



## Is it True that Eggs are as Bad for Your Arteries as Smoking?

By Dr. Mercola

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Recently, news headlines were ablaze with startling information that eggs are nearly as bad for your arteries as cigarettes. After surveying more than 1,200 seniors, the researchers concluded that eating egg yolks on a regular basis is approximately two-thirds as bad as smoking with regards to the build-up of arterial plaque.<sup>1</sup>

That's an incredible claim—especially once you know the rest of the story, as Paul Harvey used to say.

The rest of the story is this: the "study" is based on interviews of stroke patients and their recollection of egg intake and admission of smoking history.

The authors do acknowledge that the results are weak because they're dependent on the patients' self-reporting, memory, and honesty. They also say the finding that people with heart disease shouldn't consume eggs is just a *hypothesis* and should be tested further. That hasn't stopped the conventional media from running with it though, without any further scrutiny.<sup>2</sup>

### ***Latest Attack on Eggs Fraught with Conflicts of Interest***

First of all, the study was funded by the Heart & Stroke Foundation of Ontario, and the Heart & Stroke Foundation of Canada. Although these are two different entities, they use the same donors list in their annual reports<sup>3</sup>, and they are both heavily funded by Big Pharma—to the tune of AT LEAST \$7 million a year for heart and stroke recovery, and \$4.4 million for the Research Center's Heart & Stroke Spark Together for Healthy Kids™ project.

A number of "studies" that have come out of the Research Center support very aggressive drug treatment of stroke and heart attack patients, including this one, entitled "*Treating Arteries Instead of Risk Factors*<sup>4</sup>," in which the authors actually advocate skipping the risk factors altogether and just aggressively treating with pharmaceuticals. The study says they:

*"... ensured that patients with vascular disease were using an angiotensin-converting enzyme inhibitor. For those not able to use angiotensin-converting enzyme inhibitors because of cough or angioedema, we ensured that they were using an angiotensin receptor blocker, unless they had contraindications to these classes of drugs."*

Next, let's look at the study authors. Two of the three researchers in question, have declared interests in statins. David Spence and Jean Davignon have received honoraria and speaker's fees from several pharmaceutical companies manufacturing lipid-lowering drugs. Now do you think the companies that make statins might have a vested interest in getting you to be afraid of eggs and cholesterol? Of course they do.

The third researcher, David Jenkins, helped create the vegan "Portfolio Diet," which only allows egg substitutes and then only sparingly.

So what's the bottom line when you look at who funded the study and who the authors were? They all have heavy involvement with, and funding from, pharmaceutical companies, so how can you expect anything but massive conflict of interest? With this background information you could EASILY predict the outcome of the study well before it even began.

### ***Shoddy Hypothesis Ignores Already Established Science***

There is a major misconception that you must avoid foods like eggs and saturated fat to protect your heart.

While it's true that fats from animal sources contain cholesterol, this is not necessarily something that will harm you.

Cholesterol is in every cell in your body, where it helps to produce cell membranes, hormones, vitamin D and bile acids that help you to digest fat. Cholesterol also helps in the formation of memories and is vital for your neurological function.

Besides asking seniors to recollect their past egg consumption with any amount of accuracy, there are other major problems with this study. Mark Sisson posted a humorous and accurate take on it on his blog, stating:<sup>5</sup>

*"Those who ate the most eggs also smoked the most and were the most diabetic. To their credit, the authors tried to control for those factors, plus several others. Although they tried to control for sex, blood lipids, blood pressure, smoking, body weight index, and presence of diabetes, the study's authors didn't – couldn't – account for all potentially confounding variables. In their own words, 'more research should be done to take in possible confounders such as exercise and waist circumference.'*

Hmm. 'Possible' confounders, eh?

- *Exercise reduces inflammatory markers of atherosclerosis*<sup>6</sup>
- *Exercise even reduces markers of atherosclerosis in pre-pubertal obese children!*<sup>7</sup>
- *Exercise reduces thickness of the carotid arterial wall*<sup>8</sup>

*It doesn't get much clearer than that. **Exercise is a massively confounding variable that the authors failed to take into account.***

**What about waist circumference?**

- *A high waist circumference predicts atherosclerosis of the carotid artery.*<sup>9</sup>

**Or how about stress, which also wasn't considered?**

- *Perceived daily psychological demands – the amount of crap you perceive to be heaped on your plate – are associated with progression of carotid arterial plaque.*<sup>10</sup>

*Yeah, it's not like the size of a person's waist, whether or not they move of their own volition or sit in an easy chair all day, and how much stress they endure have any impact on their risk of developing atherosclerosis. Those things may be linked, and I'm sure the authors would have loved to include them in their analysis, but there just wasn't enough space on the questionnaire. Besides, it's not like a little physical activity and meditation could even undo the damage wrought by 4.68 sinful egg yolks per week. Why, that's nearly a half dozen!"* [Emphasis mine]

**Study's Data Show Egg Consumption Actually Promotes Health**

Another interesting analysis has been made by Ned Kock, who specializes in nonlinear variance-based structural equation modeling. Using a model to test for the "moderating effect," he demonstrates how the egg consumption data from the featured study actually shows that egg consumption *promotes* health.<sup>11</sup>

By looking into the effect that the number of eggs consumed per week had on the association between LDL cholesterol and plaque formation, the data shows that the highest amount of plaque is associated with the lowest LDL cholesterol levels... This is interesting, to say the least, since egg yolks are "supposed to" raise your LDL (bad) cholesterol levels thereby causing plaque buildup.

