

Coronary Artery Bypass Grafting (CABG)

Preparing for the surgery

What is this surgery — and why do I need it?

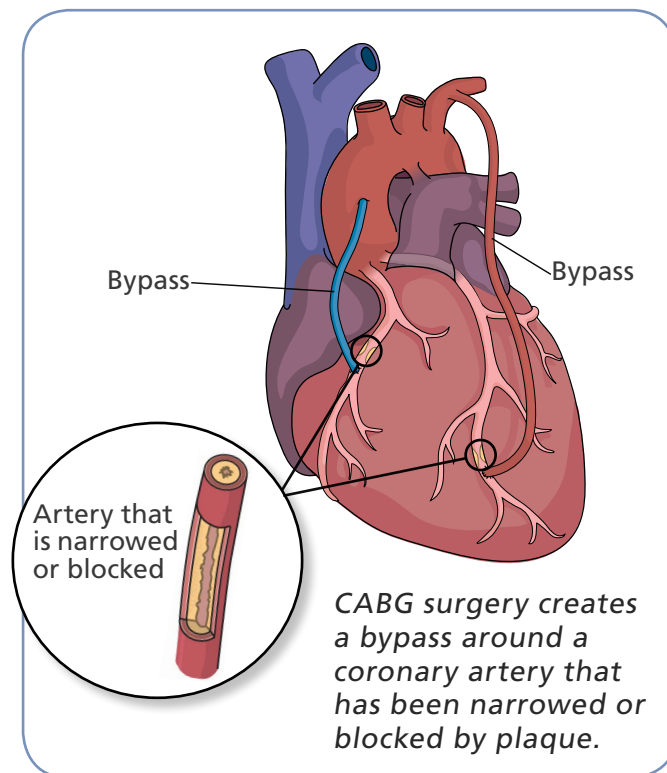
CABG surgery is a treatment for coronary artery disease. **Coronary artery disease** is a condition caused by the buildup of a fatty substance called **plaque** (plack) in your coronary arteries (the arteries of your heart). This buildup irritates and scars the arteries. Over time they become narrowed or blocked.

What happens during CABG surgery?

A blood vessel from your leg, chest, or arm is used to create a new route (a **bypass**) around a blocked section of coronary artery. A surgeon can do several bypasses in a single surgery, so CABG is a good option if you have narrowed or blocked coronary arteries. It's also a good option if your arteries have re-narrowed after a catheterization procedure in the past.

How do I prepare for the surgery?

- **You'll meet your surgeon and anesthesiologist before surgery**, along with other members of the surgery team, such as a physician assistant. They will go over the surgery plan and answer your questions. A member of your hospital care team will explain hospital routines to you and your family and answer your questions. You'll also receive an advance healthcare directive form, if you haven't already completed one. This form lists your healthcare wishes in case you can't take part in medical decisions at some point.
- **You'll have a chest x-ray, blood tests, and urine tests.** These tests help the team assess how your body will respond to surgery.
- **You'll review your list of medicines with your healthcare providers.** Bring a complete list of medicines with you to your appointments. Include any over-the-counter remedies, herbs, supplements, and other prescription medicines.
- **You may need to stop using Coumadin or other blood-thinning medicine** before surgery. Your providers may prescribe a beta blocker if you're not already taking one. They will also tell you whether or not to continue taking your other medicines.
- **You may be given a special soap to use** on the day before surgery. This is to help prevent infection.
- **You'll be asked to fast** (stop eating or drinking) after midnight (12:00 AM) the night before your surgery. Fasting helps to prevent surgery complications.



What happens on the day of surgery?

