Heart Related Problems:

chest pain

What causes chest pain?

When you have chest pain, your first thought may be that you're having a heart attack. While chest pain is a well-established sign of a heart attack, it can also be caused by many other less serious conditions.

According to one study, only 5.5 percentTrusted Source of all ER visits for chest pain result in a diagnosis of a serious heart-related problem.

Heart-related causes of chest pain

The following are heart-related causes of chest pain:

heart attack, which is a blockage of blood flow to the heart

angina, which is chest pain caused by blockages in the blood vessels leading to your heart

pericarditis, which is an inflammation of the sac around the heart

myocarditis, which is an inflammation of the heart muscle

cardiomyopathy, which is a disease of the heart muscle

aortic dissection, which is a rare condition involving a tear of the aorta, the large vessel that comes off of the heart

Gastrointestinal causes of chest pain

The following are gastrointestinal causes of chest pain:

acid reflux, or heartburn, especially after eating

swallowing problems related to disorders of the esophagus

gallstones, which can lead to upper abdominal pain or pain after eating

inflammation of the gallbladder or pancreas

Lung-related causes of chest pain

The following are lung-related causes of chest pain:

pneumonia, which causes pain that may get worse with breathing

viral bronchitis, which can cause soreness around your chest and muscle aches

pneumothorax (collapsed lung), causing a sudden onset of chest pain

a blood clot, or pulmonary embolus, which can cause sharp pain that worsens with breathing

bronchospasm, which causes chest tightness

Bronchospasms commonly occur in people who have asthma and related disorders such as chronic obstructive pulmonary disease (COPD).

Muscle- or bone-related causes of chest pain

The following are causes of chest pain related to the muscles or bones:

bruised or broken ribs, which may be due to an injury to your chest

sore muscles from exertion or chronic pain syndromes

compression fractures causing pressure on a nerve

Other causes

Shingles can cause chest pain. You may develop pain along your back or chest before the shingles rash becomes apparent. Panic attacks can also cause chest pain.

What symptoms may occur with chest pain?

You may have other symptoms that occur with chest pain. Identifying symptoms you may be having can help your doctor make a diagnosis. These include:

Heart-related symptoms

While pain is the most common symptom of a heart problem, some people experience other symptoms, with or without chest pain. Women, in particular, may report atypical symptoms that are later identified as being the result of a heart condition:

chest pressure or tightness

back, jaw, or arm pain

fatigue

lightheadedness

dizziness

shortness of breath (dyspnea)

abdominal pain

nausea

pain during exertion

Other symptoms

Symptoms that may indicate your chest pain isn’t heart-related include:

a sour or acidic taste in your mouth

pain that only occurs after you swallow or eat

difficulty swallowing

pain that’s better or worse depending on your body position

pain that’s worse when you breathe deeply or cough

pain accompanied by a rash

fever

aches

chills

runny nose

cough

feelings of panic or anxiety

hyperventilating

back pain that radiates to the front of your chest

How is chest pain diagnosed?

Seek emergency treatment immediately if you think you may be having a heart attack and especially if your chest pain is new, unexplained, or lasts more than a few moments.

Your doctor will ask you some questions, and your answers can help them diagnose the cause of your chest pain. Be prepared to discuss any related symptoms and to share information about any medications, treatments, or other medical conditions you may have.

Diagnostic tests

Your doctor may order tests to help diagnose or eliminate heart-related problems as a cause of your chest pain. These may include:

an electrocardiogram (ECG or EKG), which records your heart’s electrical activity

blood tests, which measure enzyme levels

a chest X-ray, which is used to examine your heart, lungs, and blood vessels

an echocardiogram, which uses sound waves to record moving images of your heart

an MRI, which is used to look for damage to your heart or aorta

stress tests, which are used to measure your heart function after exertion

an angiogram, which is used to look for blockages in specific arteries

If you need help finding a primary care doctor, you can browse doctors in your area through the Healthline FindCare tool.

How is chest pain treated?

Your doctor might treat chest pain with medication, noninvasive procedures, surgery, or a combination of these methods. Treatment depends on the cause and severity of your chest pain.

Treatments for heart-related causes of chest pain include:

medications, which may include nitroglycerin and other medications that open partially closed arteries, clot-busting drugs, or blood thinners

cardiac catheterization, which may involve using balloons or stents to open blocked arteries

surgical repair of the arteries, which is also known as coronary artery bypass grafting or bypass surgery

Treatments for other causes of chest pain include:

lung reinflation for a collapsed lung, which your doctor will perform by inserting a chest tube or related device

antacids or certain procedures for acid reflux and heartburn, which are used to treat the symptoms

anti-anxiety medications, which are used to treat chest pain related to panic attacks

Why would you have chest pain that comes and goes?

The potential causes of chest pain aren’t limited to your heart. They can include other parts of your body, such as your lungs and your digestive tract too. Here are some conditions may cause chest pain that comes and goes.

Heart attack

A heart attack happens when the flow of blood to your heart tissue is blocked. This can be due to plaque buildup or a blood clot.

Symptoms of a heart attack vary by individual. Pain may be felt as mild discomfort or could be sudden and sharp.

Angina

Angina happens when your heart tissue isn't getting enough blood. It can be a common symptom of heart disease. It can also be an indicator that you're at risk of having a heart attack.

Angina often, but not always, occurs while you're exerting yourself. You may also feel pain in your arms or back.

Pericarditis

Pericarditis is the inflammation of the tissues that surround your heart. It can be caused by a variety of things, including infection, an autoimmune condition, or a heart attack.

Pain from pericarditis may come on suddenly and may also be felt in the shoulders. It tends to get worse when you breathe or lie down.

Gastroesophageal reflux disease (GERD)

GERD is a condition in which stomach acid moves up into the esophagus, causing a burning sensation in the chest called heartburn. Pain from GERD may feel worse after eating and while lying down.

Stomach ulcers

A stomach ulcer is a sore that forms on the lining of your stomach. They can occur due to a bacterial infection or due to use of nonsteroidal anti-inflammatory drugs (NSAIDs).

Stomach ulcers can cause pain anywhere between your breastbone and belly button. This pain may be worse on an empty stomach and may ease after eating.

Injury or strain

An injury or strain involving your chest may cause chest pain to occur. Injury can occur due to an accident or due to overuse.

Some possible causes include things like muscle strain or injured ribs. Pain may get worse when moving or stretching the affected area.

Pneumonia

Pneumonia causes inflammation of the air sacs within your lungs called alveoli. It's caused by an infection.

Pain from pneumonia may get worse from coughing or breathing deeply. You may also experience fever, chills, and shortness of breath.

Pleurisy

Pleurisy occurs when the membranes that line your lungs within the chest cavity become swollen and inflamed. It can be caused by a variety of things, including infections, autoimmune conditions, or cancer.

Pain may feel worse when breathing deeply, coughing, or sneezing. You may also have a fever, shortness of breath, or chills.

Gallstones

Gallstones are when digestive fluid hardens inside your gallbladder, causing pain. You may feel gallstone pain in the right upper part of your abdomen, but it can also spread to the area of the shoulders or breastbone.

Panic attack

A panic attack can happen spontaneously or due to a stressful or frightening event. People having a panic attack may feel chest pain, which may be mistaken for a heart attack.

Costochondritis

Costochondritis is when the cartilage connecting your ribs to your breastbone becomes inflamed. It can be caused by an injury, infection, or arthritis.

Pain from costochondritis occurs on the left side of the breastbone and can get worse when you breathe in deeply or cough.

Pulmonary embolism

A pulmonary embolism happens when a blood clot that’s formed elsewhere in the body becomes lodged in the lungs. Pain can occur when breathing in deeply and may occur with shortness of breath and an increase in heart rate.

Pulmonary embolism is a medical emergency. If you think you’re experiencing these symptoms, seek immediate medical care.

Lung cancer

Chest pain is a common symptom of lung cancer. It's often worse when coughing or breathing deeply. Other symptoms you may notice include things like a persistent cough, unexplained weight loss, and shortness of breath.

IS IT A HEART ATTACK?

How can you tell if the pain you're experiencing is a heart attack? In addition to chest pain, look for the following warning signs:

pain that spreads to the arms, neck, or back
shortness of breath
cold sweats
feeling unusually fatigued or tired
nausea or vomiting
being dizzy or lightheaded

If you have chest pain and any of these symptoms call 911 immediately.

You should always seek emergency medical attention if you're experiencing unexplained chest pain or believe that you may be having a heart attack. If you are having a heart attack, prompt treatment can save your life.

How is chest pain diagnosed?

In order to diagnose your chest pain, your doctor will first take your medical history, perform a physical examination, and ask about your symptoms.

In some cases, the location of the pain can help give an idea of the potential cause. For example, pain on your left side could be related to your heart, your left lung, or due to costochondritis. Pain on the right side may be due to gallstones or your right lung.

Examples of additional tests your doctor may use to make a diagnosis include:

blood tests, which can help to indicate a number of conditions, including heart attack, pulmonary embolism, or infection
imaging technology such as a chest x-ray, CT scan, or MRI scan to visualize the tissues and organs of your chest

electrocardiogram (ECG), to examine the electrical activity of your heart

coronary or pulmonary angiogram to see if arteries in your heart or lungs, respectively, have narrowed or become blocked

echocardiogram, which uses sound waves to make an image of your heart in action

stress testing, to see how your heart responds to stress or exertion

endoscopy, to check for issues in the esophagus or stomach that may be related to GERD or stomach ulcers

biopsy, which involves removing and examining a tissue sample

How is chest pain treated?

The way that chest pain is treated can depend on what's causing it. Below are some examples of possible treatments:

Medications

Medications can be used to treat many different types of chest pain. Some examples include:

NSAIDs to reduce inflammation and ease pain

beta-blockers to relieve chest pain and lower blood pressure

ACE inhibitors to lower blood pressure

nitroglycerin to help relax and widen blood vessels

blood thinners to help stop the formation of blood clots

clot-busting medications to break up blood clots

statins to lower cholesterol levels

proton pump inhibitors or H2 blockers, which reduce levels of stomach acid

antibiotics to treat bacterial infections

medications to help dissolve gallstones

Procedures or surgeries

Sometimes one of the following procedures or surgeries may be necessary to treat your condition:

percutaneous coronary intervention (PCI) to help open arteries that have blocked or narrowed

heart bypass surgery, which grafts a healthy artery into your heart tissue in order to bypass a blocked artery

removing accumulated fluids, which may be necessary for conditions like pericarditis or pleurisy

catheter-assisted removal of a blood clot in the lung

removal of the gallbladder in people with recurrent gallstones

Lifestyle changes

These typically include things like dietary changes, increasing levels of physical activity, and quitting smoking.

Can you prevent chest pain?

Causes of chest pain can vary and as such, preventive measures can be diverse. Follow the tips below to help prevent some of the causes of chest pain:

focus on eating a heart-healthy diet
strive to maintain a healthy weight
find ways to effectively manage stress
ensure that you get sufficient exercise
limit the amount of alcohol that you drink
avoid smoking
avoid consuming foods that may lead to heartburn such as spicy, fatty, or acidic foods
walk or stretch frequently and consider wearing compression socks to avoid blood clots
visit your doctor for regular health screenings
The bottom line
If you have chest pain that comes and goes, you should be sure to see your doctor. It’s important that they evaluate and properly diagnose your condition so that you can receive treatment.

Remember that chest pain can also be a sign of a more serious condition like a heart attack. You should never hesitate to seek emergency medical attention for unexplained chest pain or if you think you’re having a heart attack.

30 Causes for Chest Pain ?

Signs of a medical emergency
A heart attack doesn’t always include chest pain. You may be having a heart attack if you have sudden chest pain along with any of the following symptoms:

shortness of breath
nausea
lightheadedness
a cold sweat

If these symptoms last for five minutes or more, you should call your local emergency services. You may be having a heart attack. Heart attack can also cause pain in the jaw, neck, back, or arms.

Heart-related causes

Chest pain related to your heart is often accompanied by shortness of breath or other breathing difficulties. You may also experience heart palpitations or a racing heart.

1. Angina

Chest pain associated with angina: described as pressure, or a feeling like your heart is being squeezed

Angina refers to a type of chest pain that occurs when blood is still flowing to the heart muscle, but the supply is dramatically reduced. It's a fairly common condition, affecting about 9 million Americans.

Symptoms of angina include:

feeling of pressure in your chest or like your heart is being squeezed
pain elsewhere in your upper body
dizziness

Angina is sometimes confused with a heart attack. Unlike a heart attack, angina doesn't cause permanent damage to heart tissue.

There are two main types of angina: stable and unstable. Stable angina is predictable. It comes on when you're physically active and the heart is pumping harder than usual. It tends to disappear when you rest.

Unstable angina can appear at any time, even when you're sitting down and relaxed. Unstable angina is a more serious concern because it strongly indicates you're at a greater risk of a heart attack.

If you aren't sure whether you're experiencing angina or a heart attack, err on the side of caution and call your local emergency services. If you experience either type of angina, you should make an appointment to see your doctor soon.

2. Heart attack

Chest pain associated with heart attack: sharp, stabbing pain, or tightness or pressure

A heart attack occurs when there is blockage in one or more of the arteries supplying blood to the heart muscle. When any muscle in the body is starved of oxygen-rich blood, it can cause considerable pain. The heart muscle is no different.

The chest pain that comes with a heart attack may feel like a sharp, stabbing sensation, or it may seem more like tightness or pressure in your chest. Other heart attack symptoms may include:

shortness of breath
lightheadedness
a cold sweat
nausea
a fast or irregular pulse
a lump in your throat or a feeling of choking
signs of shock, such as sudden and severe weakness
numbness in an arm or hand
vague feeling that something is wrong

A heart attack is always a medical emergency. The sooner you respond to heart attack symptoms and receive treatment, the less damage this cardiac event will cause. A heart attack may require bypass surgery or placement of a stent in one or more of your blocked coronary arteries.

3. Myocarditis

Chest pain associated with myocarditis: mild pain or feeling of pressure

In some cases, heart-related chest pain is caused by inflammation of the heart muscle most frequently caused by a viral infection. This condition is known as myocarditis. About 1.5 millionTrusted Source cases of myocarditis are reported across the globe every year.

Symptoms of myocarditis include:

mild chest pain
chest pressure
shortness of breath (the most common symptom)
swelling in the legs
heart palpitations

If your symptoms are mild, make a doctor's appointment soon. If chest pain, shortness of breath, and other signs are more severe, call your local emergency services.

4. Pericarditis

Chest pain associated with pericarditis: sharp or dull pain that usually starts in the center or left side of the chest

Another type of heart inflammation is called pericarditis. It's specifically an inflammation of the thin, watery sac that surrounds the heart, and it may be caused by viral or bacterial infections. Heart surgery can also lead to pericarditis. In most cases of pericarditis, the cause is unknown.

The condition isn't very common, affecting only about 0.1 percent of hospital admissions.

Pericarditis can cause chest pain that feels like a heart attack. The pain may be sharp or dull, and it usually starts in the center or left side of the chest. The pain sometimes radiates to your back. Other symptoms may include:

fatigue
muscle ache
mild fever

Symptoms often disappear after a week or two with rest or medications.

If you think you may be having a heart attack, call your local emergency services. If the chest pain is mild, make a doctor's appointment. Take note if you've had any type of infection, as it may have triggered pericarditis.

5. Aortic aneurysm

Chest pain associated with aortic aneurysm: may not cause noticeable symptoms, or your chest may feel tender to the touch

The aorta is the largest artery in your body, and it's responsible for transporting blood from the heart and to the vast network of blood vessels that supply most of the body. All that blood flow can cause a bulge to form in the wall of the aorta. This balloon-like bulge is called an aortic aneurysm.

You could have an aortic aneurysm without knowing it. The bulge itself may not cause any symptoms. If you do notice any signs, they may include:

tenderness in the chest, back, or abdomen
coughing

shortness of breath

See your doctor as soon as you can if you notice a change in your breathing accompanied by chest discomfort.

6. Aortic dissection or rupture

Chest pain associated with aortic dissection or rupture: sudden sharp pain in chest and upper back

An aortic aneurysm can lead to an aortic dissection, which is a tear within the layers of the aortic wall that allows blood to leak out. An aortic aneurysm can also rupture, which means it bursts, causing blood to gush from the aorta.

Symptoms of a dissection or a rupture include:

a sudden, sharp, and constant pain in your chest and upper back

pain in your arms, neck, or jaw

trouble breathing

These symptoms should be treated as an emergency, and you should seek immediate emergency medical care. An aortic dissection or rupture can be fatal if not treated promptly.

7. Cardiomyopathy

Chest pain associated with cardiomyopathy: may experience moderate pain after eating or exercise

Cardiomyopathy refers to several heart muscle diseases. They can cause the heart muscle to thicken, thin, or experience other complications that affect its pumping ability. You may develop a cardiomyopathy following another disease, or you may inherit the condition.

Symptoms may include:

shortness of breath, especially after physical activity

swelling in your legs and ankles

chest pain in some cases, which may be more intense with exertion or after eating a heavy meal

heart palpitations

irregular heart rhythm

Make an appointment to see your doctor if you have these symptoms. If shortness of breath or chest pain become severe, call your local emergency services.

8. Valve disease

Chest pain associated with valve disease: pain, pressure, or tightness, usually with exertion

Your heart has four valves that control the flow of blood in and out of the heart. As you age, your risk of valve problems increases.

Symptoms of valve disease depend on the particular type of valve disorder, and may include:

chest pain, pressure, or tightness when you’re very active

fatigue

shortness of breath

heart murmur, which is an unusual heartbeat that your doctor can detect with a stethoscope

If you notice chest pain or pressure with exertion, make an appointment to see your doctor. It may not be an emergency, but the sooner you get a diagnosis, the sooner you and your doctor can start a treatment plan.

Respiratory causes

Most respiratory causes of chest pain are due to injuries to the lungs, or problems within the airways leading to and coming from your lungs.

Chest pain associated with a breathing disorder or other respiratory condition may feel like a heart attack or heart-related condition. The pain will like increase with exertion and heavy breathing, and decrease with rest, and stable or slow breathing. Items 9–16 describe causes of respiratory-related chest pain.

9. Pulmonary embolism

Chest pain associated with pulmonary embolism: gradual or sudden, sharp pain, similar to a heart attack, that gets worse with exertion

A pulmonary embolism (PE) is a blood clot that gets lodged in an artery in one of your lungs. A PE makes it difficult to breathe. This sensation can form suddenly, and breathing gets harder with exertion.

The chest pain and tightness from a PE feels like a heart attack. It also gets more severe with physical activity. Other symptoms include swelling in the lower leg and a cough that may include blood mixed with mucus.

If any of these symptoms develop suddenly, seek immediate emergency medical help. A pulmonary embolism can stop blood flow to the heart, causing immediate death.

10. Collapsed lung

Chest pain associated with collapsed lung: pain occurs when you inhale

A collapsed lung, also called pneumothorax, occurs when air gets in between the chest wall (the rib cage, and several layers of muscle and tissue) and the lungs. This buildup of air can put pressure on a lung and keep it from expanding when you inhale.

If you have a collapsed lung, breathing in will hurt and ultimately become difficult. It may feel like the pain is in your chest due to the location of the lung. Seek immediate medical attention if you suspect you have a collapsed lung.

11. Pneumonia

Chest pain associated with pneumonia: sharp or stabbing pain that increases when you inhale

Pneumonia isn’t a stand-alone disease, but a complication from the flu or other respiratory infection. The chest pain with pneumonia usually starts as a sharp or stabbing pain that is worse when you inhale.

Other symptoms of pneumonia include:

severe cough, usually with green, yellow, or sometimes bloody phlegm
fever
chills
If you have chest pain when inhaling, see a doctor soon. If you have chest pain and are coughing up blood, call your local emergency services.

12. Asthma

Chest pain associated with asthma: tightness in the chest

Asthma is a condition that causes inflammation of your airways. They tighten and produce more mucus. Asthma’s main symptoms include wheezing and difficulty breathing during a flare-up. You may feel an uncomfortable tightness in your chest when having as asthma attack.

Asthma can usually be controlled with inhaled medications. But if your medications aren’t working as well as they have in the past, or you develop asthma symptoms without having been diagnosed with a respiratory problem, make a doctor’s appointment soon.

13. Chronic obstructive lung disease (COPD)

Chest pain associated with COPD: tightness in the chest, often worse with exertion

COPD refers to a few different conditions in which your airways become inflamed, restricting the flow of air in and out of your lungs. The two main examples are chronic bronchitis and emphysema. Symptoms of COPD include:

chest tightness

wheezing

coughing

Physical activity makes most COPD symptoms worse.

Seek immediate medical help if you have chest tightness and difficulty breathing.

14. Pleurisy

Chest pain associated with pleurisy: sharp chest pain that worsens with breathing or coughing

The pleura is a membrane that includes the tissue lining the inner wall of your chest cavity and the layer of tissue that surrounds the lungs. When the pleura becomes inflamed, the condition is called pleurisy or pleural disease. There are several types of pleurisy with a variety of causes, including cancer.

Symptoms of pleurisy include:

shortness of breath

coughing

a sharp chest pain that worsens when you breathe or cough

Chest pain may spread throughout your upper body, and may also turn into a constant ache.

If you have unexplained chest pain when breathing or coughing, make a doctor’s appointment to determine the cause.

