HEART SURGERY
What to expect before and after your surgery
Thank you for entrusting your cardiac care to Piedmont Healthcare. Our physicians and staff are dedicated to providing the best care possible. An important aspect of your care involves the education of you and your loved ones. This booklet has been created to help you care for yourself before surgery as well as what to expect while you are in the hospital and how to care for yourself after leaving the hospital.

Please note: If you are having heart surgery for a VAD implant or heart transplant, your care will differ from the information in this book. You will receive additional education materials regarding your recovery.

In addition to this book, you may find the following resources helpful:

- **TIGR video system:** Piedmont Atlanta Hospital has an educational video system called TIGR you may use free of charge while you are in the hospital. Ask your nurse for more details.
- **www.piedmontheart.org**
- **www.americanheart.org**
- **www.choosemyplate.gov**
- **Piedmont’s You Tube Channel** (can be accessed from www.piedmontheart.org)
- **Georgia Tobacco Quit Line:** 1.877.270.STOP (7867)

The information in this book provides general education material for informational purposes only. It is not intended to substitute for the advice of your physician. Please always follow your physician’s specific advice.
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**EDUCATION CHECKLIST**
Ask your doctor or nurse if you do not understand the following.

**Before surgery:**
- Read at least pages 1-17 of this book.
- Watch the video: “Preparing For Heart Surgery” (home DVD, website, TIGR system).
- Review the Cardiac Surgery Patient Recovery Pathway. (see page 5)
- Practice your incentive breathing and coughing. (see page 15)
- Use the special ointment for your nose as directed.
- Use the special mouthwash as directed.
- Bathe with wipes as directed. (see page 14)
- Bring a list of all your medications.
- Bring your pacemaker or defibrillator ID card with you (if you have an implanted device).
- Read and sign your consent.
- Advanced directive (living will, healthcare power of attorney) (bring a copy with you to the hospital).
- Leave valuables at home.

**While on 3 South:** (these need to be done in order to leave the hospital)
- Read at least pages 18-40 of this book.
- Watch the video: “Leaving the Hospital After Heart Surgery” on the TIGR video system.
- Review the Cardiac Surgery Patient Recovery Pathway. (see page 5)
- Attend Recovery from Open Heart Surgery Discharge Class. Families are encouraged to attend class too!
- Understand the purpose and how to take all of your medicines.
- Use your incentive breathing device every hour while you are awake (10 deep breaths every hour). Don’t forget coughing too! (see page 15)
- Ask for help to sit in a chair for all meals.
- Ask for help to walk in the halls 3-4 times per day.
- Your nurse or respiratory therapist will help to decrease your oxygen as tolerated. Your goal is to be off oxygen before discharge from the hospital.
- Your chest drains will be removed by the nurse when you no longer need them.
- Your temporary pacing wires will be removed by your care team when you no longer need them.
- You will need to have a bowel movement before discharge.
- Your heart rhythm, heart rate, blood pressure, and blood sugar need to be stable before discharge.
- Your labs are stable or therapeutic.
## Cardiac Surgery Patient Recovery Pathway

### Before Surgery
- **Read “Heart Surgery” book**
- **Watch video, “Preparing For Heart Surgery”**
- **Read instructions on how to use the breathing device after surgery (also called an incentive spirometer)**
- **Complete mouth wash before surgery**
- **Complete surgical bath with CHG wipes**
- **Begin sips of clear liquids**
- **Sit in chair position and stand with help**

### Day 1
- **Urine drainage tube may be removed**
- **Several IV lines may be removed**
- **Pacing wires may be removed**
- **Breathing tube is removed**
- **Your breathing tube may not be removed**

#### When your breathing tube is removed:
- **Begin sips of clear liquids**
- **Sit in chair position and stand with help**
- **Begin planning for discharge: rehab and home health needs**
- **Review “Heart Surgery” book**
- **Ask your nurse to review all new medicine**

#### Understand/Describe:
- **Symptoms to report**
- **When to call the doctor**
- **Incision care**
- **New medicines**
- **Follow-up appointment**
- **Heart healthy diet**
- **Heart Surgery book**

### Day 2
- **Pacing wires may be removed**
- **Out of bed for all meals**
- **Move your bowels**
- **Have a stable heart rate, blood pressure, and blood sugar**
- **Have your pain under control to permit adequate breathing, movement, and sleep**

#### In the unit you will have:
- **Several IV lines**
- **Chest tubes**
- **Pacing wires**
- **Breathing tube**

#### Before surgery:
- **Read “Heart Surgery” book**
- **Watch video, “Preparing For Heart Surgery”**
- **Read instructions on how to use the breathing device after surgery (also called an incentive spirometer)**
- **Complete mouth wash before surgery**
- **Complete surgical bath with CHG wipes**
- **Bring your pacemaker or defibrillator card (if you have one)**
- **Bring a list of all current medications**
- **Do not bring any valuables**
- **Bring your advance directive if you have one (including living will and power of attorney information)**

### Day 3
- **Out of bed for all meals**
- **Walk 5 times today**
- **Move your bowels**
- **Have a stable heart rate, blood pressure, and blood sugar**
- **Have your pain under control to permit adequate breathing, movement, and sleep**

#### In the unit you will have:
- **Several IV lines**
- **Chest tubes**
- **Pacing wires**
- **Breathing tube**

#### Before surgery:
- **Read “Heart Surgery” book**
- **Watch video, “Preparing For Heart Surgery”**
- **Read instructions on how to use the breathing device after surgery (also called an incentive spirometer)**
- **Complete mouth wash before surgery**
- **Complete surgical bath with CHG wipes**
- **Bring your pacemaker or defibrillator card (if you have one)**
- **Bring a list of all current medications**
- **Do not bring any valuables**
- **Bring your advance directive if you have one (including living will and power of attorney information)**

### Day 4
- **Out of bed for all meals**
- **Walk 5 times today**
- **Move your bowels**
- **Have a stable heart rate, blood pressure, and blood sugar**
- **Have your pain under control to permit adequate breathing, movement, and sleep**

#### In the unit you will have:
- **Several IV lines**
- **Chest tubes**
- **Pacing wires**
- **Breathing tube**

#### Before surgery:
- **Read “Heart Surgery” book**
- **Watch video, “Preparing For Heart Surgery”**
- **Read instructions on how to use the breathing device after surgery (also called an incentive spirometer)**
- **Complete mouth wash before surgery**
- **Complete surgical bath with CHG wipes**
- **Bring your pacemaker or defibrillator card (if you have one)**
- **Bring a list of all current medications**
- **Do not bring any valuables**
- **Bring your advance directive if you have one (including living will and power of attorney information)**

### Home Recovery Pathway

**Recovery from heart surgery is a collaborative process between you and your care team. This pathway is only a guideline and your speed of recovery may vary.**

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FREQUENTLY ASKED QUESTIONS

Do I stop my Aspirin before surgery?
No, do not stop your aspirin prior to surgery. Take your aspirin as directed.

How long will I be in the hospital?
Every person is different. Most people are in the hospital 3-6 days after their surgery, but many people need to stay longer.

When can I return to work?
You will need to discuss this with your surgeon. It depends on what you do for a living. You will have a follow up appointment with your surgeon 3-4 weeks after surgery. This appointment is a good time to discuss when you can return to work.

When can I restart my “over-the-counter” supplements/herbals?
Usually you can restart these 3-4 weeks after surgery. However, many herbs and supplements interfere with certain medications. You should tell your doctor which herbs/supplements that you took before surgery, and ask if they will interfere with any of your prescription medications.

When can I restart my arthritis prescription drugs?
This varies from patient to patient. Please ask your doctor.

Why are certain medicines that I took before surgery stopped; why is the dose changed?
This is different for every patient and every medicine. Your doctor may determine that you need a different medicine or different dose while you are in the hospital. Sometimes, medicines are stopped to protect your liver or kidneys. Please talk with your doctor about your specific situation.

When can I drive after surgery?
You should not drive until your surgeon says it is okay. You will have a follow up appointment with your surgeon 3-4 weeks after surgery. This appointment is a good time to ask if you can start driving again.

When do I make an appointment with my Cardiologist and Primary Care doctor?
Primary Care – see your family doctor or primary care doctor 2 weeks after leaving the hospital
Cardiologist – see your cardiologist 3-4 weeks after leaving the hospital
Cardiac Surgeon – see your surgeon 3-4 weeks after leaving the hospital

Call to make your appointments as soon as you are discharged from the hospital.

When can I resume sexual activity?
What about sexual stimulant medicines?
Usually you can resume sexual activity 3-4 weeks after leaving the hospital. Please see the section about sexual activity in this book for more details. Please ask your doctor about sexual stimulant medicines or enhancers – DO NOT take these unless your doctor says it is okay.

What is the visitation of ICU (intensive care unit)?
Visitors are asked to check in with the patient representative in the ICU waiting room. He or she will escort you to the ICU for a visit. If it is after 7 p.m., please use the phone outside the ICU doors to call and ask if it is okay to come in for a visit. Please keep in mind that between 7 and 8 a.m. and 7 and 8 p.m. is when the nurses are changing shifts. The staff may be unavailable for updates or visits during this time. Visitors to the ICU should be over 12 years of age. Visitors are limited to 2 people at a time. No fresh fruits or flowers are allowed in the ICU.

Can my family stay in ICU?
No, your family cannot stay with you in the ICU.
Is there a place on campus my family can stay while I am in ICU?
During the day, your family may wait in the ICU waiting room. Piedmont Hospital has a small Guest Center with rooms for rent. Please call the main information desk at 404.605.3800 for more information. The main information desk also has information on local hotels in the area.

How many people can come to the pre-op area?
Please limit the number of family members that accompany you to the hospital the morning of your surgery. If your surgery is scheduled for 0730, you will be asked to arrive at 0500. Your family and clergy should be with you at that time. There is no family visitation after 0620 for 0730 cases. Cases that occur later in the day, family and clergy will be able to visit after the anesthesia team has seen you, however please note that you will have already received sedation.

What do I do if I experience chest pain or other symptoms prior to surgery?
If you have chest discomfort, shortness of breath, or other symptoms that led you to have this surgery: Sit down and rest. If the symptoms are not gone after 5 minutes of rest, call 911.

