

This information has been developed to help you and your family understand how to prepare for your hospitalization and what will take place during your hospitalization at Tucson Medical Center. We want to reduce your stress as your prepare for heart surgery by informing you of the normal events that occur. You may have more questions about things not covered in this binder. Your physician, nurse and other staff members will be glad to help you get the answers you need.

This binder is a supplemental piece to the education provided to you by your physician and nurse. We hope you and your family find it a helpful resource.

TMC's Pre-Anesthesia Testing (PAT)

Now that your heart surgeon has told you that you need open heart surgery, the next step is to go to Pre-Anesthesia Testing. Anesthesia (sleep) is a necessary part of your surgery and is performed by a physician who is not your surgeon. This doctor is called an anesthesiologist. Your anesthesiologist needs background information about you so as to assist in your surgery. Staff at PAT will provide you with more information about what to expect.

Your PAT appointment is important because your anesthesiologist may need to order tests that are different than the ones your surgeon ordered. A nurse will be with you at this appointment to ensure everything is done with your safety in mind. This nurse will also make sure that each of your physicians has done what is needed before your surgery.

Please make sure you keep and attend your scheduled PAT visit otherwise your surgery may be delayed! This page left blank intentionally

Directions:

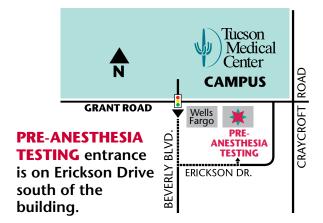
TMC's PAT is located at 5335 E. Erickson Drive, across from TMC, off of Beverly Boulevard

From Grant Road

- Turn south onto Beverly Boulevard
- Take your first left onto Erickson at the Wells Fargo building
- PAT is located next to Wells Fargo on the left side of the street

Parking is located in front of the building.

Phone: (520) 324-1446 **Fax:** (520) 324-3706



Please bring this binder to all of your appointments about your open heart surgery. Feel free to add your own information.

Be sure to look for the DVD located in this binder titled *TMC CardioVascular Center* • *Open Heart Surgery* • *Patient Experience Video*. It's a 10-minute video that will take you through the entire open heart surgery process at TMC and includes the perspective of a former open heart surgery patient. You and your family may find it helpful. The video may help answer some of your questions and alleviate some of your fears. View it at home at your convenience.

An overview of your PAT appointment:

- You will be asked for your photo ID and insurance cards.
- A name band will be placed on your wrist.
- You will be given three consent forms to sign including *Patient Rights and Responsibilities* and *Conditions of Treatment*. These consents are different than the surgery or anesthesia consent forms. They give TMC permission to treat you by drawing your blood, running an EKG and taking your blood pressure. The third form, *Informed Consent: Transfusion of Blood Products*, is about blood products. Your doctor will explain to you the benefits and risks of receiving blood products. You will also be given the opportunity to sign this consent at TMC before your surgery.
- Your vital signs, height and weight will be checked. A urine sample and several blood samples may be collected depending on what your surgeon has ordered. Your neck

continued from page 2 • An overview of your PAT appointment

will be measured to rule out any sleep apnea risks, and your nose may be swabbed to test you for MRSA, an antibiotic-resistant bacteria. Your nurse will determine if you need to be swabbed.

- Your nurse will review your list of medications, drug allergies, medical history and surgical history. Please tell your nurse if you have ever had any problems with anesthesia in the past including malignant hyperthermia, discomfort opening your mouth or being unable to open your mouth, nausea or vomiting.
- Your nurse will teach you how to use an incentive spirometer, also called an "I/S." This breathing device will help prepare your lungs for surgery and should be practiced daily at home before your surgery. Be sure to bring your incentive spirometer with you the day of surgery.
- You will be asked for emergency contact names and numbers, as well as who will care for you when you go home.
- You will be asked for a living will/medical power of attorney. These questions are asked of all patients. They are not to alarm you but to better prepare our staff for your care. It is important that your family be aware of your wishes and know where you keep these important documents.
- All of the information gathered at this appointment will be available in TMC's computer system for your surgeon, anesthesiologist and other physicians on your surgery day.
- After the appointment, you may take a shuttle, walk or drive over to TMC to get your chest X-ray. You will be given a map, along with a paper order sheet to give to the staff at the front desk of the Radiology department.
- After your X-ray, you are free to leave, or you can receive a personalized tour of the facility with an intensive care nurse. Your nurse will show you where you will be after surgery and provide some information about TMC's Cardiac Rehab. This tour also offers your family a chance to see the waiting area and become familiar with the layout of the hospital including where your room will be, the cafeteria and restrooms.

