

Plant-Based Nutrition

This program will cover:

- What is a plant-based diet?
- Benefits of a plant-based diet
- The Plant-Based Plate
- Protein
- Carbohydrates
- Fats
- Essential Nutrients
- Hydration
- Resources



What is a plant-based diet?

The term "diet" in this context is referring to a long-term way of life. It means eating nutritious foods that provide your body with the vitamins, minerals, antioxidants, and nutrients that it needs to function, develop properly, and aid in disease prevention.

Plant-based diets focus on the following aspects:

- Fruits, vegetables, whole grains, nuts, seeds, and legumes are the primary food sources.
- Plant-based eating reduces reliance on animal-based foods such as dairy, meat, and fish. Plants provide all of the nutrients found in animal-based foods (except for B12), and they contain more fiber, vitamins, minerals, antioxidants, and phytochemicals.
- Plant-based eating focuses on foods that are closer to their natural state rather than heavily processed foods. Processed foods are generally higher in calories, fat, and sugar and don't provide as many nutrients as plant-based foods.
- Whole foods are the most nutrient-dense and help your body function at its best.

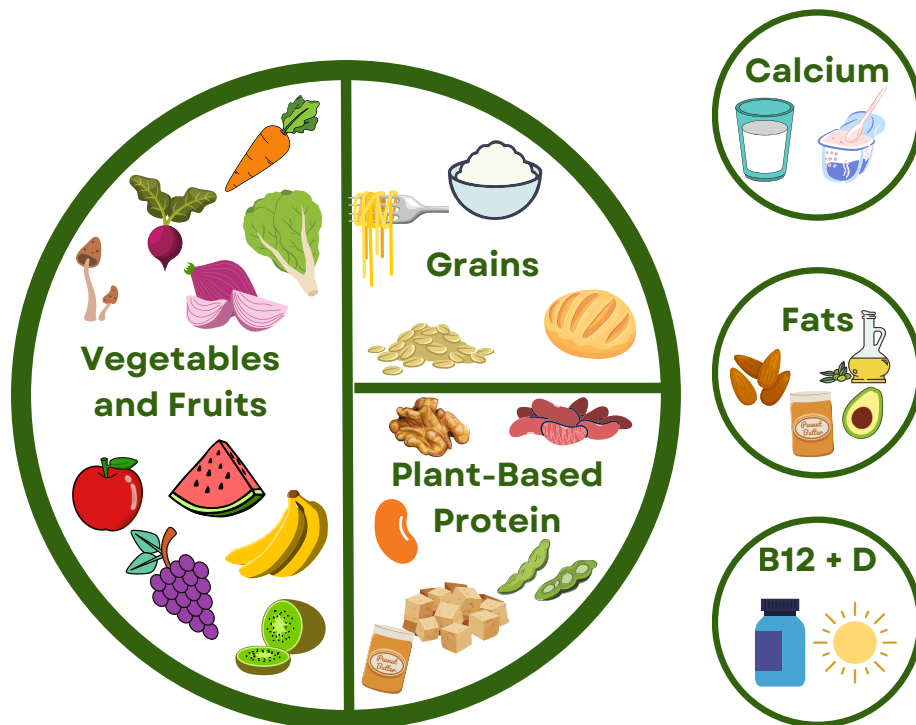
The bottom line of a plant-based diet is incorporating more vegetables, fruits, whole grains, nuts, seeds, and legumes in order to focus more on whole foods.

What are the possible benefits of a plant-based diet?

- Cancer prevention. Protein found in plant products contains phytochemicals that help fight off cancer.
- Lower rates of cholesterol and heart disease. Animal products are high in saturated fat and cholesterol. Fiber and phytochemicals assist in preventing and reversing atherosclerosis (contributes to heart disease) and high cholesterol.
- Lower blood pressure. When done correctly, a plant-based diet can be higher in potassium, calcium, magnesium, and fiber, while limiting sodium, all of which aids in lowering blood pressure.
- Prevent and manage diabetes. Plants are high in fiber and complex carbohydrates which helps blood sugar levels stabilize.

Plant-Based Plate

This Plant-Based Plate is a helpful representation of what foods and portions we should aim for at each meal. This is a great guide to use to ensure you are getting all of the nutrients your body needs, particularly when following a predominantly plant-based diet.



