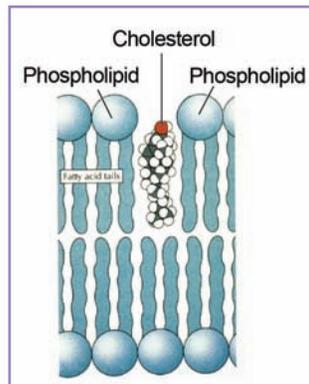


Cholesterol

by Edward Kane

Contrary to current dogma, cholesterol is an extremely important membrane structural fat, with emphasis on “**extremely**.” It is fat, not a lipid, with a wide range of body functions and a prime example of the distortion of our present perception of fats --- fats that our body needs for homeostasis. Professor Barenholz, of Hebrew University, 2002,¹ regarding the importance of cholesterol, “[The appearance of membrane-active sterols (cholesterol) in biological membranes of eukaryocytes is one of the major steps in membrane evolution].” (FYI, Humans are eukaryocytes, multi-cellular, as opposed to prokaryocytes, single celled organisms, like bacteria.) Cholesterol is not only a vital cellular molecule, it is also a large part of us, as it occupies 30-40% of our membrane (Gurr 2002²). It is the precursor for vital hormones such as the adrenals, our fight or flight hormones, and the gonads, hormones that drive our reproductive machinery. Cholesterol is important for the metabolism of the fat soluble vitamins, A, D, E and K, and is a precursor for bile acids which manage our fatty acid intake from the gut to the cells. It is intimately involved in regulating membrane fluidity over a wide range of temperatures, as well as creating a strong membrane structure, which, incidentally, equates to a strong overall metabolism. Most individuals with high cholesterol have a strong metabolism --- and they know it.

Very little appears to impact one with high cholesterol, like airborne disturbances such as pollen with its potential for allergy, etc. “When present at high concentrations, cholesterol enhances the mechanical strength of the membrane, reduces its permeability, and suppresses the main-phase transition of the lipid bilayer” (McMullen 1996³). Mason et al 1996,⁴ was able to detect a higher concentration of electrons that would congregate above the head of a cholesterol molecule in the membrane. He showed that ligands (peptides in the blood) flowing in the blood stream would avoid receptors positioned near the cholesterol molecule. They would simply go elsewhere on the membrane to establish contact. The resistance appears to make for a stronger, resistant cell --- and as said, individuals with high cholesterol sense it. Mason⁴ also reported that the absorption rate of three drugs tested had an inverse ratio of absorption to the level of



cholesterol in the membrane, establishing a protective relationship to the levels of cholesterol and the strength of the cell. A corollary is its association with autistic spectrum disorder. Sikora 2006,⁵ reported that “approximately three-fourths of the children with SLOS (Smith-Lemli-Opitz syndrome) had an ASD, and about 50% were diagnosed with Autism, the rest with pervasive developmental delay (PDD-NOS).” SLOS is an autosomal recessive condition caused by a defect in cholesterol synthesis. Tierney 2000,⁶ demonstrated low cholesterol was associated with cognitive abilities from borderline intellectual functioning to profound mental retardation. Tierney et al, in 2006,⁷ reporting on 19 samples of low cholesterol, “SLOS is a metabolic disorder associated with autism.” Cholesterol is an essential element of myelin, the insulating material crucial for nerve function in the brain and central nervous system. Dr. Richard Kelley reported in 2000,⁸ “There are heretofore unrecognized beneficial effects of cholesterol, especially in children, and that we should consider very carefully possible adverse effects that the popular war against cholesterol may have on the prenatal and postnatal development of children.”

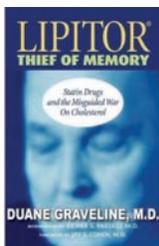
Pérez-Guzmán 2005⁹ states that hypo-cholesterolemia is common among tuberculous patients and suggests that cholesterol should be used as a complementary measure in anti-tubercular treatment. How many more disorders, not yet studied, would respond favorably to the raising of cholesterol? Little is known or discussed about its benefits, but we see it in a number of patients with a strong cholesterol level (the value is currently debatable) that either come to our clinic or when we review their cases with their doctor (The BodyBio Blood Chemistry Report). We have long taught doctors to consider a patient’s cholesterol level when titrating a nutrient or a drug, and to prescribe less to a patient with low levels, and the reverse if high. This is not currently taught in medical schools, but should be. As noted by Patricia Kane, Ph.D., “Women who are having a difficult time becoming pregnant should first look at their cholesterol level as it is invariably low. As the diet is expanded to include essential fatty acids and phosphatidylcholine, the hormones derived from cholesterol normalize and

pregnancy can more easily follow, and often does. Similarly, patients with environmental illness almost always have low cholesterol including those with sensitivity to foods, chemicals, or even frequencies, like Wi-fi, which are commonly due to the instability of the cell membrane. One patient complained that he had developed such a severe sensitivity to Wi-fi frequency that he could not travel or go into many business settings. His lab analyses revealed that he had a very low cholesterol level with a low Total Lipid Content within his red cells. The patient found relief from his symptoms after receiving high dosing with IV phosphatidylcholine and a diet high in eggs, butter, wild salmon and balanced essential fatty acid supplementation.” (Patricia Kane, Ph.D. 2008).

