THE HEART INSTITUTE™
New York’s Center for Minimally Invasive Cardiac Surgery

GUIDELINES FOR CARDIAC PATIENTS AFTER SURGERY
The following information is on recovery after open-heart surgery, designed to prepare you and your loved ones for discharge. Recovery is a family affair and you and your loved ones are encouraged to read this information, along with attending the discharge classes that are given three times a week. Our staff is also available to answer any questions you may have.

Recovering from open-heart surgery takes time. If you had traditional open-heart surgery, where they break the breastbone and make a large incision, it generally takes your body eight weeks to physically heal. In some cases, it can take three to six months to feel back to your normal self. If you had MICS CABG surgery, short for minimally invasive cardiac surgery/coronary artery bypass grafting, it generally takes your body two to four weeks to heal but can take up to two months to feel back to your normal self. MICS CABG patients typically heal faster, as there are no broken bones and three small incisions to heal.

No matter what type of surgery you had, everybody heals at a different rate. So be patient, recovery will happen.

At home, it is important to get out of bed, shower and get dressed for the day even if you are not going to be leaving your home. Do this everyday but plan rest periods between each activity, including showering, eating and walking. When getting out of bed or up from a chair, do so slowly to avoid getting dizzy.
When you go home, your incisions will most likely be “open to air” (no dressing). You may have small steri-strips on your incisions. These will start coming off in about a week as you shower.

Caring for your incisions includes taking a shower every evening with warm water. Avoid hot water, as it can make you feel dizzy and weak. Avoid taking baths as getting out of the tub will put too much strain on your upper body. Wash all of your incisions with a mild soap such as Ivory, Safeguard or Dial. Dry them by gently patting the area. Avoid rubbing or scrubbing your incisions.

Do not apply lotions or powders to your incisions until they have completely healed.

Inspect all of your incisions daily for signs of infection; these are:
• Redness, swelling, warmth around incision
• Drainage that is white or yellowish and is foul smelling
• Fever

NOTE: If you have any of these symptoms, notify your surgeon immediately.

Take your temperature daily in the morning or at any point if you feel hot or have chills. After surgery, changes in temperature are normal. Your temperature may even be slightly high (99°F) as your body heals. Notify your doctor if you have a temperature of 100°F for 24 hours, or if it is 101°F at one time.

Your legs may swell slightly after surgery, especially if a vein was taken for the surgery. You can help this by wearing your elastic (TED) stockings at home. Put them on in the morning and remove them at night. Whenever you are sitting, you should elevate your legs to help decrease the swelling. Call your doctor if you have excessive swelling or drainage from your leg wounds.

Weigh yourself daily in the morning. If you notice you have gained a significant amount of weight — five pounds in two to three days — call your cardiologist right away. The weight gain could be extra fluid and you may need your medications adjusted.

To monitor your blood pressure at home, you can purchase an automatic blood pressure machine. Record your readings once or twice a day and bring them to your cardiologist.
You will be discharged on medications prescribed by your doctor. As you recover, some medications may be stopped or the dose changed. This will be done by your cardiologist or surgeon. The nurse will instruct you on your medication before going home.

Some Tips For Taking Medication Include:
1. Take medications around daily activities such as mealtime or bedtime.
2. Use reminders, such as a sign on your refrigerator, to remember to take your medications.
3. Always take the prescribed dose.
4. Never take anyone else’s medication.
5. Never give your medication to someone else.
6. Never skip a dose or double the dose.
7. Never discontinue medication without permission of your doctor.
8. Check with your doctor before taking over-the-counter medication, as they can interfere with your prescribed medication.
9. Let your doctor know if you have any unusual symptoms such as vomiting, diarrhea or a skin rash.
It is normal to have incision pain for a while after discharge. You may also experience aches and pains in your back, neck and shoulders as you recover and are more active. You will be discharged with a prescription for pain medication. Do not hesitate to take it if you need to, as pain medication can help you with your recovery.

