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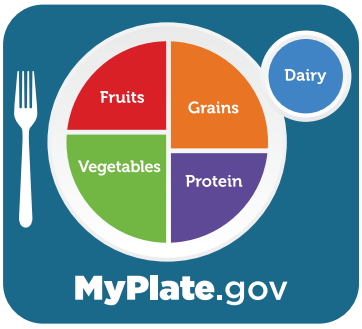
Cooperative Extension Service

Power Up with Plant Protein



The 2020-2025 Dietary Guidelines for Americans encourage people to choose foods from plants more often. MyPlate provides visual guidance to a balanced meal. It shows more than 75% of the plate coming from plants. These guidelines provide science-based advice for the general population "to promote health, reduce the risk of chronic disease, and meet nutrient needs." Organizations like the American Heart Association, the American Cancer Society, the American Diabetes Association, and the National Kidney Foundation also encourage people to eat plant-based foods to support overall health and well-being.

What foods come from plants?

Plant-based foods include:

- whole grains,
- nuts and seeds,
- fruits,
- vegetables,
- legumes and beans, and
- products made from plants, like soy-, almond-, oat-, cashew-, rice-, and pea-alternatives.

Plant-based products provide carbohydrates, fats, and protein. They also include other nutrients like fiber, antioxidants, and vitamins and minerals. These nutrients support digestion, keep cells working properly, reduce the risk of chronic conditions, and promote the nourishment of our bodies toward a healthy lifestyle.

Plant-based diets are eating patterns that focus on including more plant sources. Often, this is mistaken as advice to stop eating all meat products. Instead, these recommendations may include limiting the amount of meat you eat or replacing some current meat-centered meals with plant options. While some people choose to eat foods only from plants, there are others who are more flexible with their food sources. You can enjoy food from animals in moderation as part of a nutritious, balanced diet.

Is it possible to get enough protein from plant-based foods?

You need protein for growth, maintenance, and repair of body tissues. It is an important part of a balanced eating pattern. Proteins are made up of amino acids. Our bodies can make some amino acids. These are often referred to as nonessential. There are nine essential amino acids that cannot be made in the body. These must come from food sources. Animal foods often provide all essential amino acids our bodies require. Some plant foods provide essential amino acids (quinoa and soy), but often all essential amino acids are not found in one plant food. Eating a variety of plant foods throughout the day can help you get the essential amino acids you need.

Some plant proteins are listed below:

- Nuts (walnuts, cashews, pistachios, nut butters)
- Lentils, legumes, beans, peas (peanuts, peanut butter, chickpeas, hummus, black beans, pinto beans, green peas, black-eyed peas)
- Seeds (sunflower seeds, pumpkin seeds, chia seeds, flax seeds, sesame seeds)
- Tofu and other soy products (soymilk, edamame, tofu, tempeh)
- Whole grains (quinoa, wheat, oats, rice, corn, farro, millet, buckwheat, couscous)

Plant proteins on a budget

Many plant-based foods can support your wallet as well as your health. Often you can find these foods fresh, frozen, and canned. When produce is in season, like fresh beans and peas, it may be more affordable to buy locally from a farmers' market or to grow them in your own garden. In the off-season, frozen and canned options can be a convenient, affordable choice. Often, frozen and canned varieties do not take as long to cook because of the processing. They are also shelf-stable, which can help extend your food dollars. You can consume these foods on their own or with an animal protein as a meat-extender to save money.

Examples of ways to add in budget-friendly plant protein foods to your diet are listed below:

- Consider nut butter on whole-grain toast as your next sandwich.
- Add beans or peas to your next chili, stew, or soup.
- Top tacos with black beans or corn or incorporate as a topping for chicken, beef, or pork taco fillings.
- Use oats to extend or replace some ground meat in your next batch of meatballs or meatloaf.

Plant-based alternatives

Whether you choose to omit animal-products from your lifestyle by choice or do so because of a reaction to these items, many food manufacturers make plant-based alternatives. Plant-based meat alternatives have come a long way in the last 50 years. Burgers, ground meat for tacos, and sausage are often made of pea and soy protein products. They typically provide all essential amino acids and have a similar taste and texture to their animal-based products. Read the Nutrition Facts Label as these items are often highly processed and may contain high amounts of sodium and saturated fat.

Tofu and tempeh are soy products that are often used as meat substitutes in dishes, usually as a feature in Asian dishes. Because these foods take on the flavor of most sauces and marinades, they are very versatile in how you can use them. These foods provide protein, iron, fiber, calcium, and other vitamins and minerals.

