiber! A 2007 randomized controlled trial found that eating ½ cup of pinto beans daily for eight weeks resulted in a 19% decrease in LDL cholesterol. A 2014 meta-analysis of randomized controlled trials likewise found that compared to a control diet, consuming about one serving of pulses per day (130 g) significantly lowers LDL cholesterol. A 2021 cross-sectional study found that among older men, higher intake of legumes was associated with both lower LDL cholesterol and higher HDL cholesterol levels. And, a randomized controlled trial from 2021 found that among people with elevated cholesterol, eating one cup of canned beans (black, navy, pinto, dark red kidney, or white kidney) every day for four weeks led to significant reductions in both total and LDL cholesterol!

Reduced risk of heart disease:

Although not all the research has been consistent here, some studies have found a protective effect of legume consumption on heart disease risk. A 2001 analysis of an important prospective cohort study, following nearly 10,000 participants for an average of 19 years, found that eating legumes four times per week (compared to less than once a week) was associated with a 22% lower risk of developing coronary heart disease over the course of the study. Likewise, a 2017 meta-analysis, encompassing 14 cohort studies and 367,000 people, found that people with the highest versus lowest legume consumption had a 10% lower risk of developing cardiovascular disease or coronary heart disease. And, a dose-response meta-analysis from 2023 found that eating 400g of legumes per week appeared to deliver the highest level of cardiovascular benefits!

Reduced risk of cancer:

Legume consumption has been associated with a lower risk of several cancer types in observational studies, with animal and in vitro experiments clearly demonstrating anti-cancer effects as well (including against breast cancer, colon cancer, cervical cancer, lymphoma, and liver cancer cells). Legume polyphenols, phytosterols, bioactive peptides, and fiber appear to be key players in these protective effects!

- COLORECTAL CANCER: A 2015 meta-analysis of cohort studies, encompassing nearly 2 million participants, found that higher legume consumption was associated with a 9% lower risk of colorectal cancer. When the data was stratified into subgroups, Asian populations had an 18% lower risk. And, a 2007 analysis of the Polyp Prevention Trial found that participants consuming at least 39 g of dry beans daily had a 65% lower risk of advanced colorectal adenoma recurrence. Likewise, animal studies have shown specific anti-colon-cancer effects from legumes: for example, in a rat model of colon cancer, supplementation with black beans or navy beans for four weeks led to a 44 to 75% reduction in colon carcinogenesis!
- PROSTATE CANCER: A 2017 meta-analysis of prospective cohort studies found that higher legume consumption was associated with a 15% lower risk of developing prostate cancer. Analyzed another way, every 20 g increase in legume intake was linked with a 3.7% reduction in risk!
- BREAST CANCER: A 2018 case-control study found that participants in the highest versus lowest quartile of bean intake (greater than 109.6 g daily versus less than 6.4 g daily) had a 20% lower risk of developing breast cancer, and a 28 to 36% lower risk of developing the ER-PR- breast cancer subtype in particular. Likewise, a 2022 case-control study of urbanized Nigerian women found that bean consumption (compared to not eating any beans) was associated with a 45% lower risk of developing breast cancer, and a 49% lower risk of developing triple-negative breast cancer.

In addition, legume intake may be protective against cancer mortality as a whole. A 2019 prospective study, following participants for a median of six years, found that people in the highest versus lowest tertile (third) of legume consumption had a 49% lower risk of dying from cancer!

Reduced risk of stroke:

A 2023 meta-analysis of prospective studies found that higher legume consumption was protective against death from stroke—with every 50 g per day increase in legume intake correlating with a 10% reduction in stroke mortality.

Lower body weight and waist circumference:

Legumes appear greatly beneficial for maintaining a healthy body weight. In a 2008 analysis of National Health and Examination Survey (NHANES) data, people who reported eating

beans had significantly lower body weight and waist size than people who didn't consume beans. In fact, bean-consumers had a 22% lower risk of being obese, and a 23% lower risk of having increased weight size (a marker of abdominal obesity—which itself increases the risk of heart disease and diabetes).

Likewise, a 2023 cross-sectional study of over 15,000 adults found that legume consumption was significantly protective of weight gain over time. More specifically, the more legumes a person ate, the less weight they gained over the course of 10 years. Further analyses of the data showed that these effects appeared largely due to the fiber content of legumes!

