



SIGN


Scottish Intercollegiate Guidelines Network




Quality
Improvement
Scotland

for patients

***prevention of
cardiovascular
disease***



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 people who are either at risk of developing **cardiovascular disease** (CVD) or who already have cardiovascular disease, and for their families and friends.

It is based on the recommendations from a national clinical guideline on risk estimation and prevention of cardiovascular disease.

The booklet will help to make patients aware of treatment they should expect to receive from the NHS.

The booklet explains:

- Who is at risk of developing cardiovascular disease;
- How the risk is measured;
- What changes you can make to the way you live to reduce your risk of cardiovascular disease; and
- What medicines can be used to reduce your risk of cardiovascular disease.

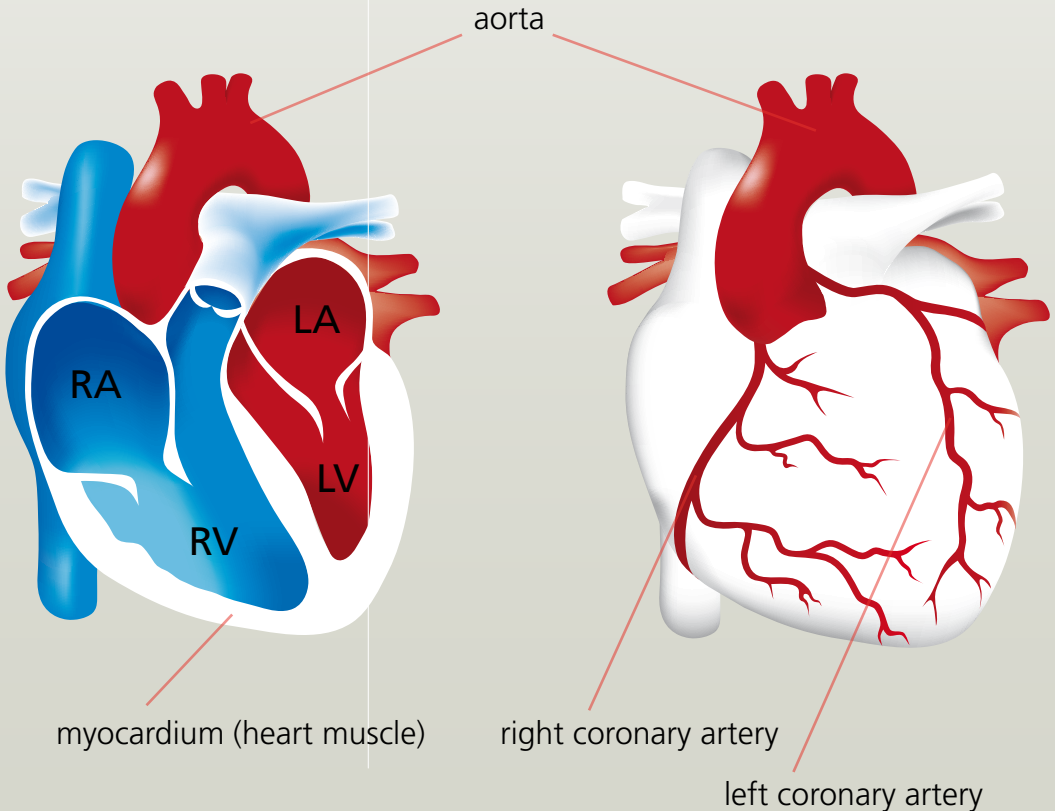
We have listed a number of support organisations at the end of the booklet where you can get more information.

There is an explanation of all the medical terms we have used on page 27.

what is cardiovascular disease?

Cardiovascular disease (CVD) is any disease which affects the heart and blood vessels (examples include coronary heart disease, peripheral arterial disease, stroke and heart failure)

Coronary heart disease (CHD) is a disease of the heart and coronary arteries caused by a build up of fatty materials in the blood vessels which supply the heart with oxygen. This can cause a heart attack, or chest pain or angina.



