The following is a collection of a few of my references and data I use in my lectures.

It is not a written article; and due to frequent requests, I have just put together many medical references to show the misunderstanding of the myth that high cholesterol causes heart disease and the side effects relating to cholesterol lowering drugs called statins.

The summary is not complete, it is not my words or opinion but a summary of comments from the articles with references.

***Note: This handout is not intended to give any medical advice or advise anyone to come off any medications but is a collection of references examining the controversy and discussions occurring relating to cholesterol and heart disease.***

***To encourage people to make an educated decision, with discussion with their doctor, (which hopefully is aware of the latest studies). It is not intended to tell people to come off statins (cholesterol lowering drugs) but to encourage them to educate themselves with the data that is now currently available.***

**If you don't want to read all the information in this document just look at the two podcasts and access the DVDs called.**

**Statin Nation as below:**

1. **Dr. Maryanne Demasi – Stating Wars: Have we been misled of the evidence?**
   Demasi M. Statin wars: have we been misled about the evidence? A narrative review. Br J Sports Med. 2018 Jul;52(14):905-909. doi: 10.1136/bjsports-2017-098497. Epub 2018 Jan 21. Erratum in: Br J Sports Med. 2018 Oct;52(19):1282. PMID: 29353811.

   Dr. Maryanne Demasi - 'Statin Wars: Have we been misled by the evidence?' - YouTube

2. **Statins: Side Effects and Alternative Ways to Lower Cholesterol**
   Dr. Berg. **https://www.youtube.com/watch?v=ynpqxnxtLi8**

3. **Statin Nation 11**
   Many countries around the world consume large amounts of saturated fat and cholesterol yet also have an extremely low rate of heart disease. As stated in the video: People with high cholesterol usually live the longest. These, and many other contradictions to the current view of heart disease are investigated in STATIN NATION II.

   The film includes interviews with 12 leading experts in this field, and was shot on location in the UK, USA, Denmark, Sweden, France, Lithuania, Australia, Egypt and Japan. In the 1960s, British physician John Yudkin was among the first to challenge Ancel Keys' hypothesis, stating that SUGAR is the culprit in heart disease—not saturated fat. Keys was a politically powerful figure. He publicly discredited and ridiculed Yudkin, whose sugar hypothesis ended up fading into oblivion.

   By the 1970s, any doctor supporting the sugar hypothesis that it is responsible for heart disease and not saturated fats, discredited the doctor and myth of low fats is good for the health increased. Two 2010 studies—both of which negate Keys' selectively biased findings and the cholesterol hypothesis as a whole, while supporting the sugar hypothesis in the development of heart disease:

   **No correlation between high cholesterol and heart disease. - the Propagation of Flawed Science**

   **Statin Nation – DVD documentary**

   The documentary above, Statin Nation — The Great Cholesterol Cover-Up, sheds much needed light on this topic. This was the original DVD. This was an interesting and eye opening video put out by Doctors and Cardiologists, stating there is no correlation or relationship between high cholesterol and narrowing of coronary arteries which causes heart disease.
   **Comments taken from the video:**

   Over the past 60 years, research has repeatedly demonstrated that there's **NO** correlation between high cholesterol and plaque formation that leads to heart disease. Despite that, the saturated fat/cholesterol myth has been an extremely persistent one. Many health experts now believe that, for optimal health, you likely need anywhere from 50 to 85 percent of your daily calories in the form of healthful fats.

As noted in the film, heart disease is the leading cause of death worldwide, the most common form of which is coronary heart disease (CHD). CHD affects the blood vessels supplying blood to the heart, causing them to narrow, thereby restricting the amount of oxygen supplied to the heart. The conventional view is that high cholesterol is a major risk factor for this condition.

Statins are now among the most widely prescribed drugs on the market and are the number one profit-maker for the pharmaceutical industry, largely due to highly successful advertising campaigns. Meanwhile, as of 2010, there were no less than 900 studies proving their adverse effects, from muscle problems to increased cancer risk! Besides the fact that statins are dangerous to health, they also do not reduce the risk for heart disease, **because high cholesterol does NOT increase heart disease risk**...

Reference: Web site: http://www.statinnation.net/

Note: This a good web site and allows you to buy their DVD to explain in more detail.

Reference: Statin Nation: Doctors and cardiologists produced two DVDs on statins and cholesterol.

**Further Reading:**

**1. Low cholesterol linked to higher mortality**

**Summary of Result:**

**It was found that high cholesterol (that is above 6.21 mmol/L) was not a risk factor in the study**. The result goes against the current guidelines.

