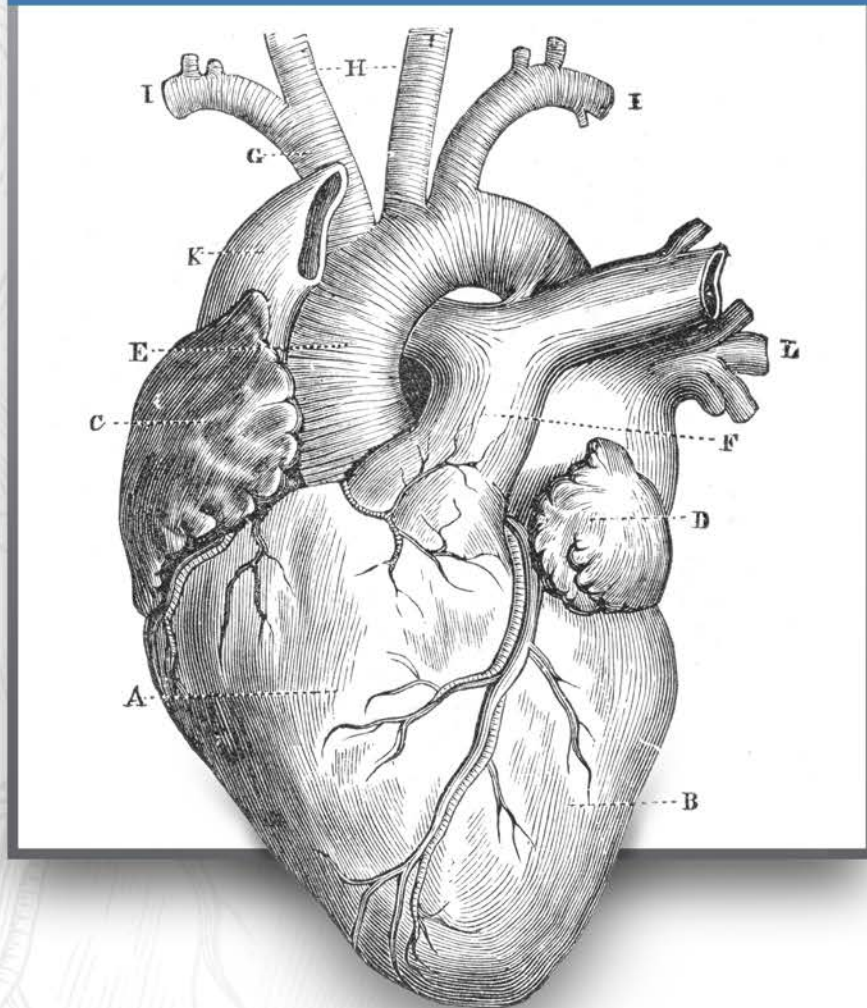


# HEART

## SURGERY PROGRAM

### PATIENT EDUCATION HANDBOOK



**NORTHWEST  
HEALTHCARE**

NORTHWEST | ORO VALLEY | SAHUARITA | HOUGHTON

MyTucsonDoc.com

## Table of Contents

Welcome .....	1	Post Surgery Follow-Up .....	40
Important Dates to Remember .....	3	Cardiac Rehabilitation .....	41
Your Heart Surgery Team .....	5	Medications .....	42
Understanding Your Surgery .....	7	Precautions .....	44
Risks & Expectations .....	14	Sternal Dos and Don'ts .....	46
Preparing for Surgery .....	15	Life After Heart Surgery .....	48
<i>The Day of Your Surgery</i>		Diet & Nutrition .....	51
Pre-Op .....	25	Exercise .....	63
CVICU Waiting Area .....	26	Exercise Log .....	66
Day of Surgery .....	27	Heart-Healthy Living .....	67
Your Hospital Stay .....	28	Northwest Campus Map .....	77
Pain .....	33	Northwest Medical Center Maps .....	78
Post Surgery .....	34	Family Resources .....	79
Heart Surgery Activities .....	35	My Notes .....	80
Leaving the Hospital .....	36	Appendix.....	81
CT Surgery Timeline .....	37		
Daily Activities .....	39		



# Welcome!

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Thank you for trusting Northwest Medical Center's expert staff for your heart surgery. Our commitment to excellent care and our focus on customer service will enable you to easily navigate your surgical experience and take the first step toward reclaiming your active lifestyle.



## **Your Heart Surgery Team:**

Northwest Medical Center's Heart Team is comprised of people who are highly trained, experienced, and skilled. The team works together to plan and complete each procedure, striving to provide the highest level of patient care by utilizing some of the most advanced technologies available.

We have developed our Heart Surgery Program and this guide to answer your questions, assist you in the surgery process, and to provide the resources you'll need to resume your normal activities again. We encourage your questions. Your entire healthcare team is focused on one thing — you!

Thank you for choosing Northwest Medical Center.

Sincerely,  
**Your Heart Surgery Team**





# Important Dates to Remember

## Countdown to Surgery

My Surgery Date: \_\_\_\_\_ Time: \_\_\_\_\_  a.m. |  p.m.

### Prior to Surgery

- Review your medications, including vitamins and herbal supplements, with your health care providers. Some medications/supplements may need to be stopped before surgery.
- Eliminate your alcohol intake and stop smoking for at least 2 weeks before surgery.
- Do not use a razor on your chest or legs within 24 hours of surgery.
- Attend your pre-procedural screening appointment.  
Date: \_\_\_\_\_
- Surgical bath should be done 3 times prior to surgery. (Two times the day before surgery, in the morning and at night, then the morning of surgery).

### Day Before Surgery

- Use the anti-bacterial scrub provided to wash your entire body from the neck down, avoiding the genitals, the evening before surgery.
- You may not eat or drink after 10 p.m. (except for approved medication).

### Day of Surgery

- Use the anti-bacterial scrub to wash your entire body from the neck down, avoiding the genitals, again the morning of surgery. Do not apply any lotions, creams, deodorant, or ointments after bathing.
- Take only the medications you have been instructed to take with a small sip of water.  
**Medications:**  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- Report to the Surgery/Endoscopy Admitting Area at your instructed time.

### After Surgery

- Follow up appointment with cardiologist  
Date: \_\_\_\_\_
- Follow up appointment with cardiac surgeon  
Date: \_\_\_\_\_
- Outpatient Cardiac Rehab appointment  
Date: \_\_\_\_\_
- Primary care provider to be seen within 2-4 weeks. Please call to setup follow up visit.  
Date: \_\_\_\_\_



# Your Heart Surgery Team

The Heart Surgery Team at Northwest Medical Center in Tucson, Arizona consists of many different specialists. You will most likely come in contact with all of these people:

**Cardiothoracic Surgeon** – The cardiothoracic surgeon is the doctor who actually performs your surgery. He/she will take responsibility for your overall health during your hospital stay and for your successful recovery after you leave the hospital.

**Anesthesiologist** – The anesthesiologist is the doctor who monitors your well-being during the surgical procedure, which includes the administration of medication to ensure a pain-free procedure.

**Primary Care Physician** – The primary care physician is responsible for your overall health. He/she will continue to provide you with health care before and after your surgery.

**Cardiologist** – The cardiologist is a physician who will assist in the care of any of your underlying medical conditions while you are in the hospital. He/she will communicate with your primary care physician as needed at the time of discharge.

**Nurse** – You will encounter many nurses during the surgical process. Each of them performs very different functions. Pre-operative nurses will prepare you for your surgery. Operating room nurses will assist the surgeon performing the operation, and Cardiovascular Intensive Care Unit (CVICU) nurses will help you recover immediately after your surgery. CVICU and Acute Care Telemetry (ACT) nurses will assist you through your post-operative period, administering pain medications, performing wound care and playing an integral role in your education and recovery.

**Cardiac Rehab Therapist** – The cardiac rehab therapist will help you start to regain your strength and endurance. They will also educate you on home exercise guidelines.

**Case Manager** – The case manager will coordinate your discharge planning, which includes setting up resources such as outpatient therapy or home health, if indicated.

**Respiratory Therapist** – The respiratory therapist will manage the mechanical ventilator you may need until you are fully awake following surgery, and will assist the nurse with the removal of your breathing tube. If your surgeon orders any supplemental oxygen or aerosol treatments for you, the respiratory therapist will provide these medications.

**Pharmacist** – The pharmacist will review your medications to ensure there are no interactions between prescribed medications or issues with allergies. They may also assist your physician with blood glucose control and ensure that your pain management medications are effective.

**Dietitian** – The dietitian will assess your overall nutrition, as well as educate you on your heart-healthy diet.

**Nurse Practitioner or Physician Assistant** – Nurse practitioners and physician assistants have advanced academic training and clinical experience and perform many of the same tasks as a physician. This person works in close collaboration with your cardiac surgeon and cardiologist and will visit you daily.

**Physical Therapist** – The physical therapist will assist you if indicated with the preservation, enhancement, or restoration of movement and physical function whether impaired or threatened by disease, injury, or disability. They utilize therapeutic exercise, physical modalities, assistive devices, and patient education and training.

**Occupational Therapist** – The occupational therapist will assist you if indicated with meaningful activities of daily life (such as self-care skills, education, work, or social interaction) especially to enable or encourage participation in such activities despite impairments or limitations in physical or mental functioning.

**Speech Therapy** – The speech therapist will assist you if indicated with therapeutic treatment of impairments and disorders of speech, voice, language, communication, and swallowing.





# Understanding Your Surgery

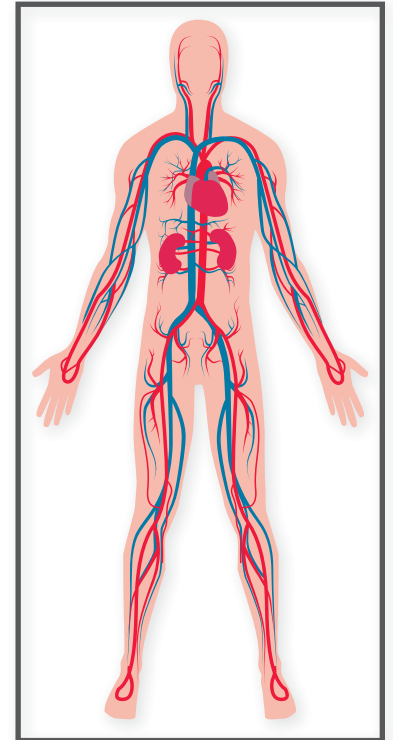
## Why Do You Need Heart Surgery?

Coronary artery disease is the most common cause of death in the United States. This disease refers to the presence of blockages in the blood vessels that feed the muscles of the heart. These blockages involve deposits of fatty substances, cholesterol, cellular waste products, calcium, and fibrin (a clotting material in the blood) in the inner lining of an artery. The build-up that results is called plaque. Plaque may partially or totally block the blood's flow through a coronary artery. Two things can happen where plaque occurs:

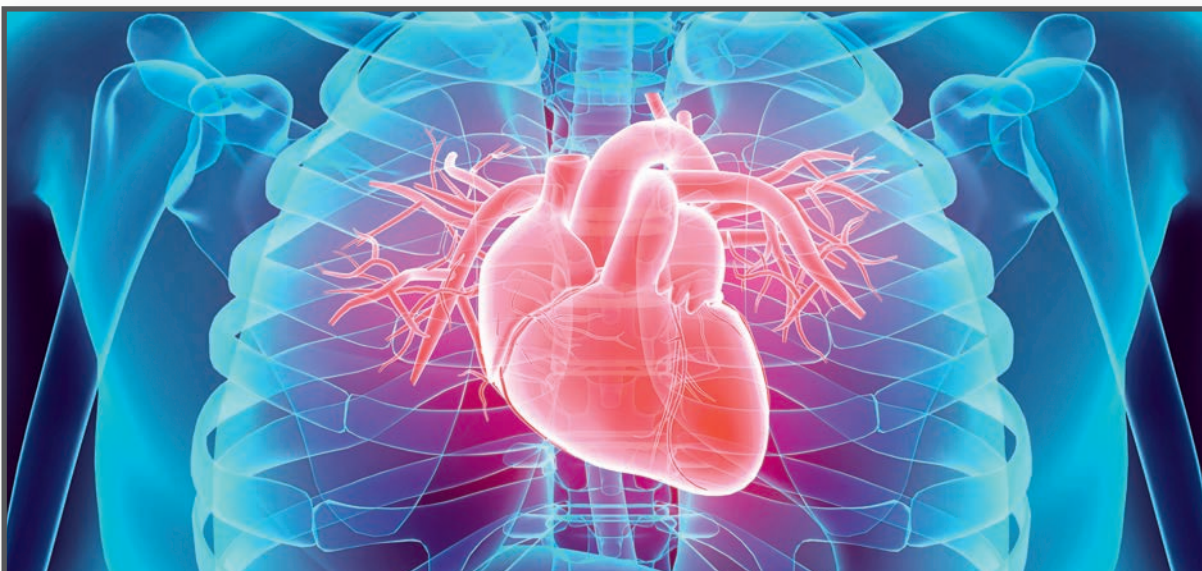
1. Bleeding (hemorrhage) into the plaque
2. Formation of a blood clot on the plaque's surface

*If either of these occurs and blocks the entire artery, a heart attack may occur.*

The valves between the chambers of your heart keep blood moving in the direction it should. When working properly, the heart valves open and close fully. A person can be born with an abnormal heart valve, or things such as infections and changes in valve structure can damage a valve. A defective valve is one that fails either to close or to open fully. A stenotic heart valve cannot open completely. A valve that does not close completely leads to blood flowing the wrong way through the valve.



▲ The circulatory system



▲ The heart and major vessels

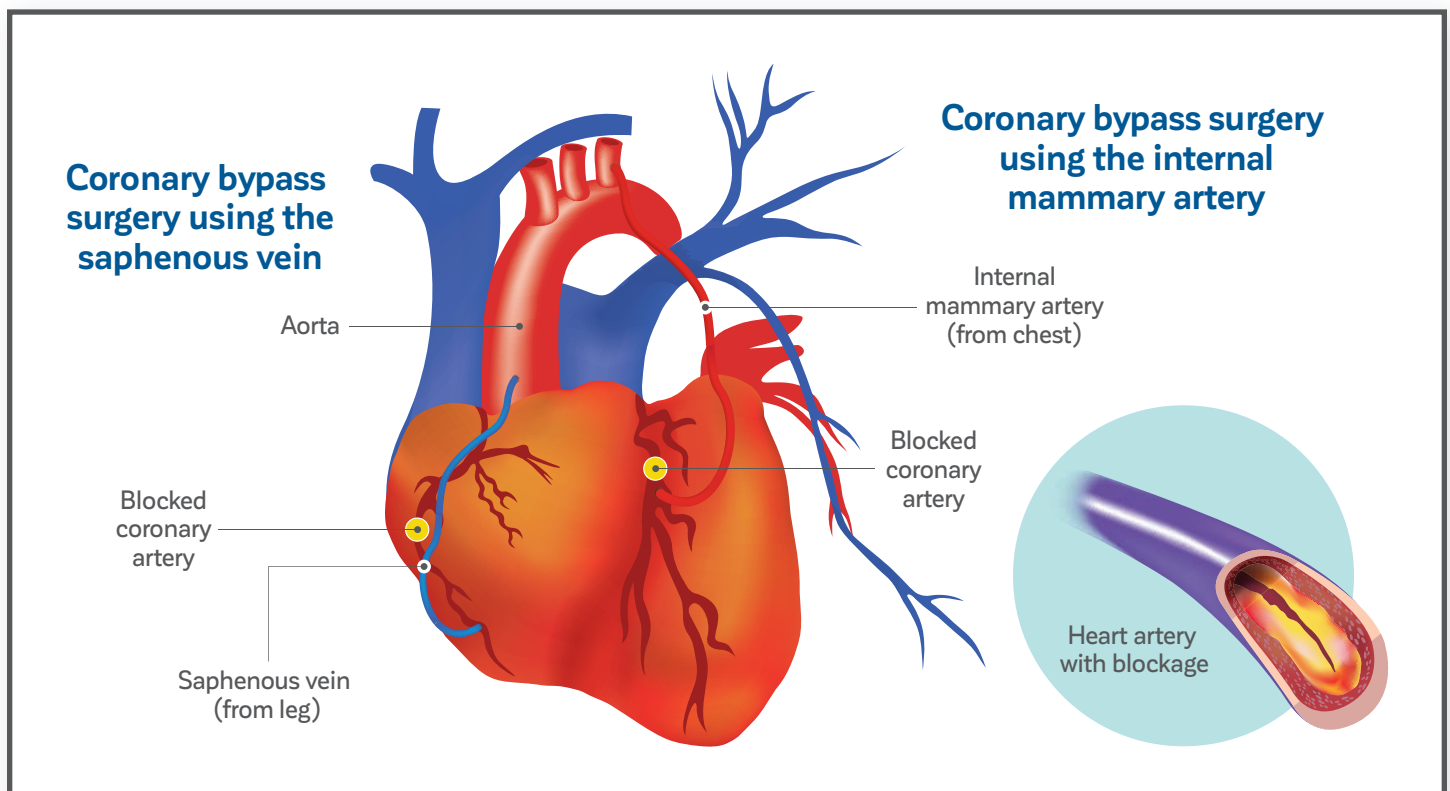
# Understanding Your Surgery

## Coronary Artery Bypass Surgery

If one or more of your coronary arteries (the vessels that carry blood to your heart muscle) are blocked, blood cannot flow to the heart muscle. In this case, the heart muscle may die (heart attack). Coronary artery bypass surgery creates a path for blood to flow around a blockage and helps prevent a heart attack. First, a healthy blood vessel (graft) is taken from another part of the body. Taking this graft usually does not affect blood flow in that body part. These arteries or veins are then surgically connected to the coronary arteries on the surface of the heart to create a way for blood to flow around the blockage. If you have multiple

blockages, more than one bypass may be done. A common abbreviation for this type of surgery is CABG, which stands for Coronary Artery Bypass Grafting.

Coronary artery bypass surgery can be done with the heart still (on pump) or with the heart beating (off pump). In the on-pump procedure, a heart-lung machine does the work of your heart and lungs during surgery. The machine supplies the blood with oxygen and pumps it back through the body. Your own heart and lungs start working again after the bypass is completed.