What do I need to bring to the hospital?
You should bring your list of medicines, a copy of your advanced directive, and any ID cards for implanted devices that you may have. You should wear your dentures, eye glasses, and hearing aides in on the morning of surgery. Please bring protective storage cases for these items with you, so we may give them to your family to hold until you are ready to put them back on after surgery.

If you had an appointment for pre-op testing at the Admissions Testing Area, you will have already been pre-registered and will NOT need a picture ID or insurance card(s).

Do I need to fast for my pre-op testing at admissions?
You do not have to fast for your pre-op testing appointment in the Admissions Area. The nurse will need to collect a clean catch urine specimen from you, so please speak to a nurse prior to using the restroom.

Do I need to visit the dentist before surgery?
Regular dental cleanings and check-ups are an important part of your overall health. If you have any concerns or problems with your teeth or gums, please talk to your surgeon. You should probably see a dentist before surgery if something in your mouth does not feel right. If you are having valve surgery and have not had a dental check-up in the past 6 months, then you should see a dentist prior to scheduling your valve surgery.

Do I have to have a caregiver in place after surgery?
Yes, you will need someone to be with you at all times for the first 1-2 weeks after leaving the hospital. You will also need someone to drive you home from the hospital on the day you are discharged. Please have your ride arrive at the hospital by 11 a.m.

How long is my surgery?
Heart surgery usually takes 3-6 hours (sometimes longer). The actual surgery may not be that long, but you may be in the operating room for that length of time. Your family will receive updates from the patient representative during your operation.

Will I be able to climb stairs when I return home?
Yes, you should be able to go upstairs when you get home. You should NOT need a hospital bed or special sleeping arrangements if your bedroom is on an upper floor.
HOW THE HEART WORKS
Your heart is a muscular organ that pumps blood to all parts of your body. All parts of your body need oxygen and nutrients that are delivered by the blood. The inside of the heart is divided into four chambers. The upper chambers of the heart are called the atria; the lower chambers of the heart are called the ventricles. In between the atria and the ventricles are valves. The valves help direct blood flow in the proper direction.

Normal blood flow starts on the right side of your heart in the right atrium. Blood then passes through the tricuspid valve into the right ventricle. From the right ventricle blood is pumped through the pulmonic valve where it then enters the lungs. In the lungs, the blood receives oxygen and carbon dioxide is removed. Oxygenated blood leaves the lungs through pulmonary veins and travels back to the heart where it enters the left atrium. From the left atrium it passes through the mitral valve and enters the left ventricle. From the left ventricle blood is pumped through the aortic valve into the aorta. The aorta delivers oxygenated blood to your entire body. Then the blood returns to the heart through the peripheral veins to the right atrium, and the cycle begins once again.

CORONARY ARTERY DISEASE
The heart requires a supply of oxygen just like all other organs and muscles. The heart has its own set of arteries to deliver blood, called the coronary arteries. The coronary arteries branch off the aorta. There are three main coronary arteries with many branches. These arteries lay on the outer surface of the heart and carry oxygen to the heart muscle. If the coronary arteries are blocked or narrowed, the heart muscle may not receive enough oxygen. When the coronary arteries are blocked or narrowed this is called Coronary Artery Disease (CAD) or Coronary Heart Disease (CHD). This can cause angina (chest discomfort), damage to the cells of the heart muscle, a heart attack, or even sudden cardiac death.
**Atherosclerosis** is a buildup of plaque (fatty substances that are made up of cholesterol and other particles) in blood vessels. When this buildup occurs in the coronary arteries, it is called coronary artery disease (CAD). This buildup of plaque damages the lining of the artery walls and causes the arteries to be stiff (less able to expand). As the plaque buildup gets worse, it can narrow the artery. This reduces the blood flow to the heart muscle. Plaque can also rupture (crack open), tearing the lining of the artery. Blood clots form around the rupture site. This can completely block the artery, and the heart muscle below the blockage does not get any oxygen. When this happens, it is called a heart attack (myocardial infarction, MI). Lack of oxygen to the heart muscle causes damage to the muscle and can decrease the heart's ability to pump blood.

**HEART VALVE DISEASE**

Normally, your four heart valves are thin and smooth with one directional blood flow through the heart chambers. Scarring or thickening of the valves can occur from birth defects, infection, rheumatic and scarlet fever. These changes can make the valves harder to open (stenosis) or not close all the way (insufficiency). The mitral and aortic valves are most affected by these changes. Symptoms may include palpitations with an irregular heartbeat, shortness of breath, swelling, coughing, and fatigue (extreme tiredness).

**Bacterial Endocarditis**

This is a very serious infection of the heart valves and/or inner lining of the heart (endocardium). It can damage or destroy the heart valves. Endocarditis may happen when bacteria enter the bloodstream during infection, dental work, surgery, or IV drug abuse. You are at risk for endocarditis if you have a heart defect, heart valve disease or have had heart valve surgery. Check with your doctor prior to dental work and any major or minor surgeries/procedures. They may prescribe antibiotics pre-procedure. Symptoms of endocarditis may include fever, chills, sweating, tiredness or loss of appetite. Call your doctor if the symptoms don’t go away within 2 or 3 days.
It is important to understand what heart surgery is about and what you can expect. These next few pages will give you an idea of what it is like.

Coronary artery bypass graft surgery and valve surgery are the most common types of heart surgery. Other heart surgeries are repair of aneurysms and congenital heart defects. Typically the heart-lung or bypass machine is used to pump for the heart and to add oxygen for the lungs while surgery is being performed.

**CORONARY ARTERY BYPASS GRAFT SURGERY (CABG)**

A coronary artery bypass graft is performed to improve blood flow in blocked arteries. This relieves symptoms of angina or chest pain. During coronary artery bypass graft surgery, typically a vein (the saphenous vein) is removed from the leg to be used for part of the bypasses. An artery (internal mammary or IMA) is usually taken from the inside of the chest wall to be used as well. The vein is typically removed endoscopically by a small incision which is made near the knee. One end of the vein is sewn on the aorta to establish blood flow and the other end is attached below the blocked area. The same principle is used with the artery, but it remains attached to its initial arterial source for blood flow.

Once the bypass is placed, the blood flow will be rerouted around the area of the blockage. This allows oxygen to get to the area of the heart that is below the blockage, and relieves symptoms. Many patients worry about the removal of the vein from their leg. There is no need for concern as the remaining venous system will compensate for the vein that has been removed.

**VALVE SURGERY**

There are four valves in your heart that function as one way doors, allowing blood to flow in and out of the chambers. Valve repair or replacement surgery is performed when a valve is damaged or scarred. A damaged or scarred valve does not open and close properly. Inappropriately functioning heart valves can lead to enlargement of the chambers of the heart which can lead to congestive heart failure.

Typically the aortic valve will need to be replaced as it is rarely able to be repaired because it is a high pressure valve. The mitral and tricuspid valves very commonly can be repaired using your native valve.
There are two types of valves which are used for replacement. The first is a tissue valve, which are typically bovine or porcine. The second is a mechanical valve which is made of a type of carbon metal. People who receive a mechanical valve must take a blood thinner called coumadin or warfarin. Your surgeon will review your specific medical history as well as lifestyle and make a recommendation for the appropriate type of valve to be used.

**ATRIAL SEPTAL DEFECT**
An atrial septal defect forms when the wall between the upper chambers (the atria) does not close completely. This allows blood to flow inappropriately. The defect is repaired with a patch during surgery.

**AORTIC ANEURYSMS**
The aorta is a major blood vessel in your body that carries blood to the body’s vital organs. An aortic aneurysm is an an abnormal bulge that occurs in the wall of the vessel. The area can then become weakened and develop a tear which is a life threatening emergency.

Some causes are chronically high blood pressure, congenital conditions such as Marfans disease or a bicuspid aortic valve. Symptoms of an aneurysm can include: acute onset of chest pain, pain between the shoulder blades, abdominal pain, shortness of breath.

During surgery to repair the aneurysm, the weakened area is removed and replaced with a synthetic tube called a graft.

**MYXOMA**
A myxoma is a mass or tumor of the heart. They can develop at any age and are more common in women than men. Typically they grow in the left upper chamber of the heart and are most often benign. They are removed from the chamber in the heart and a patch is used if necessary.
• **Office visit:** You may have an appointment with your surgeon in his/her office to discuss and plan your surgery.

• **Admissions testing appointment:** You will have a scheduled pre-op appointment with the admissions testing nurse. During this time, you will complete your paperwork for your admission to the hospital. You will also have labs drawn and any x-rays or ultrasounds that are needed before surgery. The admissions nurse will go over instructions on when to arrive at the hospital on the day of your surgery. You will also learn about what you need to do at home to prepare for your surgery (special bathing, incentive breathing, etc.).

• **Inpatient (in the hospital before your surgery):** Many people are already in the hospital when their surgery is scheduled. All of your tests and labs that need to be done prior to surgery will be done in the hospital. Your surgery team and nurses will give you information about the surgery and answer any questions you may have. In addition to this book, there are videos to watch free of charge in your hospital room about what to expect before and after your surgery.

**THE NIGHT BEFORE YOUR SURGERY**

• **If you are at home:**
  - Nothing to eat or drink after midnight (no smoking, no chewing tobacco, breath mints, or gum either)
  - Medicines: Follow instructions given to you from the surgeon’s office or pre-op (admissions testing area) appointment.
  - Bathe with CHG wipes and follow the instructions carefully. Do not shower again or wipe the CHG off after applying, allow to air-dry. (see page 14)
  - DO NOT shave your chest, groin, underarms, or legs. This will be done in the operating room as needed.
  - Use your Bactroban as directed (ointment for nose).
  - Practice your incentive breathing and coughing. (see page 15)

• **If you are in the hospital:**
  - Do not eat or drink anything after midnight (no smoking, chewing tobacco, breath mints, or gum either)
  - Do not take any of your own medicines, your nurse will give you the needed medicines
  - Bathe with CHG wipes (see page 14 for instructions).
  - DO NOT shave your chest, groin, underarms, or legs. This will be done in the operating room as needed.
  - Your nurse will bring your Bactroban to use (ointment for nose).
  - Practice your incentive breathing and coughing. (see page 15)
  - If you have diabetes or your blood sugar has been high, you will have an insulin drip (IV insulin) started the night before surgery. This will continue for 24-48 hours after surgery. Tightly controlling blood sugar before and after surgery decreases the chance of infection and promotes healing.
THE MORNING OF YOUR SURGERY

• If you are coming from home
  - When you arrive to the pre-op area the nurse will have you wipe down with CHG wipes again as well as brush your teeth with a CHG toothbrush when you arrive to pre-op.
  - Medicines: Follow instructions given to you from the surgeon’s office or pre-op (admissions testing area) appointment.
  - Use Bactroban as directed (ointment for nose).
  - DO NOT shave your chest, groin, underarms, or legs. This will be done in the operating room as needed.
  - Leave early and arrive at the hospital at the time you are directed. Come to the Main Admissions area.

