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AN INTRODUCTION TO CORONARY ARTERY DISEASE

POSTED ON APRIL 12TH, 2019 AT 9:12 AM



What is coronary artery disease?

Heart disease is the leading cause of death in the United States. [Coronary artery disease](#), or [coronary artery disease](#), affects more than 16 million Americans.

The condition involves the buildup of fatty deposits or plaque on the interior of the arteries of the heart (coronary arteries). The buildup of plaque (mainly cholesterol deposits) within the arteries is known as atherosclerosis. As a person ages, these deposits may thicken and cause the coronary arteries to narrow, reducing the amount of blood and oxygen that can flow through the arteries to the heart. The narrowing of the arteries prevents blood and oxygen from flowing easily to the heart muscle.

Symptoms of coronary artery disease

This narrowing of coronary arteries may cause angina (pain, discomfort, or pressure in the chest). If blood flow is completely blocked by plaque or a clot that forms inside the narrowed coronary artery, a heart attack may occur. Other symptoms of coronary artery disease include:

- + Shortness of breath during exertion, at rest, or while lying flat
- + Weight gain
- + Weakness and fatigue
- + Dizziness or lightheadedness
- + Nausea, vomiting, and cold sweats
- + Sense of indigestion or heartburn
- + Palpitations (abnormal heartbeat)

Treatment for coronary artery disease

For adults with coronary heart disease, the Brigham and Women's Heart & Vascular Center offers a range of innovative diagnostics and [cutting-edge treatment options](#).

Medications

Medications can help prevent the buildup of additional plaque, thin the blood, reduce cholesterol levels in the artery, and lower blood pressure. Medications used to treat coronary heart disease include Statins, antiplatelet medications and anticoagulants, vasodilators, beta-blockers, and ACE inhibitors.

Catheter

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Many catheter-based approaches can offer faster recovery times and improved clinical outcomes compared to traditional procedures. Examples

- + [Coronary angioplasty and stenting](#): A small balloon is inflated inside the artery to compress the plaque and increase blood flow.
- + [Coronary atherectomy \(DCA\)](#): A catheter-based procedure where the inner walls of coronary arteries are stripped of plaque deposits.

Surgeries

At the Heart & Vascular Center, many [surgical procedures](#) are performed by highly trained and experienced board-certified cardiologists and including:

- + [Coronary artery bypass grafting \(CABG surgery\)](#): Bypassing a blocked artery.
- + [Transmyocardial revascularization](#): New channels or vessels within the heart are created, allowing the blood to flow freely.

The surgeons and interventional cardiologists at the Heart & Vascular Center are highly experienced in many types of [minimally invasive procedures](#) to access the heart through smaller incisions and result in less pain, less scarring and faster recovery.

Treating completely blocked coronary arteries

Brigham and Women's Hospital offers a unique program for patients with completely obstructed coronary arteries, known as chronic total occlusion (CTO). These total blockages are complex and often challenging to treat.

"If a completely closed artery isn't treated in a few months, it can become much harder to address, with many hospitals no longer offering treatment options," says Kevin J. Croce, MD, PhD, Director of the Chronic Total Occlusion (CTO) Program. "We have a strong reputation for treating patients who have been told 'nothing can be done.'"

Historically, the opening of a 100 percent blocked coronary artery required major open-heart surgery. The Chronic Total Occlusion Program uses a minimally invasive procedure, known as [percutaneous coronary interventions](#) (PCI), to access the heart through a catheter inserted through the skin. The non-surgical approach allows patients to avoid open heart surgery from which it can take months to recover.

Lowering risk of coronary heart disease with lifestyle changes

"You can't change your cardiovascular risk factors such as age, gender, race/ethnicity, and family history, but you can reduce your risk by modifying behaviors and conditions that increase the risks for disease," says Dr. Croce.

To help prevent coronary heart disease, Dr. Croce advises patients to pay attention to the following health measures.

- + **Blood pressure**: Your blood pressure should be about 120 (systolic) over 80 (diastolic) mm Hg. Left untreated, hypertension can lead to heart disease, stroke, kidney failure, or heart failure.
- + **Cholesterol**: Your high-density lipoprotein (HDL, or good) cholesterol should be greater than 50 mg/dl; low-density lipoprotein (LDL, or bad) cholesterol should be less than 100 mg/dl, and triglycerides should be less than 150 mg/dl.
- + **Body Mass Index (BMI)**: If your weight is too much for your height, you may have excess body fat, which can cause high blood pressure, heart disease, and stroke. Your BMI should be between 18.5 and 24.0 (BMI calculator).

Healthy lifestyle habits, such as physical exercise, eating a nutritious diet and smoking cessation, may also help prevent coronary artery disease.

Treating complex cases

The Brigham and Women's Heart & Vascular Center is home to cardiovascular specialists who have developed special expertise in not only treating routine cases but also treating complex patients who may be considered untreatable at other centers. People from all over New England travel to the Heart & Vascular Center for the expertise of our cardiac specialists, who have experience with the most complex and complicated cases and the latest technology to provide treatment.

"We find the right treatment plan based on each patient's unique needs. Using our diagnostic and clinical expertise, we provide the right care to the right patient at the right time," says Dr. Croce.

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