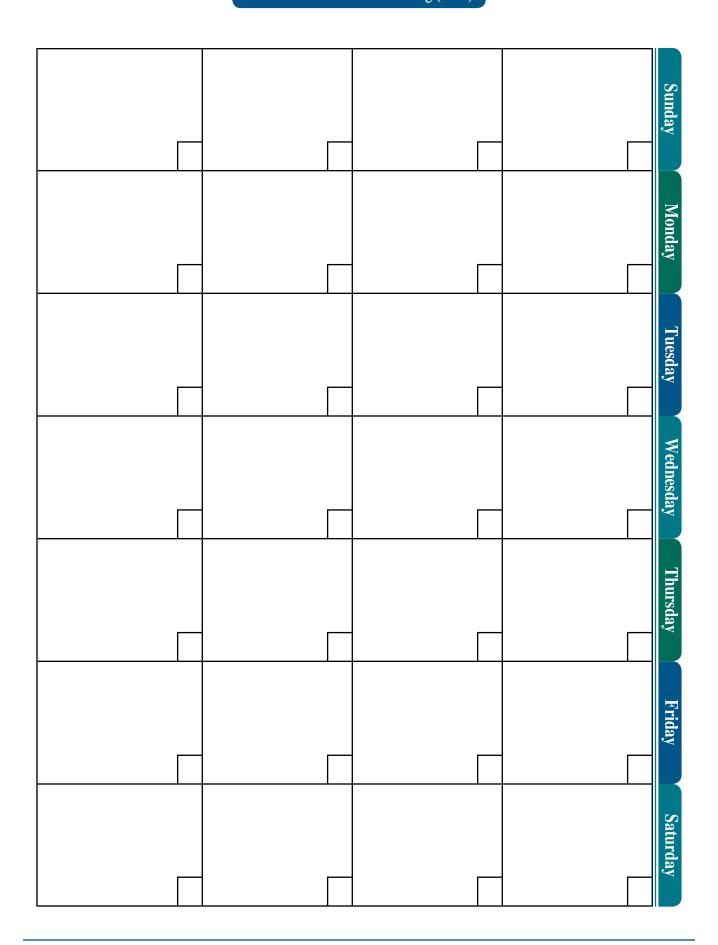
Our nurses are happy to spend this time with you and we encourage you and your family to take full advantage of this opportunity!

If your time is limited, the patient-experience DVD covers most of this information. Before leaving your PAT appointment, please check to make sure you have your bag that contains the incentive spirometer, a package of chlorhexidine wipes and your binder.

Please note that you will not receive any anesthesia at your PAT appointment.

List of items to bring with you to your PAT appointment

_	A "buddy" This person can be a spouse, good friend or relative to help you absorb and organize the information and instructions you'll receive
	Photo ID/insurance card/pharmacy card if you have one
	Any implantable device cards including pacemaker, ICD, deep brain stimulator (DBS), cochlear implants, pain stimulators, etc.
	Note: You will need to bring your programmer on the day of surgery
	Updated medication list (including the dosages and how frequently they're taken) or the actual bottles Please include all over-the-counter medications, supplements, inhalers, patches, eye drops and nasal sprays. Note: You may list these on the Patient Medication List on page 7 of this binder
	Updated medical/surgical history with dates if possible
	List of current physicians Feel free to place their cards in the card holder section of this binder
	Emergency contact names and numbers
	A copy of your living will/medical power of attorney
	Names and phone numbers of people who may receive your personal health information
Plea	se remember to bring your binder to each appointment!



Medication and Food Allergies

► I have had SEVERE allergic reactions to the following medications:

Drug Name	Severe Reaction

▶ I have had **MODERATE** allergic reactions to the following medications:

Drug Name	Moderate Reaction

▶ I have had MILD allergic reactions to the following medications:

Drug Name	Mild Reaction

► I have had SEVERE allergic reactions to the following foods:

Food Name	Severe Reaction

Patient Medication List

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Tucson Medical Center, licensed for more than 600 beds, has been Tucson's locally governed nonprofit regional hospital for 70 years. TMC is Southern Arizona's leading provider for emergency care and pediatric care (including Tucson's first Pediatric Emergency Department), with top-notch intensive care units for adults, children and newborns.

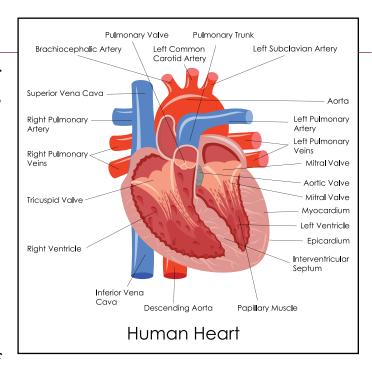
The TMC Orthopaedic and Surgical Tower was built in 2013 and has 24 operating rooms equipped with state-of-the-art monitoring equipment and emergency equipment needed to provide the highest quality care. This includes two operating rooms used only for cardiac surgery. A dedicated heart team also utilizes one of the state-of-the-art hybrid operating rooms for transcatheter aortic valve replacements, also known as TAVR. A hybrid operating room gives surgeons everything they need for a minimally invasive procedure, but can also be converted for an open heart procedure – in an instant. All of TMC's operating rooms include the innovative equipment and imaging that allows surgeons to be incredibly precise.

The first heart surgery at TMC was performed Sept. 27, 1962. Heart surgery can correct problems with the heart if other treatments have failed or just are not appropriate to manage your heart condition. Recent advances in surgical techniques and equipment may allow your surgeon to perform your heart operation in a less invasive way. Minimally invasive cardiac surgery (MICS) may include a smaller incision (either through the breast bone or between the ribs) avoidance of the heart lung machine or both. Your surgeon will decide if MICS is appropriate for you.

