

My Two Cents

A 'Bent Miles Health Publication

America! Take Back Your Health!

Don't eat! Stay healthy and die! With all the vacillating back and forth and with big pharmaceutical companies and large agribusiness companies and now even the chemical pesticide companies vying for our dollars and politicians with hands out to the lobbyist, who do we believe? Makes a person wonder: just how does one keep or regain one's health?

Do we eat eggs? Do we not eat eggs? Do we eat...??? Let a little science and a whole lot of common sense" rule. Having read an inordinate number of articles and books on diet and health, and with forty hours in biology and certification in biology, human anatomy, plant nutrition and health, I could go into a tirade about the exorbitant number of diet related health issues. But, this article will concentrate on cholesterol: are there two types, three types, or only one. Is it the cause of all our degenerative diseases? Or, does it promote good health? I would submit to you that it is more the latter than the former.

What Doctors and Drug Companies Don't Advertise About Cholesterol

By:
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I'm not insinuating that your doctor is in bed with the big pharmaceutical companies. I'm not insinuating those large drug companies are deceptive and callused about the harm they are doing human health. I'm flat stating the latter.

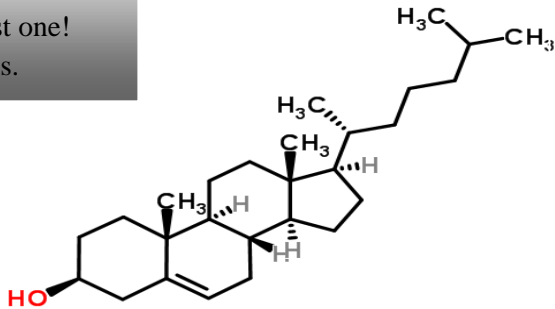
Initially, your doctor knows only what he is taught in medical school. Large pharmaceutical companies are given great latitude in drug pitches to medical students and doctors alike. Only those doctors who notice that their patients are not getting better after taking the medications they prescribe—and are curious as to why—are enticed, by their own desire to be better doctors, to research for the answer: "Why are my patients getting worse, and not better?"

Such doctors, will continue to study after medical school and will find that it is not the cholesterol that is killing people. They will continue to study for ways to heal their patents. Some of those doctors have found:

Are there actually three types of cholesterol?

Just to be clear: there is only one type of cholesterol. If you go to your local chemistry book and look up the molecular formula for cholesterol, you will see that it is $C_{27}H_{45}OH$. If you look up the molecular structure you will find it is as reflected below.

So, there is only one type cholesterol? That is correct, just one! And, here it is.



The body's cholesterol production:

There are only two ways cholesterol gets into your blood. About 85% of the body's cholesterol is created in the liver. When we eat animal products, more is added to our blood stream from those animal products. The saturated fat from the animal products then triggers the liver to produce even more cholesterol. In light of the fact the body and the brain use cholesterol, this is a good thing.

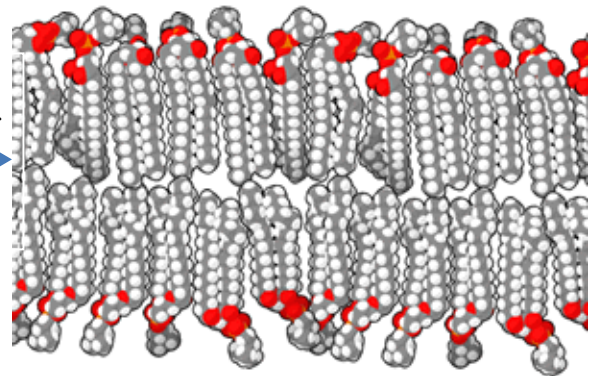
(I'm not saying go hog-wild and stuff yourself with bacon and sausages, and hotdogs. There are other health issues with consuming too much animal protein, especially processed meats). The body will make all the cholesterol it needs without adding it to your diet. But, if you consume a few organic eggs, they have other very healthy nutrients as well.

Body's use of cholesterol:

Since your liver naturally produces this fatty substance, it would seem reasonable that there is a good reason for it. And, there is; cholesterol is used for many things in your body. For instance, it is used for the synthesis of cell

membrane. Your cells' membranes are known, in the biology field of study, as a phospholipid bilayer, phospho meaning phosphorous, lipid, meaning fat; bilayer, meaning two layers.

Lipid bilayer



It is also used for the production of the hormone we call vitamin D. When the sun strikes your skin, it excites cholesterol into producing vitamin D, which in the presence of plenty of vitamin K₂ (produced by bacteria in your gut) helps calcium absorption into the bone. (Not milk) Some other reasons for cholesterol are the production of sex hormones such as testosterone and the estrogen complex hormones. (Topics for another discussion) These are just a few of the uses your body has for cholesterol. It is so important to your brain, that organ makes its own, which accounts for about 25% of the body's production.