**Conclusions were:**

Low cholesterol was related to high mortality (death rate) High cholesterol was not a risk factor for mortality.

Reference: Nago, N., Ishikawa, S., Goto, T., & Kayaba, K. (2011). Low Cholesterol is Associated With Mortality From Stroke, Heart Disease, and Cancer: The Jichi Medical School Cohort Study. Journal of Epidemiology, 21(1), 67–74.

**2. From textbook: Lipitor: Thief of Memory and Statin Drugs, Side Effects and the Misguided War on Cholesterol**
Study after study has shown that people with so-called 'healthy' low cholesterol levels actually live shorter lives. Upon closer scrutiny, the very studies that have formed the cornerstone of the anti-cholesterol argument actually show that cholesterol and saturated fat are not harmful. Numerous populations consuming high saturated fat diets have been documented to enjoy very low rates of heart disease. Over fifty years' worth of clinical dietary intervention trials have completely failed to show any mortality benefit among those following saturated fat-restricted diets - in fact, several of these studies showed higher death rates among those assigned to diets low in saturated fats!

Reference: Duane Graveline, M.D., MPH. NASA physician, author of Lipitor: Thief of Memory and Statin Drugs, Side Effects and the Misguided War on Cholesterol.

**3. Medscape October 26, 2016**
In the study, researchers analysed data which included information on 30,343,035 persons aged 40 to 65 years. The use of cholesterol-lowering drugs was associated with a significantly **higher** prevalence of Parkinson's disease.

Reference: Melville, NA. Statin Use Linked to Increased Parkinson's Risk. Medscape October 26, 2016

**4. No link between dietary saturated fat and heart disease**
Meta-analysis after meta-analysis has failed to show any link between dietary saturated fat and heart disease. And people who have heart attacks have repeatedly been shown to have normal or average cholesterol levels - not high cholesterol. Now, two more studies have recently been published to yet again destroy the diet-heart hypothesis and the basis for the use of statins - which are estimated to be taken by 100 million people around the world.

The first study, published in the **British Medical Journal** examined the validity of the diet-heart hypothesis by recovering and analysing previously unpublished data from randomised control trials. The study found that replacing saturated fat for vegetable oils did lower cholesterol levels, but this did not reduce the amount of heart disease or heart attacks. In fact, **for each 30 mg/dL (0.78 mmol/L) reduction in cholesterol there was a 22% greater risk of death.**

This fits with all of the other studies done around the world, going back more than 40 years now, showing that low cholesterol correlates with increased deaths from all causes - in particular, deaths from cancer and other diseases related to the immune system. A meta-analysis that pooled data from 21 studies and included nearly 348,000 adults found no difference in the risks of heart disease and stroke between people with the lowest and highest intakes of saturated fat.

Another 2010 study published in the *American Journal of Clinical Nutrition* found that a reduction in saturated fat intake must be evaluated in the context of replacement by other macronutrients, such as carbohydrates. The cholesterol hypothesis turned into a boon for the processed food industry, which began creating all manner of "low-fat" and "low cholesterol" foods.

Healthful saturated fats were also swapped for harmful trans fats, and ever-increasing amounts of sugar. Sugar was later replaced by processed high fructose corn syrup, which is far cheaper to produce. Then, in 1995, the first genetically engineered corn was approved in the US, and today, most of the corn syrup used in processed foods is made from genetically engineered corn. This has its own set of potential hazards, over and above those associated with fructose. This chain of events offers even more support for the notion that it is the processed sugar in the diet—not saturated fat—that causes heart disease. Because despite the low-fat craze, rates of heart disease have stayed on a steady incline.

While saturated fat consumption was dramatically reduced in most people's diet, what *didn't* decrease was sugar. On the contrary, fructose consumption has skyrocketed, for it being added to virtually every kind of processed food and beverage.

**Every five years, the US Departments of Agriculture (USDA) and Health and Human Services (HHS) convene a 15-member panel to update the nation's dietary guidelines.**

The panel's stated mission is to identify foods and beverages that help the population achieve and maintain a healthy weight, promote health, and prevent disease. These guidelines also serve as the foundation for national nutrition policies. **2015: Cholesterol Limit Removed from 2015 Dietary Guidelines**

The advisory panel has decided to eliminate warnings about dietary cholesterol, which for decades has been wrongfully blamed for causing heart disease. The latest guidelines accurately state that there **is no such link between cholesterol and heart disease**. According to the report, "cholesterol is not a nutrient of concern for overconsumption."