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How the heart works

The heart is a hollow, strong muscular organ about the size of a fist. It pumps nutrients and oxygen to all the parts of the body. It is located slightly to the left of the middle of the chest and is protected by the breastbone and rib cage. The heart has two upper chambers (the atria) and two lower chambers (the ventricles). The atria receive blood from the veins and the ventricles pump the blood out of the heart. A wall called the septum separates the left and the right sides of

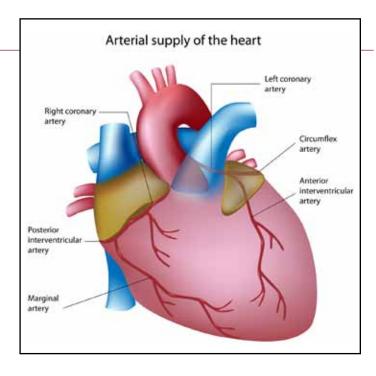


the heart. Four valves located in the heart control blood flow.

The right side of the heart receives blood from the body and pumps it to the lungs. The left side of the heart receives oxygen-rich blood from the lungs and pumps it throughout the body. The heart gets oxygen and nutrients from the blood that flows through the coronary arteries.

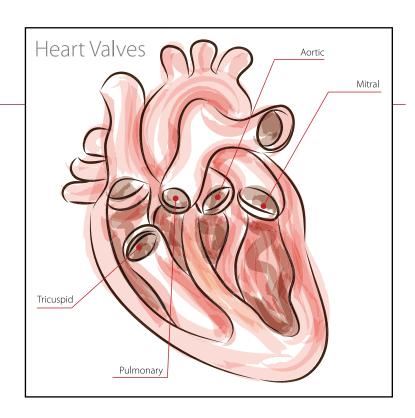
Coronary arteries

There are two large coronary arteries: the left coronary artery and the right coronary artery. The left coronary artery (LCA) consists of several branches. The beginning portion is called the left main. The main divides into two branches: the left anterior descending and the circumflex. The right coronary artery (RCA) branches into the posterior descending artery and the right marginal artery.



Coronary artery disease

Coronary artery disease develops much like a clogged drain pipe. Over years, deposits (plaque) build up within the walls of the arteries and cause a narrowing or blockage. When the blockage is large enough, blood cannot flow to supply the heart muscle with adequate amounts of oxygen. When this happens, it can lead to chest pain (angina) or a heart attack (MI).

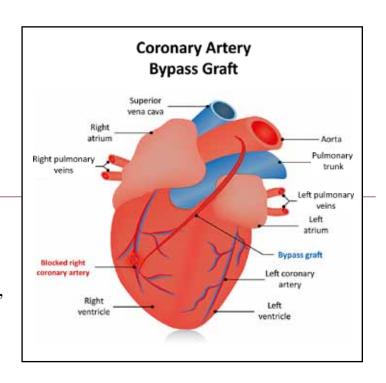


There are several options to treat the clogged artery:

- medical treatment (medications)
- angioplasty with or without stents
- coronary bypass graft surgery (CABG)

Coronary artery bypass graft surgery (CABG)

When CABG is recommended, your cardiologist will have already tried medical therapy, angioplasty and stents if possible. After an angiogram, your cardiologist and the cardiac surgeon will make a combined



Before Surgery

decision about whether you are a candidate for CABG. You and your family should discuss all options and risks with your physician.

The surgery requires opening the chest, routing blood through a heart lung machine, stopping and then restarting the heart to create new pathways for the blood to flow. Sometimes, however, the surgeons may decide not to use the heart lung machine or stop your heart. This is considered an "off pump" procedure. The new paths for blood to flow are created by taking the artery under the sternum or veins from the legs. These blood vessels are sewn in front of and beyond the blockage, so the blood flows through the new pathways, which are called **bypass grafts**. Taking the veins from the legs does not interfere with the blood supply of the legs. They do not need to be replaced, as our legs have lots of veins. We do not use any arteries from the legs.

Valvular disease

There are four valves that act as one-way doors in the flow of blood through the heart. These valves can become damaged or scarred by birth defects, rheumatic fever or other causes. When heart valves open or close improperly, the heart muscle has to work harder to deliver blood to the body. This workload weakens the heart muscle and may cause chest pain, shortness of breath or fatigue. When medication fails or the damage is extensive, valve surgery may be performed to repair or replace a diseased valve.

Types of heart valves

Your doctor will discuss what type of valve repair or replacement is best suited for you. Some of the artificial valves are made of tissue and others are made of synthetic material. When valves are replaced, the need for the heart lung machine is always necessary. The type of valve you receive will determine whether you will need long-term anticoagulation, a process of prolonging the time it takes for your blood to clot.

Anticoagulation is necessary to help prevent blood clots from forming and causing a stroke or impairing your heart's ability to work properly. By taking a special medication called warfarin (brand names include Coumadin) anticoagulation can be achieved. Anticoagulation is always necessary if you receive a synthetic (mechanical) heart valve.