15. Lung cancer

Chest pain associated with lung cancer: unexplained chest pain, including pain that’s unrelated to coughing

Lung cancer is the growth of abnormal cells in your lungs that interfere with healthy lung function. Symptoms of lung cancer include:

coughing that produces phlegm

shortness of breath

chest pain unrelated to coughing that may also extend to your back or shoulders

chest pain that worsens when you breathe deeply, laugh, or cough.

Unexplained chest and back pain should prompt a visit to your doctor soon, especially if your cough is getting worse or more frequent. If you cough up blood or phlegm tinged with blood, which is common with lung cancer, seek immediate emergency medical help.

16. Pulmonary hypertension

Chest pain associated with pulmonary hypertension: tightness or pressure

Your blood pressure is the force of blood against the inner walls of your arteries as it circulates through your body. When the force is too great, it’s called high blood pressure or hypertension. When the pressure is high in the arteries serving your lungs, the condition is known as pulmonary hypertension. It can lead to serious consequences, such as heart failure.

In the early stages of pulmonary hypertension, you'll likely experience shortness of breath when physically active. Eventually, pulmonary hypertension causes you to be tired, even at rest. You will also feel:

a tightness or pressure in your chest
a racing heartbeat
fainting
swelling in your legs
These are signs of a medical emergency.

Pulmonary hypertension can often be treated with medications and lifestyle changes. You should be evaluated by a physician if pulmonary hypertension symptoms emerge.

Digestive causes
While most heart- and lung-related causes of chest pain get worse with exercise, chest discomfort triggered by a digestive issue may actually improve with exertion and get worse when you lie down. That's because you digest food more effectively when you aren't lying flat.

Most digestive causes of chest pain are related to problems with your esophagus. The esophagus is the tube that carries food and liquids down your throat and into your stomach. Items 17–24 are digestion-related causes for chest pain.

17. Gastroesophageal reflux disease (GERD)
Chest pain associated with GERD: burning sensation

Acid reflux is a common condition that results when stomach acid moves back up the esophagus and irritates the lining of the esophagus. GERD is a more serious, persistent form of this condition.

The resulting chest pain is known by a more common term: heartburn. That's because it causes a burning sensation in the chest. It's sometimes worse when you lie down.

GERD can also cause difficulty swallowing and a feeling that there is something caught in your throat.

GERD symptoms don't require an emergency room trip, but you should tell your doctor soon. The stomach acid irritating your esophagus can lead to serious health problems if not treated.

18. Esophagitis
Chest pain associated with esophagitis: burning sensation and discomfort when swallowing

Esophagitis is an inflammation of the tissue in the esophagus. It can be caused by GERD or other conditions, such as allergies or an infection. Esophagitis can make swallowing painful and difficult, while also causing chest pain. In many cases, the pain is like the heartburn brought on by GERD.

19. Esophageal rupture
Chest pain associated with esophageal rupture: mild to severe, and comes on quickly

The lining of the esophagus can sometimes tear. When a tear occurs, it's called an esophageal rupture or Boerhaave syndrome. Food and liquids are able to escape through the tear into the chest cavity.

This condition can cause mild or severe pain in the chest, depending on the size and location of the tear. The pain usually comes on quickly and is often accompanied by:

nausea

vomiting, sometimes with blood

rapid breathing

a fever

Treat these symptoms as a medical emergency.

A doctor can use an endoscopy to diagnose this condition. Endoscopy is a procedure in which a very thin tube carrying a tiny camera is guided down the throat and into the esophagus to provide pictures of the esophagus wall.

In many cases, a surgeon can clean up the affected area and repair the tear.

20. Primary esophageal motility disorders (PEMDs)

Chest pain associated with PEMDs: mild, and may feel like heartburn

PEMDs include several different disorders of the esophagus.

With a PEMD, you could experience:

mild chest pain or heartburn

trouble swallowing

the sensation that food is sticking in your esophagus

See a doctor soon if you have these symptoms.

Treatment options include medications to help relax the muscles to ease swallowing, as well as minimally invasive surgical procedures.

21. Dysphagia

Chest pain associated with dysphagia: discomfort that occurs when swallowing

Dysphagia is the clinical term for a swallowing disorder. You may have a problem at the top of the throat or farther down the esophagus. A swallowing disorder that affects the esophagus can cause chest pain, as well as coughing.

If you start to have swallowing problems, make an appointment to see your doctor. There are many potential causes of dysphagia. It's often treatable with medication or a type of physical therapy.

22. Gallstones

Chest pain associated with gallstones: intense pain that radiates from the upper abdomen to the chest area

Gallstones are hardened little clusters of cholesterol or bilirubin. Bilirubin is a compound created when red blood cells break down.

Gallstones form in your gallbladder. The gallbladder is an organ that contains a chemical called bile, which is used to help with digestion.

When gallstones block the bile duct, you can experience intense pain in your upper abdomen. This is called a gallbladder attack. You may feel pain radiating up to your chest, too. Symptoms usually develop after a large meal.

See a doctor right away if abdominal pain lingers for more than an hour or two and you have symptoms that include:

vomiting

fever

changes in the color of your urine or stools

If you have occasional abdominal or chest pains after a heavy meal, report those symptoms to your doctor at your next appointment.

23. Pancreatitis

Chest pain associated with pancreatitis: pain that radiates from the upper abdomen to the chest and back

Pancreatitis is inflammation of the pancreas. Your pancreas is a large gland near your stomach.

Pancreatitis can be acute or chronic. Acute pancreatitis is sudden, but temporary. Chronic pancreatitis is a lifetime condition that can cause permanent damage to your pancreas.

Symptoms of acute and chronic pancreatitis include pain in the upper abdomen that may spread to your chest and back. With an acute pancreatitis attack, you may experience pain for several days and have other symptoms, such as fever, vomiting, and a swollen belly.

Chronic pancreatitis pain may become constant and worsen after meals. Vomiting and diarrhea are also common signs of chronic pancreatitis. They can lead to weight loss, too. In some cases, the pain associated with chronic pancreatitis fades over time, but the condition persists.

24. Hiatal hernia

Chest pain associated with hiatal hernia: heartburn or pain in both the chest and abdomen

There are several types of hernias, but the one that can cause chest pain is called a hiatal hernia. It occurs when your stomach starts to bulge into the opening in the diaphragm (hiatus) through which the esophagus passes before meeting the stomach. Symptoms may include:

heartburn

pain in your chest and abdomen

vomiting up blood or having black stools, which means you have some internal bleeding

Make an appointment soon if you have any of these symptoms. A hiatal hernia can often be treated with medications or surgery.

Mental health-related causes

Mental health-related chest pain may feel similar to a heart attack. You may also have heart palpitations and shortness of breath. Items 25–26 are related to mental health causes of chest pain.

25. Anxiety attack

Chest pain associated with anxiety attack: stabbing or needlelike pain, usually felt in the middle of the chest

Anxiety can cause many physical symptoms, including:

nausea

sweating

heart palpitations

lightheadedness

trouble breathing

chest pain

Many of these are also heart attack symptoms, so people sometimes confuse the two conditions. With an anxiety attack, the pain is usually a stabbing or needle-like sensation right in the middle of your chest. A heart attack often feels more like pressure or tightness in the chest.

An anxiety attack is usually triggered by an upcoming event, such as a doctor appointment, speech, or other cause of nervousness.

26. Panic attack

Chest pain associated with panic attack: stabbing pain, usually accompanied by shortness of breath and a racing heart

Unlike an anxiety attack, a panic attack can occur without any obvious trigger. It's usually a short-lived event, and it tends to develop quickly based on what's happening to you in the moment. For example, you may panic being in a large crowd or during a plane flight with a lot of turbulence.

Panic attacks share many symptoms with anxiety attacks, including:

chest pain
shortness of breath
a racing heart
dizziness
Other causes
27. Muscle strain
Chest pain associated with muscle strain: tenderness or feeling of stiffness in the chest, usually made worse with movement of the muscle

If you've ever lifted something that was too heavy or you didn't lift it correctly, you may have experienced a strained or bruised chest muscle. The largest chest muscle is the pectoralis major. Straining or injuring the pectoralis major is uncommon, but it can happen, especially when bench-pressing in the weight room.

A chest muscle strain isn't a medical emergency. If the pain doesn't get better with rest, see a doctor to make sure there isn't another cause of discomfort.

If the muscle pain is severe, you may have a muscle tear that could require surgery to repair. If there's a tear, you may be able to see a change in the appearance of your chest muscles. If this is the case, make a doctor's appointment as soon as you can.

28. Fibromyalgia
Chest pain associated with fibromyalgia: dull ache that can last for months, often accompanied by muscular and joint pain in other parts of the body

Fibromyalgia can cause a host of symptoms, including:

musculoskeletal pain that includes the chest, and muscles and joints throughout the body
fatigue
sleep problems
headaches
mood changes
The muscle pain associated with fibromyalgia feels like a dull ache that can last for months.

Fibromyalgia isn't a medical emergency, but you shouldn't wait to see a doctor for an evaluation. Make an appointment and be prepared to describe all your symptoms in detail.

The causes of fibromyalgia are unknown, and there is no cure. Instead, treatment focuses on controlling symptoms.

29. Injured rib
Chest pain associated with injured rib: intense pain when you breath or move your upper body, or touch the area

A broken or bruised rib can cause considerable chest pain every time you bend or twist your upper body, take a breath, or press the affected area. See a doctor if you have experienced trauma to your rib area, such as a car accident, fall, or sports injury, and breathing is painful or the area is tender to the touch.

Broken ribs can heal on their own after several weeks, but you should still have a doctor evaluate your injury and get X-rays or an MRI scan. In severe cases, broken ribs can lead to organ damage.

30. Costochondritis
Chest pain associated with costochondritis: sharp, stabbing pain, or tightness or pressure; pain may radiate to the back

Costochondritis occurs when the cartilage that supports your ribs becomes inflamed. It can cause chest pain that feels similar to a heart attack. For this reason, you should call your local emergency services if you have heart attack-like symptoms.

It’s not always clear why costochondritis forms, but a blow to the chest or a strain from heavy lifting may trigger it. A joint infection, arthritis, and a tumor may also cause costochondritis.

What's Causing My Chest Pain?

Chest pain is not something to ignore. But you should know that it has many possible causes. In many cases, it's related to the heart. But problems in your lungs, esophagus, muscles, ribs, or nerves may also cause chest pain. Some of these conditions are serious and life-threatening; others are not. If you have unexplained chest pain, the only way to confirm its cause is to have a doctor check you.

What Does Chest Pain Feel Like?

You may feel chest pain anywhere from your neck to your upper abdomen. It can also spread to other areas of your upper body, like your jaw, back, or down your arm. The pain can persist for a few minutes to hours, and sometimes even for months or more. It might get worse when you're doing something active but ease up when you're taking it easy. Or it could hit you even when you're just relaxing. The pain might feel like it's in one spot or spread out more.

This condition might be unilateral, affecting only one side of your chest, or be bilateral, affecting both sides or in the middle. Depending on its cause, chest pain may be:

Sharp
Dull
Burning
Aching
Stabbing
A tight, squeezing, or crushing sensation

Here are some of the more common causes of chest pain.

Heart Problems
These heart problems are common causes:

Coronary artery disease (CAD). This blockage in the heart's blood vessels lowers blood flow and oxygen to the heart muscle. It can cause pain, known as angina. It's a symptom of heart disease but typically does not cause permanent damage to the heart. It is, though, a sign that you are at risk for a heart

attack in the future. The chest pain may spread to your arm, shoulder, jaw, or back. It may feel like a pressure or squeezing sensation. Exercise, excitement, or emotional distress can trigger angina, and rest makes it better.

Myocardial infarction (heart attack). This lowered blood flow through heart blood vessels causes the death of heart muscle cells. Though similar to angina chest pain, a heart attack is usually a more serious and crushing pain, usually in the center or left side of the chest, and rest doesn't make it better. Sweating, nausea, shortness of breath, or severe weakness may happen with the pain.

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Myocarditis. Along with chest pain, this heart muscle inflammation may cause fever, fatigue, fast heartbeat, and trouble breathing. Although you don't have a blockage, myocarditis symptoms can feel like those of a heart attack.

Pericarditis. This is an inflammation or infection of the sac around the heart. It can cause pain similar to that caused by angina, but it often causes a sharp, steady pain along the upper neck and shoulder muscles. Sometimes, it gets worse when you breathe, swallow food, or lie on your back.

Hypertrophic cardiomyopathy. This genetic disease causes the heart muscle to grow abnormally thick. Sometimes, this leads to problems with blood flow out of the heart. Chest pain and shortness of breath often happen with exercise. Over time, you may have heart failure when your heart muscle becomes very thickened. This makes the heart work harder to pump blood. Along with chest pain, this type of cardiomyopathy may cause dizziness, lightheadedness, fainting, and other symptoms.

Mitral valve prolapse . It happens when a valve in the heart fails to close properly. A variety of symptoms have been associated with mitral valve prolapse, including chest pain, palpitations, and dizziness, but it can also have no symptoms, especially if the prolapse is mild.

Coronary artery dissection. Many things can cause this rare but deadly condition, which results when a tear develops in the coronary artery. It may cause a sudden, severe pain with a tearing or ripping sensation that goes up into the neck, back, or abdomen.

Aortic dissection. It happens when there's a tear in the inner layer of a weak spot in your aorta, the big artery carrying blood from your heart to the rest of your body. You may suddenly feel a sharp pain in your chest or back, like tearing or ripping. Other symptoms include shortness of breath, fainting, and dizziness.

Aortic aneurysm. Aortic aneurysms are like bulging balloons that form in the aorta. Normally, the aorta has strong walls that can handle the pressure of blood flow. But health issues, genetics, or injury sometimes damage or weaken these walls. When blood presses against these weakened areas, an aneurysm can form.

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Aortic stenosis. Your aortic valve is like a gatekeeper, allowing blood to move from the heart's left lower chamber (left ventricle) into the aorta, carrying blood throughout your body. Aortic stenosis happens when this valve becomes narrow, disrupting the normal flow of blood.

Heart rhythm problems. Also known as heart rhythm disorders, this can happen to anyone, even if you don’t have any other heart diseases. But people with other heart problems are more vulnerable. Heart rhythm problems are divided into three categories:

Electrical. Irregular heartbeats, known as arrhythmias, happen when there are issues with your heart's electrical system, which normally keeps a steady rhythm. The heartbeat can become too slow, too fast, or irregular and disorganized.
Circulatory. High blood pressure and coronary artery disease, which cause blockages in the arteries supplying blood to the heart, are the main reasons for your circulatory issues. These conditions can lead to strokes or heart attacks.
Structural. Heart muscle disease, also known as cardiomyopathy, and congenital abnormalities — issues with the development of the heart and blood vessels at birth — can harm your heart muscle or its valves.

Lung Problems

These are common causes of chest pain:

Pleuritis. Also known as pleurisy, this is an inflammation or irritation of the lungs and chest lining. You likely feel a sharp pain when you breathe, cough, or sneeze. The most common causes of pleuritic chest pain are bacterial or viral infections, pulmonary embolism, and pneumothorax. Other less common causes include rheumatoid arthritis, lupus, and cancer.

Pneumonia or lung abscess. These lung infections can cause pleuritic and other types of chest pain, such as a deep chest ache. Pneumonia often comes on suddenly, causing fever, chills, cough, and pus from the respiratory tract.

Pulmonary embolism. When a blood clot travels through the bloodstream and lodges in the lungs, it can cause acute pleuritis, trouble breathing, and a rapid heartbeat. It may also cause fever and shock. Pulmonary embolism is more likely following deep vein thrombosis, after being immobile for several days following surgery, or as a complication of cancer.

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Pneumothorax. Often caused by a chest injury, pneumothorax happens when a part of the lung collapses, releasing air into the chest cavity. This can also cause pain that gets worse when you breathe and other symptoms, such as low blood pressure.

Pulmonary hypertension. With chest pain resembling that of angina, this abnormally high blood pressure in the lung arteries makes the right side of the heart work too hard.

Asthma. An inflammatory disorder of the airways, asthma causes shortness of breath, wheezing, coughing, and sometimes chest pain.

Chronic obstructive pulmonary disease (COPD). This includes one or more of three diseases — emphysema, chronic bronchitis, and chronic obstructive asthma. The disease blocks airflow by shrinking and damaging both the airways that bring gases and air to and from your lungs and the tiny air sacs (alveoli) that transfer oxygen to your bloodstream and remove carbon dioxide. Smoking is the most common cause.

Lung cancer. You get lung cancer when unusual cells grow out of control in your lungs. It's a major health problem and can be fatal. The symptoms include a cough that doesn’t go away, chest pain, and trouble breathing.

Tuberculosis (TB). It is a contagious illness caused by bacteria that usually affects the lungs. TB spreads through the air when infected individuals cough, sneeze, or spit.

Viral infection. Respiratory viruses such as SARS-CoV-2 (which causes COVID-19) and influenza can cause myocarditis, a rare condition often triggered by an infection reaching the heart. The heart muscle becomes thick, swollen, and weak. One symptom is chest pain similar to a heart attack.

Gastrointestinal Problems

Gastrointestinal problems can also cause chest pain and include:

Gastroesophageal reflux disease (GERD). Also known as acid reflux, GERD happens when stomach contents return to the throat. This may cause a sour taste in the mouth and a burning sensation in the chest or throat, known as heartburn. Things that may trigger acid reflux include obesity, smoking, pregnancy, and spicy or fatty foods. Heart pain and heartburn from acid reflux feel similar partly because the heart and esophagus are close to each other and share a nerve network.

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Esophageal contraction disorders. Uncoordinated muscle contractions (spasms) and high-pressure contractions (nutcracker esophagus) are problems in the esophagus that can cause chest pain.

Esophageal hypersensitivity. This occurs when the esophagus becomes very painful at the smallest change in pressure or exposure to acid. The cause of this sensitivity is unknown.

Esophageal rupture or perforation. A sudden, severe chest pain following vomiting or a procedure involving the esophagus may be a sign of a rupture in the esophagus.

Peptic ulcers. These painful sores in the lining of the stomach or the first part of the small intestine may result in vague, repeated discomfort. They're more common in people who smoke, drink a lot of alcohol, or take painkillers such as aspirin or NSAIDs. The pain often gets better when you eat or take antacids.

Hiatal hernia. This common problem occurs when the top of the stomach pushes into the lower chest after eating. This often causes reflux symptoms, including heartburn or chest pain. The pain tends to get worse when you lie down.

Pancreatitis. You may have pancreatitis if you have pain in the lower chest that is often worse when you lie flat and better when you lean forward.

Gallbladder problems. After eating a fatty meal, do you feel full or have pain in your right lower chest area or the right upper side of your abdomen? If so, your chest pain may be due to a gallbladder problem.

Esophagitis. This happens when your esophagus, the tube that carries food from your mouth to your stomach, becomes inflamed. Symptoms include painful swallowing and chest pain.

Bone, Muscle, or Nerve Problems

Sometimes, chest pain may result from overuse or an injury to the chest area from a fall or accident. Viruses can also cause pain in the chest area. Other causes of chest pain include:

Rib problems. Pain from a broken rib may worsen with deep breathing or coughing. It is often confined to one area and may feel sore when you press on it. The area where the ribs join the breastbone may also become inflamed.

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Muscle strain. Sometimes, even hard coughing can injure or inflame the muscles and tendons between the ribs and cause chest pain. The pain tends to persist, and it worsens with activity.

Shingles. Caused by the varicella-zoster virus, shingles may prompt a sharp, band-like pain before a telltale rash appears several days later.

Costochondritis. Also called chest wall pain syndrome or costosternal chondrodynia, this is an inflammation of the cartilage connecting a rib to the breastbone. Pain from the condition can be similar to that of a heart attack or other heart issues.

Anxiety and Panic Attacks

Another potential cause of chest pain is anxiety and panic attacks. As everyone experiences anxiety at some point, it's hard to pinpoint when it becomes an anxiety disorder. However, if your worries start affecting your daily life for an extended period, it's wise to seek advice from a mental health expert. Anxiety disorders and stress come in various forms, but they typically share these common symptoms:

Faster heart rate and breathing

Muscle tension

Chest tightness

Persistent worries and restlessness

Fixating on trivial matters that leads to compulsive actions

If you notice these signs in a friend or family member, it's essential to talk to them about seeking help from a mental health professional. Some associated symptoms can include dizziness, sensation of shortness of breath, palpitations, tingling sensations, and trembling.

When to See the Doctor for Chest Pain

When in doubt, call your doctor about any chest pain you have, especially if it comes on suddenly or is not relieved by anti-inflammatory medications or other self-care steps, such as changing your diet.

Call 911 if you have any of these symptoms along with chest pain:

A sudden feeling of pressure, squeezing, tightness, or crushing under your breastbone

Chest pain that spreads to your jaw, left arm, or back

Sudden, sharp chest pain with shortness of breath, especially after a long period of inactivity

Nausea, dizziness, rapid heart rate or rapid breathing, confusion, ashen color, or excessive sweating

Very low blood pressure or very low heart rate

Call your doctor if you have any of these symptoms:

Fever, chills, or coughing up yellow-green mucus

Problems swallowing

Severe chest pain that does not go away

Bypass Surgery

What are the different types of heart bypass surgery?

Your doctor will recommend a certain type of bypass surgery depending on how many of your arteries are blocked.

Single bypass. Only one artery is blocked.

Double bypass. Two arteries are blocked.

Triple bypass. Three arteries are blocked.

Quadruple bypass. Four arteries are blocked.

Your risk of having a heart attack, heart failure, or another cardiac issue depends on the number of arteries blocked. Blockage in more arteries also means that the surgery may take longer or become more complex.

Why might a person need heart bypass surgery?

