SIGN

Scottish Intercollegiate Guidelines Network

NHS Quality Improvement Scotland

# for patients

# stable angina

If you start to feel unwell when your GP surgery is closed, phone NHS 24 on **0845 4 24 24 24**.

Chest pain is a symptom of a heart attack. If you start to feel severe chest pain you should phone **999** (or **112** from a mobile phone).


ISBN(10) 1 905813 07 4
ISBN(13) 978 1 905813 07 0
First published 2007

# what is this booklet about?

This booklet is for people with stable angina and for their families and friends. It is based on the recommendations from a national clinical guideline on how to look after patients with stable angina. The booklet will help to make patients aware of the tests and treatment they should expect to receive from the NHS.

This booklet will explain:

- 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.

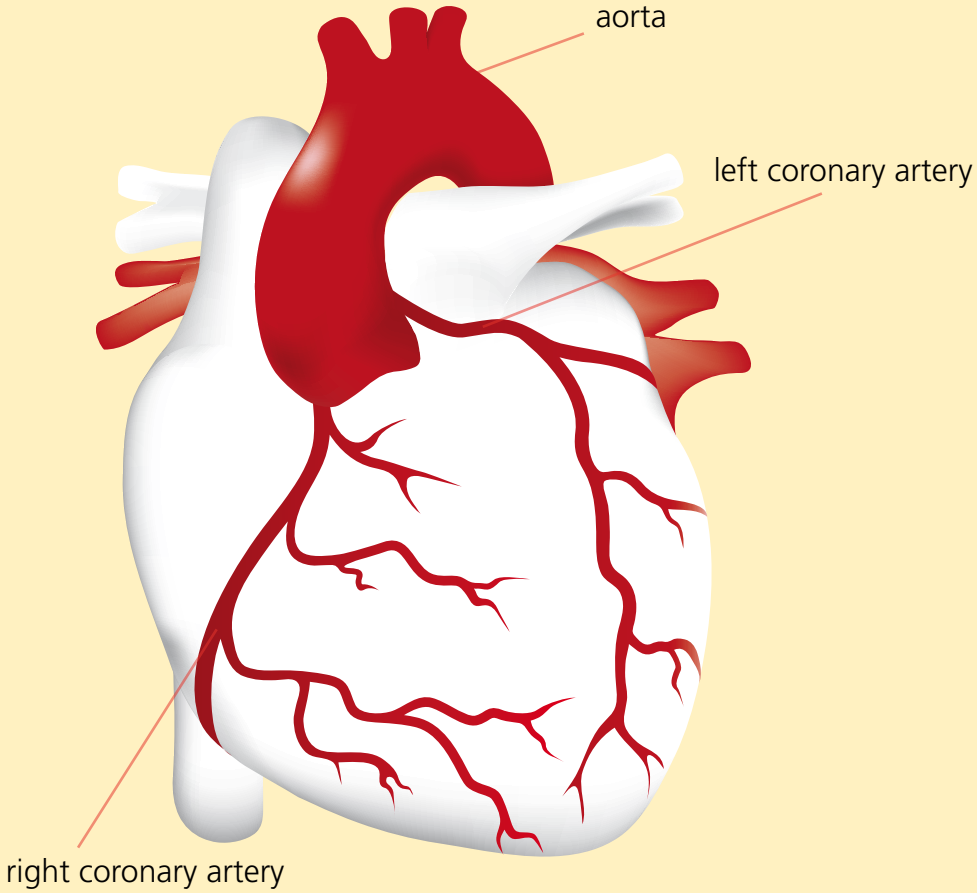
We have listed a number of support organisations at the end of the booklet where you can get more information.

There is an explanation of all the medical terms we have used on page 26.

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 stable angina?

Stable angina is a symptom that suggests that you have underlying coronary heart disease (CHD). Stable angina is chest discomfort brought on by activities such as exercise and emotional stress, which make high oxygen demands on your heart. It is caused by your arteries narrowing which means not enough oxygen rich blood can reach your heart muscle which causes discomfort.



