SPONTANEOUS CORONARY ARTERY DISSECTION (SCAD)

This factsheet outlines what spontaneous coronary artery dissection (SCAD) is, how it is treated, and how to manage a diagnosis.

This factsheet is intended for people with SCAD, their friends and families.

Key points to remember:

- Spontaneous coronary artery dissection (SCAD) is a condition where damage to the coronary artery means blood cannot get to the heart.
- SCAD symptoms can include chest pain, dizziness, nausea, and breathlessness. **If you have these symptoms, call 999 immediately.**
- SCAD is **not** closely associated with the usual heart disease risks, like obesity, high cholesterol, smoking, or age. It mostly affects women, and is the leading cause of heart attack in women under 50.
- Treatments include medication, cardiac rehabilitation, and in some cases, surgical procedures.
- Most people who have had SCAD will need to take care in the future and avoid certain physical stresses, like pregnancy or very high-intensity exercise.

The name "Spontaneous Coronary Artery Dissection" refers to:

Spontaneous - Sudden, without a direct cause
Coronary artery - Any artery that supplies blood to your heart
Dissection - Tearing, rupturing

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What is SCAD?

Arterial dissection is a technical term for any condition where an artery tears, releasing blood into the tissues around it. Spontaneous coronary artery dissection is when this happens to the coronary arteries - the blood vessels that carry blood to the heart itself.

In most cases of SCAD, this tear happens in one layer of the arterial wall, which leads to blood flowing between the layers of the wall. This causes a bulge of the wall, blocking blood flow, which prevents blood from reaching the heart properly.

What does SCAD do?

The blockage of blood to the heart can cause a lot of complications, including:

- Chest pain, heart failure, or angina
- Heart attack

SCAD is a medical emergency, and if you experience any of the following symptoms, you should call 999 as soon as possible:

- Chest pain
- Numbness or unusual feelings in your arm or left side
- Nausea, sickness, or vomiting
- Dizziness or shortness of breath

Who has a SCAD?

Anyone can experience a spontaneous coronary artery dissection. However, it mostly affects women, who make up nine out of every ten cases of diagnosed SCAD.

SCAD does not seem to be affected by the usual risk factors for coronary heart disease - high cholesterol, smoking, obesity, or diabetes - as much as other heart conditions such as heart attack or angina. It is most common around the menopause or after giving birth.

It can affect people of any age, and is one of the leading causes of heart attack in young women.

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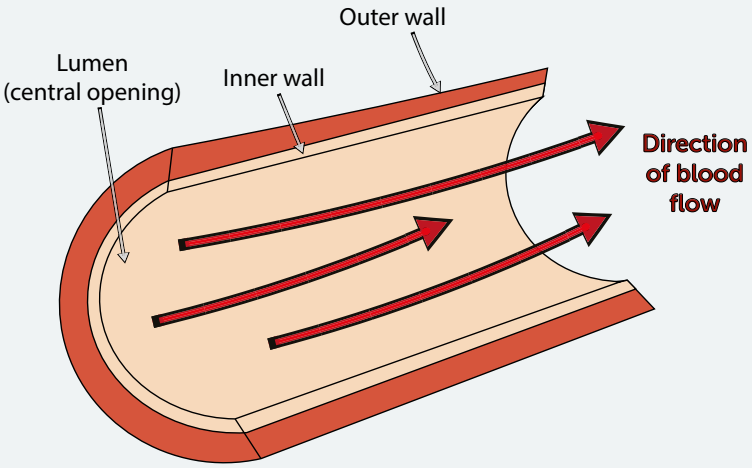
Healthy artery:

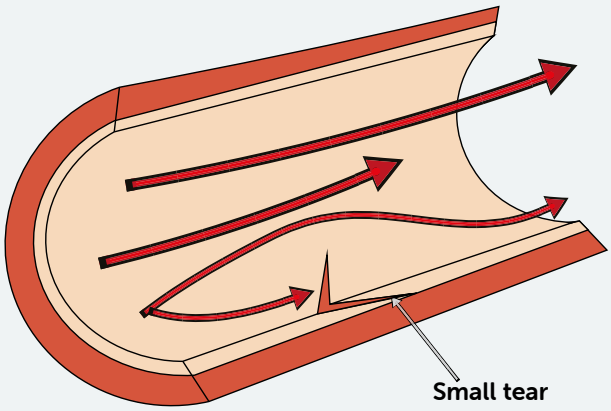
An artery has a lumen (the space which blood passes through), an outer wall, and an inner wall.



