Coronary artery bypass graft (CABG)

Coronary heart disease

Coronary heart disease happens when fat and cholesterol in your blood build up in your coronary (heart) artery walls and form a plaque (atheroma). This process is known as atherosclerosis.

Atherosclerosis narrows the artery and reduces the blood flow so that your heart muscle doesn't get all the oxygen it needs. This can damage your heart muscle and lead to a range of symptoms, which can be serious.

Coronary artery bypass graft surgery

Coronary artery bypass graft (CABG) surgery is a procedure to improve the blood flow to your heart. It's used to treat coronary heart disease. You may well hear CABG pronounced as 'cabbage'. Having a CABG procedure can relieve your angina symptoms, and may also reduce your risk of having a heart attack.

In this procedure, your surgeon will take an artery or vein from your leg, arm or chest to use as a graft or grafts. You may just have one graft, or there may be several. To reach your heart, your surgeon will make a cut down the middle of your breastbone (sternum) and open your chest. This is known as open-heart surgery. Your surgeon will then attach the graft(s) in the correct place(s) to bypass the narrowed parts of your coronary arteries. After attaching the graft(s), your surgeon will restart your heart (if it was stopped in the operation). You'll be under general anaesthesia (asleep and feel no pain) for CABG.

CABG can also be done with keyhole surgery – this is when the cuts are smaller and the operation is minimally invasive. In this case, your breastbone won't need to be cut. However, keyhole surgery for CABG is still being tested by surgeons and isn't yet widely used. It isn't suitable for everybody – your surgeon will advise you if it's appropriate for you. If you do have keyhole surgery, there's a chance your surgeon may need to convert to open surgery if it's impossible to complete the operation safely using the keyhole technique.

What happens to the place in the leg where the vein was taken away?

After a vein in your leg has been taken away to use as a graft, the fat layer and the skin layer are stitched together over the length of the surgical wound. The veins in the leg that are used in this way run under the skin. They are an 'extra' and aren't essential for taking the blood from your leg back up to your heart. The veins that are really important in returning blood to your heart are deep within your leg muscles. This is because although gravity would make all the blood pool in your feet, every time you move your leg muscles, the deep veins in your muscles are squeezed so the blood goes upwards towards your heart. The veins under the surface of your skin help in this process. They have little valves to help stop the blood falling back towards your feet, but are not so important as the deep veins. Your blood flow will work perfectly well if a small section is taken away for a graft.