Section 5
Cardiovascular Risk Factors and Healthy Lifestyle Advice

Cardiac rehab is a proven secondary prevention programme. This means when you are already diagnosed with coronary heart disease (CHD), it can help you reduce your risk of heart problems in the future. Attending your local cardiac rehab programme (see pages 41 - 42) after your heart surgery is vital to help you to live as healthy a lifestyle as possible.

What are the main cardiovascular risk factors?

Although the exact cause of CHD is not clear, there are many things (risk factors) that can increase your risk of getting this type of cardiovascular disease (CVD)**.** The more risk factors you have, the greater your chances of developing CHD. It is important to remember that some people may have many risk factors and others may have none. The risk factors of CHD generally fall into two categories; non-modifiable (ones you can't change) and modifiable (ones you can change).

Attending for a cardiac rehab assessment and following sessions will help improve your awareness and understanding of your specific risk factors. Importantly cardiac rehab will support you in **how you can** make positive lifestyle changes now and in the long term.

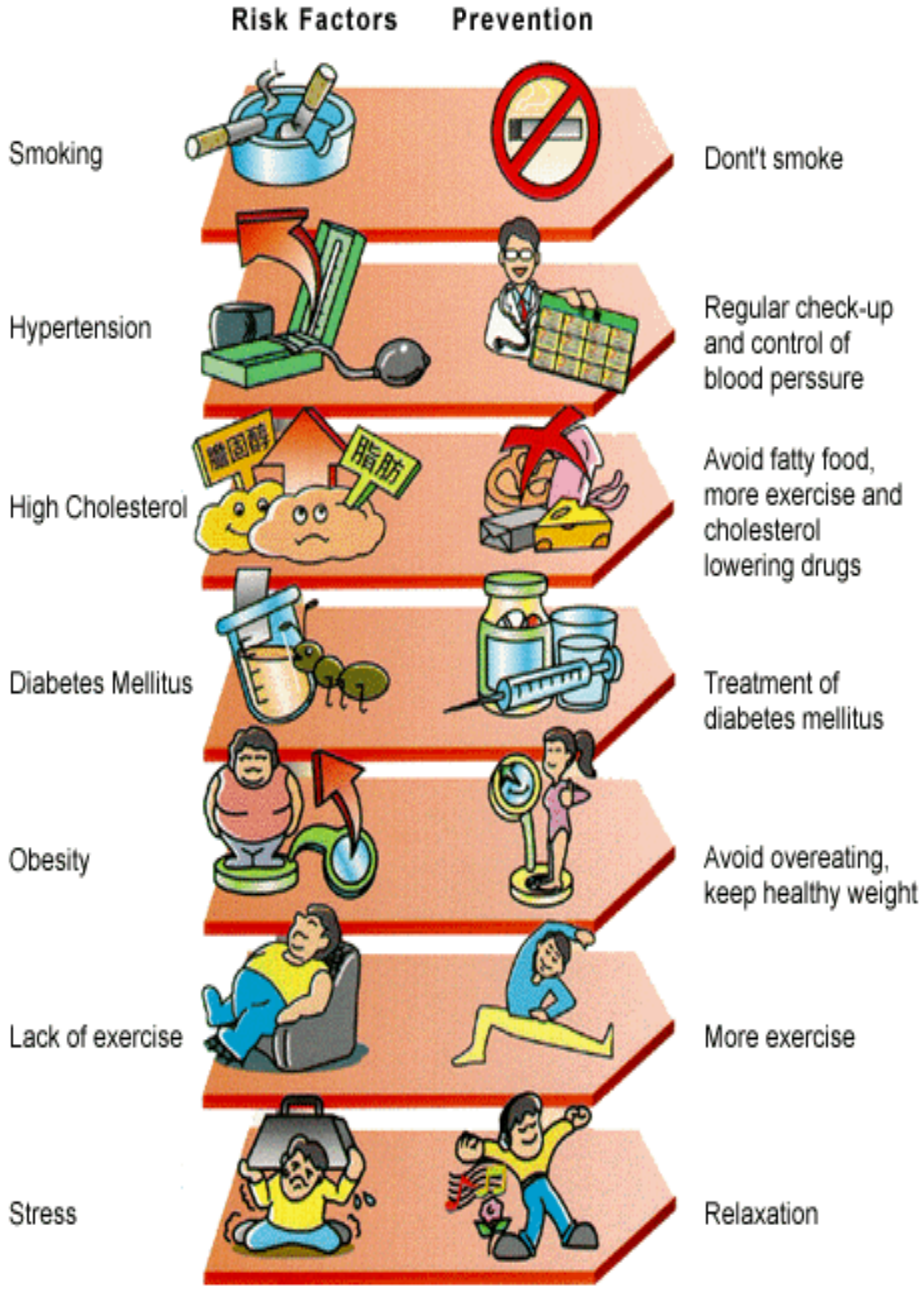
Non-modifiable risk factors for coronary heart disease

Being aware of the major CVD risk factors that you can't change may help motivate you to make changes to your lifestyle to help reduce your risk of further coronary events, for example angina or a heart attack. You are at higher risk of developing CVD if you have

- **Family history of early CHD.** This is where a first-degree male blood relative has had CHD or a stroke before the age of 55 years or, for a female relative before the age of 65 years. It is important that your family members are aware of their own risk factors and take steps to prevent CVD.
- **Increasing Age.** About 82 % of people who die of CHD are 65 years or older.
- **Gender.** As a man you are at greater risk of heart disease than a pre-menopausal woman. But once past the menopause, a woman's risk is similar to a man's.
- **Ethnicity.** Your ethnic origin plays a role. People of South Asian origin have almost a 50% higher death rate compared to the rest of the UK population.
- **Socioeconomic status.** Being poor, no matter where in the world, increases your risk of CVD.