Walking is the best exercise after being discharged. Start your walking program the day after you return home. It is important to rest at least 15 minutes before and after you walk. Do not walk outside if the temperature is less than 30°F or greater than 90°F. In bad weather you can walk in enclosed areas such as a shopping mall. Along with walking, you should continue to use your incentive spirometer at home to help keep your lungs clear.

In the immediate recovery period you will have some activity restrictions. These are only temporary and necessary to allow your body to heal:

**Restrictions for traditional open-heart surgery patients**

1. **Driving:** You will not be permitted to drive for eight weeks after surgery in order to allow your breastbone to completely heal. Also, your reaction time and reflexes will be slower from the effects of anesthesia and pain medication. You may be a passenger in a car as long as you ride in the backseat to avoid airbags and wear your seat belt. If you are taking a trip over one hour, stop and stretch your legs periodically.
2. **Lifting**: Do not lift or pull anything heavier than 10 pounds for at least three months after surgery in order to let the breastbone heal. You also need to avoid any activity that causes straining, such as vacuuming, raking leaves or lifting grocery bags.

3. **Sexual Activity**: In general you should be able to resume sexual activity four to six weeks after surgery. Use a position that is least demanding on your body, such as lying flat on your back on the bed, and do not place any weight on your arms. Be sure the room temperature is comfortable and avoid the consumption of alcoholic beverages. Various medications may affect sexual drive and/or function. If this occurs, consult your physician. Never stop taking any prescribed medication without your physician’s approval.

4. **Returning to Work**: Depending on your job, you may be able to return to work in four to six weeks. If your job includes any heavy lifting, you will have to wait at least three months. Ask your surgeon on your follow-up visit when you may return to work.

---

**Restrictions For MICS CABG Patients**

If you had minimally invasive surgery, MICS CABG, there are few limitations after surgery. The driving and lifting restrictions listed on this page apply for two to three weeks after surgery. Generally, patients can return to work after two weeks. It’s okay to return to work sooner if you’re feeling well enough, as long as your job does not cause physical strain on your body.

**NOTE**: No matter what type of surgery you had, never drive under the influence of pain medication.
A low salt, low fat, low cholesterol diet is recommended for you. If you are on a special diet (diabetic) you should continue this also. Remember that it’s normal not to have much of an appetite when you go home. However, it is important for you to eat enough for your wounds to heal. Instead of three large meals, it may be better to eat smaller meals five to six times a day. All dietary recommendations will be discussed in the discharge class. If you would like to see a dietician while you are in the hospital, please let your nurse know.
COMMON PROBLEMS

Sleep
You may find you have difficulty sleeping when you get home. This is normal. Plan to take two rest periods a day, each for about 30-40 minutes. Do not stay in bed and sleep all day, as you will not be able to sleep at night. If you had traditional open-heart surgery, avoid sleeping on your side, as this will put tension on your breastbone.

Depression
It is common after open-heart surgery to feel anxious, irritable, depressed and experience mood swings. As you catch up on your sleep and increase your activity level, this will go away.

Regularity
Constipation is a common problem after surgery, a normal reaction to having anesthesia and being inactive. This can be helped by drinking plenty of fluids, trying to increase your daily activity and eating fresh fruit and vegetables. Do not strain when going to the bathroom, this can make you dizzy and feel faint. You can take a stool softener or laxative to help you if you are having a problem.

Pericarditis
After cardiac surgery, it is common for patients to develop pericarditis, where the lining of the heart becomes inflamed. One of the symptoms of pericarditis is sharp chest pain, which worsens when you lie down or breathe in and gets better when you sit forward. It is frequently accompanied by a fever. Contact your physician if you are experiencing these symptoms. He or she can prescribe medication for treatment.

NOTE: Call your surgeon’s office immediately if you experience:

- Fever of 101°F or above
- Sweating or chills
- Any redness, swelling or drainage from your incisions
- Shortness of breath
- Any pain unrelieved by pain medication
- Persistent coughing
- If you feel your heartbeat is irregular or too fast, follow up with your cardiologist or go to the nearest emergency room

It is always better to call your doctor’s office with any questions. If your surgeon is in the operating room, a nurse or physician assistant will return your call.
FOLLOW-UP APPOINTMENTS

You will need to make an appointment with your surgical team two to three weeks after your surgery and with your cardiologist seven to ten days after surgery. We also recommend that you make a follow-up appointment with your primary care physician within two weeks after you are discharged from the hospital. If you are taking Coumadin, you will be referred to the Coumadin Clinic for regular blood tests. You will need to have your first blood test three days after discharge. Please call the Cardiothoracic Office the day after discharge to schedule your follow-up appointment with your surgeon.