Until now, the guidelines have recommended limiting dietary cholesterol to 300 milligrams (mg) per day, which amounts to about two eggs. As noted by Steven Nissen, chairman of the department of cardiovascular medicine at the Cleveland Clinic: *"Many of us for a long time have believed the dietary guidelines were pointing in the wrong direction. It is long overdue."* No More Limits on Dietary Cholesterol. DGAC has recommended limits on dietary cholesterol be removed from the upcoming 2015 Dietary Guidelines for Americans. This is a reversal of the cholesterol limitations that have been widely circulated since the 1960s.

Cleveland Clinic cardiologist Dr. Steven Nissen told USA. ***"It's the right decision. We got the dietary guidelines wrong. They've been wrong for decades."*** Dietary cholesterol may be far less detrimental to cardiovascular health than previously thought. Despite this, research has never established any clear relationship between the consumption of dietary cholesterol and the risk for heart disease.

Reference: American Journal of Clinical Nutrition. https://health.gov/dietaryguidelines/2015/guidelines/ 2015 Dietary Guidelines. http://articles.mercola.com/sites/articles/archive/2013/12/07/saturated-fat-cholesterol-heart-disease.aspx

**5. Gary Taubes, a science writer and three-time winner of the Science in Society Award of the National Association of Science Writers**
Taubes stated, "Dietary fat, whether saturated or not, is not a cause of obesity, heart disease, or any other chronic disease of civilization."

Reference: *Taubes, Gary (2007). Good Calories, Bad Calories. Taubes, Gary. (July 7, 2002). What if It's All Been a Big Fat Lie? The New York Times Magazine.*

**6. Author and journalist Michael Pollan**, a two-time James Beard Foundation Award winner, in his book "In Defense of Food – An Eater's Manifesto states "The amount of saturated fat in the diet probably may have little if any bearing on the risk of heart disease, and evidence that increasing polyunsaturated fats in the diet will reduce risk is slim to nil.

**7. "The Big Fat Surprise"** (Simon & Schuster 2014) wrote the first book to argue that **saturated fats are not bad** for health. The book was named a Best Book of 2014 by The Economist, the Wall Street Journal, Forbes, Jones, Library Journal, and Kirkus Reviews. "This book should be read by every nutrition science professional," said the American Journal of Clinical Nutrition. The book's arguments were subsequently published as cover article in TIME magazine and the New Scientist, among many other publications.

**8. Andrew Mente, PhD** (Assistant Professor, Department of Clinical Epidemiology and Biostatistics, McMaster University) that "In light of new scientific data, it appears that saturated fat is not associated with an increased risk of cardiovascular disease

**9. Research: American Journal of Clinical Nutrition (Siri-Tarino et al. 2010)**
350,000 people in a follow-up period of five to 23 years.

Findings from this research: **No relationship between saturated fat intake and heart disease**. Further research Large Japanese study of about 58,000 people actually found an inverse association between saturated fat intake and strokes. **Adults** who were eating the most saturated fat actually had the lowest levels of stroke.

Background: A reduction in dietary saturated fat has generally been thought to improve cardiovascular health.
Results: During 5–23 y of follow-up of 347,747 subjects, 11,006 developed CHD or stroke. Intake of saturated fat was not associated with an increased risk of CHD, stroke, or CVD

In conclusion, meta-analysis showed that there is insufficient evidence from prospective epidemiologic studies to conclude that dietary saturated fat is associated with an increased risk of CHD, stroke, or CVD. (Siri-Tarino et al. 2010). The finding joins other conclusions of the past few years that run counter to the conventional advice that saturated fat is bad for the heart because it increases total cholesterol levels. Traditional advice not supported by data.

Reference: Siri-Tarino PW et al (2010) American Journal of Clinical Nutrition Mar;91(3):535-46. doi: 10.3945/ajcn.2009.27725. Epub 2010 Jan 13

**Guidelines are emerging around the world (2022) to limit statins to older people especially females.**

**10. Women and Statins**
To date, no large trial of women statin users who already have cardiovascular disease has been shown to increase life expectancy by one day. More importantly, the use of statins in women at lower risk has not increased life expectancy nor prevented heart attacks and stroke.

It raises the question whether women should be prescribed statins at all. I believe that the answer is no. Statins fail to provide any overall health benefit in women. The more recent heart protection study was hailed as a success for men and women, but despite the hype there was no effect on mortality in women. If you're on a statin because you're at high risk of cardiovascular disease and you have muscle pain, it's worth taking the vitamin-like substance Coenzyme Q 10. Statins cause levels of this to fall in the body.