When a material in your blood called plaque builds up on your arterial walls, less blood flows to the heart muscle. This type of coronary artery disease (CAD) is known as atherosclerosis.

The heart is more likely to become exhausted and fail if it’s not receiving enough blood. Atherosclerosis can affect any arteries in the body.

Your doctor may recommend heart bypass surgery if your coronary arteries become so narrowed or blocked that you run a high risk of a heart attack.

Your doctor will also recommend bypass surgery when the blockage is too severe to manage with medication or other treatments.

How is the need for heart bypass surgery determined?

A team of doctors, including a cardiologist, identify whether you can undergo open-heart surgery. Some medical conditions can complicate surgery or eliminate it as a possibility.

Conditions that can cause complications include:

diabetes
emphysema
kidney disease
peripheral arterial disease (PAD)
Discuss these issues with your doctor before scheduling your surgery. You’ll also want to talk about your family medical history and any prescription and over-the-counter (OTC) medications you’re taking. Planned surgery outcomes are usually better than emergency surgery.

What are the risks of heart bypass surgery?

As with any open-heart surgery, heart bypass surgery carries risks. Recent technological advancements have improved the procedure, increasing the chances of a successful surgery.

There's still a risk for some complications after surgery. These complications could include:

bleeding
arrhythmia
blood clots
chest pain
infection
kidney failure
heart attack or stroke

What are the alternatives to heart bypass surgery?

In the past decade, more alternatives to heart bypass surgery have become available. These include:

Balloon angioplasty
Balloon angioplasty is the alternative that's most likely to be recommended by doctors. During this treatment, a tube is threaded through your blocked artery. Afterward, a small balloon is inflated to widen the artery.

The doctor then removes the tube and the balloon. A small metal scaffold, also known as a stent, will be left in place. A stent keeps the artery from contracting back to its original size.

Balloon angioplasty may not be as effective as heart bypass surgery, but it's less risky.

Enhanced external counterpulsation (EECP)
Enhanced external counterpulsation (EECP) is an outpatient procedure. It can be performed as an alternativeTrusted Source to heart bypass surgery, according to multiple studiesTrusted Source. In 2002, it was approved by the Food and Drug Administration (FDA) for use in people with congestive heart failure (CHF).

EECP involves compressing blood vessels in the lower limbs. This increases blood flow to the heart. The extra blood is delivered to the heart with every heartbeat.

Over time, some blood vessels may develop extra “branches” that will deliver blood to the heart, becoming a sort of “natural bypass.”

EECP is administered daily for a period of one to two hours over the course of seven weeks.

Medications
There are some medications you can consider before resorting to methods such as heart bypass surgery. Beta-blockers can relieve stable angina. You can use cholesterol-reducing drugs to slow plaque buildup in your arteries.

Your doctor may also recommend a daily dose of low-dose aspirin (baby aspirin) to help prevent heart attacks. Aspirin therapy is very effective in people with a prior history of atherosclerotic cardiovascular disease (such as heart attack or stroke).

Those without a prior history should only use aspirin as a preventive drug if they:

are at high risk of heart attack and other atherosclerotic cardiovascular diseases
also have a low risk for bleeding
Diet and lifestyle changes
The best preventive measure is a “heart-healthy” lifestyle, as prescribed by the American Heart Association (AHA)Trusted Source. Eating a diet high in omega-3 fatty acids and low in saturated and trans fats helps your heart stay healthy.

How do I prepare for heart bypass surgery?

If your doctor recommends heart bypass surgery, they’ll give you complete instructions on how to prepare.

If the surgery is scheduled in advance and isn’t an emergency procedure, you’ll most likely have several preoperative appointments where you’ll be asked about your health and family medical history.

You’ll also undergo several tests to help your doctor get an accurate picture of your health. These may include:

blood tests
chest X-ray
electrocardiogram (ECG or EKG)

angiogram

Heart surgery tips

Seek your doctor’s advice about any medication that affects how your blood clots. Many pain relievers and heart medications affect clotting, so you may have to stop taking them.

Quit smoking. It’s bad for your heart and increases healing time.

Tell your doctor if you have symptoms of a cold or flu. In particular, the flu can put further strain on the heart and can increase your chances of a heart attack or worsen heart failure. It can also cause myocarditis, pericarditis, or both. These are potentially serious heart infections.

Prepare your home and make arrangements to stay in the hospital for several days.

To reduce the risk of infection, wash your body with a special soap, like Hibiclens, the night before surgery. It’s made of chlorhexidine, which will help keep your body germ-free until surgery.

Fast, which includes not drinking water, beginning at midnight before your surgery.

Take all of the medications your doctor gives to you.

How is heart bypass surgery performed?

Before surgery, you’ll change into a hospital gown and receive medication, fluids, and anesthesia through an IV. When the anesthesia begins working, you’ll fall into a deep, painless sleep.

The first step

Your surgeon starts by making an incision in the middle of your chest.

Your rib cage is then spread apart to expose your heart. Your surgeon may also opt for minimally invasive surgery, which involves smaller cuts and special miniaturized instruments and robotic procedures.

Connecting to the cardiopulmonary bypass machine

You may be hooked up to a cardiopulmonary bypass machine that circulates oxygenated blood through your body while your surgeon operates on your heart.

Some procedures are performed “off-pump,” meaning that connecting you to a cardiopulmonary bypass machine isn’t necessary.

Grafting

Your surgeon then removes a healthy blood vessel from the leg to bypass the blocked or damaged portion of your artery. One end of the graft is attached above the blockage and the other end below.

The final steps

When your surgeon is done, the function of the bypass is checked. Once the bypass is working, you'll be stitched up, bandaged, and taken to the intensive care unit (ICU) for monitoring.

Who will help perform the bypass surgery?

Throughout the surgery, several types of specialists ensure the procedure is performed properly. A perfusion technologist works with the cardiopulmonary bypass machine.

A cardiovascular surgeon performs the procedure and an anesthesiologist ensures anesthesia is delivered to your body properly to keep you unconscious during the procedure.

Imaging specialists may also be present to take X-rays or help ensure that the team can view the site of the surgery and the tissues around it.

What's it like to recover from heart bypass surgery?

When you wake up from heart bypass surgery, you'll have a tube in your mouth. You may also feel pain or have side effects from the procedure, including:

pain at the incision site
pain with deep breaths
pain with coughing

You'll likely be in the ICU for one to two days so your vital signs can be monitored. Once you're stable, you'll be moved to another room. Be prepared to stay in the hospital for several days.

Before you leave the hospital, your medical team will give you instructions on how to care for yourself, including:

caring for your incision wounds
getting plenty of rest
refraining from heavy lifting

Even without complications, recovery from heart bypass surgery can take 6 to 12 weeks. That's the least amount of time it takes for your breastbone to heal.

During this time, you should avoid heavy exertion. Follow your doctor's orders regarding physical activity. Also, you shouldn't drive until you get approval from your doctor.

Your doctor will likely recommend cardiac rehabilitation. This will involve a regimen of carefully monitored physical activity and occasional stress tests to see how your heart is healing.

When should I tell my doctor about pain after surgery?

Tell your doctor about any lasting pain or discomfort during your follow-up appointments. You should also call your doctor if you experience:

fever over 100.4°F (38°C)
increasing pain in your chest
rapid heart rate
redness or discharge around the incision

What medications will I take after heart bypass surgery?

Your doctor will give you medications to help manage your pain, such as ibuprofen (Advil) or acetaminophen (Tylenol). You may also receive a narcotic for extreme pain.

Your doctor will also give you medications to help you throughout your recovery process. These will include antiplatelet drugs and other drugs prescribed by your doctor.

Talk to your doctor about what medication plans are best for you. This is especially important if you have existing conditions such as diabetes or conditions affecting the stomach or liver.

Type of drug	Function	Possible side effects

antiplatelet drugs, such as aspirin help prevent the formation of blood clots • stroke caused by bleeding rather than clotting
stomach ulcers
serious allergy-related issues if you're allergic to aspirin
beta-blockers block your body's production of adrenaline and lower your blood pressure • drowsiness
dizziness
weakness
nitrates help reduce chest pain by opening up your arteries to let blood flow through more easily •headaches
ACE inhibitors prevent your body's production of angiotensin II, a hormone that can make your blood pressure rise and cause your blood vessels to narrow headaches
dry cough
fatigue
lipid-lowering medicines, such as statins can help lower LDL (bad) cholesterol and help prevent strokes or heart attacks headache
liver damage
myopathy (muscle pain or weakness that doesn't have a specific cause)

What are the long-term effects of bypass surgery?

After a successful heart bypass surgery, symptoms such as shortness of breath, chest tightness, and high blood pressure will likely improve.

A bypass can increase blood flow to the heart, but you may need to change some habits to prevent future heart disease.

The best surgery outcomes are observed in people who make healthy lifestyle changes. Talk to your doctor about dietary and other lifestyle changes to make after surgery.

What Is Bypass Surgery?

Heart bypass surgery is when a surgeon takes a blood vessel from another part of your body to go around, or bypass, a blocked artery. The result is that more blood and oxygen can flow to your heart again.

Imagine you’re on a highway. An accident causes traffic to pile up ahead. Emergency crews redirect cars around the congestion. Finally, you’re able to get back on the highway and the route is clear. Heart bypass surgery is similar.

It can help lower your risk for a heart attack and other problems. Once you recover, you’ll feel better and be able to get back to your regular activities.

Bypass surgery is also known as coronary artery bypass grafting (CABG, pronounced "cabbage"), coronary artery bypass surgery, and coronary artery bypass graft surgery. It’s the most common type of open-heart surgery in the U.S., with nearly 400,000 procedures done every year. Most people have great results and live symptom-free for a decade or more.

You’ll still need a healthy diet, exercise, and probably medicine to prevent another blockage. But first, you’ll want to know what to expect from the surgery, how to prepare, what complications can happen, and what the recovery is like.

photo of heart bypass graft

Types of Bypass Surgery ?

There are several different kinds of bypass procedures. Your surgeon will recommend the best operation for you.

Traditional. This is the procedure used most often. Your chest is cut open and your heart is stopped, with a machine circulating your blood during the surgery.

Off-pump. Your chest is still open, but your heart is left beating. The area being worked on is kept still by special equipment.

Minimally invasive. This is also called a keyhole procedure. In this, the surgeon makes small cuts between your ribs to get access to your heart. They'll use cameras to guide the instruments, or it may be done robotically.

Your surgery will also be described by how many of your coronary arteries are blocked:

Single bypass. One artery is blocked.
Double bypass. Two arteries are blocked.
Triple bypass. Three arteries are blocked.
Quadruple bypass. Four arteries are blocked.
Quintuple bypass. Five arteries are blocked.

Reasons for Heart Bypass Surgery ?

Bypass surgery treats symptoms of coronary artery disease. That happens when a waxy substance called plaque builds up inside the arteries in your heart and blocks blood and oxygen from reaching it.

Your doctor may suggest heart bypass surgery if:

You have chest pain (angina) that your doctor thinks happens because several of the arteries that supply blood to your heart are blocked.
At least one of your coronary arteries is diseased, causing your left ventricle (the chamber that does most of your heart's blood pumping) to not work as well as it should.
There's a blockage in your left main coronary artery, which gives your left ventricle most of its blood.
You've had other procedures, and either they haven't worked or your artery is narrow again.
You have new blockages.
Coronary artery disease can lead to a heart attack. It can cause a blood clot to form and cut off blood flow. You may have bypass surgery as an emergency procedure if you've had a heart attack and other treatments aren't working, or if you have certain complications.

Preparing for Bypass Surgery
Before your surgery, you'll get lab and imaging tests to check your overall health and to see which arteries are blocked. You may have:

Chest X-ray.
Electrocardiogram (EKG). A machine records your heart's electrical activity.
Echocardiogram. Sound waves create a moving picture of your heart to show its size and shape.
Exercise stress test. Your doctor records your heart activity, blood pressure, and other physical data while you raise your heart rate by walking on a treadmill or using a stationary bike.
Nuclear cardiac stress test. You may have special pictures taken of your heart after taking a stress test. Radioactive material is injected into your vein that helps show how well blood is flowing in your heart and whether parts of the heart muscle are damaged. The pictures will be compared to another set taken when your heart is at rest.
Cardiac catheterization. A surgeon inserts a thin tube into a blood vessel and threads it through to your heart, where they inject a special dye. Then they make an image called an angiogram that shows how your blood is moving and where there are blockages.
CT scan. Another way to get a look at how your blood is flowing is using a computer that turns X-rays of your heart into a 3D picture.
Coronary calcium scan. This is another kind of CT scan that measures the amount of calcium in the walls of your coronary arteries, which is an indication of disease.
Blood tests. Your doctor will check your levels of white and red blood cells, cholesterol, blood sugar, and other things.
Urine test. This shows how well your kidneys are working.
Your doctor will also let you know if you need to make any changes to your diet, lifestyle, or medications before the surgery. Also, tell your doctor about any vitamins and supplements you take, even if they are natural, in case they could affect your risk of bleeding.

Heart Bypass Surgery Procedure ?

The most common kind of bypass surgery is the traditional method. For this procedure, you'll be asleep the whole time. Most operations take 3-6 hours.

A breathing tube goes into your mouth. It's attached to a ventilator, which will breathe for you during the procedure and right afterward. The surgical team will put a thin tube called a catheter into your bladder to collect urine. A needle with a tube attached called an IV line is placed in your vein to give you fluids and medications.

A surgeon makes a long cut down the middle of your chest. Then, they'll spread your rib cage open so that they can reach your heart.

Your surgical team will use medication to temporarily stop your heart. A machine called a heart-lung machine will keep blood and oxygen flowing through your body while your heart isn't beating.

Next, the surgeon will remove a blood vessel, called a graft, from another part of your body, like your chest, leg, or arm. They'll attach one end of it to your aorta, a large artery that comes out of your heart. Then, they'll attach the other end to an artery below the blockage.

The graft creates a new route for blood to travel to your heart. If you have multiple blockages, your surgeon may do more bypass procedures during the same surgery.

What Happens After Heart Bypass Surgery?

You'll wake up in an intensive care unit (ICU). The breathing tube will still be in your mouth. You won't be able to talk, and you'll feel uncomfortable. Nurses will be there to help you. They'll remove the tube after a few hours when you can breathe on your own.

The catheter in your bladder will come out when you're able to get up and use the bathroom on your own.

Once you're able to eat and drink on your own and no longer need IV medications, the IV line will also come out.

Fluids will build up around your heart after the procedure, so your doctor will put tubes into your chest. They'll be there for 1-3 days after surgery to allow the fluid to drain.

You may feel soreness in your chest. You'll have the most discomfort in the first 2-3 days after the procedure. You'll probably get pain medicines for that.

You'll also be hooked up to machines that keep track of your vital signs, such as your heart rate and blood pressure, around the clock.

You should be able to start walking 1-2 days after surgery. You'll stay in the ICU for a few days before you're moved to a hospital room. You'll stay there for 3-5 days before you go home.

Heart Bypass Surgery Recovery ?

It's a gradual process. You may feel worse right after surgery than you did before. You might not be hungry and even be constipated for a few weeks after the surgery. You could have trouble sleeping while you're in the hospital. If the surgeon takes out a piece of a healthy vein from your leg, you may have some swelling there. This is normal.

Recovery takes time, but you'll feel better each day. It may take up to 3 months for your body to completely recover from bypass surgery.

You'll visit your doctor several times during the first few months to track your progress. Call them if your symptoms don't improve or you're feeling worse. You may need to be seen right away if you have:

Breathing problems

Chest pain

Dizziness or fainting

Fast heart rate

Fever

Issues with your chest incision, including bleeding or discharge, new or worse pain, or discolored skin

Nausea or vomiting

Numbness in your arms or legs

Slow or slurred speech

Swelling in your legs

Weakness on one side of your body

Talk with your doctor about the best time to return to your normal day-to-day activities. What's right for you will depend on a few things, including:

Your overall health

How many bypasses you've had

Which types of activity you try

You'll need to ease back in. Some common plans include:

Driving. Usually, it's advised to wait 4-6 weeks after surgery. You need to make sure your concentration is back before you get behind the wheel.

Housework. Take it slow. Start with the simple things you like to do and have your family help with the heavy stuff for a bit while you recover.

Sex. In most cases, you should be physically good to go in about 3 weeks. But you may lose interest in sexfor a while after your surgery, so it could be as long as 3 months before you're ready to be intimate again.

Work. Apart from the physical requirements of your job, your concentration and confidence will have to come back. Most folks are able to resume light duty after about 6 weeks. You should be back to full strength after about 3 months.

Exercise. Your doctor may suggest something called cardiac rehabilitation. It's a customized, medically supervised exercise program. It also provides lifestyle education, which can include help with nutrition. Once the program is completed, you can work up to whatever fitness level you're comfortable with.

pacemaker implantation

What is a pacemaker?

A pacemaker is an electric medical device that’s generally about the size of a matchbox. A surgeon implants it under your skin to help manage irregular heartbeats called arrhythmias. Pacemakers can also be used to treat some types of heart failure.

Typically, the electrical signal that causes your heart to beat starts at an area of your heart called the sinoatrial (SA) node. The SA node is your heart's natural pacemaker. Electrical signals generated by the SA node travel from the top of the heart to the bottom in a synchronized fashion, leading to a heartbeat.

In some situations, there are problems with this electrical signaling, which can lead to a heartbeat that's too fast (tachycardia), too slow (bradycardia), or otherwise irregular. This is an arrhythmia. A pacemaker generates electrical impulses that help your heart beat at a normal rate, rhythm, or both.

Below, we'll cover more about pacemakers, including:

the different types
how they're implanted
the risks associated with them
Keep reading to learn more.

What are the pacemaker types?

Modern pacemakers have two parts:

the pulse generator, which contains the pacemaker's battery and the electronics that generate electrical signals
one or more leads, which are thin wires that deliver electrical signals from the pulse generator to your heart
The leads contain the pacemaker's electrodes. The electrodes, which often rest inside your heart and sense your heartbeat, deliver electrical signals if your heart is beating too quickly or too slowly.

Traditional pacemakers typically have one or two leads. A single-lead pacemaker sends electrical signals to either the right atrium or right ventricle of your heart. A dual-chamber pacemaker sends electrical signals to both the right atrium and right ventricle of your heart.

Some people need a special type of pacemaker called a biventricular pacemaker, or bivent.

A biventricular pacemaker has three leads, which send electrical signals to the right atrium, right ventricle, and left ventricle, helping the two sides of the heart beat in sync. The implantation of a biventricular pacemaker is known as cardiac resynchronization therapy (CRT).

Wireless pacemakers are also available. In a wireless pacemaker, the pulse generator and electrodes are combined into a single device that's about the size of a pill or capsule. This type of pacemaker is typically positioned into the right ventricle.

A medical device called an implantable cardioverter defibrillator (ICD) can also be used to prevent life threatening arrhythmias, in particular heartbeats that are too fast and unstable. If an ICD senses these arrhythmias, it can deliver electric impulses to restore a normal heartbeat. Most newer ICDs also have a pacemaker function.

Who needs a pacemaker?

Your doctor or cardiologist will test you to see if you're a good candidate for a pacemaker. One of the main reasons a pacemaker is recommended is a heartbeat that's too slow. A pacemaker may also be used for:

a heartbeat that pauses
a heartbeat that's irregular or too fast
some types of heart failure
These symptoms may be caused by a variety of factors, such as:

age-related changes to the heart tissue
damage to the heart due to:
a prior heart surgery
heart disease
a previous heart attack
congenital heart conditions
taking medications that can slow the heart rate, such as beta-blockers or calcium channel blockers
having certain health conditions, such as:
pericarditis, an inflammation of the tissue surrounding the heart
myocarditis, an inflammation of the heart muscle
cardiomyopathy, which involves changes to the heart muscle that affect its ability to pump blood
systemic sclerosis, a rare condition that can cause inflammation and scarring of the skin and internal organs
sarcoidosis, a rare condition that causes swollen areas of tissue called granulomas to appear in the organs of the body
hypothyroidism, in which your thyroid produces too little thyroid hormone
Some signs that you may have an arrhythmia or heart failure that requires a pacemaker are:

fatigue

dizziness or lightheadedness

heart palpitations

chest pain or tightness

shortness of breath

fainting

Not all pacemakers are permanent. Temporary pacemakers can control certain types of problems. You may need a temporary pacemaker after a heart attack or heart surgery. You may also need one if a medication overdose temporarily slowed your heart.

Pacemakers for children

The criteria for receiving a pacemaker is different for children than it is for adults. Many children with pacemakers have bradycardia that's causing worrisome symptoms. Children with bradycardia often have a history of congenital heart conditions or have had heart surgery that's affected the electrical signaling in the heart.

What are the risks associated with a pacemaker?

Every medical procedure has some risks. Most risks associated with a pacemaker are a result of the implantation procedure. These include:

an allergic reaction to anesthesia

bleeding or bruising

blood clots

damaged nerves or blood vessels

an infection at the site of the incision or of the leads themselves

buildup of scar tissue around the pacemaker

pacemaker syndrome, which is when a pacemaker only stimulates one ventricle, leading to fatigue, shortness of breath, low blood pressure, and pacemaker-related cardiomyopathy

pneumothorax, or a collapsed lung

fluid collection around the heart

a punctured heart, which can be caused by displaced leads

Most complications are temporary. Life-altering complications are rare.

