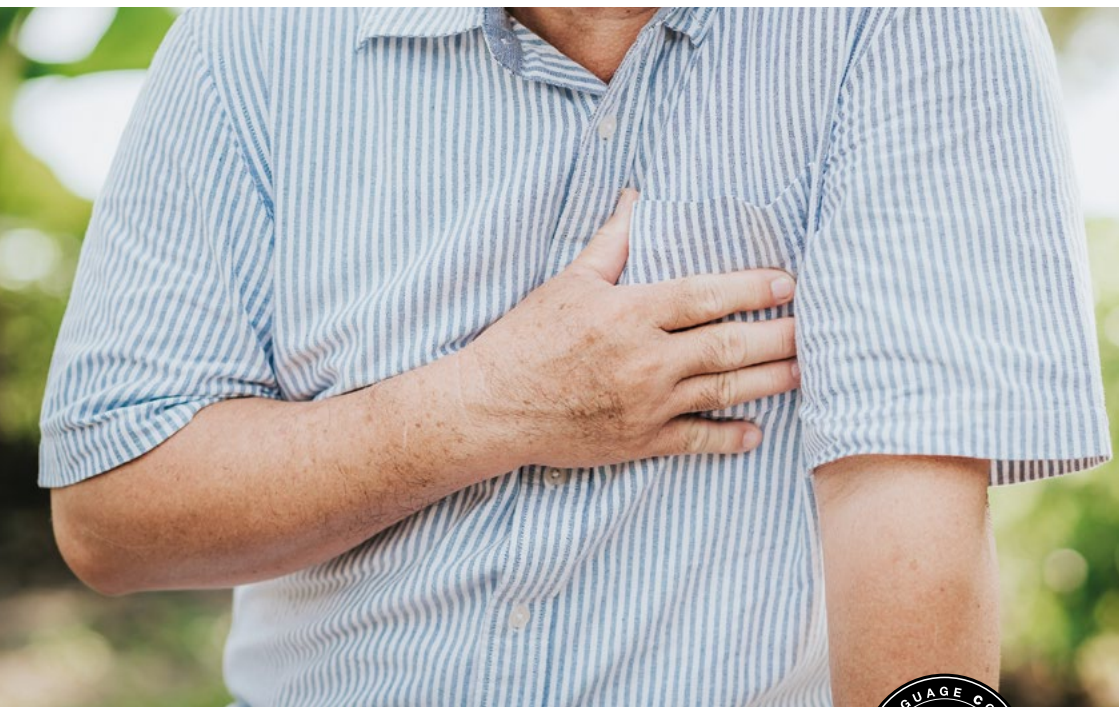


Management of stable angina

A booklet for people with stable angina, their families and carers



If you have angina for which you have already been prescribed glyceryl trinitrate (GTN) medication and you start to feel symptoms, you should:

- stop what you are doing, sit down and rest
 - take your GTN spray or tablets. The pain should ease within a few minutes – if it doesn't, take a second dose
 - call 999 immediately (or 112 from a mobile phone) if the pain doesn't ease within a few minutes after taking a second dose.
-

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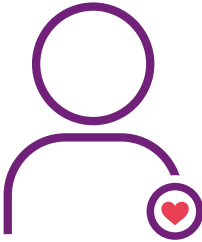
This booklet can be photocopied to be used
in the NHS in Scotland.

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Who is this booklet for?

This booklet is for you if:



**You have
stable angina**



**You are a partner, carer or
family member of someone
who has stable angina**

The booklet explains:

- what stable angina is
- how doctors will know you have stable angina
- what treatments are available, and
- what happens if you have stable angina and need another kind of operation.

This booklet does not cover unstable angina as this usually needs more urgent and immediate management. If you are concerned about unstable angina, you should speak to your doctor.

What is this booklet about?

This booklet explains the recommendations in a clinical guideline, produced by the Scottish Intercollegiate Guidelines Network (SIGN), about getting assessed and treated for stable angina. The clinical guidance is based on what we know from current research. It also gives advice based on the opinion of healthcare professionals who are trained on how best to manage your care.

Details of support organisations and other places where you can get more information are on pages 36–38.

On page 39 you can find out how we produce guidelines.

There are five types of recommendation in this booklet.