# diagnosis

**How will the doctor know if I have stable angina?**

If you have stable angina you will be treated by your general practitioner (GP). You may also have to visit a cardiology out patient clinic.

If your doctor suspects that you have angina he or she will assess you by:

> ***Patients feel it is important to receive early diagnosis and treatment***

| | |
|---|---|
| ***asking you about your symptoms including*** | • Type of discomfort – often described as tight, dull or heavy<br>• Location – for example left side of chest, arm, neck, jaw or back<br>• When it occurs – for example with emotional stress or when exercising, with the discomfort stopping when you rest<br>• How long the pain lasts |
| ***asking about your clinical history*** | • Family history of coronary heart disease<br>• Smoking history<br>• Diabetes<br>• Blood pressure |
| ***monitoring your blood*** | • Blood sugar levels<br>• Haemoglobin levels<br>• Cholesterol levels<br>• Thyroid hormone levels |

# tests

Your doctor should arrange for you to have further tests which may include:

- **Electrocardiography** – an **electrocardiogram** (ECG) is a test which records the rhythm and electrical activity of your heart. Electrodes are placed on your body and are connected to a recording machine.
- **Exercise Tolerance Testing** (ETT) – this is an ECG that is recorded when you are walking on a treadmill or pedalling an exercise bike. The doctor will ask you about any chest pain you experience when you are doing this.
- **Myocardial Perfusion Scintigraphy** (MPS) – if you cannot take an exercise tolerance test or an ECG your doctor may offer you a scan called Myocardial Perfusion Scintigraphy. You will be given an injection containing a small amount of radioactive material (this is not harmful). A special camera will monitor this material. This lets the doctors monitor the flow of blood to your heart muscle.
- **Coronary angiogram** – if you are considered to be at high risk or if your diagnosis is unclear, you should be given this test. A catheter is inserted into your groin or arm and directed through your blood vessels. A dye is put down the catheter into the blocked arteries and an x-ray is taken to show the doctors where your blood vessels are narrowed.

*Patients identified a need for open communication from doctors, particularly in response to questions from patients and their families. Patients should receive a full explanation of the results of the assessment and any investigations undertaken. They should not hesitate to ask any further questions that they may wish answered.*

# medicines for stable angina

## What medication will I receive?

Medicines recommended for angina include:

### Angiotensin converting enzyme inhibitors (ACE inhibitors)

Your doctor should consider giving you ACE inhibitors. These drugs lower your blood pressure and reduce the work your heart has to do to pump blood around your body.

Side-effects of ACE inhibitors may include:

- cough
- low blood pressure/dizziness (**hypotension**)
- kidney problems (**renal impairment**)
- high levels of potassium in the blood (**hyperkalaemia**)

### Aspirin

Aspirin is an antiplatelet therapy used to prevent your blood from clotting and blocking your arteries. As angina is a symptom of underlying **arteriosclerosis**, you should receive aspirin on a long term basis.

## Beta blockers

Your doctor should prescribe a beta blocker which will help relieve your symptoms of angina. Beta blockers work by blocking the actions of hormones called adrenaline and noradrenaline which make the heart beat faster (increased heart rate). Beta blockers slow down your heart rate and lower your blood pressure.

If you can't take beta blockers, you should be treated with either **calcium channel blockers**, **long lasting nitrates** or a drug called **nicorandil**.

## Calcium channel blockers

Calcium channel blockers are generally as effective as beta blockers for treating the symptoms of angina. You may be prescribed these drugs if you can't take beta blockers.

If you have been diagnosed with Prinzmetal angina (a rare form of angina in which pain is experienced at rest rather than during activity) you should be given a calcium channel blocker instead of beta blockers. Prinzmetal angina is caused by your coronary arteries going into spasm. Calcium channel blockers will relax the muscle.

## Combination therapy (beta blocker and calcium channel blocker)

If your angina has not been controlled with a beta blocker, your doctor should also give you a calcium channel blocker.

There is no evidence to suggest that adding a third anti-anginal drug (such as a nitrate) to your treatment will control your symptoms.

You should be considered for referral to a cardiologist if your symptoms are not controlled with two drugs.