Modifiable risk factors for coronary heart disease

Modifiable risk factors are things you can change or do something about.



Smoking

Major studies show that smoking is the single biggest preventable danger to your future health. People who smoke tobacco have twice the risk of developing CHD compared to non-smokers. People who do not smoke but have to inhale the smoke from others, known as passive smoking, are also at risk of heart disease.

Smoking affects the heart and body in many ways. Smoking just three cigarettes a day doubles the risk of having a heart attack. There are more than 5000 chemicals contained in tobacco smoke, most of which are harmful. Below are three of the main chemicals.

Carbon monoxide is a poisonous, invisible gas with no smell. It is found

in car exhausts, leaking gas heaters and burning cigarettes. It is carried around the body in the blood. To try and get more oxygen in, the heart beats faster and more red blood cells are produced meaning the blood becomes thicker and stickier. The heart has to work harder; this increases the risk of a heart attack or heart failure.

Nicotine is the drug that causes addiction. It is very powerful and fast acting, hitting the brain in seven seconds after each drag. Nicotine itself appears to have minimal long term effects on health. In the short term it causes stimulation of the nervous system and an increase in blood pressure and heart rate.

Tar is inhaled into the lungs from a burning cigarette. It is inhaled as a vapour, but settles as a sticky substance that stops the lungs working as well as they can. Tar also contains cancer causing chemicals. Tar is present whatever brand you smoke including lights, mild or menthols. When you inhale, 70% of the tar stays in the lungs.

Even if you have tried to give up before, it is worth another try. Smokers die, an average of 10 years younger than non-smokers. Stopping smoking dramatically reduces your risk of a heart attack or stroke. Did you know that former smokers live longer than continuing smokers, no matter what age they stop smoking? With every day you do not smoke your chances of a heart attack or stroke are greatly reduced.

So whatever age you are, it is never too late to stop. If you smoke, stop!

What is available to help me stop smoking?

- **Nicotine Replacement Therapy (NRT)**

Helps by providing the body with nicotine. Studies show that the benefits of using NRT to stop smoking outweigh any risks there may be with NRT. The purpose of NRT is to take the edge off withdrawal symptoms. The nicotine provided from NRT is clean i.e. it does not contain the other 4999 chemicals found in cigarette smoke. Consequently it can now be used by smokers with cardiovascular disease. Stopping smoking is critical for those with heart disease as it can slow down the progression of the disease.

There are a variety of safe, medicinal NRTs available including: patches, inhalator, gum, lozenge, mini lozenge, microtab, nasal spray and mouth spray. There are also two safe medication products (Champix and Zyban) which can be prescribed by your doctor.

The nicotine replacement therapy I have chosen is:

……..…….……..

- **Electronic cigarettes**

These are not a medicinal product. At this time there is conflicting evidence about their long-term safety and effectiveness. Current medical advice is to use a safe medicinal product such as NRT or an alternative such as Champix or Zyban. Because of this, no electronic cigarettes are produced by or for the NHS and these devices are not available on prescription. Electronic cigarettes cannot be used in the hospital. If you wish to use an electronic cigarette you can still contact the MFT Smoking Cessation Team for advice and support on stopping smoking.

Having help and support from an NHS Stop Smoking Service as well as a tested medicinal product can increase your chances of stopping smoking by up to four times. If you require further help or advice on NRT whilst you are in hospital, we can refer you to the Smoking Cessation Nurse who can offer you support in stopping smoking.

If you prefer you can refer yourself by calling the MFT Smoking Cessation Nurse on 0161 291 5030.

You can also obtain help to stop smoking from

- Your GP
- Practice Nurse at your doctors surgery
- Stop Smoking Greater Manchester Helpline 0300 123 1044
- @StopSmoking_McR / Stop Smoking McR on twitter
- Smokefree NHS at http://www.nhs.uk/smokefree or http://www.gosmokefree.co.uk

Lack of regular physical activity

Lack of regular physical activity and exercise is a major health risk.

- Inactive people have twice the risk of developing CHD compared with active people
- People who meet the physical activity guidelines (at least 150 minutes of moderate intensity activity per week
    - reduce their risk of having a heart attack by 40%
    - reduce their risk of a cardiovascular event by 30%.

Improving the amount of physical activity is one of the most important lifestyle changes needed to reduce the risk of further CHD.

What are the benefits of being physically active?

- Reduces the risk of having a stroke or heart attack
- Helps to control high blood pressure
- Helps manage cholesterol levels
- Helps to prevent and control Type 2 diabetes
- Helps you to lose weight
- Relieves stress and anxiety
- Improves sleep patterns and energy levels
- Improves confidence and sense of wellbeing.

What are the physical activity guidelines?

You should aim to be active every day. Over a week, activity should add up to at least 150 minutes at moderate intensity, for example 30 minutes activity five times a week or, alternatively, bouts of 10 minutes. A good example may be brisk walking. It is better to take regular exercise and have an active lifestyle, rather than doing isolated sessions. It is also important to avoid extended periods where you are sedentary for example sitting for long periods of time. It is a good idea to stand up and move around every 30 minutes or so.

What type of exercise should I do?

As described in the 'Your Rehabilitation' section (see pages 41 - 49) the type of exercise that helps your heart the most is called 'aerobic or cardiovascular activity'. This type of activity should be carried out at moderate intensity where you feel you are exerting yourself, feel like your breathing has increased but feel comfortable to continue. Aerobic activity is any repetitive, rhythmic activity, involving the large muscle groups in your body such as the legs, shoulders and arms. This type of activity, over time, makes your body more efficient at using oxygen and helps to develop your stamina.

With any activity it is important to begin slowly and to build up gradually. As well as being good for heart health, activities are important for improving general flexibility, co-ordination and mobility of joints and muscle strength.

