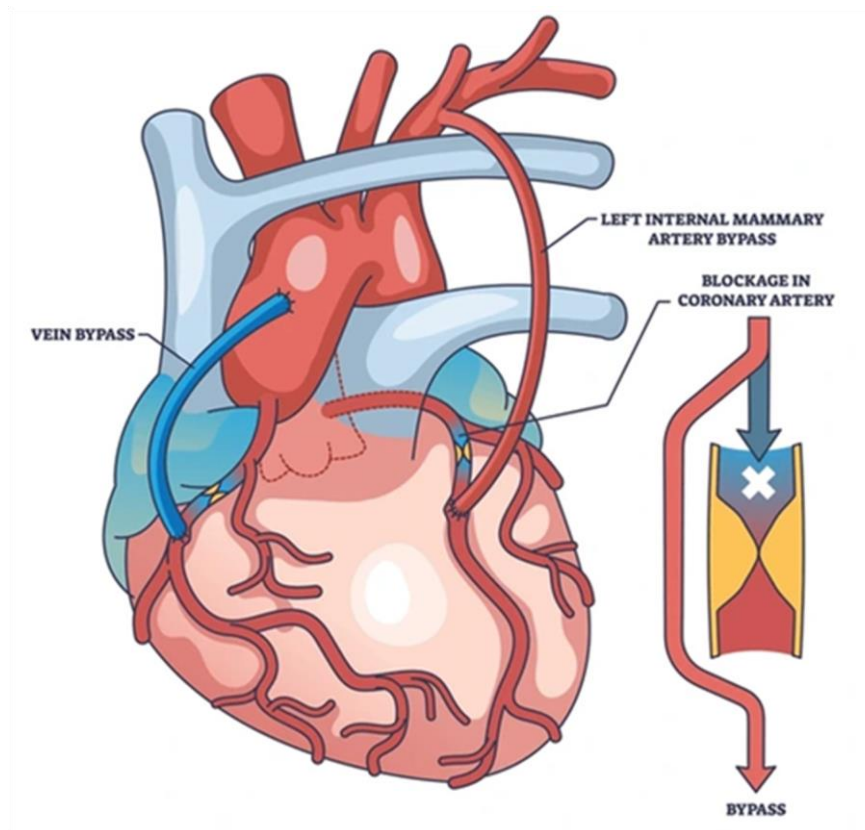


Cardiac Surgery

Information for Patients/Guardians



What is Coronary Artery Bypass Grafting (CABG)?

Coronary arteries are small blood vessels that supply blood to the heart. Coronary Artery Disease (CAD) occurs when these arteries become narrowed due to fatty deposits, reducing the oxygen and nutrient supply to the heart muscle.

To treat coronary artery disease, CABG surgery may be performed. Coronary Artery Bypass Grafting (CABG) is an operation in which doctors take a healthy blood vessel from another part of your body, often the leg, chest, or arm, and use it to create a new pathway, or “bypass,” around the blocked artery. This allows blood to flow freely to your heart muscle again.

What is Valvular Surgery?

Heart valves that are severely damaged may require surgery to restore proper function. The surgery may involve repairing the damaged valve or replacing it with an artificial valve.

Pre-Operative Care

Before surgery, a proper pre-operative care plan is developed. Pre-operative care is important because it reduces the risk of complications, prepares the body to tolerate surgery, prevents infections and bleeding, improves recovery after the operation, and reassures the patient through proper counselling and informed consent.

Getting Ready for Surgery

- Meet your surgery team and complete pre-surgery tests for clinical optimisation.
- Learn deep breathing and coughing exercises from the nursing staff.
- Stop smoking as soon as possible.

Evening Before Surgery

- Maintain good personal hygiene. Take a Hibiscrub bath in the evening and again early in the morning before surgery.
- Hand over personal belongings to your family. The nursing staff may request necessary accessories (glasses, dentures, hearing aids) if needed.
- Stop eating and drinking at least 6 hours before surgery, or as advised by your doctor.

On the Day of Surgery

- Your family may stay with you in the ward area before surgery.

- You may be given oral sedation (e.g., tablet midazolam) before going to the operating room (OR).
- Surgery usually takes 4–6 hours. During this time, your family may wait in the designated waiting area and can ask about surgery progress at the OR counter.

After Your Surgery

After the operation, you will be moved to the Cardiac Intensive Care Unit (CICU). You will be connected to a breathing machine for approximately 6–8 hours to help your body rest and breathe safely while the anaesthesia wears off. Once you are fully awake and breathing well on your own, the breathing tube will be removed.

