Cardiovascular Disease

To lead a healthy lifestyle, the heart must be working in correct order as it is one of the most important organs in the human body. Even a minor fault in the heart or one of the blood vessels can lead to an illness. Cardiovascular diseases are diseases of the heart and circulation and this form of disease is one of the major health problems that people face today.

Cardiovascular diseases are a major cause of death in the UK , and cause over 250000 deaths a year. Around a third of these deaths are premature, and cardiovascular disease is the eventual killer of one in every three people in the UK , one in four of these are male and one in five are female. The different forms of cardiovascular disease include coronary heart disease and stroke.

Majority of cardiovascular diseases are related to a disease caused Atherosclerosis, which eventually leads to more fatal diseases such as coronary heart disease and stroke. In atherosclerosis , fatty deposits form which block an artery completely or partly block it which causes a clot. This can cause permanent damage and if this happens in an artery which is supplying the heart, then a heart attack can be caused . This form of attack, myocardial infarction , can be fatal and is widespread. In 2003, there were over 7 million Americans who suffered from this sort of heart attack.

If Atherosclerosis occurs in an artery which is supplying the brain, this causes a stroke. This can lead to some fatal problems and in 2003, over 5 million Americans suffered from stroke. When atherosclerosis occurs, the layer that lines the inside of the artery gets damaged. Large white blood cells move into the artery wall and cholesterol is accumulated. An atheroma then builds up, which is a deposit. Calcium salts then build up and a plaque forms inside the artery. The artery hardens and these plaques cause the artery to become narrower. Once this happens, a blood clot is very likely to form. This causes platelets to change from flattened discs to spheres with long projections. Their cell surfaces change, causing them to stick to the exposed collagen in the wall and to form a platelet plug. These complex changes causes a plasma proteins called prothrombin being converted into thrombin. Formation of thrombin, causes fibrinogen to convert into fibrin. These strands of fibrin causes blood to clot. It is then more difficult for blood to be pumped and this eventually leads to a major disease, such as coronary heart disease or a stroke.

When a cardiovascular disease is developing, the patient is unaware through most of it, however when a more dangerous form of the disease has developed, then the patient undergoes symptoms. If a stroke is developing, the symptoms that will appear all of a sudden are numbness, dizziness, confusion, slurred speech and blurred vision. Symptoms for Coronary Artery Disease includes nausea , angina and shortness of breath. Angina is a chest pain that is caused by the narrowing of the coronary arteries. This causes anaerobic respiration and the build of lactic acid causes this angina. Angina is very dangerous and must be treated straight away. The three types of angina are stable angina, unstable angina and Prinzmetal's angina. Stable angina is when the pain is predictable and present only during exertion or extreme emotional distress, disappearing with rest. Unstable angina is angina pain that is different from regular angina pain

or pain that occurs while at rest. It is unstable and occurs randomly and can cause a heart attack. Prinzmetals angina is when angina occurs during sleep and is a symptom of coronary heart disease.

In a heart attack, the fatty plaque in the coronary arteries ruptures, cholesterol is released and a clot forms very quickly. The blood supply is either partially or completely blocked to the heart and the heart is ischaemic. A heart attack is then caused.
When a heart attack is caused, death can be one of the consequences.

There are many risk factors to both major CVDs, coronary heart disease and stroke. Risk factors are issues that can give a patient a higher risk of getting a disease. In coronary heart disease, the major CVD which kills millions every year, there are three unchangeable risk factors. These risk factors are age, heredity and gender. Over 83 percent of people who die of coronary heart disease are 65 or older. At older ages, women who have heart attacks are more likely than men are to die from them within a few weeks. The older a patient, the higher the risk of them getting coronary heart disease. Males have a higher risk than women of getting coronary heart disease and heredity also plays a big part. Children of parents with heart disease are more likely to develop it themselves, and people who are African have a higher risk than most other races.
These risk factors are uncontrollable; however, there are many risk factors which are controllable. The controllable risk factors for heart disease are tobacco smoke, high blood cholesterol, high blood pressure, physical inactivity, obesity , diabetes , stress and alcohol.
Smoking is a serious cause of heart disease. Smokers' risk of developing coronary heart disease is 2–4 times that of nonsmokers and cigarette smoking is a powerful independent risk factor for sudden cardiac death in patients with coronary heart disease. Smokers have about twice the risk of nonsmokers and cigarette smoking also acts with other risk factors to greatly increase the risk for coronary heart disease. This is because the carbon monoxide present in smoke reduces the efficiency of haemoglobin. Smoking damages the arterioles and reduces the HDL cholesterol,
As blood cholesterol rises, so does risk of coronary heart disease. When other risk factors (such as high blood pressure and tobacco smoke) are present, this risk increases even more. High blood pressure increases the heart's workload, causing the heart to thicken and become stiffer. It also increases your risk of stroke, heart attack, kidney failure and congestive heart failure. An inactive lifestyle is a risk factor for coronary heart disease. Regular, moderate-to-vigorous physical activity helps prevent heart and blood vessel disease. Exercise can help control blood cholesterol, diabetes and obesity, as well as help lower blood pressure in some people, and lack of exercise can enhance the risk of any cardiovascular disease.
Weight is also a causer of cardiovascular disease. People who have excess body fat are more likely to develop heart disease and stroke even if they have no other risk factors. Excess weight increases the heart's work. It also raises blood