It's also possible, although unlikely, for a pacemaker to malfunction, or stop working properly. This can happen if:

one or more leads move out of position

the battery in the pulse generator dies

a strong magnetic field has damaged your pacemaker

there’s a programming error with your pacemaker

If your pacemaker malfunctions, you may notice that your arrhythmia or heart failure symptoms begin to get worse. Should this occur, it’s important to make an appointment with your doctor or cardiologist so that they can check to see if your pacemaker is working properly.

How do you prepare for a pacemaker?

Before receiving a pacemaker, you’ll need several tests. These tests can ensure that a pacemaker is the right choice for you. They include:

Electrocardiogram (ECG or EKG). During an electrocardiogram, a nurse or doctor places sensors on your skin that measure your heart’s electrical signals.

Echocardiogram. An echocardiogram uses sound waves to measure the size and thickness of your heart muscle.

Holter monitoring. During Holter monitoring, you wear a device that tracks your heart rhythm for up to 48 hours (typically 24 hours).

Stress test. A stress test monitors your heart rate while you exercise.

Your doctor or cardiologist will review the results of these tests as well as your medical history to determine if a pacemaker is a good option for you. It’s important to note that not everyone with an arrhythmia or heart failure needs a pacemaker.

For example, a pacemaker may not be recommended if an arrhythmia is asymptomatic or happens with only mild symptoms. Another example of when a pacemaker isn’t necessary is when your symptoms are due to a reversible cause, such as an infection or drug toxicity.

If a pacemaker is right for you, you’ll need to plan for the surgery. Important factors to consider include:

Food and drink. You’ll be asked to fast before your procedure. This means that you can’t eat or drink anything besides water. You may need to fast for the 6 hours prior to your procedure or potentially longer.

Medications. Follow your doctor’s instructions about which medications and supplements to stop taking. If your doctor prescribes medications for you to take before the procedure, take them as directed.
Clothing. Plan to wear comfortable, loose-fitting clothes on the day that your pacemaker is placed. You’ll be asked to change into a hospital gown prior to your procedure.
Hygiene. Shower and shampoo well. Your doctor may want you to use a special soap. This reduces your chances of developing a potentially serious infection.
Your doctor will give you complete, specific instructions on how to prepare. Be sure to follow all preparation instructions carefully. If anything is unclear, don’t hesitate to ask questions.

How is pacemaker surgery performed?

Most wired pacemakers are implanted using a transvenous procedure. This means that the leads and electrodes are threaded through your veins and into your heart. Veins in the neck, chest, or thigh are typically used.

Transvenous placement typically includes the following steps:

You’ll first receive a sedative to relax you and a local anesthetic to numb the incision site. You’ll be awake during the procedure.
Your surgeon will make a small incision, typically near your collarbone.
They’ll then guide the leads through the incision and into a major vein. An X-ray machine will help them guide the leads through your vein to your heart.
Once the leads have reached the heart, your surgeon will attach the electrodes to your heart muscle. The other end of the lead is attached to the pulse generator that contains the battery and electrical circuits.
After the leads and electrodes are in place, your surgeon will implant the generator under your skin near your collarbone.
At the end of the procedure, your surgeon will test the pacemaker to make sure it’s working properly before closing your incision with stitches.
Placing a pacemaker this way typically takes about 1 hour. However, this may vary depending on the number of leads. For example, placing a biventricular pacemaker, which has three leads, will often take longer than placing a single-lead pacemaker. Your surgeon will let you know what to expect.

A less common way for a pacemaker to be implanted is through the epicardial method. This is where the electrodes are attached at the surface of the heart as opposed to inside the heart. It requires general anesthesia. Some examples of when epicardial placement is done include:

as a precaution during heart surgery

when the structure of your heart or veins would make it difficult to use the transvenous method

when a pacemaker is being placed in an infant or a child

Wireless pacemakers are placed using a thin tube called a catheter. An X-ray machine is used to guide the catheter and wireless pacemaker through a vein in your thigh to your heart. This procedure typically takes less than 1 hourTrusted Source.

After pacemaker placement

It's likely that you'll need to stay in the hospital overnight after your pacemaker has been placed. In some situations, you may be able to return home the same day.

Before you go home, your doctor will make sure the pacemaker is programmed properly for your heart's needs and may order a chest X-ray. Your doctor can reprogram the device as needed at follow-up appointments.

You'll probably feel some pain or discomfort after your procedure. You may need to take over-the-counter medications to alleviate this. Ask your doctors which pain relievers are safest for you.

It's also important to make sure to care for your incision after you return home. Your surgeon will give you instructions on how to clean the wound and prevent infection. Consider wearing loose-fitting clothing during your recovery to avoid irritating the area.

You'll probably be able to return to your daily activities in the days following the placement of your pacemaker. However, you should continue to avoid any rigorous exercise or heavy lifting for about 4 to 6 weeks, especially lifting the arm on the side of the pacemaker overhead.

Since the electrical signals that a pacemaker sends are very small, it's unlikely that you'll feel them. If you do, your doctor or cardiologist can adjust the programming of your pacemaker to minimize this. Also, because the pulse generator is implanted under the skin, you may feel it when you lie in certain positions.

What pacemaker precautions should you take?

Modern pacemakers aren't as sensitive to electrical devices as the old ones, but certain devices could cause interference with your pacemaker. If possible, try to keep at least 6 inches away from these devices. For example, try to avoid:

being around magnets or equipment that uses magnets

keeping a cell phone in the pocket over your pacemaker

holding a cell phone up to the ear that’s on the same side of your body as your pacemaker

allowing headphones to rest on or be close to your chest

wearing a smartwatch

extended exposure to metal detectors, including handheld metal detectors

lingering near anti-theft systems, such as those found in department stores

some types of electrical equipment, such as high-voltage transformers, electric fences, or portable car battery chargers

Most common household and office appliances pose little to no risk to people with pacemakers. If you’re concerned about the safety of having different devices around your pacemaker, your doctor or cardiologist will give you more detailed instructions about how to minimize your risks.

There are also several medical procedures that can interfere with your pacemaker. Some examples include:

CT scans

MRI scans

electrocauterization, which is used to stop bleeding during surgery

electrolysis, a procedure that’s used to remove body hair

microwave diathermy, which is used in physical therapy

radiation therapy for cancer

radio frequency ablation procedures, which destroy the nerves that send pain signals

shock wave lithotripsy, which is used to treat kidney stones

transcutaneous electrical nerve stimulation (TENS)

When you receive a pacemaker, you’ll be given a pacemaker ID card.

The information on this card includes:

the type of pacemaker that you have

when it was implanted

your doctor’s contact information

Always carry your pacemaker ID card on you. Be sure to show this card in emergencies or when someone, such as a healthcare professional or an airport security staff member, needs to know about your device.

What are the results of pacemaker surgery?

Many people who receive a pacemaker find that it has a very positive effect on their life. Not only can a pacemaker prevent complications due to arrhythmias or heart failure, but it can also reduce your symptoms and help you feel better.

Benefits of a pacemaker

A 2018 surveyTrusted Source received responses from 342 people who'd received a pacemaker. Most respondents reported very high satisfaction with their pacemaker, although overall scores for women were slightly lower than for men.

Getting a pacemaker can also help improve life expectancy.

For example, a 2015 studyTrusted Source looked at 8,757 people who'd received a pacemaker between 1995 and 2008. The researchers found that, in the absence of other significant health conditions, the lifespans of individuals with a pacemaker approached that of the general population.

Wireless pacemakers may have their own unique benefits.

A 2021 literature reviewTrusted Source looked at 36 observational studies of wireless pacemakers. In studies that involved a 1-year follow-up, one type of wireless pacemaker (the Micra pacemaker) was associated with a 51 percent lower likelihood of complications compared to transvenous pacemakers.

Living with a pacemaker

Your pacemaker can also track and record your heartbeat. Remote monitoring can help your doctor or cardiologist see how your pacemaker is working for you as you go about your daily activities. You'll typically only need to have an in-office visit once or twice per year to get your pacemaker checked.

During this time, your pacemaker's battery and function will be evaluated. A pacemaker's batteries typically last 6 to 10 years. Your doctor will give you a heads-up when your battery needs to be switched. This typically involves a simple procedure to replace the pulse generator.

How Does a Pacemaker Work?

The pacemaker has two parts: the leads and a pulse generator. The pulse generator houses the battery and a tiny computer, and resides just under the skin of the chest. The leads are wires that are threaded through the veins into the heart and implanted into the heart muscle. They send impulses from the pulse generator to the heart muscle, as well as sense the heart's electrical activity.

Each impulse causes the heart to contract. The pacemaker may have one to three leads, depending on the type of pacemaker needed to treat your heart problem.

Types of Pacemakers ?

There are different types of pacemakers:

Single chamber pacemakers use one lead in the upper chambers (atria) or lower chambers (ventricles) of the heart.
Dual-chamber pacemakers use one lead in the atria and one lead in the right ventricle of your heart.
Biventricular pacemaker uses three leads: one placed in the right atrium, one placed in the right ventricle, and one placed near the left ventricle.

The doctor will program your minimum heart rate. When your heart rate drops below that set rate, your pacemaker generates (fires) an electrical impulse that passes through the lead to the heart muscle. This causes the heart muscle to contract, creating a heartbeat.

Who Needs a Pacemaker?

If your heart is having trouble maintaining its own rhythm, you may need one. Your doctor will do tests to find out for sure.

Pacemakers are usually used to treat the following:

Bradyarrhythmias. These are slow heart rhythms that may arise from disease in the heart's electrical conduction system (such as the SA node, AV node, or HIS-Purkinje system).

Heart failure. This device is called cardiac resynchronization therapy (CRT) or biventricular pacing.
If you need a pacemaker, your doctor will decide what type you need based on your heart condition.

Before Pacemaker Surgery ?

Ask your doctor what medications you are allowed to take before getting a pacemaker implanted. Your doctor may ask you to stop taking certain drugs one to five days before the procedure. If you have diabetes, ask your doctor how you should adjust your diabetes medications.

Do not eat or drink anything after midnight the evening before the procedure. If you must take medications, take them only with a small sip of water.
When you come to the hospital, wear comfortable clothes. You will change into a hospital gown for the procedure. Leave all jewelry and valuables at home.

How Are Pacemakers Implanted?

Pacemakers are implanted two ways:

Endocardial approach. This is the most common technique used.
This procedure is done in a pacemaker or electrophysiology lab.
A local anesthetic (pain-relieving medication) is given to numb the area. A cut is made in the chest where the leads and pacemaker are inserted.
The lead(s) is inserted through the incision and into a vein, then guided to the heart with the aid of a fluoroscopy machine.
The lead tip attaches to the heart muscle, while the other end of the lead (attached to the pulse generator) is placed in a pocket created under the skin in the upper chest.
Epicardial approach. This is more commonly used in children.
This procedure is done by a surgeon in a surgical suite. General anesthesia is given to put you to sleep.
The surgeon attaches the lead tip to the heart muscle, while the other end of the lead (attached to the pulse generator) is placed in a pocket created under the skin in the abdomen.
Although recovery with the epicardial approach is longer than that of the other approach, minimally invasive techniques have enabled shorter hospital stays and quicker recovery times.

The doctor will determine which pacemaker implant method is best for you.

What to Expect During Pacemaker Surgery ?

The endocardial pacemaker takes about 1-2 hours to implant.

What happens during pacemaker implantation?

You'll lie on a bed and the nurse will start an intravenous line (IV) into your arm or hand. This is so you may receive medications and fluids during the procedure. You will be given medication through your IV to relax you and make you drowsy, but it will not put you to sleep.

The nurse will connect you to several monitors. The monitors allow the doctor and nurse to check your heart rhythm, blood pressure, and other measurements during the pacemaker implant.

The left or right side of your chest will be shaved and cleansed with a special soap. Sterile drapes are used to cover you from your neck to your feet. A strap will be placed across your waist and arms to prevent your hands from coming in contact with the sterile field.

How are pacemakers implanted?

The doctor will numb your skin by injecting a local numbing medication. You will feel a pinching or burning feeling at first. Then, it will become numb. Once this occurs, a cut will be made to insert the pacemaker and leads. You may feel a pulling as the doctor makes a pocket in the tissue under your skin for the pacemaker. You should not feel pain. If you do, tell your nurse.

After the pocket is made, the doctor will insert the leads into a vein and guide them into position using a fluoroscopy machine.

After the leads are in place, their function is tested to make sure they can increase your heart rate. This is called "pacing" and involves delivering small amounts of energy through the leads into the heart muscle. This causes the heart to contract. When your heart rate increases, you may feel your heart is racing or beating faster. It is very important to tell your doctor or nurse any symptoms you feel. You should report any pain right away.

After the leads are tested, the doctor will connect them to your pacemaker. Your doctor will determine the rate of your pacemaker and other settings. The final pacemaker settings are done after the implant using a special device called a "programmer."

What to Expect After Pacemaker Surgery ?

You will be admitted to the hospital overnight for the pacemaker implantation. The nurses will monitor your heart rate and rhythm. The morning after your implant, you will have a chest X-ray to ensure the leads and pacemaker are in the proper position.

You will be shown how to care for your wound. Keep your wound clean and dry. After 5 days, you may take a shower. Look at your wound every day to make sure it is healing. Your pacemaker settings will be checked before you leave the hospital.

You will receive a temporary ID card that tells you:

The type of pacemaker and leads you have
The date of the pacemaker implant
The name of the doctor who implanted the pacemaker
Within 3 months, you will receive a permanent card from the pacemaker company. CARRY THIS CARD WITH YOU AT ALL TIMES in case you need medical attention at another hospital.

Restrictions after pacemaker surgery

Do not lift objects that weigh more than 10 pounds.
Do not hold your arms above shoulder level for 3 weeks.
Avoid activities that require pushing or pulling heavy objects, such as shoveling the snow or mowing the lawn.
Stop any activity before you become overtired.
For 6 weeks after the procedure, avoid golfing, tennis, and swimming.
Try to walk as much as possible for exercise.
Ask your doctor when you can resume more strenuous activities.
Your doctor will tell you when you can go back to work, usually within a week after you go home. If you can, ease back to your regular work schedule.

Angiography

Coronary Angiography ?

Coronary angiography is a test to see if you have a blockage in a coronary artery. A contrast dye is injected into your arteries through a catheter, while your doctor watches how blood flows through your heart on an X-ray screen.

Your doctor will want to do a coronary angiography if they're concerned that you're at risk of a heart attack, or if you have unstable angina, atypical chest pain, aortic stenosis, or unexplained heart failure.

This test is also known as a cardiac angiogram, catheter arteriography, or cardiac catheterization.

Preparing for a coronary angiography

Doctors often use an MRI or a CT scan before a coronary angiography test, in an effort to pinpoint problems with your heart.

Don't eat or drink anything for eight hours before the angiography. Arrange for someone to give you a ride home. You should also have someone stay with you the night after your test because you may feel dizzy or light-headed for the first 24 hours after the cardiac angiography.

In many cases, you'll be asked to check into the hospital the morning of the test, and you'll be able to check out later the same day.

At the hospital, you'll be asked to wear a hospital gown and to sign consent forms. The nurses will take your blood pressure, start an intravenous line and, if you have diabetes, check your blood sugar. You may also have to undergo a blood test and an electrocardiogram.

Let your doctor know if you're allergic to seafood, if you've had a bad reaction to contrast dye in the past, if you're taking sildenafil (Viagra), or if you might be pregnant.

What happens during the test

Before the test, you'll be given a mild sedative to help you relax. You'll be awake throughout the test.

Your doctor will clean and numb an area of your body in the groin or arm with an anesthetic. You may feel a dull pressure as a sheath is inserted into an artery. A thin tube called a catheter will be guided gently up to an artery in your heart. Your doctor will supervise the whole process on a screen.

It's unlikely that you'll feel the tube move through your blood vessels.

How the test will feel

A slight burning or "flushing" sensation can be felt after the dye is injected.

After the test, pressure will be applied at the site where the catheter is removed to prevent bleeding. If the catheter is placed in your groin, you may be asked to lie flat on your back for a few hours after the test to prevent bleeding. This can cause mild back discomfort.

Drink plenty of water after the test to help your kidneys flush out the contrast dye.

Understanding the results of a coronary angiography

The results show whether there is a normal supply of blood to your heart and any blockages. An abnormal result may mean that you have one or more blocked arteries. If you have a blocked artery, your doctor may choose to do an angioplasty during the angiography and possibly insert an intracoronary stent to immediately improve blood flow.

Risks associated with getting a coronary angiography

Cardiac catheterization is very safe when performed by an experienced team, but there are risks.

Risks can include:

bleeding or bruising
blood clots
injury to the artery or vein
a small risk of stroke
a very small chance of a heart attack or a need for bypass surgery
low blood pressure

Recovery and follow-up when you get home

Relax and drink plenty of water. Don’t smoke or drink alcohol.

Because you’ve had an anesthetic, you shouldn’t drive, operate machinery, or make any important decisions immediately.

Remove the bandage after 24 hours. If there’s minor oozing, apply a fresh bandage for another 12 hours.

For two days, don’t have sex or perform any heavy exercise.

Don’t take a bath, use a hot tub, or use a pool for at least three days. You may shower.

Don’t apply lotion near the puncture site for three days.

You’ll need to see your heart doctor a week after the test.

What is heart angioplasty and stent placement?

Angioplasty and stent placement are common procedures to open arteries in the heart that are clogged. These procedures are formally known as coronary angioplasty or percutaneous coronary intervention.

Angioplasty involves the use of a tiny balloon to widen the artery. A stent is a tiny wire-mesh tube that your doctor inserts into the artery. The stent stays in place to prevent the artery from closing. A cardiologist typically performs both procedures at the same time.

Why do I need heart angioplasty and stent placement?

The procedure is commonly done when a fatty substance known as plaque attaches to the walls of an artery. This is a condition known as atherosclerosis. The buildup of plaque causes the inside of the artery to narrow, restricting blood flow.

When plaque affects the coronary arteries, it's known as coronary heart disease — a serious health condition. The buildup of plaque in the arteries is particularly threatening to your health because the coronary arteries supply the heart with fresh, oxygenated blood. Without it, the heart can't function.

Angioplasty and stent placement can alleviate the blockage of an artery and angina, orpersistent chest pain, that medications can't control. They're also emergency procedures used if someone is having a heart attack.

Angioplasty and stents can't help some conditions. For example, coronary artery bypass surgery could be a better option when the main artery on the left side of the heart experiences a blockage. A doctor might also consider coronary bypass surgery if the patient suffered blockages in multiple arteries or has diabetes.

What are the risks associated with heart angioplasty and stent placement?

Any surgical procedure carries risks. There's an increased risk of adverse effects in angioplasty with stent placement because the procedure deals with arteries of the heart.

The risks associated with the procedure include:

an allergic reaction to medication or dye
breathing problems
bleeding
a blockage of the stented artery
a blood clot
a heart attack
an infection
re-narrowing of the artery
Rare side effects include stroke and seizure.

More often than not, the risks of not going through the procedure outweigh the risks associated with angioplasty with stent placement.

How do I prepare for heart angioplasty and stent placement?

If you need to undergo angioplasty with stent placement in your coronary arteries because of an emergency event, such as a heart attack due to coronary artery disease, you'll have little time to prepare.

If you're undergoing the procedure with plenty of time to plan, there are several things you'll need to do to prepare.

Tell your doctor what drugs, herbs, or supplements you're taking.
Stop taking any drugs that make it harder for your blood to clot, such as aspirin, clopidogrel (Plavix), ibuprofen (Advil), naproxen (Aleve, Naprosyn), and other drugs your doctor tells you to stop taking.
If you smoke, quit smoking.
Tell your doctor about any illnesses you have, even a common cold or flu.
Take any medications your doctor prescribes for you.
Arrive at the hospital with plenty of time to prepare for surgery.
Follow whatever instructions your doctor or surgeon gives you.
You'll receive numbing medicine at the site of the incision. You'll also get medication through your veins using an IV. The medicine will help you relax during the procedure.

How is angioplasty and stent placement performed?

Angioplasty with stent placement is a minimally invasive procedure. The following steps occur during this procedure:

Your cardiologist will make a small incision in your groin to access an artery.
Your cardiologist will insert a thin, flexible tube known as a catheter through that incision.
They'll then guide the catheter up through your body to your coronary arteries. This will allow them to view your arteries using a type of X-ray called fluoroscopy. A special dye can also guide them.

Your cardiologist will pass a small wire through the catheter. A second catheter will then follow the guide wire. This catheter has a small balloon attached to it.

Once the balloon reaches the blocked artery, your cardiologist will inflate it.

Your cardiologist will insert the stent at the same time as the balloon, allowing the artery to remain open and blood flow to return. Once the stent is secure, your cardiologist will remove the catheter and leave the stent in place so blood can continue to flow.

Some stents are coated in medication that slowly releases into the artery. These are called “drug-eluting stents (DES).” These stents help to fight fibrosis, a buildup of tissue that prevents the affected artery from closing. Bare metal stents, or those that are not coated in medication, are also sometimes used.

What happens after heart angioplasty and stent placement?

You may feel soreness at the site of the incision. You can treat this with over-the-counter painkillers. You’ll also likely be prescribed medication to prevent your blood from coagulating. This helps your body adjust to the new stent.

Your cardiologist will probably want you to stay in the hospital overnight to ensure there are no complications, such as bleeding, blood clots, or problems with blood flow to the heart. Your stay might be even longer if you had a coronary event, such as a heart attack.

When you return home, drink plenty of fluids and restrict physical activity for some time. It’s important to follow your doctor’s instructions.

