

HEART SERIES H8

UNDERSTANDING HEART VALVE PROBLEMS



Chest
Heart &
Stroke
Scotland



Chest Heart & Stroke Scotland



**Chest Heart &
Stroke Scotland
improves the
quality of life for
people in Scotland
affected by chest,
heart and stroke
illness, through
medical research,
influencing public
policy, advice and
information and
support in the
community.**

FUNDRAISING

Chest Heart & Stroke Scotland is a wholly independent Scottish charity. We receive no core funding from Government or any public body or private agency and rely entirely on the Scottish public to raise the £7 million a year we need to help people with chest, heart and stroke illness throughout Scotland.

RESEARCH

We are one of Scotland's largest charitable funders of medical research, with a programme worth over £600,000 a year. We fund research projects throughout Scotland into all aspects of the prevention, diagnosis, treatment and social impact of chest, heart and stroke illness.

PERSONAL SUPPORT GRANTS

We provide small grants to people in financial difficulty, because of chest, heart or stroke illness, for items ranging from disability equipment and household goods to respite care and holidays.

VOLUNTEER SERVICES

We give support to people whose communication skills are impaired after a stroke and those living with heart failure. The Volunteer Stroke Service (VSS) provides weekly group meetings and home visits for patients. The Heart Failure Support Service (HFSS) provides volunteer befrienders to reduce social isolation.

CHSS NURSES

Our nurses provide independent practical advice and support to those who have chest, heart and stroke illnesses, their families, carers and health professionals. There are dedicated nursing services in Fife, Forth Valley, Grampian, Highland, Lanarkshire, Lothian and Dumfries and Galloway. There is also a Scotland wide nurse led Advice Line (0845) 077 6000. Calls are charged at a local call rate (out of hours answerphone). We have a wide range of booklets, factsheets and videos on chest, heart and stroke illnesses.

COMMUNITY SUPPORT NETWORK

CHSS provides support to affiliated chest, heart and stroke clubs through the Community Support Network. The clubs are independent and are run by local volunteers. The groups provide a range of activities and offer people support, stimulation and companionship in a friendly and relaxed environment. Please ask for more information.

**FOR FURTHER INFORMATION ABOUT ANY OF
THE SERVICES ABOVE PLEASE CONTACT HEAD
OFFICE BY PHONING 0131 225 6963 OR VISIT
www.chss.org.uk**

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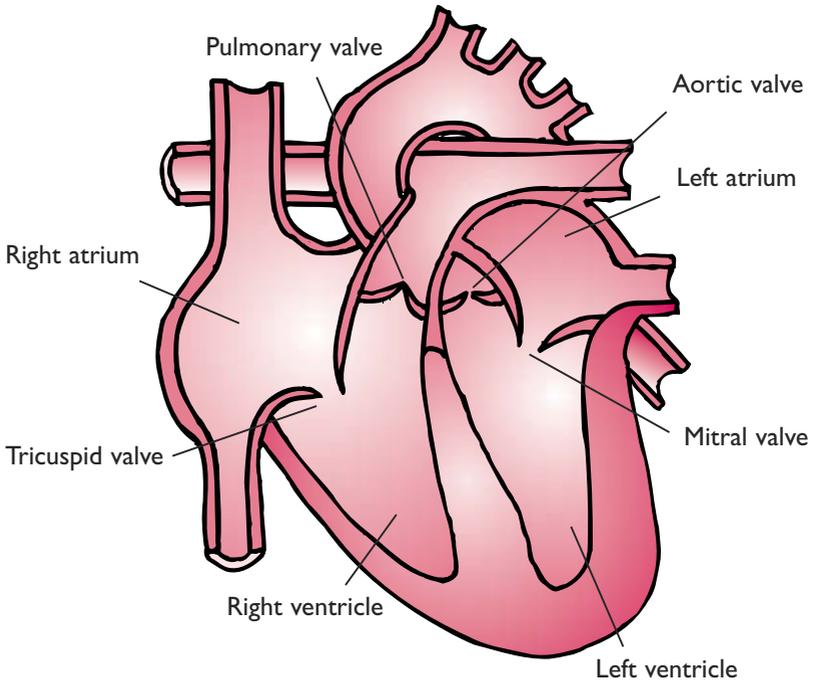
**UNDERSTANDING
HEART VALVE
PROBLEMS**

WHAT ARE HEART VALVES?

