[IMAGE]

Eat Your Way to a Healthy Heart

By Ronald Klatz, MD and Robert Goldman, MD

February means Valentine's Day; what better month to focus on matters of the heart, specifically how we can keep it healthy? Let's take a look at some of the best ways to optimize heart health this and every month courtesy of the latest research examining how nutrition affects the cardiovascular system.

Understanding the impact of aging on the cardiovascular system first requires an understanding of those effects pertaining to disease processes and lifestyle changes typical in aging. In most healthy older individuals, the cardiovascular system is adequate to meet the body's need for the pressure and flow of blood. However, age-related changes in the cardiovascular system do occur, including:

- stiffening of the arteries, which increases systolic blood pressure (amount of pressure against the arterial walls), imposing a greater load on the heart;
- decline in various peripheral circulatory factors, including a decrease in muscle mass with age during exercise, a decreased ability to direct blood flow to muscles, and a decreased ability of muscle to utilize oxygen;
- decline in aerobic exercise capacity, whether measured as total work performance or maximal oxygen consumption (in older people who maintain a high level of physical activity, however, the decline appears to be approximately half of the 10 percent per decade decrease seen in sedentary individuals); and
- decline in maximal exercise heart rate (a universal age-related occurrence).

healthy heart apple - Copyright â Stock Photo / Register Mark Because these age-related changes in the cardiovascular system are highly nonuniform, some changes can result in a definite impairment, while others may not cause any symptoms at all. Thus, aging is by no means associated with a generalized decline in cardiovascular functions; it should instead be viewed as a complex, highly selective and individualized process.

What, then, is a prudent anti-aging approach to heart health? While the benefits of cardiovascular activity are well-established and often receive the bulk of attention when discussing heart health, the scientific

literature suggests a number of nutritional approaches also are worthy of consideration for achieving optimal cardiac fitness.

The Power of (Healthy) Protein

Previous studies have linked consumption of red meat to increased risks of cardiovascular disease and cancer. Adam Bernstein, from Harvard School of Public Health, and colleagues studied data collected on 84,136 women, ages 30 to 55, enrolled in the Nurses' Health Study. The research team examined the women's medical histories and lifestyles, including dietary habits, and tracked the incidence of non-fatal heart attacks and fatal coronary heart disease for 26 years.

Women who consumed two servings per day of red meat, as compared to those who consumed only half a serving per day, had a 30 percent higher risk of developing coronary heart disease. By comparison, the data also showed that eating more servings of protein sources such as poultry, fish and nuts was significantly associated with a decreased risk of coronary heart disease. Compared to eating one serving each day of red meat, women who substituted other protein-rich foods experienced significantly lower risk of coronary heart disease:

- 30 percent lower risk associated with eating one serving per day of nuts;
- 24 percent lower risk associated with eating one serving per day of fish;
- 19 percent lower risk associated with eating one serving per day of poultry;
- 13 percent lower risk associated with eating one serving per day of low-fat dairy products.

These findings led the researchers to an important conclusion, particularly with obesity and obesity-related disorders soaring in the U.S. and clearly associated with, among other things, excessive consumption of unhealthy food: "These data suggest that high red meat intake increases risk of [coronary heart disease] and that [coronary heart disease] risk may be reduced importantly by shifting sources of protein in the U.S. diet."

Source: Bernstein AM, et al. "Major Dietary Protein Sources and Risk of Coronary Heart Disease in Women." *Circulation,* August 2010.

Where's the Watermelon?

Watermelon is a rich natural source of L-citrulline, a compound closely related to L-arginine, which is crucial to the formation of nitric oxide, which helps to widen blood vessels and thereby mediate blood

pressure. Arturo Figueroa, from Florida State University, and colleagues evaluated four men and five women, average age 54 years, with pre-hypertension (134/77 +/- 5/3 mmHg). Subjects were randomly assigned to six weeks of watermelon supplementation or placebo (a harmless substance participants believed was a watermelon supplement), followed by a four-week washout period and then crossover. The team found that supplementation with 6 grams of L-citrulline from watermelon improved arterial function and lowered aortic blood pressure in all pre-hypertensive subjects. The researchers posit that L-citrulline supplementation (from watermelon) could lead to reduced doses of antihypertensive drugs being needed to control blood pressure, or could even prevent progression from pre-hypertension to hypertension.

watermelon - Copyright â Stock Photo / Register Mark *Source:* Figueroa A, et al. "Effects of Watermelon Supplementation on Aortic Blood Pressure and Wave Reflection in Individuals With Prehypertension: A Pilot Study." *American Journal of Hypertension*, July 8, 2010.

More Barley = Less Cholesterol

Previous studies have suggested that fiber can help reduce the risk of cardiovascular disease by lowering cholesterol and improving glucose tolerance. Barley is a food rich in beta glucans, a type of soluble fiber. Nancy Ames, from the Cereal Research Centre at Agriculture and Agri-Food Canada, and colleagues completed a meta-analysis of 11 studies, finding that barley and beta-glucan isolated from barley significantly lowered both total and low-density lipoprotein (LDL) cholesterol concentrations (the "bad" cholesterol). Observing that beta-glucan has unique characteristics relating to solubility and molecular weight, which may help it to confer its cholesterol-lowering properties, the team concluded: "Increased consumption of barely products should be considered as a dietary approach to reduce LDL cholesterol concentrations."