Strong recommendation
based on good-quality research evidence



Recommendation
based on the research evidence



Recommendation
based on clinical experience



Recommendation against
based on the research evidence



Recommendation against
based on good-quality research evidence

If you would like to see the clinical guideline, please visit www.sign.ac.uk/assets/sign151.pdf

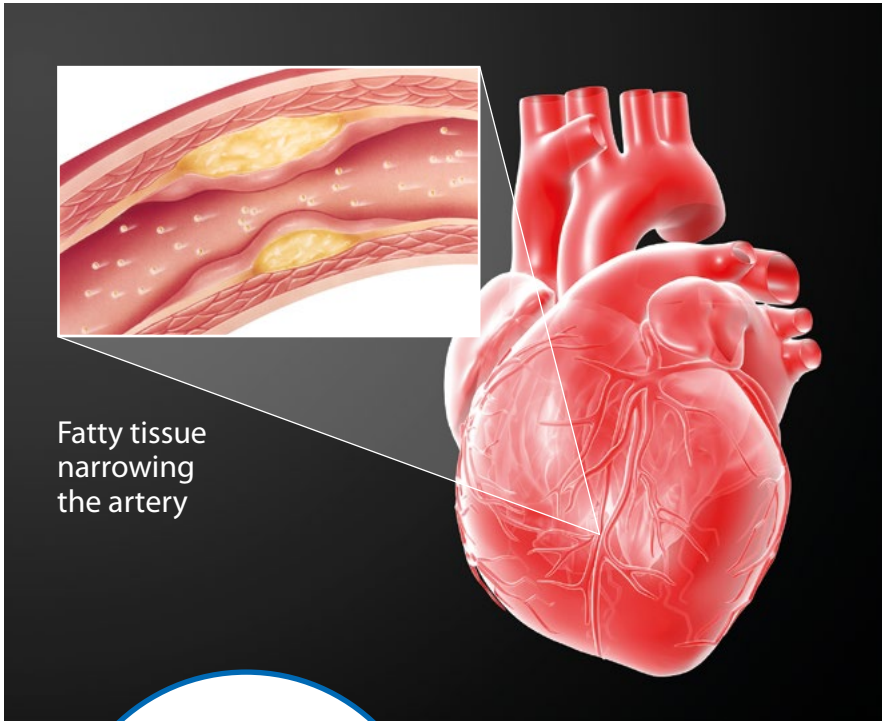
What is angina?

Coronary artery disease or arteriosclerosis is a process where the arteries on the surface of the heart become narrow.

Angina is a symptom of chest discomfort or pain caused when the narrowing is severe enough to reduce the amount of blood supplied to the heart, usually during physical activity or stress, when the heart pumps faster than when you are at rest. Some people may feel short of breath too.

Stable angina is when the symptoms are predictable with particular levels of activity, are not getting worse and do not come on when you are at rest. Stable angina is not life-threatening.

Unstable angina is when you have increased angina symptoms that come on with low levels of activity or when you are at rest.



Fatty tissue
narrowing
the artery

Arteriosclerosis
is a build-up of
fatty materials in
the artery walls.

How will healthcare professionals know if I have stable angina?

If your GP suspects you have stable angina, they will ask about the nature and pattern of your symptoms. They will ask about the issues listed below and may take some blood tests.

How you will be assessed



By asking about your symptoms

- How would you describe the discomfort? – for example tight, dull or heavy
- Where do you feel it? – for example, left side of chest, arm, neck, jaw or back
- When does it happen? – for example with exertion or emotional stress
- When does it stop? – for example when you rest
- How long does the pain last?



By asking about your clinical history



- Family history of coronary heart disease
- Previous history of coronary heart disease
- Smoking history
- Diabetes
- Blood pressure
- High cholesterol



By monitoring your blood



- Blood sugar levels
- Haemoglobin levels
- Cholesterol levels
- Thyroid hormone levels
- Kidney function



Recommendation based on clinical experience

Stable angina can often be diagnosed by reading your clinical history, including your symptoms. However, sometimes further investigations are needed to confirm the diagnosis, so you may be referred to the cardiology outpatient clinic. You may also be referred if you are known to have angina and develop new or more frequent symptoms.

What further tests might I have?

Further tests may include the ones on pages 8–11.



Electrocardiogram

An electrocardiogram (ECG) is a painless test that records your heart's rhythm and electrical activity. Electrodes are placed on your body and connected to a recording machine.



