

Nutrition News

Department of Human Nutrition

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Can a Mediterranean Diet Positively Affect Our Genes?



There is mounting evidence that a style of eating enjoyed by people in countries around the Mediterranean Sea (Spain, Portugal, southern Italy, Greece and Turkey) has a positive effect on cardiovascular health. It emphasizes modest portions of a variety of foods such as fruits, vegetables, whole grains, yogurt, fish, small amounts of red wine and a common mainstay of the cuisine in many of these Mediterranean countries – olive oil.

What makes a Mediterranean diet heart healthy?

There are several contributing factors. We know that omega 3 fatty acids found in fish can reduce inflammation of blood vessels that can cause atherosclerosis; resveratrol, an antioxidant found in red wine, can inhibit LDL cholesterol oxidation; and the monounsaturated fats in olive oil can help reduce LDL cholesterol. Although all types of olive oil contain monounsaturated fats, extra virgin olive oil undergoes the least amount of processing and therefore maintains the greatest amount of polyphenol antioxidants.

Olive oil's reputation for promoting heart health has

been strengthening over the last several years. In 2004 the U.S. Food and Drug Agency (FDA) published a "Qualified Health Claim" for labels of products that are essentially pure olive oil :

"Limited and not conclusive scientific evidence suggests that eating about 2 tablespoons (23 grams) of [virgin] olive oil daily may reduce the risk of coronary heart disease due to the monounsaturated fat in olive oil...."

Adding to the understanding of how olive oil benefits the heart, scientists have recently found that the polyphenols in extra virgin olive oil can promote

heart health on a molecular level. A study published in the July 2010 issue of the *Journal of the Federation of American Societies for Experimental Biology* (FASEB) reported that olive oil can alter genes in a heart-healthy way. Researchers from the Cardiovascular Risk and Nutrition Research Group at the Institut Municipal D-Investigacio Medica in Barcelona, Spain, conducted a study involving three

groups of healthy individuals. One group consumed a Mediterranean diet that included virgin olive oil with high levels of polyphenols; a second group consumed olive oil with low levels of polyphenols and a third group consumed their usual diet. After three months, the group that consumed the olive oil with the highest level of polyphenols had significant reduction in the expression of atherosclerosis-related genes.

This explains for the first time one reason for the heart healthy benefit of olive oil.

Consequently, consumers are beginning to have a greater understanding from the molecular level why consuming a Mediterranean type diet is heart healthy. We can positively alter the actions of our genes by changing our diet—in a very delicious way!

Common characteristics of a Mediterranean Diet include:

- Fresh food, fruits and vegetables
- Small portions
- Monounsaturated fats (found in olive oil, avocados and nuts)
- Polyunsaturated omega-3 fatty acids found in fish like salmon, tuna, sardines and trout
- Olive oil used in many foods-pastas, breads, salads and pastries
- Small amounts of red wine (optional)
- Whole grains and legumes
- Yogurt
- Fresh fruit for dessert
- Walking adds to the benefit of the diet

Sources:

FASEB (2010, July 6). Virgin olive oil and a Mediterranean diet fight heart disease by changing how our genes function.

<http://www.fda.gov/Food/LabelingNutrition/LabelClaims/QualifiedHealthClaims/ucm073992.htm#olive>.

For more information about healthy eating, contact your local extension office.

The Food Assistance Program can help people of all ages with low income buy nutritious foods for a better diet.

To find out more, call toll-free 1-888-369-4777.

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