Getting Ready for
Heart Surgery
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For more surgery information, please visit http://surgery.osu.edu/cardiac/patientcare. You can also visit https://patienteducation.osumc.edu for more patient education resources.

Talk to your doctor or health care team if you have any questions about your care.
The Library for Health Information is available to help you find more health information at (614) 293-3707 or e-mail: health-info@osu.edu.
Preparing for Your Heart Surgery

Weeks before surgery

- If you are having a valve procedure or an aortic aneurysm repair and you have your own teeth, you will need to see your dentist to make sure you are safe for surgery.
- If you are feeling ill or develop a new rash during the week before surgery, please call the surgeon’s office.
- If you are on blood thinners or antiplatelet medicines, please let your surgeon know in case this needs to be held before surgery. Examples are:
  - Brilinta (Ticagretor)
  - Coumadin (Warfarin)
  - Effient (Prasugrel)
  - Eliquis (Apixiban)
  - Lovenox (Enoxaparin)
  - Plavix (Clopidogrel)
  - Pletal (Cilostazol)
  - Pradaxa (Dabigatran)
  - Savaysa (Edoxaban)
  - Ticlid (Ticlopidine)
  - Xarelto (Rivaroxaban)
- If you smoke or use other tobacco products, please stop right away to avoid wound healing problems. There is a smoking cessation clinic available, if needed.

The night before surgery

- Do NOT eat or drink anything after midnight, including gum or mints.
- Wash from the neck down with the chlorhexidine (CHG) soap you were given. Please read the instructions, Getting Your Skin Ready for Surgery, on page 12 of this book.

Morning of surgery

Please bring these items with you:

- Phone number for the doctors and pharmacy you use.
- List of preferred home health agencies or rehabilitation centers.
- Your blood band in the Red Envelope given to you by the lab.
- Your incentive spirometer or breathing exerciser.
- Current copy of your medicine list or your bottles of medicines. Be sure to include any vitamins, herbals or other over the counter medicines.
- Your Living Will and Health Care Power of Attorney forms (if you have them)
- Comfortable clothing, such as a robe, slippers and toiletries.
- Do NOT bring jewelry, money or other valuables.
Planning for Recovery

Your care after leaving the hospital

You should have help available to you around the clock for the first few weeks after surgery. After surgery, you will not be as strong and will need someone to help you get in and out of bed, prepare meals, take you to appointments, get your medicines, help with your exercises and care for your incision.

Often the doctor cuts the breast bone or sternum to do heart surgery. It is wired back together after surgery. You will have limits on some activities for your safety and healing. For example, you will not be able to drive for at least 4 weeks after surgery until your doctor clears you to drive.

Plan for help after surgery

Our goal is to have our heart surgery patients return home from the hospital where they can recover in the comfort of a familiar environment. However, some patients may require home health services or a short stay in a skilled nursing or rehabilitation center.

If needed, we can provide you with a list of recommended care providers for home health services, skilled nursing facilities or rehab centers close to your home. We work closely with the listed companies to maintain a high level of care as you leave the hospital and continue your recovery. Our goal is to coordinate your care and reduce the chance of problems. By working together with you, your caregivers and your community care team, we aim to give you the care you need to recover as quickly as possible.

If you do not have benefits for home health services, skilled nursing facilities or rehab centers, or if you need further guidance, please call 614-293-5502 and select or ask to speak with case management, social work or your nurse navigator.

Talk to your insurance provider

Know your options to help you plan for your care after heart surgery.

If you have Medicare A or B:

- Ask for lists of nursing homes or home health services in your area.
- You can also get the lists online at www.Medicare.gov.

If you have private insurance or Medicare Advantage:

- Call the phone number on the back of your insurance card. Tell them you are having surgery, and you want to know about your skilled nursing or nursing home benefits. Ask them for a list for your area.
- Review the list and call the Admissions Director at several sites. If you can, visit the sites to see which sites you prefer.
Coronary Artery Disease
The coronary arteries supply blood and oxygen to the heart. Plaque, made mostly of fats, builds up inside arteries over time causing the arteries to narrow or become blocked. This is called atherosclerosis and you can think of it as rust forming inside your blood pipes.

In your heart arteries, the plaque build up is called coronary artery disease (CAD). The narrow or blocked arteries cause your heart muscle to not get enough blood. This can cause chest pain called angina or may cause a heart attack and damage to your heart. CABG surgery, also called heart bypass surgery, may be done to improve the blood flow to your heart.

How surgery is done
A blood vessel is used as a graft to bypass around the blockage in the heart artery. After surgery the blood flows through the bypass letting blood and oxygen get to the heart muscle. A person may have more than one graft done in surgery if there is more than one site of blockage in the coronary arteries.