▲ Coronary bypass surgery

# Understanding Your Surgery

## Heart Valve Surgery

There are three basic ways to treat a valve problem during surgery.

### Repair of the Valve:

Whenever they can, surgeons prefer to repair a valve rather than replace it. The most common kind of repair involves sewing a ring around the entrance to a valve to improve its size or shape. Another involves cutting tissue to let leaflets open or close better.

### Replacement with a Mechanical Valve:

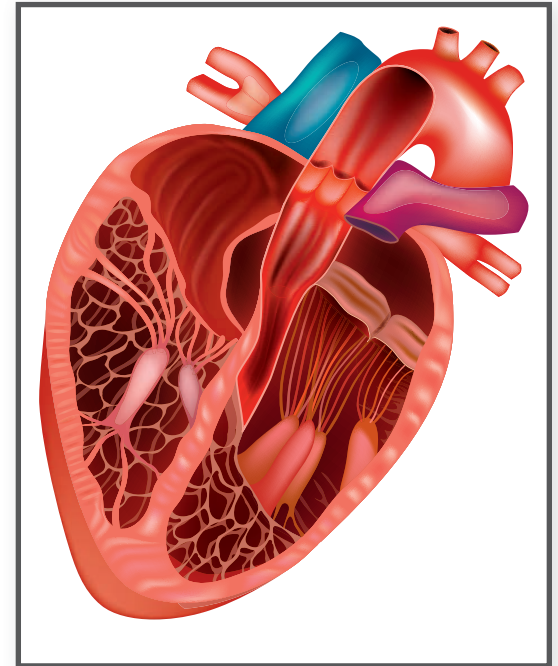
Mechanical valves are made of metal or hard carbon. Mechanical valves can last for decades, but blood tends to stick to them, forming clots. If you receive a mechanical valve, you will need to take Warfarin, an anticoagulant medication, for life to prevent blood clots.

### Replacement with a Tissue Valve:

A tissue valve usually comes from a pig or cow. Blood does not clot as easily on tissue valves, so patients may need Warfarin for only a short period of time. Tissue valves may wear out faster than mechanical valves, so they may have to be replaced sooner.

### Hybrid Revascularization

Hybrid revascularization means restoration of blood flow. This is a treatment strategy for coronary artery disease (CAD) which offers an alternative to either traditional coronary artery bypass grafting (CABG) or percutaneous coronary intervention (PCI). It combines coronary artery bypass surgery with the placement of stents in coronary arteries via a non-surgical procedure called PCI. It integrates the positive features of both CABG and stenting and requires the collaboration of your cardiologist and the cardiac surgeon to perform it. The sequence of the stenting can be done before, at the same time, or after the bypass surgery.



▲ Cross section of a heart showing the valves



▲ Example of a replacement heart valve, courtesy of Medtronic, Inc

# Understanding Your Surgery

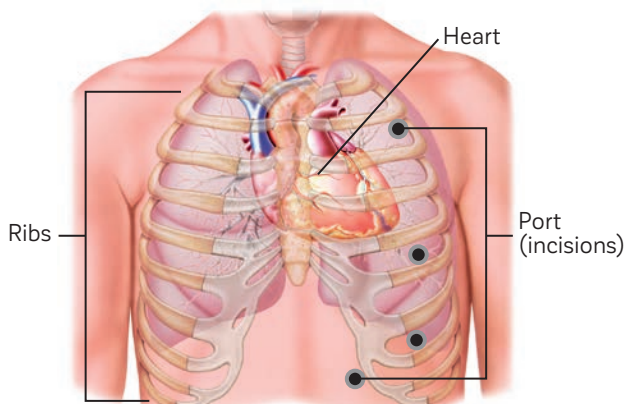
## Robotic Heart Surgery

Robot-assisted surgeries are used for a number of different heart-related procedures, including repair or replacement of stiff or leaky heart valves, coronary artery bypass grafting (CABG), heart defect repair such as atrial septal defect (ASD) repair or atrioventricular repair (AVSD), tumor removal, to correct atrial fibrillation, a common type of arrhythmia, patent foramen ovale (PFO) closure, and to treat congenital heart conditions. Your surgeon may have other reasons to recommend robot-assisted surgery which will be discussed with you.

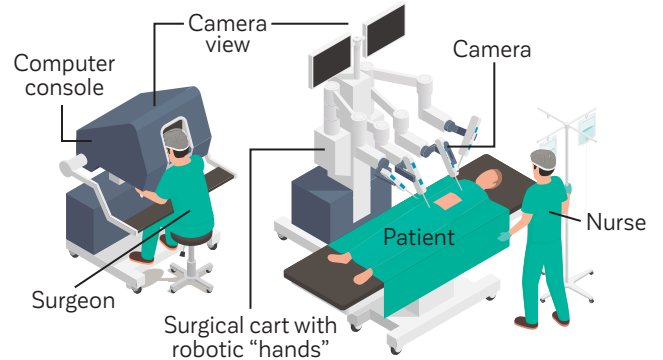
Robot-assisted cardiac surgery is heart surgery performed through very small cuts in the chest. With tiny instruments and robot controlled tools, your surgeon is able to perform heart surgery in a way that involves less risk than open-heart surgery as the surgeon does not have to cut through the breastbone to open your chest. Smaller incisions mean that you can heal faster, have decreased chest trauma, have a lower risk of infection, less postoperative pain, and return to activities more quickly. Most people can resume their normal activities after a few weeks.

In some rare cases, your surgeon may not be able to complete the surgery with the use of the robot. In this case, you would need open-heart surgery.

## Robotic surgery incisions



## Robotic cardiac surgery



## Left Atrial Appendage Ligation (LAAL)

This procedure is for surgical patients with and without atrial fibrillation. For patients with atrial fibrillation or history of atrial fibrillation, the most serious risk is having a stroke. Blood can pool and form clots in your left atrial appendage (LAA). If a blood clot breaks loose it may travel through your blood vessels and eventually cause an obstruction in your brain causing a stroke. Surgical patients who do not have atrial fibrillation are at an increased risk for developing atrial fibrillation post-operatively. Your left atrial appendage (LAA) is a small, ear-shaped sac in the muscle wall of the left atrium (top chamber of the heart). It is unclear what function, if any, the left atrial appendage (LAA) performs. Whether you have atrial fibrillation, history of atrial fibrillation, or are surgical patient with the risk of developing post-operative atrial fibrillation your most serious risk is having a stroke.

## Convergent Procedure

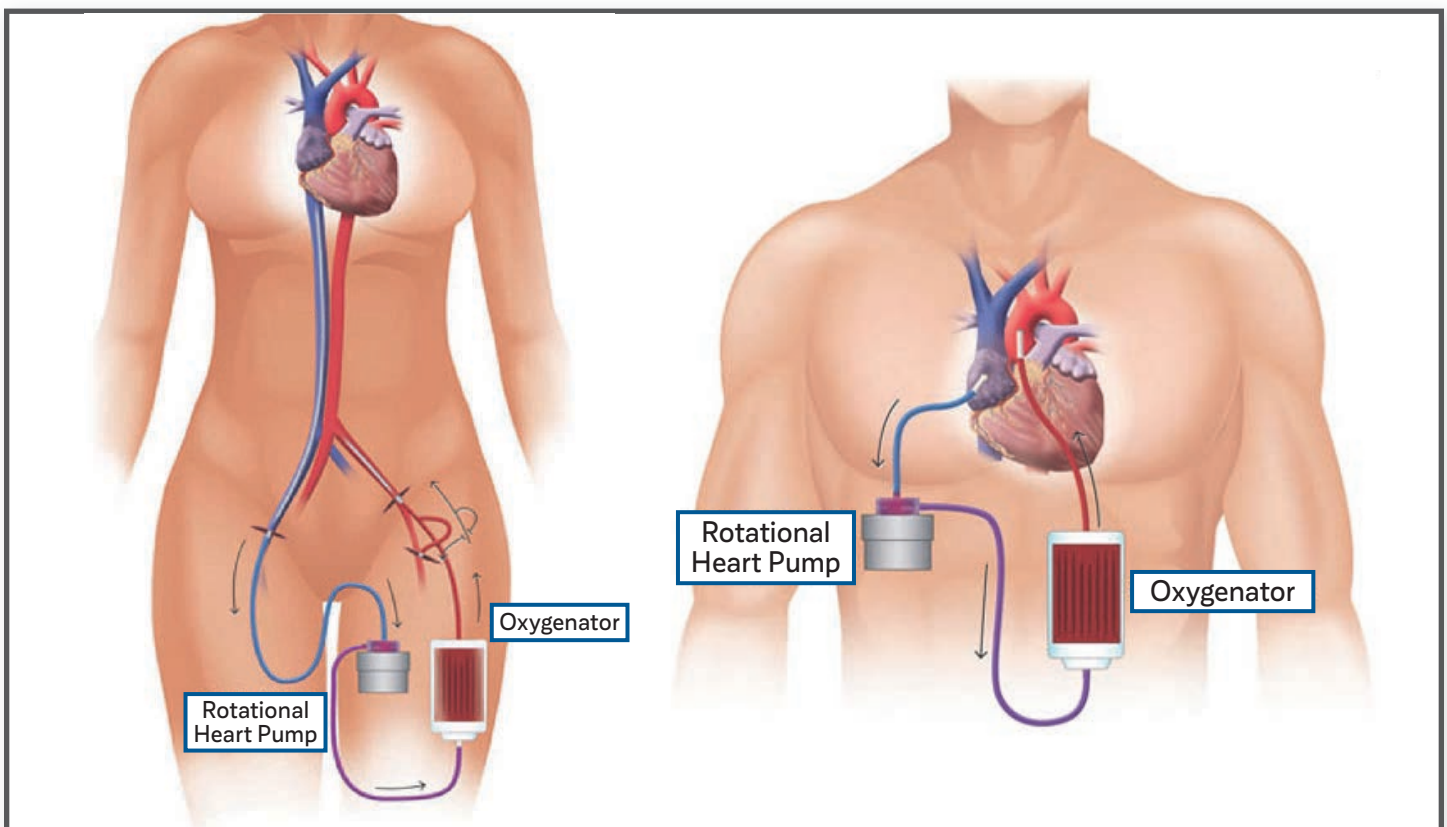
The Convergent Procedure is a collaborative effort by a cardiac surgeon and an electrophysiologist for patients with persistent, long standing atrial fibrillation (AF) that has been difficult to successfully treat with medications, catheter ablation, or minimally invasive surgical procedures alone. This procedure uses radiofrequency to produce lesions (scar tissue) on the heart to block abnormal electrical signals.

# Understanding Your Surgery

## ECMO

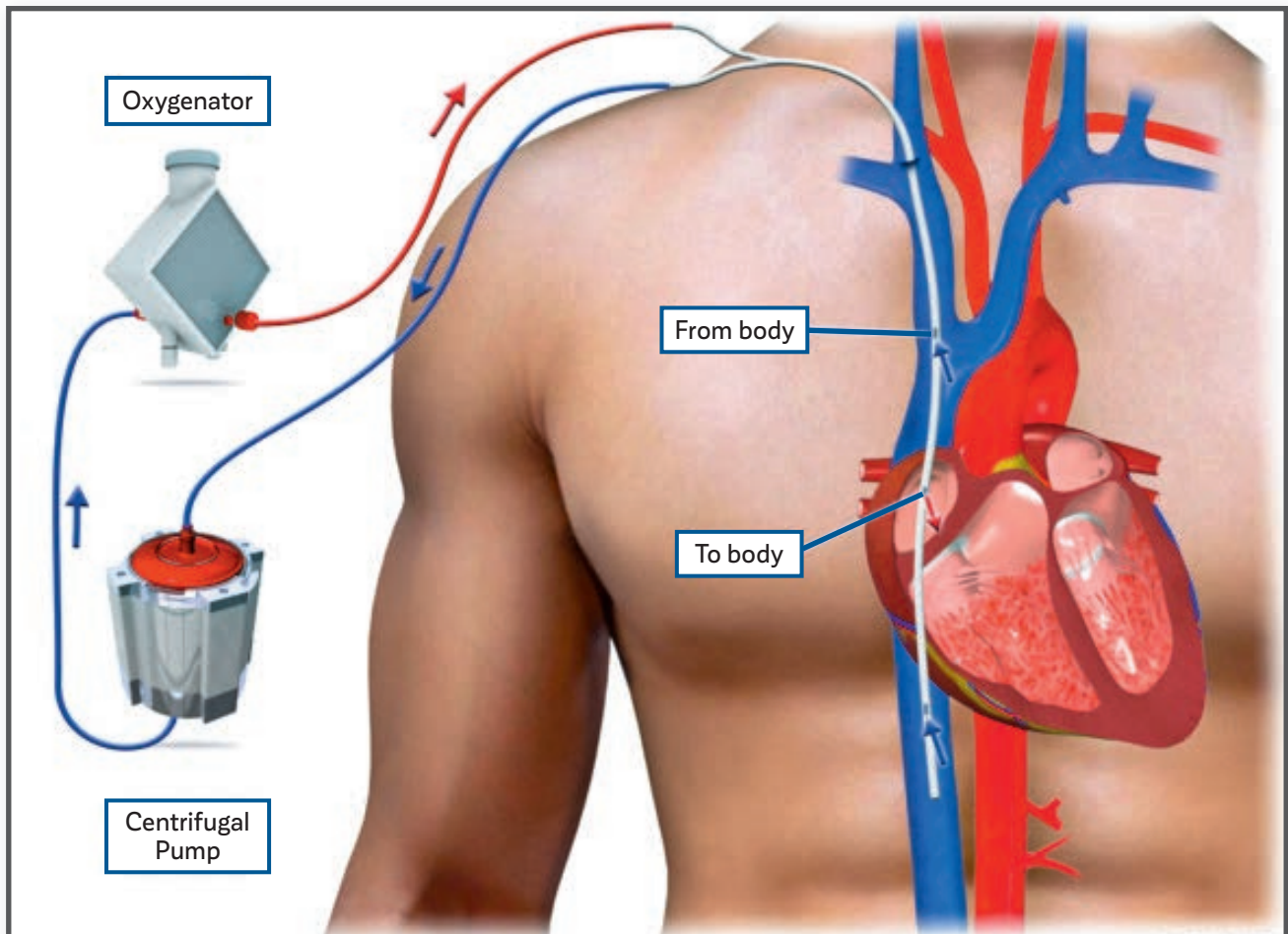
ECMO stands for Extra Corporeal Membrane Oxygenation. With this type of support, we use a blood pump to pull your blood from your body, put oxygen into it, take out carbon dioxide or the “bad gas” your body creates during metabolism, and put the newly oxygenated blood back into your body. This is the same technology used to support patients during heart surgery when the heart is stopped, but instead of staying in the OR, the patient stays in the ICU while on ECMO and instead of this being for a few hours, ECMO can support a patient for days or weeks if needed. ECMO can be used to support the body by doing all of the work of either the lungs (respiratory failure) or the heart and the lungs (cardiac and respiratory failure) depending on where the surgeon places the lines to pull from and return blood to the body. ECMO supports the body only, it does not actively heal or fix anything. It simply does the work of the heart and lungs to oxygenate the body when these organs can't.

**What to expect** - When on ECMO, the patient will always be in the ICU. The machine will be cared for by an ECMO specialist, a specially trained ICU nurse who has gone through additional training to manage the machine. The patient will also have an ICU nurse who manages the standard ICU care for the patient; you may hear them referred to as the bedside or patient nurse. A patient may be awake or asleep and using a breathing tube while on ECMO. Blood touching foreign surfaces will try to clot, so to help



▲ Rao et al; VA-ECMO: Initiation and Management *Circ Heart Fail.* 2018;11:e004905.  
DOI: 10.1161/CIRCHEARTFAILURE.118.004905 Fig. 1

# Understanding Your Surgery



▲ Hackmann, Amy E., and Muhammad Faraz Masood. "VV ECMO." *The Patient Guide to Heart, Lung, and Esophageal Surgery*, 18 May 2020, [ctsurgerypatients.org/vv-ecmo#types-of-emo](https://ctsurgerypatients.org/vv-ecmo#types-of-emo).

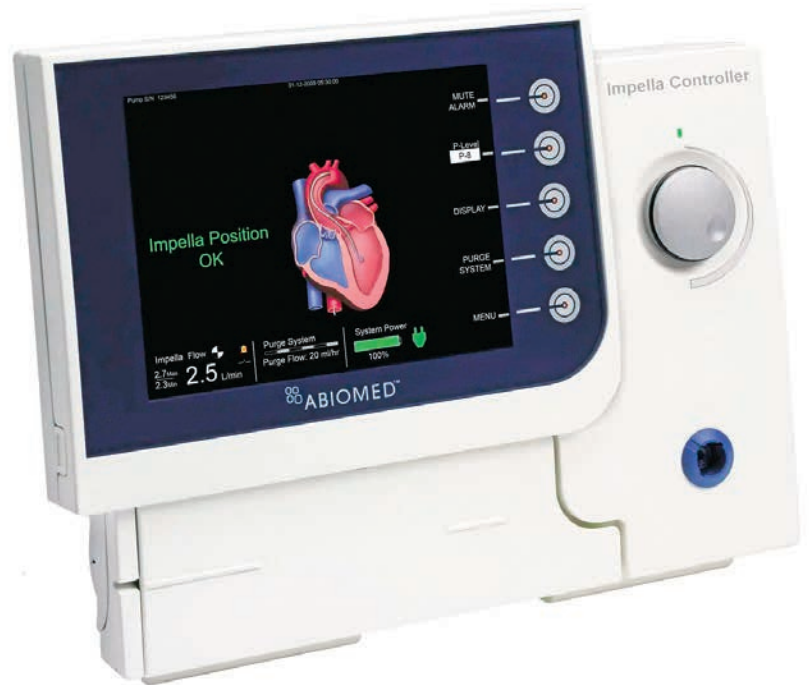
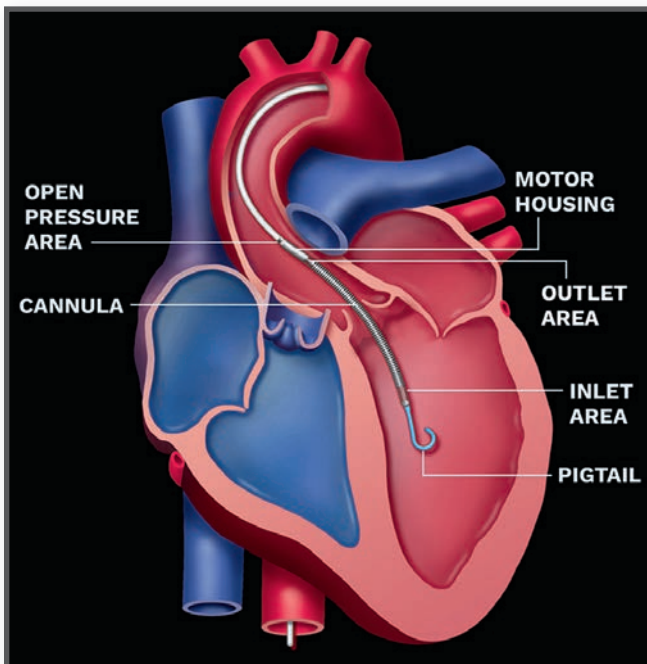
prevent this, the majority of patients on ECMO will be on a blood-thinning medication through an IV. This places them at a higher risk of bleeding, but it is necessary to keep the machine running. Labs will be drawn constantly to monitor blood gases (oxygen and carbon dioxide), electrolytes, how the blood thinner is working, and levels of types of cells in the blood. Patients on ECMO often require blood transfusions throughout the treatment to replace blood that might be damaged by the machine.