The heart is a muscular pump, made up of four chambers. These chambers have to pump regularly and in sequence to ensure an adequate blood supply to the whole body. The movement of blood through the heart is regulated by a series of valves which ensure that the blood flows smoothly in a single direction.

There are four valves within the heart: mitral, tricuspid, aortic and pulmonary. Each valve is made up of a thin ‘flap’ of strong tissue. When the valves are working properly they open and close fully. As valves can only open in one direction this prevents a backflow of blood.

Figure 1. Diagram of heart valves



WHAT CAN GO WRONG WITH HEART VALVES?

If any of the four valves are diseased or damaged the flow of blood through the heart is affected and the heart cannot work efficiently enough.

There are two main ways that valves can be affected:

- **Valves can leak.**

The valve does not close firmly enough to prevent the blood in the chamber leaking back through the valve. This is called *valve regurgitation*.

The heart has to work harder as it tries to cope with the normal flow of blood as well as the extra blood that has leaked back through the valve.

- **Valves can narrow.**

The opening of the valve is narrowed and can not open fully, restricting blood flow between chambers. This is called *valve stenosis*. The heart has to work harder to overcome this restriction.

Heart valves can leak and narrow at the same time and it is possible for more than one heart valve to be affected. Both leaking and narrowing valves can place additional strain on the heart muscle.

The **aortic** and **mitral** valves, on the left side of the heart, are most commonly affected.

WHAT ARE THE CAUSES OF HEART VALVE PROBLEMS?

Possible causes include:

- Coronary artery disease: this can commonly contribute to a leaky mitral valve.
- High blood pressure: this can commonly contribute to a leaky aortic valve.
- Getting older: age causes the aortic valve to harden and narrow.
- Wear and tear can cause valves to leak.
- Infection can lead to damage causing aortic or mitral leaking. Rheumatic fever during childhood (or teenage years) used to be the main cause of heart valve damage. However, rheumatic fever is now rare in the UK.
- Congenital heart problems: e.g. being born with an abnormal aortic valve can cause aortic regurgitation. Congenital valve problems often do not cause any problems until adulthood, when premature wear and tear may occur.
- Cardiomyopathy (disease of the heart muscle).

WHAT ARE THE SYMPTOMS OF HEART VALVE PROBLEMS?

Some people are not aware that they have a heart valve problem because the heart is coping and they don't have any symptoms. However damaged heart valves increase the workload of the heart and can place additional strain on the heart muscle. In time, depending on which heart valve is affected and how badly, symptoms can appear.

These include:

- shortness of breath
- ankle swelling
- increased tiredness
- chest pain (angina) or palpitations (increased awareness of your heartbeat)
- dizziness and / or fainting

Your doctor may discover a valve problem when these symptoms are investigated.

HOW ARE HEART VALVE PROBLEMS DIAGNOSED?

Sometimes a problem with a heart valve is picked up when your doctor, or specialist nurse, listens to your heart through a stethoscope. This can be as part of a routine examination or because you have symptoms such as tiredness, shortness of breath or swelling of the ankles.

If there is damage to a valve then he / she may hear a ‘murmur’. This noise is extra to the normal sounds of a heart beat and can be caused by a damaged valve.

Your doctor may refer you to a cardiologist (specially trained heart doctor) for more tests to assess any damage to the valve(s) as well as the general condition of your heart and coronary arteries. These tests can include:

- ECG: stands for electrocardiogram. This gives a recording of the electrical activity of the heart in the form of a graph.
- Chest x-ray.
- Echocardiogram: also referred to as an ‘echo’ this is an ultrasound scan of the heart.
- Angiogram: also called cardiac catheterisation. This is an x-ray examination of the coronary arteries.

HOW ARE HEART VALVE PROBLEMS TREATED?

Once a diagnosis of a heart valve problem has been made your doctor will decide what treatment, if any, is best for you. Any underlying problems (e.g. coronary artery disease and high blood pressure) will also need to be treated.

Monitoring

If the valves are not badly affected and you do not have any symptoms then you may not need any treatment. You will, instead, need regular check ups (including regular echocardiograms) to see how well the heart is working. This will usually be at the cardiology out-patient department.



