

## THE FATS OF LIFE

Fat is good for you! Eating the right kind of fat is absolutely vital for optimal health. Essential fats reduce the risk of cancer, heart disease, allergies, arthritis, eczema, depression, fatigue, infections, PMT — the list of symptoms and diseases associated with deficiency is growing every year. If you are fat-phobic you are depriving yourself of essential health-giving nutrients and increasing your risk of poor health. The same is true if the fat you eat is **hard** – this means fat from dairy products, meat and most margarines.

## FAT FIGURES

It is considered optimum to consume no more than 20% of your total calories in the form of fat. The current average in Britain is above 40%. Inhabitants of countries that have a low incidence of fat-related diseases, like Japan, Thailand and the Philippines, consume only about 25% of their total calorie intake from fat. For example, Japanese people eat on average 40 grams of fat a day, whereas British people eat 142 grams.

Saturated fat and monounsaturated fat are not true nutrients: you do not need them, although they can be used by the body to make energy. But **polyunsaturated** fats or oils are essential.

Almost all foods that contain fat have a balance of all three. A piece of meat will contain mainly saturated and monounsaturated fat with little polyunsaturated fat. Olive oil has mainly monounsaturated fat. Sunflower seed oil has mainly polyunsaturated fat.

Most authorities now agree that no more than 1/3<sup>rd</sup> of our total fat intake should be saturated (hard) fat, and at least 1/3<sup>rd</sup> should be polyunsaturated oils providing the two essential fats: the linoleic acid family, known as Omega 6, and the alpha-linolenic acid family known as Omega 3.

The ideal balance between these two is about twice as much Omega 6 as Omega 3. So an ideal 'fat profile', based on fat forming no more than 20% of our total calorie intake, might consist of

- 4% Omega 6
- 3% Omega 3
- 7% monounsaturated fat
- 6 % saturated fat

Most people are deficient in both Omega 6 and Omega 3 fats. In addition, a high intake of saturated fats and damaged polyunsaturated fats, known as trans-fats, stop the body making good use of the small quantity of essential fat that the average person eats in a day.

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## THE OMEGA 6 FAT FAMILY

The grandmother of the **Omega 6 fat** family is **linoleic acid**, which is converted by the body into **gamma-linolenic acid (GLA)**. Evening primrose oil and borage oil are the richest sources of GLA, and if you take these in supplement form you need less overall oil to obtain enough Omega 6 fats. The ideal intake is around 150mg of GLA a day, equivalent to 1500mg of evening primrose oil or 750mg of high-potency borage oil – a capsule a day.

**GLA** is subsequently converted into **DGLA (di-homo gamma linolenic acid)** and from there into **prostaglandins**, which are extremely active hormone-like substances. The particular kinds made from these Omega 6 oils are called series 1 prostaglandins. They:

- keep the blood thin, which prevents clots and blockages,
- relax blood vessels,
- lower blood pressure,
- help to maintain the water balance in the body,
- decrease inflammation and pain,
- improve nerve and immune function and
- help insulin to work, which is good for blood sugar balance.

And this is only the beginning. Every year more and more health-promoting functions of prostaglandins are being discovered. Prostaglandins themselves cannot be supplemented, as they are short-lived; we rely instead on a good intake of their source, Omega 6 fats.

This family of fats comes exclusively from seeds and their oils. The best are hemp, pumpkin, sunflower, safflower, sesame, corn, walnut, soya bean and wheatgerm oil. About half of the fats in these oils comes from the Omega 6 family, mainly as linoleic acid. An optimal intake would be one or two tablespoons of oil a day, or one or two tablespoons of ground seeds.

## OMEGA 6 deficiency signs

<input type="checkbox"/>	Do you have high blood pressure?
<input type="checkbox"/>	Do you suffer from PMT or breast pain?
<input type="checkbox"/>	Do you suffer from eczema or dry skin?
<input type="checkbox"/>	Do you suffer from dry eyes?
<input type="checkbox"/>	Do you have an inflammatory health problem, like arthritis?
<input type="checkbox"/>	Do you have difficulty losing weight?
<input type="checkbox"/>	Do you have a blood sugar problem or diabetes?
<input type="checkbox"/>	Do you drink alcohol every day?
<input type="checkbox"/>	Do you have any mental health problems?
<input type="checkbox"/>	Do you suffer from excessive thirst?