And, a 2016 meta-analysis of randomized controlled trials found that diets with a legume intervention (an average of one serving of pulses per day) led to significant reductions in body weight—even when the diets weren't intended to be calorie-restricted!

Greater satiety:

One of the most consistent effects of legumes is how filling they are, leading to major benefits for appetite regulation and satiety. For example, a 2014 systematic review and meta-analysis of acute feeding trials found that meals containing dietary pulses (beans, chickpeas, lentils, or peas) increased satiety levels by 31%, compared to non-pulse meals containing the same amount of calories. A trial from 2017 found that eating 218 calories of canned chickpeas (versus 218 calories of white bread) led to significantly suppressed appetite and energy intake, as well as a 29 to 36% reduction in blood sugar levels!

Reduced risk of diabetes and better glycemic control:

In a 2008 analysis of the Shanghai Women's Health Study, prospectively following almost 65,000 women, participants with the highest legume intake (an average of 65 g per day) had a 38% lower risk of developing diabetes compared to those eating very few legumes. A 2013 cross-sectional study of over 150,000 adults likewise found that among women, daily or weekly consumption of legumes was associated with a 29 to 34% lower risk of diabetes.

Similarly, a 2018 prospective study found that people in the top quartile of legume intake were 35% less likely to develop diabetes. When it came to individual legumes, consuming 6.6 g of lentils per day was associated with a 33% lower risk of diabetes, while 5 g of chickpeas daily was associated with a 32% lower risk!

And, a 2009 meta-analysis of 41 randomized controlled trials determined that dietary pulses significantly lower fasting blood glucose and insulin, and when combined with an overall high-fiber or low-glycemic diet, also help lower glycosylated blood proteins (including HbA1c levels).

Reduced risk of non-alcoholic fatty liver disease (NAFLD):

In a 2019 case-control study, higher total legume intake (beans, lentils, and peas) was associated with a 27% lower risk of developing NAFLD. Lentils, specifically, were associated with a 39% lower risk, and beans were associated with a whopping 65% lower risk!

Reduced risk of all-cause mortality:

A 2023 systematic review and dose-response meta-analysis, encompassing 32 cohorts and over 1.1 million participants, found that higher legume intake was associated with a significantly lower risk of death from all causes. More specifically, every 50 g per day increase in legume consumption was associated with a 6% reduction in all-cause mortality!

A Spotlight on Soy

Although soy deserves the "legume" title just as much as any other bean, it's often studied separately from other legumes due to its unique nutritional composition and phytoestrogen content, as well as its widespread consumption in products like tofu, soymilk, and meat substitutes. So, let's take a look at what makes this legume so unique!

For one, soy is rich in phytoestrogens called isoflavones—a type of phytonutrient that's structurally similar to estrogen, and subsequently can bind to estrogen receptors. Studies show that soy isoflavones possess anti-tumor effects, can help lower blood sugar levels, help protect against osteoporosis, reduce breast cancer risk, may provide relief from menopause symptoms, reduce the risk of cardiovascular disease, and assist in healthy body weight regulation. The soy isoflavones daidzein, genistein, and glycitin are metabolized by the gut microbiota (particularly Clostridium and Eubacterium), and the subsequent metabolites appear responsible for the beneficial effects of soybeans found in some studies.

Relative to other legumes, soybeans also contain slightly higher amounts of certain micronutrients, with a ½ cup of cooked soybeans providing 14% of the DV for vitamin K, 19% of the DV for vitamin B2 (riboflavin), 11% of the DV for selenium, and 7% of the DV for calcium. They also have a higher fat and protein content than most other legumes, containing 7.7 g of fat and 15.7 g of protein per half cup of cooked soybeans!

And, soybeans contain some peptides unique among the legumes! For example, they contain lunasin—a peptide with decades of research demonstrating anti-cancer properties, including an ability to suppress cell proliferation, regulate the cell cycle, and induce apoptosis (programmed death) of cancer cells. In general, research on soy-derived peptides shows they possess neuroprotective effects, benefits for cognitive impairment, anti-obesity effects, anti-diabetic effects, immunoregulatory effects, antioxidant activity, and antimicrobial and antiviral properties!