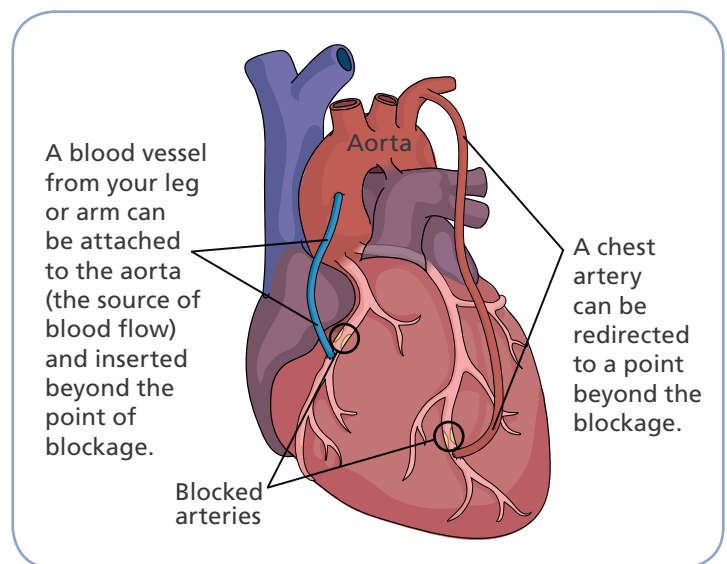
- **You'll fill out paperwork**, including an informed consent form. This form shows that you understand the risks and benefits of surgery (see page 4), and gives your healthcare team permission to treat you.
- **You'll be connected to a heart monitor**, and a nurse will place an IV (intravenous) line in your wrist or arm to give you medicine.
- **An arterial line (thin tube) will be inserted into an artery**, usually in your arm, to help monitor you during surgery.
- **Your family will wait in a waiting room.** While you're in surgery, a member of the operating room staff will call them with updates.

What happens during the surgery?

CABG surgery usually takes around 4 hours. Here's what happens:

- **You'll have general anesthesia.** This medicine will make you sleep through the surgery. You won't feel anything and won't remember it afterward.
- **Healthcare providers will put several tubes into your body:**
 - A **breathing tube** is put into your throat and is connected to a machine that breathes for you.
 - A **Foley catheter** is used to empty your bladder.
 - **Chest tubes** are used to drain excess blood or other fluids after the surgery.
 - A **Swan-Ganz catheter** is put into your neck to measure the blood pressure in your heart and monitor your heart function.
- **A blood vessel will be taken from your leg or forearm to be used as the bypass graft**, if you are using one of your own. Usually, two very small incisions (cuts) are made to reach the graft. Sometimes it requires a single larger incision. Your body won't miss this vein or artery. Other blood vessels will take over the blood flow in the area.

- **The surgeon will make an incision (cut) to reach the heart** in one of two ways:
 - **In traditional (open) surgery**, the incision is down the middle of your chest. The surgeon then separates your sternum (breastbone).
 - **In minimally invasive surgery**, the incision is smaller and is in the left side of your chest, between your ribs.
- **You will be connected to a heart-lung bypass machine**, which takes over the work of your heart and lungs. In some cases, the surgery can be done without using the bypass machine.
- **The surgeon will create one or more bypasses.** For each bypass, a section of blood vessel is connected to the aorta (a large artery coming from your heart) and to a point beyond the blockage in the coronary artery. Or, if the surgeon uses the internal mammary artery (a large artery in your chest), it will be redirected and attached to a point beyond the blockage.



- **The surgeon will close your incisions with stitches.** If you have traditional surgery, the surgeon will first close up the breastbone with stainless steel wires.

What happens after the surgery?

You will be in the hospital 3 to 7 days after the surgery. Here's what to expect:

- **Right after surgery, you will be taken to the intensive care unit (ICU).** Your family members will be taken to the ICU waiting room, where your surgeon will talk to them about how the surgery went. The ICU staff will monitor you closely. When you are stable, your family can visit you.
- **You may be swollen from fluids given during surgery.** Your family should be prepared to expect this.
- **You will have a breathing tube.** It will be taken out as soon as you can breathe safely on your own.
- **You will be connected to a heart monitor and other tubes.** See page 2 for a description of the tubes inserted during surgery. As you recover and improve, the monitors and tubes will be taken out one by one.
- **You'll move from the ICU to a regular hospital room** as soon as your doctor feels your condition is stable and improving.
- **You may have medicine through your IV to control your blood glucose (blood sugar).** The nurse will regularly check your blood glucose and may give you insulin, even if you do not have diabetes. This is to stabilize your blood glucose level which rises when the body is under stress.
- **Your healthcare providers will manage your pain.** They will regularly ask you to rate your pain level. You might have pain medicine through an IV at first. You will switch to pain pills as you get better.
- **You'll work with a respiratory therapist.** Mucus often builds up in your lungs during surgery. A respiratory therapist will check your lungs and breathing and will help you do exercises to help them get better. You'll probably start using a device called an incentive spirometer to help you breathe deeply.

