Following a Mediterranean diet rich in fruits, vegetables, legumes, whole grains, fish and healthy fats may preserve a more youthful brain in old age, a U.S. study suggests.

Previous research has connected a Mediterranean diet to a reduced risk of developing Alzheimer's disease and other degenerative brain conditions, noted lead study author Yian Gu of Columbia University in New York.

For the current study, researchers focused on elderly people with normal cognitive function to see if the diet might also be tied to losing fewer brain cells due to aging, Gu said by email.

"Among cognitively healthy older adults, we were able to detect an association between higher adherence to a Mediterranean type diet and better brain measures," Yu said.

To understand the relationship between the diet and brain health, Yu and colleagues reviewed surveys that 674 elderly people completed about their
eating habits and then examined magnetic resonance imaging (MRI) scans of their brains.

Compared to the people who didn't regularly follow many aspects of the Mediterranean diet, the participants who adhered to this way of eating more often had larger total brain volume, as well as more gray and white matter.

**More on this...**

- Modified Mediterranean diets also good for weight loss
- Mediterranean diet may reduce breast cancer risk
- Mediterranean diet with olive oil, nuts linked to healthier brain

Higher fish intake and lower meat consumption, one aspect of a Mediterranean diet, was tied to larger total gray matter volume on the brain scans.

Eating less meat was also independently associated with larger total brain volume.

Overall, the difference in brain volume between the people who followed a Mediterranean diet and those who didn't was similar to the effect of five years of aging, the researchers conclude in the journal Neurology.

One limitation of the study is that it can't show whether the diet actually causes less brain atrophy over time, the authors acknowledge. For instance, it's also possible that the effect might operate in the opposite direction, with differences in brain structure resulting in behavioral differences that include dietary habits.

It's also hard to separate the effect of eating more fish from the impact of consuming less meat, noted Dr. Victor Henderson, a neurology and health policy researcher at Stanford University in California.

"Someone who eats a lot of fish probably doesn't eat a lot of meat," Henderson, who wasn't involved in the study, said by email. "Other research suggests that it is not just fish and meat that are important," he added.
Prior research on the Mediterranean diet has suggested that supplementing this diet with additional extra virgin olive oil may strengthen the connection to better cognitive function, Henderson noted.

For example, a long-term Spanish study linked a Mediterranean diet with extra nuts and olive oil to improved memory in older adults in a report published earlier this year.

While previous research has linked a Mediterranean diet to a reduced risk of heart disease and some cancers, as well as lower odds of developing Alzheimer's disease, scientists haven't conclusively proven that the diet itself is responsible, rather than other lifestyle choices made by people who eat this way.

"It is safe to say that a well-balanced diet such as the Mediterranean diet is a healthy diet, and this research provides exciting new support for this common-sense perspective," Henderson said.
The Mediterranean Diet
Myths, Facts, and Health Benefits of a Mediterranean Diet

When you think about Mediterranean food, your mind probably goes to pizza and pasta from Italy, or hummus and pita from Greece, but these dishes don’t exactly fit into any healthy dietary plans advertised as “Mediterranean.” The reality is that a true Mediterranean diet consists mainly of fruits and vegetables, seafood, olive oil, hearty grains, and more—foods that help fight against heart disease, certain cancers, diabetes, and cognitive decline. It’s a diet worth chasing; making the switch from pepperoni and cheese to fish and avocados may take some effort, but you could soon be on a path to a healthier and longer life.

What is a “Mediterranean diet”? 

Click to view
Pizza, gyros, falafel, lasagna, rack of lamb, and long loaves of white bread: all these foods have become synonymous with what we call “Mediterranean.” We picture huge, three-hour feasts with multiple courses and endless bottles of wine. But over the past 50 years, Americans and others have altered the idea of Mediterranean fare, ramping up the meat, saturated fat, and calories at the expense of the region’s traditional fruits, vegetables, beans, nuts, seafood, olive oil, small amounts of dairy, and a glass or two of red wine. What was once a healthy and inexpensive way of eating back then is now associated with heavy, unhealthy dishes that contribute to heart disease, obesity, diabetes, and other chronic diseases.

After World War II, a study led by Ancel Keys of the Mayo Foundation examined the diets and health of almost 13,000 middle-aged men in the US, Japan, Italy, Greece (including Crete), the Netherlands, Finland, and Yugoslavia. Remarkably, well-fed American men had higher rates of heart disease than those in countries whose diets had been restricted by the deprivations of war. It was the men of Crete, arguably the poorer people of the study, who enjoyed the best cardiovascular health. This was due to physical labor and their unique food pyramid.