Medical treatment

There are various drugs which your doctor may prescribe to ease the workload of the heart and relieve symptoms. For example:

- ACE inhibitors: reduce blood pressure and increase cardiac output (improve the efficiency of the heart).
- Anti-arrhythmics: correct fast or irregular heart beats (arrhythmias).
- Beta blockers: reduce blood pressure, lower heart rate and ease workload of the heart.
- Diuretics ('water' tablets): remove excess fluid from the body by increasing urine volume. This lowers the blood pressure and eases the workload of the heart.

See the CHSS booklet 'Understanding Heart Disease' for more information on drugs and tests used in heart disease.



Surgical treatment

In the longer term your doctor may recommend heart surgery to stretch, repair or replace the damaged valve.

Balloon valve surgery

A narrowed valve can sometimes be stretched. This is most often performed for treating mitral valve stenosis and is called mitral valvuloplasty. During this procedure a small tube (called a catheter) is inserted into a major artery (usually in your groin) and then guided up to your heart. A wire, with a tiny inflatable balloon, is passed through the catheter and when it reaches the damaged valve the balloon is inflated to stretch the valve. The balloon is then deflated and the catheter and balloon are removed.

This type of surgery does not involve open-heart surgery and can be as effective as replacement surgery.

Valve repair

If at all possible surgeons will try to repair a damaged valve as it is a less invasive procedure than valve replacement surgery. Valve repair surgery is most commonly performed for treating mitral valve regurgitation.

Valve replacement surgery

If the valve cannot be repaired then it may be replaced. Replacement valves can be either artificial mechanical valves made of metal and plastic or natural tissue valves from pigs (porcine).

Not everyone will be suitable for this type of surgery.

It is important to discuss all the advantages and disadvantages of valve replacement surgery with your doctor. Complications of valve replacement surgery include:

- Bleeding following surgery.
- Blood clots: usually you will be given blood thinning medicines (e.g. warfarin or aspirin) to help to prevent this.
- Endocarditis: the new valve can become infected or inflamed. You will be given antibiotics to help to prevent this.

Mechanical valves last much longer but require long-term treatment with warfarin. Warfarin is a blood thinner (anticoagulant) that is used as part of the treatment to prevent clots from forming. Warfarin must only be used under very close medical supervision.

Tissue valves may not last as long as mechanical ones and need to be replaced after approximately 10 years. If you have a tissue valve replacement then you will have to take aspirin but you will not need to take warfarin.

See the CHSS factsheet ‘Warfarin’ for more information.



WHAT CAN I DO TO HELP MYSELF?

It is important that you take any prescribed drugs regularly and discuss any troublesome side effects, as well as any new symptoms, with your doctor.

In order to relieve the pressure on your heart it is advisable to try to do what you can to reduce the risk of further heart problems i.e.

- control and monitor blood pressure
- control and monitor cholesterol levels
- control and monitor diabetes
- stop smoking
- eat a healthy varied diet
- control your weight
- keep active
- moderate your alcohol intake

See the CHSS booklet 'Reducing the risks of Heart Disease' for more information.



WHO SHOULD I TELL?

As people with heart valve problems have an increased risk of a rare condition called Infective Endocarditis it is advisable to inform your doctor, or dentist, about your condition before you have any invasive treatment. They will assess you and decide if you need to take antibiotics prior to your treatment.



Blood Pressure Association

60 Cranmer Terrace

London

SW17 0QS

Blood Pressure Information line: 0845 241 0989

Line open 11am to 3pm Monday to Friday.

Tel: 0208 772 4994

Website: www.bpassoc.org.uk

The Blood Pressure Association is the UK-wide charity dedicated to lowering the nation's blood pressure. Their aim is to prevent unnecessary death and disability from heart disease, heart attacks and stroke caused by high blood pressure.

Free on line membership and a full subscription membership available.

British Heart Foundation Scotland

Ocean Point One

94 Ocean Drive

Edinburgh

EH6 6JH

Heart Information Line: 0300 330 3311

(open Monday to Friday 9am - 5pm)

Website: www.bhf.org.uk

The British Heart Foundation provides free, confidential information, help and support on all heart health issues through their helpline. They invest in pioneering research and support and care for heart patients.

**USEFUL
ADDRESSES AND
WEBSITES**

The Cardiomyopathy Association

Unit 10, Chiltern Court

Asheridge Road

Chesham

Bucks

HP5 2PX

Helpline: 0800 018 1024

(Monday to Friday 8.30am - 4.30pm)

Website: www.cardiomyopathy.org

The Cardiomyopathy Association provides information on the main forms of the heart muscle disease known as cardiomyopathy.

