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## Heart conditions - angina

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### Summary

- Angina is chest pain caused by insufficient blood flow and oxygen to part of the heart muscle.
  - Arteries that service the heart are narrowed by fatty plaques and this reduces blood flow.
  - If you have angina, your risk of having a heart attack increases.
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Angina (also known as angina pectoris, which in Latin means 'squeezing of the chest') is a temporary discomfort or pain that happens when part of your heart muscle is temporarily not able to get enough blood and oxygen to meet its needs.

The heart muscle is serviced by the coronary arteries. If these arteries are narrowed, the reduced blood flow means that the heart muscle receives less oxygen than it needs to function properly. A common cause of narrowed coronary arteries is atherosclerosis – a condition characterised by fatty plaques, which develop in the artery walls.

Angina is not the same as a heart attack. Angina is associated with only a temporary reduction in your heart's blood supply and, if relieved, doesn't damage your heart muscle. Middle-aged and overweight male smokers are most at risk of angina.

### Symptoms of angina

The pain or discomfort associated with angina usually feels tight, gripping or squeezing, and can vary from mild to severe. Angina is usually felt in the centre of your chest, but may spread to either or both of your shoulders, your back, neck, jaw or arm. It can even be felt in your hands.

Sometimes, angina is felt in other areas of your body without being felt in your chest. Many people do not even feel pain – just an unpleasant sensation or discomfort in their chest. Angina may also be experienced as shortness of breath, rather than pain.

### Common triggers of angina

Angina attacks can be prompted by exertion or physical exercise, when the hard-working heart muscle requires greater amounts of oxygen. The pain usually fades away with rest. Other triggers of angina may include:

- high emotion, such as anger or excitement
- cold temperatures
- eating a large meal.

### Unstable angina

Angina pain usually occurs with physical activity and goes away after a few minutes of rest. It can also be relieved by angina medicine (nitrate spray or tablets).

Unstable angina happens without an obvious cause, and can affect people in different ways and at different times. You may get angina early in the morning only, or you may get it when you are resting or even sleeping.

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## **Risk factors for angina**

Over time, the coronary arteries are narrowed by a layering of fatty deposits (plaques) in the inner linings of the artery walls. This is called atherosclerosis. These plaques are caused by a combination of factors, including:

- a diet high in cholesterol and saturated fats
- high blood pressure (hypertension)
- cigarette smoking
- insufficient physical activity
- obesity
- unmanaged diabetes
- genetic factors, or an inherited susceptibility.

## **Diagnosis of angina**

Angina is diagnosed using a number of tests, including:

- exercise stress test – the heart is monitored using a device called an electrocardiogram (ECG) while you ride a stationary bicycle or walk on a treadmill. The test is halted once angina is triggered
- cardiac catheterisation – a tube, or catheter, is threaded into the coronary arteries via a blood vessel in the groin. A special dye is then injected into the coronary artery. This outlines the artery while movie x-rays are taken. Narrowings and blockages within the artery are outlined by the dye.

## **Treatment for angina**

Angina can be treated and managed with medicines and surgery, and by making healthier lifestyle choices.

Treatment may include:

- aspirin – taken on a daily basis to help manage the condition and reduce the risk of blood clots
- nitrates – to ease the pain of an angina attack. Nitrates can be taken in many forms, including an aerosol pump spray or a tablet dissolved under the tongue. The side effects of nitrates can include flushing, headache and dizziness
- medications to lower the cholesterol level in the blood
- medications to lower blood pressure and slow the heart rate – which reduces how hard the heart must work
- lifestyle changes – including quitting smoking, losing excess body fat, switching to a low-fat diet and doing regular physical activity (such as walking every day)
- surgery – procedures such as angioplasty and bypass surgery are used if the angina doesn't respond to medications and lifestyle changes.

## **Surgery for angina**

Surgery is not a cure for atherosclerosis. Unless substantial lifestyle changes are made, fatty plaques will continue to build up in the artery walls.

The two main types of surgical intervention include:

- coronary angioplasty – a thin tube is threaded into the coronary arteries via a blood vessel in the groin, in a similar procedure to cardiac catheterisation. A small balloon attached to the end of the tube is inflated, which widens the blocked portion of the artery and allows increased blood flow to the affected part of the heart muscle. Stents (tubular grids) may be inserted to hold open the affected part of the artery
- bypass surgery – the blockage is bypassed with a section of vein taken from the leg, or artery taken from the forearm or inside the chest. Blood flow is then directed through this newly attached blood vessel, into the coronary artery beyond the narrowing or blockage.

## **Long-term management of angina**

Fatty plaques will continue to narrow the coronary arteries unless you make substantial lifestyle changes under medical supervision. These include:

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- being **smoke-free**
- enjoying **healthy eating**
- being **physically active**
- managing your **blood pressure** and **cholesterol**
- achieving and maintaining a **healthy body weight**
- maintaining your psychological and social health
- taking your medicines as prescribed.

People with diabetes should generally aim to maintain their blood glucose levels within the normal non-diabetic range and follow the advice from their doctor or diabetes educator.

### **Angina and heart attack**

Angina doesn't cause any lasting harm to the heart muscle. The danger of leaving the condition untreated, however, is the increased risk of **heart attack**.

If your symptoms don't go away within 10 minutes of rest and using your nitrate medicine, you may be having a heart attack.

**Call triple zero (000) immediately and ask for an ambulance.**

### **Where to get help**

- In an emergency, always call triple zero (000)
- Your doctor
- **Heart Foundation Health information Service**. Tel. 1300 36 27 87

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Heart Foundation

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