Keeping your body supple and flexible will help you keep a full range of movement and stay independent especially as you get older.

Activity which strengthens your muscles and bones are also important. These can also help give you good balance, posture and bone strength.

Your local Cardiac Rehab Team will advise you regarding appropriate exercise and options for enjoying long-term activity.

Visit the Green Gym http:/www.tcv.org.uk/greengym to improve your fitness and health while helping to improve the outdoor environment.

Visit Walking for Health http://www.walkingforhealth.org.uk/walkfinder to find local health walks by postcode to help you get active and stay active.

Poor diet /being overweight

Being overweight can make you more at risk of developing conditions such as CHD, high blood pressure, diabetes and osteoarthritis. 61.7% of adults are overweight or obese in the UK.
Being overweight is defined as a body mass index (BMI) of 25 - 30 and obesity is defined as a BMI of 30 - 34.9.

Maintaining a healthy weight has many health benefits as well as making you feel more energetic and increasing your confidence. To lose weight you need to use up more energy (calories or joules) than your body takes in from food and drink. New digital technology is helping to tackle obesity and lack of exercise. There are plenty of web-based tools and devices such as the Fitbit and Smartphone apps to help you manage and achieve your heart and general health goals. Alternatively visit http://www.bdaweightwise.com/

If you are overweight or obese, you can choose to take positive action to lose weight in three ways:

- ♥ Eat & drink fewer calories than your body needs
- ♥ Use more calories by getting more active
- ♥ A combination of both - try to move more and eat less

When you attend your local cardiac rehab programme you could agree to weigh-in, complete a food diary and record your weight at each exercise session. You may be referred to a hospital dietitian as appropriate.

If you are identified as overweight or obese, with other poor health conditions, you may be given information or offered a referral to a local lifestyle weight management programme as appropriate to your needs and dependent on available local services.

Dietary advice

Q. Does it really make any difference what I choose to eat?

A. Yes it does. Research has shown that by making changes to your diet you can reduce your risk of recurrent heart problems.

Q. I feel that I have done all I can to eat healthily but I still developed heart disease.

A. Unfortunately this is true of many people, but your efforts were not wasted. If you had not chosen a healthy diet, you may have developed heart disease at an earlier age or it may have been much more serious. By continuing to choose a healthy diet, you will reduce your risk of further heart problems. Can you make any changes to reduce other risk factors?

Q. What are the most important changes I should make to my diet?

A. That will depend on what you are eating right now. Many people would benefit from

- Altering their fat intake
- Increasing their intake of fruit and vegetables
- Reducing their salt intake
- Maintaining a healthy weight.

As you read through the next few questions think about what you eat and whether you could make any helpful changes to your eating pattern.

Q. Are all fats the same?

A. No. All fats and oils contain a mixture of saturated fat and unsaturated (including mono-unsaturated and poly-unsaturated fat) in different proportions. Some foods contain mostly saturated fat and very little unsaturated fat. All fats and oils are high in calories, containing more than twice as many calories as there are in the same weight of bread or potato. If you are trying to lose weight, you should restrict all fats.

Q. Is it important to reduce my intake of saturated fat?

A. Yes. Too much saturated fat causes the level of cholesterol in your blood to increase. If your weight is in the normal range, replace some of this with unsaturated fat.

Q. Which foods contain a lot of saturated fat?

A. Saturated fat is mainly found in

- Butter, lard, suet, ghee, coconut oil, palm oil, and any products made using these for example pastry, pies, cakes, biscuits
- Fat on meat, processed meats such as sausages, beef burgers, salami, corned beef
- Full-fat dairy products such as full-cream milk, cream, cheese, full-fat yoghurt
- Manufactured foods such as chocolate, mayonnaise, cream substitutes.

Q. What are trans-fats and partially hydrogenated fats?

A. These fats are like saturated fat. They are mainly found in deep fried foods, some shop-bought cakes, biscuits, confectionery, pastries and crisps. They are formed during processing when the fats are subjected to high temperatures. Many manufacturers have changed their production methods to ensure their products are free of partially hydrogenated fats and trans-fats.

Q. What is cholesterol?

A. Cholesterol is an important fatty substance found in every cell of the body. Too much cholesterol in your blood can increase your risk of heart disease. The most common cause of high cholesterol levels is eating too much total fat especially saturated fat.

If you have a strong family history of early death from heart disease or very high blood cholesterol levels, you may have a genetic condition. If you are unsure discuss this with your GP. If you are told you may have familial hypercholesterolaemia, you may need to restrict foods rich in cholesterol such as shellfish, offal and egg yolk as well as your intake of saturated fat.

Q. What are sterols and stanols?

A. Plant sterols and stanols occur naturally in plants and there is evidence that they can help to lower cholesterol levels. The intake of stanols and sterols in the typical Western diet is generally quite low.

For most people, their cholesterol level will be brought into the recommended range by

- Taking medication such as statins
- Reducing their saturated fat intake
- Maintaining a reasonable weight for their height.

Sterols and stanols may be useful if you can't tolerate cholesterol-lowering drugs. They are added to some fat spreads, soft cheeses, yoghurts and yoghurt style drinks. They are only effective if taken

regularly. There is no additional benefit of taking extra so once you have taken the recommended amount 1.6-2g/day, you can use other products e.g. olive spread which are cheaper.

If you choose to use stanol or sterol enriched products, they will lower the absorption of vitamins from your diet. Therefore ensure you eat plenty of fruit and vegetables to compensate. No safety data is available for the use of these products during pregnancy or breast-feeding so we would not recommend them. For further information, ask your GP.

Q. Why is it important to watch your intake of salt?

A. Salt can raise your blood pressure. High blood pressure can increase your risk of developing heart disease and stroke. Experts recommend we limit our salt intake.