In what ways does your plate already look like the plate above?

In what ways could you change your plate to better match the Plant-Based Plate?

Getting Adequate Nutrients

Some people may worry whether a plant-based diet can provide all of the essential nutrients, especially protein. Getting all of the nutrients that you need through a plant-based diet is easier than you think! Plant-based foods provide plenty of nutrients, including enough protein for your needs.

"Vegetarian diets, including total vegetarian or vegan diets, are healthful, nutritionally adequate, and may provide health benefits in the prevention and treatment of certain diseases. Well-planned vegetarian diets are appropriate for individuals during all stages of the life-cycles, including pregnancy, lactation, infancy, childhood, adolescence, and for athletes."

- The Academy of Nutrition and Dietetics

Do you have specific concerns regarding meeting nutritional recommendations when following a plant-based diet? ☐ YES ☐ NO

If yes, what are your concerns?

Protein - Why is It Important?

- Protein helps build, repair, and maintain organ and muscle tissue.
- Protein helps in production of hormones, immune system function, and balance of fluids in the body.
- Protein helps maintain healthy skin and hair.
- Protein can be used as an energy source in the body when necessary.

Protein Requirements

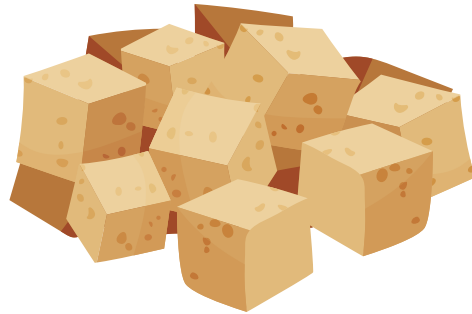
As was mentioned previously, many people worry that they will not get enough protein if they eat a plant-based diet. Often we end up eating more protein than we actually need! You can figure out how much protein you need by completing this equation:

$$\boxed{} \text{ pounds } \times 0.36 = \boxed{} \text{ grams of protein per day}$$

Tracking grams of protein each day can sometimes feel tedious. A simpler approach is to keep track of how many protein servings you eat per day. Most adults need between 5-7 servings of protein per day.

1 serving of protein is equal to:

- 1/2 oz of nuts, 1 Tbsp nut butter
- 1/4 cup beans
- 1/4 cup tofu
- 6 Tbsp hummus
- 1 oz cooked tempeh
- 1 oz of meat, fish, or poultry
- 1 egg



What sources of protein you would like to try this week? _____

Complete & Incomplete Proteins

Protein is composed of amino acids. Amino acids are used in every cell in your body to build the proteins you need to survive. There are 20 amino acids specifically used to make proteins in your body. 11 of those 20 can be made by your body (non-essential), but the other 9 must be eaten (essential).

- Complete Proteins: provide all 9 essential amino acids. These are found in animal products and soy products.
- Incomplete Proteins: contain various essential amino acids, but not all 9. By eating a variety of incomplete proteins, you can consume all of the amino acids that your body needs.

The lists below show incomplete proteins that you will eat when following a plant-based diet. By consuming incomplete proteins from different categories, your body will pair them up to create complete proteins. Keep in mind that your body can combine complementary proteins that are eaten within the same day. You do not have to eat them together in the same meal.

Grains

- Rice
- Pasta
- Wheat
- Oats
- Rye
- Cornmeal



Legumes

- Beans
- Peanuts
- Lentils
- Peas
- Chickpeas



Nuts & Seeds

- Almonds
- Cashews
- Other Nuts
- Sesame Seeds
- Sunflower Seeds
- Pumpkin Seeds



Meeting Protein Requirements through a Plant-Based Diet

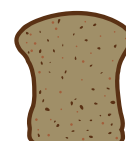
The following tips can help you meet your protein needs. Note that each food is different, so make sure to check the nutrition label to see how much protein you're really consuming.

- Aim for 6 servings of grains per day. Make half of these servings whole grains. You can get anywhere between 3 and 8 grams of protein per serving.
- Aim for 2.5 servings of vegetables per day. You'll get an average of 2.6 grams of protein per half cup of vegetables you eat.
- Aim for 5-6 servings of legumes, soy products, and nuts and seeds per day. You can get anywhere between 4 and 20 grams of protein per serving.

If you need more protein in your diet, what can you do to improve?