Angioplasty with stent placement may be a life-saving procedure, but you’ll still need to make lifestyle choices to improve your heart health. Healthy lifestyle habits include having a balanced diet, exercising, and quitting smoking if you smoke.

What Is a Peripheral Angiogram?

A peripheral angiogram is a test that checks for blockages in the arteries that supply blood to your legs and feet or your arms and hands. These arteries are called peripheral arteries because they move blood away from the heart and toward your extremities.

The test is typically done if your doctor suspects you have peripheral artery disease (PAD).

Why Is a Peripheral Angiogram Done?

Your doctor might order a peripheral angiogram if you have any symptoms of blockages in your peripheral arteries. It usually affects your legs, but can happen in other areas, depending on the disease.

Some peripheral angiography symptoms may include:

Pain in your legs or arms
Shiny skin on your legs or feet
Hair loss on your legs
Cold skin
Gangrene, or dead tissue because of lack of blood flow
Sores that won't heal
Numbness or weakness in your limbs
Pain at rest
Reddish-blue color in your extremities
Thick, opaque toenails
Trouble moving around
Weak pulse in your leg or foot

How Is a Peripheral Angiogram Performed?

A peripheral angiography is done while you lay on an X-ray table. The doctor will put some numbing medication on your groin or your arm and will make a small cut. They'll insert a small rubber sheath into your blood vessel and then insert a thin tube called a catheter.

Next, they'll inject contrast dye into the catheter and take some X-ray scans. Then they'll remove the catheter and rubber sheath and put a bandage on your cut. They'll put some pressure on the area and keep you lying down for up to 8 hours. A nurse will watch for any complications before sending you home. You'll need someone to drive you.

The procedure takes about 30 to 40 minutes.

Sometimes your doctor might do another minor procedure during the same appointment as your angiogram. They might check your arteries and then decide to treat your arteries right away.

Treatment might be a peripheral angioplasty, where a balloon is inflated to move plaque and widen your artery. Or they might place a stent, which is a permanent mesh coil that's placed against your artery walls to hold it open.

If your doctor does other procedures like placing a stent, it can take longer.

None of these procedures is considered a major surgery.

What Are the Risks of a Peripheral Angiogram?

Risks of a peripheral angiogram include:

Allergic reaction to contrast dye
Bleeding
Swelling
Bruising
Infection where the catheter is inserted
Kidney problems from the dye
You might have a higher chance of complications if you have kidney disease or you're allergic to the contrast. Your doctor might be able to use a different dye for the procedure.

In most cases, the risk for complications from an angiogram is low.

Irregular heart beat

Abnormal Heart Rhythms ?

An abnormal heart rhythm is when your heart beats too fast, too slow, or irregularly. It's also called an arrhythmia.

View video transcript

Your heart contains a complex system of valves, nodes, and chambers. They control how and when blood is pumped throughout your body. If these are disrupted, damaged, or compromised, it can change your heart rate or rhythm.

Arrhythmias can cause no symptoms, or you may feel some symptoms. They may include:

discomfort

fluttering or pounding in your chest

pain in your chest

shortness of breath

lightheadedness

fatigue

fainting

Not all arrhythmias are life threatening or cause health complications. But to be safe, you should report any abnormal heart rhythm to a doctor.

The types of abnormal heart rhythms ?

The most common types of abnormal heart rhythms include:

Tachycardia

Tachycardia means that your heart is beating too fast. For example, a typical heart beats 60 to 100 times per minute in adults. Tachycardia is any resting heart rate over 100Trusted Source beats per minute (bpm).

There are three subtypes of tachycardia:

Sinus tachycardia: This is an increased heart rate that can occur in response to exercise, pain, dehydration, excitement, fever, or illness. With sinus tachycardia, your heartbeat returns to its usual rate once you get better or become calm.

Supraventricular tachycardia: Supraventricular tachycardia originates in the upper chambers of your heart, known as the atria.

Ventricular tachycardia: Ventricular tachycardia is a very fast heart rate that occurs in the lower chambers, known as the ventricles.

Atrial fibrillation

This disorganized heart rhythm occurs in the upper chambers of your heart. It's the most common arrhythmia.

Atrial fibrillation, or AFib, occurs when many unstable electrical impulses misfire, causing your atria to quiver erratically.

AFib causes your heart to beat irregularly and can increase your heart rate to 80 to 180 bpmTrusted Source, which is much faster than the typical 60 to 100 bpm.

Atrial flutter

An atrial flutter typically occurs in the right atrium, one of your heart's two upper chambers. It may occur in the left atrium as well.

Atrial flutter is a type of arrhythmia that originates in the atrium and results in rapid atrial rhythm. It's due to an abnormal circuit of electrical activity. In atrial flutter, your heart's overall rhythm can be regular, but your heart rate is often fast.

Atrial flutter also increasesTrusted Source your risk of stroke.

Bradycardia

If you have bradycardia, you have a slow heart rate (less than 60 bpmTrusted Source). Bradycardia generally occurs when the electrical signals traveling from the atria to the ventricles become disrupted.

Some athletes have slower heart rates because they're in excellent physical condition, which isn't usually the result of a heart problem.

Bradycardia can result from:

medications, including certain blood pressure and antiarrythmic medications
hypothyroidism
hypothermia
other heart conditions

Ventricular fibrillation

Ventricular fibrillation is a life threatening arrhythmia in which the ventricles beat rapidly and erratically. This impairs the flow of blood from your heart and leads to cardiac arrest.

It’s a serious condition that results in death if not immediately treated with defibrillation.

Premature contractions

A premature contraction is a beat that occurs early. It can occur in the atrium (premature atrial contraction) or in the ventricle (premature ventricular contraction).

In either case, when feeling your pulse, it may feel as though your heart pauses or skips a beat.

What are the symptoms of abnormal heart rhythms?

If you have an abnormal heart rhythm, you may experience some or all of these symptoms:

feeling faint, dizzy, or lightheaded

shortness of breath

irregular pulse or heart palpitations

chest pain

pale skin

sweating

fainting

fatigue

What causes abnormal heart rhythms?

Several factors may cause an abnormal heart rhythm. These can include:

High blood pressure

High blood pressure means too much force is required to push the blood through your blood vessels. It creates more resistance to blood flow and can affect how your heart works. Over time, high blood pressure can lead to heart disease.

Coronary heart disease

Coronary heart disease is a serious heart problem that occurs when cholesterol and other deposits block your coronary arteries.

This plaque prevents oxygen and important nutrients from reaching your heart.

Heart conditions or damage to the heart

Having a heart condition or an injury to your heart can lead you to develop an atypical heart rate. Some of these conditions may have other symptoms as well.

They may include:

changes in your heart's muscle after illness or injury

healing after heart surgery

structural abnormalities of your heart

heart failure, which happens when your heart can't pump an adequate amount of blood

damage to your heart after a heart attack

Medications

Some medications or substances may causeTrusted Source your heart rate to change.

Medications that may cause your heart rate to increase include:

caffeine

nicotine

decongestants, such as phenylephrine or pseudoephedrine

amphetamines, which are drugs that stimulate the brain

asthma medications, such as an albuterol inhaler

other recreational drugs, such as cocaine

Medications that can cause your heart rate to decrease may include:

beta-blockers, which treat high blood pressure

calcium channel blockers

certain antiarrhythmic medications, such as digoxin and amiodarone, clonidine, and donepezil

Anxiety or emotional distress

Anxiety or other emotional distress can increase your heart rate as part of your body's fight-or-flight response. This can cause sinus tachycardia.

You may feel heart palpitations. Your accelerated heart rate typically slows once you calm down.

Illness or fever

Having an illness or fever may temporarilyTrusted Source cause sinus tachycardia. This may temporarily raise your heart rate.

Once your illness resolves, your heart rate typically returns to its normal rate.

Other causes

Other factors can also cause alterations in your heart's rhythm. These can include:

pain

electrolyte imbalances, such as low potassium, calcium, and magnesium

sleep apnea

blood clots

anaemia

hypothyroidism

other health conditions

What are the risk factors for abnormal heart rhythms?

The risks for arrhythmia can include:

smoking

previous heart conditions, or a family history of heart conditions

diabetes

stress

being overweight

being physically inactive

a diet high in fats and cholesterol

high blood pressure or other health problems

drinking alcohol in excess

drug misuse

sleep apnea

Diagnosing abnormal heart rhythms ?

A doctor typically performs a physical examination, which may include using a stethoscope to listen to your heart. They may also use an electrocardiogram (EKG) machine to examine your heart's electrical impulses. This can help them determine whether your heart rhythm is abnormal and identify the cause.

Other tools that doctors use to diagnose an arrhythmia include:

Echocardiogram: This test is also known as a cardiac echo. It uses sound waves to take pictures of your heart.
Rhythm monitoring: You'll wear ambulatory rhythm monitoring such as a Holter monitor or event recorders for at least 24 hours while doing your daily activities. These monitors allow your doctor to track changes in your heart's rhythm throughout the day.
Stress test: For this test, a doctor has you walk or jog on a treadmill to see how exercise affects your heart.
The Healthline FindCare tool can provide options in your area if you need help finding a cardiologist.

Treating abnormal heart rhythms ?

The treatment for an arrhythmia depends on its cause.

You may need to make lifestyle changes, such as increasing your activity level or changing your diet (for example, limiting caffeine intake). If you smoke, a doctor may recommend you consider quitting smoking and provide resources or medication to help.

You might also require medication to control your heart rate and any secondary symptoms. This may include rate-controlling medication or antiarrhythmics to control your heart's rate and rhythm.

Certain arrhythmias, such as AFib and atrial flutter, can increase your risk of a stroke. A doctor may recommend blood-thinning medications to lower your risk of stroke.

For serious abnormalities that don't go away with behavioral changes or medication, a doctor may recommend:

pharmacologic cardioversionTrusted Source, which uses medication, or electrical cardioversion, which uses an electrical shock to your heart
other heart testing and procedures, such as cardiac catheterization, to diagnose a heart problem
catheter ablation to identify and destroy tissue that causes abnormal rhythms

implantation of a pacemaker or cardioverter defibrillator

surgery to correct an abnormality

What is an irregular heart beat ?

A heart arrhythmia (uh-RITH-me-uh) is an irregular heartbeat. A heart arrhythmia occurs when the electrical signals that tell the heart to beat don't work properly. The heart may beat too fast or too slow. Or the pattern of the heartbeat may be inconsistent.

A heart arrhythmia may feel like a fluttering, pounding or racing heartbeat. Some heart arrhythmias are harmless. Others may cause life-threatening symptoms.

There are times when it is OK to have a fast or slow heartbeat. For example, the heart may beat faster with exercise or slow down during sleep.

Heart arrhythmia treatment may include medicines, devices such as pacemakers, or a procedure or surgery. The goals of treatment are to control or get rid of fast, slow or otherwise irregular heartbeats. A heart-healthy lifestyle can help prevent heart damage that can trigger some heart arrhythmias.

Types

In general, heart arrhythmias are grouped by the speed of the heart rate. For example:

Tachycardia (tak-ih-KAHR-dee-uh) is a fast heartbeat. The heart rate is greater than 100 beats a minute.
Bradycardia (brad-e-KAHR-dee-uh) is a slow heartbeat. The heart rate is less than 60 beats a minute.
Fast heartbeat, called tachycardia
Types of tachycardias include:

Atrial fibrillation (AFib). Chaotic heart signaling causes a rapid, uncoordinated heartbeat. AFib may be temporary and start and stop on its own. But some episodes may not stop unless treated. AFib has been linked to stroke.
Atrial flutter. Atrial flutter is similar to AFib, but the heartbeats are more organized. Atrial flutter also is linked to stroke.
Supraventricular tachycardia. This broad term includes irregular heartbeats that start above the lower heart chambers, called the ventricles. Supraventricular tachycardia causes episodes of a pounding heartbeat that start and stop suddenly.

Ventricular fibrillation. Rapid, chaotic electrical signals cause the lower heart chambers to quiver instead of squeezing in a coordinated way. This serious problem can lead to death if a regular heart rhythm isn't restored within minutes. Most people with ventricular fibrillation have an underlying heart disease or had a serious injury.
Ventricular tachycardia. This rapid, irregular heart rate starts with faulty electrical signals in the lower heart chambers, called the ventricles. The rapid heart rate doesn't let the ventricles properly fill with blood. So the heart may not be able to pump enough blood to the body. Ventricular tachycardia may not cause serious problems in people with otherwise healthy hearts. In those with heart disease, ventricular tachycardia can be an emergency that needs immediate medical care.
Slow heartbeat, called bradycardia
A heart rate below 60 beats a minute is considered bradycardia. But a low resting heart rate doesn't always mean there's a problem. If you're physically fit, your heart may be able to pump enough blood to the body with less than 60 beats a minute.

If you have a slow heart rate and your heart isn't pumping enough blood, you may have a type of bradycardia. Types of bradycardias include:

Sick sinus syndrome. The sinus node sets the pace of the heart. If the node doesn't work properly, the heart rate may switch between too slow and too fast. Sick sinus syndrome can be caused by scarring near the sinus node that slows, disrupts or blocks heartbeat signals. The condition is most common among older adults.
Conduction block. A block of the heart's electrical pathways can cause the signals that trigger the heartbeats to slow down or stop. Some blocks may cause no symptoms. Others may cause skipped beats or slowed heartbeats.
Premature heartbeats
Premature heartbeats are extra beats that occur one at a time, sometimes in patterns that alternate with a regular heartbeat. If the extra beats come from the top chamber of the heart, they are called premature atrial contractions (PACs). If they come from the bottom chamber, they are called premature ventricular contractions (PVCs).

A premature heartbeat may feel like your heart skipped a beat. These extra beats are generally not a concern. They rarely mean you have a more serious condition. Still, a premature beat can trigger a longer lasting arrhythmia, especially in people with heart disease. Occasionally, having very frequent premature ventricular beats may lead to a weak heart.

Premature heartbeats may occur when resting. Stress, heavy exercise and the use of stimulants, such as caffeine or nicotine, also may cause premature heartbeats.

Symptoms of irregular heartbeat ?

A heart arrhythmia may not cause any symptoms. The irregular heartbeat may be noticed during a health checkup for another reason.

Symptoms of an arrhythmia may include:

A fluttering, pounding or racing feeling in the chest.
A fast heartbeat.
A slow heartbeat.
Chest pain.
Shortness of breath.
Other symptoms may include:

Anxiety.
Feeling very tired.
Lightheadedness or dizziness.
Sweating.
Fainting or almost fainting.

Causes of irregular heartbeat ?

To understand the cause of heart arrhythmias, it may help to know how the heart works.

How does the heart beat?
The typical heart has four chambers.

The two upper chambers are called the atria.
The two lower chambers are called the ventricles.
The heart's electrical system controls the heartbeat. The heart's electrical signals start in a group of cells at the top of the heart called the sinus node. They pass through a pathway between the upper and lower heart chambers called the atrioventricular (AV) node. The movement of the signals causes the heart to squeeze and pump blood.

In a healthy heart, this heart signaling process usually goes smoothly, resulting in a resting heart rate of 60 to 100 beats a minute.

But some things can change how electrical signals travel through the heart and cause arrhythmias. They include:

A heart attack or scarring from a previous heart attack.
Blocked arteries in the heart, called coronary artery disease.
Changes to the heart's structure, such as from cardiomyopathy.
Diabetes.

High blood pressure.

Infection with COVID-19.

Overactive or underactive thyroid gland.

Sleep apnea.

Some medicines, including those used to treat colds and allergies.

Drinking too much alcohol or caffeine.

Illegal drug use or drug misuse.

Genetics.

Smoking.

Stress or anxiety.

Bradycardia (Slow Heart Rate)

What is bradycardia?

Bradycardia (pronounced bray-duh-kaar-dee-uh) is a slow heart rate. Adults usually have a heart rate between 60 and 100 beats per minute, but if you have bradycardia, your heart beats fewer than 60 beats per minute.

photo of bradycardia ekg
EKG readings are the most important test your doctor will use to diagnose you with bradycardia. (Photo Credit: 3D4Medical/Medical Images)

Bradycardia may or may not be a problem. For instance, your heart rate slows down and may go below 60 beats per minute while you sleep. And some people with a high level of cardiovascular fitness, like athletes, may also have a heart rate that's between 40 and 60 beats per minute without any problems.

But for some people, if their heart rate drops below 60 beats per minute, their tissues don't get enough oxygen. In that case, it could be a clue that you have an issue with the electrical system in your heart, which can cause symptoms.

Bradycardia vs tachycardia

Bradycardia and tachycardia (pronounced ta-kuh-kaar-dee-uh) are both problems with your heart rhythm. Where bradycardia is a slower-than-usual heart rhythm, tachycardia is a faster-than-usual heart rhythm. Generally, this is faster than 100 beats per minute.

Heart Basics

Your heart has four chambers, two on the top called atria and two on the bottom called ventricles.

In your upper right atrium, you have a group of cells called the sinus node. It makes the electrical signals that tell your heart to beat. If these signals slow down or are blocked, the time between your heartbeats also slow down.

A heart rate that's too slow can mean that not enough oxygen-rich blood is reaching the organs and tissues in your body. This can affect your body's ability to effectively carry out its normal processes and functions.

Many people with bradycardia don't have any noticeable symptoms. When symptoms are present, they may include:

fatigue
weakness
shortness of breath
spells of dizziness or lightheadedness
near-fainting or fainting
exercise intolerance, which is when you tire quickly during physical activity

If you're having symptoms consistent with bradycardia, see a doctor. They can help determine what may be causing your symptoms.

RECOGNIZING A POTENTIAL EMERGENCY SITUATION

In certain situations, a slow heart rate could indicate a medical emergency. The following bradycardia symptoms may be a sign of a more serious condition:

chest pain
trouble breathing
pallor (pale skin)
cyanosis (bluish skin color)
blurred or hazy vision

trouble focusing or concentrating

disorientation

Confusion

near fainting or loss of consciousness

If you have any of these symptoms and a change in your heart rate, call 911 or seek emergency medical attention immediately.

Potential underlying causes of bradycardia ?

It’s possible for bradycardia to happen due to damage to the heart muscle. When this occurs, it can interfere with the electrical signaling that coordinates your heartbeat.

Some examples of heart-related conditions that may lead to the development of bradycardia include:

coronary artery disease, a condition where blood flow to the arteries of the heart is impaired

heart attack, in which blood flow to the heart is cut off, causing heart muscle to die

previous surgery to the heart

congenital heart conditions, which are abnormalities in the heart that are present from birth

myocarditis, a swelling of the heart muscle that may be caused by infections or autoimmune disease

pericarditis, a condition that involves inflammation of the sac surrounding your heart

rheumatic fever, a potential complication of strep throat, that can lead to heart issues

damage to the heart’s electrical system from prior infection or inflammation

There are also several additional underlying conditions that may lead to bradycardia. These include:

an electrolyte imbalance, most specifically an imbalance of calcium or potassium

hypothyroidism, which happens when your thyroid produces too little thyroid hormone

sleep apnea, a condition where your breathing pauses when you’re asleep

Additionally, some medications may cause bradycardia as a side effect. A few examples include:

blood pressure medications like beta-blockers and certain calcium channel blockers

some types of anti-arrythmic drugs

opioids

Sinus bradycardia

The sinoatrial (SA) node is your heart’s natural pacemaker. It initiates the electrical impulses that travel through your heart muscle, resulting in your heartbeat.

When your SA node sends out electrical impulses at a slower rate, it’s called sinus bradycardia.

Sinus bradycardia can happen naturally due to the aging process. It can also occur due to several of the factors discussed above, including:

damage to your heart muscle due to conditions such as a heart attack, a pervious heart surgery, or myocarditis
congenital heart conditions
health conditions like hypothyroidism or sleep apnea
side effects from certain medications

Diagnosing bradycardia ?

A thorough medical evaluation by a healthcare professional is necessary to determine the cause of a slow heart rate. This will typically include the following:

a thorough medical history
a physical examination, which will include measurement of your vital signs, including your heart rate, blood pressure, and respiratory rate
an electrocardiogram (EKG or ECG), which measures the electrical activity in your heart
Based on the findings from the evaluation above, it’s possible that your doctor may recommend additional testing, such as:

laboratory tests, which may include tests of blood glucose, electrolyte levels, or thyroid function
an echocardiogram, which uses ultrasound technology to create pictures of your heart
Holter monitoring, which measures the electrical activity of your heart while you go about your daily activities
a sleep study to determine if you have sleep apnea that may be contributing to your bradycardia

How is bradycardia treated?

The treatment of bradycardia depends on what’s causing it. Bradycardia that’s mild or occasional may not require treatment.

If a slow heart rate is due to the effect of a medication, it's possible that your doctor may adjust your medication dosage. If possible, they could also switch you to a different medication that doesn't have bradycardia as a side effect.

Similarly, if an underlying condition is contributing to your bradycardia, your doctor will work to address that condition. For example, the medication levothyroxine can be used to manage hypothyroidism.

It's also possible that your doctor may recommend a pacemaker. This is an implanted medical device that stimulates heartbeats so that they occur at a regular rate and rhythm. Bradycardia is one of the main conditions for which a pacemaker may be recommended.

Medications

There are also a few medications that may be used to treat bradycardia. These may be utilized when bradycardia is causing acute symptoms and isn't due to a reversible cause, such as a medication side effect.

Medications for bradycardia work to increase your heart rate and can include:

atropine, which is the first-line drug treatment for bradycardia
dopamine
epinephrine
glycopyrrolate

All of these medications are given via intravenous (IV) infusion. If they're not effective at managing acute symptoms of bradycardia, temporary pacing (either transcutaneous or transvenous) may be used to ease bradycardia.