- Avoid adding salt at the table, including sea salt, organic salt, garlic salt.
- Avoid tinned or packet soup, sauce mixes, salty foods e.g. crisps, salted nuts, salted crackers.
- Limit the quantity and frequency of eating foods containing a lot of salt such as bacon and processed meats e.g. ham, sausages, pate, cheese, stock cubes, gravy, soya sauce, bottled sauces most processed foods, tinned meats or ready meals – check labels.

Additional tips:

- Choose fresh food where possible.
- Gradually reduce the amount of salt used in cooking and use alternative flavourings e.g. onions, garlic, pepper, vinegar, tomatoes, herbs and spices.

Q. What should I look for on food labels?

A. You can use the colour coded traffic light labelling as a guide if there is one or compare the 'per 100g' figures on the food label with the information below.

	This is a lot	**This is a little**
Fat	20g per 100g of food or more	3g per 100g of food
Saturated fat	5g per 100g of food or more	1g per 100g of food or less
Salt	More than 1.5g per 100g of food	0.3g per 100g of food or less
Sodium	More than 0.5g per 100g of food or less	0.1g per 100g of food or less

Handy tips

Also remember to watch your portion size.

Some foods are labelled with the salt content and the sodium content. You only need to compare one. It doesn't matter which you check but make sure you use the correct figure for comparison.

Q. How much fruit should I eat?

A. Government agencies recommend you try to include a total of five portions of fruit and vegetables per day. Try to include as wide a variety of different fruit and vegetables as possible. If you dislike fruit, try to eat more vegetables or salad instead.

Q. What is a portion?

A. Any of the following would be one portion

- 1 slice of large fruit e.g. 1 slice of pineapple or melon or ½ large banana
- 1 average sized piece of fruit e.g. 1 apple, 1 pear, 1 orange or 1 small banana
- 2 smaller sized fruits e.g. 2 kiwi, 2 plums or 2 clementines
- 1 handful of strawberries, raspberries or cherries
- 3 tablespoons of vegetables or a cereal bowl of mixed salad.

Q. How do I know if I am overweight?

A. Have a look at the chart on the following page and check whether your weight falls into the recommended range. If you need to lose a lot of weight, it may be better to choose a more realistic target. If you lose 10% of your body weight this will significantly reduce your risk of heart disease e.g. this would mean that if you are

- 100kg (15st 10lbs) aim to reduce your weight to 90kg (14st 2lbs)
- 70kg (11st) aim to reduce your weight to 63kg (9st 13lbs)

Once you have reached this target, you can always set a new lower target if you wish.

Also check your waist measurements as some people will fall within the recommended weight range but would benefit from reducing their waist measurement.

HEIGHT in ft and in Range without shoes	Recommended Weight Range stones & pounds	HEIGHT in metres without shoes	Recommended Weight kg
4ft 10ins	6.12 - 8.8	1.47m	43.2 - 54.0
4ft 11ins	7.1 - 8.12	1.50m	45.0 - 56.2
5ft 0ins	7.4 - 9.2	1.52m	46.2 - 57.8
5ft 1ins	7.8 - 9.06	1.55m	48.0 - 60.0
5ft 2ins	7.11 - 9.11	1.57m	49.4 - 61.6
5ft 3ins	8.1 - 10.1	1.60m	51.2 - 64.0
5ft 4ins	8.5 - 10.6	1.63m	53.2 - 66.4
5ft 5ins	8.8 - 10.10	1.65m	54.4 - 68.0
5ft 6ins	8.12 - 11.1	1.68m	56.4 - 70.6
5ft 7ins	9.2 - 11.6	1.70m	57.8 - 72.2
5ft 8ins	9.6 - 11.10	1.73m	59.8 - 74.8
5ft 9ins	9.9 - 12.1	1.75m	61.2 - 76.6
5ft 10ins	9.13 - 12.6	1.78m	63.4 - 79.2
5ft 11ins	10.3 - 12.11	1.80m	64.8 - 81.0
6ft 0ins	10.7 - 13.2	1.83m	67.0 - 83.8
6ft 1ins	10.12 - 13.7	1.85m	68.4 - 85.6
6ft 2ins	11.2 - 13.13	1.88m	70.6 - 88.4

Q. Does your waist affect your health?

A. Yes. You can't choose your shape but if you are carrying extra weight around your waist, it is a greater strain on your heart. If you are "apple shaped" rather than "pear shaped", make an effort to lose some of those extra inches.

If your waist measures more than
80cm (32 inches) for women
94 cm (37 inches) for men

your risk of heart disease is increased. The larger the measurement, the greater the adverse effect on your health. Some evidence suggests that if you are from an Asian background you should aim for a weight in the lower half of the recommended range and a slightly lower waist measurement.

Q. What should I eat?

A. Changing the proportions of the food we eat can lead to a healthier diet.

Use the below guide for your main meals

Lean meat, poultry, fish, eggs, pulses, nuts or low fat cheese

- Even lean meat contains some saturated fat therefore limit the size of portion to approximately 110g (4oz) raw weight or 55g (2oz) cooked weight.
- Trim all visible fat from meat. Remove skin from poultry. Avoid adding extra fat or lard. Use a little rapeseed oil or olive oil when cooking e.g. stir-fries or curries.
- Include 2 portions of fish a week, one of which is oily fish e.g. salmon, trout, mackerel, sardines, pilchards and herring. You could include this as a sandwich, baked potato filling, toast topping, salad or cooked meal.
- Choose potato topped pies such as cottage pie, fisherman's pie rather than pastry.
- Skim fat from gravies. Choose tomato-based sauces rather than cheesy or cream sauces. Add onions, garlic, herbs, spices, tomato puree and vinegar to give flavour.
- Vegetarian options – base meals on pulses, tofu, soya meats, nuts such as almonds, walnuts, chestnuts, hazelnuts and/or seeds.
- Choose fat-reduced cheese and limit quantity to 110g (4oz) per week. Spread this out over 3 meals. Avoid eating cheese as a snack unless it is very low-fat such as cottage cheese.

