

A LINE ON LIFE

4/10/85, Updated 12/26/01

"Good" Fat and "Bad" Fat

David A. Gershaw, Ph.D.

In another article, we talked about how high levels of cholesterol in the blood increase risks of heart attacks. If cholesterol is carried in the blood by **LDLs** — low-density lipoproteins — this increases the risk. However, **HDLs** — high-density lipoproteins — seem to clear out cholesterol from clogged arteries to reduce the risks.

If this is so, how can we *increase* the proportion of HDLs in our blood? Since cholesterol is produced from fat in our diet, *reducing fat intake* is one way. However, this is not the complete story. **Saturated fats** cause the liver to produce more LDLs and increase blood cholesterol. On the other hand, **polyunsaturated fats** favor cholesterol transport by HDLs and reduce the proportion carried by LDLs. This reduces blood cholesterol and reduces the risks of heart attack.

As a rule — with only rare exceptions — **animal fats** are highly saturated, while **vegetable fats** — with the exception of coconut and palm "oils" — have high proportions of polyunsaturated fats. In addition, animal fats contain cholesterol, but *no* cholesterol is naturally present in any vegetable foods.

The more saturated the fat is, the harder or firmer it is at room temperature. Thus butter fat and beef fat — 50%-60% saturated — are solids at room temperature. As an example of a vegetable fat, safflower oil — with only 11% saturated fats — is a liquid. How do we know that saturated fats lead to artery problems?

Dr. Ancel Keys did a famous study of 12,000 middle-aged men in seven developed countries. Keys found that Finland had the highest death rate from artery diseases (220/10,000 men over 5 years), the highest percentage of saturated fats (22% of the total calories in their diet) and the highest blood cholesterol levels. The United States was not far behind in deaths (185/10,000) and blood cholesterol levels. At the other extreme, Greece, Italy and Japan — which use mostly vegetable fats in their diets — had the lowest blood cholesterol levels. Japan — with only 3% of their calories from saturated fat — had an artery disease death rate of only 20/10,000.

When people migrate from a country with low saturated-fat consumption to one where it is high, the risk of artery diseases also increases. Japanese migrants to Hawaii developed higher blood cholesterol levels and suffered more heart attacks than Japanese in Japan. Both problems were even higher for Japanese who migrated to California.

Remember — with the typical American diet — the slow development of **atherosclerosis** (arteries being blocked by deposits of cholesterol) begins in early childhood and progresses steadily throughout life. In autopsies of American soldiers killed during the

Korean War (average age = 22), 35% already had significant narrowing of the arteries due to atherosclerosis!

However, the risks can be lowered, if your diet is changed in the following ways.

1. Reduce total fat intake by 25% or more. You can go down to as little as 10% of your daily calories as fat without any health risk. Currently, the typical American diet has 42% fat calories. (There is a lot of room for improvement!)

2. Use vegetable oils — the "*good*" polyunsaturated fats — in place of hard shortenings and animal fats — the "*bad*" saturated fats.

3. Reduce cholesterol intake.

Just reducing the total fat intake should help you to *lose weight*. Remember, **obesity** — having 20% or more over your optimal weight — is another high-risk factor. Obese persons have relatively low levels of HDLs — the "*good*" guys — but the percentage of HDLs increases when weight is lost.

In addition, **exercise** raises HDL levels. Early reports of raised HDL levels in long-distance runners gave a great push to the physical fitness movement of the 1970s and 1980s. However, later reports indicated that even *moderate* levels of exercise could lower LDL levels and raise HDL in the blood — if exercise is pursued *consistently*.

If you already have **hypertension** — high blood pressure — then the low fat diet, weight loss and consistent exercise could help to bring your blood pressure back to normal. Avoiding excessive use of salt also helps to reduce blood pressure.

**Even if you are genetically predisposed for high blood pressure,
there are steps you can take to reduce your risks.**

Unfortunately, even if you take all the steps indicated above, there is not guarantee that they will keep you from having atherosclerosis. Each person's **genetic background** influences the extent of change that a bad diet can cause. Some people are so susceptible that they would have problems, even if they followed the advice that would protect most of us. Others are blessed with constitutions that allow them to eat or do all the wrong things without suffering at all. Even so — *no dietary factor has been more strongly linked to heart disease than saturated fats and cholesterol!*

Although these articles may have seemed complex, the explanation I have given you is very simplified — perhaps *over-simplified*. For further information, consult your physician. In addition, information can probably be gained by consulting nutrition or dietary experts at your local medical or educational facilities.