He writes:

*"What is happening here? Maybe egg consumption above a certain level shifts the size of the LDL particles from small to large, making them harmless. (Saturated fat consumption, in the context of a nutritious diet in lean individuals, seems to have a similar effect.) Maybe eggs contain nutrients that promote overall health, leading LDL particles to "behave" and do what they are supposed to do. Maybe it is a combination of these and other effects."*

## **Other Research has Found No Link Between Eggs and Heart Disease**

One of the curious features of this study was the singling out of eggs without paying any attention to other foods. What about trans fat consumption, for example, which is now widely known to increase cardiovascular health risks? Or processed sugars and grains?

Additionally, while the subjects were reportedly asked about medications, drug use was not evaluated to see if there were any correlations between drugs and increased risk of arterial plaque build-up. After all, the subjects were all stroke patients, and are therefore likely to be on statins. Statins, we now know, are associated with an increased risk of diabetes, and heart disease is the number one killer of diabetics. So is the increased plaque build-up really caused by egg consumption, or is it related to drug-induced diabetes?

In a previous paper<sup>12</sup>, the researchers even point out a study showing that participants who developed diabetes during the course of the study doubled their risk of heart disease with regular egg consumption, while egg consumption had no impact on heart disease risk in non-diabetics.<sup>13</sup> Overall, the idea that eggs are unhealthy is a complete myth, one that's easily debunked if you look at the evidence.

### **For example, previous studies have found that:**

- Consumption of more than 6 eggs per week does not increase the risk of stroke and ischemic stroke<sup>14</sup>
- Eating two eggs a day does not adversely affect endothelial function (an aggregate measure of cardiac risk) in healthy adults, supporting the view that dietary cholesterol may be less detrimental to cardiovascular health than previously thought<sup>15</sup>
- Proteins in cooked eggs are converted by gastrointestinal enzymes, producing peptides that act as ACE inhibitors (common prescription medications for lowering blood pressure)<sup>16</sup>
- A survey of South Carolina adults found no correlation of blood cholesterol levels with "bad" dietary habits, such as use of red meat, animal fats, fried foods, butter, eggs, whole milk, bacon, sausage and cheese<sup>17</sup>

## **Not All Eggs are Created Equal**

Ideally, the yolks should be consumed raw as the heat will damage many of the highly perishable nutrients in the yolk. Additionally, the cholesterol in the yolk can be oxidized with high temperatures, especially when it is in contact with the iron present in the whites and cooked, as in scrambled eggs, and such oxidation contributes to chronic inflammation in your body, which is definitely associated with increased risk of plaque formation and heart disease.

However, if you're eating raw eggs, they MUST be organic pastured eggs. You do not want to consume conventionally-raised eggs raw, as they're much more likely to be contaminated with pathogens such as [salmonella](#). [Organic pastured eggs](#) are also far superior when it comes to nutrient content. In a 2007 egg-testing project, *Mother Earth News* compared the official U.S. Department of Agriculture (USDA) nutrient data for commercial eggs with eggs from hens raised on pasture and found that the latter typically contains:

1/3 less cholesterol	2/3 more vitamin A	3 times more vitamin E
1/4 less saturated fat	2 times more omega-3 fatty acids	7 times more beta-carotene

The dramatically superior nutrient levels are most likely the result of the differences in diet between free ranging, pastured hens and commercially-farmed hens. An egg is considered organic if the chicken was only fed organic food, which means it will not have accumulated high levels of pesticides from the grains (mostly GM corn) fed to typical chickens. It's important to realize that an egg can be organic without being pasture-raised. "Pastured" means the chickens have been allowed to forage for its natural food sources outside, and is

your best guarantee of a high quality egg. A deep yellow or orange yolk is a telltale sign of high-quality organic pastured eggs.

### ***How to Find Fresh Pastured Organic Eggs***

The key to getting high quality eggs is to buy them locally, either from an organic farm or farmers market. Fortunately, finding organic eggs locally is far easier than finding raw milk as virtually every rural area has individuals with chickens. Farmers markets are a great way to meet the people who produce your food. With face-to-face contact, you can get your questions answered and know exactly what you're buying. Better yet, visit the farm and ask for a tour. To locate a free-range pasture farm, try asking your local health food store, or check out the following web listings:

- [Local Harvest](#)
- [USDA's farmer's market listing](#)
- [Eat Wild](#)

### ***Avoid Omega-3 Eggs***

If you absolutely must purchase your eggs from a commercial grocery store, look for ones that are marked free-range organic. They're like still going to originate from a mass-production facility (so you'll want to be careful about eating them raw), but it's about as good as it gets if you can't find a local source.