Now that we have established a few of the uses of and requirements for cholesterol, what is all the fuss about this stuff being in your blood? And, what is a safe or unsafe level? Or, is there any such thing as safe or unsafe levels of this lipid in the human blood stream?

All cholesterol is created equal:

Current recommendations range from 150 mg/dl of blood to less than 100mg/dl of blood.

However, these may be too low. Lower is not necessarily better.

In the 1950's through the 1970's much attention was given to a 1913 Russian study that fed rabbits pure crystalline cholesterol dissolved in vegetable oil. Virtually all of today's

cholesterol treatment is based on this far outdated and inconclusive study. Such rancid substance was sure to produce scarred and clogged arteries. But, this is not what the body produces and most of us don't eat pure crystalline cholesterol dissolved in vegetable oil.

While cholesterol can have harmful effects, it also is essential for healthy brain function. The brain, surprisingly, contains about 25 percent of the cholesterol in the body. The brain uses it to synthesize neurotransmitters, substances the nervous system uses to transmit electrochemical signals between nerve cells.

A blood-brain barrier exists to help protect the brain. In many ways, it functions as its own unit. The brain cannot draw upon cholesterol from the blood. Rather, it must produce its own supply.

<http://www.livestrong.com/article/465188-the-effects-of-cholesterol-on-the-brain/#ixzz28pN53iZ6>

Protein Carriers: Cholesterol Packages:

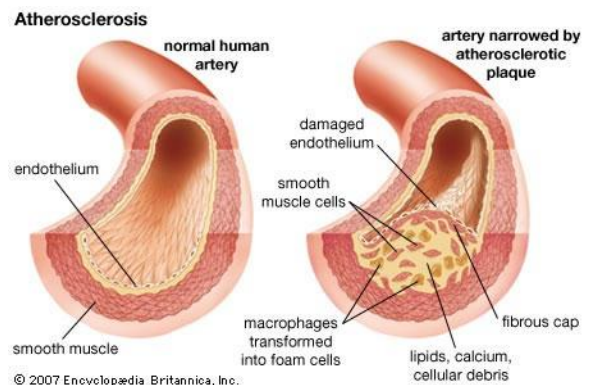
Just to throw a little more confusion into the circle, what if the good cholesterol was not so good after all?

<http://articles.latimes.com/2012/may/18/science/la-sci-sn-hdl-good-cholesterol-20120518>

In article after article you can read about HDL being the good cholesterol and LDL being the bad cholesterol. However, neither of these are cholesterol. High density lipoprotein starts off empty and picks up any leftover cholesterol and returns it to the liver for reprocessing and distribution. LDL (dubbed the bad guy) is low density lipoprotein. Since it is taking cholesterol to the cells, and the cells need it for a myriad of processes, how can it be the bad guy? Each of these lipoproteins contains the very same cholesterol. The LDL is transporting to the cells, the HDL is returning to the liver. Since blood is mostly water, and fats and water don't mix, nature has packaged the cholesterol into three different protein packages. The third is VLDL which carries with it triglycerides along with cholesterol. These are produced when you eat a sugary diet. This could be a diet heavy in processed foods such as flour products; even whole grain flour products raise the blood sugar faster than sucrose. These VLDL are very small particles that tend to burry themselves into the gaps of the endothelial cells of your blood vessels.

What is the endothelium?

The endothelium is a one cell thick organ which lines every part of the cardio vascular system. If you have a healthy endothelium, you have a healthy cardiovascular system.



So, while article after article will refer to LDL and HDL as cholesterol, they are actually carrier

proteins. Their relative density depends on size and just how much lipids they are carrying. The third type of carrier protein is very low density lipoprotein and its cargo consists of two types of lipids, triglycerides and cholesterol. These are the really dangerous lipoproteins because they are very, very small and dense (Don't ask me how a very low density object can be very dense) and are able to get under the endothelial gaps and wreak havoc.

Chronic Inflammation and Endothelium Dysfunction:

So, let's take a look at what can cause endothelium dysfunction. It can be said in two words: [chronic inflammation](#).

Most of us know about inflammation; that is what happens when we get a splinter in our finger which causes swelling and redness. There is an actual battle taking place at and near the entry point of the wound. Anytime a foreign body enters our system, our immune system is put on alert and a unit is dispatched to the point of entry to keep out the invaders. The swelling and redness is inflammation. The soreness is caused by the pressure that was caused by the swelling that was caused by the casualties of combat, dead white blood cells and whatever organisms they fought, bacteria... If you squeeze the wound, pus will come out. That pus is dead white blood cells that gave their lives so we, the whole, can live and thrive. This is referred to as acute inflammation, which is natural and necessary for our survival.