After 1–2 days in the CICU, you will be transferred to a step-down ward, where you will continue to be monitored in a less intensive setting.

Before discharge, you will stay in a telemetry bed, where your heart rhythm is continuously monitored to ensure you are stable and ready to go home.

Post-Operative Care After Discharge

Every patient recovers differently. The more you know about what to expect, the easier your recovery will be.

• Appetite Changes

It is common to experience a reduced appetite after heart surgery. Food may taste different, or you may temporarily lose your sense of taste. Some patients feel nauseated by food smells. This is temporary and will improve as your body heals.

• Sleep Disturbances

Sleep patterns may change after surgery. You may have difficulty falling asleep or wake up early.

- o Take prescribed pain medication about an hour before bedtime if discomfort is affecting your sleep.
- o Gentle daytime activity can help improve nighttime sleep.

Sleep will gradually return to normal.

• Constipation

You may use a stool softener or laxative as advised.

- o Drink plenty of water.

- o Walk as recommended by your doctor.
- o Increase fruits, vegetables, and fiber in your diet.

If you have diabetes, high blood pressure, high cholesterol, renal failure, or a mechanical valve, follow the diet prescribed by your dietitian.

- **Mood Changes**
Mood swings, sadness, or emotional changes are common after surgery. Your body has undergone significant stress. These feelings usually improve over time. Consult your doctor if fear, anxiety, or distress worsens.
- **Chest Clicking Sensation**
You may notice a clicking sound or sensation in your chest during the first few days. This should gradually decrease and disappear within a few weeks. Contact your doctor if it worsens.
- **Chest, Shoulder, or Upper Back Pain**
Mild tightness or discomfort is common and improves with time. Take prescribed pain medication as directed. If pain worsens, contact your doctor.

Medications

- Take medications exactly as prescribed.
- Keep an updated list of your medications, doses, and timings in your wallet or purse.
- Do not take any other medications, supplements, or herbal preparations without consulting your doctor.
- Your nurse or pharmacist will provide additional instructions before you leave the hospital.

Resuming Daily Activities After Surgery:

1) Exercising

For the first six weeks after surgery, do not lift more than 10 pounds (approximately 4–5 kg). Avoid pushing or pulling heavy objects.

Guidelines for exercising after surgery:

- Check your vital signs before and after exercise.
- Perform only exercises prescribed by your physiotherapist.
- Exercise within your target heart rate, as recommended.
- Stop exercising immediately if you experience shortness of breath, dizziness, muscle cramps, extreme fatigue, or chest pain.

- If symptoms continue, contact your doctor.
- If your pulse increases more than 30 beats per minute above resting rate after your exercise, reduce the intensity next time.

2) Walking

Walking is one of the best forms of exercise after heart surgery. It improves circulation throughout the body and supports heart health.

- Gradually increase the distance and duration of your walks.
- Walk at a comfortable pace.
- Stop and rest if you feel tired.

If the weather is very cold (below 4°C / 40°F) or very hot (above 27°C / 80°F), choose a safe indoor location, such as a shopping centre, for your walk. In cold weather, wear a scarf or mask over your mouth and nose to warm the air before breathing it in.

Your physiotherapist will provide you with a personalised exercise plan before discharge. Recovery varies from person to person.

3) Lifting

To protect your healing sternum:

- Do not lift, push, or pull anything heavier than 10 pounds (4–5 kg) for the first six weeks.
- This includes carrying children, groceries, or suitcases, as well as vacuuming, mowing the lawn, or moving furniture.
- Avoid holding your breath during activities, especially when lifting or using the toilet.

4) Rest

A healthy balance of rest and activity is essential during recovery.

- Rest between activities.
- Take short naps if needed.
- Spend 20–30 minutes sitting quietly to allow your body to recover.
- Rest for about 30 minutes after each activity.

Listening to your body is key.

5) Bathing

You may shower after your pacing wires and staples have been removed.

- Avoid tub baths until your incisions are fully healed.
- Do not use very hot water, as this may affect circulation or make you feel light-headed.

6) Clothing

- Wear loose-fitting clothes that do not rub or strain your incision.
- If you wear a bra, choose one without an underwire and with a front fastening.
- Wear a chest binder for six weeks if recommended by your doctor.

7) Stairs

Unless advised otherwise by your doctor, you may climb stairs.