• If you are in the hospital
  - Bathe with CHG wipes. (see page 14)
  - DO NOT shave your chest, groin, underarms, or legs. This will be done in the operating room as needed.
  - Your nurse will bring you a special CHG mouthwash and toothbrush to use. Your nurse will bring your Bactroban ointment (for nose).
  - Your nurse will give you any medications that you should have before surgery
  - Someone will come from surgical services to take you to the pre-op area. Your family may walk down with you.

Your family will be directed to the open heart surgery waiting room when you go back to the pre-op area. They will be given updates throughout your surgery by one of the patient representatives. They will meet with your surgeon after the surgery is over for an update. They will be allowed to visit you a few hours after your surgery is over.
CHLORHEXIDINE GLUCONATE (CHG) WIPE INSTRUCTIONS FOR PATIENT USE

Preparing the Skin before Surgery
Preparing or “prepping” skin before surgery can reduce the risk of infection at the surgical site. To make the process easier, Piedmont Healthcare has chosen disposable cloths moistened with a rinse-free, 2% Chlorhexidine Gluconate (CHG), which is an antiseptic solution.

DO NOT USE ON THE FACE

Prepping your skin the night before surgery:
• The night before your surgery, please take a shower if you are able to and then do not apply lotions, moisturizers or make-up to your body.
• If you usually shave your legs/underarms, do not do so within seven days of your surgery.
• Wait at least one (1) hour after showering to apply the CHG cloths.
• Use one clean cloth to prep each area of the body in order as shown in steps 1 through 6. Wipe each area in a back-and-forth motion for about 30 seconds. Be sure to wipe each area thoroughly. Assistance may be required.
• Use all 6 cloths in the packages.
• Do not allow this product to come in contact with your eyes, ears, mouth, and mucous membranes.
• Do not rinse or apply any lotions, moisturizers or make-up after prepping.
• Allow your skin to air dry. Do not rinse off (There may be a temporary “tacky feeling” until solution is completely dry; about 3-5 minutes).
• Discard cloths in trash can. Do not flush.
• DO NOT SHOWER THE MORNING OF YOUR SURGERY. You will receive an additional six (6) cloths the morning of your surgery.

Note: If redness, rash and/or burning should occur, discontinue use and wash skin.

To open the packages: Remove cellophane film and discard. Using scissors cut off end seal of package or tear package open.

STEPS:
Cloth #1 – Wipe your neck and chest.

Cloth #2 – Wipe both arms, starting each with the shoulder and ending at the fingertips. Be sure to thoroughly wipe the arm pit areas.

Cloth #3 – Wipe your right and left hip followed by your groin area. Be sure to wipe folds in the abdominal and groin areas.

Cloth #4 – Wipe the front of both legs starting at the thigh and ending at the toes.

Cloth #5 – Wipe your back starting at the base of your neck and ending at your waist line. Cover as much area as possible. Assistance may be required.

Cloth #6 – Wipe the back of both legs, starting at the heels and ending at the buttocks.
Using your incentive spirometer after surgery will help keep your lungs clear while you are recovering from surgery.

You should practice your incentive spirometer before surgery as well.

Using the incentive spirometer after surgery may also:
- Reduce your need for oxygen
- Reduce soreness from surgery
- Reduce your length of stay in the hospital
- Prevent lung infections

**How to use the incentive spirometer**
- Sit on the edge of your bed if possible, or sit up as far as you can in bed.
- Hold the incentive spirometer in an upright position
- Place the mouthpiece in your mouth and seal your lips tightly around it.
- Breathe in slowly and as deeply as possible, raising the blue piston toward the top of the column. The blue coach indicator should be in the blue outlined area.
- Hold your breath as long as possible (at least 5 seconds). Allow the piston to fall to the bottom of the column.
- Rest for a few seconds and repeat the steps above at least 10 times every hour while you are awake.
- Position the blue indicator on the left side of the spirometer to show your best effort. Use the indicator as a goal to work toward during repetition.
- After each set of 10 deep breaths, cough to help ensure your lungs are clear. Support your incision when coughing by placing a pillow firmly against your incision.
- Once you are able to get out of bed, walk in the hallway and continue to cough and deep breathe well.

**Coughing**
Anesthesia and surgery may make your cough weak. Follow this technique to cough effectively. This will help eliminate blockages to your breathing, and it will help keep your lungs clear. You should perform this cough after completing your 10 breaths on the incentive spirometer (or any time you feel you need to clear your lungs).

**How to cough**
- Sit up tall.
- Take a big deep breath in from your belly.
- Hug your pillow tight and cough 2 times.
  - The first cough raises secretions (phlegm or fluid)
  - The second cough helps you to expel it.
    (Have tissues ready; wash your hands after)

**Splinting your incision**
- Apply pressure over your incision by crossing your arms over a pillow and grasp your elbows in your hands.
- This is good for coughing, laughing, and sneezing
AFTER YOUR SURGERY

CARDIOVASCULAR INTENSIVE CARE UNIT (ICU RED)

• This is where you will be immediately after surgery.

• Usually you will stay in ICU Red for 12-24 hours.

• Waking Up – You may hear machines running or beeping. You will feel the breathing tube in your mouth. Do Not pull on the tube.

• Breathing Tube – This is called the endotracheal tube. This is connected to a machine (ventilator) that breathes for you. Your care team will make sure you can breathe on your own before the tube is removed. Usually the tube is removed a few hours after surgery.
  ○ You won’t be able to talk while the tube is in, but you can nod your head for yes or no questions.
  ○ Once the tube is removed, you will still have oxygen either through a mask or nasal prongs.
  ○ Your throat may be sore. Your voice may be hoarse. Both will get better in a few days.

• Pain – It is normal to have pain after surgery. Medicine will be given to help manage your pain. You might not be completely pain free after surgery, but it will be kept at a level that you can tolerate. Please tell your nurses when you are hurting. You want to control the pain so that you can breathe easy, get up and move around, and rest/sleep easy. Do not be afraid to take the pain medicine when you are hurting.

• Heart Monitor – You will have electrodes attached to your chest. These are attached to a device that monitors your heart rhythm and heart rate.

• IV’s – You may have several IV sites after surgery. These may be in your arm, hand, or neck. You may see several bags of IV medicine hanging near your bed. These medicines will be stopped when you no longer need them. The large IV's in your neck will be removed when you no longer need them. A small IV in your arm or hand will be left in until just before you leave the hospital.

• Chest Drainage Tubes – These are put in during surgery to drain excess blood and fluid. They will be removed once the drainage has slowed or stopped.

• Urine Drainage Tube (Bladder Catheter) – This is a small tube that collects your urine. This will be removed as soon as possible.

• Pacing Wires (temporary) – These are wires that are attached to your heart; the wires come out of your chest in the same area as your chest drains. These wires can be hooked up to a pacemaker if needed. Once you no longer need the wires, the physician’s assistant or nurse practitioner will remove the wires.

• Family Visits – Your family will be able to visit you in ICU-Red for short periods of time. Your family will need to contact the patient representative in the waiting room to make sure it is okay to come in and visit. (After 7pm, family should use the phone on the wall by the ICU doors to call and see if it is okay to come in for a visit).

When your family first visits you, they should know:
  ○ You may look pale and feel cold & clammy
  ○ You may look swollen
  ○ They may talk with you, touch you/hold your hand
  ○ Visits should be kept short; only 2 people at a time

• Getting out of bed – You may stand up with the help of your nurse for a short time, you might be asked to march in place.

• When your surgeon decides you are ready, you will be transferred to the cardiac step-down unit (3 South)
CARDIAC STEP-DOWN UNIT (3 SOUTH)

- You will move to a room on 3 south from ICU Red
- You will usually stay another 3-5 days on 3 south before leaving the hospital

Recovery from heart surgery is a team effort between you and your care team. This pathway is only a guideline and the speed of your recovery may be different:

<table>
<thead>
<tr>
<th>DAY # 1</th>
<th>DAY #2</th>
<th>DAY #3</th>
<th>YOU MAY GO HOME WHEN YOU:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(FIRST DAY AFTER SURGERY)</td>
<td>Pacing wires may be removed</td>
<td>Drains may be removed</td>
<td>Walk 5 minutes in the hallway</td>
</tr>
<tr>
<td></td>
<td>Out of bed (to chair) for all meals</td>
<td>Out of bed (to chair) for all meals</td>
<td>Move your bowels</td>
</tr>
<tr>
<td></td>
<td>Walk 3 times today (in the hallway)</td>
<td>Walk 4 times today (in the hallway)</td>
<td>Have a stable heart rate, blood pressure, and blood sugar</td>
</tr>
<tr>
<td></td>
<td>Use incentive breathing device every hour x 10 breaths, while awake (10 deep breaths every hour)</td>
<td>Use incentive breathing device every hour x 10 breaths, while awake (10 deep breaths every hour)</td>
<td>Have your pain under control to permit adequate breathing, movement, and sleep</td>
</tr>
<tr>
<td></td>
<td>Self bath</td>
<td>Self bath</td>
<td>Lab values are back to normal</td>
</tr>
<tr>
<td></td>
<td>Take laxative if no bowel movement</td>
<td>Laxative as needed</td>
<td>Oxygen is off</td>
</tr>
<tr>
<td></td>
<td>Take pain medicine by mouth</td>
<td>Take pain medicine by mouth</td>
<td>All drains and pacing wires are out.</td>
</tr>
<tr>
<td></td>
<td>You will demonstrate proper incision care</td>
<td>Attend open heart discharge class if you did not attend on Day #2</td>
<td><strong>Understand and describe:</strong></td>
</tr>
<tr>
<td></td>
<td>Attend Open heart surgery discharge class with your family</td>
<td>Review Heart Surgery Book</td>
<td>- When to call the doctor</td>
</tr>
<tr>
<td></td>
<td>Review Heart Surgery Book</td>
<td>Watch “Leaving the Hospital After Heart Surgery” video if needed</td>
<td>- Incision care</td>
</tr>
<tr>
<td></td>
<td>Ask your nurse to review all new medications</td>
<td>Planning for discharge</td>
<td>- New medicines</td>
</tr>
<tr>
<td></td>
<td>Begin planning for discharge: rehab and home health needs</td>
<td></td>
<td>- Follow-up appointments</td>
</tr>
</tbody>
</table>

You may have a physical therapist come and work with you for movement and walking. It is very important to work with the therapist when they come to your room. This will help build your strength and endurance. Working with physical therapy allows you and your care team to plan for any help you may need when you leave the hospital.
After your leave the hospital, you may return home. If you need it, arrangements can be made for a nurse, physical therapist, occupational therapist, or nurse aide to come to your house for home visits. The case managers in the hospital will work with you and your family to arrange these home services if they are needed.