Pre-operative Medication Instructions

2 weeks before surgery

- Stop smoking! Smoking prolongs healing time by decreasing oxygen to the blood.
- Stop all herbal supplements, remedies, vitamins, multivitamins including occuvite, omega 3-6-9 fish oil, flax seed oil and any other over-the-counter medications. Check with the surgeon's medical assistant or nurse if you are unsure about anything else you're taking.
- If you have a dental problem, please have it addressed and treated <u>before</u> surgery. All antibiotics given by your dentist should be taken <u>prior</u> to your surgery. Bacteria from infected or loose teeth may infect the new heart valve. Your surgery may have to be postponed if you have an untreated tooth infection.

10 days before surgery

- Stop nonsteroidal anti-inflammatories (NSAIDS) such as ibuprofen, Motrin, Advil, Aleve, Naproxen, Celebrex, Mobic, Meloxicam, Diclofenac, Etodolac, Relafen, Anaprox, Toradol, Feldene, Sulindac, Lodine, Dolobid, Voltaren, Arthrotec, Indomethacin, Nabumetone or Daypro as these act as blood thinners.
- You may continue to take Vicodin, Percocet, Tylenol, extra strength Tylenol and Tylenol PM for pain up until the day of surgery. (No Tylenol arthritis please).

5 days before surgery

- Stop aspirin and products that are an aspirin combination such as Pamprin, Excedrin, Fioricet, etc.
- Stop blood thinners such as Plavix (Clopidogrel), Pradaxa, Effient, Xarelto, Brilanta, Eliquis and Coumadin (warfarin).
- Your doctor may want to "bridge" you with Lovenox. This should be discussed with your doctor before surgery.

3 days before surgery

■ Start Allopurinol if ordered by your surgeon. Continue taking this as directed up to and on the day of surgery with a sip of water only.

continued from page 5 • Pre-operative Medication Instructions

2 days (48 hours) before surgery

- Stop Metformin, or any medications with Metformin in them such as Glucophage, Janumet, Fortmet, Glumteza, Riomet, Avandamet, etc.
- Stop ACE inhibitors such as Lisinopril, Ramapril, Accupril, Lotensin, Capoten, Vasotec, Monopril, Zestril, etc. These are considered blood pressure medications. Continue all your other blood pressure medications unless you are told otherwise.

Night before surgery

■ Please read further instructions on page 7.

Day of surgery

- Only take your blood pressure medications if it is a beta blocker such as Atenolol, Sotalol, Metoprolol, Carvedilol, Bisoprolol, Nadolol, Propranolol, etc.
- It is OK to take your blood pressure medications with the Allopurinol (with a sip of water) if your surgeon ordered it.
- Take these as early as you can (two hours before your surgery if possible).

Do's and Don'ts

2 days (48 hours) before surgery

- DO review all prescribed and OTC medication instructions to make sure you have stopped them as instructed. Refer to the calendar on page 5 in the PAT section of this binder if you have filled that out.
- DO remove all toe/fingernail polish along with all body jewelry or piercings including earrings, necklaces **and wedding bands**. *If you are unable to remove your jewelry, you may need to go to a jeweler to have it removed. Rings that are not removed will be cut off during surgery*. <u>All body/facial piercings must be removed including dermals!</u>

continued from page 6 • Before Surgery Do's and Don'ts

- DO practice deep breathing and coughing in addition to using your incentive spirometer (I/S) several times a day. This breathing exercise will be extremely important during your entire recovery experience. It helps to keep your lungs expanded, to remove secretions, to promote coughing and to avoid lung complications, especially pneumonia.
- STOP shaving any body parts 48 hours before surgery. This is especially important for infection control. To avoid infections, you will be surgically clipped as necessary in the hospital.
- DO NOT get your hair or nails done before surgery. Please remember that any skin, hair or nail product may complicate events prior to surgery.
- DO NOT smoke anything or drink any alcohol. Get plenty of rest and stay hydrated.

The night before surgery

- DO drink plenty of fluids until midnight.
- DO NOT have anything to eat or drink (even water) after midnight unless you are instructed otherwise from your surgeon or Pre-Anesthesia Testing. You may take a small sip of water with your medication in the morning.
- DO NOT smoke anything or drink any alcohol.
- DO review the instruction forms you received from Pre-Anesthesia Testing and your surgeon's instructions.
- DO refer to your calendar page again if needed.
- DO change your bed sheets and pajamas. Wear clean pajamas after your pre-op shower.
- DO shower. After you've dried off, use the 2% CHG wipes that were provided to you all over your body, as instructed on the paperwork. Do not use any other skin or hair products. Let the CHG wipes dry on your skin and then go to bed on clean sheets. Please make sure the CHG product is on your skin for a minimum of six hours before surgery. Remember no lotions! And do not rinse off in the morning.
- DO initial the form labeled TMC SSI Prevention and be prepared to give it to your pre-op nurse when you arrive for surgery. This paper should have your name and label on it.



The morning of surgery

- Take **only** the medications indicated for your day of surgery with a sip of water as soon as you get up. If you are instructed to bring any medications to the hospital, please leave them in their original containers with the labels intact. These will need to be given to the nursing staff once you are checked in. If you carry an inhaler with you on a normal basis, please be sure to bring that as well.
- Brush your teeth, swish with water and spit. No gum, hard candy, mints or cough drops after that please. You may wash your face to freshen up, but **do not** apply any hair or skin products including creams, lotion, any makeup, perfume, deodorant, hair spray, gel, talc, oil, etc. These attract bacteria which can increase your risk of infection. Additionally, many hair and skin products are flammable, especially around oxygen and cautery, which are both used in surgery.

