

THE MEDITERRANEAN DIET & MEDITERRANEAN DIET PYRAMID

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What is the Mediterranean diet?

The Mediterranean diet is based on the foods of the countries surrounding the Mediterranean Sea (see the map above). The Mediterranean diet is not intended as merely a way to lose weight. Rather, it is a lifestyle aimed at simply improving health and overall well-being with heart-healthy foods, physical activities, meal time with family and friends, and wine in moderation with meals. The Mediterranean diet emphasizes plant-based foods, such as fruits and vegetables, **whole grains**, legumes, nuts, fish, lean meat and healthy fat [1]. The Mediterranean diet includes delicious foods for boosting health.

What are the proven health benefits?

The Mediterranean diet became famous after the discovery that there are low rates of coronary heart disease around the Mediterranean despite the high fat intake of the region's population. This is particularly relevant to Americans because in the United States cardiovascular disease is the number 1

killer, causing about 1 out of every 3 deaths [2]. Ever since the first discovery of the low rates of **coronary heart disease** in the Mediterranean area, many studies have been performed showing that the Mediterranean diet contributes to a reduction of risk factors related to many chronic diseases and health problems, such as cardiovascular disease, **metabolic syndrome**, **diabetes**, cancer, and **Alzheimer's disease**.

Components of the Mediterranean diet:

- **Olive oil** is the main source of fat in the Mediterranean diet. Olive oil may help lower LDL cholesterol (bad cholesterol) and increase HDL cholesterol (good cholesterol) [1] if it is used in place of other fats, not in addition, as the calories still add up.
- **Fish** is one of the main sources of protein in the Mediterranean diet. Fish can be rich in **omega-3 fatty acids** (fats) and low in saturated fat, which may play a role in reducing the risk

of heart diseases, sudden cardiac death, and lowering blood triglycerides. High levels of triglycerides (>150mg/dL) may be a risk factor for heart disease, especially with high LDL and low HDL cholesterol.

The American Heart Association and the U.S. Dietary Guidelines for Americans [3] recommend eating at least 2 servings of fish (4 oz. per serving) per week to boost omega-3 fatty acid intake. Fatty fish, such as salmon, mackerel, trout, anchovies, sardines, and light canned tuna, contain more omega-3 fatty acids.

- Wine is a staple drink in the Mediterranean region. Red wine contains phytochemical compounds that have promising health benefits. These compounds act as **antioxidants**, which may help prevent heart disease by protecting against artery damage. Wines high in antioxidants are dark red. Red wines are also used in cooking.

According to the Dietary Guidelines for Americans [3], "Alcohol should be consumed in moderation. It is not recommended that anyone begin drinking alcohol or drink more frequently on the basis of potential health benefits."

(Moderate Drinking Definition: 2 glasses of wine for men daily, 1 glass of wine for women daily)

- Combination of the Mediterranean diet and lifestyle factors (at least 30 minutes of physical activity per day, moderate drinking, and not smoking) was associated with a significantly lower risk of death in elderly Europeans (70-90 years). The Healthy Ageing: a Longitudinal study in Europe (HALE) project. [4].