It's worth noting here that while processed soy products and individual soy components (such as soy protein or soy isoflavones) are often the target of research, the whole-bean package is really where it's at. When eaten in its unprocessed state, soy contains its full spectrum of phytonutrients, fiber, vitamins, minerals, peptides, and more! In fact, many studies assessing whole soy, soy isoflavones, and soy protein find that whole soybean consumption is associated with the greatest disease protection and health benefits.

Here are some science-based health benefits that come from eating whole soybeans:

- **LOWER RISK OF DIABETES.** In a 2008 prospective study following nearly 65,000 women for an average of 4.6 years, found that consuming 32 g of soybeans per day was associated with a 47% lower risk of developing diabetes. By contrast, intake of soy protein and processed soy products didn't show a significant protective effect.
- **LOWER RISK OF CANCER.** In 2015 meta-analysis of cohort studies encompassing nearly 2 million participants, higher soybean intake was associated with a 15% lower risk of developing colorectal cancer. A 2022 systematic review likewise found that higher soybean intake was associated with a 10% lower risk of cancer, with every additional 25 g per day increase in soy intake correlating with a 4% drop in cancer risk. (No risk-reducing effect was seen with soy protein.)
- **LOWER RISK OF ALL-CAUSE AND CARDIOVASCULAR DISEASE MORTALITY.** A 2019 meta-analysis found that whole soybean intake was associated with a lower risk of risk of death from all causes, as well as specifically from ischemic cardiovascular disease—whereas soy protein intake alone showed no significant protective effect.
- **LOWER LDL CHOLESTEROL.** A 2013 randomized controlled trial found that 40 g day of whole soybeans resulted in significant reductions in LDL cholesterol.
- **REDUCED INFLAMMATION.** A double-blind, placebo-controlled trial from 2014 found that whole soy consumption (but not purified isoflavones) significantly lowered serum hs-CRP, a measure of inflammation.

...And Now Some Soy Myth Busting!

Over the years, soy has received a lot of press—and not always good! Early research on soy (especially in animal studies) raised concerns around its isoflavone and goitrogen content, bringing fears that it could spur the growth of hormone-sensitive cancers, impact fertility, increase estrogen levels in men, harm thyroid health, and contribute to heart disease. Unfortunately, this left soy with a soured reputation that sometimes still haunts it today.

However, since the early days of soy research, an enormous number of studies have emerged looking at both the short-term and long-term health effects of soy, including in living humans. And now, the evidence is clear: not only are soy and its isoflavones safe; they're convincingly protective of many the diseases they were once feared to exacerbate!

For example, a 2021 meta-analysis of clinical studies found no evidence that soy protein or isoflavone intake had any effect on male reproductive hormones, including testosterone or estrogen levels. A 2022 meta-analysis found that soy isoflavones had a clear protective effect for breast cancer in both pre- and post-menopausal women. A 2019 review and meta-analysis determined that soy caused no significant changes in thyroid hormone levels. A 2019 systematic review and meta-analysis even found a strong inverse correlation between soy isoflavones and all-cause mortality, with those eating the highest levels of soy isoflavones having a 10% lower risk of death from all causes!

Legumes Nutrivore Scores

Legumes have an average Nutrivore Score of 489! Some individual Legumes are as follows:

Adzuki beans	535
Black beans	429
Cranberry beans	223
Fava beans (broad beans)	396
Garbanzo beans (chickpeas)	235
Great Northern beans	389
Kidney beans	634
Lentils	489
Lima beans	289
Lupins	180
Mung beans	769
Navy beans (white beans)	376
Pigeon peas	166
Pinto beans	361
Soybeans	287
Split peas	267

Some Practical Pointers

In general, legumes are remarkably easy to select, store, and cook; after all, that's what made them so valuable as a staple food throughout history! However, here are some tips to help you get the very most from this fabulous food group.

Storing:

- DRY STORAGE: If you're storing dried, uncooked legumes, keep them in a cool, dry place in airtight containers. This helps preserve their quality and prevents insect infestations.
- WET STORAGE: Cooked legumes—whether freshly cooked or from an opened can—can be stored in the refrigerator for about three to five days. Make sure to store them in airtight containers to prevent moisture and odors from seeping in (glass, plastic, or freezer-safe bags all work great here!).