The ECMO lines may be in many different vessels in the body. For lung support only, you will commonly only see one line or "cannula" in the patient's neck. For heart and lung support, you will usually see two cannulas and these are most commonly in the patient's groin or the center of the chest. Where these lines are contributes to how awake the patient may be, their level of pain and if they are able to move or sit up if they are awake.

# Understanding Your Surgery

## Impella

The Impella is a device that can support the body by doing some of the work of the heart when it is failing or needs to rest for recovery. It can be used for a short period of time in the OR or cath lab, or it can be left in for several days and the patient cared for in the ICU if needed. The Impella is a very small heart pump that is usually inserted into the left side of the heart and pulls blood from inside the heart and pushes it out into the aorta, the major blood vessel of the body. This helps take some of the workload off of the heart so it can heal and helps provide oxygenated blood to the body when the heart can't. The Impella can also be placed in the right side of the heart to push blood into the lungs if the right side of the heart is failing. Your care will be similar for either type of heart support.



**What to Expect** - While the Impella is in place you will be cared for in the ICU. You may be awake and able to eat and talk, or you may have a breathing tube in your mouth and be asleep or partially asleep. If you need the breathing tube, we always take it out as soon as it is safe to, sometimes even before the Impella is removed. You may be on other medications in your IV to increase your blood pressure or how hard your heart pumps. A small amount of blood thinner will be given through the Impella equipment to help prevent blood from clotting inside the blood pump. The Impella is often inserted through the groin, which means you won't be able to bend the leg on that side or be able to sit up or stand. You will have to lie flat in bed until the pump is removed. Sometimes the Impella is inserted in the upper part of the body, usually the chest near the armpit. In this situation, you will be able to sit up and move more easily.

Generally, we do an echocardiogram (echo), or ultrasound of the heart every day to see how well your heart is working. Your cardiologist and the heart surgeon will use these results, along with looking at how much medication you may be on to keep your blood pressure up, to determine when the Impella can come out.



# Risks & Expectations

## Risks Associated with Heart Surgery

While every precaution is taken by your healthcare providers to prevent complications, as heart surgery is a major surgery, some may still occur. These complications include infection, bleeding, damage to nerves/blood vessels, blood clot in the legs or lungs, heart attack, problems with anesthesia and very rarely, stroke or death. Also, over time, arteries or valves can become narrowed or defective, creating a need for additional surgery or repair.

### Expectations

As heart surgeries are generally successful, you should expect relief of symptoms and the ability to resume your normal activities. Success rates depend on your commitment to a heart-healthy lifestyle, which includes regular exercise, a healthy diet, weight control, stress management and medication compliance.



# Preparing for Surgery

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## Physical Examination by Your Doctor/Practitioner and Testing Prior to Surgery

Prior to surgery, you will be screened for medical problems which might put you at risk during or after your surgery. A physical examination and consultation by your surgeon is usually completed. **If you are under the care of a cardiologist you will also be evaluated by them prior to surgery.**

## Pre-Procedural Screening

Prior to your surgery, you will receive a phone call to complete a thorough interview regarding your medical/surgical history, medications, and allergies.

Your surgeon's office will also help you schedule an appointment to complete health screenings before your procedure. You will receive lab work, imaging, and an EKG. On the day of your appointment, please do not eat or drink anything after midnight. Please bring your medications with you to your appointment. During the screening appointment, you will be asked to sign the consent for your surgery and the consent to receive blood products if needed during surgery.

If your physical examination identifies any risk factors or abnormal results, additional testing may be required. Your surgeon's office will contact you with any abnormalities.

**My Date/Time** \_\_\_\_\_



# Preparing for Surgery

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## You will need to bring the following items with you to your Pre-Procedural Screening Appointment:

- Your Picture ID and Insurance Card.
- This handbook.
- Your current prescription and non-prescription medications, vitamins and herbal supplements, and a list of any allergies to food or medicines.
- A list of your previous surgeries and hospitalizations. Include the dates and information on any problems you experienced with anesthesia.
- A copy of your Living Will/Advance Medical Directive/Medical Power of Attorney.
- You may not eat after midnight on the day of your appointment. Please bring a snack to have after your lab work is completed.
- Please assure that you keep and attend your scheduled Pre-Procedural Screening Appointment otherwise your surgery may be delayed.
- Any implantable device cards including pacemaker, ICD, deep brain stimulator (DBS), cochlear implants, pain stimulators, etc. Note: If indicated, you will need to bring your programmer on the day of surgery.
- Name and phone numbers of people who may receive your personal health information.

# Preparing for Surgery

## Medications

■ **Stop Taking These Medications Prior to Surgery:** To decrease the risk of blood loss during surgery, most patients should avoid or stop taking medicines which contain anti-inflammatories (ibuprofen), blood thinners, erectile dysfunction (ED) and arthritis medications five days before surgery. Your pre-procedural screening nurse will review your list of medications and let you know specifically which medicines you should discontinue. Please discuss medications that block platelets, (Plavix, Brilinta, Effient, ASA) with your surgeon.

**NOTE:** You may take Extra-Strength Tylenol for pain. If the Tylenol does not relieve your pain, call your surgeon.

After confirming with your doctor, five days prior to surgery, stop taking aspirin, anti-inflammatories and arthritis medication.

## Herbals

■ **Talk To Your Surgeon If You Take Herbals** such as Gingko Biloba, garlic, ginger, feverfew, fish oil, Vitamin E or ginseng. Most vitamin and mineral supplements should be stopped one week prior to surgery.

## Other Medication Tips

- If you currently take anticoagulant medication called Warfarin for another health related condition, check with your physician for when to stop the medication prior to surgery.
- On the morning of your surgery, take only the medicines you have been instructed to take by your surgeon. Take with only a small sip of water.

## Prehabilitation

Prehabilitation also known as “Prehab” refers to physical therapy treatment in the preoperative setting. The goal is to reduce postoperative complications and improve postoperative outcomes by increasing patient physiological reserve. This has been found to be very helpful for patients preparing for cardiac surgery and assists in minimizing frailty. Many risk factors for postoperative morbidity and mortality are potentially modifiable if identified and treated in a timely fashion before surgery. Prehabilitation is tailored to each individual patient’s needs. Cardiac prehabilitation draws from strategies currently undertaken in cardiac rehabilitation but implements them proactively rather than reactively.

# Preparing for Surgery

## Preventing Infections

Various types of infections can occur from various causes. Infections at the surgical incision, pneumonia or an infection associated with a medical device such as a urinary catheter or intravascular (IV) line are rare but may occur. There are things that you, your family/visitors and the healthcare team can do to prevent infection.

### To help prevent infection:

- **Three antiseptic showers over entire body from the neck down, avoiding the genitals.**

Bathe two times the day before surgery, in the morning and at night, then the morning of surgery. Use the antiseptic soap provided to wash the chest, legs and groin for ten minutes on the evening before and the morning of surgery. Rinse thoroughly. Do not apply body lotion after bathing. Do not shave your legs.

- **Hand washing.** Make sure that doctors, nurses and other healthcare providers caring for you clean their hands with soap and water or an alcohol-based hand rub before and after caring for you. If you do not see your providers clean their hands, please ask them to do so. Make sure family and friends clean their hands with soap and water or an alcohol-based hand rub before and after visiting you.

- **Wound Care.** If a bandage comes off or becomes wet or dirty, tell your nurse or doctor immediately. Inform your nurse or doctor if the area around your incision site or catheter is sore or red. Do not let family and friends who visit touch the surgical site, catheters or tubings.
- **Breathe.** Follow your healthcare provider's instructions for deep breathing, moving, walking and other activities. You will be issued an "incentive spirometer" which is a device that helps to exercise your lungs. Use it as directed.
- **Quit smoking.** Patients who smoke get more infections. Talk to your doctor about how you can quit before your surgery.
- **Visit your dentist.** Bacteria can enter your blood stream through the mouth during dental procedures and cause infection. If possible, schedule a dental check-up if you haven't had one in the past six months. Brush and floss your teeth regularly. After your surgery, check with your surgeon about taking antibiotics before all dental procedures.

# Preparing for Surgery

## Discharge Planning

Preparing for your surgery includes preparing for your recovery after you leave the hospital. Some patients may require additional medical care after they leave the hospital. This additional care may be obtained at rehabilitation hospitals or with home health services.

**1. Inpatient Rehabilitation** – This is a facility where you will eat, sleep and stay round the clock for three to seven days after your hospital stay. Patients with no caregiver or family member to assist them at home or who are physically weak and deconditioned may require inpatient rehab. If you or your surgeon believes you will require inpatient rehabilitation, please visit facilities in your area to assist you in making your choice. Choose a second facility in case your first choice is full.

**2. Home Health** – These agencies send nurses and other health care providers to your home. To qualify for home care you must be homebound and generally only leave your home to see your physician.

**3. Outpatient Cardiac Rehabilitation** – Cardiac Rehab is essential to regaining your strength and endurance, and learning how to live a heart-healthy lifestyle. Most heart patients begin Cardiac Rehab several weeks after leaving the hospital. Tucson has several outpatient Cardiac Rehab programs. The outpatient Cardiac Rehab therapists will communicate with your physician to be sure your outcomes are excellent.

### Northwest Medical Center offers the following Outpatient Cardiac Rehab Clinic:

#### **NMC Cardiac Rehabilitation**

Located on the NMC Campus at  
1980 W. Hospital Dr.

*(See map on page 75)*

**Phone: 520-202-2470**

# Preparing for Surgery

## Transportation Home from the Hospital

You will need a friend or family member to drive you home from the hospital.

### The Drive Home

When getting into the car:

- Move the front passenger seat forward as far as possible.
- Sit in the back seat. Place your heart pillow over your incisions, and wear your seat belt over your pillow.
- If you have a long commute (over 1 hour), stop to stand up and stretch after 45 minutes to prevent blood clots from forming.
- Avoid riding home in a compact car, sports car, truck and high suspension vehicles. If you must sit in the front seat, move the seat *back* as far as possible.





# Preparing for Surgery

## Preparing Your Home

The following is a list of ways you can prepare your home for your return after surgery.

### Meal Planning

- Prepare and freeze or purchase small portion meals for when you may be alone.
- Stock up on staples which can be frozen such as bread, fruits and vegetables.

### Accident Proof Your Home

- Remove throw and scatter rugs from around the house.
- Be sure all stairways are secure and have hand railings.
- Tuck away long phone cords and lamp cords. If possible, use a hand-held portable phone instead. Portable phones or cell phones will fit into your clothing pocket and can be taken with you throughout the house.

- Arrange the furniture in your home for easy access to the kitchen, bedroom and bathroom.
- Rails in your shower or tub would be helpful during bathing. (If possible, have them professionally installed). You can purchase a shower bench or a shower chair to use in the shower to bathe. A hand held nozzle and non-skid mats are also recommended.
- Be sure small pets can be cared for and do not get “under foot” when you return home.
- If you have a recliner chair, you may find it more comfortable to sleep in the first few days after you return home.
- If you reside in a two story home, you will need to be more organized to limit the number of trips up and down the stairs.

If possible, be sure to have a friend or family member available to help you in your home for five to seven days after your discharge from the hospital.

# Preparing for Surgery

## Things You Need

Label all of your items with your name.

### Items to include in your bag:

- Wear loose-fitting clothes such as shorts, jogging suit and button-up shirts that you can go home in.
- Tie up tennis shoes or (slip on) flat, rubber sole shoes.
- Eyeglasses, contact lenses, and denture cases.

### Also bring:

- Picture ID and insurance card.
- Your incentive spirometer.
- If you use a C-Pap or Bi-Pap at home, please bring the machine with you. Be sure to also bring your settings and mask.
- A list of medications (prescription and over-the-counter) you are currently taking, including dosages.
- A list of food and/or medication allergies.
- A copy of your Living Will/Advanced Medical Directive/Medical Power of Attorney.
- This handbook.

Be sure to leave jewelry, credit cards and large sums of cash at home.

# The Day of Your Surgery

## Leaving for the Hospital

### Before leaving for the hospital:

- You must shower before leaving for the hospital. Use the rest of the antiseptic soap provided to you. Wash your entire body from the neck down, avoiding the genitals.
- **Do not shave your legs or chest.** You may only use an electric razor to shave your face and neck.
- Avoid using perfume, deodorant and lotions.
- You may brush your teeth and rinse with water, but avoid swallowing the water.
- No gum, ice, mints, or candy.
- Take the medications listed on your preoperative instruction sheet with a small sip of **water only** as soon as you wake.

- Wear comfortable, loose fitting clothes.
- Leave jewelry and valuables at home. **Please leave your wedding band and other jewelry at home.**
- Do not wear make up or nail polish.
- Bring a small container or case with your name clearly marked to store your eyeglasses, contact lenses, hearing aids or dentures.
- **If you use a C-Pap or Bi-Pap machine, bring this with you. Please be sure to bring the settings and mask you use for your machine.**

## Reporting to the Hospital

Please arrive at the hospital **at your appointed time**. Your surgeon's office will call you with any changes in the surgery time.

Report to the Surgery/Endoscopy entrance located on the ground floor at the northeast corner of the hospital.

**Please see the Northwest Medical Center Campus Map on page 74.**

You must designate one person to be contacted when your surgery is completed. Please talk with your surgeon's office before your surgery about current visitation guidelines.

## Before Surgery

### Pre-operative Preparation

After you meet with the admitting representative you will be escorted to the pre-operative preparation area where you will be assigned to an admitting nurse. You will be asked to change into a hospital gown and your clothes will be placed into a plastic bag with your name on it. You will remove your dentures, eyeglasses, contact lenses, and hearing aids at this time.

The admitting nurse will review your medical history and medications, conduct a brief physical evaluation and take your vital signs (pulse and blood pressure). An intravenous line (IV) will be started and you will be interviewed by the anesthesiologist, who will then place a special IV in the artery of your wrist. After you are in the operating room the anesthesiologist will put two IV lines in your neck. These will be used during your surgery to monitor you and to give medication to you. The actual surgery will not begin for about forty minutes to one hour after you leave the pre-operative area. Additional lines, urinary catheter placement, and other positioning and preparations are occurring at this time.

# CVICU Waiting Area

Please talk with your surgeon's office about current visitation guidelines. If visitors are allowed, they will be asked to wait in the cardiovascular ICU waiting area.

It may take four to eight hours from the time you leave your family until your surgery is completed. A member of the healthcare team will escort your family to your bedside as soon as possible after your surgery.



# Day of Surgery

## Anesthesia

### General Facts:

- Your anesthesiologist will meet with you prior to your surgery to thoroughly review your medical history. If you have not already done so, your anesthesiologist will speak to you about the anesthesia you will receive and you will sign a consent form prior to surgery.
- Report any difficulty or complication you may have had with anesthesia or other health concerns to your anesthesiologist and pre-operative nurse.

### General Anesthesia:

- You will be given intravenous medication which will put you to sleep prior to your surgery.
- General anesthesia will cause a complete loss of sensation and awareness.
- After surgery you will wake up slowly in the CVICU. You will have a tube in your throat and it will be connected to a breathing machine. You will also have a tube in your bladder that is connected to a collection bag. You will have tubes in your chest that drain fluids into a collection system.

## Your Surgery

### Into Surgery

After preparation for your surgery and anesthesia is completed, you will be wheeled into the operating room. The highly skilled and trained OR staff at Northwest Medical Center will begin final preparations for surgery.



# Your Hospital Stay

## Post Surgical Care

After your surgery you will be transferred to the Cardiovascular Intensive Care Unit (CVICU) on the first floor of the hospital. *If visitation is allowed, your family may wait in the CVICU waiting room.* When you awake you will feel groggy, cold, thirsty and possibly nauseated. There will be a tube in your throat attached to a ventilator to help you breathe. This tube will be removed when you are able to breathe on your own, usually four to six hours after the end of your surgery. Unfortunately, you will not be able to talk or drink until the tube is removed. It is very important to listen to the nurses and respond to questions by nodding or shaking your head. *This is often the most difficult part of the immediate post-operative period. It will pass as you stay calm and remember to breathe deeply and slowly.* The nurse will frequently assess you for pain and dispense the appropriate pain medication.

- **Intravenous Fluids, Antibiotics** — You will receive fluids and antibiotics to hydrate you and prevent infection post surgery. You may require certain IV medications to support your blood pressure and heart rate. The cardiac ICU nurse will adjust these medications according to the surgeon's guidelines. An IV catheter will remain in place throughout your hospital stay.
- **Blood Transfusions** — You may need a blood transfusion during or after surgery if certain blood counts are low. The nurses are trained to recognize signs of low blood count and will report all important lab results to the surgeon. If you object to the use of blood transfusions, this request will be honored.
- **Dressings** — A dressing will be placed over your surgical site during the surgery. The dressing will be removed on the second post-operative day and will remain off until discharge. Should the breathing

tube remain in for more than one day, the chest dressings will be changed every day. If necessary, the surgeon will use veins from one or both of your legs for the grafts. The leg dressings will be removed on the second post-operative day.