- Take your time and move slowly.
- Stop and rest if you feel tired.
- Use the handrail for balance, but do not pull yourself up with your arms.
- Rely on your legs to do the work.

8) Driving and Travel

- You may travel in a car as a passenger at any time. Always wear a seat belt.
- Avoid driving, outdoor cycling, and motorcycle riding for the first six weeks to allow your sternum to heal properly.
- During long journeys, stop every two hours and take a short walk.

9) Sexual Activity

You may resume sexual activity when you feel ready. For most people, this is around 2–4 weeks after discharge, unless your doctor advises otherwise. If you have concerns or need further guidance, speak with your nurse or doctor.

10) Returning to Work

Most patients feel ready to return to light work between six and twelve weeks after surgery.

Always consult your surgeon and obtain medical clearance before resuming work.

11) Visitors

Keep visitors to a minimum during the first few weeks. If you feel tired, excuse yourself and rest. Your recovery should be your priority.

Cardiac Rehabilitation

Cardiac rehabilitation helps individuals recover safely after a heart attack, bypass surgery, valve replacement, heart transplant, or other cardiac procedures. The programme is designed to help you regain strength, confidence, and independence.

A multidisciplinary team of doctors, nurses, physiotherapists, and dietitians will guide you through a personalised rehabilitation plan tailored to your individual needs.

Cardiac rehabilitation is delivered in four phases:

Phase I – Inpatient Rehabilitation

Phase I begins immediately after a heart attack or cardiac procedure while you are still in hospital.

This stage includes light, supervised activities such as walking along the ward corridors and gentle stair climbing. Nurses and physiotherapists also provide education on:

- Understanding your condition
- Managing risk factors
- Dietary guidance
- Medication instructions
- Physical activity and exercise
- Sexual activity
- Returning to daily home life

You are encouraged to ask questions and actively participate in your recovery planning.

Phase II – Early Outpatient Rehabilitation

Phase II begins approximately 2–6 weeks after discharge from hospital and requires a doctor's referral.

This structured outpatient programme usually runs for around 12 weeks, with sessions lasting about one hour, three or more times per week. Heart rhythm is often monitored through telemetry during exercise sessions.

The goals of Phase II are to:

- Improve functional capacity and stamina
- Support safe return to an active lifestyle
- Promote healthy lifestyle changes
- Reduce fear and anxiety related to physical activity
- Encourage psychological and social adjustment

Education is a key component and may be delivered individually or in group sessions. Topics include:

- Medication review

- Lifestyle modification and action planning
- Nutritional counselling with a dietitian
- Positive coping strategies
- Activity safety, including sexual, occupational and recreational activities

Family members are welcome to attend educational workshops for additional support.

Phase III – Supervised Maintenance Programme

Phase III is a follow-up to Phase II and typically includes patients discharged from hospital within the previous 6–14 weeks. Patients who did not participate in Phase II may also be referred directly to this phase by their doctor.

The objectives of Phase III are to:

- Maintain a regular, supervised exercise routine
- Provide ongoing support for lifestyle changes
- Help achieve long-term goals such as independent living or returning to work
- Prevent further progression of heart disease

Heart rhythm, heart rate and blood pressure are monitored before, during and after exercise. Exercise sessions are typically conducted three or more times per week.

Phase IV – Long-Term Wellness Programme

Phase IV is designed for individuals who have completed earlier phases of rehabilitation. It focuses on sustaining long-term heart health and maintaining lifestyle improvements.

Participants usually exercise three or more times per week with minimal staff supervision, promoting independence while ensuring safety.

Diet Instructions After Discharge

Following discharge, your doctor and dietitian will recommend heart-healthy dietary changes. These changes help reduce the risk of another heart attack and may lower the likelihood of requiring further procedures such as angioplasty or surgery.

General Guidelines

- Follow a low-fat diet.
- Avoid adding table salt to meals.
- Limit total fat intake to less than 30% of daily calories.
- Choose foods low in saturated fat and cholesterol.

- Include high-fibre foods such as fruits, vegetables, whole grains and cereals. Fibre helps lower cholesterol and improves digestion.
- If you have diabetes, follow your dietitian's advice regarding fruit intake (often limited to two servings per day).
- Avoid carbonated drinks and commercially prepared juices, as they are high in sugar.

