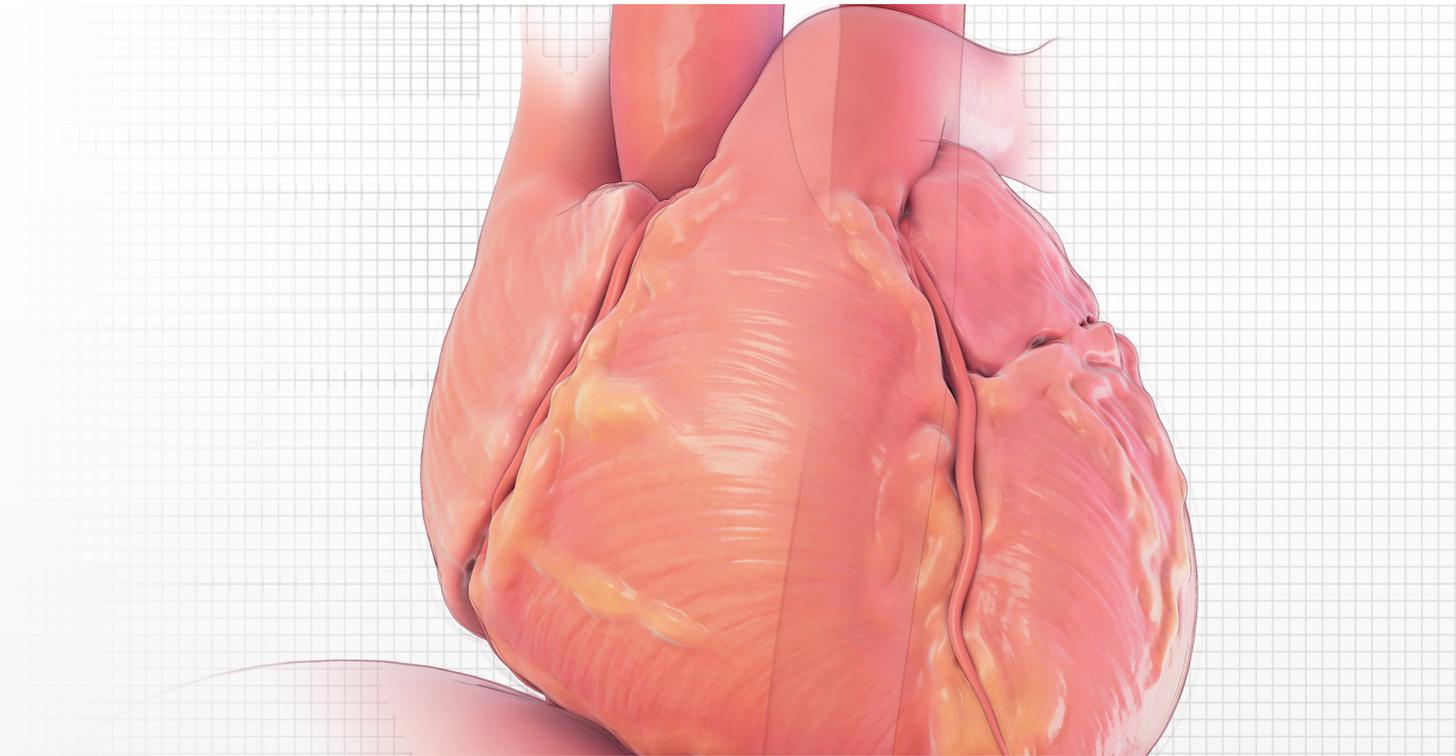


BRING THIS BOOKLET TO ALL HOSPITAL AND CLINIC VISITS



Your Heart is in the Right Place

Cardiac Surgery

Patient Information

WELCOME

We want to make your recovery from heart surgery as easy as possible. One way we can do this is by providing information. This book has been written for you and your family with the help of doctors, nurses, education specialists, clinical nutritionists and physical therapists. It contains information about the surgery and how to care for yourself at home. Your doctors and health care team will strive to make your stay as comfortable as possible.

My Cardiac Surgeon: _____

My Cardiologist: _____

My Primary Care Doctor: _____



Questions? Here's that one perfect number:

On nights and weekends, your call will be answered by an operator who will forward you to the on-call person.

Visitors are an important part of the healing process, and we encourage family and friends to visit. Below is a list of general rules and guidelines. Please see the Family and Visitor guide for more information.

- Quiet time is after 9pm until morning.
- Smoking is NOT permitted in the hospital, or on the hospital grounds.
- Please check with nurse before entering a patient's room.

Due to limited space in the ICU rooms, we ask that only two family members wait in the Family Waiting Room, with the exception of the day of surgery. All other family members should wait in the 2nd Floor Lobby. One family member may stay in the room overnight.

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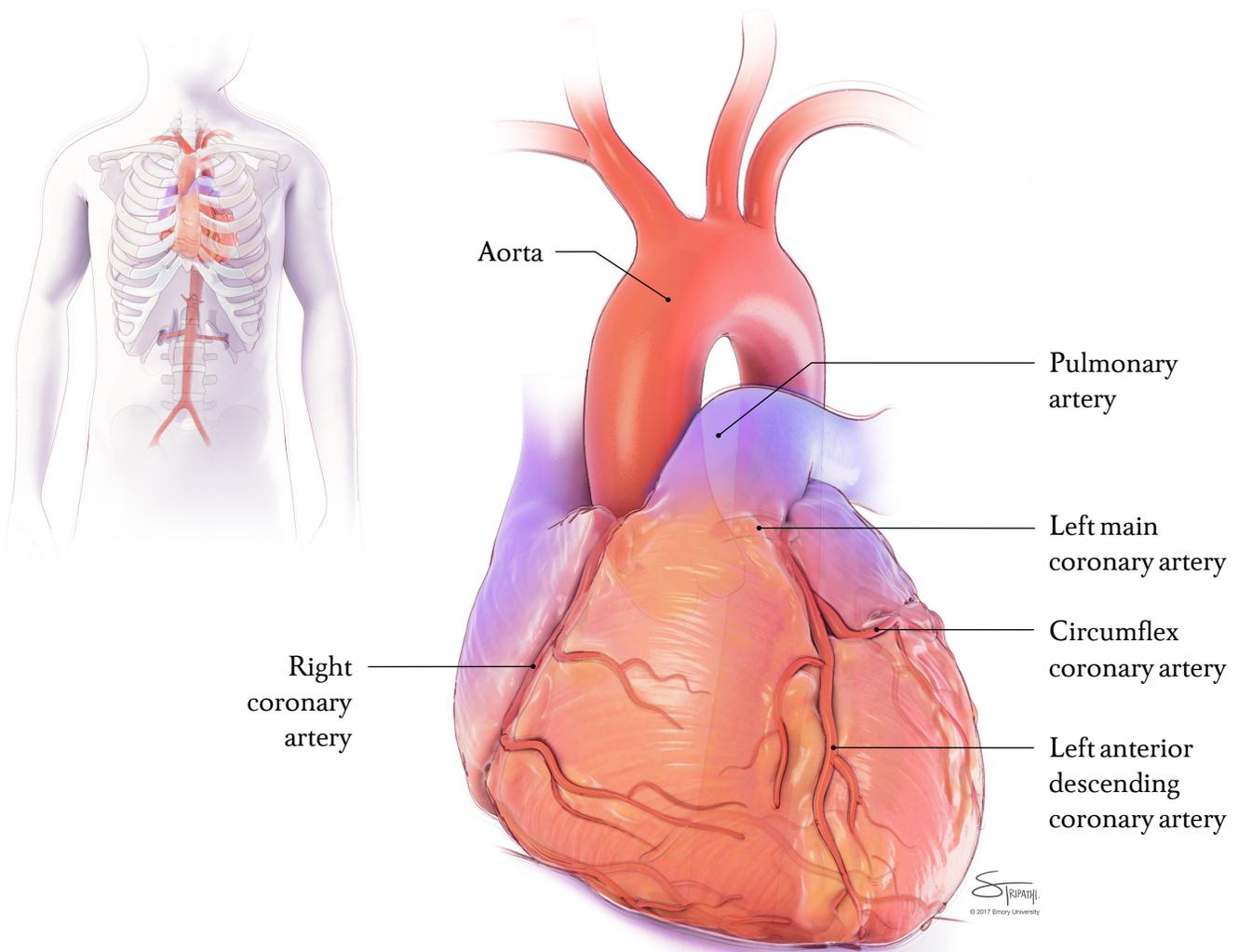
Your Heart and How It Works

Your Heart

The heart is a hollow organ that is about the size of your fist. It is located just behind your breastbone. It is a strong, hardworking muscular pump. The heart pumps blood to your lungs to get oxygen, and then pumps this oxygen rich blood throughout the body.

