SIGN

Scottish Intercollegiate Guidelines Network

NHS Quality Improvement Scotland

for patients

arrhythmias

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).

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what is this booklet about?

This booklet is for patients with cardiac arrhythmias and their families and friends. A cardiac arrhythmia is the name for what happens when your heart doesn't beat to its usual rhythm. The booklet is based on the recommendations from a national clinical guideline about how to look after patients with cardiac arrhythmias.

The booklet will help to make patients and their families aware of the tests and treatment they should expect to receive from the NHS. It t also gives advice on what to do if someone has a cardiac arrest.

The type of arrhythmia a patient experiences is related to the heart problem they have.

The booklet explains arrhythmias commonly experienced with:

- **cardiac arrest**;
- **acute coronary syndromes**;
- **chronic coronary artery disease**; and
- **coronary artery bypass graft surgery**.

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 29.

what are cardiac arrhythmias?

If your heart beats with a rhythm that is not normal, it is called an arrhythmia. There are different kinds of abnormal rhythms.

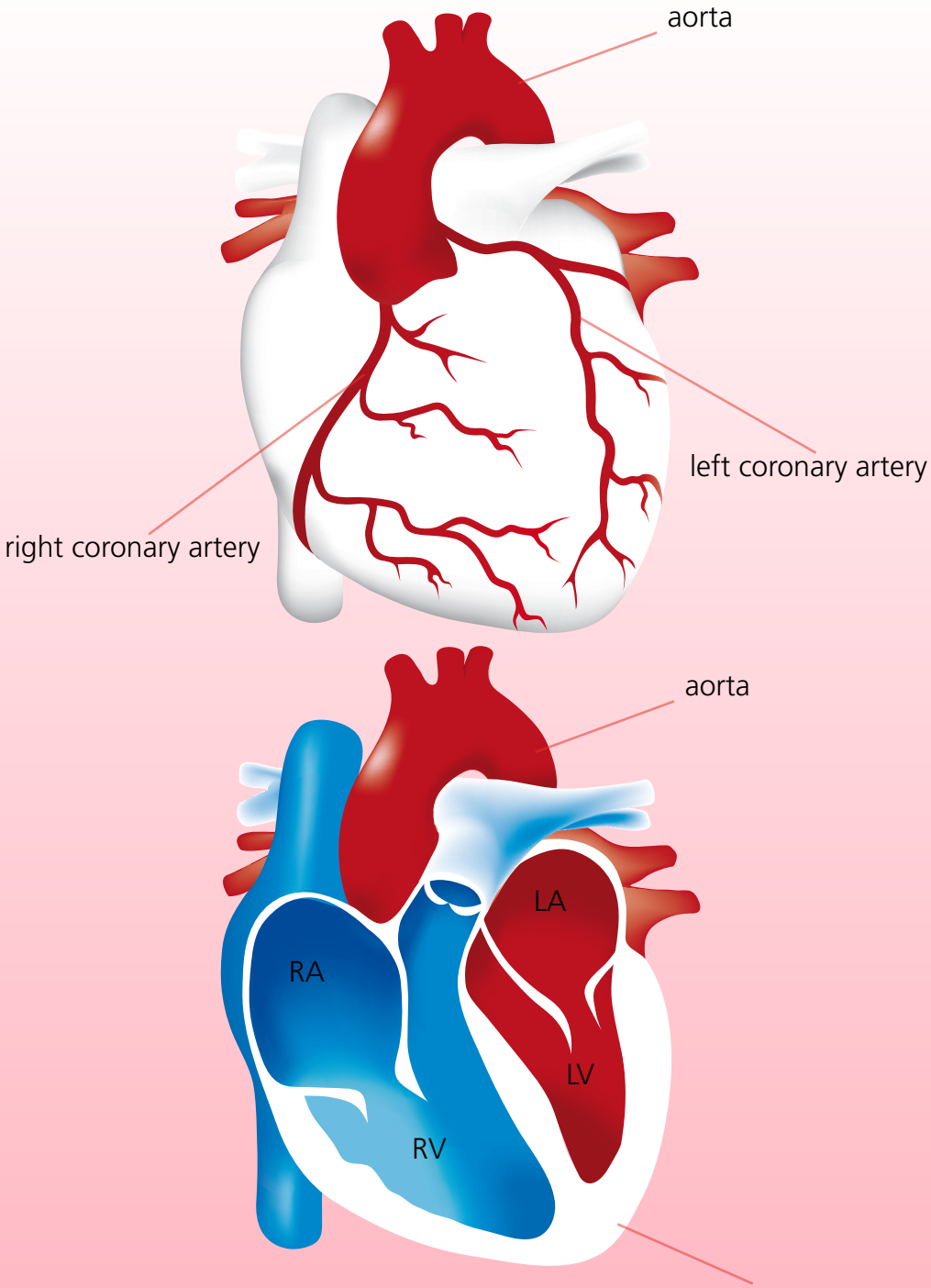
The lower chambers of your heart are called the **ventricles** (see diagram on page 4). **Ventricular arrhythmia** is what happens when the ventricles beat abnormally. If your ventricles beat abnormally fast this is called **ventricular tachycardia** (VT). If they "flutter" or fibrillate, this is called **ventricular fibrillation** (VF). If they beat abnormally fast this arrhythmia is known as a **ventricular tachycardia** (VT). The ventricles may also "flutter" and this is called **ventricular fibrillation** (VF).