RA: right atrium
RV: right ventricle

LA: left atrium
LV: left ventricle

diagnosis

How can a doctor tell if I am at risk of developing cardiovascular disease?

The risk of experiencing a cardiovascular event such as a heart attack, stroke or angina is called your cardiovascular disease (CVD) risk.

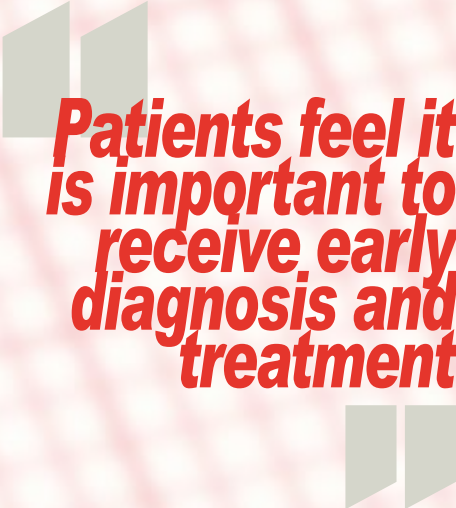
Doctors can use risk assessment tools to work out your CVD risk.

If you have:

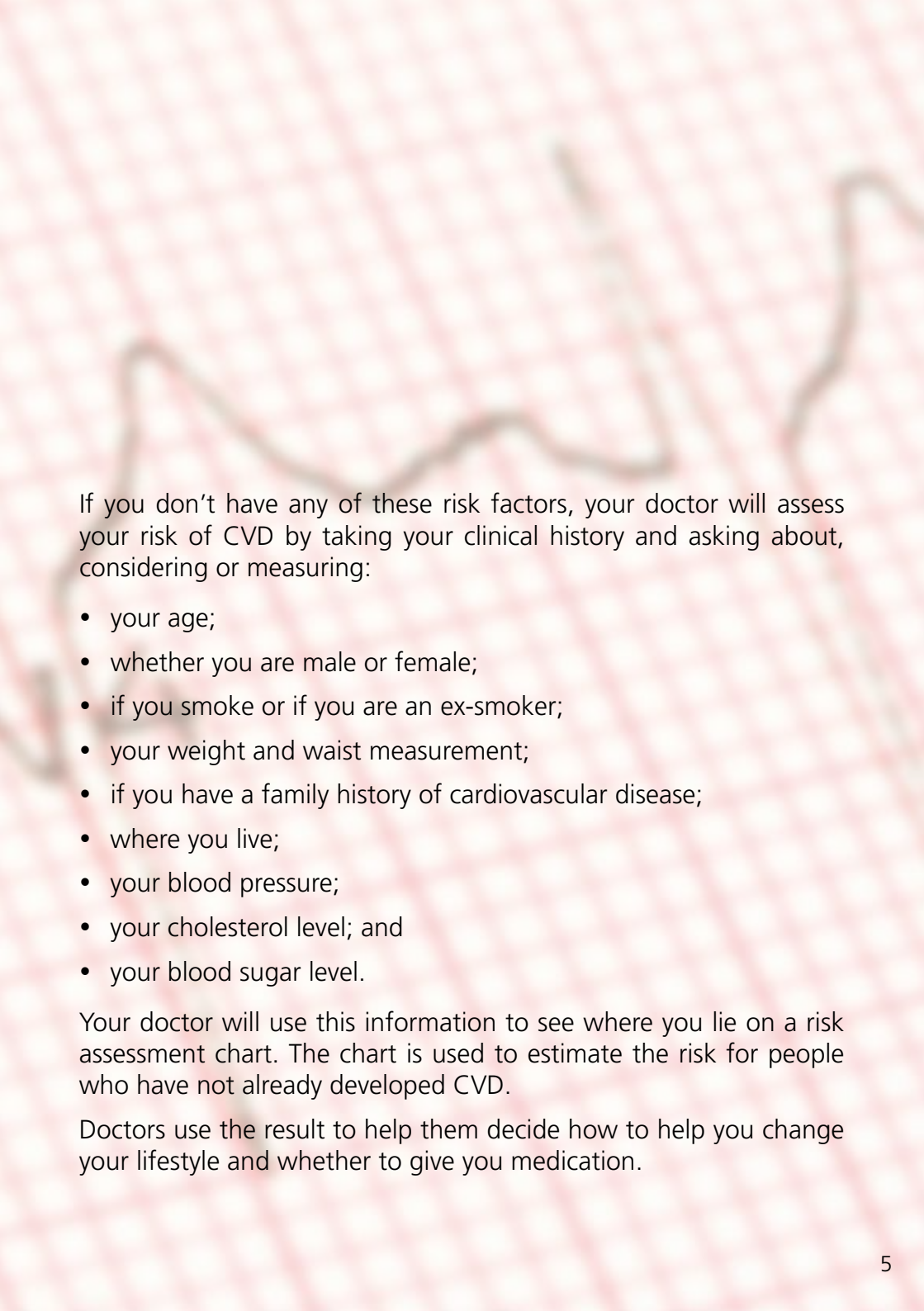
- already had a **heart attack, stroke, angina, peripheral arterial disease** or **heart failure**; or
- **diabetes** (type 1 or type 2) and are over age 40; or
- a rare disease, called **familial hypercholesterolaemia**, which runs in families;