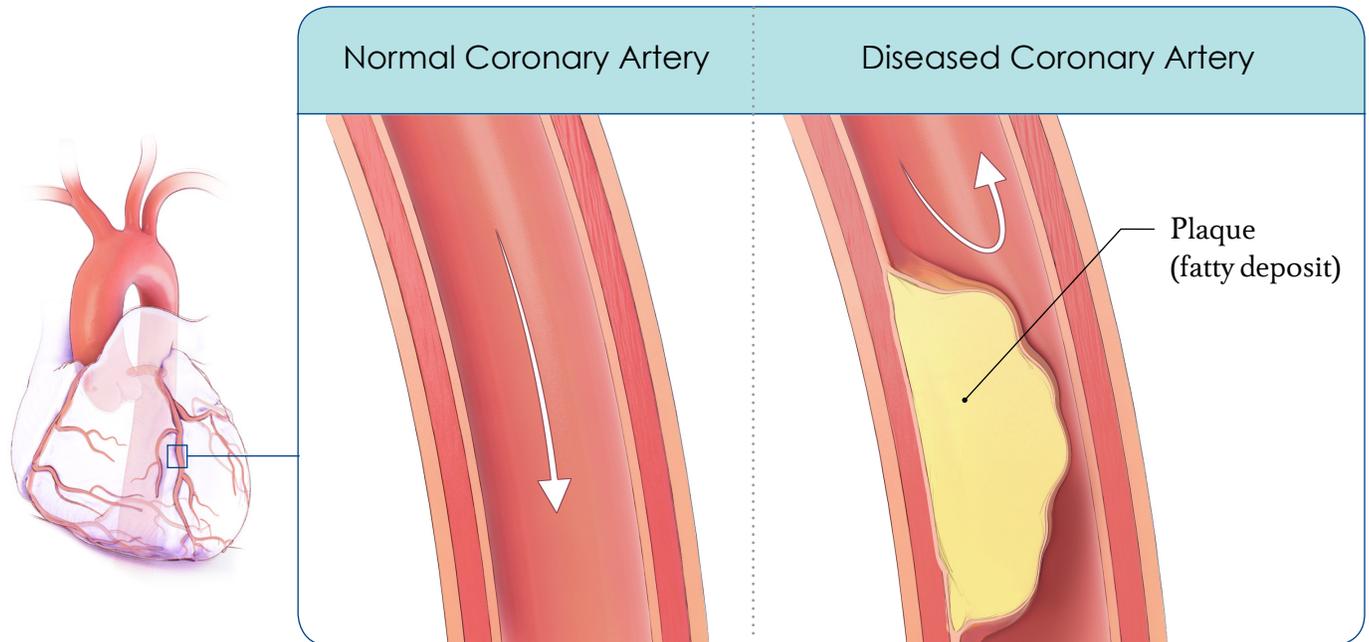
Coronary Arteries

The heart itself needs this same good blood flow. A network of heart arteries (coronary arteries) supplies the entire heart with oxygen rich blood. The coronary arteries start at the base of the aorta. There is a **Right Coronary Artery (RCA)**, and a **Left Main Artery** that branches into the **Left Anterior Descending (LAD)** and **Circumflex (Cx)** arteries.



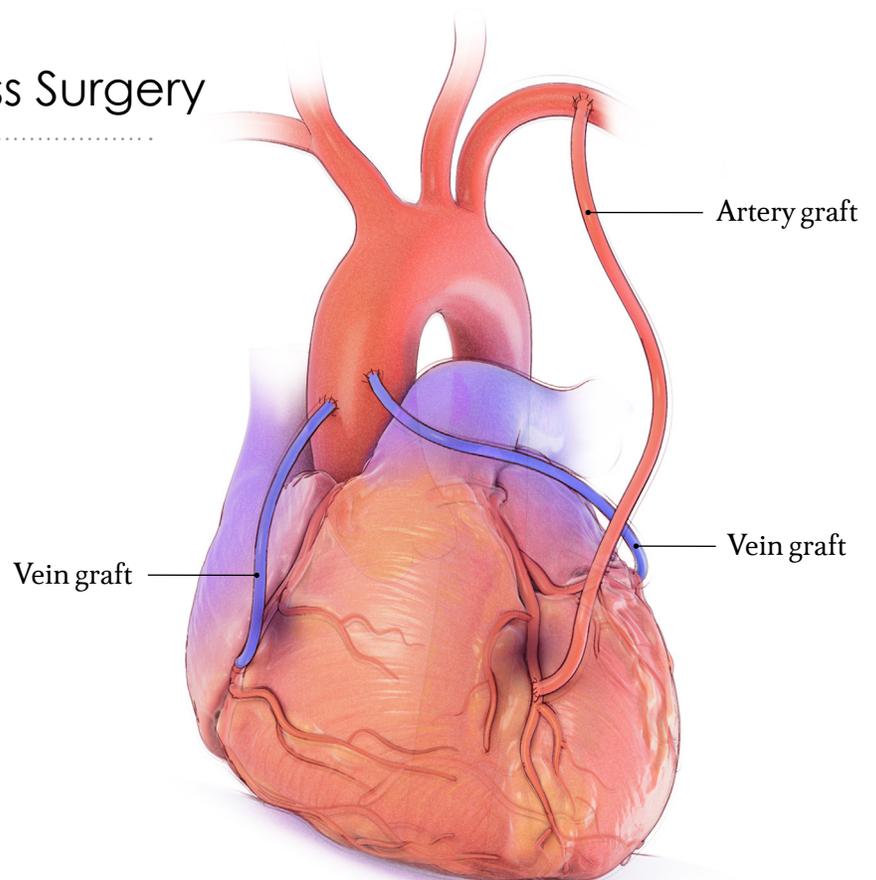
Coronary Artery Disease

Coronary Artery Disease (CAD) is the build up of fats, calcium and blood clotting materials on the inner walls of the coronary arteries. This blocks the blood flow to the heart muscle, putting it at risk for injury.



Coronary Artery Bypass Surgery

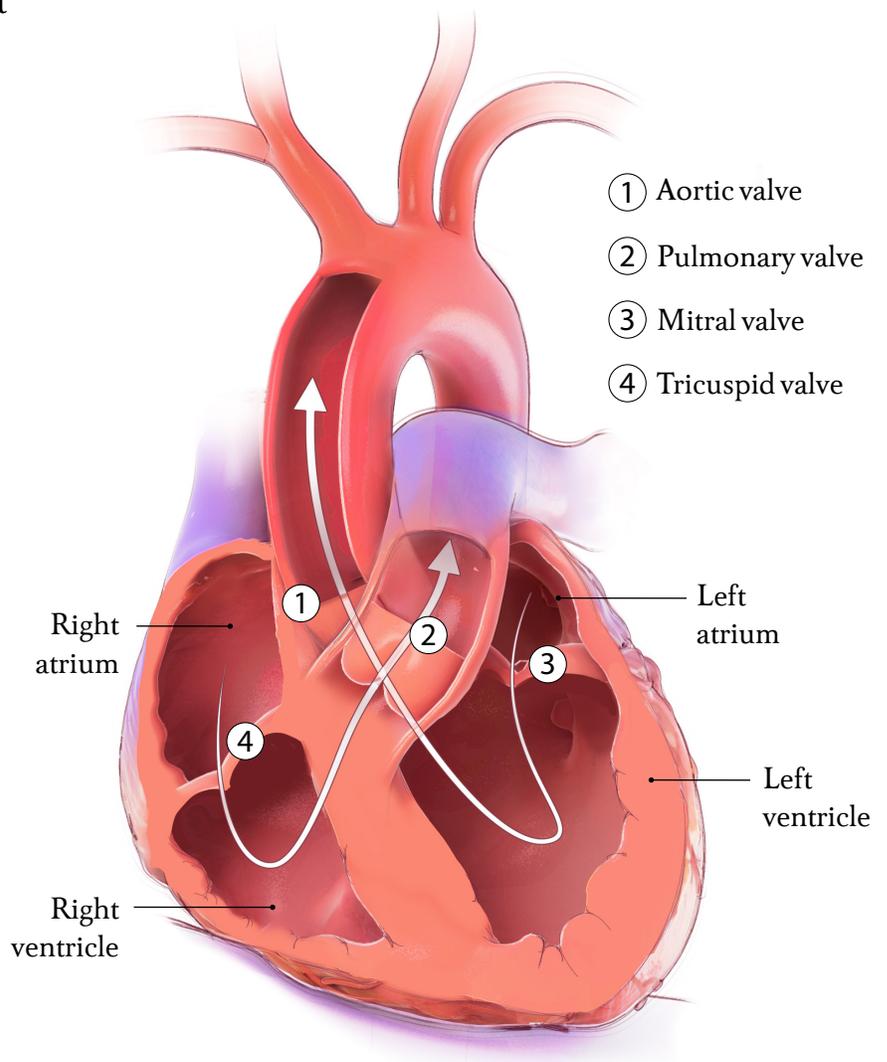
Coronary Artery Bypass Surgery (CABG) is surgery that re-routes blood flow around a blockage in the coronary arteries. Artery or vein grafts are used to "bypass" the blockage.



Your Heart Valves

The heart is divided into right and left sides. Each side has an upper chamber and a lower chamber. The upper chambers are called atria and the lower chambers are called ventricles.

As blood is pumped from one chamber to another and out to the lungs and body, it passes through valves. The valves are like one-way doors that keep the blood flowing forward. If the valves do not open or close properly, the heart works harder to pump the blood.



Heart Valve Stenosis

This occurs when the valve becomes “stiff” and does not open widely. The heart has to work harder to push the blood forward.

Heart Valve Regurgitation

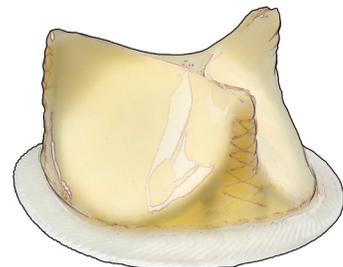
This occurs when the valve does not close tightly. Each time the heart pumps, some of the blood goes backwards and has to be pumped again. This makes the heart an inefficient pump.

Heart Valve Surgery

This surgery repairs or replaces the heart valves that do not open or close properly.



