

## **\*HEALING THERAPIES NEWSLETTER\***

This is the 61<sup>st</sup> newsletter<sup>©</sup> associated with [www.healingtherapies.info](http://www.healingtherapies.info) <<http://www.healingtherapies.info/>>, the purpose of which is to expand the healing spectrum of people with physical disabilities, especially spinal cord dysfunction. This issue focuses on cholesterol, an absolutely essential molecule, especially for brain and spinal-cord functioning.

## **\*CHOLESTEROL: THE ESSENTIAL NUTRIENT\***

(Adapted from an article appearing in the June 2012 /PN Magazine/)

The expression "sacred cow" is defined as an idea, custom, or institution considered exempt from criticism. If you study the history of medicine or science, you will find many ardently embraced sacred cows that eventually staggered and collapsed.

Past is prologue. This is not just a reflection of an unenlightened past, in which, for example, authorities persecuted Galileo for advocating heliocentricity or the 19<sup>th</sup>-century physician Ignaz Semmelweis for audaciously recommending hand washing for surgeons, but very much a contemporary issue. As a former scientific director of a half-billion dollar institute at the National Institutes of Health, I know first-hand that sacred cows still shape our health and nutritional policy.

Influenced by profit-making agendas, one modern-day sacred cow is the belief we need to lower cholesterol levels at all costs through either taking side-effect-laden drugs or eating foods that humans never physiologically evolved to consume in quantity (e.g., trans-fats). Natural-foods advocate and author Sally Fallon called high cholesterol "an invented disease, a problem that emerged when health professionals learned how to measure cholesterol levels." According to George Mann, former Vanderbilt University Professor, the cholesterol "myth is the greatest scientific deception of this century, perhaps of any century."

There are countless studies documenting 1) cholesterol's benefits, 2) health risks of having too low cholesterol, and 3) eye-opening side effects associated with cholesterol-lowering drugs. The evidence presented in such studies is often ignored, trivialized, or statistically manipulated because it challenges prevailing health-care policies - which like aircraft carriers take a long time to change direction.

### **\*Cholesterol's Role\***

In spite of its vilification, cholesterol is an absolutely essential molecule, especially for brain and spinal-cord functioning. Accumulating evidence suggests that pushing down cholesterol levels through drugs over time may have adverse neurological consequences. Given the molecule's paramount importance in the nervous system, some speculate that such efforts may compromise neurological recovery after traumatic spinal-cord or head injury.

Most of our cholesterol comes not from food but is produced by the body, especially the liver. Generally, our bodies synthesize three to five times more cholesterol than we consume. Notwithstanding the indoctrination otherwise, cholesterol levels are influenced very little by diet. For example, the Maasai, an African nomadic tribe who traditionally ate more animal fat than virtually any other population, had some of the world's lowest cholesterol levels. Although there may be other health consequences, if we eat a large ham-and-cheese omelet for breakfast and a bacon cheeseburger with a milkshake for lunch, our bodies just produce less cholesterol. If we eat an ascetic vegetarian diet, our bodies will produce more cholesterol.

In contrast, by interfering with cholesterol biosynthesis, commonly prescribed statin drugs (e.g., Lipitor), are extremely effective in lowering cholesterol. However, they also compromise the production of several other substances vital for health, including 1) coenzyme Q10 critical for energy metabolism and heart and muscle health, and 2) dolichol, a fatty molecule crucial in the assembly of cellular proteins.

Cholesterol is an essential structural component of all cells, needed to ensure membrane integrity, permeability, and fluidity. It has a key role in the transport of molecules into the cell, interaction between cells, and, importantly for /PN/ readership, nerve conduction. The amount of cholesterol in the CNS is about 10 times greater than any other organ. If one is trying to rebuild a damaged nervous system, does it make sense to take away the supply of essential building blocks through cholesterol-lowering drugs?

In addition, cholesterol is the precursor to a variety of sex hormones, including testosterone, progesterone, and estrogen, and adrenal-gland hormones, such as the stress hormone cortisol. Given that SCI already compromises production of function-restoring testosterone (/PN/ October 2011), one can only speculate on the additional impact of pushing down the levels of cholesterol, a testosterone precursor.

In addition, the sun's ultraviolet rays convert cholesterol in skin into vitamin D, which is a vitally important nutrient for individuals with SCI and MS. Finally, the liver uses cholesterol to produce bile, needed for fat digestion in the small intestine.

### **\*Problems with Low Cholesterol\***

Several adverse **health** consequences connected to low cholesterol include:

**Mental Health:** Low cholesterol is associated with various mental-**health** issues. For example, research suggests that individuals with too low cholesterol 1) have more depression, 2) commit more suicide, 3) exhibit greater violent and aggressive behaviors, 4) relapse more in cocaine addiction, 5) have reduced attention, concentration, and word fluency, and 6) in the elderly, have more cognitive decline and dementia. Lower cholesterol levels lead to decreased brain levels of serotonin, a feel-good neurotransmitter that Prozac-like drugs attempt to stimulate.

**Infectious Disease:** Low cholesterol is correlated with an increased risk of dying from various infectious diseases. For example, in a study involving 100,000+ subjects, individuals with lower cholesterol were admitted more often to a hospital due to infectious disease.

**Longevity:** Low cholesterol in the elderly increases risk of dying. A study published in the prestigious journal */Lancet/* concluded that in the elderly "long term persistence of low cholesterol concentration actually increases the risk of death."

**Heart Disease:** In spite of the hype otherwise, many studies indicate little correlation between cholesterol levels and heart disease. For example, although Americans have higher cholesterol than Japanese, the arteries of Japanese people were just as atherosclerotic - i.e., factors other than cholesterol must be involved.

### **\*Norwegian Study\***

Given editorial constraints, it's difficult to summarize the numerous studies whose results counter the cholesterol-lowering dogma. In one recent example, researchers investigated the relationship between cholesterol levels and mortality rates in over 52,000 Norwegians.

Although cholesterol has been subdivided into "good" and "bad" cholesterol depending upon its sequestering into greater complexes (e.g., high-density and low-density lipoprotein), the investigators focused on */total/* cholesterol levels because **health** policies use this number to determine treatment. Using official guidelines, 75% of Norwegian adults are considered at risk for cardiovascular disease and, hence, "in need of clinical attention." About 47% of the subjects were men and 53% women. Age ranged from 20-74. Subjects were followed for 10 years.

The relationship of mortality to cholesterol levels were gender dependent. For men, mortality followed a U-shaped pattern. Specifically, the greatest mortality was observed in men with the lowest cholesterol levels, the least mortality noted in men with intermediate cholesterol levels, and in-between mortality documented in men with the highest cholesterol levels.

With women, it followed a downward, linear pattern, in which cholesterol levels were inversely related to death rates. Specifically, as levels increased, the risk of death decreased; i.e., more cholesterol was associated with living longer. In both men and women, the highest death rate was associated with the lowest cholesterol levels.

The investigators diplomatically concluded that given their results, "clinical and public-**health** recommendations regarding the dangers of cholesterol should be revised. This is especially true for women, for whom moderately elevated cholesterol (by current standards) may prove to be not only harmless but even beneficial."

Undiplomatically, it is yet another stumble of a public-**health** sacred cow.

### **\*Conclusion\***

German philosopher Arthur Schopenhauer stated "All truth passes through three stages. First, it is ridiculed. Second, it is violently opposed. Third, it is accepted as being self-evident." The notion that cholesterol needs to be lowered at all costs is so passionately embraced by medical authorities that any suggestion otherwise, regardless of merit, is virulently opposed. But it's just a matter of time before a more balanced viewpoint will prevail.