Soaking:

Soaking is an age-old trick when it comes to preparing dry legumes, and for good reason! Soaking offers a number of both culinary and health benefits, including reducing the legume cooking time (especially helpful for larger beans like kidney beans and garbanzo beans), helping improve digestibility (by breaking down some of the complex sugars that tend to produce gas and bloating), enhancing nutrient absorption (by reducing levels of phytic acid and tannins), and creating a softer texture in the final product. Smaller legumes (such as lentils) are generally fine to cook without soaking, but even they can benefit from this extra step!

So, if you're going the soaking route, here are some basic guidelines:

1. Sort through the legumes to remove any stones or damaged legumes.
2. Rinse the legumes under cold water to remove any dirt, dust, or remaining debris.
3. Place the legumes in a bowl, and add water until the legumes are submerged by at least an inch. (You can also add a pinch of salt to the water to help soften the legumes and improve their flavor.)
4. Soaking times vary depending on the type of legume—but in general, larger beans might need to soak for eight to 12 hours, while smaller legumes might require only one to four hours. Refer to specific recipes or package instructions for recommended soaking times.
5. After soaking, drain and rinse the legumes thoroughly under cold water.
6. Now the legumes are ready for cooking!

If you're short on time, you can also use a "quick soak" method for legumes: cover them in water, bring to a boil for two minutes, and then let them sit for an hour or two!

Cooking:

When it comes to cooking legumes, you have a few options:

- BOILING: Add soaked legumes to a pot, cover them with water, bring to a boil, then reduce the heat to a simmer. Cooking times vary; smaller legumes like lentils cook faster than larger ones like garbanzo beans. Add salt toward the end of cooking to prevent toughness!
- PRESSURE COOKING: Using a pressure cooker significantly reduces cooking time. It's especially useful for larger legumes that naturally have a longer cooking time. Follow your pressure cooker's instructions for cooking times.
- CROCKPOT/SLOW COOKER: Legumes can easily be cooked in a slow cooker! Combine soaked legumes with water and any desired seasonings, then cook on low for several hours until tender.

Recipes

BREAKFAST

Nutrivore Score

238

Pumpkin Spice Lentil Muffins

PREP TIME	COOK TIME	YIELD
15 minutes	1 hour	12 muffins

⅓ cup dried lentils, or 1 cup cooked lentils, any variety

1 cup canned pumpkin

1 teaspoon vanilla extract

¼ cup melted butter, or oil of choice

1 cup water, milk or buttermilk

2 eggs

1 ¾ cup flour, gluten-free flour blend, or grain-free flour alternative

1/2 cup loosely packed brown sugar, or granulated sugar of choice

2 teaspoons baking powder

1 tablespoon pumpkin pie spice

¼ teaspoon salt

1. COOK LENTILS: Place lentils in a pot with enough water to cover by 2 inches. Bring to a boil and reduce to maintain a simmer for 25-30 minutes, until lentils are soft and slightly overcooked, but not mushy. Drain and discard excess water.
2. Preheat oven to 375°F degrees.
3. Add cooked lentils, pumpkin, vanilla, oil, and eggs to a large bowl and mix until combined.
4. In a separate bowl whisk together flour, brown sugar, baking powder, pumpkin pie spice and salt. Add dry ingredients to the wet mixture and mix just until combined, being careful not to overmix.
5. Pour muffin batter into a greased or lined muffin tin, filling each well to the top.
6. Bake muffins for 25-30 minutes or until a toothpick inserted into the center of the muffin comes out clean. Cool before serving.

TIP: You cannot tell there are lentils in these muffins by taste at all. However, you can see them when you bite into them. So, if you have extra picky eaters who may object to eating these muffins because of the lentils, I suggest adding 1 cup of mini chocolate chips to the batter before baking. This will disguise the presence of the lentils and the combination of chocolate and pumpkin is delicious.

SOUP AND SALADS

Nutrivore Score

387

Indian Lentil Soup (Dal Shorva)

PREP TIME	COOK TIME	YIELD
20 minutes	45 minutes	3-4 servings

1½ cups lentils
6 cups chicken stock
1 teaspoon turmeric
½ teaspoon cayenne pepper
1 teaspoon cumin
¼ teaspoon cardamom
2 to 3 curry leaves
3 tablespoons ghee, or oil of choice
2 teaspoons mustard seeds
2 garlic cloves, finely chopped
1 teaspoon sea salt
¼ teaspoon pepper
2 tablespoons fresh lemon juice

1. Rinse lentils thoroughly, pick out any debris, and drain.
2. In a large pot, combine lentils, chicken stock, turmeric, cayenne, cumin, cardamom and curry leaves. Bring to a boil and reduce temperature to maintain a simmer for 30-35 minutes, until lentils are very soft and starting to lose their shape.
3. With an immersion blender, partially blend soup, but leave it somewhat lumpy.
4. In a small skillet, heat ghee over medium-high heat. Add garlic and mustard seeds and sauté until garlic is browned and mustard seeds are starting to pop, about 4 to 5 minutes.
5. Add garlic mix, salt and pepper to the soup. Simmer for 5 minutes.
6. Stir in lemon juice. Taste and add additional salt and pepper, if desired.