- **Chest Tubes** — Two tubes will be inserted into your chest below the surgical site and a chest tube to the right and left lung during the surgery. The tubes collect blood and drainage after the surgery to allow the heart to beat effectively and allow the medical staff to monitor any signs of bleeding. The chest tubes will be removed when the surgeon feels the drainage has decreased enough. The dressing over the chest tubes will be changed daily.
- **Urinary Catheter** — You will have a tube inserted into your bladder during surgery. The tube drains urine into a bag and will be removed when you are able to walk to the bathroom or bedside commode. The catheter is generally removed on the second post-operative day.
- **Monitoring Equipment** — There will be many lines and wires connected to you to monitor your heart rate, blood pressure and oxygenation while you are in the CVICU. These lines may seem cumbersome and tangled. The CVICU staff has been trained to keep this equipment out of your way and to protect it so that it works as well as possible. As you get better, you will notice fewer lines and monitoring equipment!
- **Oxygen** — After your breathing tube is removed, you will receive oxygen through a tube under your nose called a nasal cannula. A nurse, technician, or respiratory therapist will place a sensor on your finger to monitor the oxygen saturation in your blood.

# Your Hospital Stay

## Post Surgical Care (continued)

- **Lab Testing** — Blood samples will be drawn daily to monitor your electrolytes and other important lab values. A chest x-ray will also be done. Fingersticks will be done frequently to monitor your blood sugar. Often the stress of surgery will elevate your blood sugar. Close monitoring of your blood sugar will improve the recovery process.
- **Activity** — You will be out of bed to a chair within four hours of the removal of the breathing tube. You may have ice chips and sips of water at that time. Returning to your normal level of function as soon as possible after surgery is one way to ensure a fast and safe recovery.

- **Pain Medicine** — You will receive pain medication via IV and/or mouth after surgery. We recommend taking your pain medications prior to receiving therapies or moving from the bed to the chair. Managing your pain will help you perform the necessary activities for recovery.

- **Breathing Exercises** — After surgery the nurses and respiratory therapists will encourage you to cough and deep breathe to prevent pneumonia. You will also be encouraged to use the incentive spirometer ten times per hour while you are awake. The staff will educate you in the most effective ways to perform these activities.





# Your Hospital Stay

## Your Post-operative Stay in Acute Care Telemetry

Your surgeon will determine when you can be transferred to the Acute Care Telemetry (ACT) unit on the fourth floor. Once you are transferred to ACT you will become more independent, and more family and friends will be able to visit you (when visitation is allowed). Napping is encouraged, and it's important to not wear yourself out.

In ACT, there are several things you can do to help in your recovery.

1. Use your call light for assistance; do not get up without help.
2. Save your urine for the staff to measure quantities. This ensures that your body is processing what you are taking in.
3. Watch your fluid intake. Check with your nurse for your specific amount. This will decrease the workload of the heart.
4. Eat at every meal. This helps in the healing process and increases your energy. Try to eat even if you do not feel like it. It will take a while for your appetite to return to normal.
5. Get out of bed and into the chair for all meals. This helps to prevent pneumonia and blood clots, and decreases your recovery time.
6. Use your incentive spirometer ten breaths every hour while awake. Hug your heart pillow while you cough and deep breathe. This helps to open the lungs, decreases the risk for pneumonia, and assists in decreasing your oxygen needs. Your supplemental oxygen may not be needed any more.
7. Walk with cardiac rehab and nursing staff three to four times daily. Increase walking time and distance based on what your heart surgery team recommends.
8. Once your chest tubes are removed, shower daily. This helps decrease the risk of infection.
9. Keep your pain in check. When you are starting to feel pain, ask your nurse for pain medication. Most medications can be taken every four to six hours. Do not let your pain level get too high – it will decrease your healing process. Continue to use stool softeners and laxatives as needed to prevent constipation from pain medication use.
10. Rest in between meals and walking.
11. Notify your nurse if you have not had a bowel movement, which is a must prior to being discharged.
12. Discharge planning will be initiated with the help of your heart surgery team, and your case manager.

# Your Hospital Stay

## Patient Safety

Your safety is of the utmost importance to all staff at Northwest Medical Center. To help ensure that we are always acting in your best interest, we have implemented several programs to keep patient safety at the forefront of everything we do.

### Patient Identification Wristband & Blood Bank Band

When you are admitted, we will place an identification band on your wrist. This has important information not only on who you are, but if you have allergies. You will also receive a blood bank wristband that identifies your blood type. It is vital that these wristbands remain in place throughout your hospital stay. Once you are discharged from the hospital, you may remove these bands.

### Two Patient Identifiers

**Our goal is to not mistake one patient for another, 100% of the time.** To accomplish this, every healthcare provider will ask you for your name and your date of birth, every time they take care of you. Every time. This includes giving you medications, taking a blood sample, performing an exam or other procedure, and even when you receive your food tray! This may become frustrating to you, because you will constantly be saying your name and date of birth. Remember that this will help prevent you from getting a wrong medication, or having an unnecessary x-ray, or giving blood for a lab test that you do not need.

### Handwashing

Handwashing is the most important activity any person can do to prevent infections. Here at Northwest Medical Center, we take our handwashing

seriously. Every healthcare provider should disinfect their hands before and after treating each patient. Our motto is “gel in, gel out.” This refers to the hand sanitizing gel that is located in a dispenser in your room. Watch for our staff to use the sanitizing gel before providing you with care.

### Preventing Infections

For your surgery you will have several access lines placed. One type of line placed is called a “central line” or “central catheter.” It is a tube that is placed into a large vein, usually in the neck, chest, arm or groin. This catheter is used to draw blood, or give fluids or medications. A bloodstream infection can occur when bacteria or other germs travel down a “central line” and enter the blood. The chance of infection is small but we will do everything we can to prevent infection including:

- Removing the catheter as soon as it is no longer needed.
- Using hand hygiene (handwashing or use of alcohol hand gel) before touching any part of the catheter.
- Using strict sterile techniques when putting the catheter in place. Staff will use mask, cap, gown, sterile gloves and cover you with a large sterile sheet during placement.
- Cleaning your skin with an antiseptic before placing the catheter.
- Cleaning the catheter opening with an antiseptic solution before using the catheter to draw blood or give medications.

The most important thing you can do is clean your hands frequently and encourage others to do the same.

# Your Hospital Stay

## Patient Safety (continued)

### Fall Prevention Program

**We are committed to keeping our patients safe while in the hospital.** This includes preventing falls from occurring. Many factors can put you at risk for falling, which may increase your hospital stay. If you are at risk for falling due to your medical history, you will be given a pair of yellow socks. This alerts the staff to take extra precautions, such as using special equipment. For your safety, ask for assistance before you get out of bed or perform other activities.

### Hourly Rounding

Our hourly rounding program is designed to ensure that you receive care in a timely and efficient manner. Each hour during the day, and every two hours at night, a nurse or nurse technician will be checking in with you. If you are awake, they will ask you the following questions:

- Are you having any pain?
- Do you need to use the bathroom?

- Do you need assistance shifting to a different position?
- Do you need any personal items?
- Is there anything else you need?

While this helps us care for you in a more proactive (positive) manner, please do not hesitate to use the call light if you need assistance between these hourly checks.

### Family Help Line

The Family Help Line is a way for patients and families to “speak up” for patient safety. If there is an emergency, a noticeable medical change or an unresolved situation and the health care team is not recognizing your concern, the Family Help Line is available. Call 7111 to request the Rapid Support Team. Further information regarding the Family Help Line is posted in your hospital room.

# Pain

## Pain Medications and Pain Control

There are a variety of ways to manage pain after heart surgery. It is important to understand you will experience some degree of pain. You and your surgeon will discuss the best plan of care for you prior to your surgery.

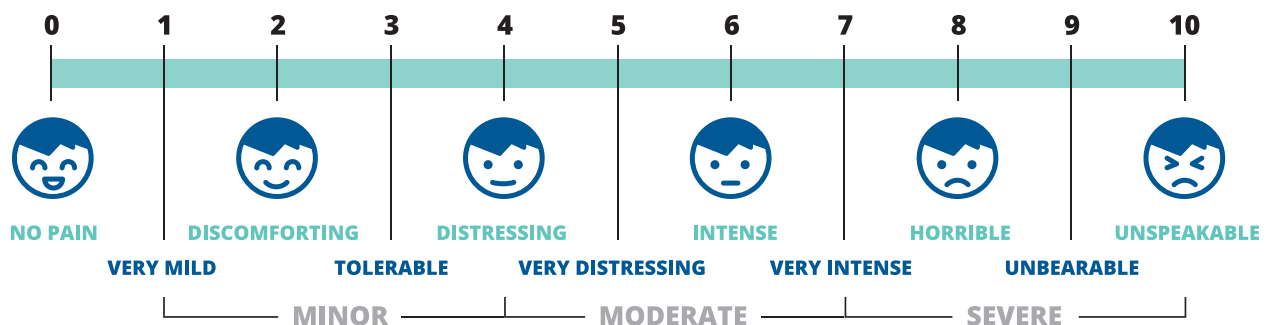
Pain control is very important in the recovery process. While we cannot completely eliminate pain, it is important for you to be able to get into a chair, ambulate, deep breathe and cough, and use your spirometer. If you are experiencing too much pain, you may not be able to perform these activities adequately, and your recovery may be delayed. We recommend you take your pain medication prior to any scheduled activities.

Be sure to talk with your nurse about your pain, so your own pain management schedule can be established.

■ **Pain Scale** — You will be asked frequently throughout your stay to rate the intensity of your pain. A pain scale will be used and is numbered 0 to 10 with each number representing a degree of pain. “0” is considered the least amount of pain and “10” is the highest amount of pain you are experiencing.

Immediately after surgery, you will not be able to talk. The nurse will use a special scale to assess your pain. This scale uses your vital signs, your facial expression, and other physical signs to determine your level of pain.

Pain medication will be administered by the nurse as needed to minimize pain and discomfort. For the first 24 hours, your pain medication will be given through your IV. As you begin to eat and drink, you will be given your pain medication in pill form.



# Post Surgery

## Post Surgical Activity and Exercises

### Coughing and Deep Breathing

After surgery the nursing staff will encourage you to cough and deep breathe frequently to prevent lung congestion.

To cough, hold your heart pillow over your chest. Take a deep breath in and cough strongly from your abdomen. To deep breathe, inhale deeply and hold your breath for several seconds. Then exhale the air slowly. Repeat several times. You will also be asked to breathe deeply and frequently with a small plastic device called an incentive spirometer. This helps you expand your lungs and prevent post-surgical complications. If you feel the urge to cough while using your spirometer, cough with your heart pillow. You should use your spirometer to take at least 10 deep breaths per hour while awake.

### Cardiac Rehabilitation

You will receive cardiac rehabilitation one to two times a day while you're in the hospital. Your participation with therapy immediately after surgery is critical to your overall recovery, mobility, and function. Therapists will coordinate your therapy sessions with nursing to ensure good pain control prior to your session.

The Cardiac Rehab Therapist will assess your heart rate, blood pressure, and oxygen saturation before and after your exercise session. The

therapist will gradually progress the distance you walk during the course of your hospital stay. A good goal is to be able to walk 500 feet before discharge.

The cardiac rehab therapist will also review important information to keep you healthy once you return home. They will review your cardiac risk factor profile, develop a home exercise program, and teach you how to take your own pulse. They will also show you some stretches to help your chest area heal better.

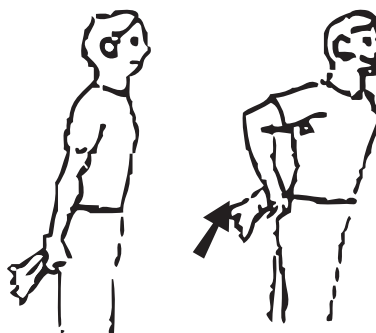
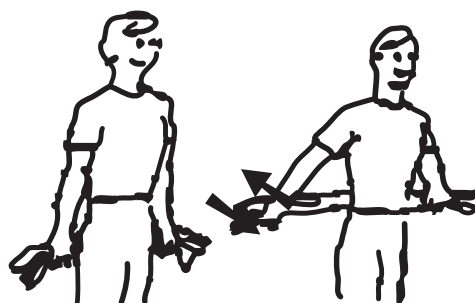
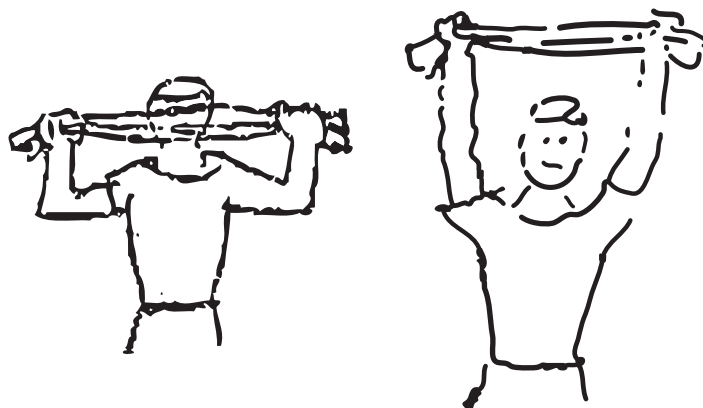
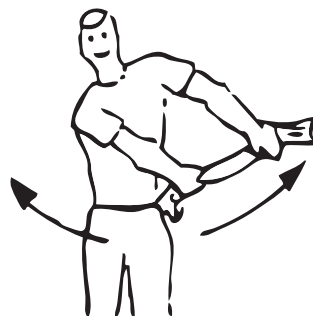
- **Physical Therapist** – If indicated, a physical therapist will assist you with the preservation, enhancement, or restoration of movement and physical function whether impaired or threatened by disease, injury, or disability. They will utilize therapeutic exercise, physical modalities, assistive devices, and patient education and training.
- **Occupational Therapist** – If indicated, an occupational therapist will assist you with meaningful activities of daily life (such as self-care skills, education, work, or social interaction). They will help to enable or encourage participation in daily living activities despite impairments or limitations in physical or mental functioning.
- **Speech Therapy** – A speech therapist may assist you if indicated with therapeutic treatment of impairments and disorders of speech, voice, language, communication, and swallowing.

# Heart Surgery Activities

## Exercises for Heart Surgery Patients

Incisional soreness often prevents people from using the muscles in their chest area. This results in poor posture, loss of range of motion, and delayed healing. The following exercises will stretch the muscles of the chest and shoulders. By performing these exercises, flexibility will be maintained, postural problems will be prevented, and healing will occur at an increased rate.

1. Start in a neutral position, with the towel in front of your body. Move your arms to one side and then to the other while keeping your torso straight.
2. Start with your elbows bent, and the towel in front of your face. Lift your arms straight up over your head.
3. Hold the towel behind your back. Extend your arms backwards, moving the towel away from the body. Keep your torso straight – avoid bending forward at the waist.
4. Hold the towel behind your back. Slide the towel up your back by bending your elbows.



# Leaving the Hospital

## Discharge from the Hospital

Standard hospital discharge time is 10 a.m., but your actual discharge time may vary because it is based upon your condition as determined by your physician. Please be prepared for discharge by having transportation arranged for as early as 10 a.m.

You will be ready for discharge when your physician feels you are stable and ambulating. You may either go home or be transferred to a rehabilitation facility.

If you are going home you will receive:

- Prescriptions to fill at your own pharmacy.
- A complete list of your medications.
- Written instructions from your nurse and doctor.
- Written information on your customized dietary plan.
- Information regarding your continued cardiac rehab.

If you are transferred to another facility, the surgeon will write the appropriate orders for the medications you will need and any further treatment you will receive.

### The Drive Home

When getting into the car:

- Move the front passenger seat forward as far as possible.
- Sit in the back seat. Place your heart pillow over your chest, and wear your seat belt over your pillow.
- If you have a long commute (over 1 hour), stop to stand up and stretch after 45 minutes to prevent blood clots from forming.
- Avoid riding home in a compact car, sports car, truck and high suspension vehicles. If you must sit in the front seat, move the seat back as far as possible.

# CT Surgery Timeline

## Cardiothoracic Surgery Timeline

\* This is a guideline. Timeline will be individualized to each patient's progress.

Patient		Later on Operative Day	Post-Op Day 1	Post-Op Day 2	Post-Op Day 3	Post-Op Day 4
<b>Admission/Day of Surgery</b>	<b>Immediately after Surgery</b>	<b>Later on Operative Day</b>	<b>Post-Op Day 1</b>	<b>Post-Op Day 2</b>	<b>Post-Op Day 3</b>	<b>Post-Op Day 4</b>
<ul style="list-style-type: none"> <li>♥ You will be prepared for surgery:</li> <li>1 IV started</li> <li>2 Blood work</li> <li>3 IV medications to relax you</li> <li>♥ Case Manager begins discharge planning</li> </ul>	<ul style="list-style-type: none"> <li>♥ ICU/Initial waking up info:</li> <li>♥ Breathing tube will place -- not able to speak</li> <li>♥ IV medications in place</li> </ul>	<ul style="list-style-type: none"> <li>♥ Breathing tube removed</li> <li>♥ Dangle legs</li> <li>♥ Sit in chair with legs elevated</li> <li>♥ Begin using incentive spirometer</li> <li>♥ Cough with cardiac pillow</li> <li>♥ Ice chips offered</li> <li>♥ Pain meds as needed</li> </ul>	<ul style="list-style-type: none"> <li>♥ Diet: Clear liquids</li> <li>♥ Removal of bladder catheter</li> <li>♥ Cardiac Rehab begins</li> <li>♥ Walking goal: up to 4 times per day</li> <li>♥ Sit in chair for meals</li> <li>♥ Pain medications</li> <li>♥ Incentive spirometry</li> <li>♥ Cough with cardiac pillow</li> <li>♥ Some invasive lines removed</li> <li>♥ Incision dressing removed</li> <li>♥ Transfer to Acute Care Telemetry</li> </ul>	<ul style="list-style-type: none"> <li>♥ Pacing wires removed</li> <li>♥ Removal of chest tubes</li> <li>♥ Increase activity/walking</li> <li>♥ Incentive spirometry</li> <li>♥ Laxative if needed</li> <li>♥ Pain medications</li> <li>♥ Cough with cardiac pillow</li> <li>♥ Shower in ACT after pacing wires removed</li> </ul>	<ul style="list-style-type: none"> <li>♥ Walk 2 times with Cardiac Rehab</li> <li>♥ Walk 2 times unassisted or with nursing staff</li> <li>♥ Dietitian consultation</li> <li>♥ Incentive spirometry</li> <li>♥ Cough with cardiac pillow</li> <li>♥ Shower</li> <li>♥ If discharged today, see next column for more info</li> </ul>	<ul style="list-style-type: none"> <li>♥ Discharge instructions by RN</li> <li>♥ Shower</li> <li>♥ Walk 4 times daily</li> <li>♥ Appointments scheduled</li> <li>♥ Patient understands discharge instructions and medications</li> </ul>
<b>Family*</b>						
<ul style="list-style-type: none"> <li>♥ One family member allowed in pre-op with patient</li> <li>♥ Remainder of family waits in CVICU waiting room on first floor</li> <li>♥ Case Manager begins discharge planning</li> </ul>	<ul style="list-style-type: none"> <li>♥ Surgeon speaks with family in CVICU waiting room or via telephone</li> </ul>	<ul style="list-style-type: none"> <li>♥ Short family visits for 10 minutes once breathing tube removed</li> <li>♥ Family identifies one contact person for calls concerning patient</li> </ul>	<ul style="list-style-type: none"> <li>♥ Family encourages patient to:                             <ul style="list-style-type: none"> <li>*Deep breathe/cough</li> <li>*Use incentive spirometer and pillow for coughing</li> <li>*Eat</li> <li>*Increase activity</li> </ul> </li> <li>♥ Family to listen/participate in Cardiac Rehab</li> </ul>	<ul style="list-style-type: none"> <li>♥ Family assist with walking</li> <li>♥ Continue encouragement</li> </ul>	<ul style="list-style-type: none"> <li>♥ Continue assisting patient with walking</li> <li>♥ Dietitian meets with patient and family</li> <li>♥ If discharged today, see next column for more info</li> </ul>	<ul style="list-style-type: none"> <li>♥ Family begins planning for transportation to follow-up appointments</li> <li>♥ Understand patient discharge instructions and medications</li> </ul>

\*Visitation guidelines may change. Please talk with your surgeon's office prior to surgery to understand current visitation guidelines.