The upper chambers of your heart are called the **atria** (see diagram on page 4). If they beat very rapidly it causes an arrhythmia known as **atrial fibrillation** (AF). This is also known as **palpitations**.

Bradycardia is the name for an abnormally slow heart rate.

Sometimes an arrhythmia can cause your heart to stop beating and pumping blood around your body. This is called a **cardiac arrest**. If this is not treated immediately it can cause people to die.

Patients feel it is important to receive early diagnosis and treatment. They identified a need for open communication with doctors, particularly in response to questions from patients and their families.



RA: right atrium
RV: right ventricle

LA: left atrium
LV: left ventricle

Treatments

What will happen if I have a cardiac arrest?

If you have a cardiac arrest there are several things that can be done to try to get your heart beating and your blood circulating around your body again:

Cardiopulmonary resuscitation (CPR)

This method for getting your heart beat back to normal is often carried out by lay people who are there when you have your cardiac arrest. CPR is used to provide breathing and to pump blood and oxygen around your body. CPR involves mouth to mouth resuscitation and chest compressions (also known as **external cardiac massage**). CPR should be continued until emergency help arrives. CPR alone rarely restarts the heart but it buys crucial time for the emergency services to arrive with additional equipment such as a defibrillator.

The CPR process is outlined on page 32.

Defibrillation

This procedure restores your normal heart beat using a device known as a **defibrillator**. This delivers a controlled electric shock through your chest wall to your heart. Treatment with a defibrillator increases your chances of survival after a cardiac arrest.

Drug treatment

Following CPR and/or defibrillation you may also be given drug treatment. The type of drug will depend on your heart rhythm.

If you still have VT/VF after CPR/defibrillation you may be given an injection of:

- **adrenaline/epinephrine**;
- **amiodarone**; or
- **magnesium**.

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.

These drugs can help get your circulation back to normal.

You will probably be given intravenous adrenaline /epinephrine if your cardiac arrest was caused because your heart:

- stopped beating completely; or
- was not strong enough to push blood out.

If your heart rate is slow (known as **bradycardia**) you should be treated with atropine. If you do not respond to atropine, you should be treated with a temporary pacemaker. This is called **temporary transcutaneous pacing**. Electrodes are put on your chest so that electrical impulses can be sent to your heart to help improve your heart rate. If this does not help, your doctors might consider using other drugs.

If you still have a slow heart rate after treatment with other drugs, the doctors will try a different way to get electrical stimulation to your heart. This is called **transvenous pacing**. Electrical impulses from an electronic pacemaker are sent to your heart through a catheter in one of your veins. This stimulates your heart to contract and produce your heartbeat.

arrhythmias and acute coronary syndromes (ACS)

What are acute coronary syndromes (ACS)?

"Acute coronary syndrome" (ACS) is a term that doctors use to describe a range of problems that can be caused by a sudden reduction in blood flow to the heart muscle caused by a narrowing or blockage of the blood vessels. This group of problems ranges from a threatened heart attack (**unstable angina**) to an actual heart attack (**myocardial infarction**). When a heart attack occurs, blockage of blood flow to the heart causes damage to the heart muscle and leaves a scar.

There are three different types of abnormal heart rhythm associated with ACS. These are **atrial fibrillation**, **bradycardia**/conduction disturbances and **ventricular arrhythmias**. These are described on page 3.

Treatments

How will arrhythmias associated with ACS be treated?