Recommended Fat and Sodium Intake

(According to the American Heart Association)

- Saturated fats: 5–7% of total daily calories (e.g. butter, margarine, processed foods)
- Omega fats: up to 10% of total daily calories (e.g. nuts, fish, flaxseeds)
- Unsaturated fats: 15–20% of total daily calories (e.g. vegetable oils, nuts)
- Cholesterol: less than 300 mg per day
- Sodium (salt): less than 2,300 mg (2.3 g) per day

Additional Advice

- Check your medication instructions for any dietary restrictions or interactions.
- Once your appetite returns, begin following these dietary changes consistently.
- Weigh yourself every morning after passing urine and before breakfast, using the same scale.
- Maintain a daily weight record.
- Contact your doctor if you gain 2 pounds (approximately 1 kg) or more overnight.

When to Contact Your Doctor

Some heart medications may cause side effects. Unless otherwise advised, take medicines with a light meal to reduce stomach discomfort.

Contact your doctor immediately if you experience:

- Persistent indigestion, vomiting or severe stomach upset
- Drowsiness or difficulty maintaining balance
- Confusion
- Tingling or numbness in the hands or feet
- Extremely slow or unusually fast pulse
- Skin rash
- Coughing up blood or any unexpected bleeding

Prompt medical advice can help prevent complications and ensure safe recovery.

**Requires Immediate
Attention (Go to the
nearest Emergency Dept)**



- ☐ Blood in stool or sputum (coughing up blood)
- ☐ Chest pain, like the pain experienced before your operation
- ☐ Shivering and fever
- ☐ Heart rate greater than 150 beats per minute, combined with shortness of breath or an abnormal heartbeat
- ☐ A new bout of nausea, vomiting, or diarrhea
- ☐ Extensive abdominal discomfort
- ☐ Shortness of breath that is not alleviated by rest
- ☐ Unexpected numbness or weakness in the arms or legs
- ☐ Severe headaches that come on suddenly
- ☐ Uncontrollable bleeding

**Urgent Problems
(Call your Doctor)**



- ☐ Hyperuricemia burst in its early stages
- ☐ Increased temperature of more than 100.0°F/38.0°C twice in 24 hours
- ☐ Excessive exhaustion
- ☐ Distress or stiffness in the left leg that worsens when pointing toes up toward the head
- ☐ Continual but manageable bleeding or oozing from incisions
- ☐ Sharp pain when inhaling deeply
- ☐ Skin rashes
- ☐ Urinary tract infection symptoms: Frequent urination, burning during urination, urgency, or bloody urine
- ☐ Unusual weight gain of more than 1-2 pounds in 24 hours
- ☐ Increased leg swelling or leg pain
- ☐ Increased difficulty breathing

**Caring for Your Wound and Recognising Signs of Infection
Swelling (especially if you have a leg incision)**

It is common for your leg to remain swollen for some time after surgery. To help reduce swelling:

- Elevate your legs whenever possible
- Perform the exercises prescribed by your healthcare team
- Wear your DVT (compression) stockings for six weeks after your operation, or as advised

These measures will support circulation and help minimise swelling.

A Lump Over the Incision

It is normal to feel a small lump along the incision site. It may be slightly tender and pink or red. This should gradually settle with time.

However, contact your doctor if you notice:

- Increasing swelling
- Worsening redness
- Increasing pain

Looking After Your Incisions

Follow your doctor's instructions carefully while in hospital and after discharge.

- Most patients can gently wash their incisions with mild soap and warm water about one week after surgery (including over steri-strips, if present). Clean the area gently and pat dry.
- You may go home with staples in place. If so, a visiting nurse will remove them as directed by your doctor.
- Scars are sensitive to sunlight and can darken if exposed. Avoid direct sunlight on the incision for the first year after surgery.
- Unless specifically advised by your surgeon, do not apply lotions, creams, oils, or powders to the incision site.
- Check your incision daily.
- Contact Your Doctor If You Notice:
 - Increased tenderness around the incision
 - Any discharge or drainage from the wound
 - A persistent fever

Caring for Your Surgical Leg

If your procedure involved removing a bypass graft from your leg, please follow these guidelines:

- Do not cross your legs.
- Avoid sitting or standing in the same position for long periods.
- When sitting, elevate your leg on a stool or table and place a pillow under your foot.
- When lying down, raise your leg on pillows or on the arm of a sofa. Aim to keep your leg elevated above the level of your heart to help reduce swelling.
- If prescribed, wear compression or support stockings during the day for at least two weeks after discharge. These will help reduce swelling, particularly if you have a leg incision.
- Remove your stockings at bedtime. Wash them daily with mild soap and water and hang them up to dry.

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