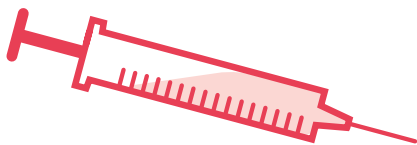
Exercise tolerance testing

Angina is more likely during physical activity so you may be referred for an exercise ECG. This is an electrocardiogram (ECG) that is recorded when you are walking on a treadmill or pedalling an exercise bike. It allows your healthcare professional to find out how well your heart responds to exercise and assess if there are any changes to your ECG when you are on the treadmill or bike. Your healthcare professional will ask you about any chest pain you experience when you are doing this.



Stress echocardiogram

This uses ultrasound to produce pictures of the heart muscle and heart structure. A stress echocardiogram assesses the heart muscle after the heart has been made to work harder, either during exercise or when you have been given medicine to work the heart harder.



Myocardial perfusion scintigraphy (MPS)

(also called thallium scan)

This investigation helps find out if there is a problem with the blood supply to your heart muscle. You will be given an injection into your arm containing a tracer that produces a very small amount of radiation. A special camera is then used to take pictures of your heart to find out if there are any problems with the blood supply or heart muscle.



Computerised tomography (CT) angiography

A CT angiogram is an investigation that uses a specialised X-ray to look at the heart arteries to find out if there are any narrowings. This is done by injecting dye into your bloodstream through your arm. A CT scanner is used to show multiple images of your heart and arteries. This allows the healthcare professional to detect any narrowed arteries. This test involves a very small dose of radiation.



Coronary angiogram

(also called cardiac catheter)

This is also a specialised X-ray of the arteries on the surface of the heart. It shows the blood supply to the heart and will find any major narrowings in the arteries that may be causing your symptoms. You will be given some local anaesthetic, then a catheter (long thin flexible tube) is inserted into your arm or groin and directed through the blood vessels to your heart. A dye is put down the catheter and an X-ray is taken to show if there is any narrowing in the blood vessels on the surface of your heart. This test involves a very small dose of radiation.




Your healthcare professionals should do the following:

- Make sure you are kept informed about the tests you will be offered and when you are likely to get them.
- Explain the results.
- Inform you of the need to check your existing medication and make sure you understand the possible side effects.
- ?** You can ask your healthcare professional about these things at any time.


What medicines are available?

Medication to reduce your risk of having further heart problems

Medicine	How it works	Possible side effects
Angiotensin-converting enzyme inhibitors (ACE inhibitors)	<p>These drugs lower your blood pressure and reduce the work your heart has to do to pump blood around your body.</p> <p>Your doctor should consider giving you ACE inhibitors. </p>	<p>Side effects may include:</p> <ul style="list-style-type: none">• cough• low blood pressure• dizziness• kidney problems (renal impairment), and• high levels of potassium in your blood (hyperkalaemia).


Notes

Medication to reduce your risk of having further heart problems

Medicine	How it works	Possible side effects
Aspirin	<p>Aspirin is an antiplatelet therapy used to prevent your blood clotting and blocking your arteries. Most people with angina are prescribed aspirin for life. If you cannot take aspirin or have an allergy, you may be prescribed another type of antiplatelet medicine (see Clopidogrel, on page 14).</p> <p>You should take aspirin long term. </p>	<p>Side effects may include:</p> <ul style="list-style-type: none">• stomach aches/ upset stomach• nausea• vomiting. <p>On rare occasions aspirin can bring on an asthma attack.</p>


Notes

Medication to reduce your risk of having further heart problems

Medicine	How it works	Possible side effects
Clopidogrel	<p>Clopidogrel is another type of antiplatelet medicine that you may be given if you are allergic to aspirin.</p> <p>It is also given to patients who have a procedure called coronary angioplasty where a stent is inserted to open up an artery. </p> <p>You can read more about coronary angioplasty on pages 20–23.</p>	<p>Side effects may include:</p> <ul style="list-style-type: none">• stomach aches/ upset stomach• nausea• vomiting.


Notes

Medication to reduce your risk of having further heart problems

Medicine	How it works	Possible side effects
Statins	<p>Statins are medicines that lower the levels of cholesterol in your blood. Too much cholesterol in your blood can cause atheroma (fatty tissue) to build up and narrow your coronary arteries.</p> <p>Statins help prevent heart attacks.</p> <p>You should be given long-term statin therapy if you have angina due to arteriosclerosis. </p> <p>You should avoid grapefruit juice if you are taking statins as it affects the way these medicines are processed by the body.</p>	<p>Side effects are minor but may include:</p> <ul style="list-style-type: none">• upset stomach• headaches• muscle ache• feeling sick.



