

Cardiovascular disease (CVD), or heart disease, is the leading cause of death in the United States and around the world. By 2030, over 1 million people could die in the U.S. from CVD *each year*. Kansas does not escape the problem — heart disease leads all causes of death in the state, and affects both men and women. Although heart disease is sometimes thought of as a man's disease, this is not true. Almost as many women as men die each year of heart disease in the United States. Heart disease is the leading cause of death for African-American and white women.

Because this chronic disease is so prevalent, research is ongoing and much is known about the causes of heart disease. It is no mystery — *poor dietary quality* is the top risk factor, accounting for approximately half of CVD deaths globally. Yet there are proven, effective steps individuals can take to lower their risk of CVD.

The American Heart Association (AHA) has shifted their 2030 goals from *managing* heart disease to *preventing* heart disease. The new AHA focus emphasizes support of healthful behavior changes — particularly healthy eating and physical activity — in the prevention and treatment of **heart disease, obesity, Type 2 diabetes mellitus (T2D), hypertension** (high blood pressure), and **hyperlipidemia** (high blood fats). Let's take a closer look at how these chronic diseases are related, and how some key healthy habits can make a positive difference.

Issue: Overweight/obesity's effect on heart health.

Adults diagnosed with obesity (those with a Body Mass Index [BMI] of 30 or above) or overweight (with a BMI of 25 – 29) are at an increased risk of heart disease, heart failure, and atrial fibrillation versus normal weight individuals. Excess fat around your middle, even if you are not overweight, can increase your risk of heart disease. You have excess belly fat if your waist measures more than 40 inches if you are a man, or if you are a woman and your waist is more than 35 inches.

Healthy heart habit: Even a small (5 to 10% of initial weight) weight loss, resulting from positive lifestyle interventions such as eating a healthier diet, can improve blood pressure, delay the onset of T2D,



improve blood sugar control in those with T2D, and improve blood lipid levels.

Issue: Diabetes' effect on heart health. Having Type 1 or Type 2 diabetes means that a person is more likely to develop heart disease and has a greater chance of a heart attack or a stroke. Over time, high blood glucose from diabetes can damage blood vessels and the nerves that control heart and blood vessels. The longer a person has diabetes, the higher the chances that he or she will develop heart disease. People with diabetes tend to develop heart disease at a younger age than people without diabetes. In adults with diabetes, the most common causes of death are heart disease and stroke. Adults with diabetes are nearly twice as likely to die from heart disease or stroke as people without diabetes.

Healthy heart habit: The steps you take to manage your diabetes also help lower your chances of having heart disease or stroke. Though some factors (such as genetics and family history) are beyond your personal control, there are several important actions persons with diabetes can tackle to lower their chances of heart disease or stroke.

- Smoking — Smoking and diabetes both narrow blood vessels. When a person with diabetes stops

smoking, they are taking an important step to reduce their chance of developing heart disease.

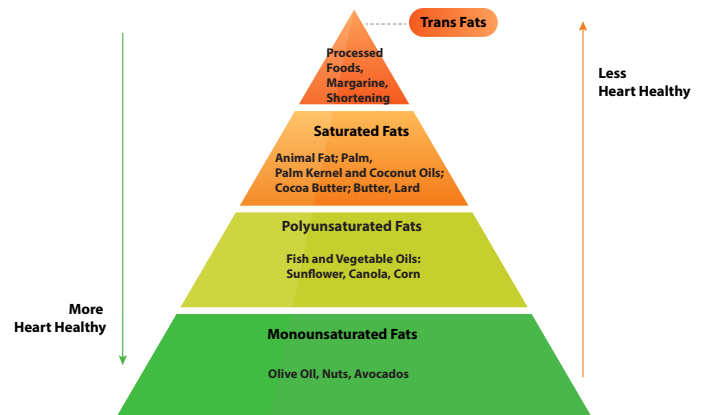
- High blood pressure — If you have high blood pressure, it means your heart has to work harder to pump blood to all parts of your body. That harder work can strain your heart and increase your risk of heart attack and stroke.
- Abnormal cholesterol levels — Cholesterol is a type of fat made in the liver and found in the blood. Your body makes two main kinds of cholesterol — LDL and HDL. The type known as LDL is often called “bad” cholesterol and can build up in your blood vessels. If your LDL levels are high, you are at increased risk for heart disease.
- High triglycerides — Triglycerides are another type of blood fat. If your levels of triglycerides are higher than recommended, you may be at increased risk for heart disease.