The possible treatments for atrial fibrillation, bradycardia and ventricular arrhythmias are shown in the table on page 16.

Bradycardia/conduction disturbances

Bradycardia is the name for an abnormally slow heart rate. It is possible that your bradycardia may not cause you any problems (**asymptomatic bradycardia**), and no action will be taken to correct it.

If your bradycardia is causing problems (**symptomatic bradycardia**) then your doctor should stop your beta blockers, digoxin and verapamil, as they may be causing the bradycardia.

A temporary pacemaker will be used to correct your heart beat. The type used will depend on the particular type of abnormal conduction happening in your heart. It will either be:

- **transvenous pacing** – electrical impulses from an electronic pacemaker are sent through a catheter in one of the veins to your heart; or
- **transcutaneous pacing** – electrodes are put on your chest so that electrical impulses can be sent to your heart.

Sometimes people have to be fitted with a permanent pacemaker. You are likely to be fitted with a pacemaker if your:

- heart is skipping beats;
- heartbeat is abnormally slow.

If you need a permanent pacemaker, your doctor should consider whether or not you are suitable for an implantable cardioverter defibrillator (ICD). This device monitors your heart rhythm and sends out an electrical shock if your heart rhythm becomes abnormal. This shock can return your heart rhythm to normal.

Ventricular arrhythmias

If you have a ventricular arrhythmia you should be assessed to see how well the left side of your heart is working.

If you have VT, or if VF recurs more than two days after your cardiac arrest, then your doctor should discuss with you the options of:

- **revascularisation** (a range of procedures that are used to unblock narrowed arteries); or
- a type of permanent pacemaker called an **implantable cardioverter defibrillator** (ICD).

If you have heart failure, diabetes or the left side of your heart is not working normally (**left ventricular dysfunction**, LVD), your doctor should also consider giving you a drug called eplerenone. You will not be given this if you have kidney problems or high levels of potassium in your blood.

arrhythmias and chronic coronary artery disease or left ventricular dysfunction

Coronary artery disease occurs when the arteries that supply blood to your heart muscle (the **coronary arteries**) become hardened and narrowed. This reduces the blood flow to your heart muscle so that it does not receive all of the oxygen that it needs to pump blood efficiently around your body.

A heart attack occurs when the arteries supplying your heart with oxygen become completely blocked and part of the heart muscle dies.

Left ventricular dysfunction (LVD) occurs when the lower chamber of your heart (the **ventricle**) on the left hand side of your heart, is not pumping blood around your body normally.

How will atrial fibrillation be treated?

Atrial fibrillation (AF) is a common complication of coronary artery disease.

If you have chronic coronary artery disease or the left side of your heart is not working normally, then you should be given medication to prevent AF. There are two drugs that can be used:

- **amiodarone**; and
- **sotalol**.

If you are taking amiodarone:

- you should be told about its potential side effects;
- your thyroid and liver function should be measured every six months to monitor for potential side effects on thyroid or liver function; and
- you should be referred for respiratory investigation if you develop new or increasing breathlessness. This may be in another part of the hospital.

What medication will I be given to help control my heart rate?

If you are experiencing AF, your doctor should aim to bring your heart rate back to normal using one or more of the drugs in the table on page 16.

You may need more than one drug to control your heart rate. For example, you may be given digoxin as well as your beta blocker or calcium channel blocker.

Ablation therapy

If your medicines do not improve your AF or the way that the left side of your heart is working, then you should be considered for ablation therapy to help bring your heart rhythm back to normal.

In ablation therapy an electrode catheter records the electrical activity in your heart. This tells the doctors where the abnormal heart rhythms are coming from. Guided radio waves are then used to destroy the parts of your heart muscle which are causing abnormal heart rhythms.

How will ventricular arrhythmias be treated?