To make your follow-up appointment, call:
(718) 226-6210

The office is located at:
HLS Building
2nd floor, Suite 202
501 Seaview Avenue
Staten Island, NY 10305
Phase One — Recovery To A Healthy Heart
You are now in the recovery process from recent heart surgery. A daily active role on your part will help counteract the weakness you may be experiencing. Your participation begins here, in the hospital!

Activity During Hospitalization
1. Incentive spirometry
2. Ankle pumps
3. Sitting/standing exercises
4. Ambulation (walking)

Your physical therapist will address these activities and provide you with all the guidance needed to start you on a heart healthy road. The activities are grouped into STEPS. Each STEP will be reviewed with you daily to individualize your treatment.

Cardiac Rehabilitation Activity Sheet

STEP 1
- Incentive spirometry 10x every hour
- Ankle pumps 10x every hour
- Sit in a chair for most of the day, as tolerated
- Sitting exercises in bed or chair 2x/day
- Walk with assistance to the bathroom

Notes:__________________________________________

STEP 2
- Incentive spirometry 10x every hour
- Sit in a chair for most of the day, as tolerated
- Sitting exercises in chair 2x/day
- Walk 150 feet with assistance, as tolerated, 2-4x/day

Notes:__________________________________________
STEP 3
• Incentive spirometry 10x every hour
• Sit in a chair for most of the day, as tolerated
• Sitting/standing exercises 2x/day
• Walk 250 feet 4-6x/day

Notes:__________________________________________

STEP 4
• Incentive spirometry 10x every 4 hours
• Sit in a chair for most of the day, as tolerated
• Sitting/standing exercises 2x/day
• Walk 400 feet 6x/day
• Stair climbing

Notes:__________________________________________

STEP 5
• Continue incentive spirometry
• Sit in a chair for most of the day, as tolerated
• Sitting/standing exercises 2x/day
• Walk 400 feet 6x/day
• Stair climbing

Notes:__________________________________________
Following your discharge from the hospital, it is important to continue your exercise program at home. Over the next four to six weeks of your recovery, the intensity and frequency of your exercise should be appropriate to ensure safety and benefit. As you progress and gain endurance, your exercise time will increase while decreasing the frequency of daily walks. Your heart rate (pulse) and how you’re feeling overall determine the pace of your walk. Check your heart rate before and at midpoint during your walk. Your heart rate at midpoint should be less than the number determined below. The Borg Rating of Perceived Exertion scale is provided to help you to determine how hard you are working.

**Resting Heart Rate:**
The pulse rate taken before walking has begun

**Limit Heart Rate:**
\[\left(\frac{220 - \text{age}}{2}\right) - \text{(Resting HR)}\] \times 50\% + \text{Resting HR}

**Resting Heart Rate:** __________

**Limit Heart Rate:** __________
Taking your own heart rate is essential to a proper exercise program. It provides you with information on how hard your heart is working and allows you to gauge the intensity of your exercise program. For patients on medications that regulate the heart beat, taking your pulse helps in effective medication administration. Learning to count your pulse rate is simple and can be mastered with some time and practice. When first learning to count your pulse, it is a common mistake to press too hard. This will block the pulse, and you won’t feel anything. A light but firm pressure using the finger pads (not the tips/not your thumb) will allow you to feel a pulse.

The wrist pulse is located at the base of either thumb. It can be felt with two or three fingers of the opposite hand.

The carotid pulse is located on either side of the windpipe. It can be found using the middle fingers of the right hand to the left carotid, or vice versa.

