



What is Coronary Artery Disease?

Blockages in your heart arteries—known as coronary artery disease—can cause symptoms that can keep you from living the life you want. **Don't let CAD hold you back.** Learn about the disease and how to return to a full life.

Understanding coronary artery disease (CAD)

Coronary artery disease, or CAD, happens when plaque builds up on the inner walls of your coronary arteries. This causes your arteries to harden and narrow, which decreases blood flow to your heart. As a result, your heart doesn't get the blood, oxygen, and nutrients it needs, which can lead to chest pain or other symptoms—or, in some cases, a heart attack.

Do you have complex coronary artery disease (CAD)?

Not all coronary artery disease (CAD) is the same. Different factors can make CAD complex. Sometimes a patient's anatomy or type of blockage in the artery creates a need for a more specialized procedure. Some of these patients may be told by their doctors that there are no treatment options other than medication due to the complexity of their disease. But specialized, minimally invasive procedures like percutaneous coronary intervention (PCI) often can be performed by an interventional cardiologist who has received special training.

How do doctors treat complex CAD?

Many of today's advanced, minimally invasive treatments have been designed specifically to treat patients with complex CAD.

Percutaneous coronary intervention (PCI) is the latest minimally invasive advancement designed to treat complex CAD patients. PCI may be a treatment choice for patients who have previously been told their blockage is too complex to treat, are on medication and still experiencing symptoms, or may have previously been rejected for heart bypass surgery. So now there are solutions for people with the most complex coronary artery disease—even if a doctor previously said nothing could be done besides medication.

Who are complex CAD patients?

Complex CAD patients are patients with CAD who may have some of the following attributes:

- Advanced age
- Frail physical condition
- Severely or totally blocked (or clogged) arteries

Chronic total occlusion (CTO)?

Chronic total occlusion, or CTO, is a type of heart disease where an artery becomes fully blocked for at least 90 days. This stops blood from getting to the part of the heart supplied by that artery. Without enough blood flow, the heart does not get the blood, oxygen, and nutrients it needs to function properly.

Percutaneous coronary intervention (PCI) is a minimally invasive procedure that restores blood flow to the heart without open-heart surgery.



What are CAD Symptoms?

Don't let CAD hold you back. Learn about the symptoms of coronary artery disease (CAD) like fatigue, shortness of breath, and tightness in your chest, and how you can find treatment.

Symptoms of coronary artery disease (CAD)

Symptoms of CAD include chest pains or pressure, called angina, which can spread to the arms or jaw. This can happen during stress, physical activity, or even at rest. Other symptoms include fatigue and shortness of breath. If the flow of blood in a heart artery is blocked, a heart attack can happen. CAD often develops over years, so you may not know you have a problem until you have major blockage and symptoms arise.

What causes coronary artery disease (CAD)?

CAD is caused by an injury to the lining of the artery wall. This injury can be caused by smoking, high cholesterol, high blood pressure, and diabetes. CAD can also be caused by other risk factors that cannot be avoided such as menopause, aging, or having a family with a history of heart disease. You can have a positive impact on some risk factors by quitting smoking, taking steps to lower cholesterol, exercising regularly, keeping your diabetes and high blood pressure under control, and seeing your doctor regularly.



How is CAD Treated?

Don't let CAD hold you back. Learn how new minimally invasive techniques can restore your blood flow.

What is percutaneous coronary intervention (PCI)?

Percutaneous coronary intervention (PCI) is a set of minimally invasive procedures, including stenting and angioplasty, used to treat CAD. There are many different percutaneous coronary intervention (PCI) treatments to treat CAD, but it's best to talk to your doctor about which may be right for you.

Until recently, it had been difficult to restore blood flow for patients with certain types of complicated coronary artery blockages, but percutaneous coronary intervention (PCI) tools and techniques have advanced rapidly and offer outstanding, reliable results for many CAD patients today.

Angioplasty

A coronary angioplasty is a type of minimally invasive procedure to treat CAD. Your heart doctor will thread a small tube, called a catheter, through an artery in your groin or arm, which then goes to an artery leading to the site of your blockage. A small balloon on the tip of the catheter is then slowly inflated to open the blockage.

This procedure can be performed with a balloon catheter alone, or can involve the placement of a coronary stent. There are risks associated with any angioplasty or stent implant procedure. It is important that you review these risks with your heart doctor as they may include infection, allergic reactions, coronary vessel damage, blood clots and death.

