

What are fats and fatty acids?

Oils and fats can be clearly visible in foods (e.g. oils, butter, margarine and vegetable fat spreads, visible fat on meat), but they can also be blended into foods (e.g. fat in meat, biscuits, cake) in which case they are referred to as 'hidden fats'.

Fats are either of vegetable origin (e.g. vegetable oils, margarine, pesto) or animal origin (e.g. dairy products), and are usually either solid (e.g. lard) or soft/liquid (e.g. oils, margarine and vegetable fat spreads). From a health and nutritional perspective, the key difference between them is what type of fatty acids they contain. Whilst the terms fat and fatty acids are often used synonymously, fatty acids are actually just one component of fat.

Knowing about fats and fatty acids, and understanding food labelling will help people achieve a healthy balanced diet



Facts on Fats

Fatty acids come from a variety of sources.

The main food sources rich in certain types of fatty acids include:

Fatty acid type	Some sources
Polyunsaturated (PUFA) - essential Omega-3	Rapeseed, soybean and linseed oils, walnuts, soft/liquid margarine and vegetable fat spreads
- Long-chain Omega-3	Mackerel, herring, tuna, salmon, trout, sardines, other sea food
- essential Omega-6	Sunflower, soy oil, vegetables, nuts, soft/liquid margarine and vegetable fat spreads
Monounsaturated (MUFA) - Omega-9	Olives, rapeseed, sunflowers, nuts (pistachios, almonds, hazelnuts, macadamia, cashew, pecan, peanuts), avocado, soft/liquid margarines and fat spreads
Saturated (SAFA)	Full fat milk, cheese, butter, and yoghurt, fatty meat, pies, pastries, lard, dripping, hard margarines, coconut and palm oil
Trans fatty acid (TFA)	Beef, sheep, milk, cheese, butter, cakes and pastries

Trans fatty acids are formed by partial hydrogenation of fats. This occurs in the rumen of cattle and sheep or in the industrial processing of fat. The proportion of trans fatty acids from ruminant sources is generally greater than that from industrial sources in the average diet in Europe.

Mainly due to oils and margarines manufacturers' on-going efforts on reformulation, trans fatty acids are no longer a public health concern in Europe. At an individual level however, achieving a low total dietary intake of trans fatty acid is still important.

Why do we need fats in our diet?

Fats are part of a normal, balanced, healthy diet and the body needs them for a variety of reasons including:

Fats provide energy to the body i.e. 1g fat provides 9 kcal, compared with 4 kcal for 1g carbohydrates and proteins. According to nutritional recommendations, fats should represent about one-third of our total energy (calorie) intake.

Fats provide the essential fatty acids (i.e. from omega-6 and omega-3 families) which we need to eat because the body cannot produce them.

Vitamin absorption – Fat in our diet health absorption of vitamins A, D, E and K. As margarines, vegetable fat spreads and oils are consumed by a sizeable population, and in fairly consistent daily amounts, these products are an important contributor to the recommended daily intake of these vitamins.

Cholesterol and heart health – Unsaturated fatty acids (mono- and poly-) have a beneficial effect on people's cholesterol profile, and consequently should form the largest proportion (at least two-thirds) of fat intake. Saturated fatty acids can increase the levels of the LDL (low density lipoprotein) cholesterol. Currently, the majority of people in Europe eat too much saturated fat.

Intake of trans fatty acids not only raises the level of LDL, but also lowers the levels of good, protective HDL (high density lipoproteins) cholesterol. Intake of trans fatty acids should be kept as low as possible.

Up to 30% of energy (calories) in a person's daily diet is derived from fat, two-thirds of which should be from unsaturated and essential fatty acids^{1,2}



Facts on Fats

Fatty acid composition	Polyunsaturated	Monounsaturated	Saturated
Rapeseed oil	32 %	62 %	6 %
Sunflower oil	63 %	26 %	11 %
Olive oil	11 %	72 %	17 %
Soybean oil	61 %	24 %	15 %
Corn oil	59 %	28 %	13 %
Palm oil	10 %	39 %	51 %
Butter	3 %	31 %	66 %
Liquid and vegetable fat spread*	30 %	60 %	10 %
Soft margarine*	50 %	30 %	20 %

(*) typical composition of high quality margarines

Figures based on average market value. There may be variability based on composition of products, geography, etc...

Role of fats in foods

Whilst the main focus of fats in our diets is health and nutrition, they are also an important ingredient in the manufacture and taste of many food products. Fats contribute to the property of foods, including aeration (e.g. ice cream), moisture retention (e.g. cake), glossy appearance (e.g. chocolate) and texture (e.g. margarine).

They also help enhance flavour, and with constantly improving technologies, fats with healthier fatty acid composition can be incorporated into food products without loss of texture or taste.



FEDIOL is the European Federation for Vegetable Oil and Proteinmeal industries.
www.fediol.eu



The European Margarine Association

IMACE is the International Margarine Association of the Countries of Europe.
www.imace.org

Both organisations are committed to giving consumers choice and improving consumer's health by reducing the intake of saturated fats and trans-fats and replacing them with unsaturated and essential fats, using constantly improving technologies to produce better products.

For this reason they support the recommendations of the **Food and Agricultural Organization of the United Nations (FAO)** and **World Health Organization (WHO)** Report on Fats and Oils in Human Nutrition.

Summarised as:

- Up to **30-35%** of the energy in a consumer's total diet should come from fats. Two-thirds should be good and essential fats
- **6-11%** of the energy in a consumer's total diet should come from polyunsaturated fats
- Less than **10%** of the energy in a consumer's total diet should come from saturated fats, and their intake of trans-fatty acids should be reduced

References

1. www.fao.org/docrep/T4660t/t4660t02.htm
Accessed: 22.10.2008
2. www.who.int/nutrition/topics/5_population_nutrient/en/index12.html
Accessed: 22.10.2008
3. Derived from www.iseo.org/foodfatsoils2006.pdf
Accessed: 29.10.2008
4. <http://www.fao.org/docrep/013/i1953e/i1953e00.pdf>
Accessed: 05.01.2012

For further information:
www.eufic.org
www.factsonfats.nl
www.thefatpanel.org.uk



Facts on Fats

Your guide to understanding the role of fats in human health and nutrition