**NOTE:** DO NOT press or rub both carotid arteries at the same time. This may cause you to faint. Check only one at a time.
As you begin your walking program, understanding your goal is very important. You will begin walking short distances a few times a day. With daily practice, your goal of walking 30 minutes continuously may be achieved in about six weeks! Walking for this length of time will require some body adjustment. When you are able to walk for 20 minutes, your body will require a warm up and a cool down for your exercise session.

• Warm up: slow walking for five minutes
• Exercise phase: brisk walking for 20 minutes
• Cool down: slow walking for five minutes

Consult with your physician four to six weeks after discharge to determine the individual progression best for you. At this time your doctor may ask to see your walking skills by taking a stress test and may suggest you enter an outpatient cardiac rehabilitation program.

NOTE: Always check with your physician before starting any exercise program.
PROGRESSIVE WALKING PROGRAM

Remember to take your Resting Heart Rate, monitor your heart rate during your exercise and use the Borg Scale (RPE) to gauge your effort.

Week 1  Walk 3 – 5 minutes three to four times daily Total of 12-20 minutes a day

Week 2  Walk 7 – 10 minutes two to three times daily Total of 21-20 minutes a day

Week 3  Walk 10 – 15 minutes two times daily Total of 20-30 minutes a day

Week 4-6*  Walk 15 – 20 minutes one/two times daily Total of 30 minutes a day

*warm up/cool down

Remember, when you achieve a total of 20 minutes, add a five minute warm up and a five minute cool down. If your Exercise Heart Rate exceeds your Limit Heart Rate, do not stop walking. Just slow down to bring your pulse rate down.

Listen To Your Body
If you should experience excessive shortness of breath, muscle cramps or pain, extreme fatigue, or lightheadedness/dizziness, follow the steps below to modify your program.

1. Stop and rest until these symptoms subside
2. Return home at a slower pace and take a short-cut
3. Over the next several days, walk more slowly or for a shorter distance, then gradually increase your distance and pace

NOTE: If you should experience any of the following symptoms, contact your cardiologist immediately and discontinue activity:

1. Chest pain/tightness
2. Palpitations
3. Nausea/vomiting
4. Unresolved indigestion
5. Pain traveling to your jaw, arms, neck, teeth, ears or back
PROGRESSIVE WALKING PROGRAM GUIDELINES FOR WALKING

• Carry ID — name, address, physician, contact person and medications you are taking.
• Do not walk outdoors in extremes of temperature or humidity. Walk indoors, such as at the mall, on inclement days.
• In winter, walk in the late morning or early afternoon — the warmest part of the day.
• In summer, walk in the early morning or the evening when it’s cool.
• Avoid walking against the wind.
• Wear a light scarf around your nose and mouth. While walking in windy and very cold weather, wear a vest or scarf to cover your chest wall.
• Walk on level ground. Avoid hills, ramps and inclines.
• Walk when you feel rested.
• Wait one hour after light meals and two hours after heavy meals before walking.
• Walking should be continual, rhythmic and at a pace that is comfortable.
• When you have reached the stage when you are walking briskly for 20 minutes in your walking program, always warm up and cool down with a slow walk.
• Keeping track with your diary is a good way to monitor progression for yourself, your doctor and your therapist.

Walking Program Diary
• Use the diary to record your activity.
• Under comments, write any changes in the way you felt during or after your walk.
• Take this record with you when visiting your physician and to your first outpatient cardiac rehabilitation visit.
• If you have questions about your walking program, call the cardiac rehab staff.
• If you develop medical problems, call your physician.
STRESS AND HEART DISEASE

Stress in itself is not unhealthy. It is your body’s natural response to any physical or emotional demand. But too much unrelieved stress can lower your body’s resistance to disease, contribute to disorders such as stomach ailments and insomnia, and cause changes in the body’s chemistry that can directly affect your heart’s health.

The “stress response” is your body’s physical reaction to a stressful situation. It is commonly called the “fight or flight” response. The physical changes that occur are designed to help your body to fight, or to flee from danger. When your body reacts to stress it produces more adrenaline which acts as a stimulant to increase your heart and respiratory rate as well as your blood pressure. Fatty acids and cholesterol are emptied into the blood stream and the blood becomes “thicker.” Muscles tense and prepare for action. When the stressful situation is relieved, your body relaxes and these processes reverse.