Someone should stay with you at home for the first 1-2 weeks after you leave the hospital. It is not a good idea to live alone right after heart surgery.

Some people may go to an acute rehab or sub-acute rehab facility for 1-2 weeks before returning home (if a little more recovery time is needed). The case managers in the hospital will work with you and your family to arrange rehab if you need rehab.

**RECOVERY TIME**

**How long will recovery take?**

Recovery after heart surgery takes about 4-6 weeks from the time you leave the hospital. You should not plan anything strenuous during this time.

- Gradually return to your previous activity level, but pace yourself. Don’t try to do too much at one time.
- Take frequent rest breaks. If you feel yourself breathing hard and fast: stop, sit down, and rest until your breathing returns to normal

**PAIN**

**How bad will the pain be?**

- It is normal to have pain after surgery. Each day the pain will lessen.
- It is normal to have muscle pain or tightness in your shoulders and upper back (between your shoulder blades). This will also get better as time goes on.
- You may feel numbness to the left of your incision if an artery in your chest was used for bypass surgery (this is called the mammary artery)
- Most patients are given a prescription for pain medicine when they leave the hospital. Take your pain medicine as directed when you are hurting, but don’t take it more often than is prescribed.

- Most prescription pain medications contain acetaminophen (Tylenol). Do NOT take both Tylenol and prescription pain medicine at the same time.
- You can take regular strength acetaminophen (Tylenol) instead of your prescription pain medicine if you want. This is a good way to gradually decrease your use of the strong pain medicine. (But DO NOT take both the prescribed pain pill and acetaminophen (Tylenol) at the same time)
- You should not take more than 4000 mg (4 grams) of acetaminophen (Tylenol) in a 24 hour period.
- Check with your physician before taking ANY medications that are not prescribed to you.

**ACTIVITY RESTRICTIONS**

**What activities are restricted during my recovery?**

- No driving until your surgeon says it is okay. You will have a follow up appointment with your surgeon in 3-4 weeks. Ask about driving then. (No driving includes lawnmowers, golf carts, tractors, motorcycles, cars, four-wheelers, etc)
- No returning to work until your surgeon says it is okay. You will have a follow up appointment with your surgeon in 3-4 weeks. Discuss returning to work at this appointment.
- You should not lift, push, pull, or carry anything over 10 pounds. Your breastbone (sternum) takes about 6 weeks to heal. Putting strain on your chest will keep it from healing.
**Sternal Precautions (Breastbone)**

- It is normal to have an occasional “clicking noise” or sensation in your chest during the first few days after surgery. This should occur less often with time and go away completely after 2 weeks. If it gets worse, call your surgeon.

- Your breastbone takes about 6 weeks to heal. To keep chest wounds closed and promote healing of your breastbone, follow these guidelines for the next 6 weeks:
  - No lifting, pushing, or pulling greater than 10 pounds
  - No heavy yard work for now (no mowing, planting gardens, raking leaves, etc)
  - No heavy house work for now (vacuuming, lifting baskets of laundry, etc)
  - Don’t tense your upper body (like trying to open a tight jar lid)
  - Don’t lift heavy bags, purses, or suitcases
  - Don’t push/pull heavy doors
  - No strenuous sports (golf, bowling, swimming, tennis, hunting, fishing, etc)
  - Avoid lifting heavy pets. Don’t let a dog on a leash pull on your arms.
  - Don’t lift children. Have toddlers crawl up to you and sit next to you. You just don’t want to pull/lift them with your arms.

- If you have a lower chair, use pillows in the seat. Rock 3 times before standing and balance with your arms. (DO NOT push with arms.)

- Avoid activities that make you reach over your head or towards your back.

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**Mobility**

Try not to put all of your body weight onto your hands and arms. This puts strain on the middle of your chest.

**Sitting up (from a lying position)**

- Keep both arms in front of you
- Then, bend both knees towards your chest and roll to your side.
- Move your legs off the bed and sit up propping with your arms (use both arms evenly or push with your elbow).
- DO NOT use side rails.

**Scooting forward in a chair**

- Lean back and push back against the chair (using your back)
- Slide buttocks forward or shift your weight side-to-side using both arms equally

**Standing up**

- Sit at edge of chair with feet flat on the floor and underneath you
- You may balance with your hands on the bed/chair, but DO NOT push with them.
- Lean forward and stand up using your legs. (You may want to rock-up)
- If people are helping you up— they should NOT pull your hands. (To return to the chair, reach back with both arms on the arm rests, but put the weight/force through your legs.)

**If you are in a wheelchair**

DO NOT roll your wheelchair with your arms. Use your legs or have someone push you.

If you are using a rolling walker, roll it, DO NOT lift it.
**SLEEPING**

**Can I sleep on my side?**

You can safely sleep on your back or either side. Some people are comfortable on their side, but for some this may not be comfortable. For side lying, you may find it comfortable to place a pillow between your knees.

You should not sleep on your stomach for 4-6 weeks. This puts pressure on your breastbone and incision.

You may sleep lying flat or propped with pillows. Do what feels comfortable.

You may have difficulty sleeping the first few nights after leaving the hospital. This will improve with time. A pain pill at bedtime might help. Try not to nap (sleep) late in the afternoon.

**RIDING IN A CAR**

**When can I ride in a car?**

You may ride in a car any time. Short trips will be better at first. For example: a trip to the drugstore and back home. Pace yourself, don’t do too much at once.

Wear your seat belt when you ride in the car. Use a pillow or rolled towel as a cushion between your seat belt and chest.

If your vehicle has passenger-side front airbags, you may want to ride in the back seat for a few weeks. If you do sit in the front seat, have your family member push the front seat all the way back. Your chest should be at least 10 inches from the dash (where the airbag comes out). Do not disable/turn-off the front airbags.

Please talk with your surgeon about any long trips or vacations. It is usually best to put these off until after your follow-up appointment with your surgeon.

If your surgeon approves and you do take a long car ride or airplane trip, exercise your legs every hour.

- Get out of the car every hour and take a walk (at least 5 minutes).
- If on an airplane, get up and walk around the plane every hour if possible.
- While riding in a car or plane, move your ankles around, flex and extend feet, raise the knees, etc.
CLIMBING STAIRS
Can I climb stairs?
You may climb stairs. Take them slow and steady. One step at a time, one foot at a time. Don’t pull on hand rails, just use hand rails for balance.

Have a family member place a chair at the top of the stairs. That way if you need to sit and rest after climbing the stairs, you can.

Once you are up the stairs, stay up for a while. Once you are down the stairs, stay down for a while.

SWELLING/BLOOD CLOT PREVENTION
How do I prevent swelling and blood clots in my legs?
• Avoid sitting in one position or standing for prolonged periods of time. Move around/take a short walk every hour while you are awake.
• Elevate legs when possible; prop them up on a recliner, sofa, coffee table, etc; use 2-3 pillows under your ankles in order to get your feet up high (When elevating your feet, try to raise your toes higher than your nose)
• Flex and extend ankles; circle your ankles (draw a circle in the air with your toes)
• Do not cross your legs or ankles
• Swelling should decrease after elevating your legs, if it becomes worse—call you doctor

APPETITE
Why don’t I have much of an appetite?
• It is normal to have a decreased appetite after surgery. Sometimes food does not taste right either. This should return to normal in about 2 weeks.
• Keep in mind that nutrition plays an important role in healing after surgery. Frequent small meals throughout the day will help you get the calories you need to heal.
• Eat a well-balanced diet. Try to eat a variety of foods every day (grains, vegetables, fruits, meats, beans, dairy).
• Increasing your activity will improve your appetite.
• If you are on a special diet (for example: for diabetes or kidney disease), stay on your meal plan as directed.
• You may have problems with constipation. You may use a laxative of your choice. Add more fruits, fiber and juice to your diet to help with constipation. Try not to strain/bear down for a bowel movement.

SUPPORT STOCKINGS
Will I have to wear support stockings (TED hose)?
• You will only need these if your surgeon prescribes them. If they are prescribed, wear them during the day while you are awake for at least two (2) weeks after leaving the hospital.
• The stockings will help decrease swelling, especially if you have a leg incision.
• Remove your stockings at bedtime
• Wash the stockings with mild soap and water; hang them on a line or towel bar to dry.
• You will need someone to help put them on and take them off
EMOTIONS

Why am I so emotional?
It is common to have a let-down feeling after surgery. Some people feel depressed and are tearful. Others may be a little short-tempered. You may have mood swings. This is a normal part of recovery. You should feel back to yourself in 3-4 weeks. If you do not feel like you are “bouncing back” to yourself, please tell your doctor.

Leaving the hospital will help. Make sure to get your rest and exercise. Short trips are okay (to the store, to church/religious services). All of this will help you get back to normal. Just pace yourself and don’t do too much at once.

Even though you cannot do the strenuous things around the house, you can do some things. You could help fold the laundry (you just can’t lift the whole basket). You could help prepare meals. It might not be a good idea to stand up and cook the whole meal, but you could help with one or two parts. These types of activities will help you feel like you are getting back to normal as well.