Example of a mechanical valve



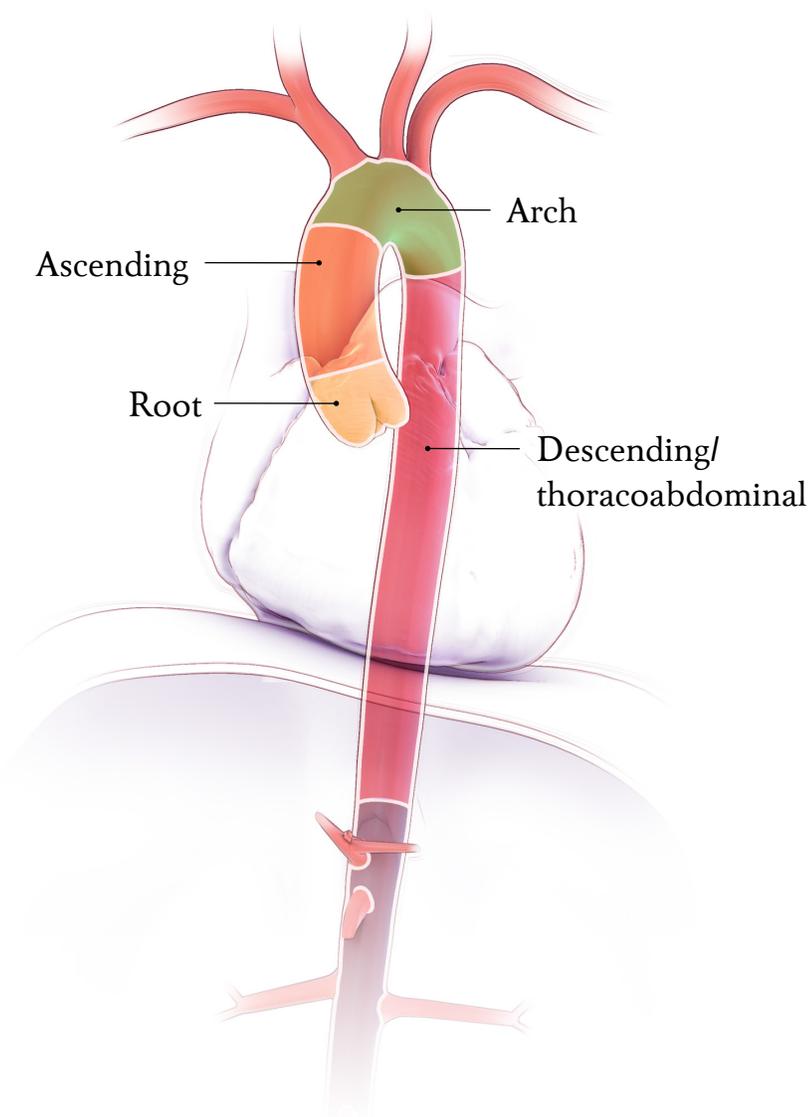
Example of a tissue valve

Your Aorta

The aorta is the major blood vessel that carries blood out of the heart to the body. It is split up into different sections. These are the:

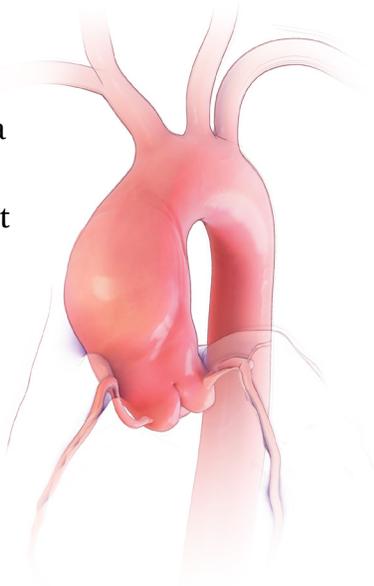
- Aortic Root
- Ascending Aorta
- Aortic Arch
- Descending or thoracoabdominal arch

There are two main disease processes that affect the aorta: an **aortic aneurysm** and **aortic dissection**. Please refer to the following page for information on these conditions.



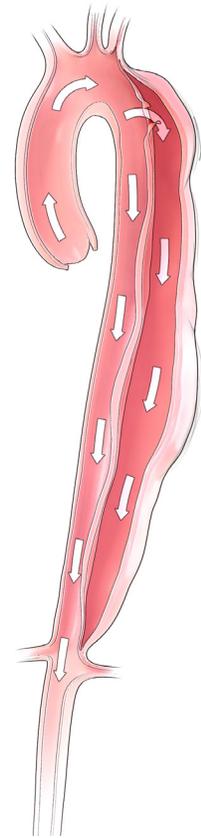
Thoracic Aortic Aneurysm

A thoracic aortic aneurysm is an overstretched and weakened area in a part of the aorta located in the chest cavity. The weakened area is formed as a bulge in a section of the aorta and often does not have symptoms. Large and rapid growing aortic aneurysms increase in size and may eventually rupture. This can be life threatening.



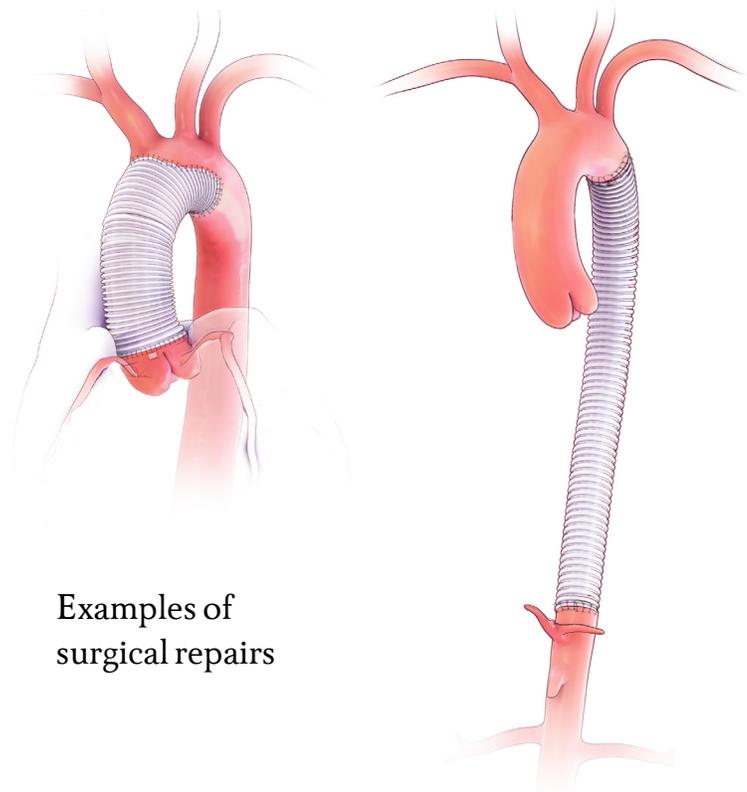
Aortic Dissection

An aortic dissection is an emergency condition which is due to a tear in the aortic wall, which can cause life threatening organ damage or bleeding. There is usually a very severe, sharp, stabbing pain either in the front part of the chest, back or abdomen.



Treatment is dependent on the symptoms, size, and growth rate of your thoracic aortic aneurysm.

Controlling lifestyle habits, medical therapy and surgical interventions are measures used for treatment.



Examples of surgical repairs

Your Heart Surgery

Types of Surgery

Traditional Open Heart Surgery

The surgeon opens the breastbone (sternum) and works directly on the heart while a heart /lung machine pumps the blood around the body. This way the surgeon can operate on a “resting” heart.

"Off Pump" Open Heart Surgery

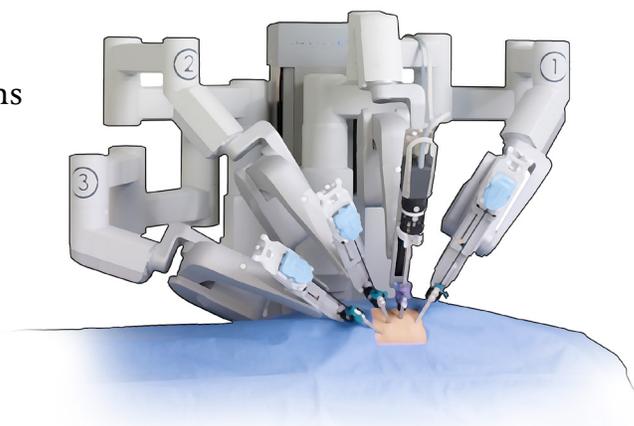
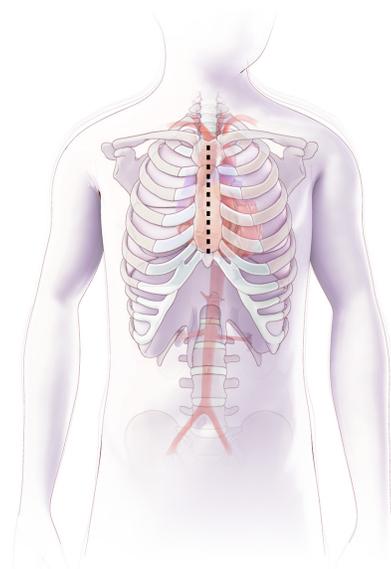
This is like the traditional open heart surgery, but the surgeon does not use the heart /lung machine. He/she can operate on a “beating” heart.

Minimally Invasive Heart Surgery

Smaller incisions are made to reach the heart. The surgeon may or may not use the heart/lung machine.

