

BEYOND STATINS: Non-pharmacologic Ways to Reduce Heart Disease Risk

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Heart disease remains the leading cause of death in the United States. For the past 40 years, prevention strategies have been centered on risk factor reduction, the main ones being smoking, hypertension, diabetes, sedentary lifestyle, and elevated cholesterol. To address these, physicians over the years have devoted their efforts towards counseling and assisting patients to stop smoking, modify their diets (predominantly by reducing fat intake), and exercise more in addition to medically treating their hypertension, diabetes, and high cholesterol. While the data is increasingly clear that those who have, or are at very high risk for, heart disease should receive medical treatment, there is much that an individual can do to reduce their risk of developing heart disease and possibly reduce, or even eliminate, the need for medication. That will be our focus here.

As we have known for a long time, among the most important factors in reducing heart disease risk are diet and exercise. Research has continued to bear out that sedentary lifestyles and diets high in saturated fat-containing foods, like red meat and butter, increase heart disease risk. It is also known that intake of “trans” fats from partially hydrogenated oils increase cholesterol and thus, probably, risk of heart disease. Lesser attention has been paid to a significant body of research that suggests that those who are happier and less stressed and who have stronger social support have less heart disease than those who don't. A lot has been made of Dr. Dean Ornish's program that has been proven to reverse heart disease. It should be noted, however, that what was studied was a comprehensive program of a 10% fat diet, meditation, stress reduction, and support groups. Whether, or not, the diet alone will reverse heart disease has never been studied. It is still controversial among many nutritionists who feel that low of a fat intake is not healthy in the long run and that it is possible that the meditation, stress reduction and support played a larger role in reducing heart disease than the diet. The debate continues...

Let's now turn to everyone's favorite topic, cholesterol. While the recommendations for treatment that experts have arrived at, and that doctors follow, have been shown to be effective in smaller studies, and it is expected that applying them on a large-scale public health level will reduce the national death rate from heart disease, the practicality and/or necessity of some of the recommendations has been questioned. In particular, to reach the cholesterol goals set by the National Cholesterol Education Program (NCEP), it is estimated that as many as 50 million Americans may need to be on cholesterol lowering medication, which now mostly translates into the use of a “statin” drug. Given the potential toxicity of these drugs, it is prudent to take a closer look at this issue.

The current cholesterol treatment guidelines are based on looking at the most cost-effective way to reduce cholesterol in the general population with the assumption that, overall, this will reduce heart disease deaths. When we look individuals, however, it becomes clear that there are many people with high cholesterol who have no heart disease and many people with heart disease who have “normal” cholesterols. So, what is going on? It turns out that the cholesterol picture is more complicated than the public has been told, but experts are still looking at how to apply this knowledge in a cost-effective manner across a large population. Individuals, however, can take matters into their own hands with the help of their physician, and probably a nutritionist.

It turns out that not all “bad” LDL cholesterol is bad and not all “good” HDL cholesterol is good. Each has a variety of forms and, for both of these; it is only the small, dense forms that are really the bad actors. What are called the large, fluffy forms appear to have minimal,

if any, negative effect in the case of LDL and significant beneficial effect with HDL. Why is this important? Nutritional factors can play a large role in determining which forms predominate. In particular, a state of insulin resistance, or what could be called “pre-diabetes,” strongly favors the small, dense forms and this can be significantly altered with nutritional therapy. A diet low in saturated fat and sugar and high in fruits, vegetables, and fiber as well as the beneficial fats found in fish oil, flax seeds, avocados and especially olive oil along with regular aerobic exercise can work to dramatically lower insulin resistance. The use of niacin can also be very helpful but should only be done under physician supervision due to potential liver toxicity issues. There is a safer form of nutritional niacin called inositol hexanicotinate but even this can cause liver irritation in some people and should be monitored.

There is now a simple, relatively inexpensive blood test available that can determine what your status is. It is known as a Nuclear Magnetic Resonance (NMR) Lipid Profile. People who have the small, dense forms will have a larger concentration of the particles in the blood because more small molecules can fit into a defined volume of blood than large molecules. Thus, a higher concentration of particles on an NMR study indicates that the small, dense particles are predominating. Using the treatment program mentioned above has been shown to decrease both the HDL and LDL concentrations, thus establishing a safer profile. An inexpensive way to get a ballpark sense of where you stand with regard to insulin resistance is to take the triglyceride level on a standard lipid blood test and divide it by the HDL number. The higher this ratio is, the more insulin resistant you likely are, with an ideal ratio being below 2-3.