Notes

Medication to control symptoms of angina



Medicine	How it works	Possible side effects
Beta blockers	<p>Beta blockers are effective at preventing symptoms of angina by slowing down your heart rate and lowering your blood pressure. This reduces the amount of work the heart has to do, so it needs less blood.</p> <p>Beta blockers should be the first medicine used to try and control your symptoms. </p>	<p>Side effects may include:</p> <ul style="list-style-type: none">• tiredness• dizziness• cold hands and feet• erectile dysfunction in men (impotence), and• disturbed sleep.

Notes

Medication to control symptoms of angina

Medicine	How it works	Possible side effects
Calcium-channel blockers	<p>Calcium-channel blockers are generally as effective as beta blockers for preventing angina. They can slow your heart rate and lower your blood pressure. They affect muscle cells that relax and widen your blood vessels. You may be prescribed these drugs if you can't take beta blockers (for example, if you have asthma). </p> <p>If Prinzmetal angina has been diagnosed, you may be given a calcium-channel blocker instead of beta blockers. (This is a rare form of angina in which there is pain at rest rather than during activity.) </p>	<p>Side effects may include:</p> <ul style="list-style-type: none">• flushing• dizziness• swollen ankles.

Medication to control symptoms of angina

Medicine	How it works	Possible side effects
Potassium-channel activators (Nicorandil)	Nicorandil is a medicine that prevents angina. It works by relaxing blood vessels and increasing the supply of blood and oxygen to your heart.	Side effects include: <ul style="list-style-type: none">• headache• flushing• indigestion• dizziness.
Nitrates	Nitrate medicines are helpful for people with angina as they relax blood vessels so they become wider, allowing more blood to flow through them to the heart muscle. This helps prevent episodes of angina. Glyceryl trinitrate (GTN) should be used to relieve angina by taking it sublingually (spray or tablet under the tongue).  GTN can be used before activity that is known to bring on episodes of angina, because it prevents them. 	Side effects may include: <ul style="list-style-type: none">• headache• dizziness• flushing• feeling faint.

Notes

A **cardiologist**
is a doctor
who specialises in
heart disease.

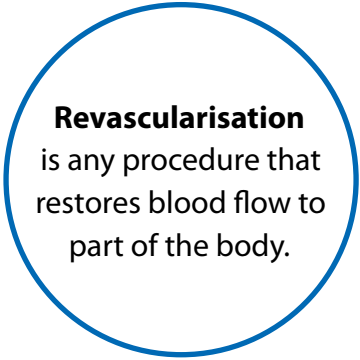


Recommendation based on clinical experience

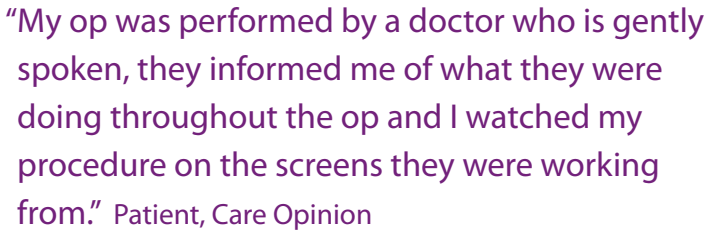
If your GP has not managed to control your angina using two medicines, they should consider referring you to a **cardiologist**.

Will I need further treatment?

If you have a CT or coronary angiogram that shows you have severe narrowing in your blood vessels, you may be considered for coronary **revascularisation** to open up the artery and relieve your symptoms. This is done by percutaneous intervention (also known as angioplasty) or coronary artery bypass graft surgery.



Revascularisation is any procedure that restores blood flow to part of the body.

