



British Heart  
Foundation

# Microvascular Angina

## What is microvascular angina?

Microvascular angina is a type of angina that affects the many small vessels which supply your heart with blood. It happens when these small blood vessels cannot provide enough oxygen to the heart muscle, causing chest pain and other symptoms. It is sometimes known as cardiac syndrome X or coronary microvascular dysfunction.

The condition is most common in women at the time of the menopause, which generally happens between the ages of 45 and 55.

**FIGHT  
FOR EVERY  
HEARTBEAT**

bhf.org.uk

## What causes microvascular angina?

The causes of microvascular angina are not fully known, but ongoing research is helping to understand, diagnose and treat the condition.

Studies suggest that microvascular angina may be caused by a number of factors:

- When your heart needs more blood to work, such as during exercise or when you feel stressed, the small blood vessels might not be able to expand enough to allow more blood towards the heart muscle. Or these blood vessels may tighten (spasm), limiting the supply of blood.
- Problems with the inner lining (the endothelium) of these small blood vessels may also mean a person is more likely to develop microvascular angina.
- Microvascular angina usually develops in middle age. So, changes that happen to your body and hormones as you age may have an effect.
- Changes in the size and number of small blood vessels may also be important.

## Symptoms of microvascular angina

If you have microvascular angina, you may have a heavy or tight feeling in your chest, which can spread to your arms, neck, jaw, back or stomach. You might also feel short of breath, sick, sweaty or light-headed. These symptoms could cause you to feel anxious.

The symptoms can be triggered by cold weather, stress, exercise or other factors. But, you may sometimes feel these symptoms when you are comfortable and at rest.

Sometimes, the symptoms can feel very similar to a heart attack, and they can occur at any time. Research suggests that if you have microvascular angina, you may be at greater risk of having a heart attack or other heart problems. If you feel chest pain that does not go away after around 15 minutes, you should call 999 immediately for an ambulance.

## What tests will I need?

If you visit hospital with these symptoms, you will have an [electrocardiogram \(ECG\)](#) test. You will also have [blood tests](#) to see whether your blood contains healthy levels of:

- iron
- cholesterol
- sugar, and
- troponin (a type of protein).

And blood tests will be used to find out how well your kidneys are working.

You might also have the following tests:

- A [stress echocardiogram](#). This is a test done when your heart rate is increased, either with medicine or by doing exercise, to look at how your heart and blood vessels react when your heart is working harder.
- A [coronary angiogram](#). This test is mainly used to look at the larger blood vessels. But doctors may use a wire with a sensor at its tip, or a chemical called acetylcholine, at the same time as a coronary angiogram. These can help to see how the small blood vessels are working.
- A [cardiac MRI scan](#) or a PET scan. These are heart scans which show blood flow in the small blood vessels in detail.

## Will I need treatment?

Researchers are working to develop specific treatments for microvascular angina. Currently, doctors may recommend a combination of medication and lifestyle changes, such as exercise, yoga and medical therapy.

Anti-angina medication can often help with controlling your symptoms. [Statins](#), angiotensin-converting enzyme (ACE) inhibitors and beta-blocker medication may also give you some protection. Different medicines work for different people, so you should talk to your medical team to find which combination of medicines works best for you.

Hormone replacement therapy (HRT) may be offered to some women if they have low levels of oestrogen, as this may be linked to the condition. HRT can improve the symptoms of microvascular angina, but it is not a cure and taking it may have its own risks, so it should be discussed with your doctor first.

## How can I help myself?

You can help to keep your blood vessels as healthy as possible by:

- Stopping smoking. Toxins in tobacco damage the inner lining of blood vessel walls. Smoking can also contribute to atheroma (fatty deposits) building up inside the artery walls.
- Doing exercise. This has been shown to improve how well the blood vessels work, so it is a good idea to take regular exercise.
- Maintaining a healthy weight and eating a healthy, balanced diet. This helps to control your blood pressure and cholesterol levels.

Making these changes can also make you feel better, as healthy eating and exercise are good for improving mood and reducing anxiety levels.

## Heart Helpline

**Our cardiac nurses and Information Support Officers are here to answer your questions about anything heart related.**

---

**Call us on 0300 330 3311**

---

Similar cost to 01 or 02 numbers.

Lines are open 9am - 5pm Monday to Friday.

**This information does not replace the advice that your doctor or nurse may give you. If you are worried about your heart health in any way, contact your GP or local healthcare provider.**

## Getting more help

Microvascular angina can make people feel isolated and anxious. If you feel this way, you may benefit from attending a local cardiac support group, or from talking therapies such as Cognitive Behavioural Therapy (CBT). Relaxation techniques, such as mindfulness meditation, tai chi and yoga, may also help. Your GP may be able to refer you.

If the pain caused by your condition is affecting your quality of life, attending a pain management course can also be helpful.

Having a written admission and care pathway in place can be helpful for patients who need to go into hospital on a regular basis for treatment. You may also find it useful to:

- Join an online community such as Healthunlocked ([healthunlocked.com](http://healthunlocked.com)).
- Call the [BHF Heart Helpline](#) to speak to one of our nurses (see left for details).