Association of diabetes with statin therapy has started a wave of discussion in the medical community. Individual statins differ with respect to their diabetogenic property; women and elderly persons appear to be at increased risk of diabetes. (note: Diabetes is a risk factor for developing heart disease)

References: Aiman, U., Najmi, A., & Khan, R. A. (2014). Statin induced diabetes and its clinical implications. Journal of pharmacology & pharmacotherapeutics, 5(3), 181–185. https://doi.org/10.4103/0976-500X.136097

*The Great Cholesterol Con* by Malcolm Kendrick, John Blake Publishing,

Jones, M, Tett, S et al (2017) New-Onset Diabetes After Statin Exposure in Elderly Women: The Australian Longitudinal Study on Women's Health. Drugs & Aging, 2017; 34 (3): 203 DOI: 10.1007/s40266-017-0435-0

**11. Statins and the older patient – no clear evidence to support prescribing statins to older patients. Increased risk of harm with Statins**
Many older adults have high cholesterol. Statins are usually prescribed to prevent heart disease. But for older people, there is no clear evidence that high cholesterol leads to heart disease or death. In fact, some studies show the opposite—that older people with the lowest cholesterol levels actually have the highest risk of death.

There is growing debate about whether doctors should prescribe statins to otherwise healthy older people to reduce their risk of developing their first heart attack or stroke. Now the debate has reignited with the publication of a new analysis that casts doubt on their benefit for people over the age of 65, and raised concern of the potential for harm in people aged over 75.

Results from a large trial completed some 13 years ago. The researchers considered data from 2,867 participants over 65 without any evidence of heart disease who were randomly assigned to the statin pravastatin or usual care, then followed for over 4.5 years. The researchers looked at the effects of the statin on deaths from any cause, and deaths from heart disease and heart attacks in

people aged 65-75 and over 75. They found no difference in any of these outcomes for either of the age groups and even raised concern of the potential for harm in people aged over 75. The study authors concluded that the benefits previously ascribed to statins may have been overstated for older people.

Further studies: Men aged 70–75 years with no history of symptoms, the harms of taking statins were greater than the benefits until the risk of developing cardiovascular disease over 10 years was over 21 percent.

Conclusions from another study: In participants older than 74 years without type 2 diabetes, statin treatment was not associated with a reduction in atherosclerotic CVD or in all cause mortality, even when the incidence of atherosclerotic CVD was statistically significantly higher than the risk thresholds proposed for statin use. In the presence of diabetes, statin use was statistically significantly associated with reductions in the incidence of atherosclerotic CVD and in all cause mortality

References: Rafel, R., et al (2018) Statins for primary prevention of cardiovascular events and mortality in old and very old adults with and without type 2 diabetes: retrospective cohort study BMJ 2018; 362

https://theconversation.com/how-old-is-too-old-for-cholesterol-lowering-medications-78102

**12. Medical Journal Articles: Increase in anxiety and depression, psychiatric effects with people taking statins**
Research into cholesterol-lowering statin drugs and serotonin-1A receptors may help explain the relationships between cholesterol levels and symptoms of anxiety and depression. Shrivastava and colleagues explored the effect of chronic cholesterol depletion induced by mevastatin on the function and dynamics of the human serotonin-1A receptors stably expressed in animal cells. Statins are competitive inhibitors of HMG-CoA reductase, the key rate-limiting enzyme in cholesterol biosynthesis.

“Our results show a significant reduction in the level of specific ligand binding and G-protein coupling to serotonin-1A receptors upon chronic cholesterol depletion, although the membrane receptor level is not reduced at all,” they wrote. The effect of chronic cholesterol depletion on the ligand binding of serotonin-1A receptors is reversible.

In addition, the researchers found novel changes in receptor dynamics with **chronic cholesterol depletion**.
These results have broad implications in light of recent reports of **anxiety and depression in patients** receiving long-term statin therapy. CNS cholesterol levels are abnormally low in many people with mood disorders.
The same researchers had previously demonstrated that maintaining normal cholesterol levels is important for the function of neuronal serotonin receptors.

Reference: Kaplan, A (2010) Statins, Cholesterol Depletion—and Mood Disorders: What’s the Link? Psychiatric Times. November 30,

In 2009, 211 million prescriptions for lipid- and cholesterol-lowering drugs, including statins, were dispensed in this country, according to IMSHealth Reports. The leading statin drugs include atorvastatin (Lipitor), fluvastatin (Lescol), lovastatin (Mevacor, Altoprev), pravastatin (Pravachol), rosuvastatin calcium (Crestor), and simvastatin (Zocor).