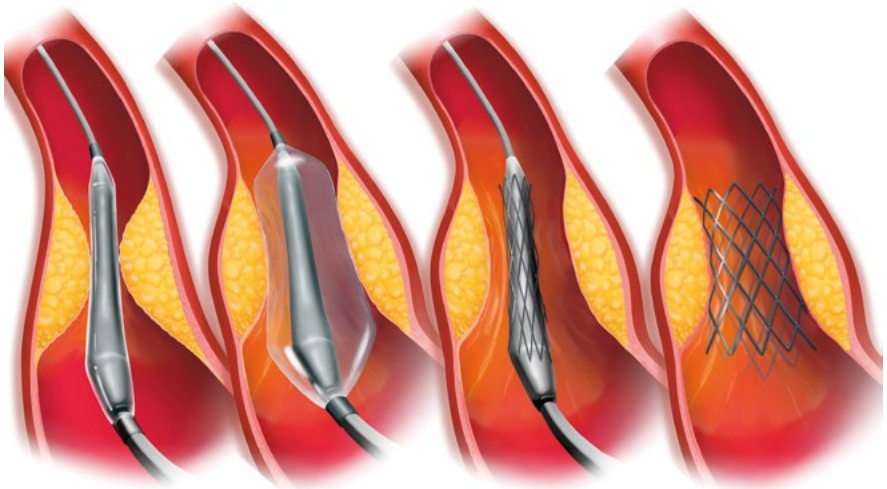


“My op was performed by a doctor who is gently spoken, they informed me of what they were doing throughout the op and I watched my procedure on the screens they were working from.” Patient, Care Opinion

Go to www.careopinion.org.uk/opinions/392106 to read the full story.



Percutaneous intervention (PCI) or angioplasty is a procedure where a catheter (a thin hollow tube) is passed into your artery, usually through your arm. Wires and balloons are passed through the catheter to open your blocked artery. A stent (stainless steel mesh) may then be inserted to keep the artery open.



1

A wire and balloon are passed into the coronary artery until they reach the narrowed section.

2

The balloon is inflated to squash the blood clot and fatty tissue that have caused the narrowing. This helps the blood to flow more easily.

3

A short tube of stainless steel mesh, called a stent, is then expanded at the site of the damage using another balloon.

4

The balloon and wire are removed. The stent is left in place to hold the artery open.

“The angiogram and PCI procedures were much less traumatic than expected and I was particularly impressed by the willingness of the doctors and nursing staff to answer every possible question I could have both before, during and after the treatment.” Patient, Care Opinion

Go to www.careopinion.org.uk/opinions/402122 to read the full story.

“The result of the angiogram showed 3 blocked arteries. I was referred for CABG operation. Six months later I walked 50 miles in 5 days of the Ayrshire Coastal path with no problems”. Patient, Care Opinion

Go to www.careopinion.org.uk/opinions/295192 to read the full story.



Coronary artery bypass grafting (CABG) is an operation to improve blood supply to your heart by bypassing a narrowed section of your coronary artery. Other veins or arteries in your body (known as the graft) will be used to divert the flow of blood away from the narrowed or blocked artery.



Recommendation based on clinical experience

Deciding whether you need angioplasty or bypass surgery will depend on the results of the angiogram and on which arteries and how many are narrowed. If several major blood vessels have narrowed, particularly if you have diabetes, you may be considered for bypass grafting. The cardiology and surgical teams will discuss the proposed procedures with you before making a decision.



Healthcare professionals should do the following.

- Explain different types of treatment including their risks and benefits, and give written information as appropriate.
- Encourage you, your family, partner or carer to ask questions and discuss concerns.
- ?** You can ask your healthcare professional about these things at any time.

Will I need to take medication after surgery?

To prevent further heart disease, you may have to take medication after your surgery.



Strong recommendation based on good-quality research evidence

If you have coronary angioplasty and a stent inserted to keep your blood vessel open, you may be asked to take extra blood-thinning (antiplatelet) medication. How long you have to take this will depend on which type of stent you have.



You can read more about preventing further heart disease in our booklet on cardiovascular disease. You can download this from our website www.sign.ac.uk/pat149-preventing-cardiovascular-disease.html or request a paper copy by phoning 0131 623 4720.

Will I receive cardiac rehabilitation after surgery?

Cardiac rehab (or cardiac rehabilitation) means all the activities that are known to help and support people in taking responsibility for their health.

Cardiac refers to the heart.

Cardiac rehab aims to inform, educate and reassure people that with the right support, they can understand and take control of their condition. There is evidence that this may help to reduce the chance of admission to hospital with a future cardiac event. Based on individual need, cardiac rehab offers a wide range of options to aid recovery and to support you in managing your health condition for yourself.

Your **cardiac rehab team** may include a wide range of healthcare professionals such as a cardiac rehab nurse, physiotherapist, dietician, and psychologist.

You will normally be offered support from a **cardiac rehab team** after coronary revascularisation.



Recommendation based on clinical experience

When your angina symptoms have not been controlled by medication (known as refractory angina), you should be considered for an educational and rehabilitation approach. This aims to relieve your symptoms and improve your physical and psychological functioning.



