



Understanding Heart Disease and Your Diet's Role in Prevention

By Courtney Davison
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Nearly half of all adults in the U.S. have some form of cardiovascular disease, according to the [American Heart Association](#). Heart disease is the leading cause of death in the nation and the world, killing [more people than all forms of cancer combined](#). In the U.S., it takes one life every 37 seconds. Read on to learn more about heart disease, what causes it, and how it can be prevented and reversed.

WHAT IS HEART DISEASE?

When we say “heart disease” here, we’re really referring to cardiovascular disease—a large category encompassing conditions of the heart muscle and coronary arteries as well as the circulatory system and blood vessels. Facets of cardiovascular disease include coronary artery disease (clogged arteries) and heart failure.

- **CORONARY ARTERY DISEASE**

Coronary artery disease (CAD) refers to the narrowing or blockage of the coronary arteries—the major blood vessels that carry blood, oxygen, and nutrients to the heart. CAD can lead to heart failure and heart attack.

- **HEART FAILURE**

Heart failure is a weakening of the heart muscle itself, usually due to CAD and the heart not receiving the blood, oxygen, and nutrients that it needs in order to function properly. The heart, in turn, is unable to pump the necessary blood to other organs of the body. This can lead to a wide variety of symptoms such as fatigue; shortness of breath; and edema. Heart failure is different from a heart attack, which happens when blood flow to the heart is suddenly cut off and the heart muscle begins to die immediately.

WHAT CAUSES HEART DISEASE?

Heart disease does not occur overnight; rather, it begins [as early as childhood](#) and worsens over time. Most commonly, the root of heart disease is plaque: fatty deposits that accumulate in arteries throughout the body.

Healthy arteries are strong, elastic, and lined with smooth tissue. Over time, as people ingest dietary fat and cholesterol, the lining becomes damaged and “sticky,” and plaque accumulates. [High blood pressure](#), smoking cigarettes, stress, obesity, [diabetes](#), and lack of exercise also contribute to the buildup of plaque.

The more plaque that is present, the narrower the arterial passageways through which blood delivers vital oxygen and nutrients to the body. This results in hypertension—aka high blood pressure. When plaque closes off arteries, it can cause cardiac arrest. Sometimes plaque ruptures and spills its toxic substances into the bloodstream: This activates platelets, which try to control damage with clotting; blood clots can then lead to blockages that cause a heart attack or sudden death.

Cholesterol

Plaque is the root of heart disease, and cholesterol is the root of plaque. “Heart disease develops in susceptible persons when blood cholesterol levels rise higher than 150 mg/dL,” Caldwell B. Esselstyn, Jr., MD, writes in *Prevent and Reverse Heart Disease*. “The converse is also true. A person who maintains blood cholesterol under 150 mg/dL for a lifetime will not develop coronary artery disease—even if he or she smokes, has a family history of coronary disease, suffers from

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hypertension, and is obese!”

FOODS THAT CAUSE HEART DISEASE

Animal-based foods are full of saturated fat and cholesterol, the building blocks of heart disease. Meat, dairy, and eggs all contribute to the buildup of plaque. As Esselstyn writes: “Plaque does not develop until the endothelium, or the lining of the arteries, is injured—and it is injured every time people eat meat, dairy, fish, and chicken. This cannot be emphasized enough.

• Meat

A 2019 study published in the journal *Circulation* assessed the diets of more than 400,000 men and women and found that over the course of 13 years, the risk of heart disease rose with every 100-gram increase in daily red and processed meat intake. And it's not just red meat that causes high cholesterol: Another 2019 study found [no difference in the way red meat and white meat raised blood cholesterol levels](#).

Additionally, eating meat leads the liver to produce the toxic substance trimethylamineoxide (TMAO). “TMAO promotes the formation of cholesterol plaques in our blood vessels, which make them less healthy and may lead to heart attack, stroke, and death,” [writes cardiologist Robert Ostfeld, MD, MSc](#). TMAO also reduces our body's ability to excrete cholesterol.

• Dairy

Milk, cheese, and other dairy products contain high levels of saturated fat, which can raise LDL, or “bad,” cholesterol levels.

• Eggs

In recent years there's been a growing perception that eggs and dietary cholesterol as a whole aren't as bad as we once thought. But recent research has called that into question, including a 2019 study that showed a “clear dose-response” between egg consumption and risk of cardiovascular disease, as Michelle McMacken explains in [“Are Eggs Good for Me?”](#)

• Ultra-Processed Foods

A 2019 *British Medical Journal* study of more than 100,000 people found that higher consumption of ultra-processed foods was associated with higher risks of cardiovascular, coronary heart, and cerebrovascular diseases. For every 10 percent increase in the amount of ultra-processed foods, the risk of a serious cardiovascular event was 12 percent higher.

IS HEART DISEASE HEREDITARY?

Genetics play a lesser role in heart disease than you might think. “If you have heart disease and your parents had it, the primary common link is not your genetics, but that you all likely ate and still eat the same food,” says Alona Pulde, MD, co-author of *The Forks Over Knives Plan* and *The Whole Foods Diet*. “The problem with these kinds of chronic ailments rests primarily in the fact that animal products and oils have been eaten across the generations. If you change the way you eat, you have a good chance of changing your destiny.”

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WHO IS MOST AT RISK?

People who have high blood pressure, have high cholesterol, have diabetes, smoke, or are obese are at increased risk for heart disease. Men are at higher risk than women (though heart disease is also the [leading cause of death for women](#)).