## Lipid lowering therapy with statins

Statins are drugs that are used to 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. You should be given long term statin therapy if you have angina due to arteriosclerosis.

You should avoid grapefruit juice if you are taking statins as it affects the way these drugs are processed by the body.

## Nicorandil

Your doctor may prescribe you with a drug called Nicorandil if you can't take beta blockers. This works by relaxing blood vessels and increasing the supply of blood and oxygen to your heart.

**Nitrates**

Different types of nitrate drugs are helpful for people with angina. **Sublingual glycerine trinitrate** tablets or spray should be used for the immediate treatment relief of angina and before doing anything that you know might bring on your angina.

Long-acting nitrates are another class of drug that is effective in treating the symptoms of angina.

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

***Patients feel there is a need for doctors to give appropriate information on medication (including side effects) and provide patients with a clear explanation on why they have been given these drugs. They also feel it is important that prescribed drugs are frequently reviewed.***

# other treatments

**Will I need to have a procedure or surgery?**

You may be considered for a procedure called **coronary revascularisation** to relieve your anginal symptoms. This will be carried out by interventional cardiologists or surgeons in a specialist unit. There are two ways they can do this:

- **Percutaneous intervention** (PCI) or **angioplasty** – in this procedure a catheter (a thin hollow tube) with a small inflatable balloon at its tip is passed into an artery in either your groin or your arm. The operator uses x-ray screening to direct the catheter to a coronary artery until its tip reaches the narrowed or blocked section. The balloon is then gently inflated so that it squashes the fatty tissue responsible for the narrowing. This widens the artery so blood can flow more easily. Inside the catheter there is a short tube of stainless steel mesh, called a stent, which is left to hold open the narrowed blood vessel.
- **Coronary artery bypass grafting** (CABG) – 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. Where possible, the graft that should be used is the internal mammary artery which is taken from inside the rib cage.

You and your doctors should discuss both these options and decide which procedure would be the best one for you. The people who are likely be involved in this decision making process are:

- interventional cardiologists;
- cardiac surgeons; and
- cardiac anaesthetists.

You should have CABG if:

- you have left main stem disease (the left main stem is the section of the left coronary artery before it branches);
- you have damage to three of the main blood vessels; or
- PCI is unsuitable.

This surgery will prevent further development of coronary artery disease.

You should have PCI if:

- you have damage to one or two of the blood vessels and drugs have failed to improve your angina; or
- CABG surgery is not suitable for you.

# patient concerns

## Will I receive information about my condition?

You should be given appropriate information to help you understand and manage your condition. This may come from books, leaflets, video tapes and the internet.

If you are having coronary artery bypass surgery, your healthcare team should give you information before and afterwards to improve:

- management of risk factors;
- psychological distress (such as anxiety); and
- physical functioning (ability to carry out everyday activities).

## Will I need to take medication after surgery?

You may have to take medication after your surgery to prevent further heart disease. These may include:

- cholesterol lowering tablets ie statins;
- antiplatelet therapy ie aspirin; and
- ACE inhibitors.

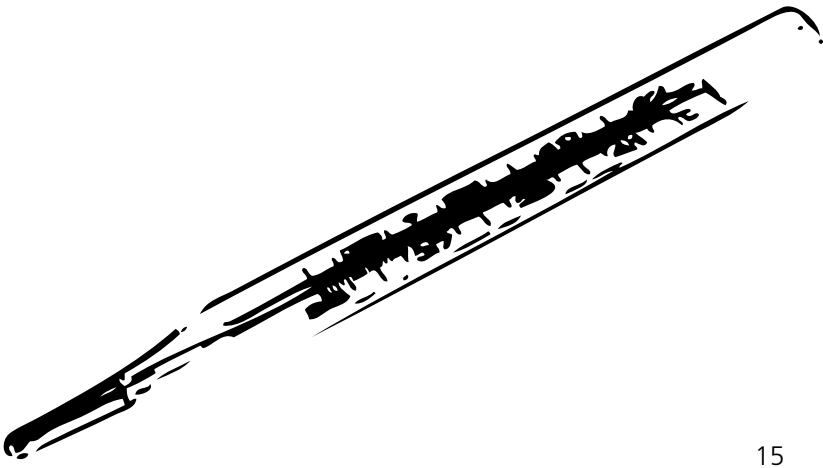
More information on the prevention of heart disease can be found in our patient version of the SIGN guideline on risk estimation and the prevention of cardiovascular disease. You can download this from our website **www.sign.ac.uk** or request a hard copy by phoning 0131 718 5090.