However, cholesterol currently enjoys a label as “**Bad-Guy #1**,” which originally, may have had some semblance of logic, but is now rife with distortions, even hysteria. Here then is the question of the age --- since cholesterol is 30-40% of that vast membrane field protecting and managing critical metabolic functions, including mental acuity, sex and reproduction, why would we want to dispose of so much of it? Why indeed?

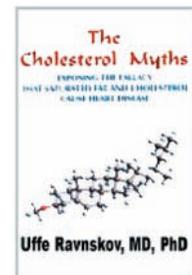
Today, the first analyte of your blood chemistry that your doctor focuses on is your cholesterol level, and if it’s elevated --- even though that value is in question --- will invariably write a prescription for a statin drug. We know the revenues generated by statin drugs to lower cholesterol are enormous, even obscene, but what is more important is the physical harm from those drugs, like transient global amnesia (TGA), liver damage or even worse, rhabdomyolysis, which, if unchecked, can cause kidney failure. Baychol[®], a statin drug, was taken off the market because of its strong association with rhabdomyolysis. (Rhabdomyolysis is the breakdown of muscle fibers resulting in the release of muscle fiber contents (myoglobin) into the bloodstream, which can result in kidney damage).

In his book, Lipitor Thief of Memory,¹⁰ Duane Graveline, a medical doctor and former astronaut, details how he developed transient global amnesia (TGA), the loss of memory, after starting Lipitor[®]. TGA can be brief, lasting a few hours, or even twenty four hours or more. His struggle to uncover the rationale for his transient loss of memory and its association to the use of statin drugs reads like a mystery novel. Trying to find the reason for memory loss when you can’t remember whole periods is a challenge you don’t want to face. Amnesia (TGA) completely wipes out hours, even days, which, because of aging, opens thoughts about a possible beginning of mental disturbance such as Alzheimer’s. We’ve all had episodes of forgetting where we laid our keys, but when it persists it can shake up the strongest individual. The



effort to unravel the missing pieces often leads to questions of one’s sanity, especially when those near and dear to you watch you struggle and begin to doubt you or just put it off as aging. Memory loss is invasive and indistinguishable from aging. If you lose it, who are you? There are recent disturbing reports of an association of statins and ALS, a devastating neurological disorder, Lou Gehrig’s Disease (Edwards 2007¹¹). Dr. Graveline lists feedback from a number of individuals that discuss why they are frightened (Comforti 2006¹²) www.spacedoc.net/ALS_statins.html.

Uffe Ravnskov MD, PhD, reports in his book, The Cholesterol Myths,¹³ that “**People with high cholesterol live the longest. This statement seems so incredible that it takes a long time to clear one’s brainwashed mind to fully understand its importance.**” A shocking reversal of everything we’re led to believe about bad-guy cholesterol. Dr. Ravnskov has gathered a vast body of evidence, and, is himself, an impressive researcher. He is relentless in uncovering weaknesses in medical research and exposing flaws in some of the most touted studies that have led the medical world down a highly questionable road, one that everyone should be more aware of, especially if you are a health care professional, but even for anyone using drugs to lower their cholesterol.



Epidemiological studies have shown that an increased risk of coronary heart disease (CHD) may come from elevated levels of serum cholesterol, which may be increased from a dietary intake of saturated fats and cholesterol. Decades of large-scale tests in human and animal studies have purported to establish that link --- that’s what we were led to believe. However, in 2006, Harvard researcher Mozafarian noted in The New England Journal of Medicine,¹⁴ “that the consumption of **trans** fatty acids raises levels of low-density lipoprotein (LDL) cholesterol, reduces levels of high-density lipoprotein (HDL) cholesterol.” In addition Ascherio 2006,¹⁵ also from Harvard, reported that “the intake of trans-unsaturated fatty acids (TFA) has been consistently shown in multiple and rigorous randomized trials to have adverse effects on blood lipids, most notably on the LDL:HDL cholesterol ratio, which is a strong marker of cardiovascular risk.” Zaloga 2006¹⁶ also a Harvard researcher, reported that the focus on total cholesterol masked the fact that although trans fatty acids and saturated fatty acids increase low-density lipoprotein (LDL) cholesterol levels to a similar degree, **trans** fatty acids also lower high-density lipoprotein (HDL, the good cholesterol). **These and similar reports appear to turn years of cholesterol reporting on its head --- and all the while we have been eating those funny, man made junk fats like**

margarine and mayonnaise, which was never considered to be a problem when they told us our cholesterol was too high, and now we are told, you must take a statin drug --- unbelievable.

