

ADDITIONAL NOTE: FIBER

Protein, carbohydrates and fat create the three building blocks of every diet. Fiber, however, is worth mentioning, and learning more about it will come in handy as you begin meal planning.

Fiber is technically a carbohydrate, but it's handled by the body much differently. Because it cannot be broken down by the human body, fiber is slow to pass through the digestive system and adds "bulk" to our diet. This means that we can consume less in volume and feel fuller for a longer period of time. As a general rule of thumb, green, leafy vegetables, beans and whole grains tend to be high in fiber.

IN CONCLUSION

- Focus on consuming lean protein, like skinless grilled chicken or plain greek yogurt. Always be sure to eat your protein first to ensure you meet your intake goals before growing too full.
- Complex carbohydrates, like whole grains, beans and brown rice, are healthier choices than simple carbohydrates, such as sweets and soda. Complex carbohydrates that contain fiber will help fill you up and keep you full. Remember, however, that consuming too many carbs will result in weight gain, regardless of the type or source.
- Unsaturated fats are the healthiest choice. You should avoid consuming excessive amounts of saturated fats, such as butter, beef, pork, whole-milk and cheese, and it's recommended that you stay away from trans-fat entirely.

Please see your Bariatric Services Reference Book for more information about meal planning.

NOTES

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Your Guide to Understanding Macronutrients

Fairfield
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This guide has been prepared to assist you and your family with understanding what macronutrients are, how your body uses them and what role they play in your diet.

WHAT ARE MACRONUTRIENTS?

Macronutrients is a term that refers to the three building blocks of every diet: protein, carbohydrates and fat. Any food you eat can be broken down into these three categories, and each type of macronutrient plays an important role in how your body functions.

PROTEIN

When molecules known as amino acids link together, they build protein. Protein is essential for your day-to-day life, and is responsible for building and repairing tissue in the body, like your muscles, skin and bones. Protein also aids in creating enzymes and hormones, as well as maintaining fluid and electrolyte balance.

Protein is the only macronutrient that your body *can't* produce on its own. This means that all the protein you need for healing, building muscle and maintaining normal body function must come from the food and supplements you eat. Examples of protein include meat, eggs, nuts, cheese and dairy products.

Some sources of protein may be high in fat. For example, you shouldn't rely on eating cheese and peanut butter as your primary source of the nutrient. Instead, choose lean – or low-fat – proteins, such as skinless grilled chicken or plain greek yogurt.

The amount of protein you should consume each day varies from individual to individual, but typically, women should consume at least 60 grams per day, and men should consume 75-80 grams per day. You will need to use protein supplements to meet these goals immediately following surgery (approximately 2-3 months), but eventually, you will be able to get all the nutrients you need from eating high protein meals.

Make it a point to always eat protein first. This will help ensure you get the nutrients you need before growing too full to finish your meal. Protein also has the ability to make you feel full for a longer period of time, making you less likely to snack throughout the day. By effectively eating enough protein, you can promote weight loss *and* maintain lean muscle in the body.



CARBOHYDRATES

Carbohydrates, or carbs, have gotten a bad reputation over the years. The truth is, however, that – when they are consumed correctly and with discipline – carbs are a necessary part of your diet, just like protein and fat. This is because they have a *major* job to do. When broken down and digested, carbohydrates supply your body with its primary source of energy: sugar.

There are two categories of carbohydrates: **simple** and **complex**.

Simple Carbohydrates

- Simple carbohydrates may also be called simple sugars.
 - Table sugar, like the sugar you add to your coffee or use to bake a cake, is a simple carbohydrate.
 - Sugar that occurs naturally in fruits and vegetables, known as fructose or "fruit sugar," is also a simple carbohydrate.
- Simple carbohydrates are found in a variety of foods.
 - Processed foods, like candy, soda, donuts and fruit juice, are full of sugar and simple carbohydrates. These have little to no nutritional value and are typically not considered part of a healthy diet.
 - Simple carbohydrates can be found in healthier foods, too, like apples and carrots.
- The term "simple" carbohydrates refers, in part, to the body's response when you eat them. Because they are *already* in the form of sugar, your body does not have to break them down in order to use them. Instead, they are immediately absorbed, resulting in an almost immediate spike of sugar in the blood stream.
 - When the sugar in your blood stream rises, your body produces a hormone known as insulin. Insulin metabolizes the sugar so your body can use it. More often than not, however, there is more sugar than the body needs, and everything that's "extra" is stored in the body as fat.
 - Simple carbohydrates also may give you a quick burst of energy, and then leave you feeling hungry and tired within the hour. This is much like children eating candy: how many times have you witnessed the "sugar rush" and the "crash" that follows?
 - » Consuming simple sugar is likely to cause **dumping syndrome**, which is characterized by stomach upset, including cramping, nausea and diarrhea. For this reason, many people find it easy to resist baked goods, sweets and highly processed foods.