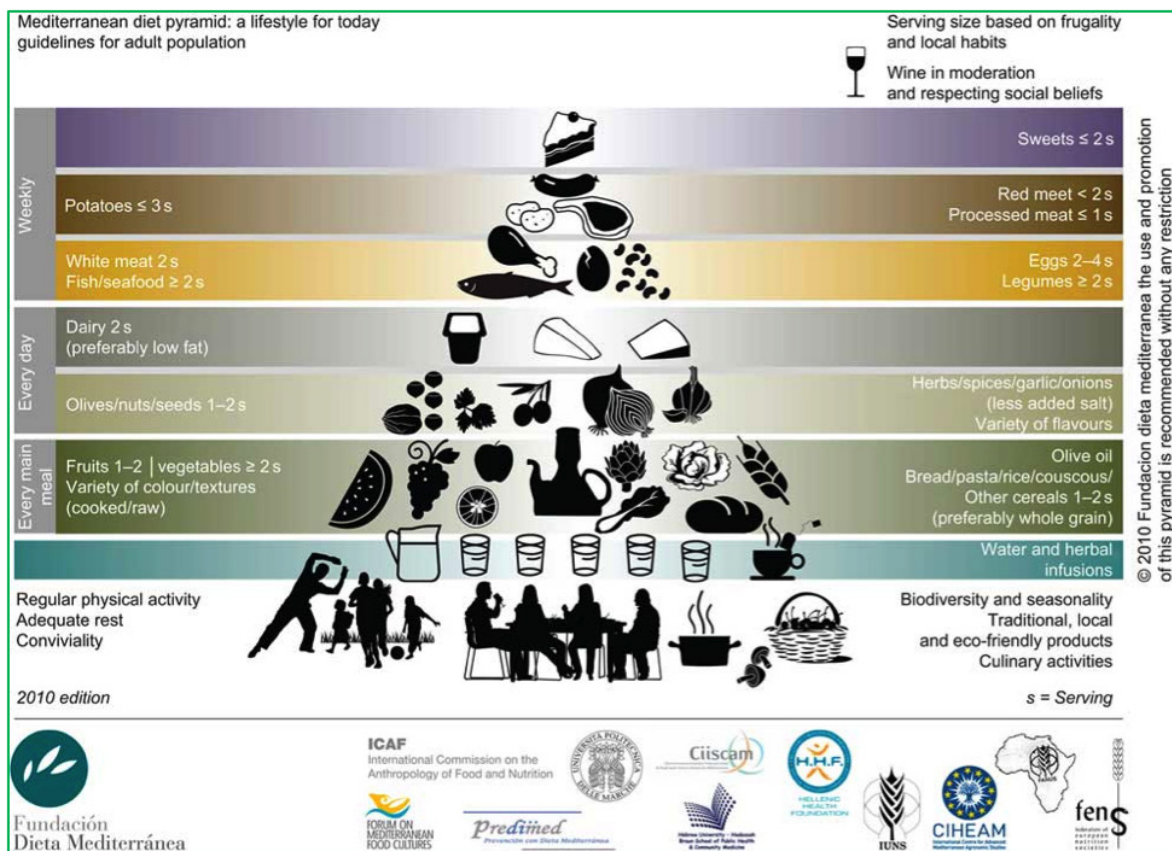
Mediterranean diet pyramid; a tool for promoting lifelong good health

The Mediterranean Diet Foundation and several scientific experts updated the Mediterranean diet pyramid [5]. It reflects the latest scientific evidence on nutrition and health of the Mediterranean dietary pattern and its role in the prevention of many chronic diseases. The Mediterranean diet pyramid includes both dietary and lifestyle recommendations aimed at reducing disease risk (see the Figure and brief explanation below).

Non-Diet Related Daily Recommendations:

At the base of the pyramid, non-diet healthy lifestyle recommendations are included: *regular physical activity, adequate rest, conviviality* (the quality of being friendly and lively, important for the social and cultural value of the meal), *biodiversity* (variety of plants and animals in a region) and *seasonality, local and eco-friendly products, and culinary activities*.

Regular physical activity and adequate rest are recommended as part of a healthy lifestyle. The Mediterranean culture stresses the importance of eating with others. When eating with company, people tend to eat slower and enjoy foods more, which may have a positive effect on eating behavior. Also, sharing food around the table provides social support and a sense of community. Other recommendations are eating a variety of foods in season. Traditionally, people in the Mediterranean region grow many of their own herbs, fruits, and vegetables. Even if they do not grow their own foods, the food pyramid encourages eating traditional,



local, and eco-friendly products. The last recommendation is culinary activities. Cooking can be an important social activity in every culture, particularly for celebrations and religious festivals. Cooking may also involve the whole family, and thus a good way to teach children how to cook so they can continue the tradition.