Bradycardia and COVID-19

COVID-19 is the illness that's caused by the novel coronavirus, SARS-CoV-2. There are several potential cardiovascular symptoms associated with COVID-19, one of which is bradycardia.

It's still unclear what exactly causes this symptom in individuals with COVID-19, but it may be due to one or a combination of the following factors:

direct damage to the heart muscle
the body's inflammatory response
low oxygen levels in the body (hypoxia)

a drop in blood pressure (hypotension)

Currently, most of the availableTrusted Source reportsTrusted Source about bradycardia in COVID-19 have been in individuals that have been hospitalized. It's unclear whether this symptom appears in people who aren't hospitalized and, if so, how frequently it happens.

The reports on how bradycardia during COVID-19 is treated can vary. While some individuals had bradycardia that resolved on its own, others required a temporary or permanent pacemaker.

Understanding your heart rate by the numbers

If you're curious about your heart rate, you can measure it yourself. First, find your pulse by holding a finger (not your thumb) to the radial artery on the inside of your wrist. Then, count the number of beats per minute while you're resting.

Other places your heart rate can be measured include:

on your neck, alongside your windpipe (carotid artery)

inside your elbow (brachial artery)

on the inside of your groin/upper thigh (femoral artery)

on the top of your foot (pedal pulse)

When you're determining your heart rate, here are some numbers to keep in mind:

A resting adult heart rate is normally between 60 to 100 beats per minuteTrusted Source.

Athletes or people on certain medications may have a lower-than-normal resting heart rate.

The normal heart rates for children can be different from those of adults, depending on a child's age:

up to 3 months old: 85 to 205 beats per minute

3 months to 2 years: 100 to 190 beats per minute

2 to 10 years: 60 to 140 beats per minute

older than 10 years: 60 to 100 beats per minute

The bottom line

Bradycardia is when your heart rate is too slow. It can be caused by a variety of conditions, particularly those that can impact the heart's normal electrical signaling. If you have bradycardia, your body may not be receiving enough oxygen to carry out its normal functions.

Some people with bradycardia may not have any noticeable symptoms. However, others may experience fatigue, weakness, or shortness of breath. In serious cases, chest pain, confusion, and loss of consciousness can occur.

Bradycardia can be effectively managed through treatments that address what’s causing it. Make an appointment with your doctor if you notice any changes in your heart rate, especially if the changes are accompanied by other symptoms.

Types of Bradycardia ?

Sinus bradycardia

This is the most common form of bradycardia. It's when your heart slows down to less than 60 beats per minute. This could be normal for you, especially if you're athletic. You probably don't need treatment unless you have symptoms.

Sinus bradycardia is unlikely to cause you complications unless your heart rate goes below 40 beats per minute. If your heart rate goes this low, your doctor may call it junctional bradycardia.

Sinus pause (also known as sinus arrest)

If you have sinus pause, your sinus node doesn't trigger your heart to beat every once in a while, so your heart may miss one or more beats.

You may have symptoms if your heart skips beats often or over an extended period of time. There may also be a risk of complications with this type of bradycardia.

Sick sinus syndrome

When your sinus node doesn't work well, you may develop sick sinus syndrome. You may have a slow heart rate or a combination of a fast and slow heart rate.

Tachy-brady syndrome

This type of bradycardia often happens in people with atrial fibrillation. It's caused by damage to your sinus node. It makes your heart rate alternate between too fast and too slow.

You may have symptoms like palpitations, lightheadedness, or fainting. You may also have complications and a higher risk of stroke.

Heart block

This happens when something blocks the signals from your sinus node, so your heart rate slows down.

Bradycardia Symptoms ?

You may or may not have symptoms with bradycardia, especially if you have a high level of fitness.

If you do have them, your symptoms may include:

Chest pain (Your doctor may call this angina.)
Feeling very tired (fatigue)
Heart palpitations (a fluttering feeling in your chest or being aware of your own heartbeat)
Shortness of breath
Memory problems, confusion, or trouble concentrating
Dizziness, lightheadedness, or fainting
Crankiness, agitation, or other personality changes

When to See a Doctor
You should see your doctor if you have a slow heart rate and any symptoms that are worrying you. Also go see your doctor if you notice any new symptoms or your symptoms change.

You should call 911 and go to the emergency room if you have any of the following symptoms:

Chest pain lasting more than a few minutes
Shortness of breath or trouble breathing
Dizziness, lightheadedness, and fainting spells
Also, go the ER if you have symptoms that come on quickly, your symptoms change fast, or they get worse.

Low Heart Rate Causes ?

Bradycardia can be caused by many conditions. Some of the most common causes include:

Not getting enough electrolytes in your diet, especially calcium, magnesium, and potassium
Anorexia nervosa, an eating disorder
Inflammation in your heart (myocarditis), the inner lining of your heart (endocarditis), or the sac that holds your heart (pericarditis)
Infections, like strep throat, which can damage your heart valves
Rheumatic fever or rheumatic heart disease (This may be another complication of strep throat.)
Lyme disease, which is an infection you can get from a tick bite
Chagas disease, which is an infection you can get from a kissing bug bite
Certain medications, such as beta-blockers, calcium channel blockers, anti-arrhythmia drugs, narcotics, lithium, depressants, or cannabis
Heart surgery, such as valve repair and replacement
Radiation therapy

Bradycardia Diagnosis ?

Your doctor will likely diagnose you based on a physical exam and tests, such as:

EKG. This test measures your heart’s electrical activity using sensors (electrodes) that stick to the skin of your chest. These electrodes sense the electrical activity of your heart. It is the most important test your doctor will use to diagnose if you have bradycardia.

Holter monitor. This is a wearable version of an EKG, which records your heart's activity continuously over about 24 hours so your doctor can see your heart's rhythm over a longer time.

Event recorder. This is like a Holter monitor, but it records only at specific times for a few minutes. You may need to push a button whenever you notice symptoms, or the recorder may be set to automatically record whenever it detects a low heart rate.

Tilt table test. Your doctor may order this test if your bradycardia is causing fainting spells. It changes your position from lying down to standing and lets your doctor see if this change triggers a fainting spell.

Stress exercise test. Your doctor may order this test to see how your heart does while you ride an exercise bike or walk on a treadmill.

Sleep study. Your doctor may order this test to see if you have obstructive sleep apnea that is causing your slow heart rate.

Blood tests that detect things such as:

Electrolyte levels, especially calcium, potassium, and magnesium
Thyroid hormone levels (Low thyroid hormone levels can cause bradycardia.)
Troponin, which is a protein made by your heart when it has been damaged
Drugs that cause heart damage or bradycardia, in a test called a toxicology screen

Bradycardia Treatment ?

If you have bradycardia, but you don't have symptoms, you likely won't need any treatment. If you do have symptoms, the treatment plan will be based on the likely cause of the problem. For instance, if the cause is hypothyroidism, or low thyroid function, treating that may take care of your slow heart rate. Or, your doctor may change medications that you take that might be slowing your heart. For instance, beta-blockers are sometimes prescribed to relax your heart muscle. But if they cause you to have a really slow heart rate, your doctor might lower your dose or give you a different drug.
Otherwise, your doctor may treat your bradycardia with:

Medication

If your heart rate is dangerously low, your doctor may treat you in the hospital with an IV drug, such as atropine, to speed up your heart rate.

Temporary pacemaker

Your doctor may fit you with a device with electric contacts that attach to the skin of your chest. This device sends mild electrical currents into your body that cause your heart to beat.

Permanent pacemaker

If you have a sick sinus syndrome, your heart's natural pacemaker doesn't work, so you may need surgery to implant a permanent pacemaker into your chest. Leadless pacemakers are now available that your surgeon can insert with a minimally invasive procedure. These pacemakers are very small, and you will usually need less recovery time after one is inserted.

Bradycardia Prevention ?

The best way to prevent bradycardia is to protect yourself from getting heart disease. Some ways to prevent heart disease include:

See your doctor for your regular checkups.

Take your medicines exactly as prescribed by your doctor.

Exercise regularly.

Eat a low-fat, low-salt, low-sugar diet rich in fruits, vegetables, and whole grains.

Maintain a healthy weight.

Keep your blood pressure and cholesterol under control.

Don't smoke.

If you drink alcohol, only drink moderately (no more than one to two drinks per day, depending on your body weight).

If you have heart disease, some steps you can take to lower your risk of getting bradycardia include:

Follow your doctor's treatment plan.

Report any new symptoms or changes in your symptoms to your doctor as soon as possible.

Pounding heart beat

Causes of heart palpitations ?

Heart palpations can have a wide range of causes that include strong emotions, medications, and lifestyle factors. In some cases, they can be caused by a medical condition affecting your heart or another part of your body.

Heart palpitations are common. One study estimates that 16 percentTrusted Source of visits to a doctor are because of heart palpitations. They’re also the second most common reason that people visit a cardiologist — a doctor who specializes in the heart.

Possible causes of heart palpitations include:

Lifestyle triggers

strenuous exercise

excess caffeine or alcohol use

nicotine from tobacco products such as cigarettes and cigars

lack of sleep

dehydration

smoking

Emotional or psychological triggers

stress

anxiety

fear

panic

shock

Drugs and medications

over-the-counter (OTC) medications, including cold and cough medications, herbal supplements, and nutritional supplements

prescription medications such as asthma inhalers and decongestants

stimulants such as amphetamines and cocaine

Heart conditions

Although heart palpitations can be harmlessTrusted Source, they can also be an indication of an underlying heart condition, such as:

arrhythmia, or an irregular heart rhythm

abnormal heart valves

heart disease

congestive heart failure

Other medical conditions

hormone changes due to pregnancy or menopause

overactive thyroid, or hyperthyroidism

fever

sleep apnea

electrolyte abnormalities

low levels of oxygen or carbon dioxide in the blood

blood loss

anemia

low blood sugar

When to get immediate medical attention

According to the National Health Service, you don’t need medical attention if your heart palpitations pass quickly or only occur occasionally.

However, there are some cases when heart palpations require immediate medical attention.

IMPORTANT

Get medical attention right away if you have heart palpitations and a diagnosed heart problem.

Even if you don’t have a diagnosed heart issue, seek medical attention immediately if you have palpitations that occur with other symptoms such as:

dizziness

weakness

lightheadedness

fainting

loss of consciousness

confusion

difficulty breathing

excessive sweating

pain, pressure, or tightening in your chest

pain in your arms, neck, chest, jaw, or upper back

a resting pulse rate of more than 100 beats per minute

shortness of breath

Diagnosing the cause of heart palpitations ?

The cause of heart palpitations can be very difficult to diagnose, especially if the palpitations don’t occur while you’re in the doctor’s office.

To start, your doctor will conduct a thorough physical exam and will likely ask you questions about your:

physical activity

stress levels

health conditions

prescription medication use

OTC medication and supplement use

sleep patterns

caffeine and stimulant use

alcohol use

menstrual history

If necessary, your doctor may refer you to a cardiologist. A cardiologist may order certain tests to help diagnose or rule out certain diseases or heart problems. These tests may include:

blood tests that check hormone and blood cell levels, as well as potassium and other electrolytes that can affect the rhythm of your heart

a urine test that measures electrolyte, blood cell, hormone, and blood sugar levels

a stress test that involves studying your heart while your heart rate is elevated, either by walking briskly on a treadmill or by taking medication that speeds up the activity of your heart

an echocardiogram that uses sound waves to create live, moving images of your heart

an electrocardiogram (EKG or ECG) that records the electrical activity of your heart

a chest X-ray that helps your doctor see if your heart is enlarged

a Holter monitor which consists of a small machine you wear that records your heart's rhythm for 24 to 48 hours

an electrophysiology study that can check your heart's electrical function

a coronary angiography that can check how blood flows through your heart

Treatment for heart palpitations ?

Treatment depends on the cause of your palpitations. Your doctor will need to address any underlying medical conditions.

Sometimes, doctors aren't able to find the cause. Heart palpations usually don't require treatment unless your doctor finds they're caused by an underlying condition.

If your palpitations don't have a medical cause, you may be able to reduce symptoms by:

Managing stress and anxiety. Including relaxation techniques in your weekly routine may help reduce heart palpations caused by stress or anxiety. There are many options, but some popular options include:

physical activity

breathing exercises

yoga

tai chi

meditation

biofeedback

Avoiding stimulants. Try to avoid or minimize your intake of caffeine. Some illegal drugs like cocaine and ecstasy are stimulants that can cause heart palpitations. Also ask your doctor whether any of your prescription medications contain stimulants that could cause heart palpitations.

Watching your diet. Low blood sugar can increase your risk of heart palpations. Replacing sugar and other simple carbs with complex carbs may help keep your blood sugar levels stable. For instance, try to swap sugary sodas, baked goods, and fruit juice concentrates with whole grains and fresh fruit and vegetables.

Changing medications. If you think your medications are contributing to your palpitations, talk with your doctor about alternatives. However, don't stop taking any medication without first talking with your doctor.

Quitting smoking if you smoke. In a review of studies published in 2018, researchers found evidence that people who smoke are at an increased risk of atrial fibrillation, the most common cause of arrhythmia.

Preventing heart palpitations ?

If your doctor or cardiologist feels that treatment isn't necessary, taking the following steps may help lower your risk of heart palpitations:

Try to identify your triggers so you can avoid them in the future. Keep a log of your activities, including the foods and beverages you consume, any medication you take, as well as your emotional state, and take note of when you get palpitations.

If you feel stressed or overwhelmed, try to add relaxation techniques to your daily routine.

If a medication is causing heart palpitations, ask your doctor if there are any alternatives.

Limit or stop your intake of caffeine. Avoid energy drinks and coffee.

Avoid stimulant recreational drugs.

Don't smoke or use tobacco products. If you smoke, consider limiting it or quitting.

Exercise regularly.

Stick to a nutrient-rich diet.

Try to prevent your blood sugar from getting too low.

If you consume alcoholic beverages, minimize your intake.

Try to keep your blood pressure and cholesterol levels managed well.

The bottom line

Heart palpitations are a common condition. Most of the time, they're harmless and don't require medical attention. However, in some cases, they can indicate a potentially serious condition.

If you have an underlying heart condition, it’s important to talk with your doctor about your heart palpitations. If you’re not sure if you have a heart condition, but your heart palpitations happen often or seem to be lasting longer or occurring more frequently, be sure to visit your doctor for a proper diagnosis.

What Are the Stages of Mitral Valve Regurgitation?

Doctors classify mitral valve regurgitation into four progressive stages. Symptoms typically don’t appear until the final stages but monitoring and treatment in earlier stages may help slow progression.

Mitral regurgitation, or mitral valve regurgitation, is when your mitral valve doesn’t properly close and blood flows backward through your heart. Your mitral valve is located between the two chambers on the left side of your heart.

Guidelines from the American College of Cardiology (ACC) and American Heart Association (AHA) divide mitral regurgitation into four stages — A to D — depending on the severity of its signs and symptoms. Stage A is the least severe and stage D is most severe.

Let’s examine each of the stages of mitral valve regurgitation more closely.

Mitral valve and heart anatomy
Your heart comprises four chambers: two upper chambers called atria (singular: atrium) and two lower chambers called ventricles.

Your mitral valve is located between your left atrium and left ventricle. It comprises several structures that can become damaged, includingTrusted Source:

Leaflets: two structures that open and close to let blood through
Mitral annulus: a fibrous ring that acts as the leaflet insertion site

Chordae tendineae (chords): fibrous strings that pull open the leaflets

Papillary muscles: muscles that pull on chordae tendineae to open your leaflets

Was this helpful?

Stage A mitral regurgitation: At risk

Stage A mitral regurgitation is the least severeTrusted Source. People in this stage are at risk of developing mitral regurgitation.

People in stage A have:

no symptoms

no related structural changes in their heart due to changes in blood flow

typical leaflets, chords, and annulus in the presence of coronary artery disease or cardiomyopathy

very small amount of mitral regurgitation

Treatment

You likely won't need treatment for Stage A mitral regurgitation. Still, a doctor may want to monitor your condition regularly and recommend lifestyle changes to support your overall heart health, such as:

reducing sodium intake

limiting alcohol

quitting or avoiding smoking

losing weight if you have overweight or obesity

Stage B mitral regurgitation: Progressive

Progressive mitral regurgitation is the second least severe stage. People in this stage still don't have symptoms, but they have a higher degree of blood volume flowing backward into their left atrium.

People in stage B might have:

mild left atrial enlargement

mild mitral regurgitation

no left ventricular enlargement or change in the blood vessels leading to the lungs

mild to severe mitral valve prolapse, meaning the mitral valve buckles inward into the left atrium

mild restriction of the mitral valve leaflets and increased mitral annulus size

Treatment

Stage B mitral regurgitation also doesn't generally need any treatment. Like with stage A, a doctor will likely want to monitor your heart regularly and may recommend lifestyle changes.

Stage C mitral regurgitation: Asymptomatic severe

Stage C mitral regurgitation also doesn't cause symptoms but causes severe mitral regurgitation. People in this stage may have:

severe mitral valve prolapse

thickening of the leaflets, possibly due to an infection or chest radiation therapy

valve inflammation with leaflet restriction

severe mitral regurgitation

moderate or severe left atrial enlargement

left ventricle enlargement

pulmonary hypertension at rest or with exercise

Doctors can divide stage C into stages C1 and C2 based on the degree of change to your left ventricle.

Treatment

ACC/AHA guidelinesTrusted Source recommend surgery for people with stage C2 disease. Such surgeries involve either repairing or replacing the mitral valve.

Experts recommend mitral valve repair over mitral valve replacement when possible.

Stage D mitral regurgitation: Symptomatic severe

People in stage D have features similar to people in stage C but with increased severity and symptoms. People with stage D mitral regurgitation may have symptoms that include:

shortness of breath with exertion or at rest

fatigue

a reduced exercise capacity

heart palpitations

chest pain

swelling in their

legs

abdomen

neck veins

Treatment

Experts recommend mitral valve surgery for people with stage D mitral valve regurgitation. People at a high risk of surgical complications may undergo a procedure called transcatheter edge-to-edge repair.

What Do Heart Palpitations Feel Like?

If you have heart palpitations, it may feel like your heart is:

Racing

Skipping a beat

Flip-flopping

Pounding in your chest and even your neck

Sometimes, you may feel dizzy or even faint. This may be a sign of a more serious condition.

What Causes Heart Palpitations?

There can be many. Usually, palpitations are either related to your heart or the cause is unknown.

Non-heart-related causes include:

Strong emotions like anxiety, fear, or stress. They often happen during panic attacks.

Vigorous physical activity

Caffeine, nicotine, alcohol, or illegal drugs such as cocaine and amphetamines

Medical conditions, including thyroid disease, a low blood sugar level, anemia, low blood pressure, fever, and dehydration

Hormonal changes during menstruation, pregnancy, or just before menopause. Sometimes, palpitations during pregnancy are signs of anemia.

Medications, including diet pills, decongestants, asthma inhalers, and some drugs used to prevent arrhythmias (a serious heart rhythm problem) or treat an underactive thyroid

Some herbal and nutritional supplements

Abnormal electrolyte levels

Heart palpitations after eating

Some people have palpitations after heavy meals rich in carbohydrates, sugar, or fat. Sometimes, eating foods with a lot of monosodium glutamate (MSG), nitrates, or sodium can bring them on, too.

If you have heart palpitations after eating certain foods, it could be due to food sensitivity. Keeping a food diary can help you figure out which foods to avoid.

Heart palpitations at night

If you have heart palpitations at night, you may have them during the day, too. You're just too busy to notice them. If you drink alcohol before bed or eat a big meal, that could contribute to them, too. Take some deep breaths and drink a glass of water -- dehydration can make palpitations worse.

Heart palpitations and anxiety

Anxiety sets off your body's fight or flight response. This increases your heart rate. They usually go away after a few minutes. If you notice them, you can try some deep breathing. If you get them frequently, talk to your doctor about counseling and possibly anti-anxiety medications.

Can low potassium cause heart palpitations?

If your potassium levels become very low, you can develop heart palpitations. Some reasons that might happen include:

Laxative use
Too much caffeine
A gastrointestinal bug that causes diarrhea and vomiting
Undiagnosed thyroid problems
They can also be related to heart disease. When they are, they're more likely to represent arrhythmia. Heart conditions tied to palpitations include:

Prior heart attack
Coronary artery disease

Heart failure

Heart valve problems

Heart muscle problems

Palpitations in Pregnancy ?

When you're pregnant, your heart has to work harder to pump extra blood throughout your entire body. This can lead to heart palpitations. They may feel uncomfortable but they are usually harmless. They go away after you give birth. Some ways to avoid them include:

Drink a lot of water. Dehydration makes heart palpitations worse.

Limit caffeine, sugar, and fat.

Try some deep breathing exercises.

If these don’t help, you can talk to your doctor about taking a type of drug known as a beta-blocker during your pregnancy.

When to Worry About Heart Palpitations ?

In rare cases, palpitations can be a sign of a more serious heart condition. If you have heart palpitations, see your doctor. Get immediate medical attention if they come with:

Shortness of breath

Dizziness

Chest pain

Fainting

Back, neck, jaw, or stomach pain

Sweating

Nausea

All of these could signal a heart attack.

Can heart palpitations cause loss of breath?

They can, but they can also signify a more serious condition such as a heart arrhythmia or even a heart attack. They should be checked right away.

Heart Palpitation Diagnosis ?