The Mediterranean Diet Pyramid is based on the dietary traditions of Crete, Greece, and southern Italy circa 1960 at a time when the rates of chronic disease among populations there were among the lowest in the world, and adult life expectancy was among the highest, even though medial services were limited.

Aside from eating a diet consisting mainly of fresh and homegrown foods instead of processed goods, other vital elements to the Mediterranean diet are daily exercise, sharing meals with others, and fostering a deep appreciation for the pleasures of eating healthy and delicious foods.

**Myths and facts of a Mediterranean diet**

Following a Mediterranean diet has many benefits, but there are still a lot of misconceptions on exactly how to take advantage of the lifestyle to lead a healthier, longer life. The following are some myths and facts about the Mediterranean diet.

**Myth 1: It costs a lot to eat this way.**

Fact: If you're creating meals out of beans or lentils as your main source of protein, and sticking with mostly plants and whole grains, then the Mediterranean diet is less expensive than serving dishes of meat, cheese, and processed foods.

**Myth 2: If one glass of wine is good for your heart, than three glasses is three times as healthy.**

Fact: Moderate amounts of red wine (one drink a day for women; two for men) certainly has unique health benefits for your heart, but drinking too much has the opposite effect. Anything more than two glasses of wine can actually be bad for your heart.
**Myth 3: Eating large bowls of pasta and bread is the Mediterranean way.**

Fact: Typically, Mediterraneans don’t eat a heaping plate of pasta the way Americans do. Instead, pasta is usually a side dish with about a 1/2-cup to 1-cup serving size. The rest of their plate consists of salads, vegetables, a small portion of meat, and perhaps one slice of bread.

**Myth 4: If you follow the traditional Mediterranean diet then you will lose weight.**

Fact: Those living on Greek islands don’t enjoy good cardiovascular health just by eating differently; they walk up and down steep hills to tend to their garden and animals, often living off what they can grow themselves. Physical labor plays a large role.

**Myth 5: The Mediterranean diet is only about the food.**

Fact: The food is a huge part of the diet, yes, but don't overlook the other ways the Mediterraneans live their lives. When they sit down for a meal, they don't sit in front of a television or eat in a rush; they sit down for a relaxed, leisurely meal with others, which may be just as important for your health as what's on your plate.

**Health benefits of a Mediterranean diet**

A traditional Mediterranean diet consisting of large quantities of fresh fruits and vegetables, nuts, fish and olive oil—coupled with physical activity—reduces the risk of heart disease, certain cancers, diabetes, Parkinson’s and Alzheimer’s diseases. More specifically:

**Protecting against type 2 diabetes.** A Mediterranean diet is rich in fiber, slowing down digestion and preventing huge swings in blood sugar.

**Preventing heart disease and strokes.** Refined breads, processed foods, and red meat are discouraged in a Mediterranean diet, and it encourages drinking red wine instead of hard liquor, which have all been linked to heart disease and stroke prevention.

**Keeping you agile.** The nutrients gained with a Mediterranean diet may reduce a senior’s risk of developing muscle weakness and other signs of frailty by about 70 percent.

**Reducing risk of Alzheimer’s.** Researchers speculate that the Mediterranean diet may improve cholesterol and blood sugar levels and overall blood vessel health—all factors that may reduce the risk of Alzheimer’s disease or dementia.

**Halving the risk of Parkinson’s disease.** In a diet containing high levels of antioxidants that prevent cells from undergoing a damaging process called oxidative stress, the risk of Parkinson’s disease is practically cut in half.

**Increased longevity.** When there is a reduction in developing heart disease or cancer, as in the case when you follow a Mediterranean diet, there is a 20% reduced risk of death at any age.
How to make the change

If you’re feeling daunted by the thought of changing your eating habits to a Mediterranean diet, here are some suggestions to get you started:

- **Eat lots of vegetables.** Try a simple plate of sliced tomatoes drizzled with olive oil and crumbled feta cheese, or load your pizza with peppers and mushrooms instead of sausage and pepperoni. salads, soups, and crudité platters are also great ways to load up on vegetables.
- **Change the way you think about meat.** If you eat meat, have smaller amounts and leaner cuts. Put small strips of chicken on your salad, or add diced prosciutto to a whole-wheat pasta dish.
- **Always eat breakfast.** Fruits, whole grains, and other fiber-rich foods are a great way to start your day, keeping you pleasantly full for hours.
- **Eat seafood twice a week.** Fish such as tuna, salmon, herring, and sardines are rich in Omega-3 fatty acids, and shellfish like mussels, oysters, and clams have similar benefits for brain and heart health.
- **Cook a vegetarian meal one night a week.** If it’s helpful, you can jump on the “Meatless Mondays” trend of foregoing meat on the first day of the week, or simply pick a day where you build meals around beans, whole grains, and vegetables. Once you get the hang of it, try two nights a week. Be sure not to load up on cheese, though.
- **Use good fats.** Extra-virgin olive oil, nuts, sunflower seeds, olives, and avocados are great sources of healthy fats for your daily meals. Some vegetable oils higher in polyunsaturated fats—like sunflower, safflower, soybean, and corn oil—are more heart-healthy than the mostly monounsaturated fats in olive oil.
- **Enjoy some dairy products.** Try small amounts of cheese, and eat Greek or plain yogurt. You want to make sure to choose low-fat or fat-free dairy products.
- **For dessert, eat fresh fruit.** Instead of ice cream or cake, opt for strawberries, fresh figs, grapes, or apples.