Good Sources of Plant Protein

- | | |
|--|---|
| • 1 cup Black Beans -- 15.2 g | • 1 cup Quinoa -- 11.0 g |
| • 1 cup Broccoli -- 4.6 g | • 4 oz Seitan (wheat meat) -- 24.0 g |
| • 1 cup Bulgar (wheat cereal) -- 5.6 g | • 1 cup Spinach -- 5.4 g |
| • 1 cup Chickpeas -- 14.5 g | • 1/2 cup Tempeh -- 15.7 g |
| • 1 cup Lentils -- 17.9 g | • 1/2 cup Tofu -- 19.9 g |
| • 2 Tbsp. Peanut Butter -- 8.0 g | • 1 slice of whole wheat bread -- 2.7 g |



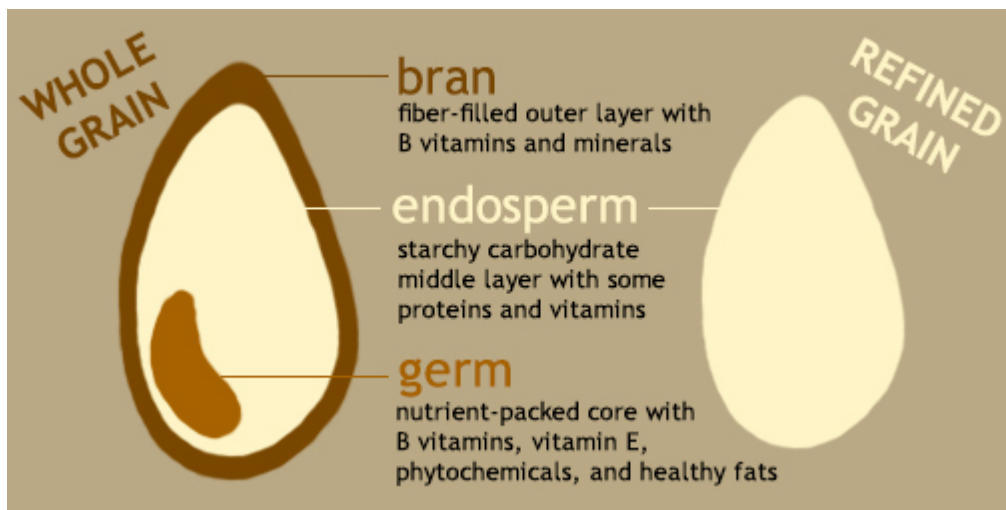
Carbohydrates

It is recommended that 45-65% of your daily calorie intake comes from carbs. Carbohydrates provide fuel for the body, and they are good for you!

Carbohydrates include fruits, vegetables, grains, and dairy products. As shown in the Plant-Based Plate above, we want to aim for 5-6 servings of fruits/vegetables per day. Doing so will help you consume a lot of the vitamins and minerals your body needs to perform its best.

There are two types of grains to look for. One is the whole grain, and another is the refined grain. Both contain nutrients and provide your body with energy. The recommendation to aim for is to make half of our grains whole grains throughout the day.

Whole grains are grains that still contain the whole part of the seed. This includes the bran and the germ. As you can see in the image below, the bran and germ contain many vitamins, minerals, fats, and fiber that are missing from the refined grain. For this reason, we want to make sure we are consuming adequate amounts of whole grains.



Whole grain sources include:

- whole wheat bread, tortillas, pasta, crackers, and cereal
- oatmeal
- corn tortillas
- brown rice
- popcorn

To tell if an item you are buying is a whole grain, you can look for a certified whole grain label on the package.



How is your current intake of whole grains?

What could you do to improve the amount of whole grains you eat each day?

Dietary Fats

There are multiple types of dietary fats that are found in both plants and animals. Fat is a macronutrient, which means that it is essential to your health. Fat supports proper body function and is essential for Vitamins A, D, E, and K to be absorbed into your body.

There are fats that are good for you, fats that are not as great for you, and fats that are in-between. Some types of fat can play a role in higher cholesterol, cardiovascular disease, type 2 diabetes, and cancer.

Trans Fat

Trans fat is not good for the human body. In 2018, the United States banned this fat from being added to food. Trans fat does occur naturally in some foods, but most trans fats are made during a food process called partial hydrogenation. This second form of trans fat is what is banned in the US.