The key to reducing stress is not in eliminating all stress, but rather in learning to manage your response to stressful situations.

• Consider how you will handle a potentially stressful situation before it happens. Often, stress results from fear of the unknown. By “rehearsing” your response, you can help yourself deal with the situation and lessen your stress.

• Practice deep breathing whenever you feel “stressed out.” Inhale deeply through your nose, hold for a count of five and then exhale slowly through pursed lips. Repeat three or four times until you feel more relaxed.

• Take time to relax. Go to a movie, take a warm bath, walk around the park, listen to soothing music, read a novel, put your feet up and close your eyes or take up a relaxing hobby.

When you learn to manage stress you’ll be happier and your heart will be healthier. If you need help in learning to manage stress, speak with any of your healthcare providers.
Energy conservation allows you to use your time and energy more efficiently during your daily routines. By utilizing the following suggestions, you can maximize your work and not feel as tired.

- All actions should be slow, smooth and rhythmical.
- Use proper breathing techniques: inhale before exertion, and exhale during exertion.
- Allow yourself plenty of rest breaks during your daily routines. Rushing will only fatigue you!
- Plan ahead and organize your day and week. Spread out heavy and light tasks, and allow for scheduled rest breaks.
- Sit whenever possible for activities (dressing, ironing, preparing foods).
- Let your feet rest on the floor or footstool while sitting, don’t let them dangle.
- Plan your work areas within normal reach to avoid extra bending, reaching or stooping.
- Have duplicate items at different workstations (cleaning supplies in the kitchen and bathroom).
- Avoid lifting whenever possible. Use a utility cart and a shopping cart, and slide objects along countertops instead of carrying them.

- Remember, a full recovery can take up to six months depending on the type of surgery you had. So if you feel depressed or irritable, it is perfectly normal.
The following activities are safe to resume immediately:

• Playing cards/board games
• Walking
• Washing dishes
• Cooking
• Light lifting (less than 10 pounds)
• Riding in a car
• Light dusting
• Showering
• Going to the store
• Eating out
If you had traditional bypass surgery the following restrictions apply for four to eight weeks after surgery. All previous activities are resumed at three months after surgery as tolerated and discussed with your doctor.

Patients who underwent MICS CABG should avoid the following for two weeks. Always remember to listen to your body when doing activities, especially when lifting or exerting energy.

1. Do not cross your legs or sit for long periods of time. Give yourself a break by standing and walking around.
2. Do not lift, push or pull anything over 10 pounds. This includes lifting groceries, grandchildren or garbage 10 pounds or greater; dog walking, vacuuming, bed linen changing and opening vacuum sealed jars.
3. Do not drive. Sit in the passenger seat with a seatbelt. If there is a safety air bag in the passenger seat, sit in the backseat.
4. Do not avoid stairs, however do not go up and down without a rest.
5. Do not take a bath. Shower with the water hitting your back.
6. DO NOT SMOKE and avoid second hand smoke.

7. Do not overexert yourself. Take two rest periods daily for 30-40 minutes each.
8. Do not place both arms over your head or behind your back at the same time. One arm at a time is fine. (Does not apply to MICS CABG patients)
9. Do not sleep on your side or stomach for the next six weeks. (Does not apply to MICS CABG patients)

Congratulations. You are on the road to a healthy heart. Keep up the good work!
**WALKING CHART**

<table>
<thead>
<tr>
<th>DATE/TIME</th>
<th>DISTANCE WALKED</th>
<th>MINUTES WALKED</th>
<th>RESTING HEART RATE</th>
<th>EXERCISE HEART RATE</th>
<th>POST HEART RATE</th>
<th>WEIGHT</th>
<th>TEMP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
THE HEART INSTITUTE
475 Seaview Avenue
Staten Island, NY 10305
Telephone 1 888 432 7878

www.BypassTheOrdinary.com | 1 888 Heart 78

THE HEART INSTITUTE is a joint venture between Richmond University Medical Center and Staten Island University Hospital.