Coronary artery stenting

Stenting is another type of minimally invasive procedure to treat CAD. During this procedure, a small mesh tube is put into your artery to widen it and restore blood flow to your heart. This mesh tube is called a stent. Once the stent is placed into the coronary artery, it expands with the inflation of a balloon catheter. The stent is left in the artery to keep it open and help prevent further narrowing of the coronary artery.

Depending on your specific needs, your doctor may choose a bare-metal stent or a drug-eluting stent. There are differences between these stent types, such as when there is a need for longer-term dual antiplatelet therapy, which you should discuss with your doctor.

Stents used to treat CAD include:

Bare-metal stents: provide support to help keep your artery open after angioplasty

Drug-eluting stents: a bare-metal stent with a special drug added to help reduce the chance of the artery becoming blocked again. This drug is released from the stent over the period of time during which re-blockage is most likely to occur

There are risks associated with any angioplasty or stent implant procedure. It is important that you review these risks with your heart doctor as they may include infection, allergic reactions, coronary vessel damage, blood clots and death.

What is complex percutaneous coronary intervention (PCI)?

Complex PCI is designed to treat patients who have complex blockages, patients who have complex arteries, and patients who have CAD and other diseases that may make them ineligible for heart bypass surgery. Recent advancements in PCI have given doctors tools and techniques to be able to successfully treat more complex CAD patients than ever before, even patients who are still experiencing symptoms after being treated for CAD or have been told there are no other options besides medication.

What is complex coronary artery disease (CAD)?

A complex CAD patient will exhibit an abnormal blockage or other interventional complication that a cardiologist cannot easily manage. You may want to seek a referral for a percutaneous coronary intervention (PCI) specialist to find the right treatment choice for you.

What is coronary artery bypass surgery (CABG)?

Coronary artery bypass surgery (CABG), or heart bypass, requires open-heart surgery. During surgery, arteries or veins are taken from another part of the body and used to reroute blood around blocked heart arteries.

Medical management

Coronary artery disease (CAD) may be managed with a mixture of lifestyle changes, exercise, diet, and medical treatment. There are medications that are given to relieve chest pain due to blockages, but do not treat the blockage itself. Your doctor may prescribe a number of medications (aspirin, beta-blockers, cholesterol medications, etc.) to thin your blood and to help prevent blockage of the arteries.



CAD Patient Stories

Don't let CAD hold you back. Learn how other CAD patients got back to living the lives they want.

Coronary artery disease (CAD) patient stories

Watch to learn more about patients like you who have been rejected for heart bypass, have a history of heart disease, are being medically managed but are still experiencing symptoms, or had to seek out treatment for their CAD.

"I have no symptoms of any sort, no pain or ache."

Back to his life after being rejected for heart bypass

Vincent shares his family history of heart disease and his own experience with bypass surgery and then coronary stenting. Twelve years after his bypass surgery, when his bypass grafts began to fail, Vincent was able to gain his momentum back with a minimally invasive percutaneous coronary intervention (PCI) procedure.

Even if you have a history of heart disease and other treatments, recent advancements in minimally invasive percutaneous coronary intervention (PCI) may make it the right treatment for you.

It is important that you talk with your doctor about which treatment is the right one for you and that you understand all of the risks and benefits.

"I feel like I did 20 years ago, I couldn't believe it."

Watch how pursuing therapy beyond medication helped Jake get back to living the life he wanted.

Back to his life after suffering even with medication

Jake suffered from chronic total occlusion (CTO), which made the vessels of his heart completely blocked. After open-heart surgery, and then medical management, Jake still experienced symptoms. After his minimally invasive percutaneous coronary intervention (PCI) procedure, Jake felt the relief that he had been looking for.

If your doctor has prescribed medicine for your CAD treatments and you are still not feeling like your best self, you may be eligible for a minimally invasive percutaneous coronary intervention (PCI) procedure.

"I'm a new person, I got my heart back."

Back to his life after looking for the right treatment—and the right doctor

Chan was diagnosed with chronic total occlusion (CTO), and had suffered two previous heart attacks. His physical activity became limited. After actively looking for a PCI specialist and the right treatment, he was treated with percutaneous coronary intervention (PCI) and got back to his normal life.

Even with prior comorbidities, you may still be eligible for a minimally invasive percutaneous coronary intervention (PCI) thanks to recent advances. Talk to your cardiologist about identifying the right treatment for you.

“There was question of bypass, and I was very upset about it.”

Watch how finding the right treatment helped Susie get back to living the life she wanted.

Back to her life after suffering from complex blockage

After Susie’s coronary artery disease (CAD) symptoms began to arise, she became worried about the possibility of open-heart surgery. By talking to her doctor, Susie’s treatment choices became greater than she suspected. Susie and her doctor decided that she would be eligible for percutaneous coronary intervention (PCI). After her stent was implanted, Susie could do the things she used to.