If you are experiencing ventricle fibrillation, your doctor should aim to bring your heart rate back to normal using either one, or a combination of, the procedures and drugs listed in the table on page 16.

arrhythmias and coronary artery bypass graft surgery (CABG)

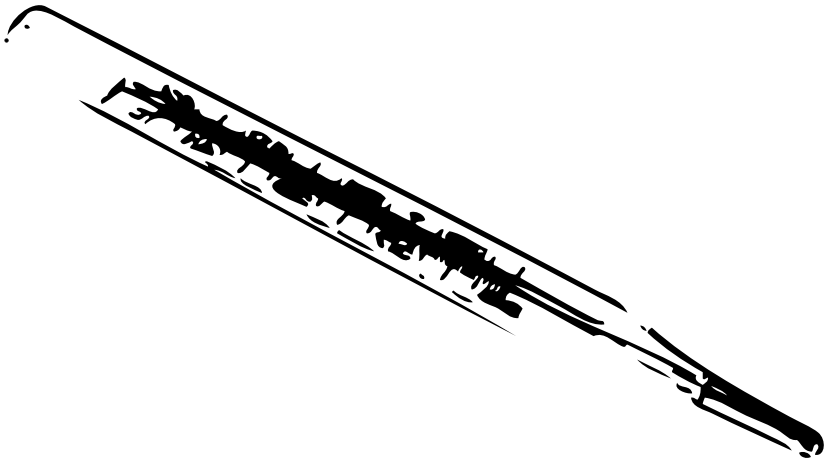
Atrial fibrillation (AF) is a common complication in patients who have CABG surgery.

If you need to have CABG surgery, your doctor should assess whether you are at risk of developing AF after your operation.

Your risk will depend on your:

- age;
- if you have had AF before; and
- how much blood the left side of your heart can pump to your body.

Before your operation the doctors should discuss the surgery and the possible outcomes with you. They should also give you information on arrhythmias and associated treatment.



What medication will I be given to reduce the risk of arrhythmias?

There are medicines available to reduce the risk of you having an arrhythmia following your CABG surgery.

After your CABG surgery you may be given some of the treatments in the table on page 16, if they are suited to you. They can help reduce your risk of developing arrhythmias.

After your CABG surgery it is important that the levels of potassium and calcium in your blood are measured regularly and corrected if they are not at the right level.

What treatment will I receive if I develop atrial fibrillation following my CABG surgery?

There is no clear evidence about which is the best treatment for patients with AF who have had CABG surgery. At the moment you should be treated in the same way as other patients with AF (see page 12).

What treatment will I receive if I develop ventricular arrhythmias following my CABG surgery?

If you develop ventricular arrhythmias following your CABG surgery, your doctors will consider the following:

- defibrillation;
- intravenous adrenaline /epinephrine;
- opening your chest for internal heart massage; and
- intravenous amiodarone.

treatment for cardiac arrhythmias

Amiodarone

Beta blockers

Calcium channel blockers (verapamil, diltiazem)

Amiodarone helps to control your heart rate.

You will be given this if:

- you have an arrhythmia following CABG
- your atrial fibrillation is causing problems with the flow of blood around your body (known as haemodynamic instability or compromise)
- you have recovered from a ventricular arrhythmia but an ICD would not be suitable for you.

Beta blockers work by stopping the actions of hormones called adrenaline and noradrenaline which make your heart beat faster (increased heart rate). Beta blockers will slow down your heart rate and lower your blood pressure.

- They are used when atrial fibrillation or ventricular fibrillation is making your heart beat too quickly.
- You should be given beta blockers if you have had a cardiac arrest.
- If you were taking beta blockers before CABG surgery, they should be restarted as soon as your doctors think it's safe to do so.

Calcium channel blockers work by relaxing your heart muscle which slows down your heart rate.

- If you have atrial fibrillation and are intolerant to beta blockers and the left side of your heart is not working normally you may be prescribed a calcium channel blocker called verapamil.
- Calcium channel blockers may be used to reduce the chance of developing arrhythmias following CABG.

Digoxin

Implantable cardioverter defibrillator (ICD)

Magnesium

Sotalol

Synchronised electrical cardioversion

treatment for cardiac arrhythmias

Digoxin helps to slow down your heart rate. It should be the first choice following atrial fibrillation if you have restricted mobility or have heart failure.

An ICD is an implanted device that sends electrical signals to your heart to stop abnormal rhythms and restart normal rhythms.
You should be given priority for an ICD if the left side of your heart is severely impaired causing a ventricular arrhythmia.

Magnesium may be given to reduce your chance of developing an arrhythmia following CABG.

Sotalol may be considered if you have recovered from a ventricular arrhythmia but an ICD would not be suitable for you.

In this procedure electrical currents are sent through your chest wall to help bring your heart beat back to normal. This may be done under general anaesthetic or using sedation.

It can be used if your atrial fibrillation is causing problems with the flow of blood around your body (known as haemodynamic instability or compromise).

You may also be considered for synchronised electrical cardioversion if you have had a ventricular arrhythmia.

