

Chapter 5

Fat

Infamous Fat - Also Known as Lipids

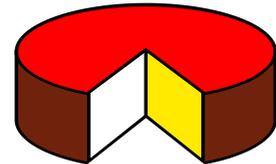
Lipids include **fats, oils** and **fat-like substances** that have a *greasy* feel. **Oil, lard, hydrogenated shortening, butter, margarine, bacon** and **salad dressings** are the most *concentrated* sources of fat.



Fat Can Be Invisible



Also, there is so-called "**invisible fat.**" It represents about three-fifths of the total fats you consume. These sources include **meats, poultry, fish, dairy products** (excluding butter), **eggs** and **baked products**. All of the fat in an egg is in the yolk. **Whole milk, cream, ice-cream** and **whole milk-cheese** have appreciable amounts of fats. **Fruit, vegetables, legumes, cereals** and **flours** are very low in fat. **Nuts**, however, have an appreciable amount of **concentrated fat** in the **nut oil**.



Classified Fat

Fats can be divided and identified as:

Simple lipids known as **triglycerides** which are esters of fatty acids and glycerol. Waxes (or wax like substances) are also esters of fatty acids and long-chain or cyclic alcohols. This group includes the esters of cholesterol, Vitamin A and Vitamin D.

Compound lipids including **phospholipids** such as **lecithin, cephalins** and **sphingomyelin**.

Derived lipids including phospholipids such as **glycerolize, sterols, carotenoids** and the **fat-soluble vitamins A, D, E** and **K**.

Fat Is A Great Source of Energy

One of the many complexities about lipids is that they digest **slowly** in the body. Thus, if you eat a meal heavy in fats, they stay in the stomach longer and you feel "full." Eat too much and you start a nice collection of fat in the **liver, metabolic system** and in various **storage points** around your body. (Usually these storage places are where you don't want fat to be stored).

Fat also is a rapid source of energy -- **but only if you work at it.**



Other Stuff You Should Know About Fat

There are two dominant forms of fat in the body known as the "**Cis**" and the "**Trans form**." Food and body-fats exist principally in the "Cis" forms. This is an important point although a little mysterious. In the manufacture of vegetable shortenings and margarines, some, but not all, of the oil bonds are **hydrogenated**. They are thus changed from their origin- "Cis form" to a "trans form." Both forms are utilized in the body. But, the Cis form **may be better utilized**.

Hydrogenation also **reduces** the **linoleic acid** content of the fat. These changes have significance in digestion and are believed to **affect the rate** and **manner** in which fat is accepted and used in the body.

The body does only one of two things with fats. It either **stores fat** or **converts fat to energy**.



Fat Storage

This storage problem is not just about large midriffs, flabby arms and enlarged buttocks. The **liver** is a prime place the body literally "**hoards**" fat. It's as though the liver wants to have enough fat just in case energy doesn't come along in the next meal.

Fatty liver is a very serious problem. Among the several fatty substances stored in the liver is one we are familiar with, called **cholesterol**. This can create problems in the liver if too much is stored. It also is a potential problem if it's released into the blood

stream. Cholesterol **must keep moving**. If it doesn't, it will begin to "cake" or "coat" the **interior walls of the blood vessels**. It will create obstructions by making the inner diameter of the blood vessel smaller and more narrow.

“Haven’t I Vacationed in the Lipotropics?”

When referring to fat, a key word to remember is **lipotropic**. This literally means "**to move the fat.**" There are certain **lipotropic substances** that **must** be present and available to prevent accumulation of fat in the liver. They include **Choline, Vitamin B-12, Betaine** and possibly **Inositol**.

Through the years, the amount of fats consumed by Americans, **day after day**, has **increased**. Less and less do we eat **cereals, breads and potatoes**. More and more we eat **ice cream, fast foods, table spreads** as well as **other fats**. This has created considerable concern in nutritional research. Research shows that a high intake of **saturated fats and cholesterol** elevates the amount of lipids in the blood. While one watches this steady **increase of fatty substances** in the blood the world also watches a steady **increase in cardiovascular disease**.



“How Much Fat is Enough?”

As you progress on your personalized program keep in mind that certain **fat soluble vitamins** essential to human health are carried in fats. When you reduce fat intake you reduce the intake of these vitamins.

Vegetable fats, such as **corn, safflower, and soybean oils**, are high in linoleic acid. Nutritionists suggest that Americans should derive no more than 20 to 30 percent of their total daily caloric intake from fats.

Where Fat Comes From

Meats - All meats contain fat. The percentage of fat will depend on the cut of meat and the grade of the meat. Prime and choice cuts of meat will contain a higher level of fat, which makes them more tender. The standard and good grades are the lower grades. They lack the tenderness associated with the high fat



levels and are lower in fat. Not all fowl is low in fat. Duck and goose have a relatively high level. The lowest fat meats are **fish, turkey** and **chicken** in that order.

Dairy Products - All dairy products contain **fat** and **cholesterol**. However, current studies show that it is healthier to consume the "natural" products over most of the artificially produced dairy products. The heat processing of products that contain fats tends to produce a harmful fatty substance called a "trans-acid". It is best, however, to purchase dairy products that are "low-fat" or "non-fat".

Cooking Oils - There is a large variety of cooking oils sold in the United States. Since most are polyunsaturated they do not raise cholesterol levels nor assist the body in making cholesterol.

Solid Shortenings - Many now have a process that allows them to have a higher percentage of polyunsaturated fat than saturated fat.

Fruits and Vegetables - Most contain some fat but in very low concentrations. Avocados are an exception and are higher in saturated fat than any other vegetable..

Nuts - Most nuts are moderately high in fat content. Walnuts contain the highest levels of polyunsaturated fats while macadamias are one of the highest overall fat nut. Some of the nuts such as cashews and coconut have more saturated fat than polyunsaturated.