For Every Meal:

Main meals should contain: 1-2 servings of **cereals** (bread, pasta, rice, couscous, and others), 1-2 servings of **fruits**, and 2 or more servings of **vegetables**. Cereals should be mostly whole grain. In order to ensure vitamin and mineral daily intake, at least one serving of vegetables should be raw (one meal per day). Fruits are often used as the dessert and put on top of custards and yogurts. It is recommended to eat a variety of colors of fruits and vegetables to get a wide variety of nutrients and antioxidants.

For Every Day:

A daily intake of 1½ -2 liters of **water** (6 to 8 glasses) is recommended. People may obtain some of this water through sugar-free herbal tea (herbal infusion, soaking the leaves of a plant or herb in water) or low-sodium, low-fat broths. Olive oil is the principal fat and should be used for cooking, baking, dressing

salad, and vegetables (one tablespoon per person). **Herbs, garlic, onions, and spices** are good ways to add flavors to dishes and may contribute to reducing salt and fat use. They can be added to pasta, vegetables, and meat dishes. **Olives, nuts, and seeds** are good sources of healthy lipids, proteins, vitamins, minerals, and fiber. **Dairy products** such as low-fat yogurt and cheese are recommended (2 servings). Moderate consumption of **wine** during meals is recommended (one glass per day for women and two glasses per day for men).

For Weekly:

Weekly consumption of a variety of animal and plant origin proteins are recommended: 2 or more servings of **fish**, 2 servings of **white meat**, less than 2 servings of **red meat**, less than 1 serving of **processed meat**, 2-4 **eggs**, and more than 2 servings of **legumes**. **Potatoes** are included in this group (less than 3 servings per week).

For Occasionally:

On the top of the pyramid, **sweets** are representing the sugary and high-fat foods. They should be consumed in small amounts and left for special occasions (less than 2 servings per week).

Recipes of the Mediterranean Diet

Steamed Salmon and Veggies

Serving for 4, Time to make 40-45 minutes



Ingredients:

- 1 lb. salmon fillet
- 4 cloves of fresh garlic, minced
- 1 fresh zucchini, sliced
- 1 onion, chopped
- ¼ head cabbage, chopped
- 2 carrots, sliced
- ½ lb. mushroom, sliced
- 1 colored bell pepper, cut into short, thin strips
- ½ lemon, cut into 4, make lemon wedges
- Dill, thyme, or any kinds of herb as desired
- 4 Tbsp. olive oil, or extra virgin olive oil (optional)
- ¼ tsp. salt and ¼ tsp. pepper

Directions:

1. Heat a pan and pour 2 Tbsp. olive oil over low heat.
2. Sauté garlic over low heat for about 1 minute (if garlic is turning brown, it is too long).
3. Spread cabbage, carrots, bell peppers, and mushrooms on the pan.
4. Salt and pepper salmon, and place on top of these vegetables.
5. Add onion and zucchini on top of the salmon.
6. Put on a lid* and cook with low heat until salmon is cooked (about 30 minutes).
7. Dress with dill, thyme, or any herb, as you like.
8. Pour 2 Tbsp. olive oil, as you like.
9. Serve with lemon.

*if you do not have a lid, use aluminum foil to cover the vegetables and salmon.

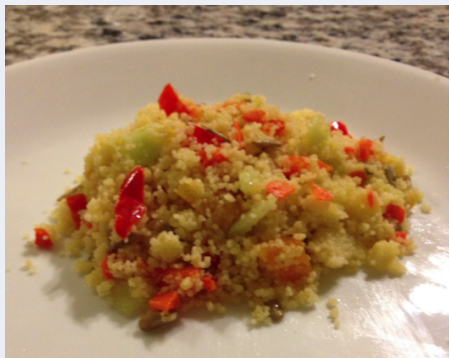
Per Serving

Calories: 360kcal, Carbohydrates, 16g, Protein: 26g, Fat: 22g, Cholesterol: 60mg, Omega 3-Fatty Acid, 2g