SCAD

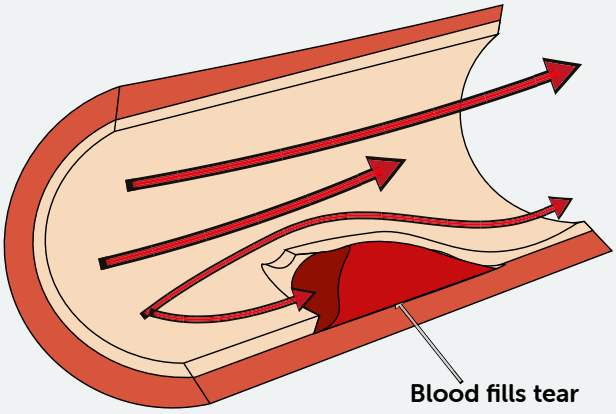
Stage 1:

A small tear or separation appears in the inner layer of the artery.



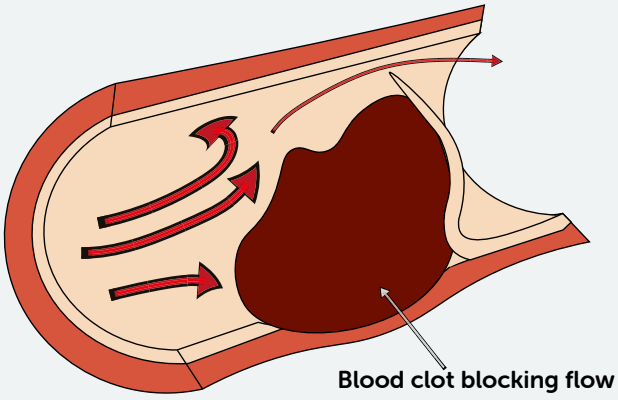
Stage 2:

The blood flows into the space underneath the tear, and is trapped between the layers of the artery.



Stage 3:

The trapped blood clots and solidifies, blocking more and more of the blood flow through the artery.



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What causes SCAD?

Patients with SCAD may have an underlying health condition that affects their blood vessels. Common conditions associated with SCAD include:

- Recent or current **pregnancy or menopause.**
- **High blood pressure.**
- **Hormonal treatment**: birth control, HRT, testosterone, oestrogen, or progesterone.
- **Fibromuscular dysplasia**, a disease that affects the walls of blood vessels.
- **Connective tissue disorders** like: Ehlers-Dahnlos Syndrome Type IV, Marfan Syndrome, polycystic ovarian syndrome (PCOS), or Loeys-Dietz syndrome.
- **Inflammatory conditions** like: Crohn's disease, lupus, ulcerative colitis, or rheumatoid arthritis.

SCAD may be triggered by stressful life events, like:

- Giving birth.
- Serious emotional stress.
- Intense physical activity.
- Severe coughing or vomiting.
- Taking certain recreational drugs, such as cocaine, amphetamines, or methamphetamines.

In some cases, the cause of SCAD is not clear, and you may need further tests or investigations to explore this.

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How is SCAD diagnosed?

If you are showing symptoms of SCAD, you will probably be offered one or more of the following tests:

- **Blood tests,** especially for troponin - a protein which is released into your blood when blood vessels in the heart are damaged.

- **Electrocardiogram (ECG)** shows the electrical activity in your heart, and highlights any unusual changes in your heartbeat.

- **Echocardiogram,** which uses ultrasound to look at your heart beating in real time.

- **Coronary CT angiogram (CCTA)** is a special sort of X-ray which highlights your coronary arteries and shows any damage. When you get a coronary angiogram, you will have to be injected with a special dye to make your arteries clearer in the image. This might be done through a catheter in your wrist or groin.

  A coronary CT angiogram exposes you to small amounts of radiation. Some conditions mean you may need an MRA instead.

- **Magnetic resonance angiogram (MRA)** is similar to a coronary CT angiogram, except that instead of an X-ray it uses a magnetic resonance imager ("MRI machine") to take pictures without exposing you to radiation.

