INCREASING GOOD CHOLESTEROL
(Increasing HDL Cholesterol)

Summary
Research has consistently shown that adequate **HDL** ("good") **cholesterol** levels have a protective effect on people's cardiovascular health. According to the landmark Framingham Heart Study, the risk of heart attack increases by about 25 percent for every 5 milligrams per deciliter (mg/dL) of HDL below the recommended values.

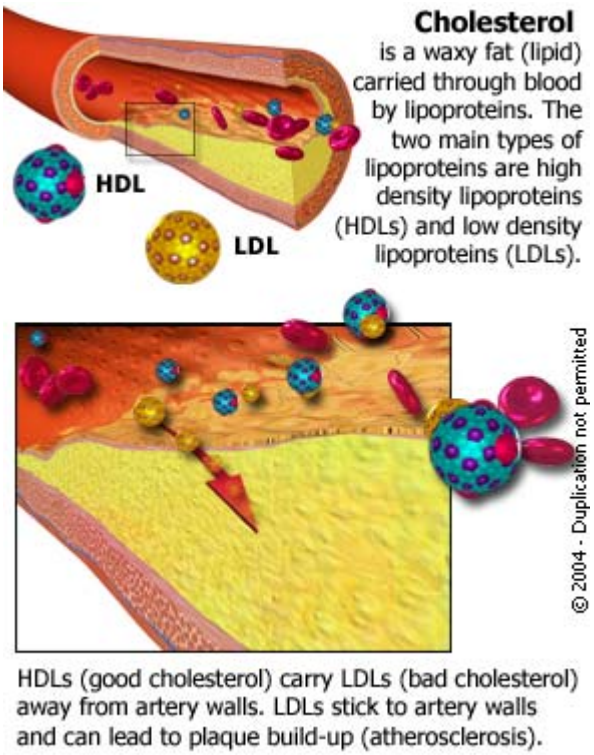
HDL cholesterol has been shown to reverse some of the harmful effects of **LDL** ("bad") cholesterol. Therefore, the more bad cholesterol you have, the more HDL cholesterol you will need.

The **National Heart, Lung and Blood Institute** currently recommends HDL cholesterol levels of at least 40 milligrams/deciliter (mg/dL) for men. The American College of Cardiology encourages women to keep their HDL cholesterol level at 45 mg/dL or more. Studies have shown that healthy HDL levels in the elderly can help preserve brain cell function and protect against mental decline, while low HDLs are linked with a higher risk of death from **coronary artery disease** and **stroke**.

This article describes a number of strategies for increasing your HDL cholesterol level to take full advantage of its protective effect.

Fats that increase HDL
Whereas **saturated fat** (found in butter, cheese, etc.) can increase your level of "bad" **LDL** cholesterol, **monounsaturated fat** can increase your level of "good" **HDL** cholesterol. Monounsaturated fat can also reduce levels of LDL cholesterol and **triglycerides**. The net effect of eating monounsaturated fat (in moderation) is a lower risk of **heart disease**. Foods that contain monounsaturated fats include the following:

- Olive oil
- Other vegetable oils
- Nuts (be certain you are not allergic)
- Avocados



HDLs (good cholesterol) carry LDLs (bad cholesterol) away from artery walls. LDLs stick to artery walls and can lead to plaque build-up (atherosclerosis).

The **American Heart Association** recommends that people consume less than 30 percent of their daily calories from any type of fat, and choosing monounsaturated fat over saturated or **trans fat** is generally helpful when working to improve cholesterol levels.

Impact of triglycerides on HDL

Research has shown a strong link between **HDL cholesterol** and a fat in the blood called **triglycerides**, which have been linked to increased risk for **heart attack** and **heart disease**. If your triglyceride level is high, your HDL cholesterol level is probably low. If your triglyceride level is low, your HDL cholesterol level is probably high. Therefore, lowering your triglyceride level can help to improve your HDL cholesterol level.

The **National Heart, Lung and Blood Institute** classifies triglyceride levels as "normal" if they are below 150. Strategies for reducing triglyceride levels include the following:

- Decrease the amount of **saturated fat** in your **diet**.
- Eat a balanced, **heart-healthy diet** in which **carbohydrates** are eaten in proportion to **proteins**, **vitamins and minerals**, essential fatty acids and **fiber**.
- Favor complex carbohydrates over simple carbohydrates. Simple carbohydrates, such as sugar, are absorbed quickly and can cause a sudden rise in insulin production (which in turn can increase triglycerides).
- Limit **alcohol** use.
- Start a regular **exercise** program.

- Achieve and maintain and a **healthy weight**.
- Control **diabetes**.
- Control **high blood pressure**.

If these strategies are unsuccessful, a physician might prescribe **nicotinic acid**, certain **fibrates** (e.g., *fenofibrate*) or other types of **cholesterol-reducing drugs**.

Impact of phytosterols on HDL

Phytosterols are vegetable fats or "plant" **cholesterol**. They are found only in plants and have a similar chemical structure to human cholesterol. A number of studies over the past two decades have suggested that intake of phytosterols has a positive impact on cholesterol levels, although scientists are still trying to understand exactly how this occurs. This discovery has led to the creation of several phytosterol-enhanced food items, usually in the form of butter alternatives.

One phytosterol-rich food that has received a great deal of attention is **soy**. Researchers have learned that soy contains chemical compounds called isoflavones, which have a significant impact on cholesterol levels. Soybeans (and flaxseed) also contain **phytoestrogens**, which are natural compounds that mimic the effects of **estrogen** in the body (e.g, raising **HDL** levels). However, a woman with a personal or family history of estrogen-dependent health problems (e.g., breast cancer) should speak with her physician before consuming large amounts of phytoestrogen-rich foods such as soy – particularly if she is already taking estrogen in **birth control pills** or **hormone replacement therapy**. Also, while the benefits of foods containing soy have been well documented, other studies have shown that soy supplementation does not have the same range of benefits.

Soy products include the following:

- Soy milk (available in both regular and nonfat forms)
- Chocolate made from soy milk instead of dairy milk
- Tofu or textured soy as meat alternatives
- Soy flour that can be used for baking
- A soy version of peanut butter

Other foods in which phytosterols occur naturally include the following:

- Sesame, corn, sunflower and canola oils
- Sesame seeds
- Sunflower seeds
- Peanuts
- Rice bran
- Green peas

Other strategies for increasing HDL

In addition to the dietary strategies involving types of fats, phytosterol intake or reducing **triglyceride** levels, there are several other strategies that can help increase **HDL** cholesterol levels:

- **Quit smoking**, which can dramatically increase HDL cholesterol levels.
- Start a regular **exercise** program.
- Maintain a healthy weight.
- Drink **alcohol** only in moderation (no more than one serving daily for women or two drinks daily for men). Moderate alcohol use may increase HDL cholesterol levels. Large quantities of alcohol, however, have the opposite effect and can cause damage to the heart muscle.

Studies of postmenopausal women have found that calcium supplements (*calcium citrate*) can increase HDL levels. This effect is attributed to calcium's effect on the introduction of **saturated fats** into the bloodstream. Calcium is seen to enhance the release of these fats from the body as waste products. Always check with your physician first to see whether a particular over-the-counter drug or supplement is appropriate (and safe) for you to take.

If these strategies are unsuccessful, your physician may recommend medications that have shown to raise HDL levels, such as **nicotinic acid** or some other **cholesterol-reducing drugs**.