During bypass surgery, a blood vessel to be used as a graft is taken from your:
- **Chest wall**, called the internal mammary artery or thoracic artery. This is the most common graft used for heart bypass surgery. One end of the artery is sewn to the coronary artery below the site of the blockage. There is no extra incision to get this graft.
- **Leg**, called the saphenous vein. This vein is taken out of the leg and sewn to the aorta and below the site of the blockage on the coronary artery.
- **Arm**, called the radial artery. This is not used as often for grafts and special testing may be done to be sure this artery can be used.

Why CABG is done
Coronary artery bypass graft surgery is a major surgery. This surgery is an option for treatment if:
- You have a dangerous blockage and signs of CAD, such as chest pain.
- Heart catheterization and stent procedures are not able to be done or are not able to treat the blockage.

The surgery does not cure the blockages, but it helps to improve blood flow by using a healthy blood vessel to create a new way to move blood around the blockage.

Surgery, medicines, exercise, diet changes and reduced stress may reduce signs of CAD, but it does not cure the disease.

Goals of surgery
- Improve your quality of life and reduce your signs of coronary artery disease.
- Allow you to be more active.
- Improve the pumping action of your heart if it has been damaged by a heart attack.
- Lower the risk of a heart attack.
- Improve your chance of survival.
Heart Valve Surgery

Why surgery is needed
There are 4 valves in the heart that open and close with each heart beat. They are the tricuspid, pulmonary, mitral and aortic valves. The valves let blood flow in and out of the heart’s four chambers. Valve surgery repairs or replaces damaged or scarred valves.

Scarring can occur from birth defects, heart attacks, infection or rheumatic fever. When valves do not open and close as they should, the heart has to pump harder to get blood to the body. This weakens the heart, causing pain, shortness of breath or dizziness. When medicine is no longer effective, surgery is needed.

After surgery, be sure to tell your dentist that you have had a heart valve replacement. You may need to take medicine before any dental work.

Valve conditions
- **Stenosis** - narrow opening of valve
- **Regurgitation** - leaky valve
- **Prolapse** - parts of the valve not working or floppy
- **Endocarditis** - infection in one or more valves
- **Malformation** - valve is defective, often from birth

Types of valves
All valves are man-made. Some are made with human or animal tissue. Others are made of ceramic or carbon materials. If you are to have the mitral or aortic valve replaced, your doctor will talk to you about having a tissue or mechanical valve.

**Tissue valve (bioprosthetic)**
- Made of animal or human tissue.
- Does not usually need long term blood thinners.
- Does not last as long as a mechanical valve, but may last 10 to 15 years.

**Mechanical valve**
- Made of man-made materials like carbon or ceramic.
- Last a long time and do not usually need replaced.
- Requires life-long treatment with a blood thinner called warfarin.

**Transcatheter aortic valve replacement**
- Made with animal tissue and wire frame (stent).
- Placed using thin tube inside old valve.
- May be option if high risk for surgery or if surgery is not an option.
- May require use of blood thinner or antiplatelet medicine for short time.
Coronary arteries

Heart valves
What You Can Expect after Coronary Artery Bypass or Heart Valve Surgery

To help you and your family know what to expect after surgery, we have created this plan for your care. Adjustments will be made based on your needs and recovery.

You and your family need to learn about your care, so you know what to do after you leave the hospital. Plan to attend Discharge Class, held on Tuesday, Thursday or Saturday at 1 PM.

Please ask any questions you have or share your concerns with your care team.

Every Day
- Ask about your progress.
- Use the breathing exerciser 10 times every hour while awake.
- Use your pillow to support your chest when you cough and deep breathe to help control pain.
- Sit up the evening of surgery and then sit up in a chair 3 times each day.
- You will be helped to get up and walk. The distance will increase each day. The goal is to walk 4 times each day. Tell the team if you are having problems with appetite or sleep.
- Ask for pain medicine before your pain gets out of control to help you be able to breath and move more easily.

Day of surgery
- The breathing tube and stomach tube will be removed within 24 hours of surgery, if able.

Day 1 after surgery
- If you are breathing well and have good oxygen levels, you will have your oxygen removed.
- Remove tubes and lines as able:
  - IV line in neck if not on IV meds
  - Arterial line
  - Catheter in bladder
- Your blood sugar will be controlled closely to help with wound healing.
- Start clear liquids and ice chips. Your diet will be advanced as you are able to eat without feeling sick.
- Restart home meds, if able.
- Start cardiac rehabilitation.