then your risk of having a heart attack within the next 10 years is thought to be more than 20% (a one in five chance).

The doctor will not need to use an assessment tool to work this out.



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



If you don't have any of these risk factors, your doctor will assess your risk of CVD by taking your clinical history and asking about, considering or measuring:

- your age;
- whether you are male or female;
- if you smoke or if you are an ex-smoker;
- your weight and waist measurement;
- if you have a family history of cardiovascular disease;
- where you live;
- your blood pressure;
- your cholesterol level; and
- your blood sugar level.

Your doctor will use this information to see where you lie on a risk assessment chart. The chart is used to estimate the risk for people who have not already developed CVD.

Doctors use the result to help them decide how to help you change your lifestyle and whether to give you medication.

How often should my CVD risk be checked?

You should be assessed at least once every five years if you are over 40 and do not have:

- any history of cardiovascular disease;
- diabetes;
- high blood pressure; or
- high cholesterol.

You should also be assessed at least once every five years if you have a close relative (for example your mother, father, brother or sister) who has suffered from premature CVD no matter how old you are.

What will the doctor do if I am at high risk?

If you are thought to be at high risk of developing CVD then your doctor will discuss the range of options that are available to you. The options are summarised in the rest of this booklet.



Patients identified a need for open communication from doctors, particularly in response to questions from patients and their families.



lifestyle changes

Can I make changes to my lifestyle to help reduce my risk?

If your doctor thinks you are at high risk of developing cardiovascular disease, you should be given advice on how to change your lifestyle. Your doctor will need to know about:

- your diet – what you eat as well as how much;
- how much exercise you take;
- whether or not you smoke; and
- how much alcohol you drink.

Diet

- A diet that is **low in saturated fat** will help to reduce your risk of cardiovascular disease. Saturated fat is found in foods which come from animal sources eg butter, full fat milk, cheese and meat.
- It may help to **eat more oily fish** such as mackerel and trout. Oily fish contains omega-3 fatty acids, which may help reduce your risk of cardiovascular disease. You should try to eat at least two portions of fish per week, and one of these should be an oily fish.
- If you have high blood pressure, you should **reduce your salt intake** to help lower it. You should aim to eat less than 6 grams of salt per day. The table on page 8 lists the foods which you should and should not eat.
- You should **eat more fruit and vegetables** (5 portions per day) to lower your risk of cardiovascular disease. The table on page 9 shows what counts as a portion.