COOKING TIP

TIP: If you can't find curry leaves, use bay leaves instead but remove them before blending.

Nutrivore Score

531

Split Pea Soup

PREP TIME	COOK TIME	YIELD
20 minutes	15 minutes	4-6 servings

1 large white onion, diced

4 celery stalks, chopped

2 large carrots, diced

6 ounces of ham or pancetta, diced

1 pound split peas, rinsed

6 cups chicken stock

3 bay leaves

2 teaspoons sea salt

1. IN A PRESSURE COOKER: Combine all of the ingredients in the pressure cooker. Cook for 15 minutes at high pressure. Let the pressure naturally release for 15 minutes. Force-release remain-ing pressure, stir and serve!
2. IN A SLOW COOKER: Combine all of the ingredients in the slow cooker. Cook on high for 4 hours or on low for 8 hours, stirring only occasionally. Serve!

TIP: Note that this soup tends to thicken as it cools, leading to a thicker soup for leftovers. Add more chicken stock for a thinner soup, if desired.

Nutrivore Score

353

Mediterranean Sprouted Lentil Salad

PREP TIME	COOK TIME	YIELD
20 minutes + sprouting and cooling time	15 minutes	4-6 servings

1 cup lentils

¼ cup olive oil, or oil of choice

3 tablespoons balsamic vinegar

2 tablespoons fresh lemon juice

1 teaspoon Dijon mustard

1 teaspoon dried oregano

½ teaspoon sea salt

1 cup diced tomatoes

1½ cups sliced cucumbers

1 cup diced red or yellow bell peppers

½ cup kalamata olives

1 small red onion, thinly sliced

½ cup crumbled feta

½ cup Italian parsley, chopped

1. Rinse lentils thoroughly, pick out any debris, and place in a large glass jar. Cover with lukewarm water and soak for 6 to 8 hours. Drain and rinse well.
2. Seal the jar with a mesh sprouting lid or cheesecloth held on with a rubber band. Turn the jar on its side, gently shaking to distribute the chickpeas to allow for airflow. Let sit on the countertop, out of direct sunlight. Two to three times daily, rinse the beans by filling the jar with water, swirling gently, and then pouring out the water through the sprouting lid or a sieve. Place jar back on its side to allow for air-flow. Sprouts should appear within 24 hours.
3. Place lentils in a pot with enough water to cover by 3 inches. Bring to a boil and reduce to maintain a simmer for 15 minutes, until lentils are soft but not mushy. Drain and refrigerate until cool, at least 1 hour.
4. MAKE DRESSING: In a small bowl, whisk together olive oil, vinegar, lemon juice, mustard, oregano and sea salt.
5. Toss lentils with dressing and remaining ingredients.

Nutrivore Score

471

Sprouted Bean Salad

PREP TIME	COOK TIME	YIELD
45 minutes + soaking, sprouting and marinating time	20 minutes	6-8 servings

½ cup black-eyed peas

½ cup mung beans

½ cup green or orange lentils

5 to 6 cups diced ripe mangoes and/or papayas (about 3 mangoes or 1 papaya)