What are the necessary lifestyle changes needed to reduce the risk of heart disease? The American College of Cardiology (ACC) and the AHA have collaborated and identified five diet recommendations to decrease risk factors for heart disease:

- Follow a diet that emphasizes eating vegetables, fruits, legumes (beans, lentils, peas), nuts, whole grains, and fish;
- Replace saturated fats (fats coming primarily from animal sources) with monounsaturated fats or polyunsaturated fats (fats from plant sources such as olive oil, canola oil, avocado, nut oils); **avoid** palm, palm kernel, and coconut oils, and cocoa butter as they are saturated fats and can raise LDLs.
- Choose foods lower in sodium and cholesterol;
- Avoid consuming processed meats, refined carbohydrates, and sweetened beverages;
- Limit intake of trans fats.

Additionally, the ACC and AHA recommend **weight loss** for persons who are overweight and obese. Even a relatively small loss of 5 to 10% of a person’s initial weight can improve many risk factors, including decreasing blood pressure, delaying the onset of T2D, improved blood sugar control, and improved blood fat levels.

Since food choices and weight control are primary points where individuals can make heart-healthy changes, it is important to carefully consider the evidence surrounding U.S.-style food patterns. Two



well-researched dietary patterns have been shown to make a real difference in heart health: **the DASH dietary pattern and the Mediterranean-style dietary pattern**. Here are the benefits of each pattern:

DASH diet — The name is short for “Dietary Approaches to Stop Hypertension.” The DASH dietary pattern improves blood pressure, blood fats, and heart disease risk. It was developed to lower blood pressure without medication in research sponsored by the National Institutes of Health.

The DASH diet is designed to help people reduce the sodium in their diet and to eat a variety of foods rich in nutrients that help lower blood pressure, such as potassium, calcium, and magnesium.

The pattern is high in vegetables, fruits, whole grains, low- or non-fat dairy, seafood, skinless poultry, legumes, and nuts. It is moderate in alcohol (for adults) and low in red and processed meats, refined grains, and sugar-sweetened foods and beverages. The DASH diet limits total fat to less than 30 percent of daily calories from fat, with a focus on healthier monounsaturated fats, such as olive and canola oils and avocado.

Mediterranean diet — The Mediterranean diet is a way of eating based on the traditional cuisine of countries bordering the Mediterranean Sea. Like DASH, the Mediterranean dietary pattern (MedDiet) promotes high intakes of vegetables, fruits, whole grains, beans, unsalted nuts and seeds, and olive oil. Weekly intake of fish, poultry, and eggs is encouraged, and moderate portions of dairy. The MedDiet reduces sources of saturated fat by specifying limited intake of red meat. Other important elements of the Mediterranean pattern include sharing meals with family and friends, enjoying a glass of red wine, and being physically active. Research on the Mediterranean plan shows that the overall dietary pattern, beyond just individual nutrients, can lower the risk of heart disease.

Nutrition experts advise that it is smart to limit excess intake of dietary cholesterol — that is, foods high in

cholesterol — for those with dyslipidemia or a low high-density lipoprotein (HDL) cholesterol level. But some very healthful foods, such as eggs or shrimp, have a relatively high content of cholesterol.

How should consumers think about these confusing foods? The American Heart Association recommends that healthy individuals may include up to a whole egg or equivalent daily, with these exceptions:

- Vegetarians (lacto-ovo, or those who include dairy and eggs) who do not consume meat-based cholesterol-containing foods may include more dairy and eggs in their diet in moderation;
- Patients with dyslipidemia, particularly those with diabetes or at risk for heart failure, should be cautious in regularly eating cholesterol-containing foods;
- For older persons with normal blood cholesterol levels, eating up to 2 eggs per day is acceptable as part of an overall heart-healthy diet pattern. Why? Because eggs are nutritious, convenient, and affordable, and versatile enough to include often in a healthy diet.

Here are some specific steps you can take to help you adopt a Med eating pattern:

- Eat more fruits and vegetables. Aim for 7 to 10 servings a day of vegetables and fruit, and focus on enjoying red, orange, and dark green vegetables more often. Choose whole fruit most often over other forms.
- Go for whole grains. Switch to whole-grain bread, cereal, and pasta. Experiment with other whole grains such as *bulgur* and *farro*. Though technically a nut, *quinoa* fits as a healthy whole grain that is high in protein.
- Choose healthy fats. Try olive oil as a replacement for butter in cooking, baking, and at the table. Instead of spreading butter on bread, try dipping bread in flavored olive oil. Consider healthy avocado as a spread for toast or a topping for salad. Avoid processed foods that contain trans fats.
- Eat more seafood. Aim to eat fish twice a week. Choose healthy choices such as fresh or water-packed tuna, salmon, trout, mackerel and herring. Sardines and tilapia also have good nutrition to offer. There are lots of healthy choices — just avoid deep-fried fish.
- Avoid heavily processed foods, such as crackers, chips, cookies, and pre-packaged meals. Most

processed foods have more added salt, sugar, and saturated or trans fats than should be eaten in a heart-healthy diet.