Do not rinse your CHG wipes off before coming to the hospital.

■ If you use a CPAP machine for sleep apnea, please bring it to the hospital before surgery. You may dump the water as TMC stocks distilled water. Please bring easy instructions with written settings if available. Be sure to label your machine with your name.

Very Important! Bring your incentive spirometer (I/S)

■ Bring your photo ID, insurance cards, a **copy** of your living will and medical power of attorney and your initialed Surgical Site Infection Prevention form, stating you used your wipes the night before surgery.

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When you arrive at TMC

- Arrive at TMC's Orthopaedic and Surgical tower two hours before your scheduled surgery time. Free valet parking is available from 5 a.m. to 7 p.m., Monday Friday. Take the elevator to the second floor and check in at the desk.
- Once you're done checking in, you will be instructed to stop by another desk close by that is staffed with a TMC volunteer. This volunteer will give you a color-coded paper with a unique identifying number



- on it. Your family and friends who are with you can track the progress of the procedure using the monitors in the lobby.
- Remember: any personal items you may need after surgery when you are in the intensive care unit (ICU) may be brought in once you are awake after surgery. You will be resting a lot after the operation and on pain medications. TMC will provide mouth-care items immediately after surgery.

Pre-op holding

- Shortly after you are checked in, you will be taken back to pre-op holding.
- A patient care technician will take your vitals and then ask you to change into a gown. All of your clothing (including underwear and shoes) will need to be taken off and placed into a bag that your family will hold onto.
- Your tech will then clip your chest, belly and the area from your groin all the way down to your ankles as necessary. The tech will then use the CHG wipes on you again, and you'll be asked to change into a different gown.
- All personal items will need to be removed including dentures, glasses, contact lenses and any remaining jewelry you may have on. Please give any valuables to your family for safekeeping, along with your ID, insurance cards and cell phone.
- You'll be attached to special equipment to monitor your blood pressure, heart rhythm and oxygenation before, during and after your surgery. You will be attached to these monitors during your entire surgery and your subsequent stay in the ICU.

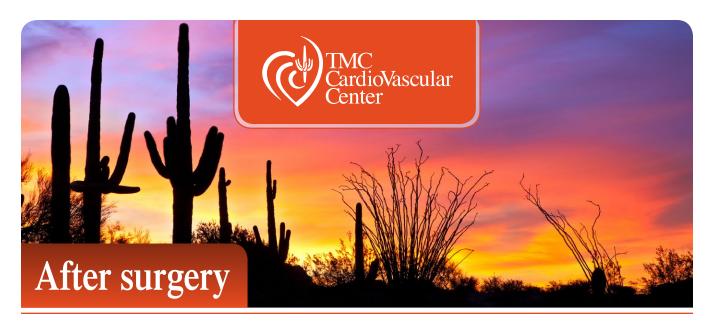
continued from page 2 • Pre-op holding

Do not be alarmed by the beeping and the different noises these machines make. The staff needs to be able to hear these alarms and will be monitoring your vital signs frequently.

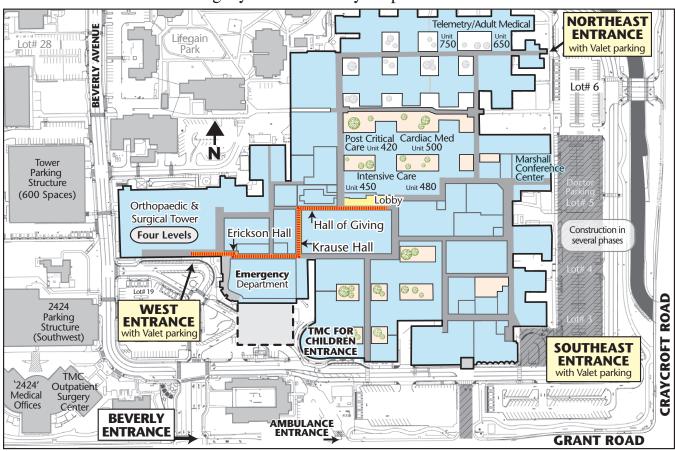
- Your tech will let you know when a member of your family may come back and join you. Please know that we will protect your privacy, but if you wish to have a family member with you before surgery, we will make every attempt to allow that when it's possible and safe to do so.
- Your pre-op nurse will then come in to go over any questions you may have. The type of surgery to be performed will be verified. If you have hearing aids, please let your nurse know. You'll be asked a series of questions and asked to sign some consent forms if they haven't been signed already. Your nurse will go over your medical history and medication list with you as well as the last time your meds were taken.
- Many of these health professionals will ask you the same questions including asking you to verify your name, birthday or medical record number on your wristband. Please keep in mind these are important procedures that are in place for your safety.
- An IV will be started and your nose will be swabbed with an antibiotic ointment. You'll be hooked up to oxygen and a pad will be placed on your bottom to help prevent pressure ulcers.
- An EKG and any other necessary tests may be performed.
- You will meet the other members of your surgical team including your anesthesiologist who will likely give you some medicine to help you relax before surgery.
- Your anesthesiologist will give you some numbing medicine and start an IV. The anesthesiologist will also place what's called an arterial line. It's like an IV in your wrist that is used to monitor your blood pressure. Your loved one may be asked to step out of the room for these procedures, if necessary.
- Your surgeon will also come in, followed by your operating room nurses.
- When everything is ready, your health care team will wheel you to the operating room. Your family member will be asked to head back to the lobby.