Mounting reports of adverse effects related to mood and sleep and cognitive performance; widespread reports of muscle aches, nausea, diarrhea, and constipation; and occasional reports of liver damage.

Some statin users themselves have reported adverse affects on such Web sites as: www.statineffects.com, maintained by Beatrice Golomb, MD, PhD, associate professor of medicine, and her team at the University of California, San Diego, as well as www.askapatient.com, operated by Consumer Health Resource Group, LLC.
For more than a decade, Golomb and her team have researched the effects of statin medications.
“Some individuals taking statins report problems with anxiety and depression, but far more report problems with irritability and changes in personality,” Golomb told Psychiatric Times.

In a survey of persons citing statin adverse effects, Golomb reported that nearly two-thirds (65%) of the 843 respondents endorsed increased anxiety or irritability and 32% endorsed an increase in depressive symptoms as part of the adverse-effect complex they attributed to statins. Manifestations of severe irritability, according to Golomb, included homicidal impulses, threats to others, and road rage.

Reference: Kaplan, A (2010) Statins, Cholesterol Depletion—and Mood Disorders: What’s the Link? Psychiatric Times. November 30, www.psychiatrictimes.com

Researchers have found that fat-soluble statins — which include Lipitor, Mevacor, Vytorin and Zocor — are more likely to cause insomnia or nightmares because they can more easily penetrate cell membranes and make their way across the blood-brain barrier, which protects the brain from chemicals in the blood.

**Insomnia – Dangerous Side Effect of Statins**
A number of people report insomnia associated with the use of statins. Cognitive decline in several of these reports along with depressive manifestations and suspect impaired bio-availability of both cholesterol and dolichols. Insomnia while on statins may well be a marker of more serious neurologic consequences to come.

Reference from: http://www.spacedoc.com/statins_insomnia.html

**Sleep Disturbance and Insomnia – Evidence of Side-effect of Anticholesterol Drugs**
Dr Beatrice Golomb, of the University of California at San Diego School of Medicine, said: "The findings are significant because sleep problems can affect quality of life and may have adverse health consequences, such as promoting weight gain and insulin resistance.

**New health warnings are to be issued over popular cholesterol-lowering drugs after evidence that thousands of users suffer side effects such as depression and sexual problems**.
These are sleep disturbances, memory loss, sexual dysfunction, depression. But some doctors have criticised delays by the Government's drug safety watchdog, the Medicines and Healthcare products Regulatory Agency. The MHRA signalled the need for updated warnings in February last year but disagreements about the wording have held up the changes.

Dr Ike Iheanacho, editor of the Drug and Therapeutics Bulletin which conducts independent reviews of evidence on drugs, said most patients and doctors were unaware of the newly identified problems.

http://www.dailymail.co.uk/health/article-1226238/Side-effects-alert-statin-users-drug-linked-depression-memory-loss.html#ixzz2sopDMtQD

**Behaviour and Personality Disorders from Statins**
Common story of statin drug side effects from victims all over the world. From aggression, irritability, hostility, paranoia, homicidal ideation, road rage-like behaviour, depression and suicidal ideation, all share one thread - that of neuropeptide synthesis, the magic peptide strand that makes us what we are and governs of every action.

Reference: http://www.spacedoc.com/statins_behavior.html

**Summary of the Major Points and Recommendations Contained in the book by Sinatra (cardiologist) & Bowden.**
Cholesterol levels have little effect on cardiovascular health, except for the small LDL particles which become oxidised and enter the endothelium of cardiac and other vessels, increasing inflammation and plaque build up. Cholesterol for all bodily functions, and reduction with statins may be a root cause of many modern disorders.

Cholesterol plays an important role in the serotonin system, so statins used to lower cholesterol may lead to the occurrence of depression.