Chest Heart & Stroke Scotland

Rosebery House

9 Haymarket Terrace

Edinburgh EH12 5EZ

Tel: 0131 225 6963

Fax: 0131 220 6313

Advice Line: 0845 077 6000

Email: advice@chss.org.uk

Website: www.chss.org.uk

Chest Heart & Stroke Scotland improves the quality of life for people in Scotland affected by chest, heart and stroke illness, through medical research, influencing public policy, advice and information and support in the community.

Grown Up Congenital Heart (GUCH)

Patients Association

Saracen's House

25 St Margaret's Green

Ipswich

IP4 2BN

Helpline: 0800 854759

(Answerphone out of hours)

Tel: 01473 252 007

Email: admin@guch.org.uk

Website: www.guch.org.uk

GUCH Patients association supports young people and adults with congenital heart disease.

Heart UK

7 North Road

Maidenhead SL6 1PE

Helpline: 0845 450 5988

(open Monday to Friday 10am - 3pm)

Email: ask@heartuk.org.uk

Website: www.heartuk.org.uk

HEART UK is a national charity for patients and their families which combines the rich skills of research scientists and the caring and knowledgeable attention of doctors, nurses and dietitians, in order to support all those at risk of inherited high cholesterol and cardiovascular disease.

Contact the Chest Heart & Stroke Scotland Advice Line nurses for confidential, independent advice.



**The line is open
Monday – Friday
9.30 – 4.00**

**0845 077 6000 or
0131 225 6963**

Out of hours answering machine.

Email: adviceline@chss.org.uk

The information contained in this booklet is based on current guidelines and is correct at time of printing. The content is also put out to peer, patient and expert review. If you have any comments about this booklet please contact Lorna McTernan, Health Information Manager; at the address on the facing page.

HEART PUBLICATIONS

Booklets		Factsheets - Free	
H1	Living with Angina	F2	Salt
H2	Reducing the Risk of Heart Disease	F3	Cholesterol
H3	Understanding Heart Disease	F4	Warfarin
H4	Living with High Blood Pressure	F6	Holidays
H5	Living with Heart Failure	F7	Insurance companies
H6	Living with a Pacemaker	F8	Suggested booklist
H7	Heart Attack: A Guide to your Recovery	F13	Air travel for people affected by chest, heart and stroke illness
H8	Understanding Heart Valve Problems	F17	Diabetes: links with heart disease and stroke
H9	Understanding Atrial Fibrillation	F18	Coping with tiredness
H10	Living with an ICD	F19	Managed Clinical Networks and You
Videos and DVDs		F20	Illustrated risk factors (ethnic target)
H5V	Living with Heart Failure Video: £5.00	F21	Illustrated risk factors (general target)
H5D	Living with Heart Failure DVD: £5.00	F22	How to make the most of a visit to your doctor
H7V	Heart Attack: A guide Video: £5.00	F23	Living with stress and anxiety
H7D	Heart Attack: A guide DVD: £5.00	F24	Healthy eating
		F26	Understanding help in the community
		F28	Glossary
		F30	Just move!

A full publication list is available from Head Office.
Rosebery House, 9 Haymarket Terrace, Edinburgh EH12 5EZ
Tel: 0131 225 6963

ORDER FORM

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If you wish to order more than 100 booklets or factsheets please contact the Health Information department at the address above.

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Open Mon – Fri

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Tel: 01463 713 433

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5 Mealmarket Close
Inverness IV1 1HT
Open Mon – Fri

www.chss.org.uk



Chest
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Chest Heart & Stroke Scotland is a wholly independent Scottish charity. We receive no core funding from Government or any public body or private agency.

We need your help to achieve our aim of improving the lives of those in Scotland with chest, heart and stroke illness. You can help by volunteering your time with our services, by supporting your local Regional office or as a fundraiser. You can help by giving now and in the future, by making a donation, organising a local fundraising event, leaving us a gift in your will or by setting up a regular Direct Debit.

If you would like to speak to one of our Advice Line nurses in confidence, phone Chest Heart & Stroke Scotland Advice Line.

**Monday – Friday
9.30am – 4.00pm**

**0845 077 6000 or
0131 225 6963**

Email us: advice@chss.org.uk

There is a text relay service for the hearing-impaired.

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