How did you score? Five or more 'yes' answers indicate that you may be deficient in Omega 6 fats. Check your diet carefully for the foods listed below .....[in the following table.](#)

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## THE OMEGA 3 FAT FAMILY

The modern diet is likely to be more deficient in Omega 3 fats than in Omega 6. This is because the grandmother of the Omega 3 family, **alpha-linolenic acid**, and her metabolically active grandchildren **EPA (eicosapentaenoic acid) & DHA (docosahexaenoic acid)** from which series 3 prostaglandins are made, are more unsaturated and more prone to damage in cooking and food processing.

As these fats get converted in the body to more 'active' substances they become more unsaturated, and generally the word used for them gets longer:

- **oleic acid:** 1 degree of unsaturation
- **linoleic:** 2 degrees of unsaturation
- **linolenic:** 3 degrees of unsaturation
- **eicosapentaenoic:** 5 degrees of unsaturation

These prostaglandins are essential for proper brain function which affects vision, learning ability, co-ordination and mood. Like Series 1 they reduce the stickiness of the blood, as well as controlling blood cholesterol and fat levels, improving immune function and metabolism, reducing inflammation and maintaining water balance.

The best seed oils for Omega 3 fats are flax (also known as linseed), hemp and pumpkin. In much the same way as evening primrose oil bypasses the first 'conversion' stage of linoleic acid, if you eat carnivorous fish such as mackerel, herring, tuna and salmon - or their oils - you can bypass the first two conversion stages of alpha-linolenic acid and go straight to EPA and DHA. This is why fish-eaters like the Japanese have 3 times more Omega 3 fats in their body than the average American. Vegans, who eat more seeds and nuts, have twice the Omega 3 fat level of the average American.

## OMEGA 3 deficiency signs

<input type="checkbox"/>	Do you have dry skin?
<input type="checkbox"/>	Do you have any inflammatory health problems?
<input type="checkbox"/>	Do you suffer from water retention?
<input type="checkbox"/>	Do you get tingling in the arms and legs?
<input type="checkbox"/>	Do you have high blood pressure?
<input type="checkbox"/>	Are you prone to infections?
<input type="checkbox"/>	Are you finding it hard(er) to lose weight?
<input type="checkbox"/>	Has your memory and learning ability declined?
<input type="checkbox"/>	Do you suffer from a lack of co-ordination or impaired vision?

How did you score? Five or more 'yes' answers indicate that you may be deficient in Omega 3 fats. Check your diet carefully for the foods listed below/in the following table.

For the strict vegans or non fish-eaters among you,

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## THE BENEFITS OF OLIVE OIL

While olive oil contains no appreciable amounts of the essential Omega 3 and Omega 6 oils, much of it is cold-pressed and unrefined. This makes it better for you than vegetable oil like the sunflower oil you can buy in the supermarket. Also, while there is a strong association between a high intake of saturated fats, mainly from meat and dairy products, and cardiovascular disease, the reverse is true of olive oil. People in Mediterranean countries, whose diet includes large quantities of olive oil, have a lower risk of cardiovascular disease. However, this may be due to a number of positive factors in their diet, including a high intake of fruit and vegetables and relatively more fish than meat. The use of cold-pressed olive oil, which contains tiny amounts of phytochemicals, also means fewer trans-fats.

## THE DANGERS OF TRANS-FATS

Refining and processing vegetable oils can change the nature of polyunsaturated oil. An example is making margarine. To turn vegetable oil into hard fat the oil goes through a process called **hydrogenation**. Although the fat is still technically polyunsaturated, the body cannot make use of it. Even worse, it blocks the body's ability to use healthy polyunsaturated oils. This kind of fat is called **trans-fat** because its nature has been changed – it is like a key that fits the body's chemical locks but will not open the door. Most margarines contain these so-called '**hydrogenated polyunsaturated oils**' and are best avoided. So too are manufactured foods that contain hydrogenated fats, so check the lists of ingredients on labels carefully.

**FRYING** (as mentioned earlier – check – was it?) is another way to damage otherwise healthy oils. The high temperature makes the oil oxidise so that, instead of being good for you, it generates harmful '**free radicals**'. (*I'll explain more fully what these are at a later session.*) Frying is therefore best avoided as such as possible, as is any form of burning or browning fat.

If you do fry, use a tiny amount of olive oil or butter because they are less prone to oxidation than top quality-quality cold-pressed vegetable oils. The latter should be kept sealed in the fridge, away from heat, light and air, and only used cold in salad dressings or instead of butter on your baked potato or vegetables.