**What help will I receive as I recover?**

You should receive cardiac rehabilitation (a structured exercise programme) after coronary revascularisation.

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

You can read more about cardiac rehabilitation in the SIGN guideline on cardiac rehabilitation **www.sign.ac.uk** or you can request a hard copy by phoning 0131 718 5090.



# surgery for other health problems

**What if I need to go into hospital for another kind of operation?**

People with angina are at risk of heart problems happening when they have surgery that is not related to their heart disease. Before having surgery, your doctors will consider your fitness and assess your risk of a heart problem happening 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.

If you are at high risk and are having high risk surgery eg abdominal, vascular or head and neck surgery, you should have further investigations which may include:

- **exercise tolerance testing** (ETT); and
- **coronary angiography**.

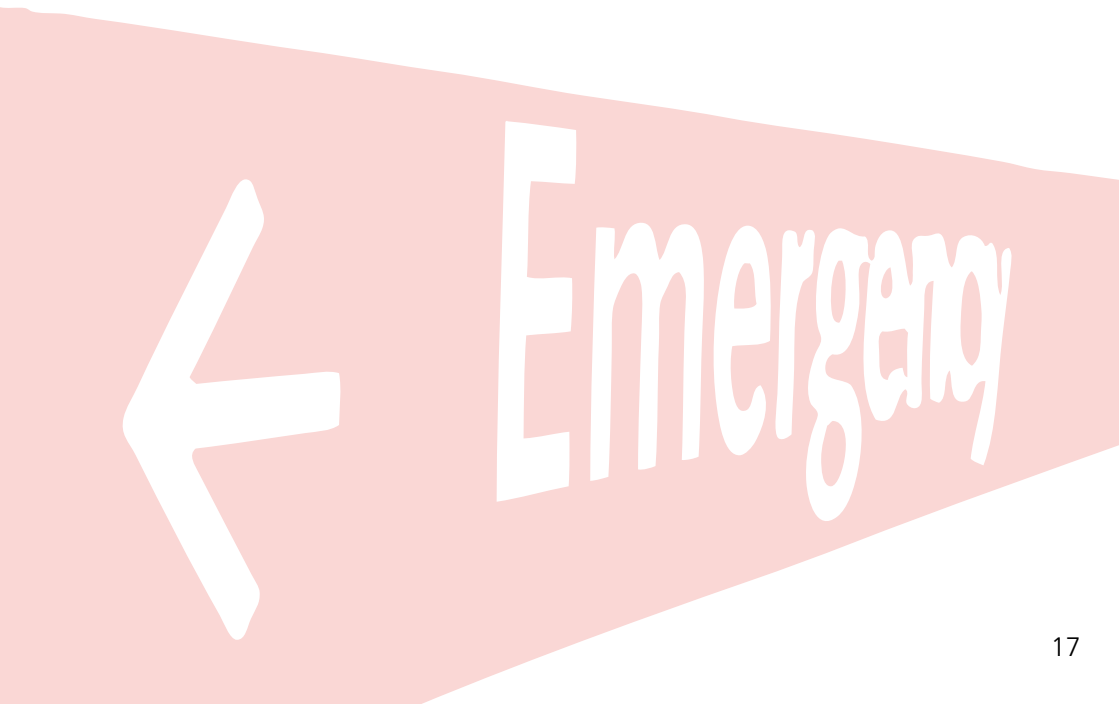
These tests are explained on page 26.

## How will I be prepared for surgery?

Before your operation your doctor will check to make sure you are fit for surgery. You will not be considered for coronary revascularisation before your surgery unless your cardiac symptoms are unstable and/or coronary artery bypass grafting would be beneficial to you in the long term.