If you have high blood pressure, your doctor may prescribe you a vasodilator (such as nitroglycerin) or ACE inhibitor to dilate the arteries so that the heart can receive more blood. But this approach only addresses the symptom, not the problem: Wider arteries just allow more room for plaque to accumulate. And studies have found an association between blood pressure medications and increased risk of [heart attack](#) and [cancer](#).

SYMPTOMS OF HEART DISEASE

It's quite possible to have heart disease and not have any noticeable symptoms. A [2012 report](#) from the American Heart Association found that 50 percent of men and 64 percent of women who die suddenly of coronary heart disease have no previous symptoms.

However, the following can be symptoms of heart disease:

- Chest pain/discomfort
- Shortness of breath
- Light-headedness
- Fatigue
- [Erectile dysfunction](#)

• Bypass Surgery

A bypass is an invasive surgery in which a blood vessel segment (taken from another part of the body) is grafted onto a blocked coronary artery, allowing blood to bypass blockages. During bypass surgery, surgeons cut open the patient's sternum and stop the heart, using a heart-lung machine to keep blood circulating during the surgery. Studies have found an association between bypass surgery and [increased risk of brain damage and cognitive dysfunction](#).

• Stent

A stent is a tiny mesh tube that doctors insert into narrowed or weakened arteries to prop them open. A [2019 large-scale federally funded study](#) found that, for patients with stable heart disease, stents were no more effective at reducing rates of heart attack and death than lifestyle changes and medication alone.

HEART DISEASE TREATMENT

The following are the most common medical treatments for heart disease patients.

• Medications

Statins are one of the most commonly prescribed medications worldwide and are prescribed to more than 39 million people in the U.S. alone, [according to the most recent data](#). While statins reduce the liver's production of cholesterol, they do not assist the liver in clearing excess cholesterol from the blood. Studies have found a link between cholesterol-lowering medications (including statins) and [cognitive dysfunction, diabetes, falls, and muscle pain](#).

REVERSING HEART DISEASE WITH DIET

Medications and surgical procedures do not address the root of heart disease. But the good news is that the

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world's leading killer is in fact preventable and even reversible. Just as lifestyle factors cause it to develop, they can also cause it to recede. You can dramatically lower your cholesterol and blood pressure simply by changing what you eat.

• REDUCE MEAT AND DAIRY CONSUMPTION

Colin Campbell's [China-Cornell-Oxford Project](#), a decades-long investigation into the nutritional habits and health of 6,500 Chinese people in 65 different rural villages, underscores the dramatic connection between meat and dairy consumption and heart disease: While the average American's total cholesterol level is well over 200, the levels of the participants in the China-Cornell-Oxford Project averaged between 81 and 135.

Additionally, American men were 17 times more likely to die from heart disease than the rural Chinese men. And in parts of China where plant-based diets were most common, researchers could not find a single person out of more than 100,000 who had died from heart disease.

• EAT PREDOMINANTLY WHOLE PLANT FOODS

A [July 2019 meta-analysis](#) of 99 studies found that diets rich in whole plant foods were associated with markedly lower cardiovascular risk compared with diets rich in meat and dairy products. Several contributing factors may help explain this difference.

First, unlike animal foods, whole plant foods don't promote the accumulation of plaque. What's more, they can actually improve the health of your arteries and reverse the progression of heart disease. This is because once your bloodstream is no longer inundated with cholesterol and fat after every meal, your body can begin to heal itself, stabilize the plaque that has already accumulated, and allow blood passageways to relax naturally.

In addition, plant-based eaters form very little of the aforementioned toxic, plaque-encouraging

TMAO. "When researchers fed steak to a vegan, virtually no TMAO was made," writes [cardiologist Ostfeld](#). "Vegans, it seems, do not select for the specific gut bacteria that lead to the formation of TMAO, whereas meat eaters do. Hence, it's as if plants create a coat of armor in our stomachs, protecting us when they are not even there."

• OTHER LIFESTYLE CHANGES FOR HEART HEALTH

In addition to eating a whole-food, plant-based diet, the following lifestyle modifications can help lower your blood pressure and thus reduce your risk of heart disease.

- Lose weight: Every 2.2 pounds of body weight lost can reduce blood pressure by a point.
- Reduce alcohol consumption: For lower blood pressure, avoid drinking more than two drinks daily if you're a man and one drink daily if you're a woman.
- Exercise regularly: Aim for 90 to 150 minutes of exercise weekly.

Read more tips on lowering blood pressure from Shivam Joshi, MD, [here](#).

REAL-LIFE CASE STUDIES OF PEOPLE WHO HAVE DRAMATICALLY IMPROVED THEIR HEART HEALTH THROUGH DIET

Check out more inspiring success stories from people who have reversed heart disease by adopting a plant-based diet.

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- [I Stopped Yo-Yo Dieting, Lost Weight, and Got Off Blood Pressure and ADD Meds with a WFPB Diet](#)
- [I Kicked Hypertension in a Matter of Weeks with a Plant-Based Diet](#)
- [At 73, I Went Plant-Based and Said Goodbye to Obesity, Heart Disease, Kidney Disease, and Arthritis](#)
- [The Heart Attack That Could Have Killed Me Made Me Stronger When I Turned to a Whole-Food, Plant-Based Diet](#)
- [From a Failing Heart and Weight Struggles to Healthy and Active: A Couple's Plant-Based Journey](#)

Ready to begin your journey toward better health? Check out our [Beginner's Guide to a Plant-Based Diet](#) for everything you need to know to get started.