how you can reduce salt in your diet

foods you should avoid

- Salty meats such as ham, bacon, sausage and pate
- Tinned, packet and instant soups
- Soy sauce, stock cubes, gravy powders and salted flavourings
- Any tinned food containing salt
- Smoked meat and fish
- Meat and yeast extracts
- Hard cheese
- Salted snacks, for example crisps, salted biscuits
- High salt ready meals, sauces and take-away meals

foods you should eat

- Fresh meat, fish, eggs, beans and lentils
- Fruit and vegetables—including fresh, frozen, tinned without salt and juices
- Fresh herbs, spices, pepper, vinegar, mustard and tomato puree
- Rice, pasta, potatoes, bread, breakfast cereals and unsalted crackers
- Milk, yoghurt, soft white cheese and small amounts of hard cheese

Use only a little salt when cooking

Avoid adding extra salt to your food at the table

what counts as a portion of fruit and vegetables?

type of food	example of what counts as a portion
fruit	<ul style="list-style-type: none">• 1 medium sized apple, pear orange or banana• 2 satsumas or kiwi fruits• 7 strawberries• 1 slice of melon (5 cm)
cooked vegetables	<ul style="list-style-type: none">• 2 broccoli spears• 8 cauliflower florets• 3 heaped tablespoons of Brussels sprouts, swede or carrots
salad vegetables	<ul style="list-style-type: none">• 1 medium tomato• 7 cherry tomatoes
pulses and beans	<ul style="list-style-type: none">• 3 heaped tablespoons of kidney beans, butter beans or chick peas

Vitamin supplements have been shown not to help prevent or treat CVD.

Your doctor will not recommend folate supplements, plant sterols and stanol esters, nuts or soya, as more research is needed to find out if they can help prevent cardiovascular disease.

If you are at risk of cardiovascular disease and are overweight, your doctor and other members of the healthcare team should help you to lose weight and keep it off.

People who have metabolic syndrome have a high risk of developing CVD. If you have metabolic syndrome, your doctor should offer you advice on diet, exercise and weight monitoring. You should have regular follow ups to see if your risk of CVD is decreasing. Metabolic syndrome is when people have a number of medical problems for example obesity, high blood pressure and type 2 diabetes which, taken together can increase your risk of CVD.

Physical activity

Regular exercise will help to make you feel better now and will help to lower your CVD risk.

Exercise can include:

- any physical activity that you do at work (for example, using stairs instead of lifts);
- any physical activity that you do in your leisure time (for example, walking, housework, gardening, dancing); and
- sports such as running, swimming or tennis.

Your doctor should encourage you to take activity that will make you feel slightly out of breath (moderate physical activity), for example, walking.

If you are already moderately active and can manage it, you should try to increase your activity level. This could be by increasing how often you exercise, or by increasing the length of time you exercise for.


Smoking

If you smoke, you are at a higher risk of developing CVD. This risk increases the more you smoke. Giving up smoking will greatly reduce your risk of CVD.


If you have CVD, your doctor should advise you to stop smoking. Your doctor should also offer you professional support to help you to do this. Nicotine replacement therapies (NRT) can be used as part of a smoking cessation programme to help you stop smoking and to increase your chances of giving up for good.

Breathing other people's smoke (passive smoking) also increases your risk of cardiovascular disease.

If you are clinically depressed it can be harder to give up smoking. If you are a smoker with CVD and depression, you should have your depression treated.



Patients feel it may be helpful for people with CVD risk to attend self help groups. Some of these groups meet for regular exercise while others offer support to patients and their carers. A list of support groups should be available at your local health centre.



Alcohol

Drinking too much alcohol can increase your risk of developing cardiovascular disease. You should not drink any more than 2 to 3 units of alcohol each day if you are a woman and 3 to 4 units if you are a man. You should try to avoid alcohol on at least 2 days each week.