Of more importance are triglycerides, fibrinogen, and some other blood factors, like C-reactive protein (CRP), homocysteine, interleukin-6 (which is a stronger marker of inflammation than CRP), ferratin (iron) in excess, and Lp (a). Calcium scan also important, as this builds up in arteries and causes loss of elasticity. Calcium accounts for half the composition of plaque, whereas cholesterol is only 3 percent! It is far more important as a marker of vascular health. Sugar is the root cause of inflammation and should be avoided in any of it's forms, as they generally contain fructose, the problem component

Reference: Nutritionist Jonny Bowden, PhD, and cardiologist Stephen Sinatra, MD. "The Great Cholesterol Myth"

You H1, Lu W, Zhao S, Hu Z, Zhang J (2013) . The relationship between statins and depression: a review of the literature..Expert Opinion Pharmacotherapy. 2013 Aug;14(11):1467-76. doi: 10.1517/14656566.2013.803067. Epub Jun 17

**Statins Linked to Anxiety and Depression**
Scientists are reporting a possible explanation for the symptoms of anxiety and depression that occur in some patients taking the popular statin family of anti-cholesterol drugs, and reported by some individuals on low-cholesterol diets. These symptoms could result from long-term, low levels of cholesterol in the brain, the report suggests. The research appears in the American Chemical Society's weekly journal Biochemistry.

The results represent the first report describing the effect of long-term cholesterol depletion on this type of cell receptor and suggest that chronic, low cholesterol levels in the brain might trigger anxiety and depression.

Reference: Shrivastava, S. et al (2010) Chronic Cholesterol Depletion Using Statin Impairs the Function and Dynamics of Human Serotonin1AReceptors. *Biochemistry*; 49 (26): 5426 DOI:

25% of the total amount of cholesterol found in the human body is localized in the brain, most of it in the myelin sheath that coats and insulates the nerves:

"It has been estimated that up to 70% of the brain cholesterol is associated with myelin. Because up to half of the white matter may be composed of myelin, it is unsurprising that the brain is the most cholesterol-rich organ in the body. The concentration of cholesterol in the brain, and particularly in myelin, is consistent with an essential function related to its membrane properties. "

**The cell membrane, specifically, is highly vulnerable to damage by statins:**
By extension, behavioral and cognitive adverse effects may be the manifestation of this fat-based interference. Diamond and Ravnskov state: A low serum cholesterol level has also been found to serve as a biological marker of major depression and suicidal behavior, whereas high cholesterol is protective.

In a study by Davison and Kaplan, the incidence of suicidal ideation among adults with mood disorders was more than 2.5-times greater in those taking statins. Moreover, several studies have shown that low cholesterol is associated with lower cognition and Alzheimer's disease and that high cholesterol is protective.

A review article called *Neuropsychiatric Adverse Events Associated with Statins: Epidemiology, Pathophysiology, Prevention and Management* discusses the state of the literature around the intersection between mental health and cholesterol control.

Despite generally dismissing a strong signal for concerning psychiatric adverse events, the article seems to conclude the following: Severe irritability, homicidal impulses, threats, road rage, depression and violence, paranoia, alienation, and antisocial behavior; cognitive and memory impairments; sleep disturbance; and sexual dysfunction have all been reported in case series and national registries of those taking statin medications.

The signal for lipophilic statins – simvastatin and atorvastatin – was stronger which makes mechanistic sense since these medications penetrate the brain and brain cholesterol deficiency has been implicated in bipolar, major depression, and schizophrenia.

Reference: Kelly Brogan, M.D. is a Manhattan-based holistic women's health psychiatrist, author of the New York Times bestselling book, A Mind of Your Own, and co-editor of the landmark textbook, Integrative Therapies for Depression. She completed her psychiatric training and fellowship at NYU Medical Center after graduating from Cornell University Medical College, and has a B.S. from MIT in Systems Neuroscience

**13. Conclusions from medical research (taken from British Medical Journal 2016). Very interesting comments from BMJ article challenging the hypothesis that high cholesterol is associated with heart disease.**
A team of academics and cardiologists from Scandinavia, the United States, Italy, Japan and Great Britain analysed 19 studies involving a total of 68,094 elderly people. They found that in 92% of cases, older people who had high levels of this LDL (or so-called "bad") cholesterol lived as long or longer and were in fact less likely to die prematurely from other diseases, including cancer. For years doctors have been prescribing statins to prevent cardiovascular disease and atherosclerosis, a hardening and narrowing of the arteries, because they were thought to be linked to high levels of cholesterol.

Now the authors are calling for a rethink of guidelines for statin prescriptions. They wrote: "Our review calls for a re-evaluation of the guidelines for cardiovascular prevention, in particular because the benefits from statin treatment have been exaggerated."

It was found in the detailed systematic review was that older people with high LDL (low-density lipoprotein) levels, the so-called 'bad' cholesterol, lived longer and had less heart disease," But their findings, published in the BMJ Open Journal, have sparked a backlash from other academics.