During surgery

- We ask family members who need to step away from the lobby to please do so in the first hour after you are wheeled back, as much of that time is spent preparing you for surgery in the operating room.
- When the screen in the lobby indicates surgery has started, please make sure your family is seated in the lobby.
- Most open heart surgeries last from three to five hours. Talk to your surgeon about what to expect with your procedure. If possible, a member of the surgical team will come out to the lobby and update your family on your progress.



- When your surgery is done, the surgeon will talk with your family in one of the consultation rooms located just off the lobby. Afterwards, your loved ones will be instructed on how to get to Rosenstiel Lobby, right next to the intensive care unit (ICU). It's about a five-minute walk so a TMC volunteer can arrange transportation to the ICU if needed.
- Immediately after your surgery is over, the surgical team and an ICU nurse will transport you directly from the operating room to the ICU, Unit 480. It will take about an hour for staff to get you settled into your private room.



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In the cardiac ICU

- The nurse will let your family members know when it's OK for one or two people to come see you inside the ICU. We ask that no more than two people at a time come back as the ICU rooms are not large.
 - You can find more information about what to expect on page 5 of this section.
- You will likely be asleep and hooked up to many monitors. You could have a breathing tube down your throat, unable to talk. The breathing tube doesn't hurt, but can be uncomfortable.
- An important note for family: Please warn your loved ones that it could be shocking to see you in this condition, but that all of the machines and tubes are there to do a job and help you recover. Also note that some of these machines will sound alarms and beep so you and your visitors should not be scared. The ICU staff will constantly be attending to these alarms. It is important that family and other visitors not touch any of these buttons to silence the alarms.
- About four to six hours after you arrive in the ICU, staff will slowly wake you up.

Waking up in the ICU

- When you wake up, in addition to the breathing tube, you'll have a urinary catheter and a chest tube. The chest tube drains blood and helps expand your lungs.
- As you wake up, you will become aware of lights and noises in the ICU room. You may be shivering as your body temperature comes back up to normal. You will likely be extremely thirsty, but you will not be able to speak or drink until your breathing tube is removed.
- When your nurses wake you up, they will ask for your help in removing your breathing tube. You'll then be put on oxygen by either a mask or nasal prongs.

continued from page 2 • Waking up in the ICU

■ You will have numerous pieces of equipment attached to you including: temporary pacing wires to keep your heart beating regularly, a naso-gastric tube to control nausea and gas, multiple IV fluids infusing by pumps into large IVs (these large IVs are called central lines and may be in your neck or upper chest area), an aterial line (similar to an IV) in your wrist, and an oxygen saturation monitor on your finger or ear. All of this equipment will be removed bit by bit as you recover.

Post-op pain

- While your pain will be managed as best as possible, it is expected to be the worst during the first 72 hours after surgery. Like any other procedure, cardiac surgery is associated with significant pain that peaks within the first few days after surgery. The pain gradually gets better and finally goes away.
- You will be asked to use the pain rating scale to communicate your pain level to your nurse.
- It is normal to feel a certain amount of discomfort after surgery. Your nurse will give you sedatives and pain-relieving medications as needed. Most patients do not remember the first few hours after surgery including the removal of the breathing tube.
- If your pain is not adequately controlled after surgery, it can cause stress and depression, which may make recovery more difficult. Pain also may make it difficult to breathe deeply, possibly exposing you to

10 Excruciating Unable to do any activities becausé Hurts of pain Worst 60 Severe Unable to do most activities because Hurts of pain Whole Lot Unable to do some activities because of pain Hurts LIttle More 5 Moderate Can do most activities with rest periods Hurts 3 Even More $\widehat{\odot}\widehat{\odot}$ Pain is present but does not limit Hurts activity Little Bit 0 No pain No Hurt

Pain Rating Scale

cardiac and pulmonary complications including infection and cardiac arrhythmias (irregular heartbeats). This is why the deep breathing exercises and the I/S are so important after surgery. It helps immensely if you have practiced how to use your I/S at home before surgery.

continued from page 3 • Post-op pain

- The nurse will explain what all the machines are doing. You will need to use your I/S 10 times an hour, every hour you are awake, until you go home. You will be encouraged to do deep breathing and coughing exercises. You will be given a small pillow to hug that allows you to brace your sternum and help reduce the pain.
- Various complementary therapies including guided imagery, music therapy, breathing exercises, massage therapy, meditation, yoga and hypnotherapy, have been shown to reduce pain, anxiety and stress. They also help your natural healing ability. Your family may bring music, aromatherapy, oils and may give you massages after surgery. No candles or open flames are allowed. Please make sure your family checks with your nurse before starting any of these therapies.
- Please note all plug-in appliances must be examined by hospital staff prior to use in the hospital.

