Saturated, Polyunsaturated, Monounsaturated--What Does It All Mean?

While a rose is a rose is a rose, not all fats are the same. There are three kinds of fat -- saturated, monounsaturated, and polyunsaturated -- and foods contain a mixture of all three. Butter, for example, is 65 percent saturated, 4 percent polyunsaturated, and 30 percent monounsaturated fat. It's labeled as a saturated fat because that's the fat that occurs in the greatest amount.

Monounsaturated fats
- Are liquid at room temperature.
- May help lower your total blood cholesterol level.
- Are thought to raise HDL (good) cholesterol and lower LDL (bad) cholesterol levels.
- Are found in greatest abundance in canola, olive, and peanut oils.

Polyunsaturated fats
- Are liquid at room temperature.
- Are found mainly in vegetable oils, except tropical oils (coconut, palm, and palm kernel oils).
- Are thought to lower both HDL (good) and LDL (bad) cholesterol.
- Have been implicated in colon cancer.

Saturated fats
- Are usually solid at room temperature.
- Are found in many animal products and tropical oils.
- Cause the total blood cholesterol level to rise.

So what do you do with these facts? First, keep your calories from fat to 30 percent or less of your total calories. Less than a third of the fats you do eat should come from polyunsaturated fats. And less than another third of the fats you do eat should be saturated. The remaining calories should be from monounsaturated fat.
You won't need a chart to accomplish this. Just eat more chicken and fish and less pork and beef. And choose oils over solid fats.

Hydrogenation: A good oil turned saturated
Have you ever wondered how corn oil can turn into corn oil margarine? Or other vegetable oils become shortening? The process is called hydrogenation.

Hydrogenation is a process of changing a liquid oil into a hard or solid fat. Partial hydrogenation only changes some of the individual fat molecules from polyunsaturated to monounsaturated. More hydrogenation will then turn more polyunsaturated fats to monounsaturated fat or change monounsaturated fats to saturated fats. When enough have been changed, the oil becomes "visible" as a hard fat.

Food companies hydrogenate oils either to improve their shelf life or to make an oil into margarine or shortening. When oils are fully hydrogenated, the process turns them into saturated fats...the fat to be avoided.

The oil that may have been heart-healthy in the beginning, may then be no better than lard--so watch out.

Cholesterol and Your Heart

Cholesterol is related to fat, but it is not a type of fat. Purified cholesterol is a powdery white substance. It's found only in foods of animal origin: meat, eggs, dairy products, fish, and poultry.
Your body gets cholesterol from two places: the foods you eat and by making it. You need cholesterol to:
- Make bile, which helps you digest the foods you eat.
- Make protective coatings for your nerve fibers.
- Make hormones and vitamin D.
- Form the outside barrier membrane of each of your body's cells.

While you need cholesterol, your body makes enough cholesterol to use in all these ways. Sometimes, in fact, it makes or retains too much cholesterol. Then the extra cholesterol starts blocking your blood vessels.
How can you stop your body from making or retaining too much cholesterol? The best way is to limit your intake of total fat and saturated fat. When you eat saturated fat, it turns on the cholesterol-making machinery in your body, causing it to work overtime...churning out more cholesterol than your body can handle. It also can cause too much cholesterol to be retained in your blood. These effects increase your risk of heart attack and stroke.
It's recommended that we limit our dietary cholesterol to 300 milligrams a day or fewer.

How Can You Reduce the Amount of Cholesterol in Your Diet?
- Use egg whites or egg substitutes in place of whole eggs. Two egg whites take the place of one whole egg.
- Eat more fish and poultry and less meat. Meats have 60 to 80 milligrams of cholesterol per 3 ounces compared with poultry's 50 to 70 milligrams and fish's 40 to 50 milligrams per 3 ounces.
- Avoid organ meats, like brains, sweetbreads (thymus glands), heart, and liver.
- Be sure to read labels of lunch meats, hot dogs, and breakfast meats.

Cholesterol and Smoking

While it may be easy to understand how smoking can be blamed for conditions like mouth cancer, lung cancer and emphysema, just how does cigarette smoke cause high cholesterol and heart disease?