SEX

What about sexual activity?
• Sexual activity may resume after 3-4 weeks, or when you can climb two flights of stairs without difficulty.
• Avoid putting weight on your arms or chest.
• Do NOT use any sexual stimulants (Viagra, Cialis, Levitra, etc.) without first checking with your doctor.
Can I get my incisions wet?
You may get your incisions wet 24 hours after the last chest drain is pulled. While in the hospital, you will have a self sponge bath.

Once you are at home, you may take a shower or a sponge bath. Either way, start washing your incisions every day with soap and water once you are out of the hospital.

Be Gentle. No scrubbing!

No tub baths, swimming pools, or hot tubs until you are completely healed.

Do not use any lotions, creams, ointments, or powders on your incisions until they are completely healed. (No Neosporin, no peroxide, no scar cream, etc.)

How do I clean my incisions?
• Gently remove any gauze dressings from the chest drain site and/or IV sites before your 1st wash.
• Use a mild soap without any fragrances or moisturizers/lotions. Dial and Ivory are two good choices.
• Use warm water, not real hot and not real cold.
• Let the water from the shower hit on your back first. Then let the water gently run over your shoulder to get your chest wet. You need to get your incisions wet to clean them properly.
• Very gently with a clean washcloth or a clean hand: wash from the top of your chest incision to the bottom of your incision. Do this for 3-4 strokes (on each side of the incision and down the middle). Do not scrub from side-to-side. You should wash in the same direction as the incision.
• Gently wash the chest drain incisions. Gently wash the leg incisions (if you have them).
• Wash all incisions first. Then, wash the rest of your body.
• After rinsing, gently pat all incisions dry with a clean towel.
• That is all you need to do! Keep your incisions clean and dry.

There is no need to keep any area covered with a bandage unless you are still seeing some drainage from any of the incisions. If you see drainage, cover the area with clean gauze (and tape) after your shower or sponge bath.

You may have a lump at the top of your chest incision. This will go away within several months.

Notes about your scar: Your incisions may sunburn easily. Be sure to protect your incisions from sunlight during the first year after surgery. The scar will get darker if exposed to sun.

CALL YOU DOCTOR IF YOU SEE OR HAVE:
• Increased redness or swelling around your incisions
• Increased pain around your incisions
• Increased drainage from your incisions
• Drainage that has a yellow/green/brown color or an odor
• Warmth/heat around the incisions

SPECIAL SITUATIONS
If you have steri-strips on your incision (little paper skin tapes) – you may wash over them. They will fall off as you heal. If they have not all fallen off one (1) week after you leave the hospital, you may remove them.

If you have sutures (stitches) or staples (metal clips) – these will be removed by a visiting nurse that will come out to your home. Or, you may have an appointment to have them removed. Make sure you know when they should be removed. Don’t get these wet until they are removed.
DRESS
What should I wear? How should I dress?
- Wear comfortable, loose fitting clothes (nothing that puts pressure on your incision).
- For women, you may find a supportive bra helpful. Avoid underwires or front closure bras. Don’t reach with your arms to the back, this will pull and stretch the incision.
- You should get up every day and get dressed. This will help you get back into a normal routine.

MEDICINES
What medicines do I need to take?
- Your nurse will review your medicines with you before you leave the hospital.
- You will receive prescriptions for any medicines that are new for you.
- You will be told which medicines from home to continue taking.
- You will be told which medicines from home to stop taking.
- You will be taught how to check your blood sugar and give yourself insulin if you are going home on insulin.

MEDICINES – KEY POINTS TO REMEMBER!
- Take your medicines exactly as directed.
- Do not stop any medicine without talking to your doctor first.
- If you feel you are having side effects from a medicine, please call your doctor.
- If you feel a medicine is not working for you, please call your doctor.
- Check with your doctor before taking any additional medicines (herbs, over-the-counter, etc).
FOLLOW-UP APPOINTMENT

When do I follow up with my doctors?
• You should see your primary care doctor (family doctor) 2 weeks after leaving the hospital.
• You should see your cardiologist 3-4 weeks after leaving the hospital.
• You should see your cardiac surgeon 3-4 weeks after leaving the hospital.
• Keep all other appointments as directed.
• If you are taking Coumadin/warfarin—you will have an appointment to have your blood checked.
  Make sure to keep this appointment!

Call to make your appointments as soon as you are discharged from the hospital.

MY QUESTIONS TO ASK
You may want to make a list of questions to take with you to your doctor, especially your surgeon, for example:
  Can I start driving now?
  When can I go back to work?
  When can I play golf?
  Do I need to keep taking the same medicines?
You may start light exercise 1-2 days after leaving the hospital, but follow these guidelines:

- Start with two walks per day. Each walk should be only 5 minutes at first. You may add one minute every other day to your walks.
- Continue to add one minute to your walks every other day until you reach two 20-minute walks. This will take about 4 weeks to build up to two 20-minute walks.
- Walk on level ground at an easy pace until your doctor says you can do more. You should be able to “walk and talk” at the same time.
- Warm-up before exercising and cool-down after exercising. Warm-up/Cool-down exercises are on the next page.
- If you feel short of breath, dizzy, lightheaded, or extremely tired- stop the exercise and rest.
- Exercise indoors if it is very hot or very cold (above 80ºF or below 40ºF). Department stores or shopping malls are a great place to walk indoors!
- You may exercise on a stationary bike instead of walking. Use your legs only, no arm exercising yet. You should still be at an easy pace.
- Once you are cleared by your doctor for regular exercise, build up slowly to 30-60 minutes of aerobic activity 5-6 days per week.

Do this exercise routine twice per day:

<table>
<thead>
<tr>
<th>DAY # (out of the hospital)</th>
<th>1-2</th>
<th>3-4</th>
<th>5-6</th>
<th>7-8</th>
<th>9-10</th>
<th>11-12</th>
<th>13-14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warm-up Exercises</td>
<td>10 reps each</td>
<td>10 reps each</td>
<td>10 reps each</td>
<td>10 reps each</td>
<td>10 reps each</td>
<td>10 reps each</td>
<td>10 reps each</td>
</tr>
<tr>
<td>Walk/Stationary Bike</td>
<td>5 minutes</td>
<td>6 minutes</td>
<td>7 minutes</td>
<td>8 minutes</td>
<td>9 minutes</td>
<td>10 minutes</td>
<td>11 minutes</td>
</tr>
<tr>
<td>Cool-down Exercises</td>
<td>10 reps each</td>
<td>10 reps each</td>
<td>10 reps each</td>
<td>10 reps each</td>
<td>10 reps each</td>
<td>10 reps each</td>
<td>10 reps each</td>
</tr>
</tbody>
</table>

**MORE TIPS:**

- Do not increase exercise time if you have difficulty completing the previous exercise time.
- Avoid exercising immediately after meals or bathing—wait at least one hour.
- Wear loose-fitting, comfortable clothes and appropriate athletic shoes.
- If you temporarily stop your exercise program, resume your activity at a lower level than where you stopped.
- If you have been prescribed Nitroglycerin, carry it with you at all times.

**IT IS OKAY TO FEEL:**

- Mild breathlessness
- Mildly tired
- A pleasant sense of muscle use

**STOP IF YOU NOTICE:**

- Chest discomfort
- Excessive shortness of breath
- Feeling more tired than expected
- Dizziness
- Irregular heartbeat
- Nausea
WARM-UP AND COOL-DOWN EXERCISES
The following exercises are to be done twice daily; before and after your daily walks. While sitting in a chair, perform 10 repetitions of each exercise.

1. Lift your arms up overhead. Stop when you feel tension in your sternum. Return arms to your side. (Arms up and down)

2. Starting with hands on opposite shoulders, reach arms out to the side. Stop when you feel tension in your sternum. Return arms to the starting position. Do NOT stretch/reach arms behind you. (Arms crossed, then out to the side)

3. Begin with both feet flat on the floor. Pull your toes up, lifting them off the floor. Push your toes back down to the floor. Then raise your heels up off the floor. (Raise the toes, then raise the heels)

4. Begin with both feet flat on the floor. Raise one knee up towards your chest; then, lower your foot back down to the floor. Now do the other knee. (Alternate raising your knees up)

5. Slowly straighten your knee, lifting your foot off the floor. Allow knee to bend as foot returns to the floor. Now do the other leg. (Alternate raising the feet/legs slowly)

THINGS TO REMEMBER!
- Do not hold your breath during any exercise.
- Exercise slowly and rhythmically, resting your arms and legs after each repetition.
- Rest at least an hour after eating/bathing before exercising.
- Rest 20 minutes before and after exercising.
- If you feel unusually tired, or have nausea, dizziness, shortness of breath, or chest discomfort—Stop exercising and rest. Notify your nurse or doctor if your symptoms do not go away after 5 minutes of rest.
CHECKLIST FOR THE FIRST 4 WEEKS OUT OF THE HOSPITAL

“I’m out of the hospital, now what do I do?”
Use this checklist for the first 4 weeks after you leave the hospital:

Every day:

☐ Remember not to lift, push, pull, or carry anything over 10 pounds

☐ Weigh yourself every day (at the same time each day). Call your surgeon if you have gained 3 or more pounds in a day or 5 or more pounds in one week. Fast weight gain may mean you are retaining fluid (water weight).

☐ Take your medicines every day as directed.

☐ Check your temperature around 4 pm every day. Call your surgeon if you ever have a fever above 101.5°F. A fever can be a sign of an infection.

☐ Continue to use your incentive breathing device. Take 10 slow, deep breaths every hour during the daytime (while you are awake). This keeps your lungs expanded and prevents lung infections.

☐ Wash your incisions daily with soap and water. Please see the section on page 23 called “How do I clean my incisions” for more details. Call your surgeon for signs of infection such as redness, swelling, warmth, or drainage.

☐ Promote circulation/prevent blood clots/reduce swelling. Move your legs or take a short walk every hour during the daytime while you are awake. Elevate feet. Don’t cross your legs. See page 21 for details.

☐ Exercise twice each day. Follow the “Home Exercise Plan” on pages 26-27. If a physical therapist is coming to your home, they may give you a different plan. If you are going to rehab after the hospital, the physical therapists at rehab will be working with you to develop an exercise plan.