<i>drink</i>	<i>percentage alcohol</i>	<i>volume equivalent to one unit</i>
beer/lager	3.5 %	0.5 pint (half pint)
beer/lager	5.0 %	0.35 pint (about a third of a pint)
wine	10 %	100 ml (one 750 ml bottle = 7.5 units)
wine	13 %	77 ml (one 750 ml bottle = 9.75 units)
fortified wine/sherry	17.5 %	57.1 ml
spirits	40 %	25 ml

A small glass (125 ml) of average strength wine (12%) contains 1.5 units (this means there are 6 small glasses in a 750 ml bottle).

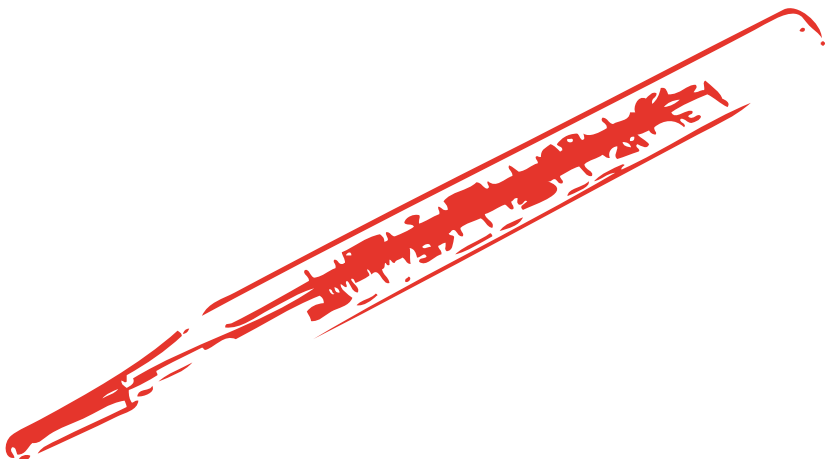
A pint of lager/beer contains 1.8-2.8 units.

A 25 ml measure of spirits (eg gin, vodka, whisky at 40%) contains 1 unit.

A home dispensed measure tends to be greater than a measure given in a pub.

Your doctor or practice nurse may help you to reduce your alcohol consumption if it is a risk to your health by:

- giving you information and advice;
- telling you about the side effects of drinking too much;
- suggesting that you keep a drinking diary;
- suggesting that you make a drinking agreement with someone; and
- explaining the risks associated with drinking too much alcohol.



medicines for cardiovascular disease

Are there any medicines I can take if I am at high risk of developing CVD?

As well as making changes to your lifestyle, your doctor may give you medicines to help reduce your risk.

Medications to reduce CVD risk


Aspirin

Aspirin is an antiplatelet drug which is used to prevent your blood from clotting and clogging up your coronary arteries.


- If you have CVD your doctor should prescribe you with low dose aspirin (75-325 mg) daily.
- If you are at high risk of cardiovascular disease but don't actually have it, your doctor should consider prescribing you with 75mg of aspirin daily.
- If you have a history of stroke, your doctor should consider giving you low dose aspirin daily plus 200mg of dipyridamole twice daily for 2 years after your stroke. This is to prevent the risk of a further stroke and/or other CVD events.
- If you have type 2 diabetes and are over 50, your doctor should prescribe you with 75 mg of aspirin daily. You may also be prescribed with aspirin if you are a younger person with diabetes and are considered to be at high risk of CVD.
- If you have high blood pressure, your doctor should prescribe you with aspirin if your 10 year CVD risk is greater than 20% (a one in five chance). You will only be prescribed aspirin once your blood pressure is less than 150/90 mm Hg.

Clopidogrel

If you have CVD but can't take aspirin, you should be given 75 mg of clopidogrel instead.



Patients feel there is a need for doctors to give appropriate information on medication 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.