Day 2 after surgery
- Remove IVs and if able:
  - Pacer wires
  - Chest tubes
- You may need a stool softener while you are on prescription pain medicines. Tell your nurse if you feel that you need to have a bowel movement.
- The Diabetes Team will help if you have high blood sugar or diabetes.

Day 3 after surgery
- Remove remaining chest tubes.
- Review needs for discharge and arrange transportation.
- Identify discharge location if not home.

Day 4 after surgery until discharge
- Review discharge education.
- Get a copy of your After Visit Summary and any prescriptions you need.
- Be sure you understand your care instructions for:
  - Medicines you are to take
  - Follow up appointments
  - Special equipment, if needed
- Pharmacist may review your discharge medicines with you.

Questions
Write down questions you want to ask your care team. It can be hard to remember, so make a list of questions or concerns.

We want you to understand your care, so please let us know if we need to explain something in a different way to help you better understand.

Some delays may occur. If you have questions or concerns, please talk to the patient care team.
Pain Management

After Heart Surgery

Pain is a normal part of surgery, but you will have orders for pain medicine to help control it. Let us know when you need something to treat your pain. The best way to treat pain is to prevent it from becoming severe. Managing your pain is key to your recovery, so you can walk, deep breathe and do other activities.

What to expect

• Expect pain from your chest tubes, IV lines and your surgical incision.
• Ask for pain medicine before your pain gets too bad. Your nurses will wait for you to tell them you are in pain before pain medicine is given.
• There can be risks with pain medicines, but our goal is to control your pain to ease your recovery.
• Your pain will change as you recover, and your body heals over several days to weeks.

Treating your pain

• Pain medicine can be given by mouth or through your IV either by the nurse or by use of a patient controlled analgesia (PCA) pump. A PCA pump allows the patient to press a button to give himself medicine when he is in pain.
• Your doctor may order more than one pain medicine for you. For example, you may have one medicine ordered for severe pain and another for mild pain.
• Everyone experiences pain in different ways and may respond to pain medicines differently. We will work to develop a plan that works best for you.
• You will often be asked to rate your pain on a scale of 0 to 10. 0 means no pain and 10 means the worst pain you can imagine. You will be asked to rate your pain to help us decide which type of pain medicine to give you.

Side effects and cautions

• Constipation is the most common side effect. Drinking fluid, taking stool softeners or laxatives and activity help to prevent constipation.
• Other side effects may include itching, dizziness, sleepiness, nausea and vomiting.
• Before surgery, it is important to let your medical team know about any drug allergies you have.
• Your total doses of Tylenol, also known as acetaminophen or APAP, should not exceed eight, 325 mg tablets or a total of 3000 mg in 24 hours from all sources. Tylenol (APAP) may be in some of your pain medicines, so please remember not to take too much because it can damage your liver.
Be active in pain control

- Always let your care team know if you are in pain or if you think you are having a side effect.
- Tell us if a certain pain medicine has helped in the past, so we can use what works for you.
- Gentle activity, such as walking, can help improve healing and reduce swelling. Your doctor will let you know what activities are safe for you after surgery.

Pain medicines

Common medicines used for **mild to moderate pain** after surgery include:

- Acetaminophen - also known as APAP or Tylenol
- Tramadol - also known as Ultram
- APAP/codeine - also known as Tylenol #3
- Pregabalin - also known as Lyrica
- Gabapentin - also known as Neurontin
- Hydrocodone/APAP - also known as Vicodin or Norco
- Oxycodone/APAP - also known as Percocet

Common medicines used for **moderate to severe pain** include:

- Hydrocodone/APAP - also known as Vicodin or Norco
- Oxycodone/APAP - also known as Percocet
- Hydromorphone - also known as Dilaudid
- Oxycodone
- Morphine

Treating pain after discharge

- Pain medicines may be prescribed for when you leave the hospital.
- Early after surgery, your pain medicine may be given on a schedule to reduce severe pain. As pain improves, it can be used only as needed.
- If your pain gets worse, contact your surgeon’s office.
- When your pain has decreased, begin replacing one tablet or dose of your prescribed pain medicines with over the counter pain medicine such as Tylenol (also known as acetaminophen or APAP).