1 bunch green onions, thinly sliced

2 tablespoons diced green chilies, optional

¼ cup chopped fresh cilantro

¼ cup chopped fresh mint leaves

1 teaspoon sea salt

¼ cup lemon juice

2 tablespoons olive oil, or oil of choice

1 teaspoon black cumin seed oil

1. Rinse beans thoroughly, pick out any debris, and place in a large glass jar. Cover with lukewarm water and soak for 6 to 8 hours. Drain and rinse well.
2. Seal the jar with a mesh sprouting lid or cheesecloth held on with a rubber band, gently shaking to distribute the chickpeas to allow for airflow. Place jar on an angle so water can drain and air can circulate, and let sit on the countertop, out of direct sunlight. Two to three times daily, rinse the beans by filling the jar with water, swirling gently, and then pouring out the water through the sprouting lid or a sieve. Place jar back at an angle to allow for airflow and drainage. Sprouts should appear within 24 hours.
3. Place beans in a pot with enough water to cover by 3 inches. Skim off any skins that float to the top. Bring to a boil and reduce to maintain a simmer for 15 to 20 minutes, until beans are soft. Drain and refrigerate until cool, at least 1 hour.
4. Toss beans with remaining ingredients. Return to fridge to marinate for at least 1 hour.

Nutrivore Score

308

Four-Bean Cassoulet

PREP TIME	COOK TIME	YIELD
45 minutes plus soaking time	2 hours	12 servings

- ½ cup dry cranberry beans
- ½ cup dry black beans
- ½ cup dry pinto beans
- ½ cup dry cannellini beans
- 4 ounces pancetta, diced
- 2 tablespoons olive oil, or oil of choice
- 2 pound boneless pork butt, cut into 1-inch chunks
- 1 pound lamb stew meat, cut into 1-inch chunks
- 1 pound kielbasa or polish sausage, cut into 1-inch chunks
- 1 cup dry white wine
- 6 large carrots, cut into ½-inch rounds
- 3 large celery stalks, thickly sliced
- 2 medium onions, quartered
- 1 6-ounce can tomato paste
- 1 cup chicken stock
- 1½ teaspoons sea salt
- 1 teaspoon dried thyme
- Pinch ground cloves
- 2 bay leaves
- ¼ cup chopped fresh parsley

1. Rinse beans and discard any stones or shriveled beans. In a large bowl, combine beans and add water to cover by 2 inches. Soak overnight and up to 48 hours. Drain beans and rinse again.
2. In a large pot, bring 8 cups of water to a rolling boil, add beans and reduce heat to low. Simmer beans until soft but before skin cracks, about 90 minutes. Drain and set aside.
3. Meanwhile, in a large Dutch oven over medium heat, sauté pancetta in olive oil until browned. Remove and set aside. Working in batches, sear pork butt, lamb and kielbasa to brown (but not cooked through) in the rendered fat in the Dutch oven, removing and setting aside.
4. Preheat oven to 350°F with rack set to its lowest level.

5. Drain excess fat from Dutch oven. Add wine to deglaze then return pancetta, pork, lamb and kielbasa to the Dutch oven along with carrots, celery, onion, tomato paste, chicken stock, salt, thyme, cloves and bay leaves. Heat broth to a rolling boil over high heat. Cover and place in the oven. Bake for 1 hour.
6. Remove from oven and add beans and parsley, stirring to incorporate. Cover and return to oven to cook for an additional 30 minutes, until meat and beans are fork-tender.

Nutrivore Score

456

Sneaky Legume Pasta Salad

PREP TIME	COOK TIME	YIELD
20 minutes	10 minutes	8-10 servings

12 or 16-ounce package dried chickpea or lentil pasta

2 cups fresh or frozen broccoli florets, chopped small

½ cup Greek yogurt

½ cup mayonnaise

2 tablespoons mustard

1 teaspoon salt

½ teaspoon pepper

½ teaspoon paprika

2 cups chopped celery, about 4-5 stalks

1 bell pepper, chopped

½ cup chopped green onions

¼ cup chopped parsley

1. Cook pasta per instructions on the box, adding an extra 1-2 minutes of cooking time to slightly overcook the pasta.
2. Just before the noodles are done cooking, add the broccoli and cook for about 30 seconds.
3. Drain and rinse noodles and broccoli in a large colander under cold water until cool.
4. In a large bowl, mix together the Greek yogurt, mayonnaise, mustard, and spices.
5. Add pasta, vegetables, and herbs and mix to combine.
6. Refrigerate for at least two hours before serving to let the flavors meld.