Synchronised electrical cardioversion can be used in place of beta blockers.

revascularisation for ventricular arrhythmias

Coronary artery bypass grafting (CABG)

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

Primary percutaneous intervention (PCI)

This is a procedure to widen the narrowed part of your artery. 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-rays 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.

How will I feel after I have been diagnosed with an arrhythmia?

Sometimes patients with coronary heart disease (CHD) and their families suffer from anxiety and depression. This is very understandable given the high levels of distress and changes in lifestyle associated with CHD. As part of your assessment, your doctor should ask if you have had any symptoms of anxiety and depression. If you and your doctor agree, you should be referred to mental health services.

If you find that you have problems remembering things following your treatment, there is a screening test that may be useful. You may receive a psychological intervention as part of your rehabilitation. This should include a cognitive behavioural component. You can read more about cardiac rehabilitation in the SIGN guideline on cardiac rehabilitation **www.sign.ac.uk** or request a hard copy by phoning 0131 718 5090.

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 25). 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.

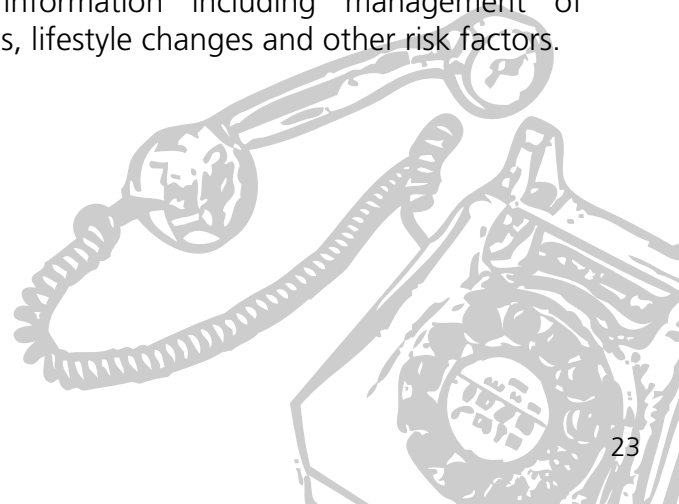
Where can I find out more?

Action on Smoking and Health (ASH)
8 Frederick Street
Edinburgh
EH2 2HB
Phone: 0131 225 4725 • Fax: 0131 225 4759
Email: ashscotland@ashscotland.org.uk • **www.ash.org.uk**

ASH Scotland is a voluntary organisation providing expert information and advice on all aspects of tobacco. Provides a range of written information including advice on passive smoking, smoking and young people, smoking cessation and smoking policies in the workplace.

Blood Pressure Association
60 Cranmer Terrace
London
SW17 0QS
Phone: 020 8772 4994 (Best time to telephone: 9.30am - 5.30pm, Monday to Friday) • Fax: 020 8772 4999
Email Information Service: www.bpassoc.org.uk/mailform.htm
www.bpassoc.org.uk

The Blood Pressure Association (BPA) helps people with high blood pressure to become more involved in controlling their condition. Provides a range of information including management of hypertension, medications, lifestyle changes and other risk factors.



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
Tel: 0131 225 6963 • Freephone helpline: 0845 0776000
Phone: admin@chss.org.uk • **www.chss.org.uk**

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.

Diabetes UK
10 Parkway
London
NW1 7AA
Phone: 020 7424 1000 • Careline: 0845 120 2960 (Best time to telephone: 9.30am - 5.30pm, Monday to Friday)
Email: careline@diabetes.org.uk • **www.diabetes.org.uk**

Diabetes UK is a national organisation providing information and advice on all aspects of diabetes such as diabetic care and diet. Provides a series of information leaflets including Diabetes UK's own magazine Balance.

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.

Heart UK
7 North Road
Maidenhead
Berkshire
SL6 1PE
Phone: 01628 628 638 (Best time to telephone: 9.30am - 4pm, Monday to Friday) • Fax: 01628 628 698
Email: ask@heartuk.org.uk • **www.heartuk.org.uk**

Heart UK is a national charity aiming to offer information and support to anyone at high risk of CHD, particularly families with inherited high cholesterol. Provides a range of information including management of CHD by lifestyle, drugs and diet.