Sometimes people have to have surgery in emergency situations. If this happens, you should continue to receive antiplatelet therapy. If your risk of bleeding is unacceptable and your antiplatelet therapy is withdrawn, you should be given it again as soon as possible after surgery.

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

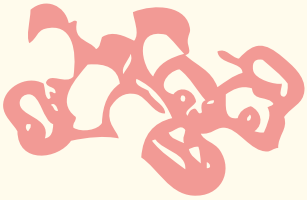


## What heart medication will I receive during surgery?

Medicines recommended during surgery include:

### Antiplatelet therapy or aspirin therapy

Aspirin is associated with a high bleeding risk and may be stopped before you have your surgery. Low dose aspirin therapy should only be stopped when related bleeding complications are expected to be high. If aspirin therapy is stopped before surgery, it should be started again as soon as possible after surgery.



## Beta blockers

Your doctors should consider giving you beta blocker therapy if you are at high risk of cardiac events and are about to have any kind of surgery. If possible they should be started days or weeks in advance of surgery.

If you have already been prescribed beta blockers to control your anginal symptoms, you should continue to take these prior to surgery.

## Statins (cholesterol lowering drugs)

Statins are drugs that are used to lower the level of cholesterol in your blood. Too much cholesterol can cause **atheroma** (fatty tissue) to build up and narrow your coronary arteries.

If you have been prescribed statin therapy, you should continue to take this before you have any surgery.

You should be given statin therapy before having major vascular surgery.

# coping with stable angina

## How will I feel after I have been diagnosed with angina?

Often when people are diagnosed with angina, they 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 is happening to your body. It is not unusual for you to experience these emotions and your doctor should give you information to help you understand and cope with your angina. Your doctor should assess your mood, quality of life and function. Your doctor will do this by asking you questions such as:

- "During the last month, have you often been bothered by feeling down, depressed or hopeless?"; and
- "During the last month, have you often been bothered by having little interest or pleasure in doing things?"

## What else can help improve my symptoms?

Treatments using a psychological and behavioural approach can help to improve symptoms of angina and can influence your behaviour, thinking and mood. You should be considered for psychoeducational treatments to reduce angina symptoms and angina symptom related distress.

You could benefit from the use of the Angina Plan. The Angina Plan is a self management programme. You can work through this with a member of healthcare staff. It can help to improve your angina symptoms, improve daily activity and reduce anxiety and depression.

## How will my treatment affect my mental health?

If you have to undergo CABG your doctor should advise you that you may experience cognitive dysfunction. This means that your memory, speed of thought and understanding may be affected. This is relatively common in the first two months after surgery.

You may be at more risk of increasing cognitive dysfunction if you are older, have evidence of **arteriosclerosis** (narrowed arteries) or have existing cognitive impairment. Your doctor should take these factors into account when considering your options for revascularisation to help your angina.

You may feel anxious and depressed before you have your CABG or after you have had it. Your doctor should offer you screening for anxiety and depression before you have your surgery and during the following year. If you need it, you should receive psychological therapy, rehabilitation and appropriate medication.

You should be offered a rehabilitation programme after revascularisation surgery.

Some people experience higher levels of anxiety and depression than others. Your doctor should pay particular attention to your mental health if you are female, living alone or are under 55 years of age.

***Patients feel it is important for doctors to discuss the psychological aspects of cardiac rehabilitation and help patients appreciate the value of it. This is important for recovery of confidence, psychological and physical well-being.***

# information and support

## Who can I talk to?

Your doctor or practice nurse should give you information on support groups and refer you to your nearest group if you feel this would be useful. There are cardiac support groups across Scotland supported by Chest Heart and Stroke Scotland (CHSS). These self help groups are run by lay 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 healthcare team hasn't already done so (details of CHSS are listed on page 24). Support groups can give you and your family/friends:

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

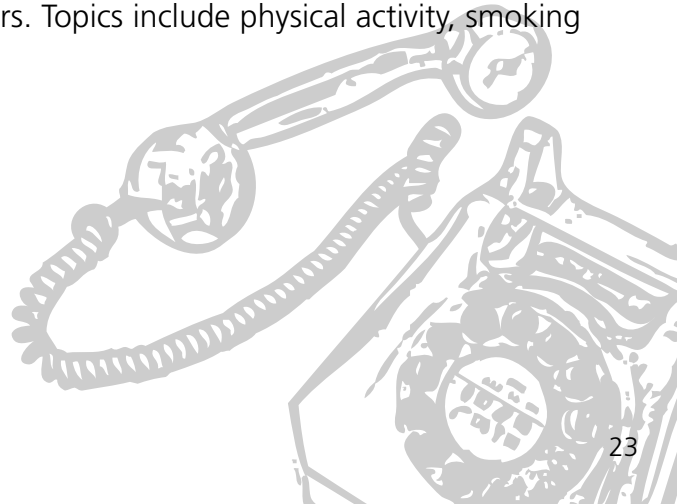
## Where can I find out more?

**British Cardiac Patients Association**
BCPA Head Office
2 Station Road
Swavesey
Cambridge
CB4 5QJ
Phone: 0800 479 2800 • Fax: 01954 202 022
Email: enquiries@bcpa.co.uk • **www.bcpa.co.uk**

The British Cardiac Patients Association is a charitable organisation run by volunteers providing support, advice and information to cardiac patients and their carers.

**British Heart Foundation (Scotland)**
4 Shore Place
Edinburgh
EH6 6WW
Phone: 0131 555 5891 • Email: scotland@bhf.org.uk
Heart Information line: 08450 70 80 70 (available Mon-Fri 9am-5pm)
**www.bhf.org.uk**

The British Heart Foundation provides a free telephone information service for those seeking information on heart health issues. Also provides a range of written materials offering advice and information to CHD patients and carers. Topics include physical activity, smoking and diabetes.



**Chest Heart and Stroke Scotland**
65 North Castle Street
Edinburgh
EH2 3LT
Phone: 0131 225 6963 • Freephone helpline: 0845 0776000
Email: admin@chss.org.uk • **www.chss.org.uk**

Chest Heart and Stroke Scotland provides a 24 hour advice line offering confidential, independent advice on all aspects of chest, heart and stroke illness. A series of information booklets, factsheets and videos are available free of charge to patients and carers. There are over 30 cardiac support groups in Scotland which are affiliated to CHSS, patients can contact CHSS for details of their nearest local support group.

**Depression Alliance Scotland**
3 Grosvenor Gardens
Edinburgh
EH12 5JU
Phone: 0131 467 3050 • E-mail: info@dascot.org
**www.depressionalliance.org**

Depression Alliance Scotland provides information and support for people in Scotland who have depression.

**Heart Surgery in Great Britain**
**http://heartsurgery.healthcarecommission.org.uk/**

This website has been developed by the Healthcare Commission and the Society for Cardiothoracic Surgery in Great Britain and Ireland to help heart surgery patients make informed choices about their treatment. It provides patients and carers with information on the different operations available and the benefits of having heart surgery.

**NHS Health Scotland**
Woodburn House
Canaan Lane
Edinburgh
EH10 4SG
Phone: 0131 536 5500 • Textphone: 0131 535 5503
Fax: 0131 535 5501
Email: publications@health.scot.org.uk (information on obtaining Health Scotland publications); library.enquiries@health.scot.nhs.uk (help with general health information enquiries)
**www.hebs.com**

NHS Health Scotland is a special health board within NHS Scotland. The organisation provides information on projects, publications, support groups and information leaflets relating to CHD.

**NHS 24**
Phone: 0845 4 24 24 24
**www.nhs24.com**

NHS 24 is a nurse led service for members of the public. It is a free helpline offering health information, advice and help over the phone.