Nutrivore Score

627

Asian Crunchy Noodle Salad

PREP TIME	COOK TIME	YIELD
20 minutes	none	3-4 servings

½ head thinly sliced Napa cabbage, about 6 cups

4 cups broccoli slaw, either bagged or shredded from broccoli stalks

⅓ cup chopped green onions

2-3 mandarin oranges, peeled and segmented

½ cup cooked and shelled edamame

1 tablespoon sesame oil

1 tablespoon olive oil

1 tablespoon rice vinegar

3 tablespoons soy sauce or coconut aminos

2 teaspoons grated fresh ginger

2 cloves fresh garlic, minced

2 tablespoons chopped fresh mint

½ teaspoon salt (less if using soy sauce)

1 cup Crunchy Noodle topping, recipe below or use your favorite store bought option

1. Combie cabbage, slaw, green onions, oranges, and edamame in a large bowl.
2. Whisk or blend together oil, vinegar, soy sauce, ginger, garlic, mint and salt.
3. Pour dressing over salad.
4. Top with Crunchy Noodle topping.

Nutrivore Score

82

Crunchy Noodles

PREP TIME	COOK TIME	YIELD
45 minutes	20 minutes	about 4 cups noodles

1 8-oz package of rice noodles

1-2 Tablespoons arrowroot, potato or corn starch

About ¾ cup oil (coconut, avocado, canola, etc)

Salt to taste

1. Cook noodles according to package directions.
2. Drain noodles and spread out onto a parchment or silicone baking mat-covered baking sheet to dry, about 30 minutes.
3. Dust noodles with starch.
4. Heat oil in a small frying pan or wok over medium high heat.
5. Add noodles a handful at a time and cook until crispy.
6. Remove from oil and let cool on a paper towel covered plate.
7. Continue to cook until all the noodles are fried.

COOKING TIP

TIP: use Asian rice vermicelli noodles and you can skip cooking the noodles before frying. These noodles cook extremely fast. Simply add a small handful of noodles to hot oil and fry for 1-2 minutes per side.

ENTRÉES

Nutrivore Score

451

Mediterranean Artichoke Heart and Fava Bean Ragout with Whitefish

PREP TIME	COOK TIME	YIELD
20 minutes	30 minutes	4 servings

4 4- to 6-ounce fillets of any whitefish (cod, halibut, tilapia, etc.)

2 lemons, juiced and zested

¾ teaspoon salt, divided, plus more to taste

¼ teaspoon pepper, plus more to taste

¼ cup olive oil, or oil of choice

1 onion, finely chopped

12 baby artichokes, trimmed, or 2 12-ounce bags frozen artichoke hearts

3 pounds fava beans, shelled and tough skins removed, or 3 cups frozen fava beans, thawed

1 cup chicken stock

1 cup dry white wine

2 cloves garlic, sliced

1 cup olives (use 3 or 4 different varieties)

¼ cup fresh chopped parsley

1. Preheat oven to 425°F. Line a baking sheet with parchment paper or a silicone liner.
2. Arrange fish fillets on prepared baking sheet. Sprinkle the top with lemon zest, ¼ teaspoon salt, and pepper. Bake for 10 minutes per inch thickness, until fish is opaque and segments flake apart easily.
3. In a large skillet or Dutch oven, heat olive oil over medium high heat. Add onion and sauté, stirring frequently, until starting to brown, about 8 minutes.
4. Add artichoke and sauté to brown slightly, 3 to 4 minutes.
5. Add fava beans, lemon juice, chicken stock, wine, garlic, and remaining ½ teaspoon salt. Bring to a boil and reduce heat to maintain a simmer. Simmer until vegetables are tender, about 5 minutes.

6. Add olives and cook just to warm through, about 2 minutes. Stir in parsley. Taste and add additional salt and pepper, if desired.
7. Serve ragout topped with fish filets.

SNACKS

Nutrivore Score

304

Hummus

PREP TIME	COOK TIME	YIELD
30 minutes	45 minutes	3 cups

1 cup dried chickpeas
2 cloves garlic, minced
3 tablespoons fresh lemon juice
2 teaspoons sea salt, divided
3 tablespoons tahini
¼ teaspoon cumin
½ cup olive oil, or oil of choice
½ cup water
2 tablespoons fresh parsley, chopped

1. Rinse and drain chickpeas. Place in a pressure cooker insert or large pot. Cover with water by 3 inches and add 1 teaspoon salt. Cook for 20 minutes on high pressure in the pressure cooker, or bring to a boil and reduce to maintain a simmer for 45 minutes on the stovetop.
2. Drain the chickpeas. Place in a blender or a food processor, and add remaining ingredients. Process until completely smooth.
3. Garnish with fresh parsley.
4. Store in the fridge up to 1 week.