  - Avoid taking NSAID (Non-Steroidal Anti-Inflammatory) medicines unless you have discussed this with your surgeon. These include medicines like ibuprofen (Advil or Motrin) and naproxen sodium (Aleve). Contact your doctor’s office if you have questions about over the counter medicines and other options for pain relief.
- If your pain is controlled without the prescribed medicine, you no longer need to take it.
- You may need to continue taking the prescribed pain medicine just before certain activities or at bedtime if you are not able to:
  - Sleep well or you are waking often due to pain
  - Do gentle activity such as walking due to pain
- Remember, these medicines help to decrease pain, but they do not completely get rid of it. You should take pain medicine, so that your pain is manageable and mild during your recovery.
How to Use an Incentive Spirometer
Breathing Exerciser

Use your incentive spirometer, also called a breathing exerciser, to help you take deep breaths to open the air sacs in your lungs. This helps to reduce the chance of developing breathing problems, like pneumonia, after surgery. **Practice your breathing exercises 3 or 4 times each day before surgery.**

**Please bring your incentive spirometer with you to the hospital.** You will do these exercises in the hospital and for 2 to 3 weeks at home as you recover from surgery.

**Steps for use**

1. If possible, sit up straight. It may help to sit on the edge of a chair or your bed.

2. Hold the incentive spirometer upright.

3. Breathe out, then close your lips tightly around the mouthpiece and take in a slow deep breath through your mouth.

4. As you take a deep breath, the piston in the clear chamber of the incentive spirometer will rise. It is important to breathe in slowly to allow the air sacs in your lungs time to open. Your incentive spirometer has an indicator to let you know if you are breathing in too fast.

5. After you breathe in as deeply as you can, hold your breath for 3 to 5 seconds. Set the goal indicator tab at the level that you reached.

6. Take out the mouthpiece and breathe out slowly. Relax and breathe normally for a few seconds until the piston returns to the bottom of the chamber.

7. **Repeat these steps a total of 10 times.** If you start to feel lightheaded or dizzy, slow down your breathing and give yourself more time between the deep breaths.

8. After you do the 10 deep breathing exercises, **take a deep breath and cough to clear the mucus from your lungs.**
Getting Your Skin Ready for Surgery

Because germs live on everyone’s skin, there is a chance of getting an infection when your skin is cut during surgery. To reduce the chance of infection, clean your skin with a special soap called 4% chlorhexidine gluconate or CHG, sold by the brand name Hibiclens. You may be given or you will need to buy a 8-ounce bottle or larger. Ask your pharmacist where to find it in the drug store. It is often with the first aid supplies.

- Do not shave for at least 48 hours near the site for your surgery cut.
- Clean your skin with CHG soap the night before your surgery and again the morning of your surgery.
- CHG soap does not bubble and lather like most soaps.
- Be careful not to get CHG into your eyes, nose, mouth or ears. If you do, rinse well with clean water.

Cleaning your skin with CHG

1. Get in the shower and wash your hair with your normal shampoo and wash your body with regular soap. Rinse your hair and body very well.
2. Wet a clean washcloth and then turn off the shower.
3. Put CHG soap on the wet, clean washcloth.
4. Apply the CHG soap to your whole body from the neck down only. Put more CHG on the cloth as you cover more of your body. You should use about 4 ounces or ½ cup of CHG to clean your body. Continue to wash your body gently for 5 minutes, paying special attention to the part on your body where the surgery will be done. Be sure to wash the back of your neck, under your arms, your belly button, private parts and your legs down to your toes. Do not scrub too hard.
5. Turn the shower back on and rinse well to get the CHG soap off of your body.
6. Pat yourself dry with a clean, dry towel.

After using CHG

- Do not use deodorant, lotions, powders, make-up or other products on the skin near the part of your body that will be cut for surgery.
- Put on clean clothes.

If you are not able to shower

If you do not have a shower or if you are not able to get into the shower, do a sponge bath with CHG soap instead.

1. First, bathe with a washcloth and regular soap. Rinse with clean water.
2. Wet a clean washcloth and apply ½ cup of CHG soap to your whole body from the neck down for 5 minutes. Pay special attention to the part of the body where the surgery will be done.
3. Rinse well with another clean washcloth and plain water.
4. Pat yourself dry with a clean, dry towel.
Medicine Safety

During Your Hospital Stay

We want to keep you safe during your hospital stay. Help us by providing a list of all the medicines you take at home, including prescription and over the counter medicines and any vitamin or herbal supplements. Please include the name of the medicine or supplement, the dose and strength of the medicine, how often you take it and when it was taken last. Also list any allergies you have to food or medicines and the reaction that occurred.

During your stay

In the hospital, we are responsible for all of the medicines you take and watching your response to them.

