

# Nutrition: High Cholesterol and Heart Disease – Part 2

Hey, everybody, time for another case study, this one on high cholesterol.

C.W. is a 53-year-old male with a history of high cholesterol levels. His total cholesterol was around 250, which his doctor was concerned about. He'd also had an NMR LipoProfile that showed an LDL-P of about 1,450. Actually, that is a little bit lower than you might expect, with a total cholesterol of 250, and I think LDL-P is a better marker for determining risk of heart disease, which we'll talk about later in the program. C.W. generally ate well but was on a very-low-carb diet, eating a lot of fat, particularly saturated fat. He also had a history of gut-related issues like bloating and loose stools.

Diet changes for C.W. included a transition toward higher-carbohydrate intake and reducing his fat intake. We swapped out his saturated fats like butter and coconut oil for monounsaturated fats like olives, olive oil, avocados and avocado oil, and nuts. For carbohydrates, I had him focus on starchy plants like sweet potatoes and even white potatoes, and also yuca, taro, plantains, things like that, and we focused heavily on incorporating cardiovascular superfoods like fatty fish, fresh fruits and vegetables, tree nuts, and fermented foods. Now, with a patient like this, most studies on average show that saturated fat and cholesterol in the diet don't affect blood cholesterol levels, but those studies are looking at averages. They're not looking at individuals, and we know that there are hyper-responders to dietary cholesterol and saturated fat, and I've definitely seen this in my practice. Some patients switch to a low-carb Paleo type of diet, and their LDL-P and the total cholesterol and LDL cholesterol go through the roof. Now, whether that's significant clinically is a whole other question that we'll be talking more about in the blood chemistry unit, but the issue here, if a patient wants to keep their cholesterol down into a more normal range, they may need to switch to a diet that helps them to do that, so that's what we're doing here. I sometimes call this a Mediterranean Paleo diet, which is one that has lower fat intake overall and emphasizes monounsaturated fats and fats from cold-water fish and less saturated fat and less added fat.

Stress was a huge problem for C.W. as well, and stress is a major risk factor for heart disease. So I had him try several different stress management techniques until he found one that he really liked. He was a tech executive, so not surprisingly he liked using the Headspace app, and I recommended that he do that daily. C.W. was also sedentary; he spent long hours working, sitting in a chair. At most, he went for walks a couple times a week, but otherwise, he was either at his desk or on the couch most of the time, so I had him incorporate more physical activity into his daily routine. He drove to work or he sometimes took public transportation, took BART, so I had him either park well away from the office and walk to and from his car before and after work, or get off a stop away from work and walk to and from work. I had him set a timer so that he was getting up every 45 or 50 minutes and taking at least a two-minute stretching or walking

break. He was owner of the company, so he had plenty of space at work to do what he wanted. I advised him to get a standing desk, which he was reluctant to do, but he agreed to do because of these issues, and eventually work up to standing for at least half the day, and then he got a personal trainer and started to do some exercise, particularly strength training initially, and then gradually started to incorporate some aerobic activity.

In terms of supplements, his vitamin D was low. It was 18 nanograms per milliliter, probably because he never got outside and really didn't eat a lot of cold-water fatty fish or foods that contain vitamin D, so I suggested cod liver oil, one teaspoon a day, to provide vitamin D and vitamin A, but often when the levels are that low, you need to supplement with a little additional vitamin D3 to get them up, so I gave him about 4,000 IU of vitamin D3. I gave him vitamin K2, which is probably one of the most important nutrients when it comes to cardiovascular disease prevention, and he didn't have any sources of it in his diet, so we started him at a pretty high dose of five milligrams per day. Also gave him some curcumin at 1,000 mg per day, and finally some magnesium at 360 milligrams per day.

Rechecked his cholesterol levels about three months later, his total cholesterol was down to around 220, and his LDL-P also mildly decreased to about 1,200, which I believe ... that's marked as borderline high from the lab's NMR, but an LDL-P of 1,200 without a lot of other significant risk factors is questionable to me in terms of being a target for treatment. So we still wanted to continue and make further progress, we did more of a functional medicine workup to look at underlying mechanisms that could contribute to high cholesterol, and he still had a little bit of weight to lose and progress to make on his activity program, and we were able to from here continue to make more progress, but this was a great start. Okay, that's it for now.