Starchy foods such as potatoes, sweet potatoes, bread, rice, pasta, chapattis, wraps, couscous

- Many people think these foods are fattening. This is not true unless you fry them, add extra fat or oil or eat in large quantities. Avoid frying potatoes or rice. Spread margarine thinly on bread.
- Serve plain boiled or baked potatoes. Use a little low-fat milk in mashed potatoes.
- Once you reach your target weight, add variety by making your own pastry, crumbles, stuffings or roast vegetables occasionally using an olive oil based margarine or rapeseed oil or olive oil.
- Serve pitta bread, wraps or hot fresh rolls for a change.

Vegetables, salad and/or fruit

- Many people eat too little fruit and vegetables – try to serve an extra portion of vegetables at your main meal. Take fruit or salad along with snack meals.
- Serve extra vegetables instead of Yorkshire pudding, dumplings, batter, stuffings.

Q. Are there other changes I should make to help decrease my saturated fat intake?

A. To decrease saturated fat

- Choose low fat milk, low-fat or fat free yoghurt or fromage frais. (If you have diabetes or wish to lose weight, choose healthy eating or diet yoghurts as these are low in both fat and sugar). Try to avoid cream and cream substitutes.
- Choose olive spread, rapeseed oil or olive oil instead of butter, lard, suet or ghee
- Avoid products containing coconut, coconut oil or palm oil as they contain a lot of saturated fat.

Q. How can I change my eating habits?

A. Here are some helpful hints to get you started

- What changes do you think you need to make to your diet? Jot them down

.....

You may feel you have too many other changes to make right now and want to concentrate on stopping smoking or becoming more active first. You must be convinced that making the change is worthwhile. Think of the benefits and jot them down. When you are ready to tackle changing your eating habits, get the list out again and remind yourself of what you have written.

.....

- Also try to jot down all the disadvantages or difficulties of making these changes

.....

- Can you do anything to help overcome these difficulties?

.....

- Try to jot down what you plan to eat for your main meals before you go shopping so that you buy all the foods you need. If you have suitable foods in the fridge/freezer you are much more likely to keep to your new eating pattern
- Prepare an extra portion of suitable meals and freeze to use at times when you are busy or when the rest of the family want to get a meal from the chip shop.
- If you live alone, it can be hard to make the effort to prepare regular meals. Remember you are as important as anyone else. You will find it easier to eat healthily if you plan and cook regular meals. This makes it easier to avoid snacking too.
- Try to get as much variety as possible so that you enjoy your meals.

Q. Can I have an occasional treat?

A. Yes and when you do – enjoy it. Eating should be a pleasure but it is also worth remembering that the only way your body obtains all the nutrients it needs to keep you healthy is from the foods you choose to eat. It is the combination of foods we eat and the balance that is important. Enjoy the occasional treat or family occasion but be careful not to take very large portions or several foods rich in saturated fat all on the same day. Try to choose wisely from day to day. Be careful to avoid frequent treats.

Q. What are the main points?

A. Just to summarise …

- Include two portions of fish a week, one of which is oily fish.
- Limit all fats if you are overweight. If normal weight for height, limit foods containing a lot of saturated, hydrogenated or trans-fats. Replace some of these fats with rapeseed oil, olive oil or sunflower oil and margarines made from these oils.
- Check your weight and waist measurement. If higher than recommended, set a realistic target and check weekly to see if you are making progress.
- Include plenty of fruit and vegetables. Aim to have five portions a day. If you dislike fruit, try to include more vegetables and vice versa.
- Choose more fresh foods rather than processed foods whenever you can.
- Limit your intake of salty foods.

Please note - If you have a poor appetite or have been losing weight unintentionally, ask a member of your Cardiac Rehab Team or your doctor to refer you to a dietitian.

Additional information
The British Heart Foundation (BHF) https://www.bhf.org.uk/heart-health/treatments produces various dietary information booklets. Many are available in the hospital or you can call the BHF on 020 7554 0000 or email orderline@bhf.org.uk

If you have access to the internet, the following web addresses have useful dietary information.

British Dietetic Association (BDA) is the Association of UK Dietitians https://www.bda.uk.com/

Food Standards Agency http://www.food.gov.uk

Change 4 Life http://www.nhs.uk/change4life

British Nutrition Foundation https://www.nutrition.org.uk/

Drinking too much alcohol

Drinking more than the recommended amount of alcohol can have a harmful effect on your heart and general health. It can cause abnormal heart rhythms, high blood pressure, damage to your heart muscle and other diseases such as stroke, liver problems and some cancers. Alcohol is also high in calories so it can lead to weight gain. It also lowers your inhibitions which might mean you find it harder to stick to your healthy eating plans when you have been drinking. If you are trying to lose weight, cut down on alcohol.

Is it safe to drink with a heart condition?

After undergoing heart surgery, it can be difficult to know if and when you can drink alcohol again. Once you have recovered from your surgery, its fine for most people with a heart condition to drink alcohol within the recommended limits. However, check with your doctor for advice on whether it is safe for you to drink alcohol and how much. Some alcoholic drinks and mixers also contain caffeine, which can make your heart work much harder. You should avoid these drinks after heart surgery especially if you suffer from recurring tachycardias (rapid heart rates) and arrhythmias (abnormal heart rhythms).
Reference:https://www.bhf.org.uk/informationsupport/support/healthy-living/healthy-eating/alcohol

Will alcohol interact with my medication?