Statin therapy

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

You should be considered for a statin (usually one called **simvastatin**) if you are over 40 and have a 10 year CVD risk of greater than 20% (a one in five chance).

If you already have CVD your doctor will consider giving you a higher dose of statin therapy.

If you are unable to take a higher dose statin therapy, you may be given drugs called **anion exchange resins** or **ezetimibe** as well as standard statin therapy. These drugs also help to lower your cholesterol levels.

Your doctor should discuss the statin dose and potential side effects with you. Tell your doctor if you suffer any side effects. If these are mild, your doctor will reduce the dose or prescribe a different statin. If you experience more severe side effects, your doctor will ask you to stop the statin. If you suffer side effects such as muscle pain, tell your doctor immediately.

If you are taking the statins called simvastatin or **atorvastatin**, grapefruit juice can affect how well these drugs work. If you cannot take simvastatin or atorvastatin you may be given **pravastatin** instead.

Fibrate/nicotinic acid

Both these drugs are used to lower levels of other fats (lipids) in your blood. If you have high levels of fats in your blood (known as hypertriglyceridaemia) you should be considered for treatment with one of these drugs.

blood pressure

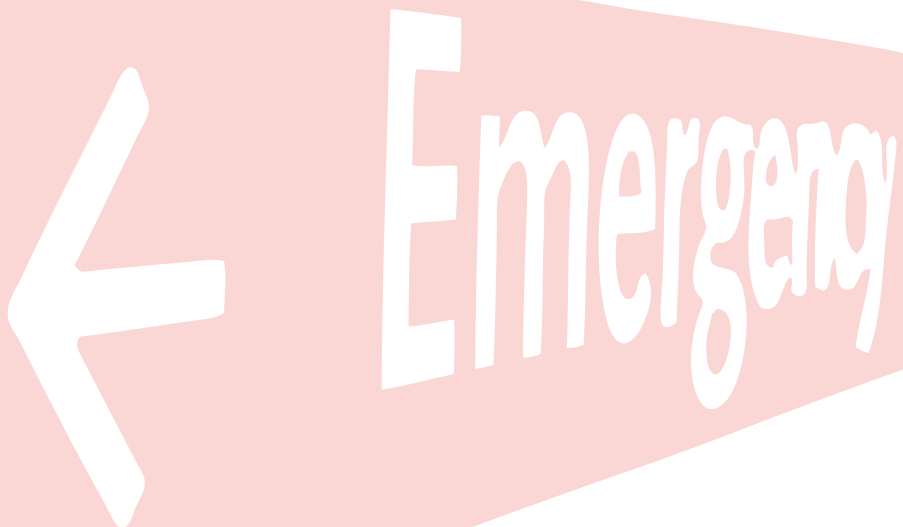
What if I have high blood pressure?

If you have high blood pressure then your risk of coronary heart disease, heart failure, stroke and kidney failure is increased.

In a healthy adult, normal blood pressure is around 120/80 mmHg. Your doctor should tell you if your blood pressure is too high.

If your blood pressure is too high, there are some changes you can make to your lifestyle to lower it. There are also medicines you can take to help. Your doctor should tell you about ways you can lower your blood pressure. These will depend on how high your blood pressure is and whether you have other conditions such as diabetes.

Find out where you are in the table on page 18 to see the kind of treatment you need.



