

What is the role of fats in the human body?

Do you try to limit your fat intake? Do you find that you're confused or worried about the fats you consume as you can't figure out the healthiest options? If any of these concerns ring true for you, then you're in the right place. To help you feel confident in choosing the right portions and the suitable types of fats, we've assembled a primer to help you understand just what good fats do for the body and how to figure out which fats you should consume.

What Do Fats Do in the Body?

Let's talk about what fats do for your body, why they're so important and what types of fats there are.

Before jumping into their roles, let's quickly meet the types of fats in the foods we eat.

About 90-95% of the fats in the body and in our diet are triglycerides. This type of fat has three fatty acid chains attached to a backbone [made from glycerol](#). The fatty acid chains can differ in length and the number of double bonds.

There are [three lengths of fatty acids](#): short-chain, medium-chain, and long-chain. You'll find them in different products. Bacteria in our gut makes short-chain fatty acids and dairy products contain them naturally. The medium-chain ones have become popular in recent years as they're found in coconut oil, which has several benefits. Healthy oils like olive oil contain long-chain fatty acids. Each type of fat has its own benefits for the body.

Fatty acids can also differ based on the number of [double bonds](#). Saturated fats have no double bonds and are able to stay solid, so they're found in things like butter. Unsaturated fatty acids have one or more double bonds. This property allows them flexibility and causes them to be primarily liquid at room temperature. The differences in their structure make our bodies use and respond to them differently. We'll cover them in more detail a little later in the post.

So, when we get the fatty acids in our foods, what happens to them, and how does our body benefit from them?

-Provision of energy

Fat is probably best known for supplying energy to the body. When our body needs extra energy, such as during exercise or between meals, the body burns fat for energy. It uses a process called [beta-oxidation](#). Briefly, during beta-oxidation, the following steps occur:

- Our cells uptake fatty acids from the bloodstream
- They are then transported mainly to the mitochondria. Cellular machinery may transport some longer fatty acids to other cellular locations
- Then, the fatty acids get activated and used in the energy-generating cellular processes
- The energy generation produces ATP, which is the form that energy takes within a cell

Fats provide the most energy compared to proteins and carbohydrates, [with one gram of fat supplying](#) nine calories. Fatty acids are an excellent energy source, helping you fuel yourself for prolonged periods.

The body can store fat in our fat tissues. We have [two types of fat in the body](#), which are white adipose tissue and brown adipose tissue:

- White adipose tissue is [typically found under the skin](#) and around the organs. The white adipose tissue is the tissue that is responsible for how the body burns fat. Its role is to release fats for fuel when the body requires it. It also [releases chemical messengers that allow it to communicate](#) with other parts of our body's metabolism.
- Brown adipose tissue is more [about how the body burns fat](#) to make heat. This type of tissue is rich in the cell's energy factories, the mitochondria. A [reduction in body temperature often activates the tissue](#). It uses fats as fuel to generate the heat that warms us up.

-Structural component

Fats are an essential structural component of the body and the cells. On a body level, fat acts as padding [and insulation](#) that helps to protect our organs. Alongside that, many fats make up important parts of our cells.

When we look at the cells [that make up our body](#), we find that each cell has an outer shell of phospholipids. These blocks are also a type of fat. The cellular surface is a constantly moving system with many responsibilities. It controls the transport of things inside and out of the cell. The shell is required for communication between other parts of the cell and other cells. Finally, it protects the cells from the outside environment. Many fats work to modify the membranes in our cells. For example, when adjusting to new temperatures, the cells might edit the types of fats present in the membrane. This helps support proper function at the new temperature.

Cholesterol is one such [important structural component](#). While it gets a mixed rep in human health, cholesterol in the cell membrane does a variety of essential things. It regulates how much water can pass through cell membranes. It helps membranes keep their shape and influences their thickness. In addition, the [body can use it](#) to make hormones and even vitamin D.

-Carrier of vitamins

We need vitamins and minerals for the body to function correctly. While most of the vitamins we eat are water soluble, [a few fat-soluble vitamins](#) are essential for health. These are vitamins A, D, E, and K. These require fats to be taken up by the body. This is a process which happens with the help of pancreas enzymes. These vitamins are typically stored in the body longer than water-soluble ones, as they tend to be stored directly in the tissue.

Here are what these vitamins do in the body and where you can find them:

- **Vitamin A.** This micronutrient is [essential for our eyesight](#). The vitamin helps the cells in the eyes grow and make structural components of the retina. The components aid

in seeing when light is low. In addition, a lot of gene expression related to enzymes and structural proteins in the body require it. It supports proper immune function as well. [Animal products like](#) eggs, milk, cheese, and plants like leafy veggies, papayas, squash, and carrots all contain vitamin A.