Open-heart surgery may not always be the right procedure for every patient. It is important that you talk with your doctor about which treatment is the right one for you and that you understand all of the risks and benefits.



CAD Doctors and Your Treatment Plan

Don't let CAD hold you back. Talk to your doctor to determine the best CAD treatment plan to help you get back to the life you want.

Note: these referenced videos are available to download from the Boston Scientific Complex PCI Download Center under 'Patient Education' Resources

What to expect on your CAD treatment journey

Diagnosis

As soon as you start to feel symptoms, it is important that you see your doctor, or check in with your heart doctor if you are already seeing one. Your primary care doctor can refer you to a heart doctor, known as a cardiologist, if you are not currently working with one.

Your heart doctor will usually use an electrocardiogram (ECG) test, exercise stress test, or cardiac angiogram to diagnose CAD.

An electrocardiogram (ECG/EKG) measures your heart's electrical activity and may show whether your heart has been damaged by a heart attack.

A stress test records your heart's electrical activity while you are exercising to reveal heart-related problems.

A coronary angiogram can show if any blockage and/or narrowing have taken place. A special dye is injected into the coronary arteries so that they can be seen in an x-ray. Information from the angiogram will help your doctor decide how to treat you.

Your doctor will refer you to an interventional cardiologist; someone who specializes in higher-level treatment, when he or she decides which treatment will be best for you.

Referral

If you are diagnosed with CAD, it is important that you see your heart doctor to decide which treatment will be best for you. Fill out a discussion guide and take it to your next appointment with your cardiologist to discuss the right treatment for you.

Your doctor will perform a series of tests to determine your diagnosis, and may then refer you to an interventional cardiologist for further evaluation.

Who treats CAD?

Don't let CAD hold you back. Make sure you're talking to the right doctor at every point in your CAD diagnosis and treatment to make sure you're on the right path.

Internal medicine/general practitioner

When experiencing CAD symptoms, you should first talk to your internal medicine doctor or general practitioner. Your general practitioner will help you recognize CAD symptoms and will consult with a general cardiologist after he or she lands on a preliminary diagnosis. They may then refer you to a more specialized cardiologist for treatment or further assessment.

General cardiologist

Your internal medicine doctor or general practitioner will refer you to a cardiologist. A cardiologist is a doctor who diagnoses and treats heart diseases. A cardiologist will confirm or deny your CAD diagnosis after performing a series of tests, and can work with an interventional cardiologist to determine the best treatment for you. Your cardiologist may refer you to the interventional cardiologist or a cardiac surgeon for further testing and a treatment plan.

Interventional cardiologist

When deciding what treatment choice is best for you, you will work closely with an interventional cardiologist. An interventional cardiologist is a heart doctor who specializes in minimally invasive percutaneous coronary intervention (PCI) procedures like stenting and angioplasty. An interventional cardiologist will determine which type of treatment suits you best, and can refer you to a percutaneous coronary intervention (PCI) specialist for an advanced percutaneous coronary intervention (PCI) assessment.

It is important that you talk with your doctor about which treatment is the right one for you and that you understand all of the risks and benefits.

Percutaneous coronary intervention (PCI) specialist

A percutaneous coronary intervention (PCI) specialist is a heart doctor who knows percutaneous coronary intervention (PCI) treatment and procedures the best, and is highly trained in complex cases. The PCI specialist is there to determine which minimally invasive percutaneous coronary intervention (PCI) procedure is right for you.



Your Treatment Plan and FAQs

Will my insurance cover the procedure?

Most insurance covers the percutaneous coronary intervention procedure and placement of a stent.

Can I reverse coronary artery disease (CAD) with lifestyle changes like diet and exercise?

Coronary artery disease (CAD) may be managed with a combination of lifestyle changes, exercise, diet, and medical treatment. You can have a positive impact on some risk factors by quitting smoking, taking steps to lower cholesterol, exercising regularly, eating a “heart-healthy” diet, keeping high blood pressure and diabetes under control, and seeing your doctor regularly.

Lifestyle changes alone cannot treat your CAD completely, and to restore blood flow you may need percutaneous coronary intervention (PCI) or bypass surgery.

It is important that you talk with your doctor about which treatment is the right one for you and that you understand all of the risks and benefits.

What do I do if I’m not happy with the medication I have been prescribed?