# Daily Activities

## Restricted Activities

The following is a list of activities you SHOULD NOT DO until after you have your follow-up visit with your surgeon:

- Drive a car
- Return to work
- Lifting more than 5 pounds
- Participate in sports/strenuous exercise
- Housework, such as vacuuming, dusting, cleaning windows
- Take a tub bath
- Use a pool, hot tub or jacuzzi

## Everyday Activities

Here is a list of everyday activities which may need modification after your surgery:

- **Showering:** You may shower as soon as you get home. If you have a tub shower, you may want to use a shower bench or chair.
- **Walking:** Use the Home Exercise Guidelines on page 60 to walk each day. DO NOT walk on uneven surfaces such as lawns or gravel.
- **Sitting:** Use chairs which have arms, backs and firm seats. If possible, use a recliner to elevate your legs. DO NOT sit on low stools, low chairs, chairs with wheels or low toilets. To maintain good circulation, pump your ankles up and down after sitting in one spot for more than 30 minutes.



# Post Surgery Follow-Up

## Cardiology Check-Up

You will have a follow-up visit with your cardiologist 10 to 14 days after you leave the hospital. Bring your medication list to this appointment, as there may be changes.

## Post Operative Check-up

It is routine to have a post-operative visit with your surgeon 10-14 days after surgery. During this post-operative visit, you will receive a thorough check-up and updated instructions for care from your surgeon. You will be informed of the activities you may resume at that time. It is

helpful to bring your list of medications to this appointment too.

During this visit you will have a 6 minute walk test to examine frailty and cardio pulmonary fitness.

## Primary Care Provider Check-Up

You should follow up with your primary care provider 2-4 weeks after your cardiac surgery. He/she will give you guidelines on managing your risk factors and schedule regular follow up visits to reduce the development or progression of coronary artery disease and reduce the risk of future complications.



# Cardiac Rehabilitation

Now that you are on your way to cardiac health you may be asking yourself, or your physician, “Why should I participate in a cardiac rehabilitation program?” The answer lies in the many benefits of cardiac rehabilitation. Individuals who participate in cardiac rehab have:

- Reduced risk for major heart problems and death after a heart attack
- Decreased severity of angina, and decreased need for medication to control angina
- Reduced need for hospitalization because of heart problems
- Reduced costs for doctor visits and hospitalizations
- Reduced visits to the emergency room
- Increased oxygen supply to the heart
- Increased coronary collateral circulation
- Increased strength of heart contraction
- Decreased resting heart rate and blood pressure
- Reduced shortness of breath and fatigue
- Increased ability to perform activities of daily living
- Lower cholesterol and triglyceride levels
- Decreased need for insulin if diabetic
- Decreased depression, anxiety, anger, stress and other feelings that follow heart surgery
- Increased self-esteem, optimism, and desire to socialize with other people
- Increased stamina, strength and endurance

## What is Cardiac Rehab?

Outpatient cardiac rehab is a program of monitored exercise, education, counseling, and cardiac risk factor modification. The program is designed to help you restore and maintain your optimum physical, psychological, emotional, and vocational functioning as you recover from your heart surgery. Clients attend two to three times per week for about an hour each time, and the program lasts eight to twelve weeks. Most insurance companies cover cardiac rehab after heart surgery.

With monitored exercise, you wear a small telemetry monitor that allows trained staff to watch your electrocardiogram (EKG) while you are actually exercising. An individualized exercise prescription is developed for you based on your own abilities and responses. Exercise is progressed according to your own adaptations and schedule.

Education is given in a variety of ways. Each participant receives written information on heart-healthy living. Educational videos are shown during the exercise sessions, and educational classes are held each week on topics including heart disease, exercise, cholesterol, high blood pressure, diabetes, nutrition, and stress.

## Who can attend cardiac rehab?

Cardiac rehab is designed for anyone recovering from a cardiac event. **To schedule an appointment with Northwest Medical Centers Cardiac Rehab program, call (520) 202-2740.**

# Medications

One of the following medications may be prescribed to reduce your risk of getting a blood clot after surgery. You need to take the medication as prescribed by your surgeon or primary care physician.

## Coumadin (warfarin) and Other Anticoagulants (Xarelto, Eliquis, Pradaxa)

If warfarin or any other anticoagulant is prescribed by your surgeon, you should take as directed.

**You should consult with your doctor before taking aspirin or other anti-inflammatory medicines (such as motrin, ibuprofen, colchicine, or celebrex).** Instead use tylenol for pain. Please check with your primary care provider or pharmacist before taking any prescriptions or non-prescription medicines including vitamins or herbals since these have been shown to affect the action of other anticoagulants.

You will need to have your blood checked to make sure you are receiving the right amount of warfarin to prevent blood clots or bleeding. Initially, you may need to be screened frequently; however, once your blood levels are stable, lab screenings will become less frequent. After you leave the hospital you will need to continue to have your levels checked by your physician.

### While Taking Warfarin

- Take daily at 4 p.m.
- Avoid alcohol.
- Avoid aspirin and other anti-inflammatory medications unless instructed by your doctor.
- Avoid large changes in diet.
- Use an electric razor.
- Notify your doctor if you experience any unusual bleeding, dark stools, nosebleeds, bleeding from the gums or unusual severe headaches.
- Inform your physician about any herbs or supplements you are taking.
- Be consistent with your vitamin K intake.

## Plavix (clopidogrel)

If Plavix is prescribed by your surgeon, you should take it once every day at approximately the same time.

**You should consult with your doctor before taking aspirin or anti-inflammatory medicines (such as Motrin or ibuprofen) if you are taking Plavix.** Instead, use Tylenol for pain.

# Medications

## Pain Medications

Your prescribed pain medication should be taken every 6-8 hours as needed. You should gradually be able to increase the length of time between pills.

You should take pain medication 20-30 minutes prior to exercising and prior to bedtime. This will allow you to perform your exercise with reduced pain and also assist with sleeping.

## Laxatives and Stool Softeners

Sometimes inactivity or pain medications can cause constipation. It is important not to “bear down” during a bowel movement, as this may cause your heart rate and blood pressure to drop. If constipation occurs, you may take any over-the-counter laxatives or stool softeners, such as Milk of Magnesia, Dulcolax pills or suppositories, Colace stool softener, Metamucil, or a Fleets enema. Drinking plenty of water, eating high-fiber foods, and being physically active can help prevent constipation.

**You should notify your doctor if you experience any unusual bleeding or dark stools.**



# Precautions

## Blood Clots

Blood clots can sometimes occur after heart surgery. Proven ways to decrease the risk of clot formation include Warfarin, Plavix, or aspirin as prescribed by your doctor, and avoiding crossing your legs. It is, however, important to recognize the warning signs for blood clots.

### Warning signs for blood clots in the leg:

- Increased pain in the calf of your leg
- Tenderness or redness in your legs
- Increased swelling of the thigh, calf, ankle or foot

### Warning signs for blood clots in the lung:

- Sudden shortness of breath
- Sudden onset of chest pain
- Localized chest pain with coughing, or when taking a deep breath
- Coughing up blood



**Call your doctor immediately if you experience any of these warning signs.**

# Precautions

## Infections

Before you go home, your doctor or nurse should explain everything you need to know about taking care of your wound. Make sure you understand how to care for your wound before you leave the hospital.

- Always clean your hands before and after caring for your wound.
- Before you go home, make sure you know who to contact if you have questions or problems after you get home.
- Some swelling, redness, and pain are common with all wounds and normally will go away as the wound heals. If swelling, redness or pain increases or if the wound feels warm to the touch, or if the wound reopens, separates or oozes, contact your doctor.
- Dermabond is a liquid skin adhesive that holds wound edges together. If this has been used on your wound:
  - This film will usually remain in place for 5 to 10 days and will naturally fall off your skin.
  - Do not apply liquid or ointment medications or any other product to your wound while the adhesive is in place. These may loosen the film before your wound is healed.
  - Do not soak or scrub until the adhesive has fallen off.
  - You may bathe/shower and briefly wet the wound. Gently blot dry with a soft towel.
  - Protect your wound from injury. Do not scratch, rub or pick at the adhesive film. Protect the wound from exposure to sunlight or tanning lamps while the film is in place.

### Warning signs of infection include:

- Persistent fever (oral temperature greater than 100 degrees)
- Shaking or chills
- Increased redness, tenderness, swelling or drainage from incision
- Increased pain during activity or at rest
- Urgency and frequency when urinating or blood streaked urine may be signs of a urinary tract infection



**Call your doctor  
immediately if you  
experience any of  
these warning signs.**



# Sternal Dos and Don'ts

## What happens to your chest during surgery?

In some surgeries, the sternum or breastbone is cut down the middle. In other surgeries, the breastbone is not cut. Your surgeon will tell you which procedure you had. If the breastbone is cut, it is put back and held together with wires. These wires are strong (like heavy fishing lines), but they can be broken or pulled through the breastbone with a lot of force. The wires hold the breastbone together until it heals into a solid bone again. Dissolving sutures hold together the other layers forming the chest scar. Puckering can occur around the top of this scar, but it will eventually go away.

The surgical site usually takes eight weeks to heal. The breastbone heals best when you lower stress on the bone and keep it still. Remember that minor chest wall discomfort and an occasional popping feeling are normal after surgery.

## Tips for Caring for Your Chest After Surgery (if your sternum was cut)

For the safety of your chest, you should adhere to the following precautions, especially for the first three months after surgery:

1. Always use the heart pillow to support your chest when coughing and sneezing.
2. Practice good, correct posture.
  - Stand and sit straight.
  - Avoid slumping forward.
  - Avoid sudden movements, such as “plopping” into a chair.
3. Always move your chest as one unit.
  - Avoid lifting with just one arm.
  - Keep arms close together when moving things, reaching, or turning your upper body.
  - Avoid heavy lifting or pulling. Do not lift more than 5-10 pounds during the first month. A gallon of milk weighs eight pounds.
4. NO driving for 6 weeks or as directed by your doctor.

As a passenger, remember to:

  - Ride in the back seat.
  - Wear a seatbelt.
  - Use your heart pillow to protect the chest when riding.
5. Call your doctor immediately if you experience the following:
  - Worsening or increased breastbone area pain.
  - Increased warmth to the breastbone region.
  - Increased redness or swelling to the chest incision.
  - Any separation of chest incision or presence of fluid drainage.

# Sternal Dos and Don'ts

## Things to Consider

### When sitting up in bed:

1. Cross your arms over your chest.
2. Roll like a log onto your shoulder.
3. Use both arms to push down on the mattress and raise your upper body.
4. At the same time, swing both legs over the side of the bed.
5. Once sitting upright on your bed, move your hips toward the edge of the bed.

### When getting up from the bed, toilet, or chair:

1. Scoot your bottom to the end of the chair or bed.
2. Position your feet for support so that they are slightly under your knees.

3. Hold your heart pillow while leaning forward from the hips.
4. Rock back and forth to help you get up.
5. Use your leg muscles to stand up. Using your arms a little to push is okay if you have a difficult time getting up.

### When walking after surgery:

1. Remember to use good posture. Stand straight, with your head up and swing both arms.
2. Walk on even surfaces to avoid falls.

These things do not apply  
if your sternum was not cut.

# Life After Heart Surgery

## Common Conditions After Heart Surgery

### Difficulty sleeping

- You may take Tylenol PM.
- Drink warm milk before bedtime.

### Depression

- This is normal, and usually temporary.
- Acknowledge your feelings with family or friends.
- Stay active. Get fresh air. Change your surroundings.
- If the depression persists for more than two weeks, notify your physician.

### Lack of appetite

- Eat small, frequent meals.
- Drink smoothies, shakes, supplemental drinks.

### Constipation

- Use a laxative: Milk of Magnesia, Dulcolax,
- Fleets Enema or suppository.
- Try a stool softener: Colace.

### Swelling

- Elevate your legs when sitting.

### Numbness along incision

- This is normal.

### Drainage from incision

- Change bandage daily.
- Remove bandage when oozing stops.
- If drainage continues, notify your physician.



# Life After Heart Surgery

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## Common Questions After Heart Surgery

**Q: How long do I need to maintain sternal precautions?**

A: Typically two to three months. (Not required if no sternal incision)

**Q: When can I start driving?**

A: Usually about six weeks after surgery, or 2-3 weeks if there is no sternal incision. Your surgeon will determine when you can begin driving.

**Q: How long do I have to keep doing the stretching exercises?**

A: Stretching exercises should be done until you are pain free; however, regular exercise should be a lifetime commitment.

**Q: When can I take a shower?**

A: Daily.

**Q: When can I resume sexual activity?**

A: When you can walk up two flights of stairs without shortness of breath, fatigue or chest pain. Each of these activities expends the same amount of energy. Use positions that do not put stress on the sternum. If you use an erectile dysfunction medication, check with your cardiac surgeon before resuming sexual activity.



# Diet & Nutrition

## Plant Based Diet

You may have been encouraged to adopt a plant based diet prior to your surgery. Research has shown that a plant based diet lowers inflammation which may help prevent chest pain and future cardiovascular events. Following a plant based diet may also reduce the risk of diseases like diabetes, cancer and heart disease, and death. For more information on plant based diet research, visit <http://www.inverse.com/mind-body/plant-based-diet-benefits>.

A healthy, plant based diet aims to maximize consumption of nutrient-dense plant foods while minimizing processed foods, oil, honey, and animal products (including dairy and eggs). It encourages lots of fruit, vegetables (cooked or raw), beans, peas, lentils, soybeans, seeds, and nuts (in small amounts) and is generally low in fat.

Your surgeon highly suggests continuing a plant based diet after surgery and beyond. The next few pages have suggestions for how to adopt a plant based lifestyle.

### Plant Based Diet Food Selections

NO animal products. Use olive oil and add seeds and nuts when appropriate.  
Modify carbs to 4 servings per meal if using a consistent carb diet.