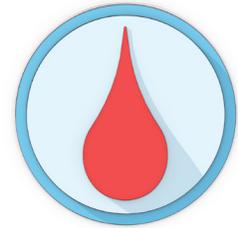
Robotic Heart Surgery

Several very small incisions are made around the chest. Small cameras and robotic arms are inserted into the chest. These arms actually perform the surgery. The surgeon operates the arms remotely using the da Vinci® robot.



Before Your Surgery

- Before you are admitted, lab tests and X-rays are done. If you are admitted on the day of surgery, the office will call you and give you an appointment for these tests.
- A member of the anesthesia team will go over your health history and answer any questions you may have.
- You should **STOP** all tobacco use as soon as you find out you need surgery. This helps prevent respiratory problems after surgery.
- You should **STOP** taking Plavix or an anticoagulant before surgery. Your surgeon will tell you when to stop.
- An identification bracelet will be placed on your wrist when you are admitted. **DO NOT REMOVE**. You may shower or bathe with this on your wrist.
- You will sign your consent for surgery.
- You will be given information on what to expect throughout your stay at the hospital.



The Night Before Surgery

- You will be given surgical soap to bathe with the night before surgery. Please follow the instructions carefully.
- You will be instructed to **NOT EAT OR DRINK ANYTHING AFTER MIDNIGHT** the night before surgery. You may take certain medicines with sips of water as determined by your doctor.
- Again, **DO NOT SMOKE**.



Checklist

Before Coming to the Hospital:

- Your driver's license and insurance cards.
- Money for parking.
- If you have a Living Will, Advance Directives for Health Care, or a Medical Durable Power of Attorney, please bring a copy of it with you. This may be the time to discuss this if you do not have one.
- Brush your teeth for 2 minutes before leaving home - rinse without swallowing.
- Complete surgical soap wash.
- CPAP machine, if you have one.
- DO NOT SMOKE.
- Do not eat.

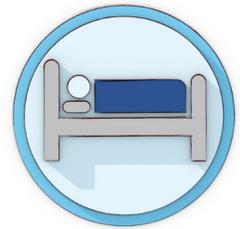
Once You Are Admitted:

- ID Bracelet.
- No valuables.

NOTES:

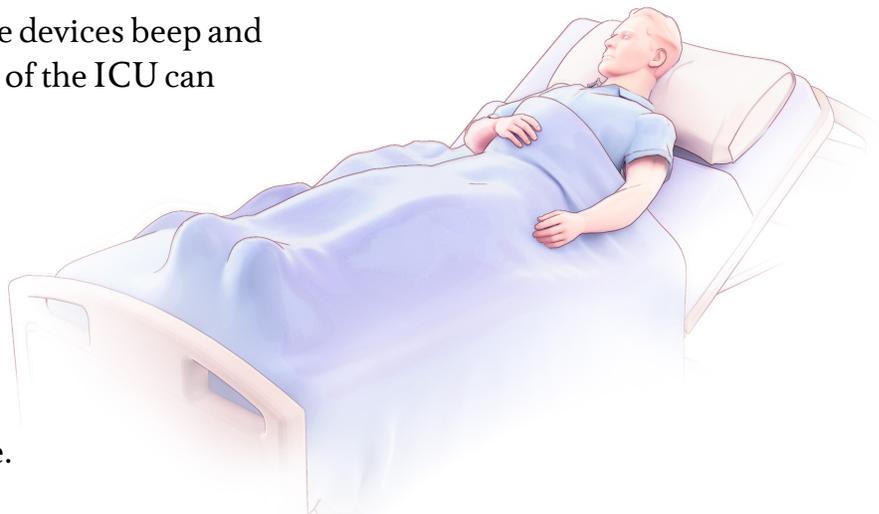
The Day of Your Surgery

- Brush your teeth for 2 minutes - rinse with mouthwash, but do not swallow.
- Do not eat or drink.
- You will be taken to the surgical holding area and prepared for surgery. Hair will be removed from surgical areas and antiseptic soap scrub will be used.
- You will be given antibiotics before and after the procedure as ordered.
- Your family will keep any personal belongings you have brought with you (glasses, dentures, hearing aid, CPAP machines, etc.).
- After seeing you off to surgery, your family will be directed to the surgical waiting room on the third floor. Wait time may be from 4 to 6 hours.
- After surgery, your family will meet with your healthcare team.
- Your family will have the opportunity to visit for the first time while you are still sleeping after surgery.



Waking Up from Your Surgery

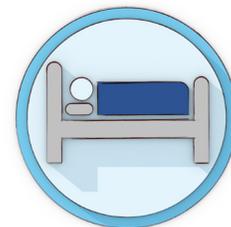
- Your family members will be asked to wash their hands upon arrival to the ICU.
- You will still be asleep from the anesthesia. It is normal to appear pale, swollen and be cool to touch when your family first sees you.
- IV pumps and medical equipment are used to treat and monitor your progress. Often these devices beep and make noise. The sights and sounds of the ICU can be overwhelming. The ICU nurses are there to answer your family's questions and to give support.
- After surgery, you will have a tube that goes down your mouth into your windpipe. This tube connects to a ventilator, which is a machine that helps you breathe.



After Your Surgery

Your Stay in the ICU

While you are in surgery, your family will be directed to the Surgery Waiting Area. They will receive updates on your progress every few hours. When your surgery is complete, someone from the surgery team will come speak to your family. The first hour after surgery is very important as we are getting you settled into the ICU. We are monitoring the effects of anesthesia, pain, bleeding, stabilizing vital signs, performing x-rays, lab tests, etc. Afterwards, the receiving nurse will examine you. When you are stable, the Nurse will come to the waiting room and direct your family in to visit.



Some patients are unconscious or semi-conscious due to their physical conditions or medications. In general, you can expect that conversations with your family will be harder to understand.

The ICU can be a frightening place. There will be many pieces of equipment in the room that may make beeps and noises. We are trained to know what the noises mean. The first few hours you will have one nurse who will be at your bedside monitoring pain and vital signs. You will also be introduced to a team of Critical Care Medicine specialists who will be involved in your care as well.



In addition, we have e-ICU providers who can ring into the room at any time.

5E ICU Staff

What you will probably notice first about the ICU is its complicated and unfamiliar equipment. Our specially educated staff uses those machines for the benefit of the patients. Please do not handle or touch any of the machines, equipment, or medications that you might see.



Doctors

Our patient care team in the ICU includes the cardiac surgeons, cardiologists, e-ICU physicians and other specialists of a critical care team. The team is led by a critical care attending doctor. Emory University Hospital is a teaching hospital; therefore, it is staffed by doctors-in-training. These doctors are referred to as interns, residents, or fellows. They provide much of the around-the-clock bedside care under the supervision of the attending physician.

Advanced Practice Providers

Nurse Practitioners and Physician Assistants known as affiliate providers are available in the ICU 24 hours/day, 7 days/week working alongside the nurses and the critical care medicine physician to provide care for our patients while in the ICU.



Nurses

Each critical care nurse has special training and skills to take care of patients in the ICU. The critical care nurse spends the majority of his or her time with the patient. There is one Unit Director responsible for nursing care in the ICU. In addition, each shift of nurses includes one nurse in charge, known as a charge nurse.

Patient Care Assistants (PCA)/Nurse Techs (NT)

The PCAs and NTs assist the staff with patient care. Along with the nurses, they spend a lot of time with the patients.

Respiratory Therapists

There are one or two therapists assigned to ICU. They are involved with oxygen therapy, breathing treatments, and breathing exercises. They also control the ventilators (breathing machines), including weaning and removing the breathing tube.

Physical Therapists

The physical therapist will work with patients after surgery. They do chest physiotherapy and assist in ambulating patients who need extra help.

Nutritionists

We have one nutritionist on our care team who will help manage your dietary needs.

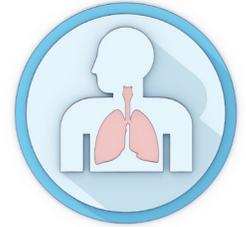
Pharmacists

We have a day and night pharmacist available to assist in your medication management.

Equipment and Environment

Breathing Tube

You will have a tube that goes in your mouth down into your windpipe. You will not be able to talk while the tube is in place. The breathing tube is like breathing through a big straw that is a little longer – just try to breathe normally. The good news is you will be sedated initially so that you can relax and breathe with the machine. As you wake up, it's a good idea for you to try meditate and put yourself in a place you love.



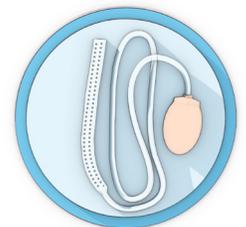
Use an example: You are sitting on the beach and you watch the waves go in and out. As the wave comes in you breathe in and as the wave goes out you breathe out. Try to get in the rhythm. This will help you relax with the breathing machine and help you to get the breathing tube out more quickly.

Protective Limb Holder (Restraints)

Protective limb holders (restraints) are used while you are asleep and during the waking process while on the breathing machine. It's very important that as you are waking up you don't dislodge any of your medication tubes. The restraints will be removed once you are fully awake and are able to work with us, or as soon as the breathing tube has been removed.

Chest Tubes

You will have 2 - 4 small drainage tubes coming from your chest area. These tubes drain away fluids that collect after surgery in your chest cavity. These will be removed a few days after surgery when they are no longer needed. We monitor the drainage regularly. These can be somewhat uncomfortable, particularly when you take a deep breath. Pain medication will help you tolerate them until we can safely remove them.