Saturated Fat

Saturated fat comes mainly from animal sources. Saturated fats are solid at room temperature.

Both trans fat and saturated fat increase your risk of high blood pressure, heart disease, type 2 diabetes, and stroke. These types of fat raise LDL (bad) cholesterol levels which causes build-up in the arteries. This in turn lowers the HDL (good) cholesterol which is what clears out the build up.

Monounsaturated & Polyunsaturated Fats

Monounsaturated fats are found in a variety of foods and oils. Polyunsaturated fats are found mostly in plant-based foods and oils. Other types of polyunsaturated fats include Omega-3 and Omega-6 fatty acids.

These types of fat help improve blood cholesterol levels, lower blood pressure, and helps control blood sugar.

Polyunsaturated	Monounsaturated	Saturated	Trans Fat
Safflower oil Corn oil Soyben oil Fish (salmon, mackerel, herring, trout) Walnuts Flaxseed Tofu Sunflower seeds	Olive oil Canola oil Peanut oil Sunflower oil Sesame oil Peanut Butter Almonds Nuts Avocadoes	Cheese Butter Cream Ice Cream Sour Cream Poultry with skin Bacon & Sausage Ground Beef Palm & Coconut Oil Fried food	Fried foods French fries Donuts Pastries Pizza Pie Margarine Shortening Hydrogenated Oils

It is not necessary to ban saturated or trans fats from your diet completely. It is helpful and appropriate to be aware of what your current habits are and make moderate changes where they may be needed.

Essential Fatty Acids

Two essential fatty acids cannot be synthesized in the body and must be consumed through your diet. These are Omega-3 and Omega-6 fatty acids. Both Omega-6 and Omega-3 fatty acids are healthy.

Omega-3 Fatty Acids

Omega-3 fatty acids are polyunsaturated fatty acids that are essential nutrients. We need Omega-3s for numerous normal body functions, such as controlling blood clotting, building cell membranes in the brain, and lowering inflammation. Omega-3s also protect against heart disease, cancer, inflammatory bowel disease, and certain autoimmune diseases. Since our bodies cannot make Omega-3s, we must get them through food.

Omega-3 fatty acids are commonly found in nuts, seeds, avocados, flaxseeds, chia seeds, and fish.



Omega-6 Fatty Acids

Omega-6 fatty acids are also polyunsaturated fatty acids that are essential nutrients, meaning that our bodies cannot make them and we must obtain them from food. They are abundant in the Western diet. Most people get adequate amounts of Omega-6s. Omega-6s lower LDL (bad) cholesterol, reduce inflammation, and protect against heart disease.

Omega-6 fatty acids are found in seeds, nuts, vegetable oils (corn, safflower, soybean, cottonseed, sesame, and sunflower), corn, and animal products.



How can you incorporate some of these foods into your diet?

Essential Nutrients

Two primary nutrients that people consuming a plant-based diet may be concerned about are Vitamin D and Vitamin B12.

Vitamin D

- It is recommended that adults get 600 IU of Vitamin D daily.
- Vitamin D works with calcium to build and maintain healthy, strong bones.
- One of the best ways to get Vitamin D is through the sun. Spend 10-15 minutes in the sun three times per week.
- Some foods that contain Vitamin D include mushrooms, soy milk, fortified orange juice, salmon, tuna, eggs, and cow's milk. You can also take a Vitamin D supplement.

Vitamin B12

- It is recommended that adults get 2.4 mcg of Vitamin B12 daily.
- Vitamin B12 is not found in plant-based foods.
- Some of the best sources for Vitamin B12 in a plant-based diet will be fortified cereals, fortified non-dairy milks (soy, almond, rice), and supplements. Most multivitamins contain B12, labeled as cobalamin or cyanocobalamin.

Calcium

Calcium is an essential nutrient for bone growth, development, and maintenance. For adults, it is recommended that you get between 1,000 and 1,200 mg per day. Many individuals associate calcium with dairy products; however, calcium is found in many plant products.

- Calcium and Vitamin D help build bone mass and aid in preventing osteoporosis.
- Calcium plays an important role in blood clotting, helping muscles contract, and regulating normal heart rhythms and nerve functions.

