

Heart bypass surgery

The formation of fatty plaques and scar tissue within a segment of coronary artery can diminish blood supply to the heart.

A heart bypass operation is performed to 'bypass' the narrowed segment, creating a new channel for the blood to supply the heart's surface. This is usually done by inserting a section of the patient's saphenous vein, which is taken from the thigh or lower leg. Sometimes, the internal mammary artery (from the chest wall) is used. Other names for this operation include coronary artery bypass graft surgery (CABG) and coronary revascularisation.

Coronary heart disease

Coronary heart disease is characterised by a narrowing of the arteries that supply blood to the heart. Fatty deposits (rich in cholesterol) stick to the artery walls, causing thickened patches called plaques to develop (atherosclerosis). These plaques narrow the arteries and reduce the flow of blood to the heart muscle. Clots (thrombosis) may then occur, blocking the artery and causing a heart attack (coronary occlusion).

The risk factors are mainly lifestyle related, and include:

- A diet high in saturated fats
- Cigarette smoking
- Obesity
- Lack of physical activity
- Uncontrolled diabetes
- High blood pressure
- Family history of heart disease.

Medical issues to consider

Once you and your doctor have decided that you are to have a heart bypass operation, your doctor will discuss in detail the risks involved. This will include the type of anaesthetic you will have and the immediate post-operative care you can expect. You also need to discuss health and lifestyle issues, including medical history, allergies and current medications.

Once in hospital, your vital signs – such as blood pressure and heart rate – are recorded. You will also undergo various medical investigations prior to surgery, including blood tests, x-rays and an electrocardiogram.

Heart bypass operation

Your chest, arms and legs are shaved and your skin washed with antiseptic solution. It is important not to eat or drink for some time before the operation. You are given a pre-medication injection to make you feel drowsy and to dry up internal secretions.

Heart bypass surgery is performed under general anaesthetic. The saphenous vein (from your leg) the internal mammary artery (from your chest wall) or the radial artery (from your wrist) can be used as grafts. Commonly, between two and four coronary arteries are grafted, depending on the location and severity of the blockages.

The surgeon accesses your heart using one of two possible incisions: either cutting down the length of your breastbone (median sternotomy) or cutting beneath the left nipple (thoracotomy). A heart-lung machine maintains your blood circulation while your heart is deliberately stopped. The vein or artery is then grafted onto the narrowed segment of coronary artery, which allows the blood flow to bypass the blockage.

Sometimes, the operation is performed while the heart is still beating (this is called 'beating heart' or 'off-pump' surgery).

Immediately after heart bypass surgery

You should talk to the medical staff if you have any fears or anxieties over the few days immediately after the operation, as emotional stress can make demands on your heart.

Following the operation:

- You spend a day or two in the intensive care unit. You have numerous monitors attached to you that are located by your bed.
- You have a couple of intravenous lines to keep your body fluids and electrolyte levels in balance.
- The medical and nursing staff are trained to look out for any complications or potential complications. They keep an expert eye on your heart tracings, and treat any irregularities if they arise.
- You have a nasogastric tube (a thin tube passed through your nose and into your stomach) to drain any excess stomach fluids, and a tube into your bladder to drain off and measure your urine output.
- You are shown how to care for your wounds. Often, washing with soap and water is enough.
- You are given advice on angina (chest pain), such as how to treat it and when to get medical help.
- Your doctor advises on when you can return to work, resume driving, and exercise strenuously.
- You are shown breathing exercises and other exercises by a physiotherapist.
- Before you leave hospital, your doctor should provide guidelines about restarting sexual activity. You should be given advice on positions that reduce exertion during sex, and what to do if you experience angina.

Complications of heart bypass surgery

Some of the possible complications of heart bypass surgery include:

- Haemorrhage
- Infection of the wound
- Heartbeat irregularities (arrhythmia)
- Kidney failure
- Fluid build-up in the lungs (pleural effusion)
- Blood clots in the leg veins (thrombosis)
- Stroke.

Taking care of yourself at home

Be guided by your doctor, but general suggestions include:

- Take all prescribed medications strictly as directed by your doctor.
- Activities such as sneezing and coughing could cause some discomfort around your wound site. Don't be alarmed, as this is normal.
- Watch for any possible complications. Some of the symptoms of infection (for example) may include redness, drainage of pus, heat, or increasing pain at your wound site. Other symptoms that may indicate problems include difficulty breathing, or a swollen and tender calf muscle.
- You will need to wear an elastic support stocking on the leg that the vein was removed from. Raise your leg regularly to reduce swelling.
- Your breastbone needs at least three months to properly heal. Strictly avoid lifting, pulling or pushing heavy objects for at least six to eight weeks after the operation.

- Follow your doctor's recommendations on diet and exercise.
- Eat a wide variety of fresh fruit and vegetables, wholegrain cereals and cold-water fish (such as salmon, tuna, sardines, mackerel, swordfish and sea mullet).
- In particular, avoid saturated fats found in animal products (including dairy foods) and hidden fats in pastries, biscuits, fried foods, snack foods, chocolate and cocoa.
- Don't smoke.

Long-term outlook after heart bypass surgery

Your wellbeing in the long term depends on your commitment to healthier lifestyle changes. For example, if you continue to smoke and eat a high-fat diet, your bypass graft may eventually become clogged with fatty plaques. You will need to regularly consult with your health professionals (including your doctor and surgeon) to ensure proper cardiac rehabilitation.

Some common experiences for patients in the weeks and months following heart surgery include:

- Constipation caused by medications, inactivity and the impact of surgery on the body.
- Excessive sweating, particularly at night.
- Emotional problems, including stress, depression and reduced self-esteem.
- Thinking difficulties, such as reduced concentration and shortened attention span

Most patients will be free of angina after surgery and will have a lower risk of heart attack, and they will usually be able to lead a more active lifestyle.

Other forms of treatment

The main alternatives to heart bypass surgery include:

- **Drug therapy** – the idea of treatment is to increase the blood flow through your arteries and discourage further deposits of fatty substances. Along with drug therapy, your doctor will ask you to lose weight (if overweight), stop smoking and modify your diet. They will also suggest an exercise plan.
- **Balloon angioplasty** – a cardiac (heart) catheter is passed into the narrowed section of the coronary artery and inflated. This ballooning effect stretches the section of the coronary artery and improves blood flow. A small mesh tube or stent may then be inserted to keep the artery open.

Where to get help

- Your doctor
- Cardiologist
- Cardiac surgeon

Things to remember

- A heart bypass operation is performed to 'bypass' a narrowed segment of coronary artery. This is usually done by inserting a section of the patient's saphenous vein, taken from the thigh or lower leg.
- Emotional and thinking difficulties are commonly experienced for the first few weeks or months following surgery.
- Your wellbeing in the long term depends on your commitment to healthier lifestyle changes, such as improving your diet, quitting cigarettes and exercising regularly.

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