Central Line and Other Tubing

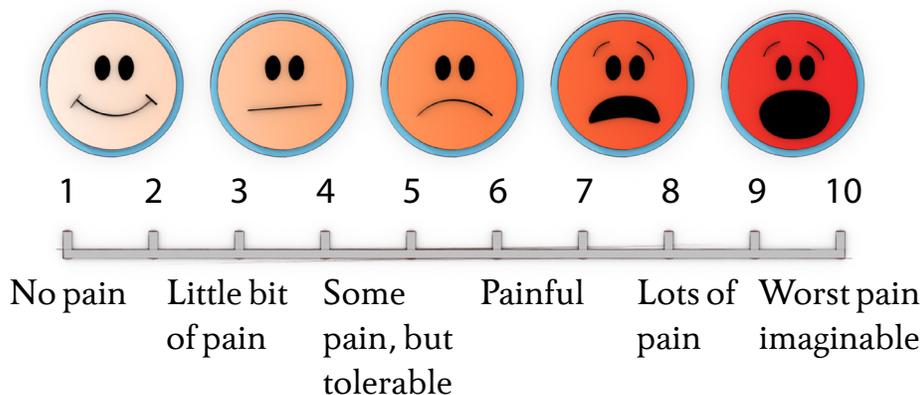
Patients who are critically ill may need intravenous fluids for:

- Nutrition
- Blood transfusions
- Medications to manage blood pressure
- Medications to support body functions or restore the chemical balance of the body
- Often you will have a tube that enters the nose and extends down into your stomach

Recovery After Your Surgery

Pain Control

You will be sore and that is expected for first few days but we want to manage your pain so that you are comfortable enough to assist with your activity and daily needs such as feeding yourself. We will medicate you through your IV at first until you are able to take fluids and pills. We will then medicate you with pain pills. It's important that you let the nurse know when you are hurting or that pain is not yet resolved so that we can find the right treatment regimen for you.



Infection Prevention

We are committed to making your stay as safe as possible. Hospital associated infections can be a concern, and we want you to know we are doing our very best to keep you healthy and free from infection. Below is information about hospital acquired infections and what can be done to prevent them.

Types and Symptoms of Hospital Acquired Infections (cont'd.)

Urinary Catheter Infection – A urinary catheter is a thin tube placed in the bladder to drain urine. Germs can travel along the catheter and cause an infection in your bladder or your kidneys.

- Signs and symptoms of a urinary tract infection may include pain in the lower abdomen, fever or blood in your urine. After the catheter is removed signs may be increased frequency or burning on urination.

Central Line Catheter Infection – A central line catheter is a small tube that is placed in the large vein of the neck, chest, arm or groin. It is used to draw blood or give medications. An infection can occur when bacteria travels down the central line catheter and enter the blood stream.

- Symptoms of an infection include fever, chills or redness around the catheter site.

Ventilator Associated Pneumonia – A ventilator is a machine that gives oxygen and helps you breath through a tube placed through the mouth, nose or trachea. A lung infection or pneumonia can develop in a person who is on a ventilator.

- Symptoms may be cough, fever, chills or difficulty breathing.

Surgical Site Infection – An infection that occurs after surgery in the part of the body where the surgery took place.

- Symptoms of a surgical site infection are fever, redness and pain around the incision, or unusual drainage from the incision.

What We Do to Help Prevent Infections

Catheter Care	If you have a Catheter/ Urinary Drainage Bag:	With a Ventilator the Nurse Will:
<ul style="list-style-type: none">· The skin is properly cleaned before placing the catheter.· The nurse may wear a mask, cap, sterile gown and gloves for extra protection.	<ul style="list-style-type: none">· Keep the bag lower than your waist to prevent urine from back flowing into the bladder. Avoid touching or tugging on the catheter.· They are checked daily, and removed when no longer needed.	<ul style="list-style-type: none">· Clean the inside of the mouth every 2 hours.· Keep the head of the bed raised.· A respiratory therapist will check your breathing and remove the ventilator when it is no longer needed.

What You and Your Family After Surgery Can Do to Help Prevent Infections

- **Clean your hands!** Family and friends should clean their hands with soap and water or an alcohol-based hand rub before and after visiting.
- Do not hesitate to ask your health care provider if they have washed their hands or used an alcohol-based hand rub.
- Always clean hands before and after wound or catheter care.
- Keep hands OFF your incisions and catheters.
- Notify your nurse if you have any symptoms of an infection.
- Tell your nurse if a bandage becomes loose, dirty or wet.
- Take the recommended shower before surgery or coming to the hospital.
- Eat nutritious foods. They help with healing.

If You Go Home with a Catheter or Dressing

- Clean your hands before and after changing the dressing or touching the catheter.
- Your nurse will give you instructions on care of your catheter or dressing.
- Do not smoke or be around second-hand smoke. This increases the risk of infection.
- Contact your doctor if you have a fever or signs of infection.

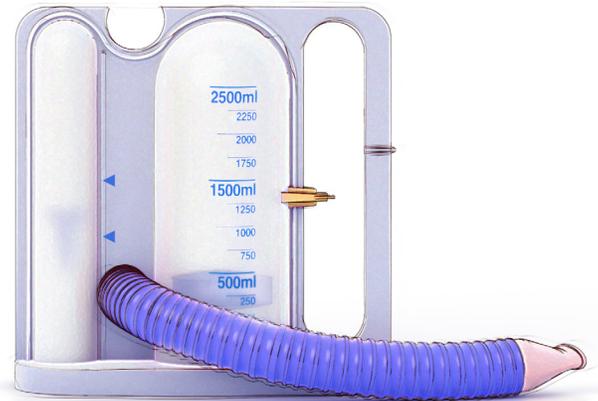
Extubation and Breathing Exercises

The immediate goal is to ensure your vital signs are stable. We will monitor the chest X-ray and lab work, wake you up, and remove the breathing tube. Hopefully, this will be accomplished within the first 24 hours. After the tube has been removed, it is important for you to participate in deep breathing exercises which includes using the incentive spirometer, holding a pillow and coughing deeply to prevent pneumonia. It's very important that you and your family work on this at least hourly while awake.

These steps will start helping you prepare for transfer to the Step-Down Unit.

Incentive Spirometer

- Sit with your back supported and hold the incentive spirometer.
- Take a deep breath in and then blow out all the way through your mouth with pursed lips.
- Put the mouthpiece in your mouth. Seal your lips tightly around it.
- Breathe in slowly through your mouth as deep as possible. The blue piston will rise toward the top of the column.
- Keep the blue coach indicator on the right side between the arrows.
- Open your mouth and exhale, letting the blue piston to fall to the bottom of the column.
- Rest for a few seconds and repeat steps above at least 10 times every hour while you are awake. If you feel dizzy, slow your breathing down.
- Move the tab on the side of the spirometer to show the highest number you reached.
- After each set of 10 deep breaths, practice coughing to be sure your lungs are clear.
- If you have an incision, place a pillow against that area to ease discomfort while coughing.
- Practice this 4-6 times each day before your surgery.



Mobilization

You may have muscle weakness while in the ICU. This may increase your time on the ventilator and can increase the amount of days you stay. Muscle weakness can prevent patients from doing normal activities and can last for years.

Who is at risk? Patients who:

- Are in the CVICU
- Are on bed rest
- Are on certain medications



It's important that your arms and legs are moved passively at least 2 times/day while they are asleep/sedated to maintain maximum mobility of their joints (arms, shoulders, elbows, wrists, fingers, legs, hips, knees, ankles, and toes).

We know that the sooner we get you out of bed and sitting in a chair, you have less chance for bedsores, pneumonia and other complications.

When you are stable, we will be getting them up to the chair and soon after that we will begin walking small amounts and progress ambulation as tolerated.

Early Progressive Mobility

Early progressive mobility is a 3 step program of daily exercises for all patients. The team consists of a nurse/nurse tech, physical/occupational therapists, and respiratory therapists.

Range of Motion (ROM)	Out of Bed to Chair (OOB)	Walking
<ul style="list-style-type: none">· ROM is for patients who are too weak, sleepy or cannot follow commands.· Done 2 times a day· ROM can:<ul style="list-style-type: none">- Prevent muscle loss- Prevent joint stiffness· Is done by the:<ul style="list-style-type: none">NurseNurse techFamily member	<ul style="list-style-type: none">· OOB to chair is for patients who are awake and can follow commands.· Helps patients breathe better.· Relieves back pressure.· Patients will exercise:<ul style="list-style-type: none">Leg liftsCyclingArm exercise	<ul style="list-style-type: none">· Walking helps patients:<ul style="list-style-type: none">- Get stronger- Breathe better- Clear their lungs- Reduce skin breakdown· Patients on a breathing machine can walk too! It is done with the help of a team member.

The benefits of this program include:

- Decreased days on a breathing machine
- Decreased delirium
- Decreased ICU days
- Improved muscle strength
- Decreased hospital days

After surgery, walking will be gradually increased. Follow the program described below. Walks should be spaced at intervals throughout the day, and done after rest. The first few times may take some effort. It becomes easier each time you walk.

Day One - Walk 1 lap around the nursing station, 3 or 4 times a day.

Day Two - Walk 2 consecutive laps around the nursing station, 3 or 4 times a day.

Day Three - Walk 3 consecutive laps around the nursing station, 3 or 4 times a day.