Good Sources of Plant-Based Calcium

- 1 oz Sesame Seeds -- 381 mg
- 6 oz Calcium-fortified Orange Juice -- 375 mg
- 1 cup Calcium-fortified Soy Milk -- 300 mg
- 1 cup Collards -- 358 mg
- 2 packages Instant Oatmeal -- 326 mg
- 10 medium Figs (dried) -- 269 mg
- 1/2 cup Calcium-set Tofu -- 258 mg
- 1 cup Spinach -- 244 mg
- 1 cup White Beans -- 161 mg
- 1 cup Mustard Greens -- 152 mg
- 1 cup Navy Beans -- 128 mg
- 1 cup Vegetarian Baked Beans -- 128 mg



Are there any foods listed above that you would like to incorporate into your diet?

Sodium

The daily recommendation of sodium is less than 2,300 mg for most adults. If you are over the age 51 or have other health concerns, it is recommended that you get less than 1,500 mg per day. Getting too much sodium can lead to high blood pressure.

The Role of Sodium in Our Bodies

- It helps maintain the right balance of fluids in your body.
- It helps transmit nerve impulses.
- It influences the contraction and relaxation of muscles.



Where does all the sodium that we eat come from?

- Processed and prepared foods.
 - These foods are generally high in salt and additives. Some examples include: frozen meals, fast food, pizza, cold cuts, bacon, cheese, and canned soup.
- In the kitchen and at the table.
 - Recipes will generally call for salt, and many people will add more salt once the food is on their plate.
 - Condiments are notorious for being high in sodium. One tablespoon of soy sauce contains nearly 1,000 mg of sodium.

Tips for Lowering Sodium Consumption

- Eat fresh, frozen, or canned fruits and vegetables
- If you do choose to eat meat, eat fresh or frozen meats instead of processed meats like lunch meat, hot dogs, bacon, sausage, and ham.
- Choose low-sodium options. Many canned and packaged options are labeled as "low sodium".
- Moderate condiment consumption if you use them often. Watch for the sodium levels in soy sauce, salad dressings, ketchup, mustard, and relish.
- Cook at home more frequently than eating out.

If you need to decrease the sodium in your diet, what can you do to improve?

Water Intake

There are many health benefits to staying hydrated. Some of these benefits include regulating your body temperature, preventing infections, keeping your organs functioning properly, delivering nutrients to your cells, improving sleep quality, improving cognition, and improving mood.

Aim to get between 64 to 96 ounces per day. That is 8 to 12 cups of water. The amount you need will vary based on how you feel, your physical activity level, and the temperature.

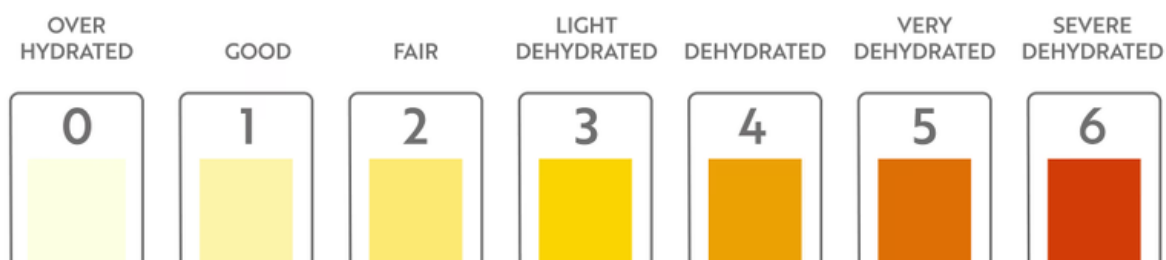
How much water are you drinking each day?

Are you regularly consuming other liquids instead of water?

If yes, what liquids are you consuming?

If needed, what can you do to increase your water intake?

The best indicator to know if you're drinking enough water is the color of your urine. If you are well hydrated, your urine should be pale yellow. If you are dehydrated, your urine will be dark yellow. Keep in mind that things such as medication can also affect the color of your urine.



Resources

Resource	Website	Supporting Organizaiton
Eating Vegetarian		USDA
Living a Whole Food, Plant-Based Life		The Center for Nutrition Studies
Vegan Health Resources		Vegan Health
Plant-Based Recipe Database		Forks Over Knives
Plant-Based Diet Resources		Physicians Committee for Responsible Medicine