

The Handbook of Research Synthesis and Meta-Analysis

Fat is an important part of your diet, but figuring out how much to eat can be confusing. Over the last 50 years, many people have moved from a moderate fat to a low fat diet, based on recommendations from health organizations. However, the 2020-2025 Dietary Guidelines for Americans no longer specifies an upper limit for how much total fat you should consume. This article takes a detailed look at different types of fat and provides suggestions for how much to eat per day.

What is fat? Along with protein and carbs, fat is one of the three macronutrients in your diet. You consume fat in the form of triglycerides. A triglyceride molecule consists of three fatty acids attached to a glycerol backbone. The fatty acids contain chains of carbons and hydrogens. One way to classify fats is by the length of their carbon chains: short-chain fatty acids: fewer than 6 carbons

fewer than 6 carbons medium-chain fatty acids: 6–12 carbons

6–12 carbons long-chain fatty acids: 13–21 carbons

13–21 carbons very long-chain fatty acids: 22 or more carbons Most of the fats you eat are long-chain fatty acids. Short-chain fatty acids are mainly produced when bacteria ferment soluble fiber in your colon, although milk fat also contains small amounts. Long-chain and very long-chain fats are absorbed into the bloodstream and released into the body's cells as needed. However, the liver takes up short-chain and medium-chain fats directly and stores them as energy. Summary: Fats are one of the three macronutrients. The body

absorbs them from food and uses them for energy and other functions.

Functions and benefits of fat Fat performs a number of functions and provides several health benefits: Energy: Fat is an excellent energy source. It provides 9 calories per gram, whereas protein and carbs each provide 4 calories per gram.

Fat is an excellent energy source. It provides 9 calories per gram, whereas protein and carbs each provide 4 calories per gram. Hormone and gene regulation: Fats regulate the production of reproductive and steroid hormones, as well as genes involved in growth and metabolism (1 , 2).

Fats regulate the production of reproductive and steroid hormones, as well as genes involved in growth and metabolism (,). Brain function: Adequate fat intake is important for brain health, including mood (3 , 4).

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Absorption of fat-soluble vitamins: Vitamins A, D, E and K must be consumed with fat to be properly absorbed.

Vitamins A, D, E and K must be consumed with fat to be properly absorbed. Flavor and fullness: Adding fat to foods makes them tastier and more filling. The fat stored inside your body helps: insulate your organs

keep you warm

provide energy that you can use in the case of a calorie deficiency Summary: Fats provide a number of benefits for your body, including

serving as an energy source, regulating hormones and genes, maintaining brain health, and making food tastier and more satisfying.

Different types of fat Fatty acids are grouped according to the number of double bonds between carbons in their structures. Monounsaturated fat Monounsaturated fatty acids (MUFAs) have one double bond in their carbon chains. MUFA food sources are typically liquid at room temperature and fairly stable for cooking purposes. The most common MUFA is oleic acid, which olive oil contains in high amounts. Monounsaturated fat is linked to several health benefits, including a reduced risk of serious diseases such as heart disease and diabetes (5 , 6 , 7). One review of 24 controlled studies found diets high in monounsaturated fat lead to significantly lower blood sugar, triglycerides, weight and blood pressure levels, compared to high carb diets. The high monounsaturated fat diets also increased HDL (good) cholesterol levels (7). MUFAs may also increase feelings of fullness that lead to reduced calorie intake. In one study, people felt fuller and took in fewer calories for the next 24 hours after consuming bread alongside oil rich in oleic acid, compared to bread that contained less (8). Polyunsaturated fat Polyunsaturated fatty acids (PUFAs) contain two or more double bonds. They can be divided into groups depending on the location of the double bonds. These include omega-3s and omega-6s. These double bonds make PUFAs more flexible and fluid than saturated fats. On the other hand, they're also far more prone to damage and rancidity. Studies have found that long-chain omega-3 fats have benefits for inflammation, heart disease, diabetes, depression, and other health conditions (9 , 10 , 11 , 12). Although you need some omega-6 fats, they can contribute to chronic inflammation if you consume too much, especially if omega-3 PUFA intake is low (13 , 14 , 15). Omega-6 fats are very common in modern-day diets. On the other hand, omega-3 fats are usually consumed in much smaller amounts. Significantly, researchers report that the evolutionary diet of humans provided a ratio of omega-6 to omega-3 fats between 1-to-1 and 4-to-1. By contrast, it's estimated that most people now consume these fats in a 15-to-17:1 ratio (16 , 17). Saturated fat Saturated fatty acids (SFAs) have no double bonds in their carbon chains, so the carbons are said to be "saturated" with hydrogen. They're very stable at high temperatures and far less likely to be damaged during cooking than polyunsaturated fats. SFA intake can raise LDL (bad) cholesterol levels in some people, although this depends in part on the specific fatty acids consumed. It should also be noted that HDL (good) cholesterol typically goes up as well (18). Overall,