Atrial fibrillation (A-fib)

- Atrial fibrillation is an irregular heart rhythm caused by erratic beating of the upper chambers of the heart, the atria. It is one of the most common complications after heart surgery and may develop in up to 30 percent of all open heart surgery patients.
- A-fib usually develops within the first 72 hours after surgery. Many patients have some A-fib after surgery but are in a normal heart rhythm by the time they go home from the hospital.
- A-fib can make you feel like your heart is racing. This may cause fatigue, sweating, mild chest heaviness, shortness of breath and a sense of restlessness or anxiety. Your TMC nursing staff is trained to watch for these symptoms on your monitors and will respond quickly if it happens.

Controlling A-fib

- A-fib can usually be controlled by medication alone. Occasionally though, medication is not enough. When this happens, the heart needs a small electrical shock called a cardioversion. This often brings the heart back into a normal rhythm.
- When A-fib is prolonged, rapid, or goes back and forth from A-fib to a normal rhythm, blood clots may form in the heart. These clots can be dangerous. If a clot is pumped out of the heart, it could block blood flow to the brain and possibly cause a stroke. To help prevent clots, you may be placed on a blood thinner such as Heparin, Lovenox or Coumadin for a short time.

Other things to expect

- Later that surgery day, when you are in the ICU, you will get up and move from the bed to a chair with staff assistance.
- A few days later, the chest tube, most IV lines and the catheter will be removed.
- TMC does have unrestricted visiting hours, but we ask that all visitors are healthy and no visitors sleep inside the patient's room. They may, however, stay in Rosenstiel Lobby as it never closes. Your nurse is in charge of visits and will do what is best for you.
- Due to possible infection risk, babies and young children are discouraged from visiting you in the ICU but they can certainly visit you when you are moved to the post-cardiac care unit, (PCCU).
- Patients typically stay in the ICU for one to two days before being transferred to the PCCU, where they'll remain for another three to four days before being discharged, depending on how they're healing.
- The nurse will go over instructions for you and your caregiver about what to expect.

Respiratory therapy after open heart surgery

- In the hospital, you will be visited by a respiratory therapist (RT) whose sole purpose is to keep you from having lung complications after surgery. Once you are off the breathing machine and your breathing tube has been removed, your RT will make sure you know how to use your I/S correctly.
- Remember, the I/S will help to keep your lungs expanded, to remove secretions, to promote coughing and to avoid lung complications, especially pneumonia.
- After surgery, deep breathing is more difficult because of pain from your incision. It is normal not to want to take big breaths or cough because of pain, so make sure you are taking the pain medications as needed. Without these deep-breathing exercises, the air sacs at the base of your lungs have a tendency to collapse. This can lead to complications such as shortness of breath or pneumonia so please make sure you are using your pillow!
- Please let your RT know if you were receiving breathing treatments at home but are not receiving them in the hospital. You may need these treatments throughout your stay at TMC. Also, please let your RT know if you used any of these at home before surgery:
 - Home oxygen
 - BIPAP or CPAP machine for sleep apnea
 - Nebulizer or inhaler for breathing problems

Blood-sugar control

The stress of hospitalization, pain, surgery and some medications can elevate your blood sugar even if you do not have diabetes. If you do have diabetes and your blood sugar is normally well controlled, it will most likely be higher than usual after surgery. We will monitor your blood-sugar finger sticks closely, whether you are a diabetic or not, especially in the ICU.

Why is my blood sugar so important?

Normal blood sugar, or blood glucose, is important for wound healing and the prevention of surgical-site infections. We like to keep blood sugar well controlled after surgery. The best way to do this in the hospital is to use insulin, either though

continued from page 6 • Blood sugar control

your IV line infusion or at intervals throughout the day as an injection just under the skin.

- During IV insulin infusion, your blood sugars will be monitored every hour.
- During injection therapy, your blood sugar will be monitored every two to four hours depending on how high or low your blood-sugar levels are.

Nutrition in the hospital

You will be ordered a cardiac diet during your hospital stay which has limited fat, cholesterol and sodium to optimize heart health. Your diet may be tailored for you in other ways as well. If you also have diabetes, for example, you will be ordered a cardiac diabetic diet. If you have any serious food allergies, be sure to let your nurse know. It will be placed under the "allergies" section in the computer and will alert the dietary staff.

- Once you are eating after your operation, you will be able to order your food by phone. TMC is committed to providing you with fresh, appealing and nutritious meals during your stay. Our on-demand food service is available to bring you food between 6:30 a.m. and 7:30 p.m. daily.
- For on-demand food service, your nurse will provide you with a menu that is changed daily. Simply dial **4-1111** from your hospital room to speak with a nutrition representative and place your order. Your nurse can answer any questions you have about this service. Guests may order a tray as well for a small fee. The main cafeteria is also available for friends and family who are visiting.
- It is important to eat balanced meals after surgery as your body needs to get the nutrients needed for proper healing. A registered dietitian is available to help you if you have any special dietary needs or a poor appetite after surgery. Please talk to your nurse if you would like more information on dietary guidelines for your specific needs.