The raising of one's cholesterol by the ingestion of foods high in saturated fats is more prevalent in today's diet than ever before from the highly mechanized raising of beef, dairy, poultry, and now fish. We did not get here eating beef that was bunched together and fattened up in a corn feed lot before we got hold of it, and, any meat we did manage to kill was a fast moving animal like an antelope, a buffalo or a wildebeest, all of which evolve with a dramatically different fatty acid profile (Crawford 1989¹⁷). Both saturated fats and cholesterol are hard rigid fats --- and get this --- both are essential for the health of the membrane, but not without an adequate supply of the unsaturated Essential Fatty Acids (PUFAs), which were much higher in fast moving grazing animals in our Paleolithic days. The cell membrane needs both, rigid saturated fats (the backbone) and vibrating active unsaturated lipids (the performers). Life is a balancing act. There are a large number of studies on the effectiveness of lowering cholesterol by using the primary parent EFAs, the omega-6 linoleic, and omega-3 à-linolenic.¹⁸⁻²⁶ (For a more complete review of EFA/Cholesterol abstracts visit www.bodybio.com/abstracts/ch-efa).

We are getting advice on cholesterol that is tainted. Recently, when a select group of famous doctors advised the government on new cholesterol guidelines for the public, something else most all of them had in common was not revealed. Eight of the nine were making money from the very companies whose cholesterol-lowering drugs they were urging upon millions of us. Two owned stock in them. Two others went to work for drug companies shortly after working on the guidelines. Another was a senior government scientist who moonlights for 10 companies and even serves on one of their boards (USA TODAY® 2004²⁷). This is a picture that is repeated over and over throughout the medical world today, and not only in the USA. It is so pervasive that we can not trust the very group that we depend on for our health. Your personal doctor may not be guilty of any of this. He or she is caught up in a system that they have very little control of. They don't even have the freedom to exercise their own personal medical judgment, which, in many instances, because of our overly litigious society, may be the reverse of what they wind up writing you a prescription for. The system is broken.

Low cholesterol is not healthy --- that's a statement you will probably never hear or see in print. Many studies have found that low cholesterol, in certain respects, is worse than high cholesterol. In 19 large studies of more than 68,000 deaths, reviewed by Professor David R. Jacobs²⁸ and his co-workers from the Division

of Epidemiology at the University of Minnesota, low cholesterol predicted an increased risk of dying from gastrointestinal and respiratory diseases. Professor Jacobs and his group, together with Dr. Carlos Iribarren,²⁹ followed more than 100,000 healthy individuals in the San Francisco area for fifteen years. At the end of the study, those who had low cholesterol at the start of the study, had more often been admitted to the hospital because of an infectious disease. Low cholesterol and increased risk of early mortality has been well researched. (6, 30-34)

Cholesterol is a rigid fat, which can be controlled in the membrane by raising the concentration of polyunsaturated lipids, which makes the membrane more fluid. "A diet based on a high proportion of essential polyunsaturated fatty acids (fluid) would allow a higher incorporation of cholesterol (rigid) in the membranes to balance their fluidity, which would contribute to lower blood cholesterol levels (Colin 2003²⁴)." Colin et al also explored polyunsaturated fatty acids and the brain venturing into the subject of polyunsaturated fatty acids (PUFAs) and depression and an association of elevated omega 6 and low omega 3, which is beyond this article, but concludes with "some epidemiological, experimental and clinical data favoring the hypothesis that polyunsaturated fatty acids could play a role in the pathogenesis and/or the treatment of depression." (An interesting topic for the next BodyBio Bulletin --- Fatty Acids and the Brain).

What is an optimal cholesterol level? That's an easy one, isn't it? Just check your latest blood test. Doctors generally review your lipid levels which include cholesterol as well as LDL, HDL and your triglycerides. However since 1995, when BodyBio starting their blood test and vitamin computer program, it was led a merry chase trying to establish lipid laboratory range numbers. Seems that all testing laboratories dropped their classical two standard deviation method for just those four blood lipid levels (see "Inside the BodyBio Report" at <https://www.bodybio.com/>). They used instead a less than (<) such as < 200 for cholesterol, but no low or high range numbers. A less than number could mean that anything below is OK. That makes no sense. Less than 200 could be anywhere down to zero, which would probably mean that you would not be alive with anything approaching a zero level of cholesterol. In essence we were left with creating numbers as shown below which has worked well for our doctors which include the ~30,000 BodyBio Reports to-date.

BodyBio adult lipid ranges:

Total Cholesterol	145 - 235
Triglycerides	50 - 150
LDL	62 - 130
HDL	35 - 80

The technical term for low cholesterol is hypo-cholesterol (hypo = low). There is a large body of research on hypo-cholesterol, which flies in the face of what you have read in the media, which invariably paints cholesterol as bad, the lower the better. The abstracts below tell the reverse, that low cholesterol and low LDL are a high risk for earlier death when compared to those with normal or elevated cholesterol. Please review the abstracts on low cholesterol, they paint an entirely different story, at times a frightening one.

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