#### Breakfast

Avocado toast  
Toast with peanut butter or almond butter  
Fruit Plate – *strawberries, blueberries, banana, raspberries (if available), with a side of nuts (almonds, walnuts, sunflower seeds, pecans, etc.)*  
Oatmeal, cream of wheat or cream of rice with brown sugar, berries and flax  
Cold cereal with almond or soy milk  
Orgain shake with bananas, berries and flax  
Vegetable broth  
Coffee, herbal tea, juice, coffee, almond or soy milk

#### Lunch & Dinner

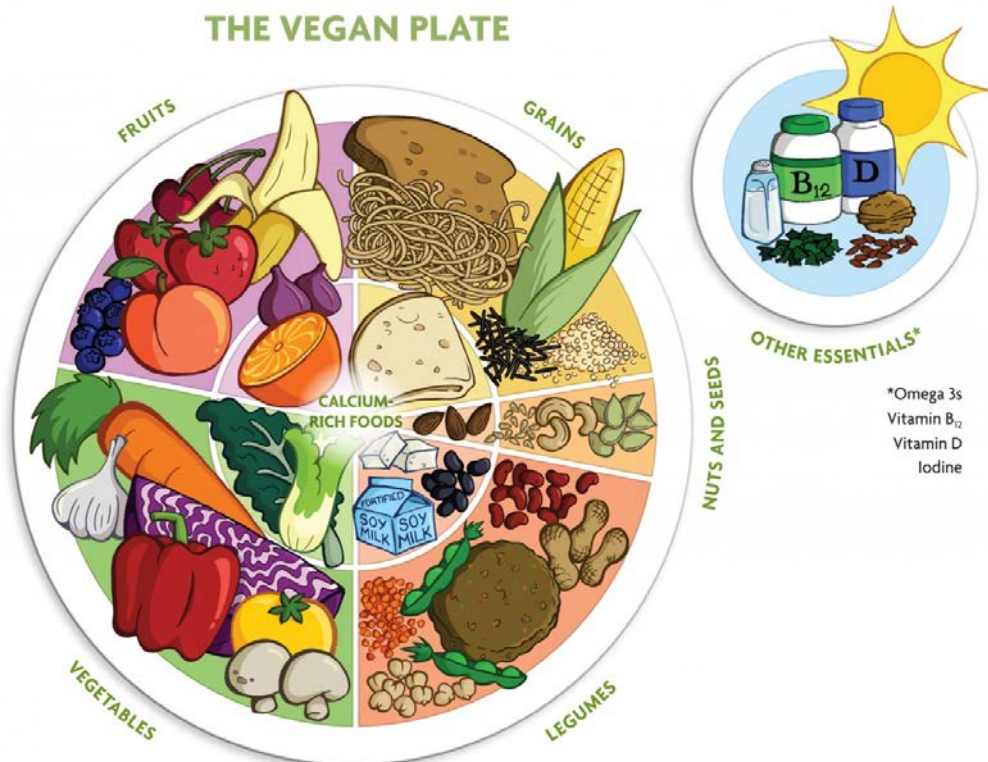
Spinach salad with strawberries, cranberries, walnuts, almonds, red onion and balsamic dressing  
Romaine salad with veggies, beans and sunflower seeds  
Black bean burrito with avocado slices  
Tofu stir fry with brown rice or farro  
Vegan “beef” flavored rice & vegetables with black beans  
Vegan spicy “sausage” flavored rice & vegetables with lentils  
Vegan oriental “chicken” fried rice with “vegan chicken strips”  
Veggie burger

Panko crusted eggplant with pasta (olive oil) and a side salad  
Steamed veggie plate – *Options: broccoli, cauliflower, carrots, zucchini, green beans, peppers, mushrooms, spinach, kale with brown rice, farro, barley or sweet potato.*  
Black beans, pinto beans or garbanzo beans with brown rice  
Baked sweet potato with margarine  
Whole grain pasta with olive oil  
Vegetable soup or broth  
Orgain shake  
Whole fruit

# Diet & Nutrition

## The tips below will help you to get the most out of your vegan lifestyle:

- Eat mostly whole, minimally processed **fruit and vegetables, especially green, red and orange** – *eat the rainbow!*
- Choose **higher fiber** starchy foods, such as oats, sweet potato, wholegrain bread, whole wheat pasta and brown rice
- Include good sources of **protein** in most meals, such as beans, lentils, chickpeas, tofu, soy almond or rice alternatives to milk and yogurt, or peanuts
- Choose heart-healthy fats, such as avocados, nuts, seeds, olives, olive oil and canola oil
- Eat nuts and seeds daily, especially those rich in **omega-3 fat** like walnuts, pecans, chia seeds, flaxseeds and pumpkin seeds
- Eat **calcium-rich** foods daily, such as calcium-fortified products and calcium-set tofu



- Ensure that your diet contains a reliable source of iodine (arguably a supplement is the best option)
- Season food with herbs and spices instead of salt
- Drink about six to eight glasses of fluid a day

Food Group	Food Recommended
Grains	<ul style="list-style-type: none"> <li>■ Make at least half of grain choices whole grain, including whole wheat, barley, rye, buckwheat, corn, teff, quinoa, millet, amaranth, brown and wild rice, sorghum and oats. ½ cup serving size</li> </ul>
Protein	<ul style="list-style-type: none"> <li>■ Nuts and seeds (1 ounce) such as peanuts, almonds, pistachios, sunflower, chia and flaxseeds.</li> <li>■ Nut and seed butters (2 Tablespoons) such as peanut butter, almond butter and sunflower butter</li> <li>■ Soy foods (1/2 cup) such as tofu, tempeh or soynuts</li> <li>■ Meat alternatives (1/2 cup) such as veggie burgers</li> <li>■ Legumes (1/2 cup cooked) such as dried beans, lentils or peas at least a few times per week in place of other protein sources (unsalted varieties)</li> </ul>
Dairy	<ul style="list-style-type: none"> <li>■ Fortified soymilk, almond milk, rice milk, oat milk, low fat plant based cheeses, lower sugar plant based yogurts</li> </ul>
Vegetables	<ul style="list-style-type: none"> <li>■ A variety of fresh, frozen and canned (unsalted) whole vegetables (1/2 cup cooked, 1 cup raw) including dark green, red and orange vegetables, legumes (beans and peas) and starchy vegetables such as sweet potatoes, potatoes, low sodium vegetable juices</li> </ul>
Fruits	<ul style="list-style-type: none"> <li>■ A variety of fresh, frozen, canned (1/2 cup) and dried (1/4 cup) whole unsweetened fruits, canned fruit packed in water or fruit juice without sugar added, 100% fruit juice (1/2 cup limit to 1 per day); avocados</li> </ul>
Oils and Fats	<ul style="list-style-type: none"> <li>■ Unsaturated vegetable oil (1 teaspoon) including olive, peanut, avocado and canola oil. Dairy and egg free margarine, salad dressings and mayonnaise</li> </ul>
Beverages	<ul style="list-style-type: none"> <li>■ Coffee, tea, water, 100% fruit juice. Avoid soda, sweetened beverages, sports drinks, energy drinks and sweetened coffee drinks.</li> </ul>

### Coronary Artery Bypass Graft (CABG) Vegan Sample 1-Day Menu

Breakfast	<ul style="list-style-type: none"> <li>■ 1 cup whole grain cereal</li> <li>■ ¼ cup walnuts</li> </ul>	<ul style="list-style-type: none"> <li>■ 1 cup soymilk fortified with calcium, vitamin B12, and vitamin D</li> </ul>
Morning Snack	<ul style="list-style-type: none"> <li>■ 6 ounces strawberry banana soy yogurt</li> </ul>	
Lunch	<ul style="list-style-type: none"> <li>■ 1 cup kidney beans</li> <li>■ ½ cup mashed sweet potato</li> <li>■ 1 cup broccoli</li> </ul>	<ul style="list-style-type: none"> <li>■ 1 orange</li> <li>■ ½ tablespoon margarine, soft tub</li> </ul>
Afternoon Snack	<ul style="list-style-type: none"> <li>■ 1 cup strawberries</li> </ul>	<ul style="list-style-type: none"> <li>■ 11 almonds</li> </ul>
Evening Meal	<ul style="list-style-type: none"> <li>■ ½ cup meatless meatballs</li> <li>■ ¾ cup whole wheat pasta</li> <li>■ ½ cup tomato sauce</li> </ul>	<ul style="list-style-type: none"> <li>■ 1 cup cooked spinach</li> <li>■ 1 teaspoon olive oil</li> <li>■ 1 cup soymilk fortified with calcium, vitamin B12, and vitamin D</li> </ul>



# Diet & Nutrition

## Weekly Diet Log

Meal	Mon _____	Tues _____	Wed _____	Thurs _____	Fri _____	Sat _____	Sun _____
BREAKFAST							
LUNCH							
DINNER							
SNACKS							

Use this log to help monitor your food intake and bring it with you to your follow-up visits. Recording the amount of each food is not necessary. Please fill out the date next to the weekday in the space provided.

# Diet & Nutrition

A well balanced diet is an important part in the healing process. You should not attempt any weight loss program during your recovery, as proper nutrition is essential to restore your strength.

It is not uncommon to experience a decrease in appetite for the first couple weeks after surgery. If this occurs, try eating smaller meals more often during the day, perhaps five to six smaller meals.

While your surgeon recommends a plant-based diet, those who choose not to follow a plant-based life style should follow the guidelines below.

## American Heart Association Recommendations

A heart-healthy eating plan can help people who have high amounts of cholesterol in their blood. It can help you after a coronary artery bypass graft or angioplasty. Following the plan can help reduce the LDL cholesterol (also called “bad” cholesterol) in your blood. Too much LDL can form plaque in your arteries. This puts you at risk for heart attack or stroke.

HDL cholesterol (sometimes called “good” cholesterol) helps rid your body of LDL cholesterol. To keep your HDL at a good level, choose heart-healthy fats, such as vegetable fats (olive oil, canola oil, vegetable oils, nuts, and seeds). Exercise also helps keep your HDL at the best level.

## Keys to Heart-healthy Nutrition

- Limit saturated fats and trans fats:
  - Foods high in saturated fats include marbled (fatty) meat, poultry skin, bacon, sausage, whole milk, cream, and butter.
  - Trans fats are found in stick margarine, shortening, some fried foods, and packaged foods made with hydrogenated oils.
  - If you eat these foods, have them only once in a while and in small amounts. Instead of butter or stick margarine, try reduced-fat, whipped, or liquid spreads.
- Limit the amount of cholesterol that you eat to less than 200 milligrams (mg) per day. Foods high in cholesterol include egg yolks (one egg yolk has about 212 mg of cholesterol), fatty meat, whole milk, cheese, shrimp, lobster and crab.
- Eat more omega-3 fats (heart-healthy fats):
  - Coldwater, oily fish are good sources of omega-3 fats. Choices include salmon, tuna, mackerel, and sardines. Aim to eat fish twice a week.
  - Other foods with omega-3 fats include walnuts and canola and soybean oil.
  - Flaxseed is another source of omega-3 fats. Have it as flaxseed oil or ground flaxseed. (The whole seeds pass through your body without heart-healthy effects.)
- Limit sodium to no more than 1,500 mg per day.

# Diet & Nutrition

## Keys to Heart-healthy Nutrition (continued)

- Keep the total amount of fat that you eat (including heart-healthy fats) to 25% to 35% of the calories that you eat. If you should eat 2,000 calories per day, your fat intake can be between 50 and 75 grams per day.
  - Get 20 to 30 grams of dietary fiber per day. Fruits, vegetables, whole grains, and dried beans are good sources of fiber:
    - Aim for 5 cups of fruits and vegetables per day.
    - Have 3 ounces of whole grain foods every day.
  - Plan more plant-based meals, using beans and soy foods for protein. For example, eat a soy burger instead of a hamburger. Make chili or casseroles with beans instead of ground meat.
- Talk with your dietitian or doctor about what a healthy weight is for you. Set goals to reach and maintain that weight.
  - Limit Alcohol. Check with your doctor before resuming alcohol consumption after your surgery.
  - Food Interactions: Certain foods contain high amounts of vitamin K and may interact with your blood-thinning medications. Avoid too many servings of foods high in vitamin K. Green leafy vegetables such as kale, cabbage, lettuce, leafy greens, spinach and broccoli are high in vitamin K, as are avocados. Oils, such as soybean, canola and olive, are also high in vitamin K.



## VITAMIN K CONTENT OF FOODS

- Eating more than the serving size for a moderate or low Vitamin K food can make it a high Vitamin K food.
- Unless otherwise noted, all foods are cooked; meat is roasted, fish is cooked with dry heat, vegetables are cooked from fresh and fruit is raw.
- This is a guide. Actual values may vary depending on product processing. Vegetables that are frozen then cooked may have higher Vitamin K values.
- Values are rounded to the nearest whole number and may be averaged with similar foods in group.

High Vitamin K (more than 100 mcg) Food Serving  
mcgModerate Vitamin  
K (25 – 100 mcg) Food Serving  
mcgModerate Vitamin K (25 – 100 mcg) (continued)  
Food Serving  
mcgLow Vitamin K (less than 25 mcg) Food Serving  
mcgLow Vitamin K  
(less than 25 mcg) (continued) Food Serving  
mcgVitamin K Free  
(less than 5 mcg) Food Serving

**Source:** U.S. Department of Agriculture, Agricultural Research Service. 2008. USDA National Nutrient Database for Standard Reference, Release 21. Nutrient Data Laboratory Home Page, <http://www.ars.usda.gov/ba/bhmrc/ndi>; accessed September 2, 2009.

**Source:** NutritionData.com: Nutrition Facts and Information, <http://www.nutritiondata.com>; accessed September 2, 2009.

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# Diet & Nutrition

## Recommended Foods

Food Group	Recommended Foods
Grains	<ul style="list-style-type: none"><li>■ Whole grain breads and cereals, including oats and barley</li><li>■ Pasta, especially whole wheat or other whole grain types</li><li>■ Brown Rice</li><li>■ Low-fat crackers and pretzels</li></ul>
Vegetables	<ul style="list-style-type: none"><li>■ Fresh, frozen, or canned vegetables without added fat, salt, or sugar</li></ul>
Fruits	<ul style="list-style-type: none"><li>■ Fresh, frozen, canned or dried fruit</li></ul>
Milk	<ul style="list-style-type: none"><li>■ Nonfat (skim), ½%-fat, or 1%-fat milk or buttermilk</li><li>■ Nonfat or low-fat yogurt or cottage cheese</li><li>■ Fat-free and low-fat cheese</li></ul>
Meat and Other	<ul style="list-style-type: none"><li>■ Lean cuts of beef and pork (loin, leg, round, extra lean hamburger)</li></ul>
Protein Foods	<ul style="list-style-type: none"><li>■ Skinless poultry</li><li>■ Fish</li><li>■ Venison and other wild game</li><li>■ Dried beans and peas</li><li>■ Nuts and nut butters</li><li>■ Meat alternatives made with soy or textured vegetable protein</li><li>■ Egg whites or egg substitute</li><li>■ Cold cuts made with lean meat or soy protein</li></ul>
Fats and Oils	<ul style="list-style-type: none"><li>■ Unsaturated oils (olive, peanut, soy, sunflower, canola)</li><li>■ Soft or liquid margarines and vegetable oil spreads</li><li>■ Salad dressings</li><li>■ Seeds and nuts</li><li>■ Avocado</li></ul>

# Diet & Nutrition

## Foods Not Recommended

Food Group	Foods Not Recommended
Grains	<ul style="list-style-type: none"> <li>■ High-fat bakery products, such as doughnuts, biscuits, croissants, Danish pastries, pies, cookies</li> <li>■ Snacks made with partially hydrogenated oils, including chips, cheese puffs, snack mixes, regular crackers, butter-flavored popcorn</li> </ul>
Vegetables	<ul style="list-style-type: none"> <li>■ Fried vegetables</li> <li>■ Vegetables prepared with butter, cheese or cream sauce</li> </ul>
Fruits	<ul style="list-style-type: none"> <li>■ Fried fruits</li> <li>■ Fruits served with butter or cream</li> </ul>
Milk	<ul style="list-style-type: none"> <li style="width: 50%;">■ Whole milk</li> <li style="width: 50%;">■ Half-and-half</li> <li style="width: 50%;">■ 2%-fat milk</li> <li style="width: 50%;">■ Cream cheese</li> <li style="width: 50%;">■ Whole milk yogurt or ice cream</li> <li style="width: 50%;">■ Sour cream</li> <li style="width: 50%;">■ Cream</li> <li style="width: 50%;">■ Cheese</li> </ul>
Meat and Other	<ul style="list-style-type: none"> <li>■ Higher-fat cuts of meats (ribs, t-bone steak, regular hamburger)</li> </ul>
Protein Foods	<ul style="list-style-type: none"> <li style="width: 50%;">■ Bacon</li> <li style="width: 50%;">■ Organ meats (liver, brains, sweetbreads)</li> <li style="width: 50%;">■ Sausage</li> <li style="width: 50%;">■ Poultry with skin</li> <li style="width: 50%;">■ Cold cuts, such as salami or bologna</li> <li style="width: 50%;">■ Fried meat, poultry, and fish</li> <li style="width: 50%;">■ Corned beef</li> <li style="width: 50%;">■ Whole eggs and egg yolks</li> <li style="width: 50%;">■ Hot dogs</li> </ul>
Fats and Oils	<ul style="list-style-type: none"> <li>■ Butter</li> <li>■ Stick margarine</li> <li>■ Shortening</li> <li>■ Partially hydrogenated oils</li> <li>■ Tropical oils (coconut, palm, and palm kernel oils)</li> </ul>

# Diet & Nutrition

## Sample One-Day Menu

Meal	Recommended Foods
Breakfast	<ul style="list-style-type: none"><li>■ ½ cup apple juice</li><li>■ ¾ cup oatmeal with 1 small banana and 1 cup skim milk</li><li>■ 1 cup brewed coffee</li></ul>
Lunch	<ul style="list-style-type: none"><li>■ Turkey and cheese sandwich: 2 slices whole-wheat bread, 2 ounces lean deli turkey breast, 1 ounce low-fat swiss cheese, mustard, 1 medium sliced tomato, shredded lettuce</li><li>■ 1 pear</li><li>■ 1 cup skim milk</li></ul>
Evening Meal	<ul style="list-style-type: none"><li>■ 3 ounces broiled fish</li><li>■ 1 cup brown rice with 1 teaspoon soft margarine</li><li>■ 1 medium stalk broccoli and 1 medium carrot</li><li>■ Tossed salad with mixed greens, tomatoes, chickpeas, and olive oil and vinegar dressing</li><li>■ 1 small whole grain roll with 1 teaspoon soft margarine</li><li>■ 1 cup tea</li><li>■ ½ cup nonfat frozen yogurt with fruit</li></ul>
Snacks	<ul style="list-style-type: none"><li>■ 1 ounce trail mix made with nuts, seeds, raisins, and other dried fruit</li><li>■ 1 cup blueberries</li><li>■ 1 cup skim milk</li></ul>

Good nutrition is essential to healing. Maintaining a healthy weight will eliminate stress to your joints and may reduce the risk of heart disease, high blood pressure, diabetes and cancer. Nutritionists recommend a balanced diet, including variety of foods every day. We recommend you visit [www.mypyramid.gov](http://www.mypyramid.gov) and/or [www.americanheart.org](http://www.americanheart.org) for additional information on healthy eating.

# Diet & Nutrition

## Diet & Nutrition

Make sure your diet includes adequate calcium (with Vitamin D), protein, and iron prior to and after your surgery. Include high fiber foods, such as fruits, vegetables and whole grains and drink plenty of water to avoid constipation. Avoid alcohol.

## Important Nutrients for a Speedier Recovery After Surgery

Nutrient	What does it do?	Where does it come from?
Magnesium	Acts like a “key” to let calcium move into muscles.	Nuts, cooked dried beans and peas, whole grain leafy vegetables, milk and dairy products
Calcium	Makes bones stronger.	Milk, cheese, yogurt, broccoli, dark green leafy vegetables, canned fish with bones, cooked dried beans
Vitamin D	Helps the body use calcium.	Vitamin D fortified milk, egg yolks, butter, cream, cod liver oil, salmon, herring, mackerel, sardines
Iron	Used to make red blood cells.	Red meats, dried fruits, cooked dried beans, dark green leafy vegetables, fish, poultry, oysters, prune juice
Copper	Helps “knit” together building materials for new body tissues.	Whole grain breads/cereals, shellfish, nuts, poultry, cooked dried beans and peas, dark green leafy vegetables
Protein	Makes up part of enzymes, hormones, and is needed to use calcium.	Meats, eggs, poultry, lentils, dried beans and peas, milk products, breads and cereals
Vitamin C	Helps speed healing and helps prevent infections.	Oranges and orange juice, tomatoes, pineapples, lemons, limes



# Diet & Nutrition

**Diet & Nutrition** *(continued)*

## Vitamins and Iron Supplements

Discuss with your physician if you need to be taking a multi-vitamin.

