

Fat — as a macro nutrient 1.1.2

Key Words

Fat: a macro nutrient supplying the body with a concentrated energy source

Oils: Fats liquid at room temperature e.g. sunflower oil

Solid fats: Fats solid at room temperature e.g. butter + lard

Visible fat: Fat in food seen easily e.g. fat on bacon

Invisible fat: Fat in food that cannot easily be seen e.g. butter in cooked pastry, oils in fried foods i.e. doughnuts and crisps

Fatty acid: part of a fat molecule

Triglyceride: fat molecule made up of 1 part glycerol + 3 fatty acids

What is it and what

is it made of? - a macronutrient found in animal and plant foods. Fat is solid at room (ambient) temperature/oil is liquid. Exactly the same energy value: 9kcal/37kJ per gram. Fats and oils are made up of triglycerides which look like this:



Types of fatty acids:

Monounsaturated fatty acids: fatty acid found mainly in solid fats and liquid oils

Saturated fatty acids: fatty acids found mainly in solid fats e.g. butter, lard, suet, block margarine, ghee, fat on meat, palm oil, coconut and chocolate. Saturated fatty acids can increase cholesterol level in the blood. Too much cholesterol can lead to thickening of the artery walls and Coronary Heart disease

Unsaturated fatty acids: fatty acids found mainly in liquid plant oils e.g. olive, rapeseed, sunflower, + corn; oily fish, avocado pears, nuts, seeds + some veg. fat spreads. These can help to reduce cholesterol in the blood

Essential fatty acids: when we eat food, our body breaks up (digests) the fat molecules they contain to make new fatty acids and fat molecules for our body to use. The two essential fatty acids needed by adults and children that cannot be made by the body and have to be eaten in the form of food are found in oily fish, plant and seed oils, eggs and fresh meat.

Functions in the body. (what it does in the body):

- Gives energy which is stored in the body. It is stored in the adipose tissue under the skin
- Insulates to keep the body warm because the adipose tissue insulates the body from the cold and protects bones and kidneys from damage providing a cushion layer
- Provide fat soluble vitamins A, D, E and K.

Effects of excess: Fat is energy dense – 9kcal per gram.

Eating too much can lead to weight gain.

Could contribute to developing cardio vascular disease (CVD) and coronary heart disease (CHD)

Effects of deficiency

- If carbohydrate intake is also reduced, body weight will be lost because the body uses its energy store from its fat cells + it will not be replaced
- The body will chill quickly because there is not enough fat to insulate
- Fat deficiency in babies and children could affect normal growth
- The body will easily bruise as there is not a thick enough cushion of fat for protection
- Body will not receive enough vitamins A, D, E and K as these are found in foods containing fat

Sources of solid animal fats: Visible fat in meat, cheese, butter, lard, suet

Invisible: cheese; butter in cakes, pastries and desserts.

Meat products e.g. sausages + burgers. Marbling in meat. Processed meals and take away.

Sources of solid plant fats: Visible: white vegetable fats, veg. fat spreads, (margarines), coconut cream, cocoa butter

Invisible: Processed foods. Chocolate + pastries, cakes, biscuits, doughnuts and breads made with hydrogenated white veg. spreads. oils in tuna, block vegetable fat, ghee, plant oils e.g. palm, olive and sunflower

Sources of liquid animal oils: Visible: animal oils, cod liver oil, oily fish, e.g. mackerel + sardines

Invisible: milk, cream, egg yolk, oily fish

Sources of liquid plant oils: Visible: plant oils, nuts and seed oils (e.g. sunflower, sesame, rapeseed, corn, olive, almond)

Invisible: many processed foods, ready meals + take away foods

Amount needed for different life stages

The amount needed is calculated as a percentage of our total daily energy intake. The recommended healthy adult amount is:

Type of fat	% of food energy every day
Total fat of which:	No more than 35%
Saturated fatty acids	11%
Monounsaturated fatty acids	13%
Polysaturated fatty acids	6.5%
Trans fatty acids	No more than 2%