Estimated cost to make \$12 - \$18

Super-Easy Couscous Salad

Serves 6, Time to make: 15 minutes



Ingredients:

- 1 ½ cups dry couscous
- 1 ½ cups water
- 1/2 cup carrots, diced
- 1/2 cup cucumber, diced
- 1/2 cup red bell pepper, diced
- 1/4 cup sunflower seeds, hulled
- 1/4 cup dried apricot diced (or use raisins)
- 1 tsp. extra virgin olive oil
- 1/4 cup extra virgin olive oil
- Salt and Pepper (optional)
- Cilantro, chopped (optional)

Directions:

1. In large sauce pan boil 1 ½ cups of water. Remove from heat. Pour 1 ½ cups of dry couscous. Stir well. Cover and let stand for 5 minutes. Fluff with a fork. Set aside.
2. Sauté the carrots and bell peppers until tender in 1 tsp. olive oil.
3. Mix in the diced cucumbers, sunflower seeds, and dried apricots (or raisins) to the couscous.
4. Mix in the carrots and bell peppers.
5. Mix in the ¼ cup of olive oil.
6. Add salt, pepper and chopped cilantro, as you like.

Per Serving

Calories: 304 kcal, Carbohydrates, 39g, Protein: 7g, Fat: 13g, Cholesterol: 0mg

Estimated cost to make \$2



What is Couscous?

- Couscous is made from ground semolina wheat. It originated in North Africa, but is used in many cuisines, such as the Mediterranean area and the United States.
- Couscous is healthy because one cup of couscous is low in calories (176 kcal), has 6 grams of protein, and 2 grams of fiber. It is a good source of B vitamins and selenium. Selenium prevents damage to red blood cells and may protect against some forms of cancer. There is no fat or sugar in couscous.

Glossary Terms

Alzheimer's disease: Alzheimer's disease is a progressive brain disease that slowly destroys memory, thinking skills, and eventually interferes with daily tasks. It's the most common cause of dementia — a group of brain disorders.

Antioxidants: Antioxidants are substances found in foods which inhibit (=anti) oxidation in the body's cells – oxidation is a chemical reaction that produces free radicals. Free radicals cause destruction of our body's cells and antioxidants stop them. Recent studies have shown antioxidants reduce the risk of heart disease and cancer. Antioxidants can be found in vegetables, fruits and plants.

Coronary heart disease: Coronary heart disease is a condition in which a waxy substance called plaque builds up in the blood vessels that supply blood and oxygen to the heart. This buildup causes the arteries to get narrow. As a result, blood flow to the heart can slow down or stop.

Diabetes: Diabetes is a disease in which the person has high blood glucose (blood sugar), either because insulin production is inadequate, or because the body's cells do not respond properly to insulin or both.

Metabolic syndrome: Metabolic syndrome is a group of conditions that raises the risk for heart disease and diabetes. These conditions are high blood pressure, high blood sugar levels, high triglyceride levels (a type of fat in your blood), low HDL cholesterol level (the good cholesterol in your blood), and too much fat around your waist.

Omega-3 fatty acids: Omega-3 fatty acids are considered essential fatty acids. They are necessary for human health but the body can't make them -- you have to get them through food. Omega-3 fatty acids can be found primary in fish. Other foods (nuts, beans, seeds, oil, and greens) contain these fatty acids in small amounts.

Whole grains: Whole grain foods contain all three parts of the grain; germ, endosperm, and bran, in contrast to refined grains, which retain only the endosperm. Common types of whole grains include brown rice, oatmeal, popcorn, and whole wheat.

Information Sources

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Abstract

The Mediterranean diet has been shown to reduce risk for chronic diseases, such as cardiovascular disease, diabetes, and cancer. This article discusses the health benefits of following the Mediterranean diet and introduces the Mediterranean Food Pyramid. Recipes following the Mediterranean diet for Arizonans are introduced.



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