High Blood Pressure Foundation
Department of Medical Sciences
Western General Hospital
Edinburgh
EH4 2XU
Phone: 0131 332 9211 (Best time to telephone: 9.30am - 5pm, Monday to Friday) • Fax: 0131 332 9211 • Email: hbpf@hbpf.org.uk
www.hbpf.org.uk

The High Blood Pressure Foundation is a registered charity which aims to improve the assessment, treatment and public awareness of high blood pressure. Provides a range of information leaflets including understanding high blood pressure and cholesterol and cardiovascular risk.

Implanted Defibrillator Association of Scotland
10 Selkirk Avenue
Paisley
PA2 8JF
Tel: 01505 813 995 • Email: hanheart@aol.com

This group provides information, advice and practical support to patients who have implantable defibrillators.

Mental Health Foundation (Scotland)
Merchant's House
30 George Square
Glasgow, G2 1EG
Phone: 0141 572 0125 • Email: Scotland@mhf.org.uk
www.mentalhealth.org.uk

The Mental Health Foundation helps people prevent, cope with and recover from mental health problems. Provides a range of factsheets on mental health issues including anxiety and depression.

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.

Scotland's Health on the Web
www.show.scot.nhs.uk

This website provides public access to publications relating to CHD such as the strategy for CHD and stroke in Scotland.

Scottish Association for Mental Health (SAMH)
Cumbrae House
15 Carlton Court
Glasgow
G5 9JP
Phone: 0141 568 7000 (Best time to telephone: 2pm-4.30pm, Monday to Friday) • Email: enquire@samh.org.uk
www.samh.org.uk

Provides patients and carers with information on all aspects of mental health.

glossary

Ablation therapy a procedure which uses an electrode catheter to record the electrical activity in your heart. Radio frequency is then used to destroy the parts of your heart muscle which are causing abnormal heart rhythms

Acute coronary syndromes a pattern of symptoms of chest pain including unstable angina and heart attack

Amiodarone a drug used to help restore a normal heart rhythm

Angina chest discomfort brought on by activities such as exercise and emotional stress which make high oxygen demands on the body

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

Arrhythmia a disorder of the heart rhythm

Atria the two upper chambers of the heart

Atrial fibrillation a type of arrhythmia (abnormal heart rhythm) in which the atria (upper two chambers of the heart) beat very rapidly. Atrial fibrillation can cause quite unpleasant palpitations and sometimes breathlessness

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

Bradycardia a slow heart rate

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

Cardiac arrest when the heart stops pumping suddenly

Cardiologist a doctor specialising in heart disease

Conduction disturbance when the electrical activity in the heart is not transferring properly

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

Coronary artery disease a narrowing or blocking of the coronary arteries (vessels that carry blood to the heart)

Defibrillation a procedure to restore a regular heart rhythm by delivering an electric shock through the chest wall to the heart

Defibrillator a device which delivers an electric shock through the chest wall to the heart in order to restore a normal heart beat

Digoxin a drug used to treat fast heart beats

Haemodynamic compromise problems with the flow of blood around your body

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

Hypertension high blood pressure

Implantable cardioverter defibrillator (ICD) a device which monitors your heart rhythm and sends out an electrical shock if your heart rhythm becomes abnormal

Percutaneous intervention (PCI) an operation to widen your narrowed artery using a catheter (thin hollow tube) with an inflatable balloon. Your doctor will insert the catheter into an artery at your groin or arm and directs the catheter to the narrowed section. The balloon is inflated to remove the fatty tissue which is causing the narrowing. The doctor will use the tube of steel mesh from the catheter to keep the widened artery open. This is known as a stent.

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

Sotalol a drug used to slow a rapid heart rate or restore a normal heart rhythm

Synchronised electrical cardioversion a procedure where electrical currents are sent through your chest wall to help bring your heart beat back to normal

Temporary transcutaneous pacing a procedure which uses a temporary pacemaker to get a slow heart rate back to normal. Electrodes are put on your chest so that electrical impulses can be sent to your heart to help improve your heart rate

Transvenous pacing a procedure used to try and get a slow heart rate back to normal. Electrical impulses from an electronic pacemaker are sent through a catheter in one of your veins to your heart

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

Ventricles the two pumping chambers of the heart

Ventricular tachycardia (VT) a condition where there is a fast heart rate – between 120 and 200 beats per minute – in the ventricles (two large chambers of the heart)

Ventricular fibrillation (VF) a life threatening disturbance in the heart rhythm which causes the heart to quiver or fibrillate in a disturbed way

References:

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

adult basic life support

Reference:

Resuscitation Council (UK)

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

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