Iron is an essential mineral that assists the body with a variety of functions. Iron carries oxygen and carbon dioxide in your red blood cells to many body tissues and is needed to produce energy and support the immune system. Your physician can assist you in a recommendation for a vitamin and iron supplement.

### **Remember when taking an iron supplement:**

- Take your supplement on an empty stomach with at least 8 ounces of water.
- Add foods rich in iron to your diet, such as lean meats, poultry, and fish.
- Include Vitamin C rich foods to your diet to help the body absorb iron. Some recommendations include strawberries, orange juice, cantaloupe, green peppers, broccoli and tomatoes.
- Limit coffee and tea at meals as they hinder the absorption of iron.
- Take calcium and zinc supplements separately from your iron supplement.



# Exercise

## Home Exercise Guidelines

After your discharge from the hospital, you should continue the exercise regimen you learned in the hospital. Continued aerobic training is important for many reasons, including:

- Improved circulation
- Lowered resting blood pressure
- Decrease in resting heart rate
- Improved muscle tone
- Stress reduction

### How Often?

The best way to condition and protect your heart and lungs is to exercise regularly. Your goal will be 30 – 60 minute sessions of aerobic exercise three to five days per week. At first, it will be several times a day, every day. As you become more conditioned you can continue with three to five days per week.

### How Long?

Increase the time you walk by approximately one minute each day. The chart below will help you determine the progression of your exercise routine:

Week	Times per Day	Warm-up	Aerobic Workout	Cool Down
1	3-4	2 min.	5 min.	2 min.
2	2-3	3 min.	6-10 min.	3 min.
3	2	4 min.	10-15 min.	4 min.
4	2	5 min.	15-20 min.	5 min.
5	1	5 min.	20-25 min.	5 min.
6	1	6 min.	25-30 min.	5 min.

Remember, the main goal during this phase of recovery is to increase your strength and endurance. Do not be too concerned about the speed you walk. Over time, your exercise goal will be 30 – 60 minutes of aerobic activity three to five days per week.

### How Hard?

How hard you exercise can be measured three ways:

1. Heart Rate
2. Rating of Perceived Exertion
3. Talk Test

# Exercise

## 1. Heart Rate

Your heart rate, or pulse, is the number of times your heart beats in one minute. It is important to take your heart rate so you know what is normal for you at rest. With exercise, your heart rate should not increase more than 20 – 30 beats per minute above your resting heart rate.

To find your pulse, place your index and middle fingers over the thumb side of your wrist. Do not use your thumb to take your pulse, as it has its own pulse, and will interfere with your counting. Keep your fingers flat, so that a greater area is in contact with your wrist. Lightly press with your two fingers until you feel the pulsation.

A second location to find your pulse is at the neck. Place your index and middle fingers on the side of your neck, just below the jawbone and just to the side of the windpipe.

To calculate your pulse, count the number of beats in ten seconds, and multiply by six. Start counting with “0”, i.e., “0, 1, 2, 3...”. Use the chart below to convert the number of beats you feel in ten seconds to your heart rate:

Beats in 10 sec	Heart Rate	Beats in 10 sec	Heart Rate
10	60	18	108
11	66	19	114
12	72	20	120
13	78	21	126
14	84	22	132
15	90	23	138
16	96	24	144
17	102	25	150

## 2. Rating of Perceived Exertion

Perceived exertion refers to how you feel related to the amount of exercise you are performing. This scale is used together with the heart rate and talk test to help you determine your exercise tolerance. For example, if you are within your prescribed heart rate (below 20 beats above resting heart rate), but you have a rating of “17” on the scale below, decrease your exercise intensity.

<b>6</b>	<b>14</b>
<b>7 Very, very light</b>	<b>15 Hard</b>
<b>8</b>	<b>16</b>
<b>9 Very light</b>	<b>17 Very hard</b>
<b>10</b>	<b>18</b>
<b>11 Fairly light</b>	<b>19 Very, very hard</b>
<b>12</b>	<b>20</b>
<b>13 Somewhat hard</b>	

# Exercise

## 3. Talk Test

You should not be out of breath while you are walking. You should be able to walk and talk at the same time.

If you can hold a conversation with a walking partner, you are exercising at an appropriate intensity.

## Precautions

Stop and rest if you have any of the following symptoms:

- Chest pain or discomfort
- Shortness of breath
- Dizziness or lightheadedness
- Nausea
- Excess fatigue

If symptoms persist, call your doctor if you develop a new or changing symptom, check with your doctor before returning to exercise.

## Do not exercise:

- In extreme weather
- Within one hour after eating a meal
- If you have a fever, flu-like symptoms, or other illness

Use the exercise log on the next page to record your exercise progress. Continue to do the stretching exercises on page 32 two times per day.

You should plan on starting cardiac rehabilitation four to six weeks after your surgery. Be sure to discuss Cardiac Rehab with your physician at your follow-up visit.





# Heart-Healthy Living

Now that you have a “new” heart, it is important to make lifestyle changes that will keep your heart healthy in the years to come. Knowing your own cardiac risk factors is the first step in developing a heart-healthy lifestyle.

## Cardiac Risk Factor Analysis

Certain personal characteristics are associated with heart disease. The presence of these cardiac risk factors may increase your chance for developing additional cardiac disease. Risk factors are divided into two categories: non-modifiable and modifiable.

### Non-modifiable Risk Factors

These are risk factors which you cannot change. You should try to make these your “baseline risks”, with no additional risk factors.

- **Age:** Men over 45 years and women over 55 years have a higher risk of heart disease.
- **Gender:** Men are at greater risk than women before the age of menopause.
- **Family History:** Heart attack or sudden death before 55 years in a male relative (father, brother, uncle, grandfather) or heart attack or sudden death before 65 years in a female relative (mother, sister, aunt, grandmother) puts you at higher risk for heart disease.

### Primary Modifiable Risk Factors

These are risk factors which you can change. When you treat these risk factors, you reduce your risk for heart disease.

- **Smoking:** Smokers have a 70% greater chance of heart disease than non-smokers; smoking increases plaque formation in coronary arteries, increasing blood pressure and heart rate. People who quit smoking reduce their risk close to that of non-smokers.
- **Hypertension:** Elevated blood pressure may interact with other risk factors (high cholesterol, smoking, obesity) and contribute to heart disease.
- **High Cholesterol:** Total cholesterol greater than 200 mg/dL or LDL greater than 130 mg/dL (70 mg/dL in individuals with heart disease) is associated with a five-fold increase in cardiac disease. This risk is increased in the presence of smoking and hypertension.
- **Low HDL Cholesterol:** High density lipoprotein (HDL) is the good cholesterol, which can help to lower levels of LDL (bad) cholesterol and total cholesterol. HDL levels should be greater than 35 mg/dL for men, 45 mg/dL for women, and can be increased through a diet high in whole grains, weight loss, and exercise.
- **Physical Inactivity:** People exercising less than 30-40 minutes 3 times per week or not at all increase their risk for heart disease. Persons exercising regularly can increase the chance for survival after a heart attack, and are more likely to control other risk factors such as obesity, hypertension, and diabetes

# Heart-Healthy Living

## Secondary Modifiable Risk Factors

These risk factors place a person at greater risk for heart disease, but have not been proven to independently increase risk. However, they are risk factors that should be taken into consideration when developing lifestyle habits to control or prevent cardiac disease.

■ **Diabetes Mellitus:** People with Insulin Dependent Diabetes Mellitus (IDDM) who are greater than 30 years old, have had IDDM for more than 15 years, or people with Non-Insulin Dependent Diabetes Mellitus (NIDDM) who are greater than 30 years old are at high risk for heart disease. Men with diabetes have a two-fold increase in cardiac risk, while women with diabetes have an four-fold increase in risk.

■ **Obesity:** Obesity is defined as a percent body fat greater than 30% or a body mass index greater than 30 kg/m<sup>2</sup>. Poor eating habits and physical inactivity can contribute to weight gain, and subsequently increase the risk for high cholesterol, diabetes, and hypertension.

■ **Stress:** People with an overdeveloped sense of time/urgency, drive and competitiveness (Type A personality) are at increased risk for developing heart disease.



# Heart-Healthy Living

## Smoking Cessation

One of the most important things you can do for your health is to quit smoking. You will look and feel healthier. Food will start to smell and taste better. You will have more money in your pocket. You will have more energy. Quitting will lower your risk of heart disease, stroke, chronic bronchitis, emphysema, and cancer.

### Tips to Help You Kick the Habit

- Don't try to quit to please someone else.
  - Evaluate your habit. Keep a record for a week of what you do and where you are every time you light up. This will show you what stimulates you to smoke or during what activities you smoke.
  - Set a date for quitting. Prepare to quit. Give yourself some time to get ready.
  - What temptations and cravings did your list show you? AVOID THEM. When cravings hit, do something else. For example, try chewing sugarless gum or drinking water.
- Ask friends and family to help you. Their support is important in your success.
  - Be kind to yourself. Quitting is difficult and one of the most important changes you will ever make. Give yourself little healthy rewards.
  - Change parts of your life that make it difficult to quit. You may have to avoid socializing with friends who still smoke, or only get together with them in a non-smoking environment. True friends will understand and support you.
  - If you relapse and smoke, accept that this may be a part of the path to success. Don't panic. Many people that successfully quit smoking relapsed two or three times before finally breaking the habit. Set a new date and start again.
  - Never forget that this is a positive thing for you. You are not "giving up" anything.

For additional information on smoking cessation, call the Arizona Smoker's ASHLine at (800) 556-6222, or visit them online at [www.ashline.org](http://www.ashline.org).



# Heart-Healthy Living

## Controlling High Blood Pressure

High blood pressure (hypertension) is called the silent killer. This is because many people who have it do not know it. Normal blood pressure is less than 120/80. Know your blood pressure and remember to check it regularly. Doing so can save your life.

### Tips to Control High Blood Pressure

- Choose heart-healthy foods. Follow the American Heart Association recommendations on page 49.
- Limit canned, dried, cured, packaged, and fast foods. These can contain a high amount of salt.
- Follow the DASH (Dietary Approaches to Stop Hypertension) eating plan. For information on the DASH plan, visit [www.nhlbi.nih.gov](http://www.nhlbi.nih.gov), and search for “dash” in the search bar at the top of the page.
- Maintain a healthy weight. Ask your healthcare provider what weight range is healthiest for you. If you are overweight, weight loss of only 10 pounds can help lower blood pressure.
- Get regular exercise. Choose activities that you enjoy. Find ones you can do with friends or family.
- Manage stress. Make time to relax and enjoy life. Find time to laugh.
- Visit with family and friends, and keep up with hobbies.
- Limit alcohol intake. Men should have no more than two drinks per day; women should have no more than one drink per day.
- Quit smoking. Quitting smoking will lower your blood pressure.
- Take your medications as directed. While lifestyle changes are always beneficial, they may not be enough to counteract your genetic history for high blood pressure. Medications are safe and effective, as long as they are monitored by your physician.

# Heart-Healthy Living

## Controlling Your Cholesterol

Cholesterol is a waxy substance that travels in your bloodstream. When you have high cholesterol, it builds up in the walls of your blood vessels. This makes the blood vessels narrower and blood flow is decreased, which puts you at increased risk for a heart attack or a stroke.

### Tips to Control Cholesterol

- Eat less unhealthy fat. Cut back on saturated fat, and eliminate trans fats (also called hydrogenated fats).
- Eat more fish. Fish contains heart-healthy omega-3 fatty acids.
- Eat more whole grains and soluble fiber (such as oatmeal, beans, bran and rice).
- Be active. Choose an activity that you enjoy, such as walking, swimming, and bicycling. Exercise will also increase your HDL (good) cholesterol.
- Quit smoking. Quitting smoking can lower your cholesterol levels.
- Take your medications as directed. While lifestyle changes are always beneficial, they may not be enough to counteract your genetic history for high cholesterol. Medications are safe and effective, as long as they are monitored by your physician.



# Heart-Healthy Living

## Increasing Physical Activity

Physical activity not only independently lowers your risk for heart disease, it also helps control many other risk factors such as obesity, cholesterol, hypertension, and stress. To keep your heart healthy, aim for 30 – 60 minutes of aerobic exercise, three to five days per week.

### Tips to Add Physical Activity into Your Day

- Choose activities that you enjoy. Walking, swimming, and riding an exercise bike are excellent choices.
  - Add extra movement to things you do now. Walk to mail letters. Park your car at the far end of the parking lot. Use the stairs instead of the elevator.
  - Remember that all activity is beneficial. Raking leaves, gardening, doing household chores, and washing the car all help your heart.
- Join a group exercise program at the YMCA, a senior center, or a community center.
  - Plan your activity by writing it on a calendar. Give yourself a healthy reward when you reach your exercise goals.
  - In extreme weather, power walk at a local indoor mall. Many malls have a mall walking program with lectures and incentives.
  - At work pick a lunch spot a few blocks away and walk there and back. Use your break for a brisk walk.
  - Get your family active. Ride bikes with your kids. Take your kids with you on a short walk after dinner.

# Heart-Healthy Living

## Controlling Your Diabetes

If you have diabetes, you are two to four times more likely to have heart disease than someone without diabetes. This is because people with diabetes also have other risk factors for heart disease, such as high blood pressure, high cholesterol, and obesity. You can help control your health risks by making healthy lifestyle changes.

### Tips for Controlling Diabetes

- Quit smoking. Smoking affects how your body uses insulin, making it harder to keep blood sugar under control.
- Test your blood sugar regularly. Testing is the only way to know whether your levels are under control. Ask your physician what levels are appropriate for you.
- Have your glycosylated hemoglobin (HbA1C) checked regularly, as directed by your physician. This blood value reflects long-term glucose control.
- Take your medication as directed.
- Eat a heart-healthy diet. Try to limit the amount of carbohydrates you eat at one time. Eat food low in saturated fat, and eliminate trans fat. Eat fiber, including fruits, vegetables, and whole grains. Try to avoid concentrated sweets.
- Be physically active. Exercise has the same effect as insulin in the body. Many people with diabetes can take fewer medications when they are more active.
- Keep your appointments with your healthcare providers. This includes regular checkups for eye care and foot care.

# Heart-Healthy Living

## Weight Loss

Excess weight is a major risk factor for heart disease. Losing weight may help keep your arteries open so that your heart can get the oxygen-rich blood it needs. Weight loss can also help lower your blood pressure and cholesterol.

### Calories and Weight Loss

- Calories are the fuel your body burns for energy. You get the calories you need from the food you eat. For healthy weight loss, women should eat at least 1,200 calories a day, men at least 1,500 calories a day. If you want more information on your specific needs, consult a registered dietitian.
- When you eat more calories than you need, your body stores the extra calories as fat. One pound of fat contains 3,500 calories!
- To lose weight, try to burn 500 calories a day more than you eat. You can do this by eating 250 calories less each day, and exercising 250 calories more each day. Walking one mile burns approximately 100 calories.
- In the final analysis, calories in must equal calories out, or weight gain will result.

### Tips for Losing Weight:

- Eat breakfast. This gets your metabolism going first thing in the morning, and keeps it going all day.
- Think about your eating habits. Do you eat out of habit instead of hunger? If you find yourself automatically snacking in front of the television every night, pick a certain spot in the house and do not let yourself eat anywhere else.
- Plan ahead. Dine out at places where there are low-fat, low-calories foods to choose from. If attending a party, eat a small healthy meal beforehand so you will not eat as many high-fat, high-calories foods at the party.
- Eat a few light meals each day instead of one main meal. Do not skip meals.
- Eat smaller portions. Use a salad plate instead of a dinner plate for your main meal. The plate will look “full” with less food.
- Stay hydrated. The sensation for thirst is often mistaken for the sensation for hunger. If you feel hungry, drink water first – this may eliminate hunger.
- Eat a small salad or cup of soup before your meal. It takes about 20 minutes for signals from your stomach to travel to your brain and tell you that you are no longer hungry. Eating just before your meal allows this signal the time it needs, so you don’t overeat.
- Be realistic and expect setbacks. If you go off your diet, do not quit and do not get mad at yourself. Just get back on track.

# Heart-Healthy Living

## Managing Stress

Stress has become such a common element in our daily lives that it is easy to overlook the effect it has on our overall health. It is estimated that 70 – 90 percent of all visits to family physicians are for stress-related complaints. Chronic negative stress contributes to a host of illnesses, such as arthritis, asthma, cancer, colds, diabetes, heart disease, ulcers, depression, and headaches.

### Instant Stress Busters

- Just notice! Without judgment, just notice: what does your body feels like, are you breathing, is your heart racing, are you tired, are you hungry, what is your mind chattering about, are you talking fast, etc.?
- Breathe (abdominal breathing is best). Inhale to the count of 1-2-3-4-5. Exhale to the count of 1-2-3-4-5.
- Change your mind chatter to positive chatter. Your body's physiology changes according to what is going on in your mind. Be positive.
- Smile! Make a big, toothy grin. Show your teeth. Let your eyes sparkle. Feel your body release endorphins. (Your body wants you to be healthy and happy.)
- Stretch.
- Exercise! Try a yoga or Tai Chi class. All forms of exercise can reduce stress.

- Take a mini-vacation. In your mind, go to your favorite place to get away. Picture the sights and colors; hear the sounds; experience the temperature; just be there and experience the peace.
- Prayer and meditation are excellent stress reducers.
- Laugh. Change your perspective. Step out of the situation. See yourself starring in a “sitcom” and this is just one of the episodes!
- Read a good book, or comics.
- Take time for yourself. Set aside a portion of your day to focus on yourself and relaxing.
- Take a 20-minute power nap.
- In the full spectrum of life, ask yourself, “Does this really matter?”

