

Advantages and Disadvantages of Various Dietary Fat Amounts and Types

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Description

In nutrition, biology, and chemistry, the term fat typically refers to any ester of fatty acids or mixture of such compounds, most commonly those found in food or living things. Triglycerides, also known as triple esters of glycerol, are the primary components of vegetable oils and animal fatty tissue; or even more specifically, triglycerides that are solid or semisolid at room temperature, excluding oils. In this sense, in addition to the triglycerides, the term would include several other types of compounds like mono- and diglycerides, phospholipids such as lecithin, sterols such as cholesterol, waxes such as beeswax and free fatty acids, which are typically present in human diet in smaller amounts.

Aroma Ingredients and Vitamins that are Not Soluble in Water

Fats are one of the three main macronutrient groups in human diet, along with carbohydrates and proteins, and the human body can produce the fat it needs from other food ingredients, with the exception of a few essential fatty acids that must be included in the diet. They are a major and dense source of food energy for many animals and play important structural and metabolic functions in most living things, including energy storage, waterproofing and thermal insulation. Some flavor and aroma ingredients and vitamins that are not soluble in water are also carried by dietary fats. Fats are used as both energy sources and storage for energy that isn't needed right away in humans or many other animals. When burned or metabolized, a gram of fat produces approximately 9 food calories (37 kJ = 8.8 kcal). Fats are also important sources of essential fatty acids, which are required in the diet. Vitamins A, D, E and K can only be digested, absorbed, and transported in conjunction with fats because they are fat-soluble. Fats are essential for keeping skin and hair healthy, protecting organs from shock, regulating body temperature, and promoting healthy cell function. Additionally, fat protects against a variety of illnesses. The body can effectively dilute or at least maintain equilibrium of a particular substance when it reaches unsafe levels in the bloodstream by storing it in new fat tissue. This helps to protect vital organs until the offending substances can be metabolized or removed from the body through excretion, urination, accidental or intentional bloodletting, sebum excretion, and hair growth. Adipose tissue,

also known as fatty tissue, is the body's way of storing metabolic energy for a long time in animal's adipocytes, or fat cells, store fat that comes from the diet and the metabolism in the liver. These cells may break down the fat they have stored in response to a lack of energy in order to supply the blood with glycerol and fatty acids. Several hormones, including insulin, glucagon, and epinephrine, control these metabolic processes. The hormone leptin is also produced by adipose tissue. The metabolic profile of the tissue is determined by its location: Subcutaneous fat is beneath the skin and includes fat in the abdominal area that is located beneath the skin but above the wall of the abdominal muscle. Visceral fat is located within the abdominal wall (*i.e.*, beneath the wall of the abdominal muscle). Recently, it was discovered that visceral fat is a significant producer of hormones and other signaling chemicals, many of which are involved in inflammatory tissue responses. Resistin, which has been linked to Type 2 diabetes, obesity, and insulin resistance, is one of these. This last result is currently up for debate, and reputable studies support each side of the argument. The ester bond is where the pancreatic lipase hydrolyzes and "releases" the fatty acid. The duodenum cannot absorb lipids when they are in the form of triglycerides. After the triglycerides have been broken down, the duodenum absorbs fatty acids, monoglycerides (one glycerol and one fatty acid) and some diglycerides.

Disadvantages of Various Dietary Fat

In a process known as lipolysis, triglycerides are broken down in the intestine into monoacylglycerol and free fatty acids following the secretion of lipases and bile. After that, they are transferred to the intestinal absorptive enterocyte cells. In the enterocytes, the triglycerides are rebuilt from their fragments and packaged into chylomicrons with cholesterol and proteins. Before being mixed into the blood, these are excreted from the cells, collected by the lymphatic system, and then transported to the large vessels close to the heart. The chylomicrons can be captured by a variety of tissues, releasing triglycerides that can be used as an energy source. Triglycerides can be made and stored by liver cells. The hormone glucagon causes hormone-sensitive lipase to break down triglycerides and release free fatty acids when the body needs them for energy. The glycerol component of triglycerides can be converted into glucose *via* gluconeogenesis by conversion into dihydroxyacetone phosphate and then into glyceraldehyde 3-phosphate, which

serves as brain fuel when it is broken down. The brain cannot use fatty acids as an energy source unless they are converted to a ketone. Because of this, fat cells may also be broken down if the needs of the brain ever outweigh those of the body. Triglycerides are unable to easily pass through cell membranes. Triglycerides must be broken down into free fatty acids and glycerol by lipoprotein lipases, special enzymes found on the walls of blood vessels. Cells can then absorb fatty acids through the Fatty Acid Transporter (FAT). Diglycerides and

monoglycerides are two other less common types of fat, and esterification only affects two or one of the OH groups in glycerol. Glycerol may be substituted for by other alcohols like cetyl alcohol, which is predominant in spermaceti. Phosphoric acid or a monoester of phosphoric acid takes the place of one of the fatty acids in phospholipids. Numerous studies have been conducted on the advantages and disadvantages of various dietary fat amounts and types, but these issues remain highly contentious.