I would strongly encourage you to [AVOID ALL omega-3 eggs](#), as they are some of the least healthy for you. These eggs typically come from chickens that are fed poor-quality sources of omega-3 fats that are already oxidized. Also, omega-3 eggs perish much faster than non-omega-3 eggs.

As discussed by Mark Sisson:<sup>18</sup>

*"...hens given an unnatural industry-standard diet high in omega-6 containing grains (soy and corn) produce less healthful eggs than hens on a more natural diet of grains lower in omega-6 with supplementary antioxidants.<sup>19</sup>*

*When subjects ate two of the soy/corn-fed eggs a day, which were high in omega-6 fats, their oxidized LDL levels were increased by 40 percent. Subjects who ate two of the other eggs each day, which were low in omega-6 fats, had normal levels of oxidized LDL (comparable to subjects in the control group, who consumed between two and four eggs a week). Since the oxidation of LDL particles is strongly hypothesized to be a crucial causative factor in atherosclerosis, it's conceivable that eating normal, industrial eggs could have a negative effect on carotid plaque."*

### ***Heart Disease is One of the Easiest Diseases to Prevent!***

Heart disease, just like type 2 diabetes, is one of the easiest diseases to prevent and avoid, BUT you simply must be proactive. I find one of the most important risk factors to be your cholesterol to HDL ratio.

Contrary to popular belief, your **total** cholesterol level is just about worthless in determining your risk for heart disease, unless it is close to 300 or higher. And, perhaps more importantly, you need to be aware that cholesterol is not the CAUSE of heart disease. If you become overly concerned with trying to lower your cholesterol level to some set number, you will be completely missing the real problem. In fact, I have seen a number of people with levels over 250 who actually were at low heart disease risk due to their HDL levels. Conversely, I have seen even more who had cholesterol levels under 200 that were at a very high risk of heart disease based on the following additional tests:

- Your HDL/Cholesterol ratio: This percentage is a very potent heart disease risk factor. Just divide your HDL level by your cholesterol. Ideally, it should be above 24 percent. Below 10 percent, it's a significant indicator of risk for heart disease.

- Your Triglyceride/HDL ratios. You can also do the same thing with your triglycerides and HDL ratio. This ratio should be below 2.

Keeping your inflammation levels low is key if you want to reduce your risk of heart disease (as well as many other chronic diseases). It's important to realize that there are different sizes of LDL cholesterol particles, and **it's the LDL particle size that is relevant (which Ned Kock's modeling mentioned above indicates as well). This is because** small particles get stuck easily and cause more inflammation, whereas large particles do not get stuck. **Statins do not modulate LDL particle size.** The only way to make sure your LDL particles are large enough to not get stuck and cause inflammation and damage is through your diet. In fact, it's one of the major things that insulin does. So rather than taking a statin drug, you really need to focus on your diet to reduce the inflammation in your body, which is aggravated by eating:

- Oxidized cholesterol (cholesterol that has gone rancid, such as that from overcooked, scrambled eggs)
- Sugar and grains
- Foods cooked at high temperatures
- Trans fats

### ***Six Healthy Heart Tips***

A few more recommendations that can have a profound impact on reducing inflammation in your body and reducing your risk of heart disease include:

- **Optimizing your insulin levels.** If your fasting insulin level is not lower than three consider limiting or eliminating your intake of grains and sugars until you optimize your insulin level.
- **Optimizing your vitamin D levels.** Most people are not aware that vitamin D can have a profoundly dramatic impact on lowering your risk for heart disease. Your best source of vitamin D is through your skin being exposed to the sun. In the wintertime, I recommend using a safe tanning bed. If you opt for a vitamin D supplement, make sure you're taking the right form of vitamin D—D3, not D2—in the appropriate amounts to reap the benefits, and remember to get your vitamin D levels tested regularly. For more information, please see this previous article.
- **Balancing your omega-6 to omega-3 fat ratio.** Most Americans eating a standard American diet have a ratio of 25:1, which is highly unbalanced. The ideal ratio of omega-6 to omega-3 fats is 1:1. Therefore, you'll want to lower the amount of vegetable oils in your diet, and make sure you have a high-quality, animal-based source of omega-3s, such as krill oil.
- **Exercising regularly.** Exercise a great way to lower inflammation without any of the side effects associated with medications. High intensity interval exercises are particularly beneficial
- **Normalizing your weight, or better yet, your [waist size](#).** If you're a woman with a waist measurement of over 35 inches or a man with a waist of over 40 inches, you probably have high inflammation. Whittling a few inches off the waist by reducing your portions and increasing activity can go a long way toward solving that problem.
- **Addressing your stress.** Feeling stressed can create a wide variety of physiological changes, such as impairing digestion, excretion of valuable nutrients, decreasing beneficial gut flora populations, decreasing your metabolism, and raising triglycerides, cholesterol, insulin, and cortisol levels