However, when inflammation becomes chronic, this is not natural and is the beginning of serious illnesses, from diabetes, heart disease, to cancer. What can cause chronic inflammation? The major culprit is sugar. However visceral fat—fat around the waste that extends into and around such organs as the liver, heart, and intestines can also be a cause. Visceral fat is created when insulin converts the excess blood

sugar to fat. Both can cause inflammation you may never notice. This becomes a vicious circle.

Ask your doctor for a “C” reactive protein test to establish if you have inflammation. This chronic condition can promote joint aches as well as excess estrogen that may produce man-boobs. Visceral fat can become living tissue and even generate blood vessels.

Abdominal fat's impact on inflammation:

Visceral fat, or as it is often called abdominal fat, is a very well documented risk factor for: diabetes, heart disease, and some forms of cancer such as pancreatic cancer. Whatever the cause of chronic inflammation, the results are the same: chronic diseases.

Foods that can promote chronic inflammation:

Recent studies indicate that chronic inflammation can be caused by eating too many simple carbohydrates such as sugar and processed grain products. Even whole wheat bread is made from highly processed flour and has been shown to have a higher glycemic index than sucrose. When we develop a habit of consistently spiking our blood sugar and getting the inevitable onslaught of insulin and the cells become insulin resistant, the body has to find a way to reduce the sugar in the blood so the insulin turns the sugar to fat to be deposited around the waist. The fatter our waist gets the more chronic inflammation sets in. This inflammation coupled with the VLDL, discussed earlier, causes damage to the endothelial cells and plaque starts to form.

How inflammation affects the endothelium:

One function of the endothelial cells is to produce nitric oxide, chemical formula NO. In our atmosphere, this is an air pollutant caused by the burning of fossil fuels. When made by our

endothelial cells, however, it serves as a neurotransmitter signaling the blood vessels to dilate. This dilation causes the blood vessels to expand and allow for a greater blood flow to all parts of the body. Just the motion of getting up and walking signals the endothelial cells to make more NO. So, exercise is a good thing.

The foods we eat also play a major role in the production of NO. Any foods with the amino acid precursor L-arginine will aid in NO production. Or, you can do like I do, and supplement in conjunction with healthy eating habits. Anything that requires major blood flow, such as the building of muscles when weight lifting, wound repair or blood flow to the penis—in case of erectile dysfunction—will be facilitated by the production of NO. And again, we should never underestimate the importance of exercise in our overall health to include the production of NO.

Foods that contain L-arginine:

L-arginine is the precursor to the amino acid arginine. Foods that contain it are:

Nuts, Legumes and Vegetables

Nuts are a good source for arginine. The nuts with the highest arginine levels include Spanish peanuts, almonds, English walnuts, hazelnuts and cashews. Get arginine by eating legumes such as kidney beans, soybeans and French beans. Garlic and onions have the highest levels of arginine in the vegetable category.

Read more: [Foods That Contain L Arginine | eHow.com](http://www.ehow.com/about_5366630_foods-contain-arginine.html#ixzz29ZO6DRZR) http://www.ehow.com/about_5366630_foods-contain-arginine.html#ixzz29ZO6DRZR

Protein and Other Sources

Arginine can be found in proteins such as canned tuna, salmon, chicken, shrimp, eggs, pork and milk. Other foods with arginine include chocolate, oats, dairy products, sunflower seeds and brown rice.

Adhesion and blockage of blood vessels:

NO can do only so much; chronic inflammation will eventually cause [leucocyte* adhesion](#) which will result in buildup of cholesterol and calcium plaque which will narrow and harden the arteries resulting in cardiovascular blockage and heart attacks or blocking of the blood vessels to the brain resulting in strokes. Blockage of the blood vessels to the penis results in erectile dysfunction. Because this is caused by vascular narrowing same as in heart disease, it may be an indicator of cardiovascular blockage and a heart attack in the not too distant future of the owner of said penis.

Summary:

The amount of cholesterol is not the culprit in ill health as much as is; a combination of VLDL and chronic inflammation. Very low density lipoprotein and inflammation drive the epidemic of heart disease, cancer, and diabetes currently experienced by Americans. And, sugar drives the inflammation. Too much animal protein can be problematic and too much cholesterol can lead to health problems; but it is the sugar, highly processed foods, and inflammation that are driving the degenerative diseases that have beset the U.S. in the past twenty years: not the three types of cholesterol that don't exist.

In conjunction with the normal cholesterol test, be sure to have your doctor do the following tests.

- C reactive protein—checks for inflammation
- Test for Very Low Density Lipoprotein (small dense Lipoprotein)