pressure and blood cholesterol and triglyceride levels, and lowers HDL ("good") cholesterol levels. Having diabetes, drinking large amounts of alcohol and stress also increase the risk of cardiovascular disease. The diet of a patient must also be healthy, and cholesterol must be low. This means that fried food must not be eaten regularly, and around 2 portions per week at least of fish is also very good. Cholesterol must be kept low as around 46 % of coronary heart disease is caused by a blood cholesterol level which is too high. Cholesterol is insoluble and must be combined with proteins to form soluble lipoproteins in order to be transported. The triglycerides from saturated fats in our diet combine with cholesterol and protein to form low density lipoproteins. Excess LDLs in the diet overload membrane receptors and blood cholesterol becomes high. The cholesterol is then deposited in the artery walls and atheromas are caused. This causes atherosclerotic plaques and can cause heart disease. Saturated fats are also dangerous whereas polyunsaturated are healthy. This is because unsaturated fats have closely packed hydrocarbon chains.

A healthy diet that reduces the risk of cardiovascular disease must have energy, reduced saturated fat, more polyunsaturated fats, reduces cholesterol, reduces salt and include oily fish.

Once cardiovascular disease has occurred, it must be treated. One pre disease treatment is to use anticoagulant drugs and anti platelet drugs. These drugs reduce the clotting and allow the blockages in arteries to be cleared. Using these drugs has been proven to reduce the risk of having cardiovascular disease by about 25%. Using aspirin and beta blockers, once prescribed by doctors is also known to reduce the risk of cardiovascular disease. Heart surgery, such as angioplasty is the main way of curing coronary heart disease.

The government is doing a lot to prevent cardiovascular disease and increase awareness. The NHS national service framework for coronary heart disease has services available that include smoking advice, information about risk factors and advice and treatment. The NHS also has an R&D Programme for Cardiovascular Disease and Stroke. This group works and researches areas of cardiovascular disease to prevent it such as hormone replacement and rehabiliation for patients. A £600m programme of hospital building is continuing to provide new or expanded heart surgery hospitals and the NHS is trying reduce waiting times for surgery. The government can further decrease cardiovascular disease by increasing awareness in the future of cardiovascular disease and putting bans on foods with too much cholesterol . If more peopl are aware of these risk factors and get tested for cardiovascular diseases, then there will be less cardiovascular diseases and they will be detected much earlier.

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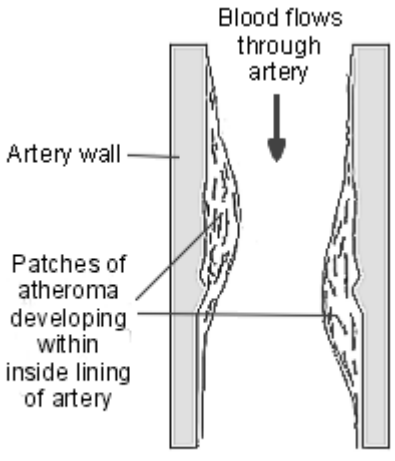

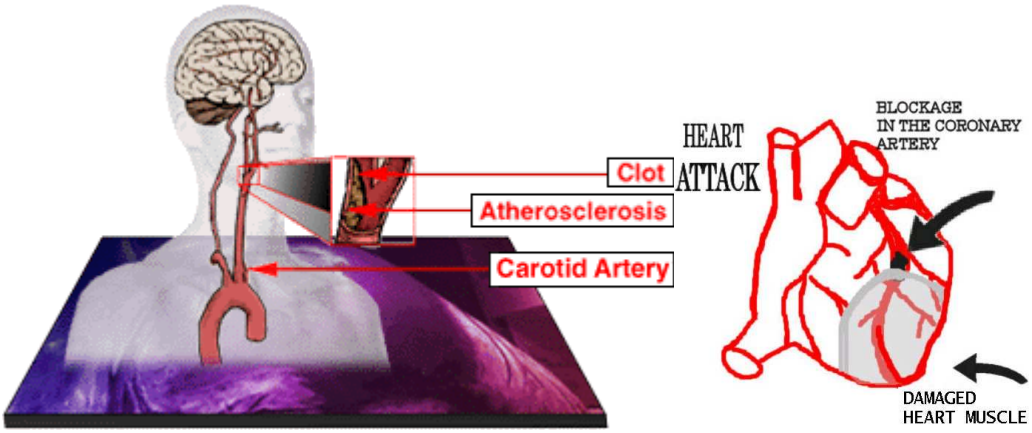
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