If you are not happy with the medication you have been prescribed, it is important that you discuss this matter with your general practitioner or heart doctor. Minimally invasive percutaneous coronary intervention (PCI) can often fully restore your blood flow, whereas medication only masks your symptoms. It is important to talk to your doctor to see if percutaneous coronary intervention (PCI) is the right treatment for you and that you understand all of the risks and benefits.

How is percutaneous coronary intervention (PCI) different from medical management of coronary artery disease (CAD)?

Percutaneous coronary intervention is a minimally invasive interventional technology that treats blockages in coronary arteries and helps to prevent CAD symptoms from coming back. Medical management can treat your symptoms, but it can’t take the blockage away.

If I’ve been rejected for bypass surgery before, does that mean I can’t have percutaneous coronary intervention (PCI)?

If you were rejected for bypass surgery or coronary artery bypass graft (CABG) surgery before, you may not have been considered for minimally invasive percutaneous coronary intervention (PCI) at the time, and might not have been reconsidered since. Percutaneous coronary intervention (PCI) is a minimally invasive advanced technology that is appropriate for more patients now than before. It is important that you discuss your treatment choices with your doctor to see if percutaneous coronary intervention (PCI) is right for you.

How is percutaneous coronary intervention (PCI) different from heart bypass?

Heart bypass requires open-heart surgery, while percutaneous coronary intervention (PCI) is a minimally invasive procedure that is done by inserting a catheter into your groin or arm to treat your coronary artery blockage.

What can make me eligible for percutaneous coronary intervention (PCI)?

Percutaneous coronary intervention (PCI) is a minimally invasive treatment that has evolved rapidly and can provide outstanding, reliable results for a broader range of patients than ever before, including patients with coronary artery disease (CAD), complex CAD, and patients with CTO. You may also be eligible for percutaneous coronary intervention (PCI) if you have previously been rejected for CABG, or are currently on medical management.

Is complex percutaneous coronary intervention (PCI) only for complex coronary artery disease (CAD) patients?

Complex percutaneous coronary intervention (PCI) may be appropriate for any patient who would benefit from restoring blood flow by opening up blocked coronary arteries.

It is important that you talk with your doctor about which treatment is the right one for you and that you understand all of the risks and benefits.

Who will determine which treatment choice is right for my coronary artery disease (CAD)?

It is important that you talk to your general practitioner or heart doctor. After diagnosis, your doctor will refer you to an interventional cardiologist who will determine which treatment is right for you.

How can I get referred to a complex percutaneous coronary intervention (PCI) specialist?

It is important that you talk to your cardiologist or interventional cardiologist about getting referred for percutaneous coronary intervention (PCI). Your heart doctor will perform a series of tests to determine your diagnosis, and you may be referred to a complex PCI specialist to determine which treatment is for you.

How does the procedure typically work?

The percutaneous coronary intervention (PCI) procedure is typically an outpatient procedure, but may require a short stay. Typical recovery times vary, but you may be able to leave the same day or day after your procedure.



Take The Assessment Quiz

Considering treatment options? Take our assessment quiz to find out more and receive your symptom checker results.

Have you been experiencing fatigue, shortness of breath, or chest tightness?

Symptoms of CAD include chest pains or pressure, called angina, which can spread to the arms or jaw. This can happen during stress, physical activity, or even at rest. Other symptoms include fatigue and shortness of breath.

YES NO NOT SURE

Have you been diagnosed with coronary artery disease?

Your heart doctor will usually use an electrocardiogram (ECG) test, exercise stress test, or cardiac angiogram to diagnose CAD.

YES NO NOT SURE

Have you been on medication and still experiencing symptoms?

Your doctor may prescribe a number of medications (aspirin, beta-blockers, cholesterol medications, etc.) to thin your blood and to help prevent blockage of the arteries.

YES NO NOT SURE

Have you talked to your doctor about PCI: angioplasty?

PCI, or sometimes known as angioplasty or coronary artery stenting, is a minimally invasive procedure that is used to treat CAD.

YES NO NOT SURE

Have you have talked to your doctor about CAD and been told your blockage is too complex to treat?

If you were rejected for heart bypass or coronary artery bypass graft (CABG) surgery before or been told there was nothing that could be done for you, you may not have been considered for minimally invasive percutaneous coronary intervention (PCI) at the time, and might not have been reconsidered since.

YES NO NOT SURE

Are you looking for alternative treatment options to manage your Coronary Artery Disease?

Your doctor will refer you to an interventional cardiologist; someone who specializes in higher- level treatment, when he or she decides which treatment will be best for you.

YES NO NOT SURE

Thank You

Based on your responses, you may want to contact your Interventional Cardiologist or family physician for an appointment to discuss your symptoms. Download your answers and our discussion guide to bring to your appointment.