← Emergency

lowering your blood pressure

<i>what is your blood pressure?</i>	<i>what do you need?</i>
Greater than 160/100 mmHg	Blood pressure lowering drug therapy and lifestyle advice
140/90 mmHg and you have signs of cardiovascular disease	Blood pressure lowering drug therapy
Persistently 140/90 mmHg	Lifestyle advice
Family history of high blood pressure	Lifestyle advice
130 mm/80 mmHg and you have cardiovascular disease and chronic kidney failure	Blood pressure lowering drug therapy
130 mm/80 mmHg and you have cardiovascular disease and diabetes with complications	Blood pressure lowering drug therapy
Greater than 140/90 mmHg with a 10 year CVD risk of greater than 20%	Blood pressure lowering drug therapy
Greater than 140/90 mmHg with a 10 year CVD risk of less than 20%	Lifestyle advice, blood pressure lowering drug therapy and regular CVD risk check

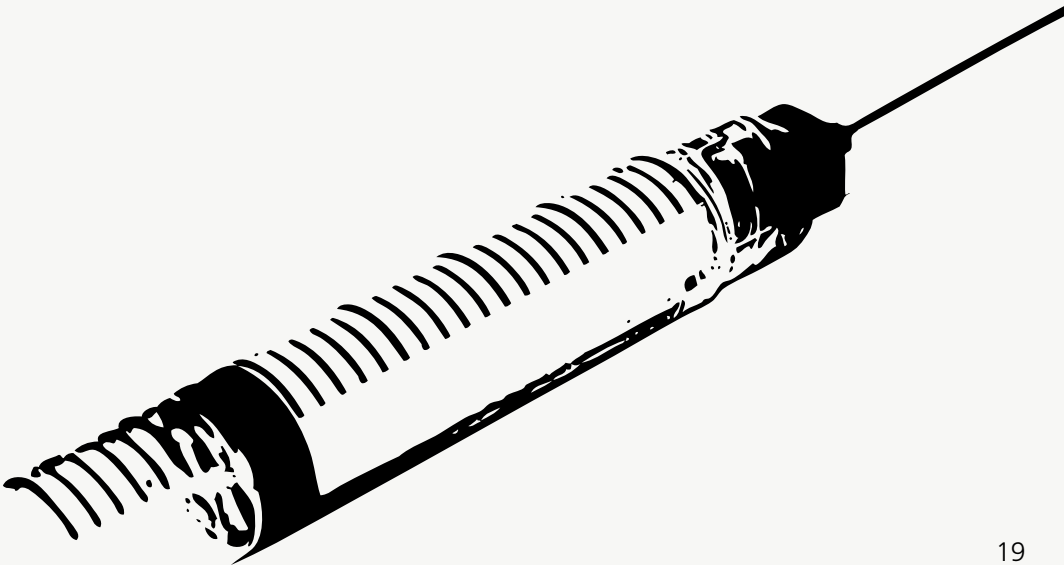
If your doctor is certain that you have high blood pressure (known as **hypertension**) then you may need to have two or more drugs to treat this (known as **anti-hypertensives**).

What changes can I make to lower my blood pressure?

Some of the changes you can make to help reduce your blood pressure include:

- losing weight;
- reducing the amount of salt in your diet;
- limiting the amount of alcohol that you drink;
- doing more exercise;
- eating more fruit and vegetables; and
- eating less saturated fat in your diet (eg full fat milk, cheese and meat).

These are discussed in more detail on pages 7-13.



***cop*ing with cardiovascular disease**


How does my mental health affect my risk of cardiovascular disease?

When your doctor assesses your risk of developing CVD, he or she should ask how you have been feeling and what kind of social support you have. They should ask this because depression and social isolation or reduced support are risk factors for the onset and development of CHD.

If you are depressed, stress management training may help to improve your mood. Stress management uses methods such as relaxation or problem solving techniques to reduce or manage your stress.

Your doctor may use motivational interviewing to help you adapt to changes you are making to the amount you eat or drink, or how much exercise you do. It can also help you to cope with and stick to your treatment plan.

If you have more complex problems, you may be referred to a clinical psychologist or therapist. They can help you get used to changes in your life.



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.