Drinking alcohol can affect the way your medicines work. If you want to drink and you are taking regular medication, you should check with your pharmacist or doctor first that it is safe to do so.

Everyone should avoid drinking too much alcohol but this is particularly important if you are taking the following medication.

- If you are taking sleeping tablets or painkillers, remember that alcohol will have a more powerful effect.
- Warfarin and other anticoagulant (anti-clotting) medication - too much alcohol can interfere with the blood clotting process, so if you do drink alcohol it is better to have just a small amount regularly. Your anticoagulant clinic will be able to advise you on this (see pages 33 - 35).

How much can I drink?

If you drink alcohol it is important to keep within the guidelines (Department of Health 2016). For detailed information visit https://www.drinkaware.co.uk/ or if you have a Smartphone download for free, the Drinkaware Track and Calculate Units app.

- Men and women should not drink more than 14 units of alcohol each week.
- You should have several alcohol-free days each week. These guidelines apply whether you drink regularly, or only occasionally.

Most people don't drink alcohol every day - but if you do, you should aim to have some days off. Just make sure you do not increase the amount you drink on the other days. If you do drink as much as 14 units per week, spread this out evenly over three days or more.

Drinking large amounts of alcohol in one go can cause additional damage to your body, so avoid heavy or 'binge' drinking – you can't save up your units! If you drink too much, avoid alcohol for 48 hours to allow your body time to recover.

When it comes to single drinking occasions you can keep the short term health risks at a low level by sticking to a few simple rules.

- Limit the total amount of alcohol you drink on any occasion
- Drink more slowly, drinking with food, and alternating with water

For further information visit https://www.nhs.uk/oneyou/be-healthier/drink-less/

How much is one unit of alcohol?

A unit is a measure of alcohol. The number of units is based on the size of the drink and its alcohol strength or ABV. The ABV (alcohol by volume) figure is the percentage of alcohol in the drink. One unit is 10ml of pure alcohol. Because alcoholic drinks come in different strengths and sizes units are a good way of telling how strong your drink is. It's not as simple as one drink, one unit.

- A single pub measure (25mls) of spirits (40% ABV) contains one unit of alcohol
- A glass (50 ml) of liqueur, sherry or other fortified wine (20% ABV) contains one unit of alcohol
- Half a pint (about 300mls) of normal strength (4% ABV) lager, cider or beer contains 1.1 unit of alcohol - be aware that many beers and ciders are stronger and have a higher volume than this
- A standard 175ml glass of wine (13% ABV) would be 2.3 units - be aware that many wines have higher alcohol content and the size of glasses may be bigger

If you feel you would benefit from a referral to the alcohol team

outpatient clinic, talk to your cardiac rehab health professional or email the hospital team at alcohol.team@mft.nhs.uk or call them on

0161 2916572.

Stress

Stress describes the state you may sometimes experience when everything seems too much to cope with. You may feel overwhelmed and unable to meet the demands placed on you. We all experience some degree of stress in our lives. Not all stress is bad for us, for example the stress we feel when having an interview or doing an exam might help us improve our performance and enable us to succeed. However, too much stress over a long period of time can have a negative effect on your health and wellbeing.

When we experience stress, our bodies react to a perceived threat by releasing certain hormones, the main one being adrenalin. Adrenaline causes increases in our heart rate, blood pressure and breathing rate. It can also cause muscle tension and indigestion.

These changes can make us feel that there is something wrong with our bodies, when in fact it is a normal adrenaline response to a stressful thought or event. This is referred to as a “fight or flight” response and is necessary for survival in a life threatening event. Sometimes people may misinterpret this “fight or flight” response (and think that they are having a heart attack). This in itself creates further anxiety which results in even more stress hormones circulating in the body.

How does stress affect the heart?

In the past, stress has not been identified as a direct risk factor for coronary heart disease (CHD). However, emerging findings suggest that the effects of the stress response, particularly when chronic can lead to inflammation in our arteries, which increases the risk of having a heart attack, angina or stroke*.

Acute stress can trigger reduced blood flow to the heart, can cause your heart to beat irregularly and can increase the likelihood of blood clots. It is therefore just as important to manage stress in the same way we would manage other risk factors such as smoking or high blood pressure.

Stress can also be an indirect risk factor for CHD. When we are stressed, we tend to rely on short-term fixes which can result in less healthy behaviours such as overeating, drinking too much alcohol or smoking. All of these risk factors increase our risk of cardiovascular disease. * *Tawakol A, Ishai A, Takx RAP, Figueroa AL, Abdelrahman A, Kaiser Y, et al. Relationship between resting amygdalar activity and cardiovascular events: a longitudinal and cohort study. Lancet. 2017;389:834–845. doi: 10.1016/S0140-6736(16)31714-7.*

What can I do to help myself manage stress?

- ♥ Take time to look at the kind of things that are stressful to you. By identifying the sources of stress, you can start to think about how you can deal with them
- ♥ Making changes to your lifestyle in a positive way such as eating a balanced diet, taking regular physical exercise, cutting down on alcohol and giving up smoking. Doing these things will reduce your risk for developing further CHD
- ♥ Make more time for rest and relaxation (for example mindfulness, yoga and relaxation techniques). See below for information on a rapid relaxation technique that you can try
- ♥ Learn to say no to people when you feel overburdened
- ♥ Avoid putting things off. Adopt the “Do it today!” approach
- ♥ Learn to challenge your thoughts if you notice that worrying thoughts tend to run away with you
- ♥ Talk to family or friends about your worries or find out about support groups that you can attend. Ask for help if you need it and accept it when it is being offered
- ♥ Make more time for yourself to enjoy activities that make you feel good
- ♥ Make time to reassess your values. What do you find important in life? Is your life going in the direction that you would like it to? If not, what can you do to bring about change?
- ♥ Be kind to yourself. Recovery takes time. Try not to be too hard on yourself. It is normal to have good days and bad days after heart surgery (see page 28)

If you feel stressed or very anxious, talk to your GP or a member of your Cardiac Rehabilitation team who will be able to help you decide what help would benefit you most. Some Cardiac Rehabilitation Departments may run a stress management course that you can attend during or after your rehabilitation programme. Additionally, if you are experiencing any ongoing anxiety or depression, you may be referred to a specialist health professional for psychological interventions such as cognitive behavioural therapy (CBT).