Your doctor will:

Give you a physical exam

Take down your medical history

Want to know about your current medications, diet, and lifestyle

Ask for specifics about when, how often, and under what circumstances your palpitations occur

Sometimes, a blood test can help your doctor find the cause of your palpitations. Other useful tests include:

Electrocardiogram (EKG). This can be done while you’re at rest or exercising. The latter is called a stress EKG. In both cases, the test records your heart's electrical signals and can find unusual heart rhythms.

Holter monitoring. You’ll wear a Holter monitor on your chest. It records your heart's electrical signals for 24 to 48 hours while you're doing normal activities. It can identify rhythm differences that weren't picked up during an EKG.

Event recording. You’ll wear a device on your chest and use a handheld gadget to record your heart's electrical signals when symptoms occur.

Chest X-ray. Your doctor will check for changes in your lungs that could come from heart problems. For example, if they find fluid in your lungs, it may come from heart failure.

Echocardiogram. This is an ultrasound of your heart. It provides detailed information about its structure and function.

If necessary, your doctor may refer you to a cardiologist for more tests or treatment.

Heart palpitations but normal ECG

Sometimes you may have heart palpitations but your ECG is normal. Your doctor may want to run other tests to make sure, like a Holter monitor. But as long as you don’t have other symptoms such as chest pain, your heart is most likely healthy.

Treatment for Heart Palpitations ?

This depends on their cause. Often, palpitations are harmless and go away on their own. In that case, no treatment is needed.

If your doctor doesn't find a cause, they may advise you to avoid the things that might trigger the palpitations. Strategies may include:

Ease anxiety and stress. Leave a stressful situation and try to be calm. Anxiety, stress, fear, or panic can cause palpitations. Other common ways to stay calm include:

Relaxation exercises
Yoga
Tai chi
Biofeedback
Guided imagery
Aromatherapy
Cut out certain foods, beverages, and other substances. These may include:

Alcohol
Nicotine
Caffeine
Illegal drugs
Talk to your doctor about certain medications. You may have to steer clear of:

Cough and cold medicines
Certain herbal and nutritional supplements

If lifestyle changes don’t help, you may be prescribed medications. In some cases, these will be beta-blockers or calcium-channel blockers.

If your doctor finds a reason for your palpitations, they will focus on treating that reason.

If they’re caused by a medication, your doctor will try to find a different treatment.

If they represent an arrhythmia, you may get medications or procedures. You may also be referred to a heart rhythm specialist known as an electrophysiologist.

How to stop heart palpitations from anxiety

To stop heart palpitations from anxiety, you’ll need to treat the underlying condition. Some ways to do that include:

Talk therapy. One popular method is cognitive behavior therapy. It teaches you different ways to think and behave in situations to help your anxiety.
Antidepressant and anti-anxiety medications.
Beta-blockers. This class of drugs treats high blood pressure, but it can also slow down your heartbeat, too.
Stress management techniques like exercise, yoga, and meditation.
How to stop heart palpitations quickly

It’s important to find the cause of your heart palpitations to help treat them. But there are things you can do at home to help them go away faster:

Take some deep breaths. One good technique is box breathing. Inhale for a count of four, hold your breath for a count of four, then exhale for a count of four. Hold your breath for another count of four.

Vagal maneuvers. These actions activate your vagus nerve, which helps to control your heart rate. One way to do it is to tense up your muscles, then bear down like you are about to have a bowel movement.

Limit caffeine and alcohol. Both can cause palpitations. They also dehydrate you, which can worsen palpitations.

Dizziness

What is dizziness?

Dizziness is the feeling of being lightheaded, woozy, or off-balance. It’s linked to the sensory organs, specifically the eyes and ears, so it can sometimes cause fainting. Dizziness isn’t a disease itself but rather a symptom of various disorders.

Dizziness is common. Occasional dizziness isn’t something to worry about. However, it’s important to call a doctor immediately if you’re experiencing repeated episodes of dizziness for no apparent reason or for a prolonged period.

Dizziness causes ?

Dizziness has a variety of possible causes.

Vertigo and disequilibrium
True dizziness is the feeling of lightheadedness or nearly fainting.

Vertigo and disequilibrium may both cause a feeling of dizziness, but these two terms describe distinct sensations.

Vertigo is characterized by a spinning sensation, like the room is moving. It may also feel like motion sickness or as if you’re leaning to one side.

Disequilibrium is a loss of balance or equilibrium.

A common cause of vertigo and vertigo-related dizziness is benign positional vertigo (BPV). BPV leads to short-term dizziness when someone changes positions quickly, such as sitting up in bed after lying down.

Dizziness and vertigo can also be triggered by Meniere’s disease. This condition causes fluid to build up in the ear with associated ear fullness, hearing loss, and tinnitus.

Another possible cause of dizziness and vertigo is an acoustic neuroma. This noncancerous tumor forms on the vestibulocochlear nerve (auditory nerve), which connects the inner ear to the brain.

Common causes
Losing too much fluid can result in dehydration, one of the most common causes of dizziness. Symptoms of dehydration include thirst and dry skin.

Other common causes of dizziness include a migraine attack or alcohol.

Dizziness can also result from a problem in the inner ear, which is the area that senses movement and regulates balance. These problems include hearing loss.

Dizziness may be linked to certain medications, too, including:

muscle relaxants
antiepileptic drugs
antihistamines
blood pressure medications
Other possible causes
Some other potential causes of dizziness include:

Sudden drop in blood pressure: Sudden low blood pressure may be caused by various medical conditions or even from standing up (orthostatic hypotension). It can lead to dizziness and falling, especially in older adults.
Cardiomyopathy: In this condition, the heart muscles become rigid and weak and pump less blood. Symptoms can include dizziness, fainting, and trouble breathing.
Heart attack: While chest pain is the most common indicator of a heart attack, dizziness or lightheadedness can also be symptoms. They occur if there's not enough blood reaching your brain.
Arrhythmia: Arrhythmia occurs when the heart beats at an atypical pace. It can cause dizziness, lightheadedness, or shortness of breath.
Circulation problems: Cardiomyopathy, heart attack, and other heart conditions can result in circulation problems, where your heart is unable to pump enough blood. This can cause you to feel dizzy.
Excessive exercise: Overexerting yourself may make you feel dizzy or lightheaded. It can also lead to dehydration and heat exhaustion, which can both cause dizziness.
Heat exhaustion: If you're in a hot environment and sweating excessively, you're likely experiencing heat exhaustion. The condition may make you feel dizzy, thirsty, and weak.
Decrease in blood volume: Low blood volume can result from bleeding or dehydration. It can cause dizziness, fatigue, and low blood pressure. Learn more about the relationship between dehydration and blood pressure.
Anxiety disorders: Dizziness may be related to anxiety with no other physical causes. You may have repeated episodes of dizziness.
Anemia: Anemia is a low red blood cell count. Low levels of iron-rich hemoglobin in your red blood cells mean the cells can't transport enough oxygen throughout the body. The lack of oxygen caused by anemia may make you feel dizzy, tired, or short of breath.

Hypoglycemia: Hypoglycemia, or low blood sugar, can make you feel shaky, lightheaded, or hungry. Severe hypoglycemia is a serious condition that can cause a seizure. Discover other symptoms associated with hypoglycemia.

Carbon monoxide poisoning: If carbon monoxide fumes from cars, grills, or furnaces build up indoors, breathing them in can be fatal. Dizziness, headache, and vomiting are all symptoms.

Motion sickness: Traveling by car or boat or experiencing other types of motion can give you motion sickness. You may feel dizzy and nauseous.

Multiple sclerosis (MS): Multiple sclerosis (MS) damages the brain and spinal cord. It causes a range of symptoms that can include dizziness.

Parkinson's disease: Dizziness is a common symptom of Parkinson's disease, a neurological condition that causes shaking and balance issues. Dizziness may become more noticeable in later stages of Parkinson's.

Infections: A variety of infections are associated with dizziness. Examples include:

COVID-19: You may feel dizziness and vertigo while you have or recover from COVID-19. The dizziness and vertigo may be associated with headaches and a loss of balance.

Other viral infections: Other viral infections, such as the flu or a cold, may also cause you to feel dizzy or lightheaded. These infections may be associated with dehydration as well.

Ear infection: An ear infection may lead to inflammation in your inner ear, causing dizziness and balance troubles. Ear infections are associated with both bacterial and viral causes.

Labyrinthitis and vestibular neuritis: Labyrinthitis and vestibular neuritis occur when specific nerves in your inner ear become inflamed. Triggers often include viral infections, but they can vary. Bacterial infections are more common in people with labyrinthitis than in people with vestibular neuritis.

Symptoms related to dizziness ?

People who are dizzy may experience various sensations, including:

lightheadedness or faintness

a false sense of spinning

unsteadiness

a loss of balance

a feeling of floating

Sometimes, dizziness is accompanied by nausea, vomiting, or fainting. Seek emergency medical help if you have these symptoms for extended periods.

When to call a doctor about dizziness

It’s important to call a doctor if you have repeated bouts of dizziness. Also, notify a doctor immediately if you experience sudden dizziness along with:

a head injury
a headache
neck stiffness
a high fever
ongoing vomiting
blurred vision
hearing loss
tinnitus
difficulty speaking
numbness or tingling
droopiness of the eye or mouth
loss of consciousness
chest pain
heart palpitations or a low heart rate
These symptoms could indicate a serious health problem, so it’s important to seek medical attention as soon as possible. According to a 2021 Swedish study, 5% of people who used emergency services for dizziness had a time-critical medical issue.

If you don’t already have a primary care doctor, the Healthline FindCare tool can help you find a physician in your area.

Dizziness treatment ?

Treatment for dizziness focuses on the underlying cause. In most cases, home remedies and medical treatments can help you manage the underlying cause.

The following are potential treatments for the causes of dizziness:

Vertigo and benign positional vertigo (BPV): BPV, a common cause of vertigo, can often be resolved with the Epley maneuver. This exercise involves turning your head in specific ways to help alleviate symptoms. Surgery is typically not needed, but it’s an option for people who can’t manage their BPV otherwise.

Meniere's disease: This condition has no cure, but it may improve with medications, a healthful low-salt diet, antibiotic or corticosteroid injections, or ear surgery.

Acoustic neuroma: If the tumor grows, you may need radiation or surgery.

Dehydration: To help treat dehydration, drink plenty of fluids.

Migraine: Treatment for migraine attacks includes medications and lifestyle changes, such as learning to identify and avoid migraine triggers.

Alcohol: Drinking less alcohol may help you avoid dizziness from overconsumption.

Inner ear issues: You may be able to manage inner ear issues with medications or at-home exercises that help you maintain your balance.

Medications: If medications seem to be causing your dizziness, speak with a doctor about changing your medication or dose.

Sudden drop in blood pressure: Treatment for sudden low blood pressure depends on the cause or underlying condition, but it may involve adjusting your medications, exercising, or changing positions slowly when standing up.

Cardiomyopathy: This condition may be improved with medications or lifestyle changes such as quitting smoking and eating a heart-healthy diet.

Heart attack: A heart attack requires emergency treatment, which may include medications, oxygen therapy, or surgery.

Arrhythmia: Arrhythmia doesn't always require treatment. Healthy lifestyle choices, such as exercising and eating a balanced diet, can help you manage your symptoms. Heart medications are also available. Surgery is reserved for more serious cases.

Circulation problems: Circulation problems may improve with regular exercise, a heart-healthy diet, medications, or surgery.

Excessive exercise or heat exhaustion: Drinking plenty of fluids can help when dizziness is caused by excessive exercise or heat exhaustion.

Decrease in blood volume: Treatment for low blood volume focuses on restoring fluids through an intravenous (IV) line and treating underlying causes such as bleeding.

Anxiety disorders: Medications and anxiety-reducing techniques, such as therapy, can help with anxiety disorders.

Anemia: Iron supplements, medications, and eating a balanced diet can help treat anemia.

Hypoglycemia: If you have symptoms of hypoglycemia, try drinking fruit juice or soda or taking glucose tablets. For severely low blood glucose levels, you may need an injection of the hormone glucagon. Discover other emergency treatments for hypoglycemia.

Carbon monoxide poisoning: This condition requires immediate medical care. It may be treated with oxygen, a ventilator, and IV fluids.

Motion sickness: You can try ginger candy, aromatherapy, and over-the-counter (OTC) medications such as diphenhydramine (Benadryl) for motion sickness. Learn more about remedies for motion sickness.
Multiple sclerosis (MS): This condition currently has no cure, but physical therapy and medications may help with symptoms.
Parkinson's disease: Medications, surgery, and exercises may improve Parkinson's disease symptoms, though there is no cure at the moment.
Infections: Treatment will depend on the cause of the infection but will likely include hydration and rest.
COVID-19: Staying hydrated, resting, and doing balance exercises may help with dizziness that persists after a COVID-19 infection. If your symptoms get worse, it's important to have a doctor check for other underlying conditions.
Other viral infections: Hydration and rest are key to recovery. Antiviral medications are also available to help you manage conditions such as the flu. OTC medications such as decongestants and pain relievers can help treat a cold.
Ear infection: An ear infection may get better with rest and drinking fluids, or it may be treated with antibiotics.
Labyrinthitis and vestibular neuritis: Treatment often includes medications such as antidizziness medications, antihistamines, and antibiotics.
Stroke: You need emergency medical care for a stroke, which may include medications as well as surgery to repair and prevent internal bleeding.
Malignant tumor: Treatment may include surgery, radiation therapy, chemotherapy, or other medications.
Brain disorders: Treatments will vary depending on the disorder. Possible treatments include pain relievers, physical therapy, speech therapy, and surgery.

Diagnosing the causes of dizziness ?

A doctor can narrow down the cause of your dizziness by performing a physical examination. They'll ask you questions about your dizziness, including:

when it occurs
the situations where it occurs
how severe your symptoms are
which other symptoms occur with the dizziness
A doctor may also:

check your eyes and ears
perform a neurological exam

observe your posture

If the doctor suspects certain causes, including carbon monoxide poisoning, heart conditions, or a stroke, they may recommend a CT scan, an MRI, or another imaging test. You may also need additional tests.

In some cases, a doctor can't determine the cause of dizziness.

Balance tests

A doctor or specialist may perform tests to check your balance. These tests look for problems with your inner ear that may affect your balance or cause dizziness.

They include:

computerized dynamic posturography (CDP) test, where you try to maintain your balance while standing on a moving platform

Romberg test, which measures how well you keep your balance when standing with your eyes closed for 1 minute

electronystagmography (ENG) test, which involves a doctor placing sensors around your eyes and measuring your eye movements

videonystagmography (VNG) test, in which you'll wear goggles and view light patterns so a doctor can measure your eye movements

rotary test, where goggles record your eye movements while you sit in a rotating, motorized chair

Tests for vertigo

If you have vertigo, the doctor may perform the following tests:

Dix-Hallpike maneuver, which involves turning your head and then switching quickly between lying down and sitting up so a doctor can check if you experience vertigo

vestibular evoked myogenic potentials (VEMP) test, in which a doctor looks for problems in your inner ear by playing sounds into earphones while you move your head and eyes

video head impulse test, which records your eye movements as you try to keep your eyes on a target while moving your head

Hearing tests

Hearing tests may also be performed for dizziness and balance issues. These tests may include:

otoacoustic emissions test, in which a small earphone plays sounds in your ear and a doctor measures the echoes that come back from your inner ear

tympanometry, in which a doctor blows air into your ear to evaluate the movement of your eardrum

electrocochleography, which tests the electrical activity of the cochlea (a hollow bone in the inner ear) using an electrode placed in the ear

Electrocochleography can help diagnose Meniere's disease.

Cardiac tests

Tests that can help a doctor diagnose cardiac causes of dizziness include the:

electrocardiogram (EKG), which they use to measure your heart's electrical activity

echocardiogram, which is a type of ultrasound that reveals how well your heart works

stress test, where a doctor monitors your heart as you use a treadmill or perform another type of exercise

Tips for managing dizziness

Follow these tips if you have recurrent bouts of dizziness:

Sit or lie down immediately when you feel dizzy and rest until the dizziness goes away. This can prevent you from possibly losing your balance, which may lead to falling and serious injury.

Use a cane or walker for stability, if necessary.

Always use handrails when walking up or down stairs.

Try activities that can help improve your balance, such as yoga and tai chi.

Avoid moving or switching positions suddenly.

Avoid driving a car or operating heavy machinery if you frequently experience dizziness without warning.

Avoid caffeine, alcohol, and tobacco. Using these substances may trigger dizziness or make it worse.

Drink plenty of water and get sufficient sleep. Avoiding stressful situations may also be helpful.

If you suspect a medication is causing your dizziness, talk with your doctor about lowering the dose or switching to another medication.

Take an OTC medication such as meclizine (Antivert, Bonine) if you experience nausea along with dizziness. These medications may cause drowsiness, so do not use them when you need to be active or productive.

Rest in a cool place and drink water if your dizziness is caused by overheating or dehydration.

Always speak with a doctor if you're concerned about the frequency or severity of your dizziness.

12 Reasons You're Feeling Dizziness, Ringing in Your Ears, or Pressure in Your Head ?

Several health conditions can cause dizziness, ringing in your ears, and pain or pressure in your head, some of which may be serious. If you experience symptoms that are severe or persistent, it's important to consult a doctor.

Getty Images

Dizziness and ringing in the ears that interfere with your daily activities are also known by the medical terms vertigo and tinnitus. These symptoms can make it hard to work, relax, and even sleep. Pain and pressure in your head or sinuses can have the same effects.

These symptoms can sometimes be signs of minor issues, such as sinus infections or headaches. But when these symptoms are severe or won't go away, they may need immediate medical attention.

Read on to learn 12 possible causes of ringing in your ears, dizziness, and pressure in your head, and what you can do about them.

When to get help

Get immediate help for the following signs, as they may indicate a medical emergency:

feeling faint or losing consciousness
chest pain
shortness of breath
sudden change in vision or hearing
bloody nose
dizziness that worsens over time or persists for several hours
headache that lasts for more than a day and doesn't respond to over-the-counter (OTC) pain relievers
tingling or numbness in your limbs, especially on only one side
weakness in one side of your face or body
slurred speech
loss of vision in one eye
unable to stand or walk

Was this helpful?

1. Sinusitis

Inflammation of your sinuses caused by infection is commonly known as sinusitis.

Short-lived sinusitis cases are often caused by viral infections, like the common cold. Chronic sinusitis may be the result of a bacterial infection.

The main symptoms of sinusitis are:

sinus pressure
thick, colored drainage from your nose
congestion
cough
fatigue
Home remedies
You can treat a minor case of sinusitis at home with rest, fluids, and OTC pain relievers, such as ibuprofen and acetaminophen.

Medical treatment
If your sinus infection persists, you may need to take antibiotics to treat it.

In some rare cases, chronic sinusitis results from polyps in the sinuses. Your doctor may recommend surgery to remove them.

2. Headache
The National Institutes of Health (NIH)Trusted Source reports that headache is the most common form of pain. Doctors have identified more than 150 types of headache disorders.

Common headache triggers include:

poor posture
dehydration
stress
weather or changes in air pressure
drinking alcohol
bright or strong lights
The type of pain you're experiencing can often tell you what type of headache you have. For example, feeling like a tight band is stretched around your head might mean you have a tension headache. Tension headaches are often caused by pressure changes or poor posture.

Home remedies

Rest and OTC pain relievers can often help with minor headache symptoms. You can also try applying a cold compress across your forehead or the back of your neck.

Other treatments may include:

managing stress

avoiding headache triggers, such as alcohol or flashing lights

Medical treatment

Some prescription medications may help prevent or ease headaches, including:

beta blockers

calcium channel blockers

methysergide maleate

antidepressants, such as amitriptyline

anti-seizure medications like valproic acid

dihydroergotamine

lithium

topiramate

3. Tinnitus

Described by many as a “ringing in the ears,” tinnitus is often caused by damage to the middle or inner ear. Certain headache disorders can also cause a ringing in the ears.

Tinnitus can seem worse at night when you’re trying to sleep.

Home remedies

Distracting noises, including low-volume music or a fan, can sometimes make tinnitus feel more manageable.

Stress management and exercise may help, too.

Medical treatment

Biofeedback and antidepressant drugs may help ease tinnitus symptoms.

Hearing aids can also help if you’re having trouble with conversations and everyday sounds because of tinnitus.

4. Vertigo

Vertigo is a sense of dizziness that can feel like you or your surroundings are spinning.

Vertigo is more of a symptom than its own condition. But an inner ear disorder called benign positional vertigo (BPV) can bring on dizziness, nausea, and related symptoms.

Home remedies

If you’re experiencing vertigo, you can try resting or marching in place until the sensation goes away.

If BPV is the problem, you can learn exercises that are meant to restore balance within the ear. Talk with a medical professional about trying this therapy. They might teach you a head exercise to move the small crystals of calcium carbonate in your ear that cause BPV.

Medical treatment

Medications such as antihistamines and beta-blockers can help if your symptoms are severe.

5. Vestibular migraine

Vestibular migraine is a type of migraine that doesn’t necessarily cause a headache but can cause symptoms such as vertigo and lightheadedness.

You won’t always know what causes vestibular migraine, but you can learn some of its common triggers. These include:

stress

fatigue

certain foods and beverages, like chocolate, red wine, and coffee

Home remedies

Stay hydrated and get enough sleep to help lower your risk of vestibular migraine episodes. Migraine triggers vary from person to person, so learning to identify and avoid your own triggers can provide further relief.