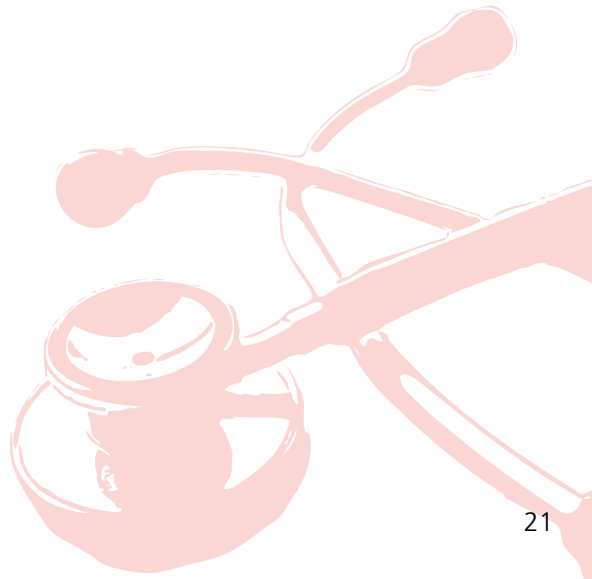


information and support

Who can I talk to?

You and your family may find it helpful to speak to people who are in a similar situation. Your doctor or practice nurse can give you information on support groups and refer you to your nearest group if you think this would be useful. There are cardiac and stroke 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 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 offer:

- emotional and social support;
- help with rehabilitation (through a structured exercise programme);
- advice on preventing further cardiovascular 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

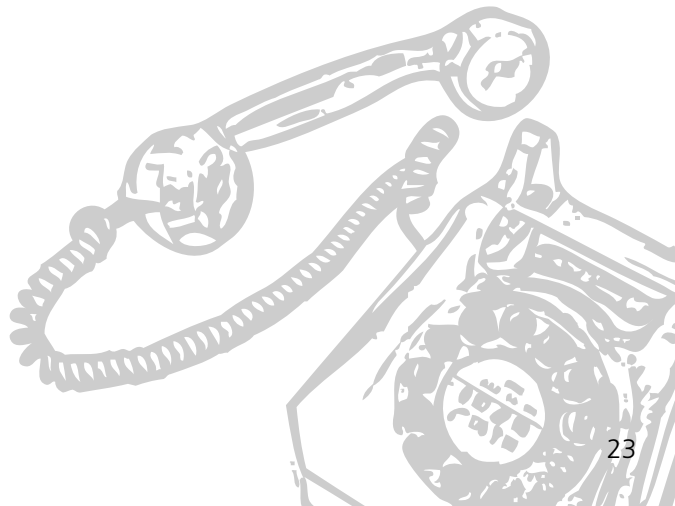
EH6 6WW

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

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.

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 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.

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.

glossary

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

Antioxidant vitamins and other substances found mainly in vegetables and fruit

Aspirin a drug which is used to help prevent blood clots

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

Cardiovascular disease any disease which affects the heart and blood vessels (examples include heart attack, stroke, angina, peripheral arterial disease and heart failure)

Cholesterol a fatty material made in the body by the liver

Coronary heart disease a disease of the heart and coronary arteries caused by a build up of fatty materials in the blood vessels which supply the heart with oxygen

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

Hypercholesterolaemia when there is too much cholesterol in the blood

Hyperlipidaemia when there is too much cholesterol or other fats in your blood

Hypertension high blood pressure

Metabolic syndrome a condition when people have a number of medical conditions including obesity, high blood pressure and type 2 diabetes which increase the risk of cardiovascular disease

Nicotine replacement therapies aids to help you stop smoking which contain nicotine

Omega-3 fatty acid oils found in oily fish such as mackerel and trout

Passive smoking when a non-smoker inhales another person's smoke

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

Risk a situation that increases the chances of developing a disease

Saturated fat a type of fat found mainly in food from animal sources (particularly dairy and meat products)

Smoking cessation giving up smoking

Statin therapy drugs that are used to help cholesterol levels in the blood

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, dietitians, 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 623 4740 • Email: karen.graham2@nhs.net



This booklet 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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