Fortified soymilk is a plant-based milk alternative that the Dietary Guidelines for Americans recognizes as a sufficient milk replacement in terms of nutrients provided. There are plant-based alternatives for cheese, yogurt, and sour cream from soy, coconut, and cashew products. Make sure to check the Nutrition Facts label to ensure they are fortified with calcium and/or vitamin D.

Many of these alternatives look, taste, and provide a similar texture to animal-based foods in dishes. Often manufacturers fortify these foods with vitamins and minerals to provide essential nutrients we may miss out on that are found in animal products. However, to taste, feel, and look like these animal-based examples, manufacturers might also add sugar, sodium, and saturated fats. These are nutrients that are listed on the Nutrition Facts label of these processed foods. The health organizations listed above and the Dietary Guidelines for Americans suggest limiting these nutrients when possible.

Necessary nutrients

There are some necessary nutrients that may be important to consider if you are choosing an entirely plant-based diet.

Vitamin B12

- **Plant food sources:** Fortified foods like breakfast cereal, soy beverages, nutritional yeast
- **Importance:** Helps form red blood cells, plays a key role in development of brain and nerve cells
- **Additional considerations:** This vitamin does not occur in plant foods unless fortified.

Vitamin D

- **Plant food sources:** Fortified margarines, breakfast cereals; some mushrooms
- **Importance:** Supports bone and brain health, protects against inflammation
- **Additional considerations:** There is no natural source of vitamin D in plant foods. Regular exposure to sunlight will help your body generate some vitamin D, but often not in adequate amounts.

Riboflavin (another B vitamin)

- **Plant food sources:** Dark greens, whole and enriched grains, mushrooms, legumes, nuts, seeds, nutritional yeast
- **Importance:** Supports growth, development, and function of cells in the body
- **Additional considerations:** It plays a major role in the breakdown of food into energy in our bodies.

Iron

- **Plant food sources:** Legumes, whole grains, dried fruits, nuts, and seeds
- **Importance:** Helps form red blood cells to carry oxygen throughout the body
- **Additional considerations:** Iron from animal foods is more easily absorbed in our bodies. To aid in absorption from plant food, consume vitamin C-rich foods like bell peppers, citrus fruits (grapefruits, oranges), and cruciferous vegetables (broccoli, Brussels sprouts). Tannins in tea, coffee, and red wine, which act as antioxidants in protecting us from chronic conditions, may inhibit iron absorption.

Calcium

- **Plant food sources:** Stone-ground meal, self-rising flour and meal, some fortified breakfast cereals, calcium-fortified orange juice, legumes, tofu, calcium-fortified soy milk or other fortified plant-based milks, some nuts (such as almonds), certain seeds (such as sesame seeds), and some vegetables (such as broccoli, collards, kale, mustard greens, turnip greens, okra, rutabaga, and Chinese cabbage).
- **Importance:** Supports bone and teeth health, becomes increasingly important as we age to support strength, helps functioning of nerve and muscle tissue
- **Additional considerations:** Milk is a major source of calcium in the typical American diet.

There are numerous plant-based protein options available. So, there are ways to make this dietary pattern fit your preferences, budget, culture, and personal needs. Overall, including more plant foods in your eating pattern can meet your preferences while supporting your budget and health needs.

References

Alcorta, A., Porta, A., Tarrega, et al. (2021). Foods for Plant-Based Diets: Challenges and Innovations. Foods, Feb; 10(2): 293. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7912826.

American Heart Association. How does Plant-Forward (Plant-Based) Eating Benefit Your Health? (2023). Retrieved from https://www.heart.org/en/healthy-living/healthy-eating/eat-smart/nutrition-basics/how-does-plant-forward-eating-benefit-your-health

Delimont, N. M., Haub, M. D., & Lindshield, B. L. (2017). The Impact of Tannin Consumption on Iron Bioavailability and Status: A Narrative Review. Current developments in nutrition, 1(2), 1–12. https://doi.org/10.3945/cdn.116.000042

Thompson, S., Tresserra-Rimbau, A., et al. (2023). Association of healthful plant-based diet adherence with risk of mortality and major chronic diseases among adults in the UK. Journal of the American Medical Association Network, 6(3):e234714. Retrieved from https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2802814#:~:text=Overall%2C%20our%20results%20suggest%20that,mortality%20and%20major%20chronic%20diseases.

Academy of Nutrition and Dietetics (2021). Building a Heathy Vegetarian Diet: Myths and Facts. Retrieved from https://www.eatright.org/health/wellness/vegetarian-and-plant-based/building-a-healthy-vegetarian-diet-myths.

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