# Heart-Healthy Living

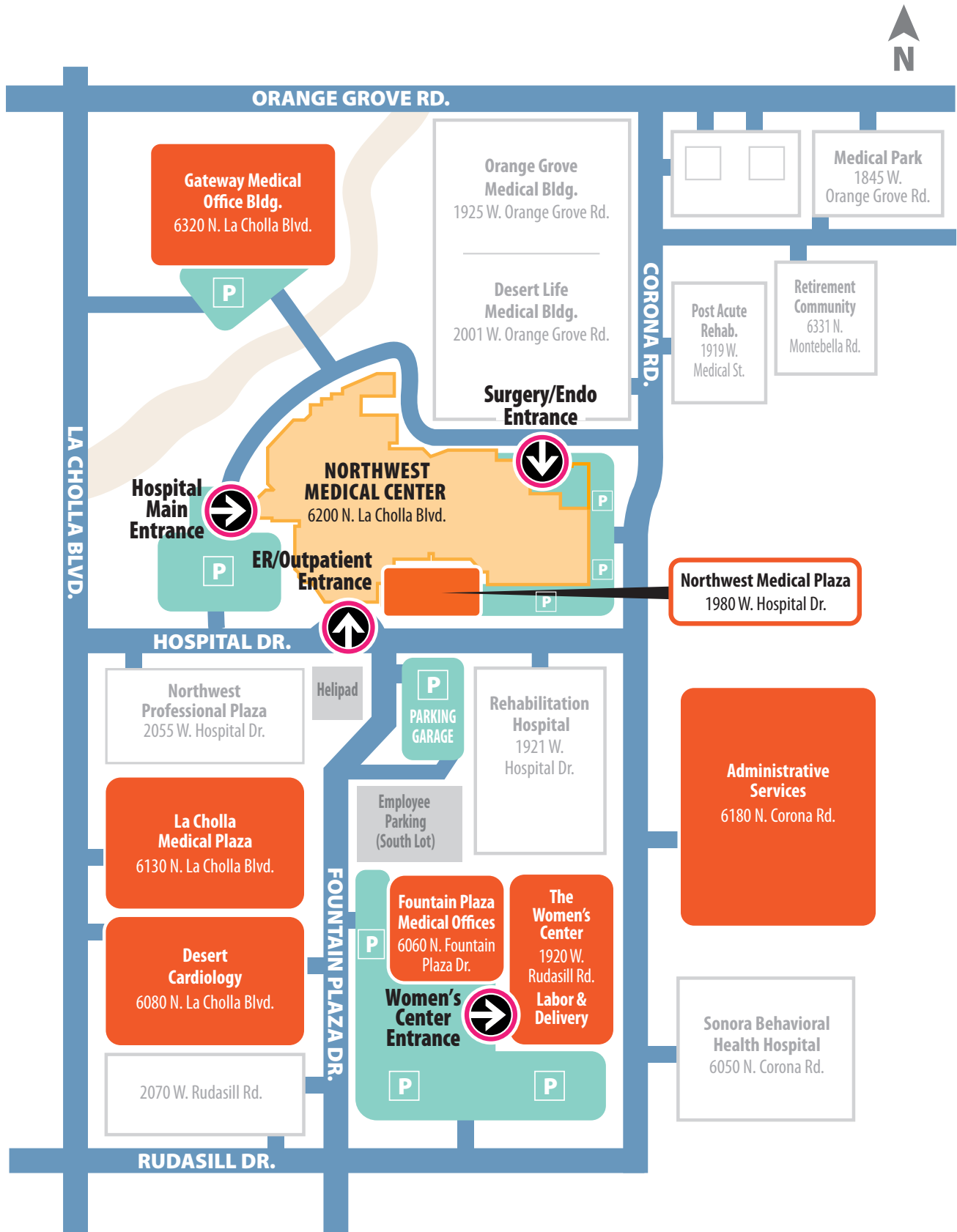
## Resources for Heart Health

Living with heart disease means making a lot of changes. You will have a lot of questions about these lifestyle changes. You are also likely to have a range of new feelings to deal with. Reach out to people close to you. Also, support groups can provide helpful advice.

### Resources

- Northwest Medical Center Cardiac Rehab: (520) 202-2740
- American Association of Cardiovascular and Pulmonary Rehabilitation: [www.aacvpr.org](http://www.aacvpr.org)
- American Heart Association: (800) 242-8721, [www.americanheart.org](http://www.americanheart.org)
- U.S. Department of Agriculture Food Pyramid: [www.mypyramid.gov](http://www.mypyramid.gov)
- American Dietetic Association: [www.eatright.org](http://www.eatright.org)
- American Diabetes Association: (800) 342-2383, [www.diabetes.org](http://www.diabetes.org)
- National Heart, Lung, and Blood Institute: (301) 592-8573, [www.nhlbi.nih.gov](http://www.nhlbi.nih.gov)
- American College of Sports Medicine: [www.acsm.org](http://www.acsm.org)
- WomenHeart: The National Coalition for Women with Heart Disease: (202) 728-7199, [www.womenheart.org](http://www.womenheart.org)
- Arizona Smoker's ASHLine: (800) 556-6222, [www.ashline.org](http://www.ashline.org)

# Northwest Campus Map





# Northwest Medical Center Maps



<b>HOSPITAL FIRST FLOOR</b>		Exterior Hospital Doors		Interior Doors		Cafeteria
		Restrooms		Visitor Lobby/Waiting Areas		Classrooms
		Parking		Visitor/Patient Access		Sidewalk and Courtyard
		Visitor/Patient Hallways		Medical Office Bldg. (1980 W. Hospital Dr.)		
				Visitor Elevators		

# Family Resources

We understand that visitation can help with healing, so we generally maintain open visitation. Visitation can change based on cold or flu season or due to pandemic activity, including Covid-19. Please talk to your surgeon's office before surgery about current visitation guidelines.

- **Parking:** Visitor parking is free in designated areas and the parking garage. Northwest Medical Center also offers a free valet service at our Outpatient entrance, Monday – Friday from 7:30 a.m. to 6 p.m. There is no valet parking at any other entrance.
- **Surgery/Endoscopy:** The admitting area for surgery is open at 5 a.m.
- **Chaplains:** Spiritual needs of all patients are respected and supported through the services of the volunteer chaplains. Patients, families, visitors or staff members regardless of religious affiliation may request Pastoral Care. To request spiritual services, please call extension 8675 (or 520-469-8675 from outside the hospital).

- **Chapel:** The Northwest Medical Center Interfaith chapel is located on the first floor of the hospital near Radiology. You are invited to enter for prayer, meditation or quiet reflection 24 hours a day/ 7 days a week.
- **Gift Shop:** The gift shop is located on the first floor near the main entrance of the hospital, on the west side of building.
- **Cafeteria:** The Northwest Medical Center Café is located on the first floor near the main entrance of the hospital, on the west side of the building. Visa/Mastercard are accepted. 24-hour vending services are available in dining areas. Coffee is free to all patients and visitors in the cafeteria (located in the seated area next to the tray return), waiting rooms and on patient units. For a recording of the current cafeteria hours, please call 469-8170 ext. 1.
- **Important Phone Numbers:**

Main Hospital	(520) 742-9000
Gift Shop	(520) 742-9000 ext. 7114
CVICU Waiting Area	(520) 469-8395
CVICU	(520) 469-8370
ACT	(520) 469-8430



# Appendix

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## **Clinical Trials and Five Year Follow Up**

Clinical trials are carefully designed, reviewed and completed and need to be approved before they start. In these studies, some patients are given a specific intervention while others are given a placebo to study the cause and effect relationship between the health intervention and the health outcome. Health related interventions could include drugs, surgical procedures, devices, behavioral treatments, educational programs, dietary interventions, quality improvement interventions or process of care changes.

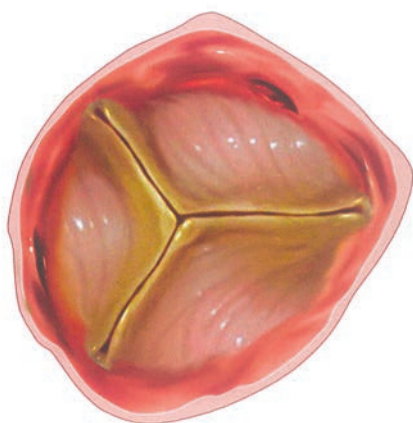
Northwest Medical Center participates in several clinical research trials. Depending on your health and qualifications, you may be offered the opportunity to participate in a clinical trial. You will receive information about the study, what the intervention is, and how long the study will last. Often, those who participate in studies are required to follow up for several years after the intervention. You will be asked to sign a consent form before participating in any trials.

## **Post-Operative Pain Management**

Heart surgery can be painful, and we use several tactics to help manage your pain. Recently, more attention has been paid to the opioid epidemic in our country, and we support a growing trend of research that focuses on non-opioid pain management techniques. While you may still receive opioids during your recovery period, you will also likely be offered non-opioid pain medications, including dronabinol, an FDA-approved, synthetic THC product. Dronabinol has been shown to contribute to a reduction in pain, in conjunction with other pain management techniques.



# Severe Aortic Stenosis

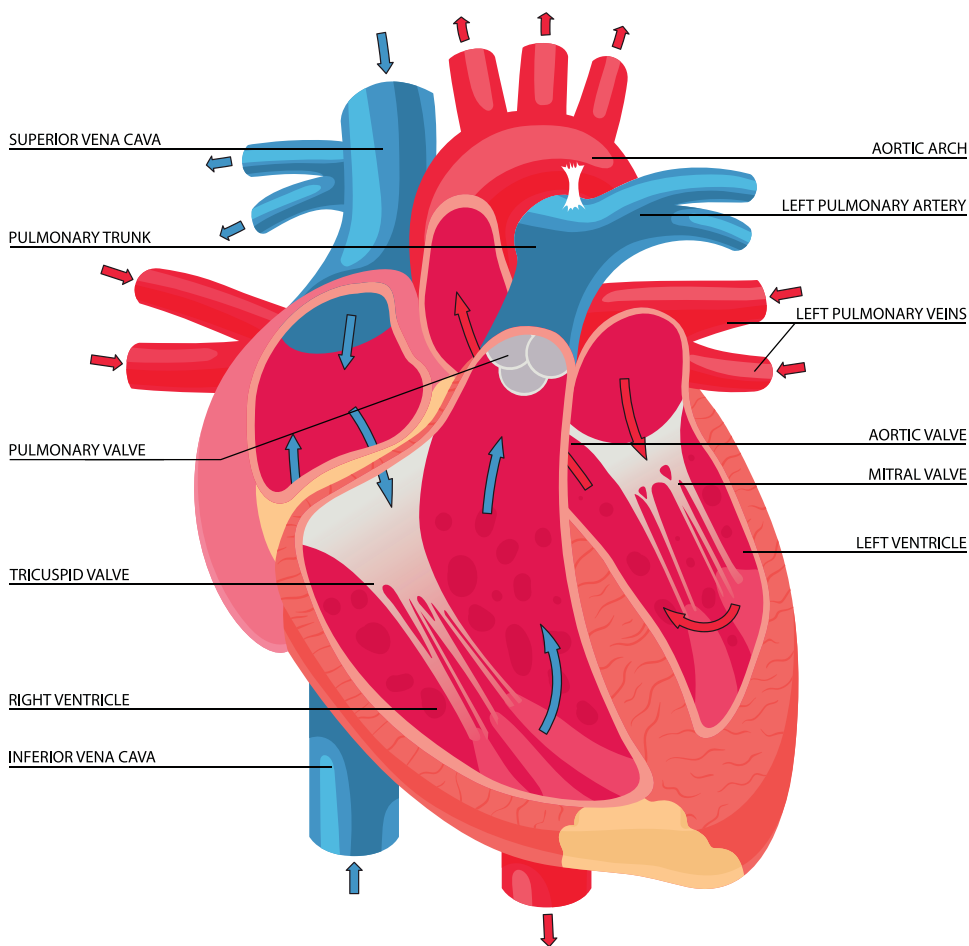


Normal Valve



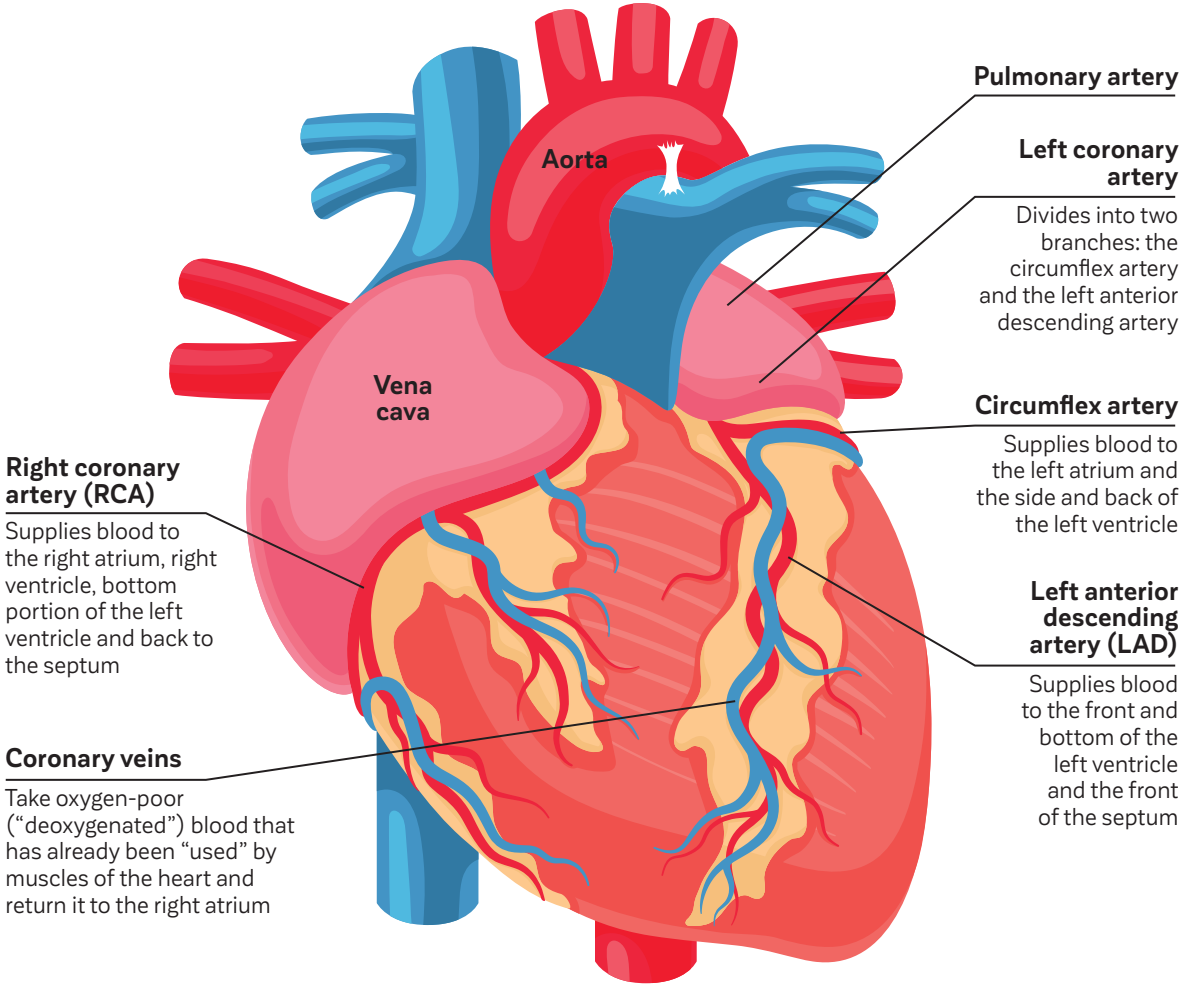
Stenotic Valve

## All Valves

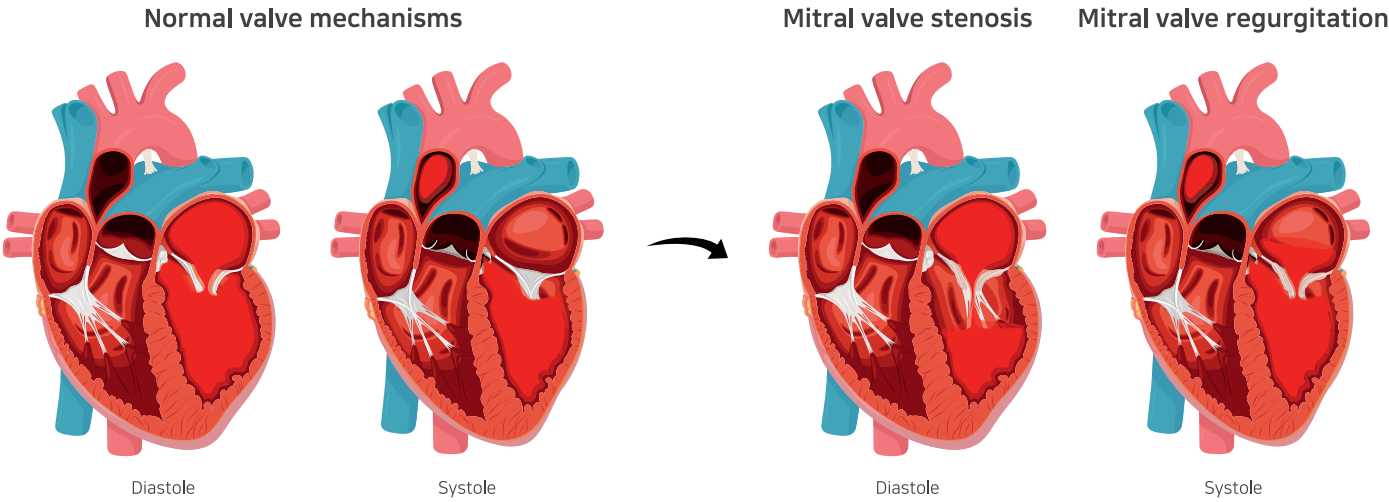


Your heart is located between your lungs in the middle of your chest, behind and slightly to the left of your breastbone (sternum). A double-layered membrane called the pericardium surrounds your heart like a sac. The outer layer of the pericardium surrounds the roots of your heart's major blood vessels and is attached by ligaments to your spinal column, diaphragm, and other parts of your body. The inner layer of the pericardium is attached to the heart muscle. A coating of fluid separates the two layers of membrane, letting the heart move as it beats.

# Coronary Arteries



# Valve Stenosis and Regurgitation





[MyTucsonDoc.com](http://MyTucsonDoc.com)