You can read more about cardiac rehabilitation in our booklet on cardiac rehabilitation <http://www.sign.ac.uk/assets/pat150.pdf> or you can request a paper copy by phoning 0131 623 4720.

What if I need to go into hospital for an operation not involving my heart?

People with angina are at risk of heart problems when they have surgery for another health condition. This is because any type of surgery might put your heart under great strain.



Recommendation based on clinical experience

If possible, surgery for another health condition should be delayed for at least one month after coronary artery bypass grafting.



Strong recommendation based on good-quality research evidence

Before you have surgery, your doctors will consider your fitness and assess your risk of a heart problem during your surgery. This may include assessing clinical history, resting electrocardiogram (ECG) and **functional capacity**. This is measured using a scoring system and should be part of your preoperative assessment.

Functional capacity is the ability to carry out everyday physical activity such as climbing stairs.



Strong recommendation based on good-quality research evidence





You should have further investigations if you are at high risk of a heart problem during surgery and are having high-risk surgery. High-risk surgery includes abdominal, vascular, or head and neck surgery. Investigations may include exercise tolerance testing (ETT) and coronary angiography.



Recommendation against based on good-quality research evidence

Coronary revascularisation is not recommended before your surgery unless your cardiac symptoms are unstable or coronary artery bypass grafting would benefit you in the long term (or both).

What heart medication will I need if I'm having surgery?

Medication	
Antiplatelet therapy or aspirin therapy	<p>Aspirin is associated with a bleeding risk and may be stopped before you have your surgery. Aspirin should be continued if you have had a recent heart attack, coronary artery stents or a stroke. If aspirin therapy is stopped before surgery, it should be started again after surgery.</p> 
Beta blockers	<p>If you are on beta blockers, they will not be stopped because you are having surgery. </p> <p>Starting beta blockers to protect your heart just before surgery is not recommended. </p>
Statins (cholesterol-lowering drugs)	<p>If you have been prescribed statin therapy, you should continue to take this before and after you have any surgery.</p> 

How will I feel after angina has been diagnosed?

Often when angina is diagnosed, people have many concerns and misunderstandings about their condition.

If this happens, it can affect your mood and everyday life. For example, you may feel anxious and depressed because you don't understand what's happening to your body. It's not unusual for you to have these emotions.

Your doctor will respond to your request for information to help you understand and cope with your angina. You can also ask them for further explanations of information in this booklet. How you cope and adjust to your diagnosis of angina also depends on other factors, such as the level of personal support you receive, and any stressful events in your life.



Strong recommendation based on good-quality research evidence

Professionals involved in your care should regularly assess the impact that angina is having on your mood, quality of life and functioning. The assessment will also help to monitor your progress and help with decision-making about your treatment. Members of the cardiac rehab team are trained to help you adjust to the emotional aspects of your diagnosis.

"I've suffered angina and breathlessness for years, heavily reliant on GTN spray and medicines. I walked out of hospital a new man, I'm still doing really well and walking every day and looking forward to the future." Patient, Care Opinion

Go to www.careopinion.org.uk/opinions/406370 to read the full story.



Your healthcare professionals will assess your mood, quality of life and functioning by asking you questions such as:

"During the last month, have you often felt down, depressed or hopeless?"; and

"During the last month, have you often had little interest or pleasure in doing things?"



Recommendation based on clinical experience

Self-management options influence behaviour, thinking and mood. They include relaxation therapy, stress management, and how to manage anxiety. Your healthcare professionals should consider whether or not these options could improve your symptoms, and any distress related to angina.



Psychological support can help to improve persistent low mood and anxiety, but you may need to be referred to a specialist clinic to receive this. Relaxation therapy has been shown to be helpful for angina. Our booklet on cardiac rehab gives a helpful overview of psychological therapies for patients with a cardiac diagnosis. Go to www.sign.ac.uk/pat150-cardiac-rehab.html or request a paper copy by phoning 0131 623 4720.

You can use this space to write down how you are feeling.

What information will I receive?

Throughout your care, professionals should make sure you have information in a format that suits you.



Throughout your care, your healthcare professionals should do the following:

- Explain to you how to distinguish between angina and a heart attack and that you should call 999 if you suspect you are having a heart attack.
- Discuss the importance of taking medication.
- Make sure you understand the importance of carrying your glyceryl trinitrate spray or tablets at all times.
- Offer you advice on how you can improve your lifestyle to prevent your angina getting worse.
- Offer further information such as booklets from the British Heart Foundation or Chest Heart & Stroke Scotland.