Another potentially significant risk factor for heart disease that has not been given a lot of attention is an elevated blood level of a compound called homocysteine. In fact, an elevated homocysteine level is a better predictor of heart disease risk than an elevated total cholesterol level. Homocysteine is a component of a biochemical pathway for generating compounds called methyl groups that are essential for many body processes. When it accumulates in the body it leads to changes that accelerate heart disease. The metabolism of homocysteine depends on the activated form of folic acid, called 5-MTHF. There are many genetic variations of the enzyme that makes 5-MTHF from folic acid and if someone has a weaker form of the enzyme, or their diet is deficient in folic acid, they will make less 5-MTHF and the homocysteine level will rise. The treatment is quite simple. Take enough extra folic acid, with some B6 and B12, to get the homocysteine level down to an acceptable level. While most labs will list a level of around 11 or so as the upper limit of normal (some even say higher), many nutritional practitioners recommend a level below 8-9.

A truly exciting area of research has been the recent confirmation of the role that chronic inflammation plays in the generation of heart disease. It has been proposed for decades that inflammation, and the resultant generation of reactive oxygen species known as free radicals, may be the trigger for the damage to blood vessel linings that leads to heart disease. It is thought that the body's attempts to heal this damage, especially in the face of high levels of LDL cholesterol, which themselves have been oxidized by excess free radicals, may be what ultimately causes the formation of atherosclerotic blockages. This was the basis for recommending anti-oxidant supplements for prevention. Although previous research on vitamins has not borne this out (for reasons that are beyond the scope of this article), this view has been solidified by the discovery that an elevated level of a blood test called high sensitivity C-reactive protein (hs-CRP), which detects low levels of inflammation, is associated with a significant increased risk of heart disease. Such chronic inflammatory problems as chronic gingivitis have even been shown to be associated with heart disease. Other than treating any known underlying inflammatory conditions, there has been, as yet,

little medical research done on how to treat an elevated hs-CRP other than noting that statin drugs, particularly Lipitor, seem to do this in addition to lowering cholesterol. A number of authorities have even suggested that the lipid lowering effects of the statins may actually be a secondary effect and that their “anti-inflammatory” effect may be what really reduces heart disease. This is because, before the statins came out, no studies on lowering cholesterol showed the same beneficial effects.

What you should know is that there are non-drug ways to reduce inflammation. Nutritional research has long shown that increased intake of processed carbohydrates and sugar, as well as inadequate intake of essential fats, promotes inflammation. The answer is, therefore, to reduce or eliminate intake of “the whites,” white flour and white sugar, and increase intake of “good” fats, especially the omega-3 fats found in fish, fish oils, flax, and cold-pressed canola oil (but don’t cook with it!). I had a patient drop his hs-CRP from a high risk level of 6.0 to a low-average level of 1.1 in 2 months just by eliminating soft drinks.

The last, and least known, risk factor that responds to non-drug therapy that I want to discuss is iron. It is a little known fact that iron overload is a risk factor for heart disease. This is because iron rusts, i.e. oxidizes, and as we noted above, excess oxidation increases heart disease risk. Men and post-menopausal women are at particular risk for iron overload from too much red meat and iron-fortified foods like cereals and breads. Your iron status can be checked by a simple blood test called a serum ferritin level. While most labs will call anything in a range of around 20-380 “normal,” it has been shown that a level of 200 doubles your heart attack risk. An ideal level may be more like 50-85. The treatment is simple and benefits both you and the community. Be a Good Samaritan and donate blood on a regular basis until your ferritin is in the ideal range. In addition, minimize iron-fortified foods and do not take vitamins with iron. Obviously, this does not apply to women during their reproductive years that lose iron every month with their menstrual cycle. Iron deficiency is a greater risk for them.

It is my hope that the above discussion will give individuals who want to contribute to their own health, particularly with regard to heart disease, some useful tools to use in their journey and to discuss with their physicians. Good luck to you all.

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