Week After Surgery	Frequency	Time	Pace
1	2x/day	5-10 min.	Leisurely
2	2x/day	10 min.	Leisurely
3	2x/day	15 min.	Leisurely
4	1x/day	20-25 min.	Leisurely
5	1x/day	30 min.	Leisurely
6	1x/day	30-35 min.	Leisurely to Moderate
7	4-5x/day	40 min.	Moderate
8	4-5x/day	45 min.	Moderate
9	4-5x/day	50 min.	Moderate
10	4-5x/day	55 min.	Moderate to Brisk
11	4-5x/day	60 min.	Moderate to Brisk

1. Walk when rested. Wait at least 30 minutes after a meal.
2. Walk on level ground for the first six weeks, then gradually begin adding small hills.
3. Avoid extremely hot and cold weather.
4. Wear comfortable shoes made for walking.
5. It is normal to feel like you have done some work at the end of the walk. However, if you are extremely tired and do not feel better after a 20 minute rest period, decrease the walking times and discuss how you feel with the doctor.
6. You may want to exercise indoors such as a mall or health facility.

Continue the walking program unless there is a change in tolerance to the exercise, or you are instructed otherwise by the doctor or exercise specialist. Always listen to your body. If you get very tired, slow down or stop walking for that day.

Report any chest pain, shortness of breath, unusual symptoms or fatigue to your doctor.

CV Step-Down Unit

Once you are transferred to the Step-Down Unit, you are expected to take an active role in your recovery. The nurses, doctors, respiratory and physical therapists, and your family are there to help you.

- Use your **incentive spirometer** at least 10 times every hour you are awake. Try to move the piston up to at least the “1000” mark.
- Get out of bed for **meals**. Food may have little taste and your appetite may not be normal at this time. Good nutrition is important for the healing process.
- You will **walk** around the nursing station to improve your lungs and prevent leg clots. The more you move the stronger you will feel and the quicker you will go home.
- You will be encouraged to take your **pain medicine** as you need it.
- It may be difficult to **sleep** or stay asleep through the night. You may also have vivid dreams. Changing your pain medications or the times they are given may help.
- Your **weight** may increase after surgery due to fluid retention. A “water pill” may be given to help remove this extra fluid.
- Even without activity, **sweating** spells are common.
- **Blood sugar** levels will be monitored. The stress of surgery may raise your blood sugar. High blood sugars are controlled to improve healing. Insulin may be given at this time and possibly continued after discharge.



Blood Sugar Monitoring

Until Post Op Day 2 at 0800

- You may require insulin to control blood sugar after surgery
- Non-caloric clear liquid diet
- Controlling blood sugar improves healing



Post Op Day 2 at 0800

If your blood sugar is stable and you are tolerating clear liquids, your diet will be advanced to a specific cardiac surgery diet to continue your healing

Sternal Precautions

- Follow for 6 weeks or until your doctor recommends

Use the following tips to help your incision heal properly:



- Always use two hands to carry items.
- Walkers (or a podium walker while in the hospital) are the only approved assistive device for ambulation (no canes or crutches). This allows you to spread the force through both arms.
- Use your arms, otherwise they will become stiff. Motions that are ok:
 - Reaching up
 - Out (not behind the midline)
 - Slightly back and rotated out



- Do NOT lift more than 10 pounds
- Do NOT push or pull with arms with moving in bed or chair. Use your legs! Your arms can be used to help you balance as you stand up from a chair
- Do NOT Twist, logroll instead. To logroll, start by bending up your legs, then roll, keep trunk straight.

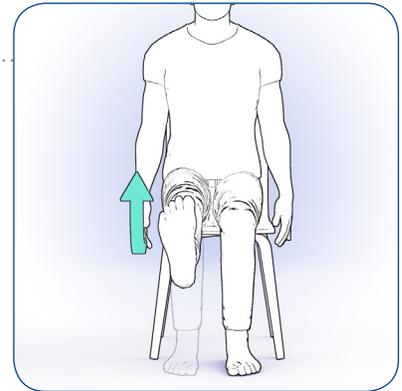
General Exercises

After surgery, your chest, shoulders and neck muscles will be stiff and sore. While we do not want you to overdo activity while the chest is healing, we do want you to move and stretch the muscles to overcome stiffness. The following pages show safe stretching exercises to do daily for the next six weeks, or until the stiffness is gone. They should be done slowly and should not wear you out.

Leg Extensions

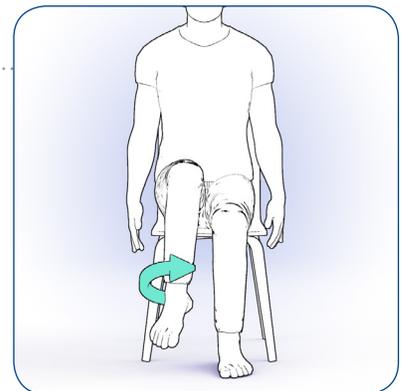
In sitting position, extend lower leg forward. Return leg to starting position. Repeat with opposite leg.

Starting number: 10
Increase per week: 5
Maximum number: 30



Ankle Circles

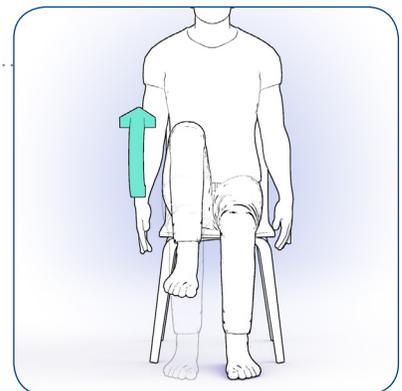
If sitting or lying for an extended period of time, rotate each ankle clockwise and counter-clockwise 10 times.



Knee Lifts

In sitting position, lift right knee toward chest. Return knee to starting position with foot resting on floor. Repeat exercise with left knee.

Starting number: 10
Increase per week: 5
Max number: 30



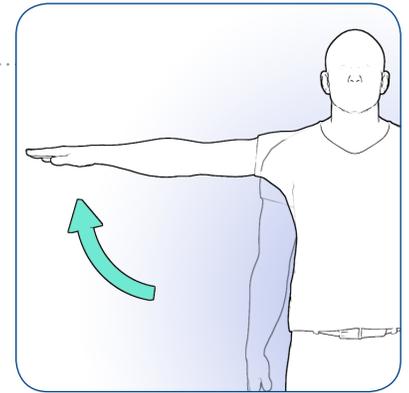
Shoulder Stretch

While standing with feet spread shoulder-width apart, or while sitting in a chair, hold arms out to the side. Raise arms to shoulder height. Return to starting position and repeat.

Starting number: 10

Increase per week: 5

Maximum number: 30



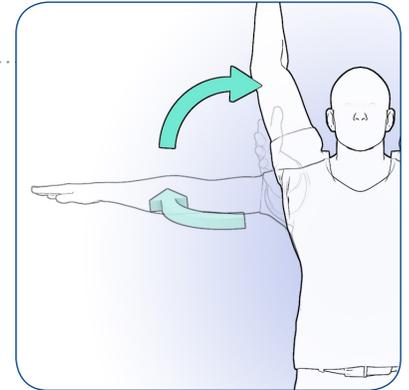
Arm Lifts

In a standing position with feet spread shoulder width, or while sitting in a chair, extend arms out to front at shoulder level. Bring hands out to sides at shoulder height. Raise arms above head until elbows are close to ears. Return to starting position and repeat.

Starting number: 10

Increase per week: 5

Maximum number: 30



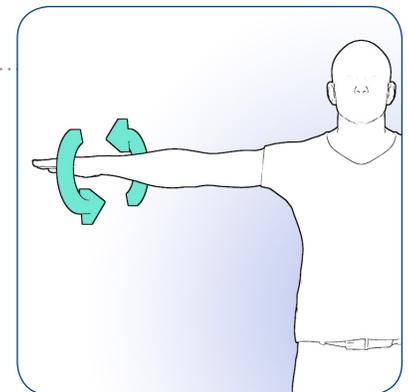
Arm Circles

With arms extended out to sides at shoulder level, make small circles and gradually increase their size. Reverse direction.

Starting number: 10

Increase per week: 5

Maximum number: 30



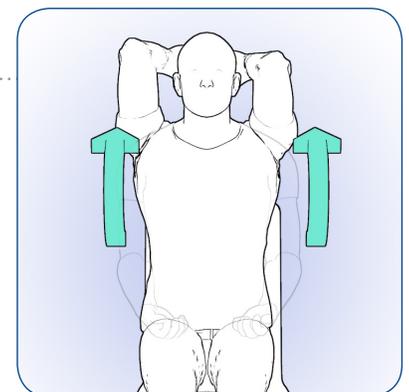
Raising Bent Arms

In a sitting position, keep back straight. Place hands palms up, loosely closed, on lap. Keeping arms in this bent position, raise arms up and back until upper arms are in line with ears. Return to starting position and repeat.

Starting number: 10

Increase per week: 5

Maximum number: 30



Cardiac Rehabilitation

One of the best things you can do for yourself is to attend a cardiac rehabilitation program. This program will guide your activity and help you change your lifestyle habits. Most important, your heart and blood pressure will be monitored during exercise. Talk to your doctor about how to begin a cardiac rehabilitation program.

Cardiac rehabilitation is a comprehensive, outpatient program designed to help patients with heart disease or known cardiac risk factors live full, productive lives. Individualized exercise plans are provided after an evaluation of each patient's health status, fitness level and personal goals. Patients are supervised by the medical director, nurses and exercise specialists. A case manager follows each patient's progress through the program. Education components are provided to assist each individual with necessary behavior modifications for reducing risk factors for heart disease.

We invite you to attend our cardiac rehab program.