Nutrivore Score

376

Socca (Chickpea Flatbread)

PREP TIME	COOK TIME	YIELD
25 minutes	20 minutes	4-6 servings

1 cup chickpea flour

1 ¼ cup room temperature water

1 tablespoons olive oil, or oil of choice, plus more to grease pan

½ teaspoon salt, plus more to sprinkle on top

1. Drizzle olive oil into a 12-inch cast iron skillet or pizza pan and place in cold oven. Preheat oven to 425°F.
2. While oven is preheating, mix all ingredients in a medium bowl. Let batter sit for about 20 minutes. It will thicken slightly, but should be a fairly runny consistency.
3. When the oven is preheated and the skillet is hot, pour the batter into into the skillet and place in the oven. Bake for 20 minutes until edges are golden.
4. For extra crispy socca, broil for an additional two minutes until golden brown.

COOKING TIP

TIP: For additional flavor options you can sprinkle with fresh cracked pepper, mix fresh rosemary into the batter and then sprinkle with flakey sea salt before baking, or bake it as is, but then serve topped with butter and honey.

DESSERT

Nutrivore Score

205

Chocolate Mousse Squares

PREP TIME	COOK TIME	YIELD
20 minutes + 2 hours chilling time	30 minutes	16 2-inch squares

1 cup flour, grain-free flour alternative, or gluten-free flour blend

1/2 cup butter, or oil of choice

1/4 cup powdered sugar (or for a more nutrient dense option you can blend maple sugar in a blender for 30 seconds to make your own)

½ teaspoon salt, divided

12 ounce bag dark chocolate chips, about 2 cups

16 ounces silken tofu, drained

Double shot of espresso or 2 ounces strong brewed coffee, or sub milk of choice

1 teaspoon vanilla extract

1. Preheat oven to 350°F. Grease an 8"x8" baking pan or line with parchment paper.
2. In a bowl, knead together flour, butter, powdered sugar and ¼ teaspoon salt. This is easiest with your hands as it makes a very stiff dough similar to pie crust dough in consistency.
3. Press dough into the bottom of the pan to form an even layer. Poke holes all over the top with the tines of a fork.
4. Bake for 30 minutes, until golden brown. Let cool until cool to the touch.
5. In a double boiler, melt chocolate chips. Alternatively, melt chocolate chips in the microwave in 30-second intervals, stirring each time, until the chocolate is melted and smooth.
6. Add melted chocolate to a blender along with the tofu, espresso, vanilla and remaining ¼ teaspoon salt. Blend until smooth.

7. Pour the filling into the baked crust. Refrigerate until set, about 2 hours.

8. Slice into squares and serve.

VARIATION: Skip the crust and serve the filling as you would chocolate pudding. If a sweeter dessert is desired, use semisweet or milk chocolate chips in place of the dark chocolate chips. Use a 9-inch pie tin to make a more traditional pie instead of squares. A graham cracker crust or traditional pie crust would also be delicious. Top with whipped cream or swirl in peanut butter or nut butter of choice before chilling to change up the flavor.

About the Creators of this Book

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FOUNDER OF NUTRIVORE

Award-winning public speaker, New York Times bestselling author and world-renowned health expert, Dr. Sarah Ballantyne, PhD believes the key to improving public health is scientific literacy. She creates educational resources to help people improve their day-to-day diet and lifestyle choices, empowered and informed by the most current evidenced-based scientific research.

Charissa Joy, AOS

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Charissa Joy has over 15 years of experience working in the wellness space. Charissa has many roles on the team. She is Dr. Sarah's right hand womanand touches every part of Dr. Sarah's businesses. She manages all communications for Nutrivore, both external and internal. She is the project and team manager. She handles all marketing internal and external marketing, as well as all brand/affiliate partnerships.

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Kiersten is a Content Creator for Nutrivore with a focus on recipe creation, practical resources and food photography, with a little writing on the side. After experiencing full body healing with the help of Dr. Sarah's and others' work, she now enjoys finding and creating beauty both in her work for Nutrivore and in her home as she raises two daughters alongside her military husband.

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On Nutrivore.com she is a researcher, writer, and content creator and is responsible for developing and maintaining the expanded Nutrivore Score database of over 7,500 foods (plus many of the nerdy puns sprinkled throughout the website!).

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