To add to the confusion, another recent study claimed that decades of health advice urging people in England to adopt low-fat, low-cholesterol diets had been disastrous for the fight against obesity.
Taken from the medical research: High LDL-C is inversely associated with mortality in most people over 60 years. This finding is inconsistent with the cholesterol hypothesis (ie, that cholesterol, particularly LDL-C, is inherently atherogenic).

Since elderly people with high LDL-C live as long or longer than those with low LDL-C, our analysis provides **reason to question the validity of the cholesterol hypothesis.** Moreover, our study provides the rationale for a re-evaluation of guidelines recommending pharmacological reduction of LDL-C in the elderly as a component of cardiovascular disease prevention strategies. Lack of an association or an inverse association between low-density-lipoprotein cholesterol and mortality in the elderly: a systematic review

Reference: Uffe Ravnskov, Diamond, D et al (2016 ) Lack of an association or an inverse association between low-density-lipoprotein cholesterol and mortality in the elderly: a systematic review. British Medical Journal. August 2016 - Volume 6 - 6

**14. Kelly Brogan, M.D. is a Manhattan-based holistic women's health psychiatrist. Kelly Brogan, MD, and Sayer Ji, Greenmedinfo.com**

A new study finds the chemical war against cholesterol using statin drugs was justified through statistical deception and the cover up of over 300 adverse health effects documented in the biomedical literature.

The common claims around "relative risk reduction" which can make an effect appear meaningful, when the "absolute risk reduction" reveals its insignificance. In this way, 100 people are treated with statin medications to offer 1 person benefit, and the change from a 2% to a 1% heart attack rate is billed a 50% reduction rather than a 1% improvement, *which is what it actually is*.

At least 300 adverse health effects evident in the published literature so far, with at least 28 distinct modes of toxicity, including,

- Muscle damage (myotoxicity): 80 studies
- Nerve damage (neurotoxicity): 54 studies
- Liver damage (hepatoxocity): view 32 studies
- Endocrine disruption: view 16 studies .
- Cancer-promoting: view 9 studies .
- Diabetes-promoting: view 8 studies
- Cardiovascular-damaging: view 15 studies .
- Birth defect causing (teratogenic): view 11 studies

Linked to suicide in men, depression including postpartum, and cognitive dysfunction, low cholesterol is not a desirable goal for the average psychiatric patient, aka half of the American population.

Beyond the known fact that statin drugs deplete the body of two essential nutrients: coenzyme Q10 and selenium, they are also highly myotoxic and neurotoxic. Because the heart is one of the most nerve-saturated muscles in the human body, these two modes of toxicity combined represent a 'perfect storm' of cardiotoxicity – a highly ironic fact considering statin drugs are promoted as having 'life-saving' cardioprotective properties.

Expert review by Diamond and Ravnskov decimates any plausible indication for these cholesterol-lowering agents, giving full consideration to the above-mentioned side effects.

**They Plainly State:**

"Overall, our goal in this review is to explain how the war on cholesterol has been fought by advocates that have used statistical deception to create the appearance that statins are wonder drugs, when the reality is that their trivial benefit is more than offset by their adverse effects."

Not only is low cholesterol a problem, but it puts an individual at risk for viral infection, cancer, and mental illness because of the vital role that lipids play in cell membrane integrity, hormone production, and immunity.

A broadly toxic xenobiotic chemical, statin medications have only been demonstrated to be of slight benefit by statistical manipulation. For example, Diamond and Raynskov elucidate that:

The JUPITER trial of Crestor vs placebo resulted in increased fatal heart attacks in the treatment group which were obscured by combing fatal and nonfatal infarctions. In the ASCOT trial was used to generate PR copy boasting Lipitor's 36% reduction of heart attack risk, a figure arrived at through use of relative risk reduction from 3 to 2%.

The HPS study has 26% drop out rate prior to the beginning of the trial (which also demonstrated a 1% improvement with treatment), so that those with significant side effects were functionally excluded from the study.

While no study has ever shown any association between the degree of cholesterol lowering and beneficial outcomes described in terms of absolute risk reduction (likely because they would be perceived as insignificant), the adverse effects are not only always presented in these terms, but are also minimized through the technique of splitting common side effects up into multiple different categories to minimize the apparent incidence.

These side effects include “increased rates of cancer, cataracts, diabetes, cognitive impairment and musculoskeletal disorders”.

**Cancer**
In at least four trials, statistically significant increases in cancer incidence was found, and handily dismissed by all authors as insignificant because they claimed “no known potential biological basis” is known. This may be because the authors are still thinking of cancer as a genetic time bomb that has nothing to do with mitochondrial dysfunction, loss of lipid integrity, or environmental exposures.