Medical treatment

Prescription drugs that treat migraine may also help reduce vestibular migraine symptoms, such as:

beta-blockers

triptans

anti-seizure drugs

calcium channel blockers

CGRP antagonists

6. Meniere’s disease

Another condition that causes both vertigo and tinnitus is Meniere’s disease. According to the National Institutes of Health (NIH)Trusted Source, this condition affects more than half a million people in the United States. Meniere’s disease is the result of fluid changes in the inner ear.

Home remedies

Rest and stress management can help with the symptoms of Meniere’s disease. You can also try making changes to your diet to limit your salt and sugar intake, and prevent fluid buildup.

Medical treatment

Motion sickness and anti-nausea medications can help. You might also benefit from diuretics that reduce fluid levels in your body.

7. Grave’s disease

Your symptoms might also be caused by Grave’s disease, an autoimmune disease that affects your thyroid gland. Grave’s disease can trigger feelings of pressure behind your eyes.

Medical treatment

Antithyroid drugs and radioactive iodine therapy may help reduce your symptoms.

8. Concussion

You can get a concussion after a blow to the head, or after whiplash, an injury that causes your head to move back and forth unusually fast. A concussion is a mild traumatic brain injury that requires medical attention.

Home remedies

A doctor’s evaluation is critical if you think you might have a concussion.

During a concussion, rest and OTC pain relievers may help relieve the initial pain and disorientation. After a concussion, stay in a dark, quiet place, and avoid stimulation from lights and sounds.

Medical treatment

The only way to treat a concussion is to rest and avoid contact sports and other activities that may threaten the head. Your doctor will still want to monitor you for signs of bleeding or swelling while you recover. These signs might mean you need treatment for a more serious injury.

9. Acoustic neuroma

The thought of a tumor can be frightening, but not all tumors are cancerous.

For example, an acoustic neuroma is a benign tumor in the brain. While usually harmless, an acoustic neuroma can grow and put pressure on important nerves.

Medical treatment

Treatment isn't always necessary, but radiation can sometimes help to shrink the tumor. This type of targeted radiation is called stereotactic radiosurgery.

Regular monitoring with an MRI scan is also important. This will make sure that the tumor doesn't grow to a large size that can disrupt nerve activity and brain function.

10. Ischemic stroke

An ischemic stroke happens when a blood vessel supplying blood to brain tissue is blocked or the arteries supplying blood narrow significantly.

An ischemic stroke is a medical emergency. Seek treatment right away if you believe you're having the symptoms of this kind of stroke, such as:

blindness in one eye
double vision
feeling weak or paralyzed in one or more of your arms and legs
dizziness
vertigo
feeling confused
losing coordination
face drooping on one side

Medical treatment

During an ischemic stroke, tissue plasminogen activators are given to dissolve blood clots. Surgical devices also exist that can break up clots and restore healthy blood flow.

General treatment approaches to prevent ischemic stroke include:

oral blood thinners, such as aspirin
blood pressure control
lowering cholesterol
certain lifestyle changes, like quitting smoking, losing weight, and increasing physical activity

11. Aneurysm

An aneurysm is a weakness in the wall of a blood vessel. When an aneurysm bursts, the result is a hemorrhagic stroke.

An aneurysm is sometimes the result of high blood pressure. An aneurysm is much more dangerous than an ischemic stroke.

This condition must be treated as a medical emergency.

Medical treatment

Medications to reduce blood pressure and slow bleeding may help.

In severe cases, you may need surgery to repair the damaged artery.

12. Brain cancer

According to the American Cancer SocietyTrusted Source, the chance for a person of developing a malignant brain tumor in their lifetime is less than 1 percent. In other words, it’s a pretty rare occurrence.

That said, regular brain scans are critical to detect brain tumors early on. This is especially true if you have a family history of brain cancer or are undergoing treatment for a cancer that may have spread to your brain.

Talk with a doctor if you have any concerns.

What Causes Sudden Dizziness and Nausea?

Inner ear problems are the most common causes of sudden dizziness and nausea. These include BPPV, Meniere's disease, and vestibular neuritis. But there are several other possible causes.

A sudden spell of dizziness can be disconcerting. You may feel sensations of lightheadedness, unsteadiness, or spinning (vertigo). In addition, you may sometimes experience nausea or vomiting.

But what conditions can cause sudden, intense dizzy spells, particularly when they're accompanied by nausea or vomiting? Read on to discover more about potential causes, possible remedies, and when to see a doctor.

Causes of sudden dizziness and nausea

There are many reasons why you may suddenly feel dizzy. Most often, though, sudden dizziness occurs due to problems in your inner ear, which is responsible for maintaining balance.

Sudden intense dizziness accompanied by nausea or vomiting is the hallmark symptom of certain conditions and may be causedTrusted Source by:

low blood sugar
heat exhaustion
anxiety or panic disorders
medication side effects

Below, we'll explore in more detail a few of the other conditions that can cause sudden dizziness and nausea.

Benign paroxysmal positional vertigo (BPPV)

BPPV is a condition that causes sudden, intense feelings of dizziness. The sensation often feels like everything around you is spinning or swaying, or that your head is spinning on the inside.

When dizziness is severe, it's often accompanied by nausea and vomiting.

With BPPV, symptoms almost always occur when you change the position of your head. An episode of BPPV usually lasts less than a minute. Even though the dizziness is short lived, the condition can become disruptive to daily activities.

BPPV happens when crystals in a specific part of your inner ear move out of place. Often, the exact cause of BPPV is unknown. When a cause can be established, it's often the result of:

injury to the head
inner ear disorders
damage during ear surgery
unnatural positioning on your back for extended periods, like lying in a dentist's chair
When these crystals are dislodgedTrusted Source, they move into another part of your inner ear where they don't belong. Because the crystals are sensitive to gravity, changes in the position of your head can cause intense dizziness that seems to come out of nowhere.

Treatment typically involves your doctor maneuvering your head in specific directions to reposition the dislodged crystals. This is called canalith repositioning, or the Epley maneuver.

It's possible for BPPV to go away on its own, though the condition has a recurrence rate of about 22 percent over 5 years. In rare cases, surgery may be necessary.

Meniere's disease
Meniere's disease also affects the inner ear. It typically only affects one ear. People with this condition can experience severe vertigo, which may lead to feelings of nausea. Other symptoms of Meniere's disease includeTrusted Source:

muffled hearing
a feeling of fullness in the ear
ringing in the ears (tinnitus)
hearing loss
loss of balance
The symptoms of Meniere's disease can come on suddenly or after a short episode of other symptoms like muffled hearing or ringing in your ears. Sometimes, episodes may be spaced apart, but other times they can happen closer together.

Meniere’s disease happens when fluid gathers in your inner ear. What causes this fluid buildup is unknown, although infections, genetics, and autoimmune reactions are suspected.

The treatment options for Meniere’s disease includeTrusted Source:

medications to treat the symptoms of dizziness and nausea
salt restriction or diuretics to help reduce the amount of fluid your body retains
injections with steroids or the antibiotic gentamicin to alleviate dizziness and vertigo
pressure treatment, during which a small device delivers pulses of pressure to prevent dizziness
surgery, when other treatments are not effective
Labyrinthitis and vestibular neuritis
These two conditions are closely related. Both have to do with inflammation in your inner ear.

Labyrinthitis happens when a structure called the labyrinth in your inner ear becomes inflamed.
Vestibular neuritis involves inflammation of the vestibulocochlear nerve in your inner ear.
With both conditions, dizziness and vertigo can come on suddenly. This can lead to nausea, vomiting, and problems with balance. People with labyrinthitis may also experienceTrusted Source ringing in the ears and hearing loss.

It’s unknown what causes labyrinthitis and vestibular neuritis. However, it’s believed that a viral infection may be involved.

Treatment often involves resting in bed, avoiding bright light, and avoiding activities like watching TV or reading while symptoms are present. A person may need to take medications that can relieve symptoms like dizziness and nausea.

If balance problems persist, treatment may involveTrusted Source a type of therapy called vestibular rehabilitation. This therapy uses various exercises to help you adjust to changes in balance.

Vestibular migraine
People with vestibular migraine experience dizziness or vertigo in association with migraine attacks. Other symptoms can include nausea and sensitivity to light or sound. In some cases, a headache may not even be present.

The length of these symptoms can range from 5 minutes to 72 hoursTrusted Source. Like other types of migraine, symptoms may be caused by certain triggers like stress, lack of rest, or certain foods.

It's unknown what causes vestibular migraine, although genetics may play a role. Additionally, conditions like BPPV and Meniere's disease have been associated with vestibular migraine.

Treatment involves using over-the-counter (OTC) or prescription medications to ease migraine pain and symptoms of dizziness or nausea. Vestibular rehabilitation may also be used.

Orthostatic hypotension

Orthostatic hypotension is a condition in which your blood pressure suddenly drops when you change positions quickly. It can happen when you go from lying down to sitting up, or from sitting up to standing.

Some people with this condition have no noticeable symptoms. However, others may experienceTrusted Source nausea, along with other symptoms like:

dizziness
lightheadedness
headache
fainting episodes

The drop in blood pressure means less blood flows to your brain, muscles, and organs, which can lead to symptoms. Orthostatic hypotension has been linked to neurological conditions, heart disease, and certain medications.

Orthostatic hypotension can be managedTrusted Source through lifestyle changes. These include:

changing positions slowly
sitting down while performing daily tasks
changing medications, if possible

Causes of sudden dizziness without nausea

Dizziness is typically causedTrusted Source by issues with the inner ear, which regulates balance. When your brain receives signals from your inner ear that don't line up with the information your senses are reporting, it can result in dizziness and vertigo.

Several factors can cause sudden dizzy spells, including:

anemia

dehydration

medication side effects

circulation issues, such as sudden drops in blood pressure or insufficient blood flow to your brain, such as a transient ischemic attack (TIA) or stroke

TIA or stroke

Often called a “ministroke,“ a transient ischemic attack (TIA) is like a stroke, but the symptoms typically only last a few minutes. It happens when there’s a temporary lack of blood flow to part of the brain.

Unlike a stroke, a TIA usually doesn‘t cause lasting damage. But it can be a warning sign of a more serious stroke.

Although rare, a TIA can be the cause of sudden dizziness. According to a 2019 review, sudden dizziness is reported in about 8 percentTrusted Source of patients with a TIA or stroke.

Sometimes, a sudden onset of dizziness is the only symptom of a TIA. Other times, there may be other symptoms. These can includeTrusted Source:

weakness, numbness, or tingling in your arm, leg, or face, usually on one side of your body

slurred speech or difficulty talking

problems with balance

vision changes

sudden, severe headache

disorientation, confusion

Although less common, sudden dizziness can also be causedTrusted Source by a stroke, specifically a brain stem stroke. With a brain stem stroke:

Dizziness lasts longer than 24 hours.

Dizziness, vertigo, and imbalance usually occur together.

Weakness on one side of the body isn’t typically a symptom.

In more severe cases, symptoms can include slurred speech, double vision, and a decreased level of consciousness.

If you have any symptoms of a TIA or stroke, it‘s important to get immediate medical attention. Your doctor will determine if you‘ve had a TIA or a stroke, or if your symptoms have a different cause.

Self-care measures

If you have a sudden onset of dizziness, nausea, or vertigo, consider taking the following steps:

Sit down as soon as the dizziness comes on.

Try to avoid walking or standing until the dizziness passes.

If you must walk, move slowly and use a supportive device like a cane, or hold onto furniture for support.

Once your dizziness has passed, be sure to get up very slowly.

Consider taking an OTC medication like dimenhydrinate (Dramamine) to ease your nausea.

Avoid caffeine, tobacco, or alcohol, which can worsen your symptoms.

When to seek care

Make an appointment to see your doctor or healthcare professional if you have sudden dizziness and nausea that:

happens frequently

is severe

lasts a long time

can’t be explained by another health condition or a medication

To help diagnose the cause of your dizziness and nausea, your doctor will ask about your medical history and performTrusted Source a physical examination. They’ll also perform a variety of tests. These may include:

balance and movement testing, which can help determine if specific movements lead to symptoms

eye movement testing to detect abnormal eye movements associated with inner ear conditions

hearing tests to check if you have any hearing loss

imaging tests like MRIs or CT scans to generate a detailed image of your brain

complete blood count and blood chemistry tests

Seek emergency medical care if you experience sudden dizziness or nausea that occurs with any of the following symptoms:

feelings of numbness, weakness, or tingling

severe headache

slurred speech or trouble talking

chest pain

rapid heartbeat

trouble breathing

frequent vomiting

changes in your hearing, such as ringing in your ears or hearing loss

blurry or double vision

confusion

fainting

If you don’t already have a healthcare professional, our Healthline FindCare tool can help you connect with physicians in your area.

What Is Dizziness?

Dizziness is a feeling of being lightheaded, unsteady, and faint. It can make you feel like the world is spinning. Sometimes the feeling is mild and goes away quickly. Other times it can be severe and come along with other symptoms, like a headache and throwing up.

Dizziness Causes ?

Many parts of your body – including your eyes, brain, inner ear, and nerves in your feet and spine – work together to keep you balanced. When a part of that system is off, you can feel dizzy.

Many things can cause dizziness, such as:

Inner ear problems, like vertigo

Inner ear infections

Being low in certain nutrients

Heart problems

Concussion

Diseases that affect your brain

Dehydration

Stress and anxiety

Some medications

Motion sickness

Low blood sugar

photo of vertigo concept with spinning trees

When you're dizzy, you might feel like the world is spinning, even though you're standing still. (Photo Credit: Vicu9)

Vertigo

If it feels like the room is spinning around you and you have trouble staying steady on your feet, you might have a type of dizziness called vertigo. Vertigo can be a symptom of several health conditions affecting your inner ear and your vestibular system. The vestibular system is what helps you sense your body's position in space, coordinate your movements, and stay upright and balanced.

Benign paroxysmal positional vertigo

Benign paroxysmal positional vertigo (BPPV) is a common inner ear disorder. With BPPV, tiny bits of calcium in part of your inner ear get loose and move to places they don't belong. The system doesn't work the way it should and sends your brain the wrong signals.

It's often caused by the natural breakdown of cells that happens with age. A head injury can cause it, too.

You'll feel it briefly when you tilt or turn your head, and especially when you roll over in bed or sit up. BPPV isn't serious and usually goes away on its own. If not – or you'd like to help it along – it can be treated with special head exercises to get the pieces of calcium back in place. Your doctor can help you perform these exercises.

Meniere's disease

People with Meniere'sdisease have too much fluid in their inner ear. This condition brings on intense periods of vertigo that can last hours. You may feel fullness or pressure in one ear. Other symptoms include ringing in your ears, hearing loss, and nausea. You may feel exhausted after the attack passes.

Doctors don't know what causes it, and there's no cure for it. It's usually treated with diet changes (a low-salt diet) and medicine to control the dizziness.

Inner ear infection

Inflammation of the nerves in your ears due to infection also causes vertigo. Vestibular neuritis and labyrinthitis are two types of infections that can cause problems in the inner ear. Vestibular neuritis affects your vestibular nerve, and labyrinthitis affects both your vestibular nerve and your cochlear nerve – a nerve in your ear involved in hearing. These infections are often caused by a virus.

Other causes of vertigo

Some other causes of vertigo include:

A noncancerous tumor that puts pressure on the vestibular nerve called an acoustic neuroma
Some medications that hurt the inner ear, such as aminoglycoside antibiotics, diuretics, or salicylates
Head injury
Stroke
Multiple sclerosis
Vestibular migraine

Heart Problems and Dizziness ?

Dizziness can sometimes be a sign of a heart problem. It could be an early sign of heart disease or a more serious sign of a heart attack.

If your arteries are blocked because of atherosclerosis, for example, your blood flow slows down and doesn’t circulate through your body as it should. Your heart tries to pump harder and faster to help. This might make you feel a racing heart and dizziness, as well as other symptoms.

Heart palpitations and dizziness

Heart palpitations – the feeling that your heart is beating faster than normal or fluttering – is fairly common. But if you feel your heart fluttering and dizziness together, this could be a sign of problems with your heart. You should see your doctor as soon as possible if this happens.

Low Blood Pressure and Dizziness ?

Dizziness can be a sign of low blood pressure, or hypotension. Your brain needs a steady supply of oxygen-rich blood to function properly. Your heart provides this by pumping the blood throughout your body.

This pumping action causes pressure as it pushes the blood through the arteries. This is similar to when you turn on a garden hose. As the water fills the hose, it puts pressure on the hose itself. If the water pressure is too low, the water can't reach as far.

If your blood pressure drops too low, the blood doesn't circulate and can't reach your brain. This can cause dizziness and fainting, especially if you move suddenly from a sitting to a standing position.

Other heart- and circulation-related problems can cause dizziness, such as:

Heart attack
Sudden severe blood loss
Standing up quickly, particularly for older people
Blood clots
Clogged arteries
Irregular heartbeat

Other Common Causes of Dizziness ?

Dizziness is quite common and has a wide range of other causes.

Dehydration

Many people don't drink enough fluids to replace the liquid they lose every day when they sweat, breathe, and pee.

When you're very dehydrated, your blood pressure can drop, your brain may not get enough oxygen, and you'll feel dizzy. Other symptoms of dehydration include thirstiness, tiredness, and dark urine.

To help avoid dehydration, drink plenty of water and other unsweetened beverages, and limit coffee, tea, and soda, which can increase dehydration.

Medications

Several drugs list dizziness as a possible side effect. Check with your doctor if you take:

Antibiotics, including gentamicin and streptomycin
Antidepressants
Anti-seizure medications
Blood pressure medicine
Sedatives

Low blood sugar (hypoglycemia)

People with diabetes need to check the amount of sugar (glucose) in their blood often. You can get dizzy if it drops too low. That also can cause hunger, shakiness, sweating, and confusion. Some people without diabetes also have trouble with low blood sugar.

Motion sickness

If you get motion sickness, either from riding in a car, being on a boat, or even going on a carnival ride, you may get dizzy as well as sick to your stomach.

RELATED:
4 MS Symptoms Treated With Medical Marijuana

Concussions (traumatic brain injuries) ?

If you've had a strong impact to your head, you are at risk of a concussion – a traumatic brain injury (TBI). A blow to the head could be caused by many things, such as a fall down stairs, certain sports (especially sports like football), or even if your head and neck are shaken badly, like in a car accident.

One of the signs of a concussion is dizziness. You could also have:

Headache
Nausea and vomiting
Ringing in your ears
Blurry vision
Drowsiness
Confusion
Concussions should be taken seriously. If you think you might have one, seek emergency care as soon as possible.

Anxiety and stress

If you are anxious, you could feel several physical symptoms, including dizziness. Doctors don't know why this happens, but they think that somehow the areas in the brain responsible for anxiety and dizziness interact with each other, and that interaction results in dizziness.

Carbon monoxide poisoning

Carbon monoxide poisoning is very serious. Every year, more than 100,000 people in the U.S. need emergency treatment for carbon monoxide poisoning, and at least 420 die. One of the most common symptoms is dizziness, along with:

Headache
Weakness
Nausea and vomiting
Chest pain
Confusion

If you have any of these symptoms, leave where you are right away and call 911.

Low iron levels

Iron is an essential mineral that helps your blood carry oxygen throughout your body. Low iron levels, called iron deficiency anemia, can cause dizziness, as well as:

Fatigue
Feeling that your hands and feet are cold
Weakness
Shortness of breath
A hard time concentrating
Bruising easily
Headaches
There are many reasons you could be low in iron, including:

Internal bleeding, like in your gastrointestinal (GI) tract or urinary tract
Losing blood after a serious injury or during surgery
Having heavy menstrual periods
Blood loss after childbirth or miscarriage
Giving blood donations too frequently
Certain diseases, like inflammatory bowel disease (Crohn’s disease or ulcerative colitis)
Weight loss surgery
Kidney disease

Dizziness Symptoms ?

Feeling dizzy can be very uncomfortable. Symptoms include feeling like:

Everything around you is moving or spinning and you’re not.
You’re lightheaded and going to faint.
You can’t keep your balance.
You're a little confused or foggy.
You're nauseated.

How to Stop Feeling Dizzy ?

Occasional dizziness often goes away on its own. In general, if you feel dizzy, try lying down for a few minutes. Sit up very slowly, without sudden movements. Then slowly stand up. This may help.

Here are some more tips and home remedies for dizziness, depending on what caused it:

Dehydration. If you are overheated or dehydrated, drink fluids, move to a cool or shaded spot, and rest. Water is good, but you may want to try a sports drink, which has electrolytes and minerals the can speed hydration.

Medications. Check your drugs for side effects to see if they could be causing your dizziness. Speak with your doctor or pharmacist about your dizziness. If it’s caused by an over-the-counter medication, the pharmacist may be able to suggest another type. If it’s a prescription medication, there may be tips on when and how to take the drug to lower the risk of dizziness. If not, then speak with your doctor to see if there is another medication that can replace it.

Low blood sugar. A quick fix is to eat or drink something with sugar, like juice or a hard candy. But if you have diabetes, speak with your doctor about the best way to handle low blood sugar.

Motion sickness. It’s not always possible to avoid motion sickness. If you do get motion sickness, you can:

Sit in the front seat of a car or as close to the front as possible in a bus. Look out at the horizon.
Choose window seats when possible.
Lie down if you’re on a boat.
Close your eyes.
Sip water to stay hydrated.
Eat small portions of food frequently.
Don't smoke.
Suck on ginger candy or other types of lozenges.

If your dizziness is caused by something more serious, like a concussion, illness, or an injury, you need to see a doctor. You may need treatment for what is causing it, like antibiotics for an ear infection.