  An MRA cannot be used if you have certain magnetic materials in your body (e.g. cochlear implants, a pacemaker, or a vagal nerve stimulator) - speak to a doctor if you are concerned about this.

These tests will allow your doctor and medical team to see whether you have arterial damage, and imaging like angiograms and echocardiograms also mean that they will be able to see exactly where the damage is.

The European Society of Cardiology recommends that, after a SCAD, you should have a full "head to hip" CCTA or MRA scan. This scan will check for any other issues with your blood vessels.

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How is SCAD treated?

The main aim of SCAD treatment is to restore blood flow to the heart, manage chest pain, and support healing. This can be done through medication, surgery, or cardiac rehabilitation.

In many cases, SCAD will get better on its own, and can be managed with lifestyle changes and medication.

The main types of medications which are prescribed for SCAD are:

- **Medications to stop blood clots forming,** such as aspirin and clopidogrel.
- **Blood pressure medications**, particularly beta-blockers, which reduce the amount of blood your heart needs.
- **Medications to manage persistent chest pain.**

However, in some rare cases you may need a **surgical intervention.** There are two main surgical procedures used to treat SCAD:

Stent insertion

A stent is a small mesh tube that is inserted into the artery, then expands, holding the artery open to allow blood flow. The stent will be left in place to keep the artery open.

Coronary artery bypass surgery

Coronary artery bypass surgery (also called coronary bypass, coronary artery bypass graft, or CABG) is used when the artery cannot heal.

A length of artery is taken from somewhere else in your body (usually your leg, although if this is inappropriate arteries in the arm can be used instead) and inserted into the heart. This replaces the damaged artery and provides your blood with another way to get to the heart.

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Cardiac rehabilitation

Cardiac rehabilitation is another treatment you may be offered in the longer run. This is an individual treatment programme made up of exercises and education, which can help you to make lifestyle changes to prevent a future SCAD incident.

Cardiac rehabilitation can also be a source of support with the emotional and mental stress of surviving SCAD.

To find out whether there are cardiac rehabilitation services near you, you can search local services by postcode at: **www.cardiac-rehabilitation.net/cardiac-rehab.htm**

(Although the above link is produced by NHS England, it does also cover Scottish postcodes and services)

Managing chest pain

Many people (between six and nine out of every ten people who have a SCAD) experience chest pain and fatigue after a SCAD. In most cases, this pain gets better after time.

Chest pain often comes in cycles, and may be experienced just before your period. Your pain may or may not respond to medication - ask your doctor whether there is anything you may be able to try to relieve it.

It can help to keep a journal of when you experience pain, any triggers you have noticed, and how bad it is. This helps with avoiding triggers, and can also be a way of recognising when your pain starts to reduce.

Some people who experience long-term chest pain also find that mindfulness, meditation, and breathing exercises can help. These do not necessarily reduce pain, but may make it easier to manage.

Chest pain can have an effect on your mental wellbeing. For more information on managing your thoughts and feelings, see CHSS' booklet on **Mental Wellbeing.**

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Life after SCAD

Most people who experience a SCAD recover, with an estimated 92 out of every 100 patients surviving for more than ten years after being hospitalised.

You may be advised to avoid high-intensity exercise after your SCAD. This is because, in some cases, this kind of activity can trigger another arterial dissection by putting stress on your heart.

Pregnancy is another common trigger for SCAD, and if you have experienced one arterial dissection, you are at higher risk for another. You may therefore be advised to avoid getting pregnant in the future.

You will probably be asked to return for regular stress tests after your discharge from hospital. This is to make sure that your healing is going as planned, and that any complications are picked up early.

Finding support

There are groups and organisations who may be able to offer you support, help, and information around the physical and emotional consequences of SCAD. These include:

The British Heart Foundation: www.bhf.org.uk

Beat SCAD UK: beatscad.org.uk

The RareConnect online community: www.rareconnect.org/en/community/spontaneous-coronary-artery-dissection

SCAD UK and Ireland Survivors Facebook group: www.facebook.com/groups/455390254641041/

You can also go to our website for information, advice, and support: **www.chss.org.uk**

For more direct support services, personalised help, or if you need someone to talk to, call our Advice Line: **0808 801 0899**

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