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Quick start to a Mediterranean diet

There is new, even stronger research backing up the Mediterranean diet as a way to prevent vascular disease. The diet includes generous quantities of olive oil, fruits, vegetables, nuts, and fish; limited portions of red meats or processed meats; and moderate amounts of cheese and wine. So how can you make the switch? Start with small steps, jump-starting your effort with these top five tips:

1. Very Lightly Sauté food in olive oil, not butter.
2. Eat more fruits and vegetables by having them as a snack, or adding them to other recipes.
3. Choose whole grains instead of refined breads and pastas.
4. Substitute fish for red meat at least twice per week.
5. Limit high-fat dairy by switching to skim or 1% milk from 2% or whole milk.

<table>
<thead>
<tr>
<th>Instead of this:</th>
<th>Try this Mediterranean option:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chips, pretzels, crackers and ranch</td>
<td>Carrots, celery, broccoli and salsa</td>
</tr>
<tr>
<td>dip</td>
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</tr>
<tr>
<td>Chips, pretzels, crackers and ranch</td>
<td>Carrots, celery, broccoli and salsa</td>
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<td>dip</td>
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<tr>
<td>White rice with stir-fried meat</td>
<td>Quinoa with stir-fried vegetables</td>
</tr>
<tr>
<td>Sandwiches with white bread or rolls</td>
<td>Sandwich fillings in whole-wheat tortillas</td>
</tr>
<tr>
<td>Ice cream</td>
<td>Pudding made with skim or 1% milk</td>
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Also, consider adding sliced avocado to your sandwich instead of cheese, or forgoing the tomato sauce on your pizza. You can opt for egg whites or tofu rather than eggs, snack on olives or nuts instead of cookies, and have a glass of red wine instead of a mug of beer.

Adapted with permission from Harvard Health Letter: July 2013, a newsletter published by Harvard Health Publications.

More help with nutrition

Diet and Weight Loss Help Center: By developing healthy lifestyle habits and relieving emotional problems without the use of food, you can achieve weight loss success.

Nutrition issues

- Healthy Eating: Easy Tips for Planning a Healthy Diet and Sticking to It
- Choosing Healthy Fats: Good Fats, Bad Fats, and the Power of Omega-3s
- Healthy Weight Loss and Dieting Tips: How to Lose Weight and Keep It Off
- Eating Well on the Cheap: Saving Money on Healthy Food
- High-Fiber Foods: Benefits, Sources, and Getting More Fiber in Your Diet
- Heart Healthy Diet Tips: Lower Cholesterol and Prevent Heart Disease
Resources and references

**Health benefits of a Mediterranean diet**

*Study Supports Heart Benefits from Mediterranean-Style Diets* — A study starting in 2003 shows the healthy results from eating a Med diet. (Harvard Health Publications)

*Antioxidants: Vitamin C and E, Mediterranean Diet* — A breakdown on the benefits of a diet rich with Vitamin C and E, and monounsaturated fats. (National Parkinson Foundation)

*Mediterranean diet: A heart-healthy eating plan* — Learning about a heart-healthy eating plan based on typical foods and recipes of Mediterranean-style cooking. (Mayo Clinic)


**Omega-3 fatty acids**

*Omega-3 Fats: An Essential Contribution* — All about the health benefits of the important omega-3 fatty acids, including the best food sources in which to find them. (Harvard School of Public Health)

*Omega-3 Fatty Acids* — Simple charts listing omega-3 fatty acid content of selected foods. (Tufts University)

*Omega-3 fatty acids* — Comprehensive article on omega-3 fatty acids and the role they may play in preventing several diseases and conditions. (University of Maryland Medical Center)

**Mediterranean recipes**

*22 Med diet recipes to improve your health* — Ideas for breakfast, lunch, dinner, and snacks. (Health.com)

*Mediterranean Diet 101* — Learn the basics of this European regional diet. (Food Network)

*Heart-Healthy Mediterranean Diet Recipes* — Over 35 tasty and creative Mediterranean recipes. (Whole Living)

[Medical EXPOSE](http://www.medicalexpose.com/)
First always use 100% fruit juice with no added sugar or synthetic chemicals. Fresh is best.