- We will take special care to select the right medicines for you.
- We do not allow you to take your own medicines, except if the medicine is:
  - Not on hospital’s list of preferred medicines
  - An oral chemotherapy agent
  - Herbal medicine ordered by your doctor
  - A controlled substance with no acceptable alternative and approval from Pharmacy leadership

If your home medicines are to be used in the hospital

For the exceptions, medicines must be:

- In the original prescription container and clearly labeled and prescribed for you.
- Not expired.
- Reviewed by the hospital pharmacist, your doctor or nurse.
- Kept in the secure medicine cart and given by the nurse. It will not be allowed to be kept at bedside.

Home medicines brought to the hospital

Medicines you brought to the hospital will not be used unless there is an exception as noted above. You will have the option to:

- Send your medicines home with an adult family member or caregiver, or
- Place the medicines in a bag to be stored in a secure area on the nursing unit until your discharge.
What to Bring the Day of Surgery

Use this checklist to be sure you have everything you need to bring with you to the hospital for your surgery:

- **This form. Cut this sheet out of your book or bring the book with you.**
- Your photo ID and health insurance card(s).
- Your blood band in the **Red Envelope** given to you by the lab.
- Your incentive spirometer or breathing exerciser.
- A current copy of your medicine list or your bottles of medicines. Be sure to include any vitamins, herbals or other over the counter medicines. Also, it may be helpful if you have the name and phone number of the pharmacy you use.
- Your Living Will and Health Care Power of Attorney forms (if you have them).
- Toiletries and comfortable clothing, such as a robe and slippers.
- Do NOT bring jewelry, money or other valuables.
- A list of 2 or 3 home health agencies, rehab centers or nursing homes you would like to use if needed:

  ________________________________________________________________
  ________________________________________________________________
  ________________________________________________________________

After surgery, we can provide you with a list of recommended care providers close to your home. If you do not have benefits for home health services, skilled nursing facilities or rehab centers, or if you need further guidance, please call 614-293-5502 and select or ask to speak with case management, social work or your nurse navigator.

- **Name and phone numbers for your:**

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<th>Family Doctor</th>
<th>Heart Doctor</th>
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4 ROSS VISITOR GUIDELINES
AT THE OHIO STATE UNIVERSITY WEXNER MEDICAL CENTER

Visiting hours:
8:30 a.m. – 1:00 p.m.
3:00 p.m. – 6:30 p.m.
8:30 p.m. – 10:00 p.m.

- We ask that no more than two people visit in the patient room at one time. This will help the staff to have enough space to safely care for your loved one.
- The patient must be easily accessible for the staff to perform care, especially in the case of emergency.
- If the patient is having a treatment in the room, you may be asked to wait in the waiting area until the treatment is complete for the patient’s privacy.
- If the patient is unstable, the nurse may restrict visitation to safely administer care. Please see criteria below that qualifies the patient as unstable.

The patient may be unstable if:
- He or she is having difficulty breathing on the breathing machine, also called a ventilator.
- Blood pressure is not well controlled and the patient needs IV medicines and/or blood products as part of their care.
- Close monitoring is needed after just coming out of the operating room or an invasive procedure, or if he or she is having neurologic changes.
- Several pieces of equipment are needed for care in the room to manage the heart, breathing or other body functions.

Why are there times when the unit is closed to visitors?
- 6:30 – 8:30 a.m. and 6:30 – 8:30 p.m.: The unit will be closed to visitors at these times for the nurses and other care providers to safely exchange shifts and information about the plan of care for your loved one.
- 1 – 3 p.m.: This is the unit quiet time, and the unit will be closed to visitors. This break allows the patients a time for rest and healing.

Nighttime visitors:
Overnight visitors are not permitted in patient rooms. If you wish to stay overnight in the hospital, we will direct you to a nearby waiting area where we can contact you via cell phone if there is an update or change in the patient’s condition.

Child visitors on 4 Ross:
For our patients’ safety and comfort, children under the age of 12 are prohibited on the unit.

In certain cases, approval for a child to visit may be granted if the patient is:
- The parent or legal guardian of the child or
- Having to stay more than 30 days in the hospital or
- Nearing death

Why do we restrict children?
- 4 Ross is an ICU environment.
- Children may be frightened by the equipment on the unit or tubes and wires attached to patients. A loved one may look different than they normally do, and this can be very scary to a child. Even if your loved one is feeling better, children may see other patients who are very sick.
- Equipment used in care can take up a lot of space in the room. To keep the patient safe, we need to be sure the equipment is not bumped, pulled or handled in any way that could harm the patient.
- Our patients need rest to heal and recover. Sometimes young children do not understand when they are not being quiet or the need to be quiet. This is normal for young children, but can be disruptive to those who are not feeling well.

Thank you for taking part in the care of your loved one. Please let us know if there is anything that we can do to make this a better stay for them or for you.