- Reduce red meat, and avoid processed meats. Substitute other protein sources such as fish, poultry, or beans for meat. When you eat meat, choose lean cuts and keep portions small.
- Think dairy. Choose low-fat (and low sugar) Greek or plain yogurt and small amounts of various kinds of cheese.
- Spice is nice — and herbs, too! Herbs and spices boost flavor, increase interest, and lower the need for salt in foods.

Lifestyle changes beyond food — Healthy food choices are very important, but they aren't the only positive step recommended for a healthy heart. Research has shown that the risk-reducing effects of both the DASH diet and the Mediterranean plan are amplified when **healthful eating is combined with regular physical activity**. The 2018 Physical Activity Guidelines for Americans summary reports that physical activity can “make people feel better, function better, sleep better, and reduce the risk of a large number of chronic diseases.” The many benefits of regular physical activity complement and magnify the heart-healthy strategies identified in both plans.

- Adults should move more and sit less throughout the day. Any amount of moderate to vigorous physical activity provides some health benefits.
- A physically active lifestyle is essential for good blood pressure, weight loss, and overall health.
- Adults should aim for 150 minutes to 300 minutes of moderate physical activity per week (for example, brisk walking for 30 minutes most days of the week). It is recommended to not go more than two days without physical activity in order to maintain and build on the health benefits.
- If that's more than you can do right now, **do what you can**. Even 5 minutes of physical activity has real health benefits.

Managing stress is another important step in lowering your risk of heart disease. There are many ways to combat stress, so finding a healthful way that works for you is both easy and important. The social aspect of the MedDiet and shared meals can be stress-reducing, and many people find regular physical activity decreases stress. Activities such as yoga, meditation, and practicing mindfulness are popular stress-lowering tactics that can positively affect a person's health.

A healthy heart is no accident — for many Americans, it takes focus, partnership with their healthcare providers, and lifestyle adjustments. What steps can *you* take to move – to make a Med DASH – toward a healthier heart?

Glossary of terms

Body Mass Index (BMI) — A person’s weight in kilograms divided by the square of height in meters. A high BMI can be an indicator of high body fatness. BMI can be used to screen for weight categories that may lead to health problems, including heart disease and some cancers, but it is not diagnostic of body fatness or health of an individual.

Cardiovascular disease — A group of conditions that involve the heart or blood vessels. Common complications include heart attack, chest pains (angina), or stroke.

Atherosclerotic cardiovascular disease (ASCVD) — a type of cardiovascular disease caused by high levels of bad cholesterol (LDL) in the blood. This leads to the buildup of plaque on the walls of the arteries, which over time can lead to heart attack or stroke.

Dyslipidemia — An abnormal level of blood fats (cholesterol, triglycerides, or both).

Hyperlipidemia — One type of dyslipidemia, when blood fats (cholesterol, triglycerides, or both) are too high.

Hypertension — Also called high blood pressure; occurs when blood pressure, the force of the blood pushing against the walls of the blood vessels, is consistently too high.

Cholesterol — A waxy substance needed in the body to build cells and make vitamins and other hormones. It is made in the liver and also comes from animal-based foods eaten in the diet. High cholesterol contributes to a higher risk of cardiovascular disease.

The two types of cholesterol are **LDL cholesterol (LDL)**, which is bad, and **HDL cholesterol (HDL)**, which is good. Too much of the bad kind, or not enough of the good kind, increases the risk cholesterol will slowly build up in the inner walls of the arteries that feed the heart and brain.

Trans fats — A type of fat found either naturally or man-made in foods. Trans fats raise your bad (LDL) cholesterol levels and lower your good (HDL) cholesterol levels. Eating trans fats increases your risk of developing heart disease and stroke and is also associated with a higher risk of developing type 2 diabetes mellitus (T2D). Products can be listed as “0 grams of trans fats” on their Nutrition Facts label if they contain 0 grams to less than 0.5 grams of trans fat per serving. You can also spot trans fats by reading ingredient lists and looking for ingredients referred to as “partially hydrogenated oils.”

Triglycerides — The most common type of fat in the body, triglycerides store excess energy from the diet in fat tissue. Above-normal triglyceride levels can raise the risk of cardiovascular disease independent of cholesterol levels. Eating a diet high in sugar and refined carbohydrates, being overweight or obese, and heavy alcohol intake can all affect triglyceride levels.

References can be found in the Leader’s Guide for this lesson, MF3567.

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Authors

Sharolyn Flaming Jackson, M.S., Extension Specialist, Family and Consumer Sciences, State Walk Kansas Coordinator, and Sandy Procter, Ph.D., RD/LD, Extension Nutrition and Health Specialist

Reviewed by:

Lisa Martin, MPH, RD/LD, Shawnee County Extension Agent, and Linda Yarrow, PhD, RD, LD, CDE, Instructor, Department of Food, Nutrition, Dietetics and Health, Kansas State University

Kansas State University Agricultural Experiment Station and Cooperative Extension Service

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