Most fruit juice has too much sugar and needs to be diluted at least 50% with good clean water.

You can drink a glass of this diluted juice once every four hours, and drink water or slightly flavored water in between.

Do not be afraid to mix fruit and vegetable juices.
Scientific aspects that justify the benefits of the Mediterranean diet: mild-to-moderate versus heavy drinking.

Covas MI¹, Marrugat J, Fito M, Elosua R, de la Torre-Boronat C.

Author information

**Abstract**
The Mediterranean diet is now recognized as being both limited in toxicity and abundant in nutrient and non-nutrient protective factors. A large body of basic, clinical and epidemiological studies have been developed in recent years to provide evidence of the benefits of the Mediterranean diet or its components on health. Evidence-based medicine ranks randomized controlled clinical trials as providing the highest level of evidence and expert opinions the lowest. On the basis of these criteria, the current state of knowledge about Mediterranean diet in primary and secondary prevention of disease and mortality and morbidity as functions of the amount of alcoholic beverage consumption, is reviewed. Efficacy versus effectiveness, the role of basic and animal research, and bioavailability studies providing evidence is also discussed.

PMID: 12074970  [PubMed - indexed for MEDLINE]

**Ancient Romans 'had perfect teeth' thanks to healthy low-sugar diet**
Scientists used CAT scans to examine the remains of 30 men, women and children killed in Pompeii when Mount Vesuvius erupted in AD 79
They may have lived in an era when dental care was rudimentary at best, but the ancient Romans had better teeth than people today, new research has revealed. Scientists used CAT scans to examine the remains of 30 men, women and children who were killed in Pompeii when the city was engulfed by ash and pumice from Mount Vesuvius in AD 79.

After months of research, their most startling discovery was the excellent condition of the Romans’ teeth, which the researchers ascribed to a low-sugar, fibre-rich Mediterranean diet.

“The inhabitants of Pompeii ate a lot of fruit and vegetables but very little sugar,” said Elisa Vanacore, a dental expert. “They ate better than we did and have really good teeth. Studying their teeth could reveal a lot more about their lives.”
Their diet was free of refined sugar. Photo: EPA

They were strangers to toothbrushes or toothpaste, but their healthy diet meant that few of the Romans suffered from cavities, the CAT scans showed. Three-dimensional imaging revealed that many of the victims of the eruption had severe cranial injuries caused by falling masonry and rubble as homes, taverns and public bath houses toppled around them. The scans reveal the victims’ skeletons in stunning detail, including that of a little boy.
“Their diet was balanced and healthy, similar to what we now call the Mediterranean diet,” said Massimo Osanna, the director of the ancient site near Naples. “The research is a big step forward in our understanding of the Roman world. Exceptional findings are emerging about their age, sex, social status and dietary habits.”

Another surprising discovery was that the bones showed deterioration as a result of the high levels of fluoride in the water that supplied Pompeii.

The research project has brought together an expert team of Italian radiologists, archaeologists, orthodontists and anthropologists.

It is not only humans that they studied – there was also a dog and a wild boar, both trapped in the conflagration that devastated Pompeii and neighbouring Herculaneum when Vesuvius erupted.

When waves of blisteringly hot ash fell over Pompeii, many people suffocated and were buried. The ash gradually hardened into pumice, encasing their bodies.

Over time the soft tissue of the bodies rotted away, leaving cavities containing just their skeletons.

Archaeologists in the 19th century pioneered the technique of pouring plaster into the cavities.
Once the plaster hardened, the archaeologists chipped away at the surrounding pumice to extract detailed casts of the victims, many of them contorted in the moments before death.

Experts plan to examine a total of 86 plaster cast bodies. The little boy aged around four was found in a villa dubbed the House of the Golden Bracelet with the ossified remains of his parents.

Some of the remains are too unwieldy to fit into the CAT machine, including that of a woman in a sitting position who is holding a toddler on her lap, one of the most poignant casts.

Pompeii was encased in hardened ash for centuries before excavations began in 1748. Mt Vesuvius had been spouting smoke and ash for days before it finally erupted and the majority of the population of 20,000 are thought to have fled in safety. But around 2,000 stayed behind and were killed when ash and toxic fumes engulfed the city.

http://www.medicalexpose.com/