Medications

Below is a list of some of the frequent medications that our physicians prescribe following surgery. It is not a complete listing of your medications, but is intended to give you some basic knowledge of the purpose for these specific medications. Your nurse is available to answer any questions that you might have regarding these or any of your other medications. You may go home on some of these or similar medications and we will be giving you more details on your home medications closer to discharge.



Beta-Blockers

- Beta-Blockers are medications that affect the heart and circulation (blood flow through arteries and veins).
- Beta-Blockers may be used to treat angina (chest pain), hypertension (high blood pressure) and heart rhythm by regulating heart rhythm and blood pressure, beta-blockers help in treating and/or preventing heart attacks.
- *Some examples of Beta-Blockers are Lopressor, Toprol, Coreg, Tenormin, and Atenolol.*

Zocor (Simvastatin)

- Zocor blocks the production of cholesterol (a type of fat) in the body.
- Zocor is used to reduce the total amounts of cholesterol, LDL (bad) cholesterol, triglycerides (another type of fat), and a protein needed to make cholesterol in your blood. Zocor is also used to increase the level of HDL (good) cholesterol in your blood.

- *Some other examples of lipid lowering medications are Lipitor, Pravachol, Zetia, Niaspan, and Avandia.*

Colace (Docusate)

- Colace is a stool softener. It makes stools easier to pass.
- Colace is used to treat constipation due to hard stools, and for people who should avoid straining during bowel movements.

Aspirin

- Aspirin works by reducing substances in the body that cause pain and inflammation.
- Aspirin is used to reduce pain, inflammation, and fever. Aspirin is also used under medical supervision to treat and/or prevent heart attacks, transient ischemic attacks (TIAs or 'mini-strokes'), strokes, and angina in certain individuals.

Plavix (Clopidogrel)

- Plavix prevents platelets (substances in the blood) from clustering together. This helps prevent blood from forming blood clots.
- Plavix is used in the prevention and treatment of a heart attack, stroke, blood clot, and acute coronary syndrome.

Percocet (Acetaminophen and Oxycodone)

- Percocet is in a class of drugs called narcotic analgesics. It relieves pain.
- Acetaminophen is a less potent pain reliever that increases the effects of oxycodone.
- Together, acetaminophen and oxycodone are used to relieve moderate-to-severe pain.

Vicodin (Acetaminophen and Hydrocodone)

- Vicodin is in a class of drugs called narcotic analgesics. It relieves pain.
- Acetaminophen is a less potent pain reliever that increases the effects of oxycodone.
- Together, acetaminophen and hydrocodone are used to relieve moderate-to-severe pain.

Lasix (Furosemide)

- Lasix is in a class of drugs called loop diuretics (water pills). It decreases the amount of fluid in the body by increasing the amount of salt and water lost in the urine.
- Lasix is used to reduce swelling in the body caused by congestive heart failure, liver disease, or kidney disease. It is also used to reduce the excess fluid that the body retains following heart surgery. You will be weighed daily to assure that your water weight is decreasing.

Refills on medications will be discussed on your first post-operative visit.

K-Dur (Potassium Chloride)

- Potassium is a mineral that is found naturally in foods and is necessary for many normal functions of the body, especially beating of the heart.
- Potassium chloride is used to prevent or to treat a potassium deficiency. It is used in conjunction with Lasix (water pill) because potassium is depleted with diuretics.

Nexium (Esomeprazole)

- Nexium decreases the amount of acid produced in the stomach.
- Nexium is used to treat ulcers, gastroesophageal reflux disease (GERD or heartburn), erosive esophagitis, and other conditions involving excessive stomach acid production.
- *Other examples of acid reducing medications are Pepcid, Prilosec, and Prevacid.*

Bactroban (Mupirocin)

- Bactroban is an antibiotic ointment. Bactroban decreases bacterial growth in your airway and helps to prevent pneumonia after your surgery. You will not be taking Bactroban at home

Amiodarone

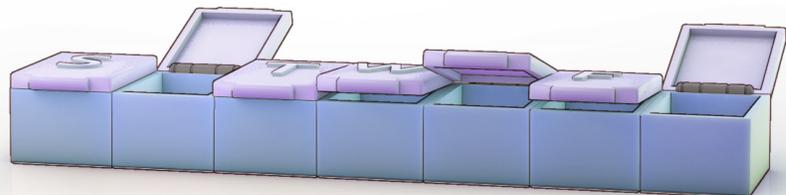
- Amiodarone is an anti-arrhythmic medication. Amiodarone prevents irregular heartbeats and promotes a regular heart rhythm.

Angiotensin-Converting-Enzyme (ACE) Inhibitors

- ACE inhibitors are used to treat hypertension (high blood pressure), to prevent heart failure following a heart attack, and to reduce the risk of heart attack, stroke, and death in patients who are at an increased risk for these problems.
- *Some examples of ACE inhibitor medications are Altace, Vasotec, Lisinopril, Prinivil, Captopril, and Capoten.*

Coumadin®

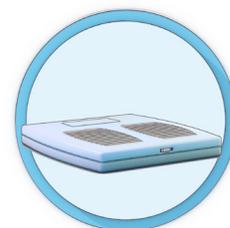
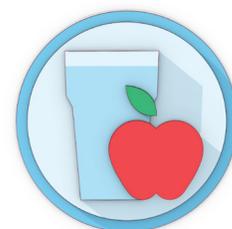
- Patients who have a mechanical heart valve must take medication to prevent blood clots from forming around the valve. This medicine, called Coumadin®, is often referred to as a blood thinner.
- If you are prescribed Coumadin®, it is recommended that you wear a Medic Alert identification bracelet. Before going home, you will be given additional information about lab draw, INR levels, dietary restrictions, and signs and symptoms.



Your Recovery

General Information

- Take your **medicines** as prescribed. Your nurse will review what medications to take after surgery. These may be different than what you took before surgery. Always carry a list in your wallet.
- **Tylenol®** is the only over-the-counter medication advised at this time for pain and slight temperature.
- It is not unusual to have difficulty **sleeping** at night. You may also experience vivid dreams. Taking Tylenol® or pain medication may help.
- It is not unusual to have sweating spells.
- Avoid **constipation**. Straining is very stressful on the heart. Start with a healthy fiber rich diet and use over-the-counter aids as needed. Examples include Miralax and Milk of Magnesia.
- Often, it takes time to get your **appetite** back. Food may not smell good. Eating properly is important for healing. Try smaller more frequent meals.
- It is best to **avoid alcohol**, especially when you are recuperating. Later, if you choose to drink, follow the American Heart Association guidelines. It recommends no more than two beers, or 8oz of wine, or 2 ounces of hard liquor in a 24 hour period. For women, it is half this amount.
- Use your **incentive spirometer** 4 to 6 times per day until you see the surgeon for the first follow up visit. Do 10 breaths each time you use the machine. This will help open up the lungs and prevent pneumonia and fever, and make you breath easier.
- Your **weight** may be increased after surgery due to fluid retention. It is normal to continue to lose this fluid retention weight. **Weigh** yourself every morning before eating, after urinating, in the same clothes and on the same scale. However, report to your doctor if you gain 5 pounds in a week.



Following **heart valve surgery**, there is an increased risk of developing bacterial infections of the heart, called **Subacute Bacterial Endocarditis (SBE)**. To prevent this, you will need to take antibiotics for procedures like dental work and colonoscopy for the rest of your life. Always tell you dentist and physicians that you have had heart valve surgery so they may prescribe the correct antibiotic.

Fatigue and Emotions

- You will be recovering emotionally as well as physically from heart surgery. It is normal to have days where your spirits are down and you feel depressed. If this lingers more than 4-6 weeks, medical attention may be needed and you should discuss this with your family doctor.
- Mild shortness of breath and feeling tired is not uncommon. Plan rest periods or short naps. Balance activity and rest. Good nutrition, exercise, relaxation, meditation and spirituality help.

Be Prepared

- The day your family member goes home is a very busy day. There is a lot to learn, so plan on spending a few hours at the hospital.
 - Be prepared! Stock up on groceries, have clean sheets on the bed and get a good night sleep. Remember, you will also need to stop by your pharmacy on the way home to pick up prescriptions.
-

Times to Call Your Surgeon

- A **fever** of 101 degrees.
- **Weight gain** of 2-3 pounds over night or 5 pounds in a week.
- Your **incisions** become beefy red, feel hot, have colored drainage or become more painful.
- You feel unusual pressure at the incision or the incision begins to separate.
- There is green discharge or odor coming from the incision site.
- Unusual **dizziness** or feel your heart is racing or beating fast or irregular.
- Increased **shortness of breath** with activity.



Times to Go to the Emergency Room

- Fever over **101 degrees**, with shaking chills, vomiting.
- **Signs of stroke**: Slurred speech, uneven smile, numbness or weakness on one side of your body.
- **Shortness of breath** at rest.
- **Chest pain**, or angina pain, call 911.

