



Northern Illinois Cardiothoracic and Vascular Surgery

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DIETARY RECOMMENDATIONS

We recommend that patients follow a traditional “Mediterranean” style diet after being diagnosed with cardiovascular disease. This is a diet based on principles easily applied to American-style cuisine. All the necessary ingredients are readily available in any supermarket. You don’t have to like olives or olive oil, and although it is a plant-based diet, no particular foods are forbidden. Our recommendations are based on a large study of patients (the Lyon Heart Study) who were given either a Mediterranean or a typical diet following a heart attack. In all other ways the patients were treated the same. The patients on the Mediterranean diet experienced a 50% to 70% reduction in recurrent events related to cardiovascular disease over the following five years, compared to the patients on the ordinary diet. The benefits of this diet appeared within a few weeks of instituting dietary changes and were persistent over the entire duration of the study. This is the only dietary approach that has been shown to confer such a dramatic improvement in clinical outcomes, though in other studies similar dietary approaches have also been shown to be helpful. The mechanisms underlying the benefits of the diet are not fully understood, but it appears that the diet may decrease the tendency for both inflammation and clotting in the body.

The Mediterranean diet is not a low fat diet at all (roughly 30% of the calories in the diet come from fats). Rather, it is certain kinds of fats or oils which are favored. These include the monounsaturated fats (nuts, olive oil, canola oil) and omega-3 fatty acids (primarily fish—especially salmon, and to a lesser extent nuts), and their intake is not restricted. At the same time, the intake of saturated fats (from meat, dairy, or hydrogenated oil sources) is restricted. The diet is traditionally eaten in regions of Southern Europe bordering the Mediterranean Sea. People in this area who eat the traditional diet have been found to have very low rates of heart disease and stroke, compared to rates of disease in the rest of Europe and North America. Their dietary staples include frequent vegetables, beans, lentils, bread and whole grains, fish, poultry, some yogurt, and fruit, with the majority of dietary fats coming from olives or olive oil, nuts, seeds, and canola oil. Among other things, this diet naturally provides high levels of an essential fatty acid called alpha linolenic acid, an important member of the omega-3 family of fatty acids.

The patients in the Lyon Heart Study were given simple instructions to change their diets, which are paraphrased below (we have added some additional suggestions based on newer evidence):

- Reduce or eliminate the consumption of beef, lamb and pork.
- Eliminate dairy fats as much as possible from the diet (no butter, cheese or cream, use skim milk).
- Eliminate margarine, animal fats, and other sources of saturated fats (“hydrogenated” or “partially hydrogenated” oils, also lard, shortening) as much as possible. A canola-based spread



may be used as a substitute for butter and margarine (we recommend Smart Balance Lite spread).

- Eliminate highly processed or refined (“junk”) food and concentrated sugars – seek out good sources of dietary fiber (whole grains, oats, bran, flax seeds).
- Eat fish and lean poultry (skinless) to substitute for meat sources. Try substituting 1% fat content ground turkey for any recipe calling for hamburger or ground beef.
- Seek out a variety of beans and lentils as alternative sources of protein and fiber.
- Eat a variety of fresh vegetables every day, especially green vegetables (not iceberg lettuce), and colorful ones (tomatoes, sweet peppers, etc.).
- Eat a small quantity of nuts (especially walnuts) every day (unsalted, unsweetened).
- Eat some kind of fresh fruit every day (no day without fresh fruit).
- Skim milk and lowfat yogurt are acceptable.
- Whole grains, bread, and pasta are eaten (look for whole grain bread made without hydrogenated oils).
- Olive oil and canola oil are the only oils permitted for salads and food preparation, and their use is not restricted. No other oils are used.
- Root vegetables (yams, potatoes, sweet potatoes, carrots, turnips) are encouraged.
- A moderate quantity of wine is allowed at meals (especially red wine), limited to 4 ounces total per day. Grape juice (red/purple) appears to have the same protective effect.

Some additional important notes about the Mediterranean diet:

The Mediterranean diet may be an anti-cancer diet as well; apparently there was a 58% reduction in the expected number of cancers in the Lyon Heart Study after four years.

It is an appropriate diet for all types of diabetics as well as nondiabetics, as the carbohydrate content is not excessive. This compares favorably to lowfat diets which tend to have high carbohydrate levels and may cause elevation in triglycerides.

Overall, we recommend that similar overall numbers of calories for carbohydrates, protein and fats/oils be consumed. In other words, try for roughly one-third of total calories from carbohydrates (avoiding sweets and refined flours), one third from proteins (fish, nuts, beans, and soy being preferred sources), and one third from fats/oils (avoiding animal fats and hydrogenated or partially hydrogenated oils).