With statistically significant increases in cancer incidence and deaths, in some trials, the minimal cardiovascular benefit is far eclipsed by the cancer mortality. In one of the only long-term trials, there was a doubling of the incidence of ductal and lobular breast cancer in women taking statins for more than ten years. One of many reasons that women should never be treated with these medications.

**Myopathy (aches and pains)**
Aches and pains in people taking statins is very common and not often reported on.
As one of the more well-known side effects of statins, muscle breakdown and associated pain, or myopathy has also been hidden in the literature. Risk from taking statins is muscle damage resulting in weakness, tenderness, or pain. Commonly occur in large muscles in the legs, also in the upper arms chest, shoulders, or lower back, and elsewhere. Statin-related muscle inflammation and damage can occur. A 2006 study in the Journal of Pathology found that statin therapy induces ultrastructural damage in skeletal muscle in patients without myalgia,” indicating that statin-associated muscle damage may be a universal problem for the millions put on them.

**High cholesterol does not cause heart disease, statins have serious side effects.**
In a Swedish study including 289 of the 290 municipalities, no association was found between statin use and the change in mortality from acute myocardial infarction.

Also, the American National Health and Nutrition Examination Survey found that during the period 1999-2006 the number of heart attacks (AMI) and strokes increased from 3.4 to 3.7%, and from 2.0 to 2.9%, respectively. During the same period mean LDL-C level decreased from 126.1 to 114.8 mg/dL, and the self-reported use of lipid-lowering drugs increased from 8 to 13.4%. Furthermore, statin utilization in 12 European countries between 2000 and 2012 was not associated with reduced CHD mortality or its rate of change over the years.

**Conclusion**
The idea that high cholesterol levels in the blood are the main cause of heart disease is impossible because people with low levels become just as atherosclerotic as people with high levels and their risk of suffering from CVD is the same or higher. The cholesterol hypothesis has been kept alive for decades by reviewers who have used misleading statistics, excluded the results from unsuccessful trials and ignored.

Reference: Uffe Ravnskov and Sherif Sultan et al. (2018) LDL-C Does Not Cause Cardiovascular Disease: a comprehensive review of current literature. Available from: https://www.researchgate.net/publication/327564052_LDL-

**15. Interesting web site - THE CHOLESTEROL MYTH DEBUNKED. Points taken off this website.**
https://www.ditchthecarbs.com/the-cholesterol-myth/

**Cholesterol**
The concept of "Good" cholesterol HDL and "Bad" cholesterol LDL are outdated.
Eating more good healthy fat. Avoid the current guidelines which state we should be eating low-fat and wholegrain. Eat low-carb, high-fat, unprocessed, real food.

A low-fat diet has been shown to have worse outcome. Low carb high fat leads to better health outcomes and disease prevention.

**Low Fat Diets – Cause Weight Gain and Problems:**
Avoid anything marked low fat (as sugar and salt have been substituted for fat, and we need some fat for satiation of appetite and for calories), processed meats, seed oils, sugars, omega-6 fatty acids (mainly from seed oils).
Sugar and carbs are far more detrimental to our health than dietary fat.

**Sugar causes inflammation.** Sugar raises insulin which raises blood pressure, appetite, triglycerides
**Sugar causes high triglycerides,** which is by far the biggest danger sign for heart disease. Lower your sugar, lowers insulin, lowers triglycerides, lowers your risk.

**Low cholesterol is not healthy.** Low cholesterol is linked with depression, aggression, Alzheimer's, suicidal thoughts to name a few. Cholesterol is required to make brain cells

**The benefits of statins have been grossly exaggerated, the side effects have been underreported.**
There is a great debate going on with the statin lobbyists, and pharmaceutical companies to release their figures.
There are class actions taking place in America against the statin drug companies, stating they knowingly have underreported side effects such as muscle damage, memory loss and diabetes.

There is also research into the fact that statins reduce Co-enzyme Q10, an enzyme required by every mitochondria for energy transfer, causing muscle pain and damage may actually contribute to heart disease! Statins should never be prescribed for the elderly, most women and only in middle-aged men with a history of proven coronary heart disease. The biggest side effects of statins are memory loss, muscle damage, diabetes, loss of energy and low immunity. Statins reduce hormone production, bile production and Vitamin D.

The research on the adverse effects of Statins and the controversy of whether they give cardiac primary and secondary protection are too numerous to list in this document.