Cigarettes contain a host of toxins, including a particularly reactive chemical compound called acrolein. Acrolein is a yellow, foul-smelling vapor that is produced by burning plants, like tobacco. It is also man-made and is so poisonous that it is used in both pesticides and chemical weapons. Acrolein is easily absorbed into the bloodstream through the lungs, and scientists believe it contributes to heart disease by affecting the way the body metabolizes cholesterol.

Cholesterol Basics
Despite its poor reputation, cholesterol is a naturally occurring, fatty substance in our bodies that is produced by the liver, and helps with hormone production and food digestion. Cholesterol moves through the bloodstream inside two distinct proteins that work in tandem:

Low-density lipoprotein (LDL),the so-called "bad cholesterol," delivers cholesterol throughout the body and high density lipoprotein (HDL),known as "good cholesterol," collects fatty deposits and returns them to the liver.
To maintain a healthy heart, the American Heart Association recommends keeping LDL levels below 100 mg/dL, HDL levels above 40 mg/dL, and combined levels below 200 mg/dL.

Eating too many high-fat foods can tip this balance, and recent research suggests smoking can as well. Acrolein interferes with the cleansing ability of HDL by attacking the protein. The result: More fat accumulates in the bloodstream and throughout the rest of the body.

Acrolein also interferes with the LDL by inhibiting the protective enzyme responsible for keeping the LDL intact. Without this enzyme, the LDL becomes vulnerable to oxidation, a complicated chemical process that changes its molecular structure. Due to this change in structure, the immune system is no longer able to recognize the LDL. In response to this, the immune system releases white blood cells and other disease-fighting substances that bind to the affected area, causing inflammation and further buildup at the site. One study found that the more oxidized LDL present in the blood stream, the higher the incidence of a heart attack or stroke.

Salt's effects on your body
Salt works on your kidneys to make your body hold on to more water.
This extra stored water raises your blood pressure and puts strain on your kidneys, arteries, heart and brain.

Kidneys
Your body removes unwanted fluid by filtering your blood through your kidneys. Here any extra fluid is sucked out and put into your bladder to be removed as urine. To do this, your kidneys use osmosis to draw the extra water

out of your blood. This process uses a delicate balance of sodium and potassium to pull the water across a wall of cells from the bloodstream into a collecting channel that leads to the bladder.

Eating salt raises the amount of sodium in your bloodstream and wrecks the delicate balance, reducing the ability of your kidneys to remove the water. The result is a higher blood pressure due to the extra fluid and extra strain on the delicate blood vessels leading to the kidneys. Over time, this extra strain can damage the kidneys - known as kidney disease. This reduces their ability to filter out unwanted and toxic waste products, which then start to build up in the body.

If kidney disease is left untreated and the blood pressure isn't lowered, the damage can lead to kidney failure. This is when the kidneys are no longer able to be filter the blood and the body slowly becomes poisoned by its own toxic waste products.

If you have high blood pressure and are being treated with a diuretic medication, this makes the kidneys remove more fluid from the bloodstream. Because the sodium in salt counteracts this effect, reducing your salt intake will make your blood pressure medicine more effective.

Arteries
The extra blood pressure caused by eating too much salt puts extra strain on the insides of your arteries. To cope with the extra strain, the tiny muscles in the artery walls become stronger and thicker. Yet this only makes the space inside the arteries smaller and raises your blood pressure even higher. This cycle of increasing blood pressure (which occurs slowly over a number of years) can ultimately lead to the arteries bursting or becoming so narrow that they then clog up entirely.

When this happens, the organs of the body that were receiving the blood from the arteries become starved of the oxygen and nutrients they need. This can result in the organs being damaged and can be fatal.

Heart
The raised blood pressure caused by eating too much salt may damage the arteries leading to the heart. At first, it may cause a slight reduction in the amount of blood reaching the heart. This may lead to angina (sharp pains in the chest when being active).

With this condition the cells in the heart don't work as well as they should because they are not receiving enough oxygen and nutrients. However, lowering blood pressure may help to alleviate some of the problems and reduce the risk of greater damage.

If you continue to eat too much salt then, over time, the damage caused by the extra blood pressure may become so severe that the arteries burst or become completely clogged. If this happens, then the part of the heart that was receiving the blood no longer gets the oxygen and nutrients it needs and dies. The result is a heart attack.

The best way to prevent a heart attack is to stop the arteries becoming damaged. And one of the best ways of doing this is keep your blood pressure down by eating less salt.