Source: AbuMweis SS, et al. "Beta-Glucan From Barley and Its Lipid-Lowering Capacity: a Meta-Analysis of Randomized, Controlled Trials." *European Journal of Clinical Nutrition*, Oct. 6, 2010.

Try a Little Coffee

Hypertension (high blood pressure) makes blood vessels less responsive to signals to expand, and the lower elasticity of the aorta serves as a significant predictor of cardiovascular events. Christina Chrysohoou, from the University of Athens (Greece), and colleagues analyzed coffee consumption patterns among 435 hypertensive individuals, ages 65 to 100, enrolled in a larger study involving the permanent inhabitants of

Ikaria Island, where many residents reach 90 years of age and older. Compared to those who rarely drank coffee, moderate consumption (1-2 cups a day) was associated with a lower prevalence of diabetes, lower prevalence of high cholesterol, lower body mass index, lower prevalence of cardiovascular disease, and higher values of aortic distensibility.

Source: Chrysohoou C, et al. "Moderate Coffee Consumption Improves Aortic Distensibility in Hypertensive Elderly Individuals: Ikaria Study" (Abstract #5233), presented at European Society of Cardiology 2010 Congress, Sept. 1, 2010.

Treat Yourself to Chocolate

Dark chocolate is rich in antioxidant compounds, particularly flavonoids, and previous studies have demonstrated the food's beneficial effects on blood pressure and endothelial function. Luc Djousse, from Harvard Medical School, and colleagues studied the effects of total chocolate intake on coronary heart disease. The team studied 4,970 men and women, ages 25 to 93, surveying for frequency of dark chocolate consumption and assessing for the onset of coronary heart disease.

The researchers found evidence suggesting an inverse association between frequency of chocolate consumption and coronary heart disease; specifically, consumption of chocolate more than five times a week was associated with 57 percent lower prevalence of coronary heart disease, as compared to those subjects who did not consume chocolate. [Keep in mind that not any chocolate will do; you can't go around eating candy all day and expect to help your heart (or overall health, for that matter); for more information, read "Chocolate: The Next Miracle Food?" in the August 2010 issue of *TYH*.]

chocolate - Copyright â Stock Photo / Register Mark *Source:* Djousse L, et al. "Chocolate Consumption Is Inversely Associated With Prevalent Coronary Heart Disease: The National Heart, Lung, and Blood Institute Family Heart Study." *Clinical Nutrition*, Sept. 19, 2010.

Healthy Fats, Healthy Heart?

Low HDL (high-density lipoprotein, "good" cholesterol) levels and high LDL (low-density lipoprotein, "bad" cholesterol) levels are a risk factor for cardiovascular disease. Previous studies have suggested that the addition of dietary monounsaturated fatty acids (MUFA), common in the Mediterranean diet, is a viable approach to raising HDL levels. David Jenkins, from St. Michael's Hospital (Ontario, Canada), and colleagues recruited 17 men and 7 postmenopausal women to complete a very low saturated fat diet before

being randomly assigned to either a high-MUFA diet or a low- MUFA diet. Both groups of patients were assigned to a specific vegetarian diet that included oats, barley, psyllium, eggplant, okra, soy, almonds and a plant sterol-enriched margarine.

In the high-MUFA group, the researchers substituted 13 percent of calories from carbohydrates with a high-MUFA sunflower oil, with the option of a partial exchange with avocado oil. The team found significant reductions in blood cholesterol levels over the two-month study period for participants, with the replacement of 13 percent of total calories from carbohydrate by monounsaturated fats in the dietary portfolio resulting in a 12.5 percent increase in HDL and 35 percent reduction in LDL.

"Monounsaturated fat increased the effectiveness of a cholesterol-lowering dietary portfolio," wrote the researchers. "The potential benefits for cardiovascular risk were achieved through increases in HDL cholesterol, further reductions in the ratio of total to HDL cholesterol and reductions in C-reactive protein."

Source: Jenkins DJA, et al. "Adding Monounsaturated Fatty Acids to a Dietary Portfolio of Cholesterol-Lowering Foods in Hypercholesterolemia." *Canadian Medical Association Journal*, November 2010.

So eat your way to a healthy heart; that's what the research suggests. With these and countless other foods associated with cardiovascular fitness, what reason could you possibly have for avoiding a heart-healthy meal plan starting today? Talk to your doctor for more information on how small dietary changes can improve your cardiovascular and overall health.

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10 More! Other Important Foods for Heart Health

You can't really get enough of heart-healthy foods, and fortunately, they're in abundance; in addition to the foods mentioned in this article, check out these 10 tasty foods that can help optimize your cardiovascular system. *Source: WebMD.com*

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