- **You'll get the right nutrition.** You may not be hungry after surgery, but your body needs the right nutrition to heal well. You'll be encouraged to eat, and you may get nutritional supplements.
- **You'll be expected to move and walk.** You'll get out of bed and walk several times a day, and sit in a chair as much as possible. Cardiac rehabilitation staff will work with you as you safely increase your activity.
- **You can go home when your doctor says it's okay.**

How should I care for myself at home?

It takes around 4 to 8 weeks to recover from CABG surgery. When you are ready to go home from the hospital, your nurse will give you a full set of instructions. You may get a copy of Intermountain's *Heart Care Handbook* after your surgery. Chapter 1 in the handbook, "Going Home," explains what you need to do during your recovery at home.



Other chapters in the *Heart Care Handbook* contain information about heart disease, heart disease risk factors, heart tests, and treatments for heart disease. The handbook also covers lifestyle changes to improve your heart health. The grafts inserted during CABG surgery are just as likely to get plaque buildup as the arteries they replaced. For this reason, it's important to make changes to reduce your risk of coronary artery disease.

Outpatient cardiac rehab is a great way to recover after surgery and improve your heart health. It is recommended that CABG surgery patients go to at least 36 outpatient cardiac rehab sessions after their surgery. There you will learn how the right exercise and nutrition can help you build a stronger heart.

When to seek medical care

Call your healthcare provider if you have:

- **Signs of infection or a blood clot:**
 - Temperature over 100.4° F for 3 days in a row, or any fever over 101.5° F
 - Leg, arm or chest incisions that are red or hot to the touch
 - Swelling or soreness around incisions that gets worse
 - Drainage that increases, changes color, or smells bad
 - Swelling, tenderness, warmth, or pain in the calf
- **Signs of heart or lung problems:**
 - Angina (chest discomfort) or a smothering feeling
 - Racing or irregular heartbeat
 - Shortness of breath (trouble breathing) that started recently or is getting worse
 - Dizziness, lightheadedness, or weakness
 - Weight gain of more than 2 pounds in one day or more than 5 pounds in a week
 - Excessive swelling in the hands or feet

Call 911 if you have any of these symptoms:

- Chest pain that's not relieved by rest or nitroglycerin
 - Shortness of breath that suddenly gets worse
 - Resting heart rate that is very slow (below 50 beats per minute) or very fast (over 130 beats per minute), unless your healthcare providers tell you otherwise
 - Sudden numbness or weakness in your arms or legs
 - Sudden, severe headache
 - Fainting spells
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- **Other problems:**
 - Nausea, vomiting, or diarrhea that doesn't go away
 - Pain that limits your daily activities
 - Clicking or movement in your sternum (breastbone) after 6 to 8 weeks
 - Feelings of depression that don't improve or that get in the way of daily activities
 - Bleeding gums, or blood in your urine or stools

What should I ask my doctor about CABG surgery?

Ask your doctor about the risks, benefits and possible alternatives of CABG surgery. There may be other benefits or risks for your unique medical situation than those listed below. If you have questions, be sure to ask.

| Potential benefits | Risks and potential complications | Alternatives |
|---|--|---|
| <ul style="list-style-type: none"> • CABG surgery is a procedure to restore blood flow to areas of the heart. • Relief from angina (chest discomfort). • More energy. • Less risk of a heart attack later on. | <ul style="list-style-type: none"> • Problems that can happen with any surgery. These include surgical site pain, infection, bleeding that requires a blood transfusion, blood clots, or reactions to general anesthesia (including vomiting, trouble urinating, sore throat, cut lips, headache, heart problems, stroke, or pneumonia). • Heart attack during or after the surgery. • Memory or thinking problems after the surgery. • Low-grade fever and chest pain that can last up to 6 months after the surgery. • Blockage of the grafts later on, so you need another surgery. • Heart rhythm problems. • Kidney or lung failure. • Stroke. • Death (extremely rare). | <ul style="list-style-type: none"> • Angioplasty, a nonsurgical procedure. • Watching and waiting, with medicine, lifestyle changes, and regular tests to check the blood flow to your heart. |