- **Vitamin D.** This micronutrient helps us [take up calcium and phosphorus](#). We need these minerals to mineralize our bones and make them strong. In addition, this process supports muscular functions, nerve impulses and hormone function. The body mainly makes the vitamin upon contact with the sun. However, you can find it in foods that are fortified with this nutrient. Otherwise, you can get this vitamin from supplements like Maxler Vitamin D3 5000 IU drops/[DE] Vitamin D3 600 IU.
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- If you'd like to learn more about the benefits of this vital vitamin and what it does in the body, check out our post about [all you need to know about vitamin D](#).
- **Vitamin E.** This vitamin is an [essential antioxidant that the body needs](#). It counters the action of free radicals during fat usage. It also protects the cell membranes from their actions, therefore supporting the structure and stability of the cells. You can find this [vitamin in foods like vegetable oils](#), whole grains, nuts and seeds. If you're planning to supplement this vitamin, it's important to find a supplement with natural vitamin E. [DE] Maxler Natural Vitamin E, is a great option, as this form is best absorbed by the body.
- **Vitamin K.** A lesser-known vitamin, but just as important as the other more famous ones. It is needed to [make the blood clot properly](#). We make [plenty of vitamin K2 through the bacteria](#) in our gut, but we can find vitamin K1 in foods like leafy greens, cabbage, some fruits, and some meats.

Therefore, we need to get plenty of fats in our meals. This helps us absorb and deliver these critical vitamins for optimal health.

-Other biological functions

In addition to the above, there are other functions that healthy fats do for the body. They are important signaling molecules that the cells use. Our cells have [receptors in their membranes](#) to which free fatty acids bind. There seem to be multiple types of fatty acid receptors. Their interaction with fats helps regulate other metabolic processes, such as insulin secretion. The signalling done by fatty acids is essential for the healthy growth and maintenance of tissue and even our stem cells.

In addition to being signaling molecules, certain types of fatty acids are essential for cellular processes and our overall health. These [are the polyunsaturated fatty acids](#), like omega-3s. The body must get these fats from foods. They get converted into other compounds with hormone-like functions or roles in inflammation.

In addition, there's a particular type of fatty acids that has gained more interest in recent years. These are called short-chain fatty acids. The reason why they're interesting is because the microbiome, or the gut bacteria that we have, produces short-chain fatty acids. These fats seem to affect our health in significant ways.

We can't digest the fibre we get from foods, and as that fibre travels into our gut, the microbes that live there use it as a fuel, fermenting it. This process creates [short-chain fatty acids](#), of which the most commonly found are acetate, butyrate and propionate.

These molecules then get moved into the blood and reach other body parts, affecting [many of our functions](#). For example, our colon cells can use them as energy sources. They can even regulate how the body burns fat and stores fat. They also play a role in glucose metabolism, supporting glucose uptake. Short-chain fatty acids may also participate in regulating blood cholesterol levels.

Our body's metabolism isn't the only thing affected by short-chain fatty acids. We know that the gut communicates with the brain through what are [called the gut-brain interactions](#). It appears that these fatty acids have functions in mental health and even conditions like dementia. Many of these conditions are associated with a disbalance in the microbiome.

It's clear that many different types of fats are essential for different processes in the body. They are needed to help keep our cellular structure intact, provide us with nutrients, and regulate processes involving signaling and our overall metabolism.

But with so many roles and types of fats, it's hard to tell which fats are better for you, if any. In the following sections, we'll explore common types of fats. We'll touch on trans fats, unsaturated fats and polyunsaturated fats. The aim is to help you make decisions about what you eat.

Trans fats

If there's one type of fat that is infamous for its role in the health of the human body, it's trans-fat. Trans fatty acids [have at least one double bond](#) in a trans configuration. It's important to note that some [trans fats are present naturally](#) in foods like dairy products. However, the change usually occurs as part of hydrogenating unsaturated fatty acids to make things like margarine.

While this sounds complicated, the main idea is simple. The industrial processes that lead to the creation of trans fats make the molecule's geometry slightly different. Our internal chemistry is sensitive to such changes. The change in geometry makes the trans fats affect the body differently. The structure change also [allows them to be solid](#) at room temperature.

These types of fats are often associated [with an increased risk of heart problems](#). So, it's likely best to limit the intake of these fats, whether they're produced industrially or found naturally in certain sources.