☐ Rest periods: plan to have a 30-45 minute rest period twice each day. You may sleep if you wish or just rest. This is a good time to elevate your feet and have some quiet time. Avoid sleeping late in the afternoon or evening; this might keep you from sleeping well at night.

☐ Remember no driving, no working. Take it easy. Light activities are best. Books, puzzles, board games, easy walks, cards, movies, or needlework may be a good way to pass the time.

☐ Stop any activity immediately if you feel short of breath, irregular heartbeats, faint/dizzy, or you have chest pain. Rest until the symptoms (feelings) go away. If they do not go away, call your doctor.

☐ Remember, it takes 4-6 weeks to start feeling better.
When do I call my doctor?
Call your doctor if you have:

- Increased redness, swelling, drainage, heat or pain on your incision(s)
- Incision drainage that has a color or odor (foul smell, yellow/green discharge)
- Fever above 101.5°F (or a lower fever lasting more than 2 days)
- Weight gain of 3 pounds or more in one day (or weight gain of 5 pounds or more in one week)
- Increased swelling in your feet, ankles, legs, hands, arms, or abdomen
- Increased shortness of breath

WHEN TO CALL 911
CALL 911 or go to the Emergency Room if you have:

- Chest pain or tightness not relieved by 5 minutes of rest (and not associated with your incision)
- A heart rate that is very fast or very slow
- Irregular heart beat
- Blood pressure that is very high or very low
- Shortness of breath not relieved by rest
- A sudden severe headache
- Sudden numbness or weakness in arms or legs
- Fainting spells, dizziness, or confusion
- Blurred vision
- Any other symptom that is new and affecting your well-being
What is Cardiac Rehabilitation?
• Education for lifestyle modification and exercise
• Supervised by a variety of health care professionals and requires physician referral
• Your physician will refer you to the program and will remain in charge of your care
• An outpatient service at the hospital or clinic
• Meets two to three times a week
• Supervised progressive exercise/activity

Nutrition recommendations
• Blood pressure and cholesterol control
• Smoking cessation
• Stress management
• Weight management
• Diabetes control

Benefits of Participation
• Improved functional abilities
• Improved quality of life
• Reduction of lifestyle related risks
• Increased knowledge of disease process and prevention strategies
• Improved ability to perform daily life activities
• Increased knowledge of heart disease
• Increased self-esteem and confidence
• Improved adherence to healthy lifestyle choices
• Slow the progression of cardiovascular disease and reduce the chances of having a heart attack

Who Is Eligible for Cardiac Rehab?
• Anyone with heart disease or risk factors for heart disease would benefit from cardiac rehab.
• Medicare and private insurances often cover cardiac rehab. Please call the cardiac rehab of your choice and the staff will be able to tell you what your insurance covers.
• “Maintenance” programs are designed to help patients continue their commitment to exercise. These programs usually are not covered by insurance.

Why is Cardiac Rehab Important?
Cardiac Rehab will give you the tools, knowledge, and motivation needed to fight the progression of cardiovascular disease with your “heart and soul”!

See the following page(s) to find the Cardiac Rehab Program closest to where you live or work.

If you would like more information about Outpatient Cardiac Rehab at Piedmont Hospital please call us at 404.605.1150.
Cardiac Rehab is a program that meets 3 times per week for exercise/risk factor management classes. You must first see your cardiologist or primary care doctor for your follow-up appointment and referral. You may need to have a stress test before you begin. Please call the rehab program of your choice. Your insurance may cover cardiac rehab.

<table>
<thead>
<tr>
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<th>CITY</th>
<th>ORGANIZATION</th>
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<td>Anderson, SC</td>
<td>Anderson, SC</td>
<td>AnMed Health</td>
<td>864.512.1505</td>
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<td>Baldwin</td>
<td>Milledgeville</td>
<td>Oconee Regional Medical Center</td>
<td>478.454.3945</td>
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<td>Bartow</td>
<td>Cartersville</td>
<td>Harbin Clinic</td>
<td>770.382.2580 ext. 7049</td>
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<td>Bibb</td>
<td>Macon</td>
<td>Coliseum Medical Center</td>
<td>478.464.1326</td>
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<td>Bibb</td>
<td>Macon</td>
<td>Medical Center of Central Georgia</td>
<td>478.633.5090 or 478.633.9090</td>
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<td>Carroll</td>
<td>Carrollton</td>
<td>Tanner Medical Center</td>
<td>770.838.8289</td>
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<td>Catoosa/Dade</td>
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<td>Hutcheson Medical Center</td>
<td>706.858.2233</td>
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<td>Chatham</td>
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<td>Memorial University Medical Center</td>
<td>912.350.4041</td>
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<tr>
<td>Chatham</td>
<td>Savannah</td>
<td>St. Joseph's / Candler</td>
<td>912.819.7340 or 912.819.8811</td>
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<td>Cherokee</td>
<td>Canton</td>
<td>Piedmont Mountainside Hospital</td>
<td>706.253.2540</td>
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<td>Clarke</td>
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<td>Cobb</td>
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<td>Emory University Hospital</td>
<td>404.778.2850 or 404.778.2716</td>
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<td>Hall</td>
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<td>Houston</td>
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<td>Houston Health Complex</td>
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<td>Lowndes</td>
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<td>Cherokee, NC</td>
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<td>Muscogee</td>
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<td>Newton</td>
<td>Covington</td>
<td>Newton Medical Center, The Fitness Forum</td>
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<td>Polk</td>
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<td>Putnam</td>
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<td>Richmond</td>
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<td>706.721.9055</td>
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<tr>
<td>Richmond</td>
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<td>University Hospital</td>
<td>706.774.3278 or 706.774.5877</td>
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<td>Rockdale</td>
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<td>Washington</td>
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<td>Watauga, NC</td>
<td>Boone, NC</td>
<td>Appalachian State University/ Watauga Medical Center</td>
<td>828.262.6305 or 828.268.9054</td>
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<td>Whitfield</td>
<td>Dalton</td>
<td>Bradley Wellness Center at Hamilton Medical Center</td>
<td>706.278.9355</td>
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</table>
RISK FACTORS FOR HEART DISEASE

Many factors can contribute to various types of heart disease. It is important to control and manage the ones that you can.

Some of the major risk factors are:
- Age
- Family History
- Gender
- Race
- Tobacco Use
- Lack of Exercise
- Unhealthy Diet
- Diabetes
- High Blood Pressure
- High Cholesterol
- Overweight/Obesity
- High Stress Level

Some risk factors are beyond your control such as age, gender, family history, and race. However, you do have control over tobacco use, diet, and exercise. Many risk factors can be managed closely. These include diabetes, high blood pressure, cholesterol, body weight, and stress.

TOBACCO

Stop all Tobacco Use

All products with nicotine can cause damage to the blood vessels in the body. Avoid second-hand smoke as well.
- No smoking cigarettes, cigars, or pipes
- No chewing, dipping, or snuff

Talk to your doctor about medications that may help you quit.

Ask your doctor before using nicotine gum, patches, or electronic cigarettes. Remember, even if your doctor says you can use these to help you quit—eventually you want to wean off of all tobacco completely!

Resources to help you quit:
- Unite Georgia Tobacco Quit Line:
  - 1.877.270.STOP
- American Lung Association:
  - 1.800.LUNG.USA
  - www.lungusa.org
- American Cancer Society:
  - 1.800.ACS.2345
  - www.cancer.org
- Piedmont Atlanta Hospital’s Pulmonary Rehabilitation Freedom from Smoking Program:
  - 404.605.3564
  - 1.866.900.4321
**EXERCISE**
Exercise is an important part of a healthy lifestyle. You should begin slowly and gradually increase your time and intensity. For the first 4-6 weeks after heart surgery, exercise at an easy pace. You should be able to “walk and talk” at the same time. You should not feel breathless while exercising.

Eventually, you should work up to 40-60 minutes of moderate daily exercise. A brisk walk is perfect! However, for now, keep your exercise at an easy pace.

Follow the “Home Exercise Plan” on pages 26-27 to help you get started.

A cardiac rehab program can help you learn to make exercise a part of your life. See page 30 for more information.

**HEALTHY DIET**
Good nutrition is a very important part of your heart health. The next few pages highlight some guidelines for a well-balanced, heart-healthy diet.

A healthy, balanced diet includes a variety of foods that are low in saturated fat, trans fat, cholesterol, salt (sodium), and added sugars.

Ask your nurse or doctor about meeting with a dietician during your time at the hospital.

A good heart healthy cookbook may be helpful to have! The American Heart Association has published a variety of cookbooks that are available at your local bookstore or online.

Talk to your doctor about a referral to meet with a dietician after leaving the hospital. Many hospitals have outpatient nutrition services to further your education.

**BEING ACTIVE CAN:**
- Lower blood pressure
- Lower heart rate
- Lower bad cholesterol
- Raise good cholesterol
- Reduce body weight
- Improve Diabetes control
- Reduce risk of stroke
- Reduce risk of heart attack and heart disease
- Decrease Stress
### 10 tips to a great plate

**choose MyPlate**

Making food choices for a healthy lifestyle can be as simple as using these 10 Tips. Use the ideas in this list to *balance your calories*, to choose foods to *eat more often*, and to cut back on foods to *eat less often*.