On rare occasions when beef, pork or lamb is eaten, try for small quantities and the leanest possible cuts. Especially avoid any meat if the fat content is greater than 3% by weight or if 30% or more of the calories come from fat; this excludes most ground meat, hot dogs, lunch meats, sausage, bacon, and so on).

The Mediterranean diet is not designed to automatically cause weight loss, as net weight loss or



gain will be determined for any diet by the number of calories consumed. Too many calories (even if good food calories) cause weight gain! It is better to take small portions and have seconds if you're still hungry than to eat large portions. People who desire to lose weight are best served by making long term lifestyle changes that result in calorie restriction (while maintaining a healthy eating pattern), and at the same time increasing exercise which increases caloric needs and protects lean body mass.

Though it has not been tested in the same sort of clinical trial, a traditional Asian diet may confer many of these same health benefits. Asian diets overlap considerably with a Mediterranean diet; both are plant-based, i.e. heavily weighted towards consumption of vegetables, whole grains, beans, nuts and fruits, both include fish, both have an absence of red meat and other sources of animal fats. The main differences come in the consumption of soy products in Asian dishes and the absence of olive products. However available evidence points to soy products as a healthful addition to any diet (for further information on a prototypical Asian diet refer to [The Okinawa Program](#) book listed below). Use caution, as "Chinese food" (especially in restaurants) can be very high in animal fat and salt.

Vegetarian dishes should be an important part of a Mediterranean diet. However, beware of vegetarian dishes that call for butter or cheese or eggs, as these should be modified.

The only diet that has been shown to allow actual regression of plaques in coronary arteries is the strict vegetarian and very lowfat diet developed by Dr. Dean Ornish. We are less certain about the ability of this diet to reduce clinical events as it was studied in small groups of patients who underwent other interventions in addition to dietary changes. Additionally, the compliance rates with the diet are lower, and it may not be well suited for diabetics or patients with high triglyceride levels. For some patients it may be a good option. Dr. Ornish has written a number of books that are readily available.

A large number of other diets have been advocated as being the best option for a variety of disease states. Some have shown encouraging results in promoting weight loss and improvement in cholesterol levels. Unfortunately, others have no basis in fact and are no more than marketing ploys designed to sell books or promote a philosophy. A complete discussion is beyond the scope of this outline, and the reader is referred to the [RealAge Diet](#) book listed below, which devotes a section to a review of different diets that have been marketed in this way.

Cholesterol lowering medicines may be a very important way to further reduce risk for some patients. It is very important for patients to follow lipid levels with their cardiologist/internist in the long run.

Daily exercise also appears to be a crucial part of long-term reduction. Eating wisely is not a substitute for getting the blood moving. Just twenty minutes a day of gentle aerobic exercise appears to be sufficient (though more is probably better). As the preventive cardiologists say "The only days you don't have to exercise are the days that you don't eat."



Suggested reading:

Optimal Diets for Prevention of Coronary Heart Disease. Hu F., and Willett W. JAMA 2002; 288:2569-2578 (*Excellent overview of studies to date*).

The Role of Plant-based Diets in the Treatment and Prevention of Coronary Artery Disease. Gardner C. Coronary Artery Disease 2001; 12(7):553-559. (*Another great review*).

Mediterranean Alpha-Linolenic Acid-Rich Diet in Secondary Prevention of Coronary Artery Disease. de Lorgeril M., Renaud S., et al. Lancet 1994 Volume 343, pages 1454-1459 (*Original publication of Lyon Heart Study*).

Mediterranean Diet, Traditional Risk Factors, and the Rate of Cardiovascular Complications after Myocardial Infarction: Final Report of the Lyon Heart Study. de Lorgeril M., Salen P., et al., Circulation 1999; 99:779-785 (*Final paper with summary results*).

Understanding the Mediterranean Diet. Curtis, B. M. and O'Keefe, J. H. Postgraduate Medicine 2002, Volume 112, Number 2, pages 35-44 (*Good summary and review*).

The RealAge Diet. Roizen M. F., and La Puma J. Cliff Street Books, Harper Collins Publishers, Inc., NY, NY 2001 (*Detailed information on dietary and other risk reduction strategies. Also visit the website and do the survey at RealAge.com for specific recommendations*).

The Okinawa Program. Wilcox B., Wilcox D., and Suzuki M. Three Rivers Press, NY, NY. 2001 (*Detailed description of lifestyle and dietary habits of a remarkably healthy and long-lived Asian population, great information on a prototypical Asian diet*).