Unsaturated fats

On the other hand, unsaturated fats have a double bond or often more than one double bond. There are [plenty of benefits](#) of having unsaturated fats over saturated fats, such as:

- Lowering of LDL cholesterol

- Reducing the risk of heart problems. A cohort [study has suggested](#) that replacing 5% of saturated fat with unsaturated can lower the risk of coronary heart disease by up to 25% if replaced with polyunsaturated fats.
- Potential [improvement of body composition](#)

There are two main types of unsaturated fats: monounsaturated and polyunsaturated.

-Monounsaturated fats

These types of fats contain one double bond in their structure. Our body can actually make monounsaturated fats. This is why [you won't often see a recommended](#) daily amount of these fats you should eat. Most of the monounsaturated fats we eat come from oleic acid. This fatty acid is present in plant oils and animal oils. These types of fats are considered to be neutral for the body, so it's a good idea to use them in your food.

You can find monounsaturated fats in the following foods:

- Nuts and seeds
- Avocado
- Plant oils – canola, olive oil, peanut, and sesame oils
- Peanut butter

-Polyunsaturated fats

Polyunsaturated fats have more than one double bond in their structure. This group contains an important fat subgroup called the essential fatty acids. These are good fats for the body that we must obtain from foods, as we can't make them in the body. The two main groups of these essential fats are the omega-3s and the omega-6s.

Let's start by discussing the importance of omega-3 in our daily lives and our diet. You can [typically find these fats in seafood](#) and fish sources. Plenty of plant sources like walnuts also contain them. There are three main types of these fatty acids. You can find DHA and EPA in animal products. ALA, the other type, exists in plant sources.

For those who consume most of these fats from plants, it's essential to get sufficient amounts of these fats on a day-to-day basis. That's [because our body needs to convert](#) the plant version into EPA and DHA. The conversion process is not efficient. [DE] A supplement that contains vegan omega-3 fatty acids, like Maxler Vegan Omega, might be a good option. It can help you get sufficient amounts of omegas each day.

You can find these beneficial [fatty acids in plenty of foods](#), such as:

- Fish and seafood. Fatty fish like salmon and mackerel are good options.
- Fish oil supplements. Fish oils contain plenty of omega-3s. An omega-3 supplement like Maxler Omega-3 Premium might be a better option for those wanting a higher dosage.
- Plant oils. Flaxseed oil, soybean and canola are good options for omega-3s.
- Nuts and seeds. Chia, hemp seeds and walnuts are excellent sources of the nutrient.

- Eggs. You can choose enriched eggs for a higher dose, but pasture-raised eggs contain this nutrient.

Omega-3s, in general, have [plenty of benefits for the body](#), including:

- Lowering inflammation, which assists in warding off chronic issues.
- They support healthy blood pressure and benefit the cardiovascular system.
- They're great for helping control glucose levels.
- They support the development and health of the brain and the nervous system.
- They can support athletes by improving muscle function, growth and strength.
- They can modulate the immune response, which can be beneficial for athletes and everyone else alike.
- They can benefit endurance athletes. Athletes can use them as fuel sources.
- They support our natural hormone production.

Omega-6 fatty acids are the other group of polyunsaturated fatty acids. They are also essential for a healthy body. Their primary role is to [supply the body with energy](#). However, the body can also convert them into molecules that tend to set off inflammation. [It is good for immunity](#) but may also increase the risk of conditions caused by inflammation. It's, therefore, critical to not overconsume omega-6 fatty acids.

If you've heard of CLA or [conjugated linoleic acid](#), it is an omega-6 fat. We find it naturally in plenty of vegetable oils and dairy products. CLA has reported benefits on obesity, [helping reduce body fat](#) when supplemented for about half a year. It likely does this by lowering the making and storage of fats in our fat cells. It also increases fat usage in muscles. Additionally, it may have benefits in supporting cardiovascular health. However, more investigations will need to confirm the benefits.

If you're interested in CLA, it's best to get the advice of a medical practitioner on whether it's a suitable supplement for you. As always, choose supplements you trust the manufacturer and quality of to ensure you get the desired product.

Overall, it's a good idea to get plenty of unsaturated fats in your daily menus. You should try to prioritize them over saturated and trans fats where possible.

How do dietary fats relate to our health?

With so many functions of fats, what's the final verdict?

