

## Go good fat! Not no fat

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### Abstract

*Fat is an important part of our diet; it is one of the nutrients that make up the foods we eat. Fat is a nutrient. It is crucial for normal body function and without it we could not live. Not only does fat supply us with energy, it also makes it possible for other nutrients to do their jobs. Fats, which consist of a wide group of compounds, are usually soluble in organic solvents and insoluble in water. Our bodies require small amounts of 'good fat' to function and help prevent disease. The wrong type of fat can cause serious health complaints. There are different forms of fat and they function in different ways, like provide energy, storage of energy on body, provide protection of soft organs, to regulate body temperature, save protein sources of fat soluble vitamins. Unsaturated fats are generally considered better for us than saturated fats.*

**Keywords:** Fat, Good fat, Bad fat, Saturated fat, Unsaturated fat, Polyunsaturated fat, Body health, Monosaturated Fat, Omega 3 fatty acid, cholesterol, Trans fat, triesters etc.

### Introduction

Fat is an essential part of our diet and nutrition, we cannot live without it. Fat naturally present in many foods. Chemically, Fats are usually known as triesters of glycerol and fatty acids (triesters = one of three ester chemical groups). This fat is often referred to as invisible fat. Examples of foods containing appreciable quantities of invisible fat include meat, poultry, fish, dairy products, eggs, nuts and seeds. Visible fats made from these products. Fats play a variety of roles in food preparation and Nutrition. Fat is one of the richest sources for energy. One gram of fat equals to nine kilocalories of energy. They are mixture of lipids and fat soluble vitamins. Although it is absolutely necessary to have fat in our diet, too much of it can affect your health. Our bodies require small amounts of 'good fat' to function and help prevent disease. However, a lot of modern diets contain far more fat than the body needs. Too much fat, especially too much of the wrong type of fat, can cause serious health complaints including obesity, higher blood pressure and cholesterol levels, which in turn lead to a greater risk of heart disease. There are different forms of fat and they function in different ways, like provide energy, storage of energy on body, provide protection of soft organs, to regulate body temperature, save protein sources of fat soluble vitamins, help in the absorption of vitamins, to decrease the digestive enzymes in stomach, to keep skin smooth lustrous and healthy, act as lubricant in

gastrointestinal tract, synthesis of phospholipids etc. The main types of fat are saturated, polyunsaturated, monounsaturated and Trans fat. Some of these forms are good and some are bad. Usually, the bad fat is saturated fat because they tend to raise blood cholesterol level especially the LDL cholesterol which will lead to an increase of heart diseases but saturated fats are also needed for proper alignment of growth factors in cells and organs.

### Fear of Fat?

We urban people are obsessed with low- and no-fat foods. We're offered with supposedly guilt-free options: fat-free milk, cheese, and yoghurt, low-fat cookies, cakes, and frozen dinners. Low fat promises have not been delivered and obesity rates are high. The reason for that is simple: not all fat is bad. In fact, our body *needs* fat. Healthy or "good" fats are essential to help manage your moods, stay on top of your mental game, fight fatigue, and even control your weight. Since the human brain is nearly 60 percent fats, healthy fats are also vital for proper brain development and function.

### Types of Fat

**Saturated** and **unsaturated** are the two main types of fat. Unsaturated fats are generally considered better for us than saturated fats. The reason that unsaturated fats are better is down to the molecular structure of fat.

Saturated fat molecules form regular shapes that clump together easily; unsaturated fat molecules however, form irregular shapes that cannot clump together so easily. Saturated fat is therefore more likely to stick to the sides of arteries and allow other saturated fat molecules to build up; this can gradually clog the arteries leading to higher blood pressure and making it more difficult for the heart to pump oxygen rich blood around the body. Fat are not soluble in water and unless this problem is addressed – usually through change in diet and increased exercise - it can lead to serious health problems such as coronary heart disease. Generally saturated fats come from animal sources ie. meat, dairy, eggs etc and Unsaturated fats come from vegetable sources i.e. sunflower oil, olive oil, and soya oil, oily fish i.e. salmon, trout, mackerel etc. and soft margarines. Vegetable sources do contain saturated fats but usually in low amounts; take oats for example, which contain almost 9% fat, made up of the three main types, saturated, monounsaturated and polyunsaturated. Monounsaturated and Polyunsaturated are the two main types of unsaturated fat – they are unsaturated as they are missing one (mono) or more (poly) hydrogen atoms in their chemical makeup – this is what gives them irregular shapes. Saturated fats are totally *saturated*, each molecule of fat is covered in hydrogen atoms. Saturated fats increase health risks if you consume too much over a long period of time. A large intake of saturated fats will eventually raise cholesterol levels, which can lead to cardiovascular disease and possibly stroke.