Across Scotland there are cardiac support groups working with various charities such as Chest Heart & Stroke Scotland (CHSS).

These self-help groups are run by people with experience of heart disease. You and your family may find it helpful to meet and talk to people who have gone through similar experiences. You can refer yourself to one of these support groups if your cardiac team hasn't already done so.

Support groups can give you and your family and friends:

- emotional and social support
- help with rehab (through a structured exercise programme)
- advice on preventing further heart problems, and
- information and education.

Where can I find out more?

NHS inform

NHS inform provides a health and care information service for the people of Scotland, including information on over 850 medical conditions such as heart failure, high blood pressure, depression and diabetes.

Phone: 0800 22 44 88 (8am–10pm)

www.nhsinform.scot/illnesses-and-conditions/heart-and-blood-vessels

Email: nhs.inform@nhs24.scot.nhs.uk

Organisations that help with heart disease

British Heart Foundation (BHF)

The BHF is the nation's heart charity and the largest independent funder of cardiovascular research. The BHF provides vital information for patients and carers. To speak to one of its cardiac nurses for advice and support, call its helpline.

To order any of its publications, visit

<http://bhf.org.uk/publications> or

Phone: 0870 600 6566 or

Email orderline@bhf.org.uk or

Phone: 020 7554 0000

Heart Helpline: 0300 330 3311

www.bhf.org.uk

Chest Heart & Stroke Scotland (CHSS)

This is Scotland's health charity set up to improve the quality of life for people in Scotland affected by chest, heart and stroke illness through research, influencing public policy, advice and information, and support in the community.

Phone: 0131 225 6963

Advice Line Nurses: 0808 801 0899 (9.30am–4pm, Monday to Friday) free from landlines and mobiles

www.chss.org.uk

Email: admin@chss.org.uk

Quit Your Way Scotland

Phone: 0800 84 84 84 (Monday–Friday 8am–10pm, Saturday and Sunday 9am–5pm)

<https://www.nhsinform.scot/care-support-and-rights/nhs-services/helplines/quit-your-way-scotland>

Blood Pressure UK

This charity is dedicated to lowering people's blood pressure to prevent disability and death from stroke and heart disease.

Phone: 020 7882 6218

www.bloodpressureuk.org

Email: help@bloodpressureuk.org

Other websites

Breathing Space

Breathing Space is a free, confidential phone and web-based service for anyone who is experiencing low mood or depression, or who is unusually worried and in need of someone to talk to.

Phone: 0800 83 85 87

weekdays: Monday to Thursday 6pm to 2am

weekend: Friday 6pm to Monday 6am

www.breathingspace.scot

Diabetes UK

Diabetes UK provides information, advice and support to help people with diabetes manage the condition well, and bring people together for support when it's needed most.

Phone: (Careline Scotland) 0141 212 8710

www.diabetes.org.uk

Email: careline.scotland@diabetes.org.uk

How are SIGN guidelines produced?

Our guidelines are based on the most up-to-date scientific evidence. We read research papers to find evidence for the best way to diagnose, treat and care for patients. If we cannot find this out from the research evidence, we ask healthcare professionals to use their clinical experience and judgment to suggest treatments.



1

Gather lived experience



2

Identify the questions



3

Search for the evidence



4

Look at the evidence



5

Make judgements and recommendations



6

Ask people for feedback



7

Publish



8

Let everybody know about our guidelines

You can read more about us by visiting www.sign.ac.uk or you can phone **0131 623 4720** and ask for a copy of our booklet 'SIGN guidelines: information for patients, carers and the public'.

The Scottish Intercollegiate Guidelines Network (SIGN) writes guidelines which give advice for healthcare professionals, patients and carers about the best treatments that are available. We write these guidelines by working with healthcare professionals, other NHS staff, patients, carers and members of the public.

We are happy to consider requests for other languages or formats. Please phone **0131 623 4720** or email sign@sign.ac.uk

www.sign.ac.uk



www.healthcareimprovementscotland.org

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The Healthcare Environment Inspectorate, the Scottish Health Council, the Scottish Health Technologies Group, the Scottish Intercollegiate Guidelines Network (SIGN) and the Scottish Medicines Consortium are key components of our organisation.

