

# Coronary Artery Bypass Surgery

## What is coronary artery bypass surgery?

Coronary arteries are blood vessels that carry oxygen and nutrients to the heart. Coronary artery bypass surgery is an operation to improve the flow of blood to the heart muscle when your coronary arteries are severely narrowed or blocked by plaque. Plaque is a buildup of fats, cholesterol, and other substances on the inside walls of the arteries.

The operation involves taking blood vessels from other parts of your body and attaching them to the coronary arteries beyond the blockage. The blood is then able to flow around, or bypass, the blockages. If more than one artery is blocked, you may need more than one bypass.

The location and degree of coronary artery blockages are mapped before surgery using a procedure called heart catheterization, or coronary angiogram.

## How do I prepare for coronary bypass surgery?

Knowing what to expect may help reduce the anxiety most people feel before any operation. Talking to your doctor or other people who have had the surgery may help.

You may also want to talk to your doctor about the possibility of setting aside some of your own blood before the surgery. Then, if you need a transfusion during your operation, your own blood will be available.

Talk with your healthcare provider about what medicines you should take before the procedure. Your doctor may prescribe medicine to prevent blood clots from forming during the procedure. If you are taking daily aspirin for a medical condition, ask your provider if you need to stop taking it before your surgery.

Plan for your care and recovery after the operation. Allow for time to rest, and try to find people to help you with your day-to-day duties.

Follow any instructions provided by your doctor. Shower and wash your hair the night before the procedure. Eat a light meal, such as soup or salad, the night before the procedure. Do not eat or drink anything after midnight before the procedure.

Follow your provider's instructions about not smoking before and after the procedure. Smokers heal more slowly after surgery. They are also more likely to have breathing problems during surgery. For this reason, if you are a

smoker, you should quit at least 2 weeks before the procedure. It is best to quit 6 to 8 weeks before surgery. Also, your wounds will heal much better if you do not smoke after the surgery.

You will be weighed the morning of the procedure. After the operation you will be weighed again to see if you are retaining water.

To prevent infection, your legs, groin, and chest (if necessary) will be shaved or clipped before the operation.

You may be given a mild sedative to help you relax before the general anesthetic is given. The anesthetic will relax your muscles, keep you from feeling pain, and put you in a deep sleep.

### **What happens during the procedure?**

Coronary artery bypass surgery is performed by a team of surgeons. The operation takes 2 to 6 hours, depending on how many blood vessels need to be bypassed. Your surgeon will make a cut in your chest and divide your sternum (breastbone). He or she will connect you to a heart-lung machine that will take over the work of your heart and lungs during the operation.

If a vein is used for the bypass, one end of it is sewn into the aorta (the main artery from the heart to the body). The other end is sewn into the area below the blockage in the coronary artery. If the mammary artery is used, the lower end of the mammary artery is cut and reattached to the coronary artery beyond the blockage. In either case, the blood then uses the new vessel as a detour to bypass the blockage.

The doctor will then restart your heart. He or she will take you off the heart-lung machine and close the cut in your chest by wiring together your sternum (breastbone) and then close the skin with stitches. The doctor may leave some tubes in the cut to drain any blood or fluid.

If the blocked coronary arteries are on the front side of the heart, it may be possible for the surgeon to do the bypass through a small incision in the upper chest. This approach does not require cutting the breastbone and makes recovery much easier, but it is not appropriate for most people. Check with your doctor to see if this approach will work for you.

### **What happens after the procedure?**

After surgery, you will go to the intensive care unit (ICU). You will stay in the ICU overnight or as long as you need for observation. A constant electrocardiogram (ECG) monitor will record the rhythm of your heart.

You will have respiratory therapy to prevent any lung problems, such as a collapsed lung, infection, or pneumonia. A nurse or therapist will give you a breathing treatment every few hours. Ask for pain medicine if you need it. You will have physical therapy, which includes walking around the hospital and other strengthening activities. You will learn how to move your upper arms without hurting your breastbone. You will be told which foods to avoid when you get home, such as foods high in fat, cholesterol, and sodium.

### **What are the risks associated with this procedure?**

There is risk with every treatment or procedure. Some of the risks are listed here. Talk to your provider about how the risks apply to you.

- There are some risks any time you have general anesthesia. Discuss these risks with your healthcare provider.
- Infection, particularly of the lungs, may be a problem.
- Bleeding after the operation sometimes means more surgery is needed to stop the bleeding.
- Blockages can develop in the bypass grafts.
- There is a risk of stroke during and after the operation.
- Abnormal heart rhythms are fairly common but usually respond to treatment.

### **How can I take care of myself?**

Follow the full treatment and take all medicines as prescribed by your provider. In addition:

- Get enough rest. Plan at least 2 rest periods during the day (more if you still are tired).
- Enjoy the support and visits of family and friends, but keep visits short and allow yourself time to rest.
- Learn deep breathing and relaxation techniques.
- Lose weight slowly if you are overweight.
- Follow a healthy, well-balanced diet that is low in salt, saturated fats, and cholesterol.
- Weigh yourself every morning. A sudden weight gain of more than 3 pounds should be reported to your doctor.
- Follow the exercise program prescribed by your doctor.
- If you feel constipated, ask your doctor about a stool softener or a fiber-based laxative. (Constipation is a common problem after a lot of bed rest in the hospital or at home.)

- Your doctor may suggest you wear support hose to prevent swelling and circulation problems in your legs. Putting powder on your legs can help you pull hose on more easily. Smooth out any wrinkles to avoid pressure spots.

### **How can I prevent problems from occurring during recovery?**

- Follow your doctor's advice about activity after surgery.
- Have someone help you with your bath or shower if you feel dizzy. You may want to use a shower stool or seat for safety.
- Avoid very hot water in your shower, bath, or hot tub because it can affect blood flow and make you lightheaded.
- When you first go home, avoid lifting anything heavier than 5 to 10 pounds.
- Avoid driving, mowing the lawn, mopping, vacuuming, and any other activities that strain your upper arms and chest as long as your doctor tells you to.
- Avoid sexual intercourse until your healthcare provider tells you it's OK to resume it.
- Do not drink alcohol without your healthcare provider's approval.

### **When should I call the doctor?**

Call the doctor right away if:

- You develop a fever.
- You become short of breath.
- You have worsening chest pain.

Call the doctor during office hours if:

- You have questions about the procedure or its result.
- You want to make another appointment.

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