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### The general guidelines for getting the right kind and amount of fat in your diet are:

- Eat one tablespoon of cold-pressed seed oil (sesame, sunflower, pumpkin, flax seed etc.) or one heaped tablespoon of ground seeds a day.
  - Avoid fried food, burnt or browned fat, saturated and hydrogenated fat.
  - If you do fry, use olive oil or butter.
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## THE FACTS ABOUT FAT

In dietary terms, fat has been the wicked witch of the late 20<sup>th</sup> century. Every time we grab a fatty snack, we feel guilty. Yet we are still eating too much of the wrong kinds of fat – and probably too little of the healthy types.

Here's what you need to know:

Fat is made up mainly of FATTY ACIDS and GLYCEROL, along with some other compounds – fatty acids being by far the largest component. Glycerol comprises roughly 3% of total fat energy intake. Glycerol is naturally present as a building block of fats and you do not need to be concerned about intake).

The fatty acids can be divided into three main groups:

1. saturated fatty acids,
2. polyunsaturated fatty acids,
3. monounsaturated fatty acids.

All fat-containing foods contain all three types of fatty acids, but in varying proportions. When people say, for instance, that 'butter is a saturated fat' that is not really true. Certainly the majority of the fat in butter is saturated (67%) but it also contains 25% monounsaturated fat and even a little polyunsaturated. Beef, another food people typically think of as containing saturated fat, contains virtually as much monounsaturated fat as saturated, at 43%.

To help you balance the fats in your diet the wheel chart ([opposite or below or next page](#)) gives ideal (average in the case of glycerols) percentages for each types of fat.

Currently about 39%-42% of our total daily calorie intake is in the form of fats. Fat is mainly used by the body as energy. At 9 calories per gram it provides more than twice as many calories as either carbohydrate (3.75 calories per gram) or protein (4 calories per gram). If fat surplus to energy needs is eaten, it stores itself in the body as adipose tissues (fat!). This can later be converted into energy if needed – i.e. if food intake does not match energy output (the basis of slimming diets). A small amount of fat is also needed because it 'carries' the fat-soluble vitamins A, D and E.

Polyunsaturated fats are also needed to supply essential fatty acids.

Because a high-fat diet has been strongly linked with heart disease as well as some forms of cancer, obesity and other ills, the Department of Health advises us to cut our fat down to 33% or less. Many other authorities advise going even lower, e.g. the USA and WHO (World Health Organisation) recommend between 25% -30%.

It is no good saying 'cut down on fat' because in terms of health all fats are not equal.

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## SATURATED FAT

This is the kind of fat that is usually solid at room temperature and is found in the largest quantities in animal produce such as meat, cheese, cream, milk, eggs, butter and lard, and in milk chocolate and many manufactured goods, such as pastries, cakes and biscuits.

It has been proved that a diet high in saturated fat may also be linked with other ailments and problems, including cancer and obesity. It may also predispose to nutritional imbalances – people who eat a diet high in saturates (particularly with between-meal snacking on high-fat, high-sugar items) may find their appetites satisfied without eating enough of the other foods that provide a range of nutrients.

Currently our saturated fat intake is about 15% of our total calorie intake (39.5% of fat intake) and the Department of health estimates that if we reduced our intake to 10% (i.e. cut out one-third) then the risk of coronary heart disease would be 'reduced substantially'.

## MONOUNSATURATED FAT

This type of fat is also usually liquid at room temperature but may solidify when cooled (say, in the fridge) and is found in greatest quantities in olive oil, rapeseed oil and groundnut oil, as well as in olives themselves and in many nuts and avocados. It is also present in reasonable quantities in all fats, most dairy produce, eggs, fish, meat and many other types of foods.

Monounsaturated fats were at first thought to have no effect on blood cholesterol level, but it is now known that they actually have a better overall effect than polyunsaturated fats – by not only lowering the 'bad' LDL cholesterol but by maintaining or even raising the levels of the 'good' HDL cholesterol.

There is also evidence that a diet rich in monounsaturates is linked with good health in other ways – the typical 'Mediterranean' diet is rich in these oils and is linked not only with less heart disease but also with increased longevity, lower levels of obesity and less cancers than the Northern European diet. Oils high in monounsaturates are also often rich sources of the antioxidant vitamin E.