

# Leyla Weighs In: More On Heart Disease: Oxidized LDL

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Fact: Those with diabetes, pre-diabetes and metabolic syndrome progress to coronary artery disease as much as 70 percent faster than individuals without diabetes. High blood sugar and insulin levels create inflammation, especially in arteries. The high carb diet associated with these conditions causes LDL cholesterol particles to become small, dense and more atherogenic. This is much more indicative of health outcomes than the *amount* of LDL circulating. We want big, fluffy, “pattern A” LDL particles, not “pattern B.”

But there’s more to the story according to Joseph Pizzorno ND, as described in his article in *Integrative Medicine* (Vol 13;3:2014):

LDL becomes very problematic when it’s *oxidized* and inflammation is the cause of it. Oxidized LDL (oxLDL) is directly involved in the atherosclerotic lesions in coronary arteries that result in cardiovascular disease. It is also associated with angina, accelerated atherosclerosis and heart attack.

Interestingly, elevated oxLDL is associated with insulin resistance, metabolic syndrome and untreated hypothyroidism. You can imagine then that getting these conditions under control can help reduce the oxidation of LDL cholesterol.

Polyunsaturated vegetable oils are a promoter of oxLDL because they’re volatile and become rancid quickly. It is my sincere hope that the American Heart Association will one day stop encouraging intake of proinflammatory vegetable oils as a replacement for healthy saturated fats. Unfortunately, it doesn’t appear that will happen anytime soon since they’ve recently doubled down on their stance that saturated fats are dangerous.

Other contributors to oxLDL are elevated homocysteine and hs-CRP, both markers of inflammation. High homocysteine is treated with vitamins B6, B12, folate and trimethylglycine. Those with very high homocysteine levels may need additional nutritional support with SAM-e.

Excessive alcohol intake is a “mitochondrial poison” according to Dr. Pizzorno, and it also raises triglycerides, an independent risk factor for

heart disease. A high refined carbohydrate diet will do the same.

Exposure to toxic metals such as lead, mercury, arsenic and cadmium, and PCBs (polychlorinated biphenyls) oxidize LDL and are associated with carotid artery plaques. Eat organic as often as possible and choose low mercury seafood. A useful website is [www.gotmercury.org](http://www.gotmercury.org).

Make sure to get some good quality antioxidants like vitamins C and E, and garlic, and eat plenty of colorful vegetables and some dark colored fruits. CoQ10 is shown to reduce LDL oxidation in humans and taking NAC will help boost glutathione levels—your master endogenous antioxidant.

To your health!