Monounsaturated fat molecules are not saturated with hydrogen atoms - each fat molecule has only the space for one hydrogen atom. Health experts say the impact on health of monounsaturated fats is neutral - they are neither good nor bad for you. Many health professionals, however, do say that they reduce a person's risk of developing heart disease. The Mediterranean diet is full of monounsaturated fats.

There are a number of spaces around each polyunsaturated fat molecule - they are not saturated with hydrogen atoms. Polyunsaturated fat is good for our health, especially those from fish, known as the Omega-3 polyunsaturated fatty acids. Omega-3 polyunsaturated fatty acids protect us from heart disease as they lower blood cholesterol levels. Health care professionals say Omega-3 polyunsaturated fatty acids may also help reduce the symptoms experienced by people who suffer from arthritis, joint problems in general, and some skin diseases.

### Monounsaturated fat

- 1) Avocados
- 2) Olives
- 3) Nuts (almonds, peanuts, macadamia nuts, hazelnuts, pecans, cashews)
- 4) Natural peanut butter (containing just peanuts and salt)

### Polyunsaturated fat

- 1) Walnuts.
- 2) Sunflower, sesame and pumpkin seeds.
- 3) Flax seed.
- 4) Fatty fish (salmon, tuna, mackerel, herring, trout, sardines).
- 5) Soyamilk and tofu.

### Cholesterol

Cholesterol is a type of fat found in the blood. Nearly all the cholesterol in the body is produced by the liver, very little is found in foods although seafood, liver, kidney and eggs do contain some cholesterol. Cholesterol is vital in the body, not only does it play a role in how all cells work but it is also a 'building block' for other essential chemicals that the body produces. Cholesterol is carried around the body in the bloodstream combined with proteins, these are called lipoproteins. There are two main types of lipoprotein that are used to measure cholesterol levels in the blood. LDL (low-density lipoprotein) and HDL (high density lipoprotein). LDL is often called '**bad**' cholesterol HDL is considered '**good**' cholesterol. HDL is 'good' as it can remove extra bad cholesterol from the bloodstream. Blood cholesterol is measured by looking at the total LDL, HDL and other fats in the blood. People with high cholesterol levels are more likely to develop health problems – the risks are increased further for people who also smoke, have high blood pressure, are physically inactive and unfit, are overweight or obese or suffer from diabetes. A common cause of high cholesterol levels in modern society is the consumption of too much saturated fat.

### Hydrogenated or Trans fats

Trans fats are synthetically made, they do not naturally occur. Trans fats are created in an industrial process that adds hydrogen to liquid vegetable oils to make them more solid. They are also known as *partially hydrogenated oils*. Trans fats might be monounsaturated or polyunsaturated, they are never saturated. A trans fat is a type of unsaturated fat with trans-isomer fatty acid(s). Therefore, trans fats have fewer hydrogen atoms than saturated fats.

Trans fats are not essential for human life and they most certainly do not promote good health. Consuming trans fats increases your LDL cholesterol level (bad cholesterol) and lowers levels of HDL cholesterol (good cholesterol), which in turn raises your risk of developing coronary heart disease and stroke. Experts say that trans fats from partially hydrogenated oils are worse for your health than naturally occurring oils. Trans fats have become popular because food companies find them easy to use and cheap to produce. They also last a long time and can give food a nice taste. As Trans fats can be used many times in commercial friers they are commonly

used in fast food outlets and restaurants. Transfats commonly found in Fried foods, such as French fries, doughnuts, pies, pastries, biscuits, pizza dough, cookies, crackers and many other baked foods.

**Fat is foe**

Due to its high calorific value, it is easy to consume too many calories when eating fatty foods. Unused calories can be stored by the body as fat and will cause weight gain. Our bodies store fat for lean times and has evolved to cope with seasonal availability of food – storing fat when food is plentiful and burning it off when food is scarce. In the modern world, and for most people, food is plentiful all year round – our bodies store fat but never burn it off, as fat accumulates we become overweight. See our page dieting for Weight Loss for more information on maintaining a healthy body weight. Fat can cushion and protect our internal organs; however too much cushioning means more bulk and weight which in turn increases the workload of the heart and other organs. Your body (the liver) produces cholesterol which is vital to a healthy body and a building block for other essential chemicals that the body produces. Cholesterol is a waxy substance that, in low levels, flows freely around your body in the blood. Higher levels of cholesterol mean a higher risk of developing coronary heart disease. See below for more on cholesterol. Some fats are worse than others. Saturated fats are worse for you than unsaturated fats – this is to do with their chemical structure and how the body processes them. Trans or hydrogenated fats – which are almost exclusively manufactured and are used in many processed foods are particularly bad and are linked to an increased risk of high cholesterol levels and coronary heart disease.

