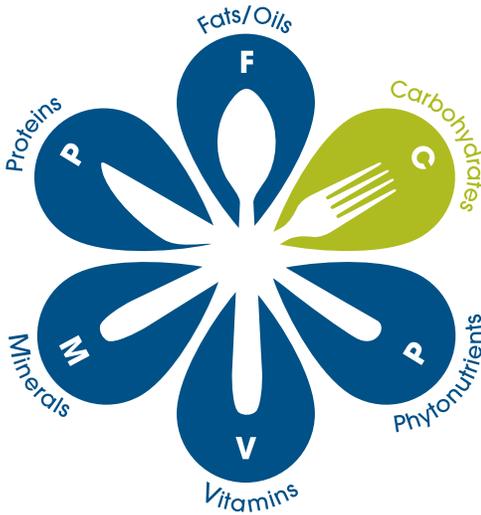




Macronutrients: Carbohydrates



Macronutrients are a class of chemical compounds that provide humans with energy and essential nutrients. They are required by the body in relatively large amounts on a daily basis and make up the bulk of the diet. Proteins, fats, and carbohydrates are the main types of macronutrients that provide the body with energy.

Carbohydrates are the body's main source of energy. When you eat carbohydrates, your body uses some of them for energy right away. The carbohydrates that your body doesn't need are stored either in muscle cells or fat cells to be used later. Carbohydrates are found in many different foods and are an important part of a healthy balanced diet, but the source and quality of carbohydrates is important to consider.

Sources of Carbohydrates

Some carbohydrate-rich foods are more nutrient dense than others. The best sources of carbohydrates supply the body with energy while also providing it with vitamins, minerals, phytonutrients, and fiber. All of these nutrients are important for basic brain functioning, kidney health, digestive health, and muscle function. Good sources of carbohydrates include the following:

Vegetables	Both starchy and non-starchy vegetables are good sources of carbohydrates. Vegetables that are high in fiber can help stabilize blood sugar and keep you feeling full for longer. (To learn more about the role of fiber in a balanced diet, see IFM's <i>What is Fiber?</i> document.)
Fruits	Many fruits are high in carbohydrates due to the natural sugars found in them. However, fruit is also an important source of many vitamins, minerals, and phytonutrients, and should be included in limited amounts in a balanced diet when appropriate.
Whole grains	Whole, unprocessed grains are high in fiber, slow to digest, and full of vitamins and minerals. Because they are so nutrient-dense, they promote feelings of fullness, keeping you satisfied for longer.
Beans and legumes	Beans and legumes are good sources of both carbohydrates and protein. They also contain other vitamins and minerals like folate (vitamin B9), potassium, iron, and magnesium.
Dairy products	Dairy products like milk, yogurt, and cheese are good sources of both carbohydrates and protein. While they don't contain fiber, they do supply the body with other vitamins and minerals. Note that not everyone can digest dairy properly, and dairy is not necessary to include in a balanced diet. For those who choose to consume dairy, full-fat and organic sources are preferred.

Other carbohydrate-rich foods include foods that are made with refined grains and sugars. This list includes (but is not limited to) sodas, white breads, pastas, cakes, pastries, cookies, chips, French fries, candy, ice cream, and other convenience foods. While it may be unrealistic to avoid these foods at all times, remember that too many refined grains and sugars in the diet can promote chronic inflammation in the body, which can contribute to a host of health conditions.

Recommendations for Carbohydrate Intake

According to the National Academy of Sciences, adults should get 45% to 65% of their calories from carbohydrates. However, too many carbohydrates in the diet—especially those from refined sugars and grains—can contribute to the development of many chronic health conditions. Because of this, IFM recommends that carbohydrates should account for 45% to 50% of daily calories for most healthy individuals. For those with specific health concerns requiring advanced therapeutic dietary interventions, carbohydrates should account for roughly 20% to 40% of daily calories, depending on the specific intervention or health condition. Talk to your Functional Medicine healthcare provider to learn more.

Tips for Incorporating Carbohydrates into a Balanced Diet

- Try adding whole, unprocessed grains to salads, soups, and stews. Experiment with your favorite recipes using grains like amaranth, quinoa, millet, barley, and wild rice.
- Make your favorite recipes using beans or legumes in place of animal protein. Chickpeas, black beans, tofu, and edamame work well in many dishes.
- Replace instant oatmeal and cold cereals (which often contain added sugars) with plain full-flake or steel cut oats. Top with fresh berries for a bit of nutrient-dense sweetness.
- When shopping for bread and pastas, look for brands that are made from whole grains.
- Opt for whole fruit over juice when possible. Whole fruits contain more fiber and less sugar, which helps keep blood sugar balanced.

References

- Fiber. The Nutrition Source. <https://www.hsph.harvard.edu/nutritionsource/carbohydrates/fiber/>. Published April 12, 2016. Accessed January 12, 2017.
- Sienkiewicz Sizer F, Whitney E. Nutrition Concepts & Controversies. 12th ed. Belmont, CA: Wadsworth Cengage Learning; 2011.