Mindfulness

Paying more attention to how you feel and to the world around you can improve mental wellbeing. This is called mindfulness. One of the most common mindfulness techniques is body scanning (focusing on different parts of your body and letting the tension go, moving from head to feet). Mindfulness helps you to be present in the here and now and can be helpful in dealing with anxious thoughts. Mindfulness can be used anywhere, for example in a quiet room whilst meditating or even when walking - being conscious of the light, of the trees and of the birds singing.

Useful websites

- https://www.bhf.org.uk/mindfulness
- https://www.mindful.org

- https://www.headspace.com (also available as free smartphone app)

Relaxation

Relaxation can be an effective coping strategy to help to improve your physical and mental wellbeing. It can be learnt by anyone and with practice you should be able to relax almost anywhere.

Relaxation benefits the heart as it can lower blood pressure, and also slows down your breathing and heart

rate. Relaxation reduces muscle tension and pain and can help to calm you down when you feel anxious. It is important that you make time to relax during your recovery period but also as a longer term strategy for wellbeing.

If you are feeling particularly stressed, you can try this quick "emergency" relaxation technique

- ✓ Recognise that you are feeling tense – look out for signs within you like racing thoughts, butterflies in your stomach, tension in your shoulder muscles or a dry mouth
- ✓ Breathe in deeply through your nose and hold your breath for 2-3 seconds
- ✓ Exhale slowly through your mouth until you have no air left in your lungs
- ✓ Repeat this breathing pattern again. You might feel slightly dizzy - this is your body's response to deep breathing and is nothing to worry about. The dizziness will pass
- ✓ As you exhale, focus on dropping your shoulders and relaxing your hands and jaw
- ✓ Tell yourself: "I am okay. I can do this. I am feeling more relaxed". Speaking to yourself in a kind and calming way can help a lot in bringing down your stress levels

Your local Cardiac Rehabilitation Team may present relaxation classes, please contact them to enquire about this as it can be helpful to learn a few different relaxation techniques in order to find the one that works best for you.

If you would like details of where to obtain relaxation CDs, you can contact the Wythenshawe Hospital Cardiac Rehabilitation Team on 0161 291 2177 or cardiac.rehab@mft.nhs.uk

If you want to find out more about managing stress and how you can help your heart, you can order the BHF booklet "**Coping with stress"** by telephoning 0300 200 2222.

Online resources for relaxation and wellbeing

- https://www.nhs.uk/conditions/stress-anxiety-depression/mental-health-helplines/
- https://www.ntw.nhs.uk/resource-library/relaxation-techniques/
- You can also visit YouTube for lots of examples of scripted guided relaxation techniques and relaxing background music.

Self-help services

- Living life to the full series http://www.llttf.com
  Provides sessions to help you be happier, sleep better, do more and feel more confident
- Psychological services covering Manchester, Stockport and Trafford - self referral and GP referral possible
  https://www.selfhelpservices.org.uk/shs_type/psychological-therapy/
- Mental health charity - MIND http://www.mind.org.uk
  Information on conditions, treatment and support

Medical modifiable risk factors

Your individual medical risk factors that can be controlled will be monitored at your cardiac rehab sessions. Maintaining guideline levels of blood pressure and blood glucose is also important for safe exercise. The ideal is for you to have your blood fat levels (cholesterol) checked by the end of your cardiac rehab programme.

High blood pressure (hypertension)

Blood pressure (BP) is the pressure of blood in the arteries as the heart pumps blood around the body. High blood pressure happens if the walls of the larger arteries lose their natural elasticity and become rigid, and the smaller arteries or vessels constrict (become narrower). As we get older, we often need a 'higher pressure' to force the blood through vessels that have 'stiffened' with age. So, what might be a high reading for a young person can be perfectly normal for an older person. Your doctor or nurse will tell you the correct reading for you.

High blood pressure is often missed as there are no obvious symptoms. This is why hypertension is particularly dangerous. If left untreated, it can cause damage to many parts of the body including blood vessels, the heart, the kidneys and the eyes. It is a major risk factor for hardening of the arteries, heart attack, stroke, heart failure, kidney failure and sight loss. A small reduction in blood pressure can help protect your heart.

You can help control your blood pressure by:

- ♥ Keeping to a healthy weight
- ♥ Cutting down on salt – no more than 6g of salt per day. Dietary salt is a significant factor in raising blood pressure in people with hypertension and in some people with normal blood pressure
- ♥ Cutting down on alcohol intake
- ♥ Stopping smoking
- ♥ Taking your prescribed medication
- ♥ Practising relaxation, mindfulness and other stress management techniques
- ♥ Avoiding stressful situations.

For more detailed advice or to order the BHF booklet 'I've got my blood pressure under control' call 0300 200 2222.

It is normal for your blood pressure to rise and fall depending on your activity.

You have probably heard the doctor or nurse say something like, ‘your BP is 140 over 80’. Blood pressure is measured in millimetres of mercury. This is usually written down as mmHg. The top number (140) is the pressure that your heart is pumping at (systolic). The lower number (80) is the pressure between heart beats when the heart relaxes (diastolic).