**Recommended Dietary allowances of Women/Men  
Calories intake**

Age	Calories (kcal) Women	Calories (kcal) Men
11-14	2200	2500
15-18	2200	3000
19-24	2200	2900
25-50	2200	2900
51	1900	3000
Pregnant	300	Nil
Lactating first 6 months	500	Nil
Lactating second 6 months	500	Nil

**Fat is friend**

Like protein, but a not carbohydrate, fat is essential to human life, we all needing fat in our diets .Fat is a concentrated source of energy – 1 gram of fat contains 9 calories, much more than a gram of protein or carbohydrate which both contain 4 calories per gram. The body can pull on its fat reserves during lean time .Fat enables our bodies to process vitamins A, D, E and K,

which are all fat soluble and vital to good health. (More on Vitamins) Like amino acids in protein, fat contains essential fatty acids (EFA’s). These EFA’s are, as their name suggests, essential to good health and likely to help the heart and immune system. The human body cannot make its own (synthesize) these EFA’s and therefore has to get them from consumption of fat. Some fatty acids – like omega 3 – may provide other health benefits such as complimenting the cognitive processes of the brain. Fat makes food taste better. Hot buttered crumpets, double cream on trifle, gravy made from dripping! Although we need fat we only need small quantities of the right kinds of fat to stay healthy. We all know that too much fat and consuming the wrong kind of fat can be detrimental to our health.

**How to be healthy with fats**

Always avoid Trans fats, hydrogenated fats and saturated fats in your diet – prefer foods with unsaturated fats. If you are overweight then you should reduce your total fat intake – try to replace fatty foods with fresh fruit and vegetables. Increase your consumption of oily fish – omega 3 fats are known to provide many health benefits and most people do not consume enough - salmon, trout, fresh tuna and mackerel are all good. These good fats can improve blood cholesterol levels, lower your risk of heart disease, and benefit insulin levels and blood sugar. Omega-3 fats are particularly beneficial for your brain and mood. The best sources are fish, nuts, and seeds.

**Control unsaturated oils**

There are basically two types of unsaturated vegetable oils:

1. Traditional, cold-pressed oils such as extra virgin olive oil, peanut oil, and sesame oil that are rich in monounsaturated fats and made without the use of chemicals or heat.
2. Modern processed oils such as soybean oil, sunflower oil, corn oil, canola oil, cottonseed oil, and safflower oil which are industrially manufactured.

Manufactured vegetable oils shouldn’t be included as “good” fats because the damaging industrial processing can transform the fatty acids into dangerous trans fat.

**Olive oil fraud**-A lot of imported "olive oil" is actually a combination of olive oil and cheaper, refined oil. To protect yourself-Opt for olive oil with the California Olive Oil Council (COOC) logo on a bottle. For olive oils from France: look for the "AOC" logo, from Italy: the "DOP" logo, and from Spain: the "DO" seal.

**When Good fat goes Bad?**

A good fat can become bad if heat, light, or oxygen damages it.

- Polyunsaturated oils must be refrigerated.
- Cooking at high heat with some unsaturated oils can damage the fat.
- Discard oils, seeds, or nuts if they smell or taste bitter.

### Eat omega-3s often

Omega-3 fatty acids, types of polyunsaturated fat, can:

- Prevent and reduce symptoms of depression, ADHD, and bipolar disorder
- Protect against memory loss and dementia
- Reduce the risk of heart disease, stroke, and cancer
- Ease arthritis, joint pain, and inflammatory skin conditions
- Support a healthy pregnancy
- Help you battle fatigue, sharpen your memory, and balance your mood

*Focus on fat from real food, not processed food, There are many opinions and few absolutes in the nutrition world. For most of us, it's our overall dietary pattern that is more important than specific foods. What we do know for sure is that the typical Western diet—filled with fried, processed food, packaged meals and sugary snacks—is leading to higher rates of obesity and illness. Eating less processed food and more “real,” natural food—fresh from the ground, the ocean, or small, local farms—is a sound place to start for all your food choices, including healthy fats.*

### Prefer healthier saturated fat

- Avoid saturated fat from processed meats, packaged meals, and takeout food.
- Don't replace high quality sources of saturated fat with refined sugary snacks.
- Avoid red meat (beef, pork, or lamb) and add chicken, eggs, fish, and vegetarian sources of protein.
- Eat red meat, with "organic" and “grass-fed” label.
- Roast, grill, or slow cook meat and poultry instead of frying.
- Enjoy full-fat dairy in moderation and choose organic or raw milk, cheese, butter, and yoghurt when possible.
- Avoid snack foods such as corn or potato chips.

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