# glossary

Angiotensin converting enzyme inhibitor (ACE inhibitor) a drug used to lower blood pressure

Angioplasty a procedure where a catheter (a thin hollow tube) with a small inflatable balloon at its tip is passed into an artery in either your groin or your arm. The operator uses x-ray screening to direct the catheter to a coronary artery until its tip reaches the narrowed or blocked section. The balloon is then gently inflated so that it squashes the fatty tissue responsible for the narrowing. This widens the artery so blood can flow more easily. Inside the catheter there is a short tube of stainless steel mesh, called a stent, which is left in place to hold open the narrowed blood vessel

Aspirin a drug which is used to help prevent blood clots

Arteriosclerosis the build up of fatty materials within the walls of the arteries

Beta blocker a drug which blocks the action of hormones called noradrenaline and adrenaline, which normally increase your heart rate (make your heart beat faster). Using beta blockers slows down your heart rate and lowers your blood pressure

Calcium channel blocker a drug that is used to treat angina and high blood pressure

Cardiologist doctor specialising in heart disease

Coronary angiogram a procedure where a catheter is inserted into your groin or arm and directed through your blood vessels. A dye is then put down the catheter into the blocked arteries and an x-ray is taken to give the doctors pictures showing where your blood vessels are narrow

Coronary artery bypass grafting (CABG) an operation to bypass narrowed section or sections of coronary arteries and improve the blood supply to the heart

Electrocardiogram (ECG) a test which records the rhythm and electrical activity of your heart by putting electrodes on your body and connecting these to a recording machine

Exercise Tolerance Testing (ETT) this is an ECG that is recorded when you are walking on a treadmill or pedalling an exercise bike

Functional capacity ability to carry out physical activity (such as climbing stairs)

High blood pressure occurs when the smaller blood vessels in the body become narrow and cause pressure to build up. Also known as hypertension

Hypertension high blood pressure

Internal mammary artery blood vessel inside the chest cavity

Myocardial Perfusion Scintigraphy (MPS) a scan to assess the function of your heart as well as blood flow. A small amount of radioactive material is injected into the blood. A large camera positioned close to the chest picks up the gamma rays given off by the radioactive material

Nitrates drugs used to relieve angina

Percutaneous intervention (PCI) a procedure where a catheter (a thin hollow tube) with a small inflatable balloon at its tip is passed into an artery in either your groin or your arm. The operator uses x-ray screening to direct the catheter to a coronary artery until its tip reaches the narrowed or blocked section. The balloon is then gently inflated so that it squashes the fatty tissue responsible for the narrowing. This widens the artery so blood can flow more easily. Inside the catheter there is a short tube of stainless steel mesh, called a stent, which is left in place to hold open the narrowed blood vessel

Peripheral arterial disease a disease of the arteries which supply blood to the limbs. This usually causes pain in the legs when walking

Prinzmetal angina a rare form of angina in which pain is experienced at rest rather than during activity.

Refractory angina when symptoms of angina have not been controlled with medication.

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

Statin therapy drugs used to reduce cholesterol levels (a fatty material made in the body by the liver)

Unstable angina is angina which you have experienced for the first time or angina which has previously been stable but has worsened. Unstable angina can occur during periods of rest or with minimal activity

References:

British Heart Foundation (BHF). The heart – technical terms explained: Heart Information Series Number 18; BHF; London; 2004.

## What is SIGN?

The Scottish Intercollegiate Guidelines Network (SIGN) writes guidelines which give advice to doctors, nurses, physiotherapists, occupational therapists, other healthcare staff and patients about the best treatments that are available. We write them by working with doctors, nurses and other NHS staff and with patients, carers and members of the public. The guidelines are based on the most up to date medical evidence.

## Alternative formats

If you would like a copy of this leaflet in an alternative language or format such as large print, please contact

Karen Graham
Patient Involvement Co-ordinator
Phone: 0131 718 5108 • Email: karen.graham2@nhs.net

**This leaflet is based on a clinical guideline issued to all NHS staff.**

The 2007 guideline was developed by SIGN, the Scottish Intercollegiate Guidelines Network. It is based on the most up to date medical evidence.

The full clinical guideline can be downloaded from the SIGN website www.sign.ac.uk

SIGN
28 Thistle Street, Edinburgh EH2 1EN
Tel: 0131 718 5090 • Fax: 0131 718 5114 • www.sign.ac.uk