Complex Carbohydrates

- Complex carbohydrates are generally considered the healthier option because they provide vitamins, minerals and fiber.
 - "Starchy" vegetables, like potatoes, corn and peas, are considered complex carbohydrates.
 - Whole grain pasta, whole grain bread, oatmeal, beans, legumes and brown rice are considered complex carbohydrates as well. These all have fiber.
- Complex carbs are eventually broken down and turned into simple sugars so that your body can use them for energy – but the process takes much longer. This means that your blood sugar spikes less quickly, and your insulin response is less aggressive. In turn, you'll have more energy for a longer period of time, and you can maintain your feelings of fullness for hours instead of minutes.



FATS

Like carbohydrates, fats have been labeled as "bad." Again, the reality is that fats are an important and necessary part of your diet. The fat you consume helps your body transport and use the vitamins and nutrients it needs. It also helps with energy storage, vital organ function (especially the brain) and joins together with other substances in the body to make protective layers around the body's nerves and cells.

There are several types of fat, and some of them are much healthier than others. In all cases, however, fats are very high in calories (each gram of fat has approximately twice as many calories as a gram of protein). This means that a little bit goes a long way towards reaching your "calories from fat" intake goal, and reaffirms that fats should be consumed mindfully.

Learning about the different types of fat can be overwhelming; this guide was designed to give you a brief description of the most commonly referenced fats and how to recognize them. If you have questions, we encourage you to take advantage of the knowledge that Fairfield Medical Center's Bariatric Nutritionists can provide.

Saturated Fats

- Saturated fats tend to be solid at room temperature, are associated with animal fats and are considered to be an unhealthy option when compared to most other types of fat.
 - Saturated fats are linked to an increase in bad cholesterol and a higher risk of heart disease.
 - Examples of saturated (animal) fats include butter and lard.

Unsaturated Fats

- Unsaturated fats tend to be liquid at room temperature, are associated with plant and fish sources and are considered to be healthier options than saturated fats.
 - Unsaturated fats help lower cholesterol, and they play the largest role in carrying out the important functions mentioned above.
 - Within the category of unsaturated fats, there are monounsaturated fats and polyunsaturated fats. The "mono" and "poly" come from their chemical makeup, but here's what you really need to know:
 - Monounsaturated fats are liquid at room temperature, but solid when refrigerated. Examples of this include olive oil and canola oil. Avocados, almonds and peanuts are also high in monounsaturated fats.
 - Polyunsaturated fats will remain liquid at room temperature and when refrigerated, and are often known as **essential fatty acids**. Cold water fish (like salmon or cod), nuts (walnuts), seeds (flaxseed) and many vegetable oils contain polyunsaturated fats.
 - › The terms omega-3 and omega-6 essential fatty acids refer to these polyunsaturated fats. It's important to consume essential fatty acids because, much like protein, your body can't produce them on its own. All of the essential fatty acids you need must come from your diet and supplements.

Trans-fats

- You may have heard a lot about trans-fats; these types of fats are actually manufactured in a lab, and are often added to foods to increase their shelf-life. Cookies, crackers, chips, margarine and baked goods are full of trans-fats. As you can tell, foods that include trans-fats aren't often considered healthy, and they should be avoided. Stay away from products that list "hydrogenated" or "partially hydrogenated" oils as one of the first ingredients.

Now that you understand the basics of fats, you can use your knowledge to make better choices in your diet. It's important to remember, however, that any fat consumed in excess will be converted and stored in the body as extra weight. In general, fats should be limited to approximately 10-15 grams per meal, and should be primarily polyunsaturated (from nuts, seeds, vegetable oil and fish).