<table>
<thead>
<tr>
<th>Tip</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>1. <strong>balance calories</strong></td>
<td>Find out how many calories YOU need for a day as a first step in managing your weight. Go to <a href="http://www.ChooseMyPlate.gov">www.ChooseMyPlate.gov</a> to find your calorie level. Being physically active also helps you balance calories.</td>
</tr>
<tr>
<td>2. <strong>enjoy your food, but eat less</strong></td>
<td>Take the time to fully enjoy your food as you eat it. Eating too fast or when your attention is elsewhere may lead to eating too many calories. Pay attention to hunger and fullness cues before, during, and after meals. Use them to recognize when to eat and when you’ve had enough.</td>
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<tr>
<td>3. <strong>avoid oversized portions</strong></td>
<td>Use a smaller plate, bowl, and glass. Portion out foods before you eat. When eating out, choose a smaller size option, share a dish, or take home part of your meal.</td>
</tr>
<tr>
<td>4. <strong>foods to eat more often</strong></td>
<td>Eat more vegetables, fruits, whole grains, and fat-free or 1% milk and dairy products. These foods have the nutrients you need for health—including potassium, calcium, vitamin D, and fiber. Make them the basis for meals and snacks.</td>
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<tr>
<td>5. <strong>make half your plate fruits and vegetables</strong></td>
<td>Choose red, orange, and dark-green vegetables like tomatoes, sweet potatoes, and broccoli, along with other vegetables for your meals. Add fruit to meals as part of main or side dishes or as dessert.</td>
</tr>
<tr>
<td>6. <strong>switch to fat-free or low-fat (1%) milk</strong></td>
<td>They have the same amount of calcium and other essential nutrients as whole milk, but fewer calories and less saturated fat.</td>
</tr>
<tr>
<td>7. <strong>make half your grains whole grains</strong></td>
<td>To eat more whole grains, substitute a whole-grain product for a refined product—such as eating whole-wheat bread instead of white bread or brown rice instead of white rice.</td>
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<tr>
<td>8. <strong>foods to eat less often</strong></td>
<td>Cut back on foods high in solid fats, added sugars, and salt. They include cakes, cookies, ice cream, candies, sweetened drinks, pizza, and fatty meats like ribs, sausages, bacon, and hot dogs. Use these foods as occasional treats, not everyday foods.</td>
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<tr>
<td>9. <strong>compare sodium in foods</strong></td>
<td>Use the Nutrition Facts label to choose lower sodium versions of foods like soup, bread, and frozen meals. Select canned foods labeled “low sodium,” “reduced sodium,” or “no salt added.”</td>
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<tr>
<td>10. <strong>drink water instead of sugary drinks</strong></td>
<td>Cut calories by drinking water or unsweetened beverages. Soda, energy drinks, and sports drinks are a major source of added sugar, and calories, in American diets.</td>
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**Go to [www.ChooseMyPlate.gov](http://www.ChooseMyPlate.gov) for more information.**

**USDA**
United States Department of Agriculture
Center for Nutrition Policy and Promotion

**DG TipSheet No. 1**
June 2011
USDA is an equal opportunity provider and employer.
Choose a Low-Cholesterol, Heart Healthy Meal Plan

To get balance in your daily meal plan, you have to eat a variety of foods. One way to do this is to choose foods from the different food groups.

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<th>CHOOSE</th>
<th>GO EASY</th>
<th>AVOID</th>
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<td>Meat, poultry, fish, and shellfish</td>
<td>Lean cuts of meat with fat trimmed, chicken and turkey without the skin, fish</td>
<td>Boiled shrimp, low and no- fat luncheon meats, hot dogs (high sodium), breakfast meats</td>
<td>&quot;Prime&quot;-grade fatty cuts of meat, bacon, goose, duck, liver, hot dogs, sausage, regular luncheon meats, fried meats, organ meats</td>
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<tr>
<td>(up to 6 ounces/day)</td>
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<td>Dairy products</td>
<td>Skim milk, 1% milk, low-fat buttermilk, low-fat evaporated milk, non-fat milk, low-fat yogurt, cottage cheese, cheese labeled no more than 3 grams of fat per oz.</td>
<td>2% milk, yogurt, part-skim ricotta, part-skim or imitation hard cheese(part skim mozzarella), 'light' cream cheese, 'light' sour cream</td>
<td>Whole milk, cream, half and half, imitation milk products, whipped cream, custard style yogurt, whole milk ricotta, hard cheese (like Swiss, American muenster, cheddar), sour cream, cream cheese, ice cream</td>
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<tr>
<td>(2 servings/day)</td>
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<tr>
<td>I serving = 1 cup milk OR I oz. Cheese</td>
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<tr>
<td>Eggs</td>
<td>Egg whites, cholesterol- free Egg substitutes</td>
<td>Egg yolks (no more than 3 or 4 per week)</td>
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<tr>
<td>Fats and Oils</td>
<td>Olive, peanut, canola, safflower, tub (not stick) margarine with no Trans fat, nuts, seeds, and avocados. olives, natural peanut butter</td>
<td>Regular peanut butter, safflower, sunflower, sesame and soybean oil</td>
<td>Butter, lard, bacon fat, coconut, and palm kernel oil, regular margarine, regular salad dressing, regular mayonnaise</td>
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<td>(up to 6-7 teaspoons/day)</td>
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<tr>
<td>Breads, cereals, pasta, rice, dried peas, and beans</td>
<td>Most breads, bagels, english muffins, rice cakes, low-Fat crackers, hot and cold cereals, whole wheat pasta, brown rice, dried peas and beans</td>
<td>Low-fat pancakes, waffles, biscuits, muffins, cornbread (read label for low-fat information, low fat is 3 grams of fat or less), white rice, regular pasta</td>
<td>Croissants, sweet rolls, danish, doughnuts, crackers (made with saturated fats or Trans fat), granola type cereal, egg noodles, rice and pasta prepared with cream, butter, cheese sauces</td>
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<tr>
<td>(6-8 servings/day)</td>
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<tr>
<td>I serving = 1/2 cup 6 crackers I slice bread (Choose Whole-grain products)</td>
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<tr>
<td>Fruits and vegetables</td>
<td>Vegetables: Fresh, frozen, or low/no sodium canned. Fruits: Fresh, frozen (without added sugars), or canned in its own juices.</td>
<td></td>
<td>Vegetables and fruit prepared in butter, cream, cheese sauce or other saturated fats</td>
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<tr>
<td>(2-4 servings fruit/day and 3-5 servings vegetables/day)</td>
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<tr>
<td>Snacks</td>
<td>Sherbet, sorbet, Italian ice, frozen yogurt, angel food cake, popsicles, fig bars, cocoa powder, gingersnaps, hard candy, plain popcorn, pretzels, fruit juice, tea, coffee</td>
<td>Ice milk, fruit crisp and cobblers, homemade cakes, cookies, pies prepared with unsaturated fats</td>
<td>Ice cream, chocolate candy, potato chips, buttered popcorn, milkshakes, floats, eggnog, store bought pies, store bought frosted and pound cakes</td>
</tr>
<tr>
<td>(avoid too many sweets)</td>
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</table>
Do I need to cut all fats from my diet?
No, you do not need to cut fat completely out of your diet. The American Heart Association advises these fat guidelines for healthy Americans over age 2:
- Limit total fat intake to less than 25–35 percent of your total calories each day;
- Limit saturated fat intake to less than 7 percent of total daily calories;
- Limit trans fat intake to less than 1 percent of total daily calories;
- The remaining fat should come from sources of monounsaturated and polyunsaturated fats such as unsalted nuts and seeds, fish (especially oily fish, such as salmon, trout and herring, at least twice per week) and vegetable oils; and
- Limit cholesterol intake to less than 300 mg per day, for most people. If you have coronary heart disease or your LDL cholesterol level is 100 mg/dL or greater, limit your cholesterol intake to less than 200 milligrams a day.**

Unsaturated Fats
These are the GOOD fats. The better choice!
- Raises HDL “GOOD” Cholesterol
- Lowers LDL “BAD” Cholesterol

Examples of Unsaturated Fats

Monounsaturated:
- Olive oil/olives
- Corn oil
- Canola oil
- Peanut oil
- Avocados
- Cashews, almonds, most nuts

Polyunsaturated:
- Soybean oil
- Sunflower oil
- Safflower oil
- Vegetable oil
- Fish

Saturated Fats
These are the BAD fats. Limit your intake of these!
- Raises LDL “BAD” Cholesterol

Examples of Saturated Fats
- Lard
- Palm oil
- Coconut oil
- Red meat
- Butter
- Whole milk
- Egg yolks
- Cheese
- Poultry Skin
- Ice Cream

Transfats/Hydrogenated Oil
These are the WORST fats. Avoid these when possible!
- Raises LDL “BAD” Cholesterol
- Lowers HDL “GOOD” Cholesterol

Examples of Transfats/Hydrogenated Oils
- Stick margarine
- Vegetable shortening/Crisco
- Partially-hydrogenated oils
- Deep-fried chips
- Many fast foods
- Most commercially baked goods (cakes, pies, cookies, etc)

**Information from: http://www.heart.org/HEARTORG/Conditions/Cholesterol/PreventionTreatmentofHighCholesterol/Know-Your-Fats_UCM_305628_Article.jsp
**DIABETES AND HEART DISEASE**

Diabetes and heart disease go hand in hand. Heart disease is much more common in people with diabetes and it occurs earlier and progresses faster. In fact, when diagnosed with diabetes, a person is considered to have the same risk for heart attack as someone who already has a diagnosis of heart disease. Diabetes that is not well managed damages the blood vessels and nerves in your body. This results in eye and kidney damage, wounds that do not heal, heart attack and stroke. The most common complications of unmanaged diabetes are heart attack and stroke.

Diabetes is considered well managed when you follow the **ABCs** of diabetes treatment goals.

**A1C** is less than 7.
- This number (the A1C) reflects your average blood glucose over the past 2-3 months. Your doctor should run this test on you every 3–6 months.
- Blood glucose on a daily basis should be:
  - Less than 180, 2 hours after a meal
- Less than 90–130 before meals

**Blood pressure** is less than 130/80.
- High blood pressure is more common in people with diabetes. The combination of high blood pressure and high blood glucose leads to much greater risk for heart attack, stroke, kidney and eye problems.

**Cholesterol—Lipid Profile:**
- LDL: less than 100
- HDL: Men greater than 40; Women greater than 50
- Triglycerides: less than 150

**Other resources about diabetes:**
- Piedmont Atlanta’s Diabetes Resource Center
  - 404.605.3823
- Piedmont Fayette’s Diabetes Services
  - 770.719.7290
- Piedmont Henry’s Diabetes Services
  - 678.604.1040
- American Diabetes Association
  - 1.800.DIABETES
  - www.diabetes.org
  - www.changingdiabetes-us.com

**BLOOD PRESSURE**

High Blood Pressure is also called Hypertension. This is when the pressure inside your arteries is higher than normal. This causes wear & tear on the artery walls. Hypertension also makes your heart work harder to pump blood around the body.