research indicates that SFA consumption has a neutral effect on health and doesn't appear to cause or contribute to heart disease (19 , 20 , 21). In fact, some foods high in saturated fat may benefit metabolic health. For example, studies suggest that the medium-chain triglycerides in coconut oil and palm oil may boost metabolic rate and reduce calorie intake (22 , 23). The American Heart Association recommends that only 5-6% of your fat intake should be saturated. In other words, if you're on a diet of 2,000 calories a day, you should consume around 13 grams of saturated fat per day (24). Trans fat In a trans fats molecule, hydrogens are positioned across from each other rather than side by side. Small amounts of trans fats occur naturally in dairy and other animal foods. However, nothing is natural about the trans fats used in processed foods. These trans fats are produced by adding hydrogen to unsaturated fats to create a product that functions more like a saturated fat. Ingredient labels often list them as "partially hydrogenated" fats. Consuming trans fats can lead to a number of health problems. Artificial trans fats are linked to inflammation, unhealthy cholesterol changes, impaired artery function, insulin resistance, and excess belly fat (25 , 26 , 27 , 28 , 29). Research has linked the intake of trans fats with a higher risk of cardiovascular disease (30). Trans fats are often found in margarine and other processed spreads. Food manufacturers sometimes add them to packaged products, such as crackers, to help extend shelf life. Summary: Fats are grouped by the number of bonds in their carbon

chains. Aside from trans fats, most fats have beneficial or neutral effects on health. However, a high omega-6 to omega-3 ratio may cause problems.

How much fat is healthy to eat per day? The appropriate amount of fat to eat will depend on your calorie requirements for weight loss or maintenance. It'll also be based on your eating style and diet. You can use this calculator to determine your calorie needs to lose weight or maintain your weight, which is known as your daily calorie goal. Low fat diet A standard low fat diet contains about 30% " or less " of its calories from fat (31). Here are a few examples of suggested daily fat ranges for a low fat diet, based on different calorie goals: 1,500 calories: about 50 grams of fat per day

about 50 grams of fat per day 2,000 calories: about 67 grams of fat per day

about 67 grams of fat per day 2,500 calories: about 83 grams of fat per day Studies show higher fat diets, such as low carb and Mediterranean diets, offer many health benefits and may be a better choice than lower fat diets for some people. High fat, low carb or Ketogenic diet A ketogenic diet: minimizes carbs

provides a moderate amount of protein

is very high in fat The percentage of calories from fat will depend on how low your carb intake is, but it will generally be around 75% of calories (32 , 33 , 34). Here are a few examples of suggested daily fat ranges for a low-carb or ketogenic diet, based on different calorie goals: 1,500 calories: about 83â€"125 grams of fat per day.

about 83â€"125 grams of fat per day. 2,000 calories: about 111â€"167 grams of fat per day.

about 111â€"167 grams of fat per day. 2,500 calories: about 139â€"208 grams of fat per day. Moderate-Fat Mediterranean Diet The Mediterranean diet includes a wide variety of plant and animal foods such as: fish

meat

eggs

dairy

extra-virgin olive oil

fruits

vegetables

legumes

whole grains It typically provides 35â€"40% of calories from fat, including plenty of monounsaturated fat from olive oil. Here are a few examples of suggested daily fat ranges for a Mediterranean diet, based on different calorie goals: 1,500 calories: about 58â€"67 grams of fat per day

about 58â€"67 grams of fat per day 2,000 calories: about 78â€"89 grams of fat per day

about 78â€”89 grams of fat per day 2,500 calories: about 97â€”111 grams of fat per day Summary: How much fat you eat per day should be based on the type of diet you follow and your calorie needs for weight loss or maintenance.

Foods high in healthy fat Regardless of the type of diet you follow, itâ€™s important to get a balance of different types of healthy fats every day. Fortunately, many delicious foods can provide the fat you need. While most foods contain a mixture of different fats, some are especially high in certain types. Below are examples of foods rich in different types of healthy fats. Monounsaturated fat Monounsaturated fats are found in most plant and animal foods, but some foods are especially rich in them. These include: olive oil

olives

macadamia nuts

almonds

pecans

hazelnuts

pistachios

peanuts

avocados

pork

beef All of these foods also contain omega-6 polyunsaturated fats. Polyunsaturated fat Omega-6 fats are present in most plant and animal foods, including those mentioned above. However, getting adequate omega-3 fats takes a little more work. Foods rich in omega-3s include: salmon

sardines

herring

mackerel

anchovies

chia seeds

flaxseeds

walnuts It's worth noting that plant foods, such as flax, contain alpha-linolenic acid (ALA). This can convert to eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), which may have health benefits. However, the conversion rate of ALA to the omega-3s EPA and DHA is poor (35). Saturated fat Healthy foods that are high in saturated fat include: coconut oil

palm oil

whole-milk dairy, such as full-fat yogurt

mascarpone cheese

cheddar cheese

lamb meat Summary: Choose a variety of healthy foods that provide fats from

each of the different groups every day, especially omega-3 fats.

Reference

[Medical Research Writing Made Easy - A stepwise guide for research writing](#)

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