Dietary fats are an essential part of a healthy diet. They support our energy levels, allow us to take in all the necessary micronutrients, and act as structural support in the cells. Some fats also have specific benefits for the body. For example, omega-3 fatty acids, are great at supporting the health of the eyes and the nervous system. They can also play a beneficial role in athletic performance. Therefore, many are good fats for the body.

Ultimately, the type of fat we consume makes all the difference between the beneficial and detrimental effects of the fat.

However, it's also important to mention that you should consume dietary fats in moderation. Consuming fats [doesn't turn on the fat oxidation](#) processes, which is how the body loses fat. Instead, the body prefers to store fats, which can lead to an increase in percent body fat.

It's, therefore, important to control fat intake to ensure you have healthy body fat. What is a healthy percent body fat? Around [20-30% for women and 8-20% for men](#). Low fat in the body can be [associated with issues](#), so don't try to go too low.

The easiest way to calculate body fat is through a [calculator](#). You can also do so through contacting your medical professional. If you're looking for ways to reduce body fat or want to learn how to get rid of body fat, you might be interested in reading our post about [losing weight safely](#).

Tips for Making Healthy Choices Around Dietary Fats

You're hopefully feeling more confident about understanding what fats do and why you shouldn't exclude them from your diet. It's now time to consider practicalities. How do you choose your fat sources? What should you watch for? How do you get the most out of your fats without running the risk of gaining weight or changing what you eat daily? Here [are tips to get you started](#):

1. **Find out how much fat you should be consuming.** Your requirements will depend on your personal preference and your dietary guidelines. Typically, around 20-30% of our energy will come from fat, which might sound like a lot. In practice, though, it's important to remember that oils and fats are higher in calories than proteins and carbohydrates. One gram of fat contains nine calories, while carbs only offer four. So, especially if you're on a calorie-controlled diet trying to reduce your body fat, knowing the numbers and serving sizes is essential for correct fat use.
2. **Pick fats that are good for you.** Aim to get most of your fats from healthy sources, such as plant oils or foods rich in omega-3 fatty acids. These will support your overall health, and you can easily incorporate them into existing recipes. Swap your butter when frying eggs for some olive oil. It's that simple.
3. **Go lower fat on other foods.** If you know you tend to get plenty of saturated fats from your foods, or if you need to decrease your fat intake, go lean. Pick leaner cuts of meat or trim excess fat. Choose dairy that is lower in fats, such as skimmed milk or zero-fat Greek yoghurt. These alternatives have less saturated fat in them, helping you keep track of calories.
4. **Check your labels.** While choosing lower-fat options is often good, make sure you check their labels. They may contain added sugars and salt to make them tastier, and if that doesn't suit your goals, then search for other alternatives. Additionally, if you're getting ready-made foods or baked goods, watch out for saturated and trans fats that might be being used to make those foods to keep them cheaper.
5. **Choose healthier snacks.** Processed or convenience snacks might have plenty of saturated fats. Try prepping your own snacks instead, as you can add healthier fats to them, such as apple slices with peanut butter, tuna salad with low-fat mayo or avocado toast.

When trying to make healthy decisions around fats, it's essential to consider which foods can be sources of good fats for the body. Watch out for hidden fats and make healthier choices to control the amount of fat you get, especially trans and saturated fat.

Recommended Intakes for Dietary Fats

No matter what diet you're following, getting completely rid of fats in your diet isn't great. Instead, try to make sure you're getting sufficient amounts of fats for your body, as their functions are connected to good health. To help you make decisions around how much fat is a good idea in your day-to-day diet, the US Dietary Guidelines recommend that you get about [20-35% of your daily energy](#) from these macronutrients, with under 10% of your energy being saturated fats.

[DE] [Germany's dietary guidelines](#) suggest that you should be getting around 60-80 g of fat maximum. Every day, 10-15 g of those should be from oils, while 15-30 g should be butter or butter alternatives. However, the guidelines suggest limiting fatty foods and looking out for hidden fats that might be present in foods.

[RU] In Russia, the general dietary guidelines [suggest that up to 30%](#) of your energy can come from fats. However, for those who lead more [sedentary lifestyles](#), it's recommended that you get around 1-2 servings of fats daily, which can amount to approximately 20-50 ml of oils. For those with higher activity, around three servings of fats per day should suffice.

Fats shouldn't be a scary food, as they do quite a lot for the body, from supplying us with energy to helping us absorb necessary vitamins. Therefore, it's crucial to understand how to make choices around fats that support your goals and requirements. Choose fat sources that are higher in unsaturated fats or those that contain beneficial omega fats. Stick to your daily guidelines, and you'll be on your way to getting all the benefits from fats without worry.