**Normal Blood Pressure (for an adult)**
120 / 80

**Pre-Hypertension**
121-139 / 81-89

**High Blood Pressure (Hypertension)**
140 / 90 or higher (and it stays high over time)

**Ways to Lower Blood Pressure**
- Take your medicines if prescribed
- Have regular check-ups with your doctor
- Be Active, exercise regularly
- Stop all tobacco use
- Lose weight if you are overweight
- Eat a healthy diet
- Limit alcoholic beverages

**Moderate alcohol intake**
One (1) drink per day for women, and 1-2 drinks per day for men. It is best not to drink every day. No binge drinking!

One drink = 1 oz liquor
= 12 oz beer
= 4 oz wine

**NOTE:** There are some conditions where you should not drink alcohol at all. Please check with your doctor about your specific situation.
MAINTAIN A HEALTHY BODY WEIGHT

Being overweight or obese puts you at greater risk for:
• Heart disease
• Stroke
• Diabetes
• High cholesterol
• High blood pressure

Extra weight puts strain on your heart. It is important to maintain a healthy body weight to reduce your risk of heart disease as well as other diseases.

BMI stands for Body Mass Index*

This is a numerical value of your weight in relation to your height. BMIs are good indicators of healthy or unhealthy weights for adult men and women, regardless of body frame size.

- BMI between 18.5–25: healthy weight
- BMI less than 18.5: underweight
- BMI between 25–29.9: overweight
- BMI 30 or higher: obesity

To calculate your exact BMI value, multiply your weight in pounds by 703, divide by your height in inches, then divide again by your height in inches.**

\[
BMI = \frac{\text{(weight in lbs)} \times 703}{\text{(height in inches)}^2}
\]

You can also find a BMI calculator on the website: www.heart.org

CONTROL CHOLESTEROL

By now you have heard about high cholesterol levels, but you may not know exactly what cholesterol is and why abnormal levels can be so harmful. Your body needs some cholesterol to form cell membranes, some hormones, and other tissues. You get cholesterol from two sources: your liver and the food you eat. The liver produces 3/4 of the cholesterol needed by the body, so we only need 1/4 from food sources. The more saturated fat you eat, the more cholesterol your liver makes. The fat that you eat is digested and then sent to the liver, where it is metabolized and distributed to the body by cholesterol. Cholesterol cannot dissolve in the blood, so it is transported to and from cells by “bundles” of fat and protein called “lipoproteins.” They carry the digested fat from the liver throughout the body through blood vessels.

The Good vs. The Bad

- **LDL (low-density lipoprotein)** is the major cholesterol transporter in the blood and is commonly known as “bad” cholesterol. This is the sticky cholesterol that builds on artery walls and causes a buildup of plaque. Plaque is the hard substance that narrows the artery, which leads to coronary artery disease.

- **HDL (high-density lipoprotein)**, or the “good” cholesterol, carries about 1/3 to 1/4 of the blood cholesterol. Research has shown that HDL carries the sticky LDL away from the artery walls and back to the liver to be excreted and passed out of the body. HDL may also remove the excess cholesterol from established plaque, slowing the buildup on the artery walls.

- **Triglycerides** are the most common type of fat in the body. A high triglyceride level in combination with low HDL and/or high LDL has been shown to increase the rate of plaque buildup. Normal levels can vary by age and gender.

Controlling cholesterol continued on next page

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* Information from: http://www.heart.org/HEARTORG/GettingHealthy/WeightManagement/BodyMassIndex/Body-Mass-Index-BMI-Calculator_UCM_307849_Article.jsp

The Numbers Game
What should my numbers be?
• Total cholesterol lower than 200 mg/dL
• HDL greater than 40 mg/dL for men
• HDL greater than 50 mg/dL for women
• LDL lower than 100 mg/dL
  (This goal may change depending on how many other risk factors you have!)
• Triglycerides less than 150 mg/dL

My numbers
Date: ____________________________
My total cholesterol is: ____________________________
My LDL cholesterol is: ____________________________
My HDL cholesterol is: ____________________________
My triglyceride level is: ____________________________

WAYS TO LOWER CHOLESTEROL
• Take your medicines if prescribed
• Have regular check-ups with your doctor
• Be Active, exercise regularly
• Stop all tobacco use
• Lose weight if you are overweight
• Eat a healthy diet

MANAGE STRESS
In life, we can't always avoid stress. However, it is important to know what causes you stress and how to manage it.

Tips to reduce stress:
• Try to avoid stressful situations if possible. For example, try not to schedule appointments that will put you in traffic if traffic is one of your stressors.
• Think about how you should react to a stressful situation or person. Plan ahead if you know you will feel stress before it happens.
• Take time for yourself each day. (Even if it is only 15-20 minutes)
  o Sit quietly
  o Listen to music
  o Read a book or magazine
• Deep breathe or stop and count to ten
• Exercise
• Plan your day or week, so you feel organized and prepared
Angina (Angina Pectoris) – discomfort and/or other symptoms in any area from the umbilicus (belly button) to the ear lobes (chest, back, arms, jaw, neck, or shoulders); this discomfort occurs when the heart is not getting enough blood/oxygen

Arrhythmia (Dysrhythmia) – an abnormal heart rate or rhythm

Asystole – absence of a heartbeat

Atrium (plural-atria) – one of the two upper chambers of the heart; receives blood from the veins and squeezes it into a ventricle

AV Node (atrioventricular node) – cluster of cells between the atria and ventricles; the AV Node receives signals from the SA node and transmits them to the ventricles

Benign – not cancerous; not malignant

Bovine – of or pertaining to cattle, buffalo, kudus

Bradycardia – a heart rate slower that 60 beats per minute

Cardiac – having to do with the heart

Cardiac Arrest – the heart stops beating and causes sudden death if not corrected; ventricular fibrillation and ventricular tachycardia are the most common causes of cardiac arrest

Cardiac Catheterization (angiogram) – a procedure to diagnose heart problems; a small catheter is threaded into a blood vessel and guided into the heart; this test is used to look at the coronary arteries, valves, muscle action, and to measure ejection fraction

Cardiomyopathy – a disorder of the heart muscle; the heart muscle has a reduced ability to pump blood

Cardiopulmonary Resuscitation (CPR) – the act performed by one or two people to try to revive a person whose heart and breathing have stopped; CPR usually involves mouth-to-mouth ventilation and external chest compressions

Cardioversion – the process of converting an abnormal heart rhythm to a normal rhythm; this is done by delivering a synchronized electrical shock to the heart; the patient is usually sedated for this procedure

Catheter – a flexible or rigid hollow tube that can be inserted into a body cavity, vessel, or duct

Conduction – the transfer or transmission of signals from one place to another

Congestive Heart Failure (CHF) – when the heart is not able to adequately pump blood to the body’s organs and tissues

Contraction – when the heart muscle squeezes in order to pump blood; the heartbeat or pulse is the result of each contraction

Coronary Arteries – the arteries that lie on the surface of the heart; they provide the heart with oxygen and nutrients

Defibrillation – delivery of a shock (high energy) to the heart in order to stop ventricular fibrillation

Dysfunction: impaired functioning; not functioning normally

Dysrhythmia (Arrhythmia) – an abnormal heart rate or rhythm

Echocardiogram (echo) – a test that uses ultrasound to produce images of the heart; the movement of the heart, valve function, and size of the heart and chambers are studied

Ejection Fraction – the percentage of blood that is pumped out of the heart with each heartbeat; a normal ejection fraction is 55-70%; the ejection fraction is a way to measure the strength of the heart muscle
**Electrocardiogram (EKG)** – a recording or picture of the electrical activity in the heart

**Electrode** – a device that senses electrical signals from the heart

**Electrophysiology** – the study of the electrical conduction system of the heart

**Endoscopic Vein Harvesting** – a minimally invasive technique used to remove a vein from the body to use as a bypass graft. Only 2-3 very small incisions are needed. The technique uses special instruments that are long and thin; they are inserted through the small incisions in order to get to the vein.

**Fibrillation** – when the atria or ventricles quiver; a rapid and chaotic heart rhythm; little or no blood is pumped from the chamber that is fibrillating

**Heart Attack (Myocardial Infarction)** – injury or damage to the heart muscle because the heart cells are not getting oxygen

**Heart Block** – when the electrical signal in the heart is impaired; the signal is not conducted normally from the atria to the ventricles

**Heart Failure** – when the heart is not able to adequately pump blood to the body’s organs and tissues

**Heart Rate** – how many times the heart beats or contracts in one minute

**Intravenous (IV)** – inside the vein; a small catheter placed into a vein to deliver fluids or medications

**Life-threatening rhythms** – arrhythmias that can result in cardiac arrest or sudden death

**Myocardium** – the heart muscle

**Pacemaker** – a device that delivers an artificial electrical impulse which causes the heart to beat

**Palpitations** – a fluttering or pounding in the chest; a common symptom of many arrhythmias; usually due to a rapid or irregular heartbeat

**Pericardectomy** – surgical removal of part or most of the pericardium. Usually done by open-chest surgery. If you had this surgery, you should follow the same recovery guidelines that are discussed in this book.

**Pericardial Effusion** – too much fluid in the pericardial sac; fluid around the heart

**Pericardium** – a protective sac that surrounds the heart

**Porcine** – of or pertaining to swine or pig

**Rhythm** – the heartbeat’s pattern

**SA Node** – the sinoatrial node or sinus node; the natural pacemaker of the heart; a cluster of cells in the atria that normally start the electrical impulse which stimulates the heart to contract/beat

**Symptoms** – something a person feels or experiences with a health problem

**Synchrony** – two or more events happening at the same time

**Syncope** – fainting; passing out; losing consciousness momentarily due to lack of oxygen to the brain

**Tachycardia** – a heart rate greater than 100 beats per minute

**Valve** – a part of the heart that maintains blood flow in one direction through the heart; there are two atrioventricular (AV) valves between the atria and ventricles; there are two semilunar (SL) valves in the arteries leaving the heart

**Ventricles** – the two lower chambers of the heart; they perform the main “pumping” action of the heart; the left ventricle pumps blood to the body; the right ventricle pumps blood to the lungs

**Ventriculogram** – performed during a heart catheterization to study the ventricle; it involves and x-ray and injection of radiopaque dye into the ventricle; an estimation of the ejection fraction can be made during this procedure