You will have your blood pressure checked when you attend cardiac rehab and you should continue to have regular blood pressure checks at your GP surgery. The targets for blood pressure when you attend clinic are

- individuals aged under 80 years:lower than 140/90mmHg
- individuals aged over 80 years:lower than 150/90mmHg.

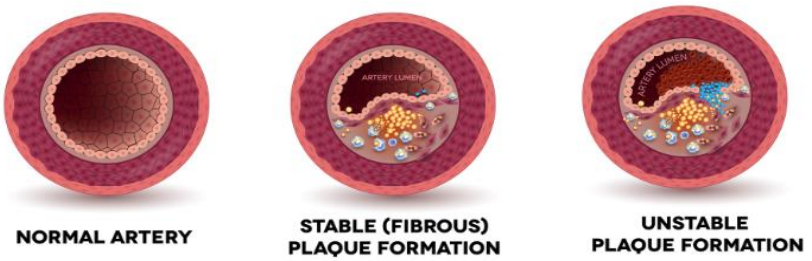
However, the targets for daytime average blood pressure during an individual’s usual waking hours are

- individuals aged under 80 years: lower than 135/85 mmHg
- individuals aged over 80 years: lower than 145/85 mmHg

For all people with diabetes the target for resting blood pressure is less than 130/80.

High fat levels in the blood (cholesterol)

Cholesterol is a word you may well have heard, but never understood. Cholesterol is the best known of a group of fat-like substances in the body called lipids. The liver makes cholesterol from the saturated fats we eat. A certain amount of cholesterol is essential for life and it is present in every cell in the body and also in the blood. When people have an excess of fats in their blood, the body is unable to break these fats down and may therefore deposit them in the artery wall. These affected areas are known as atheroma or atherosclerotic plaques. Over time these get bigger and can spread into the centre of the artery, making the artery smaller. This may cause the symptoms of angina or more seriously lead to a heart attack.



Cholesterol is carried around the blood in different forms. The two main forms are high density lipids (HDL) and low density lipids (LDL).

HDL carries the cholesterol away from your arteries back to your liver whereas LDL carries the cholesterol to your arteries where it can contribute to the build-up of fatty deposits (atheroma), in your artery walls.

A high level of cholesterol may be affected by diet and lifestyle. It could also be inherited, a condition called Familial Hypercholesterolaemia. You may be asked if any family members have been diagnosed with high cholesterol or have been diagnosed with any heart problems at a young age. These factors could have implications on your treatment.

If you are known to have a heart problem, you should try to lower your cholesterol. The best way is to

- ♥ Eat more healthy fats (less saturated/ trans fats)
- ♥ Be physically active
- ♥ Keep to a healthy weight.

For many people these natural ways are not enough on their own. In this case, research has shown that the need for cholesterol lowering medication is essential. The test for cholesterol is often done as a fasting test which means you will be asked not to eat or drink anything other than water for 12 hours before the test.

After your heart surgery it is advisable to wait three 3 months before having your cholesterol levels checked. If you have been prescribed a statin for life you will have blood tests every 6 - 12 months that measure your total cholesterol, HDL cholesterol and non-HDL cholesterol.

For further information visit the heart UK Cholesterol Charity at http://www.heartuk.org.uk or order the BHF booklet 'Reducing your blood cholesterol' by calling 0300 200 2222.

Diabetes

Diabetes occurs when the glucose level in the blood is too high. Glucose is a sugar that the body makes mainly from the starches and sugars (carbohydrates) in food. The blood carries glucose to all the cells in the body, where it is used to produce energy. The hormone insulin allows the glucose to move from the blood and into the cells, therefore enabling the glucose level in the blood to fall. Diabetes occurs when the body either stops producing insulin or the insulin is no longer able to keep the glucose level in the blood within the normal range.

In diabetes, glucose levels in the blood rise because glucose cannot move from the blood into the cells due to a lack of insulin. The cells become starved of glucose (fuel) which leads to symptoms of diabetes. Diabetes increases the risk of coronary heart disease and can cause other serious health problems. There are two types of diabetes

- Type 1 – when the body does not produce any insulin
- Type 2 – when the body does not produce enough insulin, or the cells of the body are unable to use insulin effectively.

Prediabetes (borderline diabetes) is closely linked with obesity. One in three adults in England has prediabetes. It is characterised by the presence of blood glucose levels that are higher than normal but not yet high enough to be classed as diabetes. Make healthy choices now to prevent Type 2 diabetes developing.

- Diabetes damages the heart in several ways
- High glucose levels in the blood affect the walls of the arteries, making them more likely to develop atheroma (plaque)
- Platelets stick together more easily, forming clumps which are more likely to get stuck in blood vessels
- Diabetes increases the damage done by the major CHD risk factors of smoking, high blood pressure and high blood cholesterol
- Diabetes can affect the heart muscle itself, making it a less efficient pump
- People with Type 2 diabetes often have lower levels of HDL cholesterol
- Diabetes can affect the nerves to the heart so that the symptoms of heart disease are not felt in the usual way

If you have diabetes it is very important to:

- ♥ control your blood glucose
- ♥ control your BP and cholesterol
- ♥ be physically active
- ♥ keep to a healthy weight.

Target blood sugar for anyone with diabetes is between 4 - 9 mmols. If your blood sugar is consistently outside this range your medication (either insulin or tablets) may need adjusting. You should contact your practice nurse, district nurse, GP or Diabetes Nurse Specialist. You should attend your GP surgery for regular diabetic check-ups, which include a blood test called glycated haemoglobin (HbA1c) which identifies your average long-term blood sugars.

If you have diabetes the nursing staff will give you more information and if necessary, while you are in hospital, you may be referred to a Diabetes Nurse. You can call 0300 200 2222 to order the BHF booklet ‘Diabetes and your heart’. For more information you can contact Diabetes UK http://www.diabetes.org.uk/