At Home

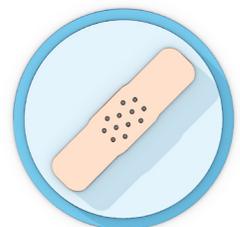
General Incision Care After Surgery

- Check your incisions every day for **signs of infection** such as unusual redness, swelling, pain or cloudy drainage.
- Provide good **hand washing** and a clean environment. Avoid yard work or swimming in a lake or pool.
- After 24 hours, you may remove any **dressings** that are still on. However, **steri-strips** are to stay in place until they fall off.
- Take your **temperature** daily. The best time is late afternoon. If your temperature goes over 101 degrees, call our office. For fevers less than 101, you may take Tylenol®.
- You may **shower**. During your shower, face away from the showerhead and have the water stream down your back. Avoid tub baths, hot tubs and pools. Wash your incisions with a clean, separate wash cloth. Use a mild soap and warm water and pat dry. Gently pat dry with a clean towel each time.
- Do not apply any **lotions** or ointments or powders. Let all scabs heal naturally.
- Your **incisions** may appear uneven, or have a lump at the top. This will improve over time.
- Your incisions may be tender, bruised, scabbed, numb and may itch. **Do not scratch.** Keep your hands off!
- If the mammary artery in your chest was used for a bypass, you may notice **chest numbness/heaviness** on the left side. This will go away in a few months.
- Keep **pets** away from incisions to prevent infections.



Care of Your Leg and Chest Incisions

- Care for your **leg incision** as described in general incision care.
- **Avoid crossing your legs** or sitting in one position or standing for long periods of time.
- Check the legs for swelling. **Elevate** your legs when sitting to help decrease swelling.
- Chest incisions and chest tubes sites are washed with soap. Do not apply soap directly to the incision. If the site is draining, you may apply a band-aid or gauze. Chest tube sites may drain for several weeks. Remember to keep them clean and apply clean dressing.



Home Recovery From Heart Surgery

Everyone recovers from heart surgery at a different rate. You will feel better each week. Full recovery may take 1-2 months. Before leaving the hospital, you will either be scheduled for a follow-up visit with your heart surgeon or be asked to contact your surgeon's office to schedule your follow-up visit. You will also be instructed when to make an appointment with your cardiologist. Always bring a list of your medications to every office visit.

Activity and Exercise after Traditional Surgery

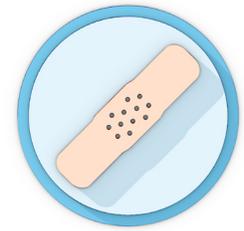
- It takes **8-12 weeks** for your breastbone to completely heal. Strong wire sutures support the bone during healing.
- Do not push, pull or lift anything over **10 pounds** until seen by your surgeon on a follow-up appointment. Avoid carrying children, groceries, suitcases or moving furniture.
- **Avoid "twisting"** actions. Keep upper body motions even. It is not recommended that you sleep completely on your side. You may use a small back support such as a pillow.
- **Do not drive a car**, or ride a motorcycle or outdoor bicycle for at least one month, or until your surgeon says it is OK. Ask at your first post-operative visit. You may go on short trips as a passenger in a car. Be sure to wear your seat belt and stop to stretch your legs every couple hours. Flying in airplanes will be determined by your surgeon.
- You may feel discomfort, numbness or tingling in your chest. This should gradually go away.
- You may experience **muscle discomfort** or tightness in your shoulders and upper back. This is normal and will get better over time. Good posture will greatly improve this. You may take prescribed pain medicine or Tylenol® to help relieve the discomfort. If you need pain medication refills, you need to contact the office.· You may **climb stairs** if you feel steady on your feet. Take your time and go slowly. Stop and rest a few minutes if you get tired.
- Walk to the kitchen for your **meals**. You may help prepare your meals and do the dishes.
- Return to **light housework** such as making your bed or light dusting.
- You may attend **social activities**, attend church, meet friends or dine out when you feel ready. Plan short outings at first. Avoid close crowds and sick people.



Recovery from Surgery - Robotic or Minimally Invasive

Going Home After Robotic Surgery

- You may **shower** and wash your incisions with antibacterial soap. Do not apply any ointments or lotions to the incisions.
- Keep your **incisions clean** – For one month, avoid heavy yard work, public gyms, swimming pools, saunas, lake water, and bath tubs. Wash your hands frequently!
- Your incisions are covered with a shiny “skin glue” called **Dermabond**. Please **DO NOT** scrub it off when taking a shower. It will slowly wear off in the next couple weeks.
- You may go home with a **black stitch** at your chest tube site. This stitch will be removed at the office visit. Wash the site with anti-bacterial soap. If the site is draining, you may apply a band-aid or gauze. It is normal for chest tubes to drain for several weeks. Remember to keep them clean and apply clean dressing.
- For a couple weeks, you may have some numbness or strange tingling sensations in the chest. Bruising is also common. You may feel a ridge under the groin incision which will flatten out over time.



Activity and Exercise after Robotic Surgery

- The first week, do not lift, push, or pull objects over **5-10 pounds**. You may prepare meals, do dishes, light loads of laundry, office work, go up and down stairs, and resume sexual activity when you feel comfortable.
- After a week, you may increase lifting up to **25 pounds**. Gradually resume house work, exercise and sporting activities as you feel comfortable.
- After **one month**, there are no activity restrictions. You may resume all activities and exercise. Often, heart surgery allows you to be a more active person!
- If you did not have an exercise program, begin by **walking 5-10 minutes** twice a day. Increase your walking time 1-3 minutes every day. The goal is to walk 30-45 minutes several days a week.
- Your doctor will discuss returning to **work and driving** at your first office visit.



Manage Your Risk Factors

Continue to keep your heart healthy by controlling the risk factors that cause heart disease.



· **Diabetes:** High blood sugar can cause damage to the arteries.



· **High blood pressure:** High blood pressure makes the heart work harder and causes injury to the lining of the arteries.



· **High cholesterol:** Cholesterol is a fat that is found in the blood. High cholesterol levels can increase blockages in the heart arteries.



· **Overweight:** Excess weight makes the heart strain to pump blood through the body.



· **Smoking/Tobacco Use:** Nicotine has serious damaging effects on the arteries throughout the body. For more information on quitting visit www.smokefree.gov, or call Georgia Tobacco Quit Line at 1-877-270-STOP.



· **Stress, Anger, Depression:** These emotions can lower your peace of mind, raise heart rate, blood pressure, and even cholesterol.



· **Lack of Exercise:** Regular exercise strengthens the heart and greatly reduces the risk of heart disease.

Resources for additional information*

www.americanheart.org - search topics such as exercise, emotions, cholesterol, etc.

www.diabetes.org - for diabetes related topics

www.nhlbi.nih.gov - search any of these risk factors and DASH diet

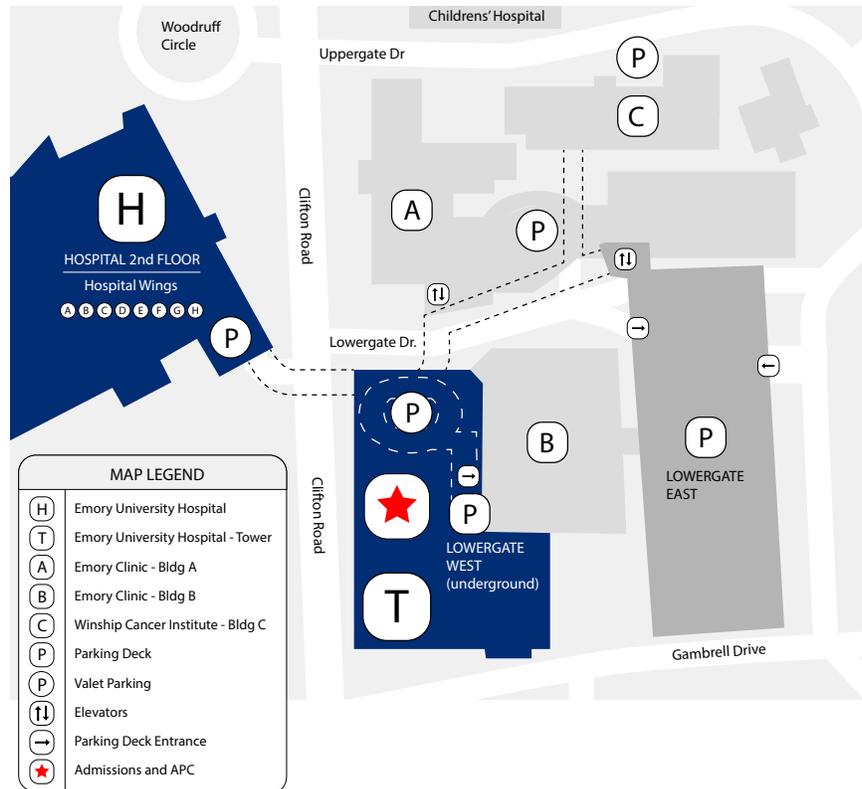
www.eatright.org

www.nutrition.gov

*This page contains links to other websites with information about cardiovascular diseases. We hope you find these sites helpful, but please remember, we do not control or endorse the information presented on these websites, nor do these sites endorse the information contained here.

Hospital Map

Emory University Hospital
3rd Floor Surgical Reception
1365 Clifton Road NE
Atlanta, GA 30322



Parking

There are several parking options:

Self-Parking

- Lower Gate Visitor Parking Deck
Main hospital entrance on Clifton Road, directly behind Emory Clinic Building B
- Hourly Parking rates apply. Long-term parking cards are available in the main lobby (A-wing, 2nd floor of the hospital). Five-day cards are \$40.
- For more information, please contact 404-712-5619
- When you've been here 21 days, security provides on free ongoing valet parking pass. Legal next-of-kin can obtain the pass in the security office.

Valet Parking

- Main hospital entrance on Clifton Rd, on the south side of the hospital, 24 hours, 7 days a week. Valet charges cover parking and valet services.

Please ask the parking attendant for details on parking rates.

EMORY
HEALTHCARE

emoryhealthcare.org
404-778-7777