Depression after open heart surgery

After open heart surgery, patients often have feelings of sadness or varying degrees of depression. Usually these feelings disappear within several weeks. Sometimes, however, the signs of depression don't go away and become worse.

Signs of depression include:

- feeling sad or empty
- loss of interest or pleasure in daily activities
- significant weight loss or weight gain
- significant change in sleep patterns such as inability to sleep or sleeping more than usual

- restlessness
- fatigue or loss of energy
- feeling worthless or extreme guilt
- difficulty making decisions
- difficulty concentrating
- thoughts of death or suicide
- planning or attempting suicide

If you have any of these symptoms, call your primary care physician. If you are thinking about or planning suicide, call your doctor immediately or go to the emergency department. Do not feel embarrassed if you experience this!

Goals for the hospital, post-op days 1-4

Hospital staff considers your surgery day as day zero. Post-op day one, for example, is the day after your surgery.

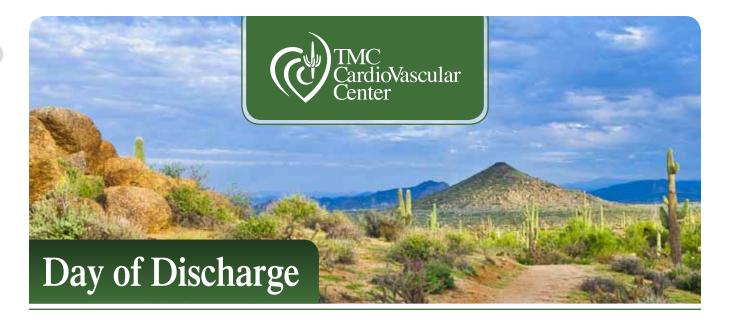
An important part of your recovery is to get out of bed and move. As uncomfortable as it may be, increasing activity improves circulation, breathing and your sense of well-being. The key is having your pain well controlled.

These are some of the activities you will be assisted with:

- Get up with help from ICU staff to sit in a chair
- Keep legs elevated and uncrossed while in a chair
- Get to the restroom with help from ICU staff
- Use your I/S at least 10 times an hour every hour you're awake to expand your lungs and prevent pneumonia
- Take a deep breath and cough using your arms or the pillow to splint your breastbone or sternum
- Increase diet from ice chips to clear liquids to solids (goal: full cardiac diet) as tolerated. If you are nauseated please let staff know
- Fluids will be limited to 1 ½ liters or 6 ½ cups per day (the staff will keep track in the ICU)
- Ask for pain meds to stay ahead of pain. Nurses will administer IV meds in ICU until you are tolerating an oral diet
- Ask for laxatives or stool softener to stay ahead of constipation
- Cardiac rehab staff will work with you to help you safely increase your activities

Your stay in the Post-Cardiac Care Unit

- Staff will let you know if it's OK to move around your room and get up and walk by yourself. If you are unsteady on your feet or feel dizzy or woozy from medication, you will still need some assistance. Increase your walking time and distance based on what your health care team recommends.
- Once you are transferred to the Post-Cardiac Care Unit (PCCU), you will be more independent, and more family and friends will be able to visit you. Be sure not to wear yourself out. Napping is encouraged.
- Continue to keep your legs elevated and uncrossed while you are sitting in the chair. If you notice any breakdown in your skin, or any sores that have developed, notify your nurse.
- Try to eat every meal sitting up in the chair or stay up in the chair most of the day while staying comfortable with repositioning and pillows.
- Continue to limit your fluids. By post-op day four, your fluid restriction may be lifted.
- Continue to use your I/S frequently. Take deep breaths and cough often. You will need the support of your pillow to splint your chest. Your supplemental oxygen may not be needed anymore.
- Let your nurse know if you have not had a bowel movement yet, as it is a MUST before you can be discharged.
- Continue to keep your pain under control and continue to use stool softeners and laxatives as needed.
- Start planning for discharge with the help of your nurse, other staff, cardiac rehab staff and your case manager.



- Your nurse will go over instructions for you and your caregiver about what to expect. You will receive detailed information about:
 - Doctor appointments
 - Activity limitations
 - Your diet
 - Your medications
- You and your care team, including your physician, nurse and case worker, will assess your progress and decided whether you're able to go home or if it's best to go to a rehabilitation facility for more assistance. This decision depends on various factors including your support system, your ability to walk and move about, your alertness and your pain control.
- Please ask staff to three-hole punch your discharge paperwork so you can place it in this binder if you'd like.

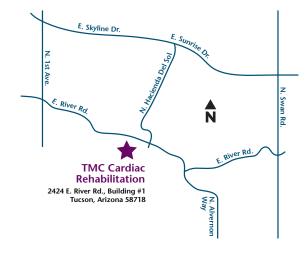


The role of exercise and cardiac rehabilitation

Exercise is crucial after your open heart surgery if you want to recover as fully as you can and reduce further cardiac problems. Regular exercise will increase your quality of life. Cardiac rehab begins in the hospital. Our staff provides you with an individual exercise program, information about risk factors, education, counseling and a plan for home exercise and activities. Your surgeon or cardiologist will give you a prescription

for the outpatient program before you leave the hospital. Medicare and most other insurances cover the cost of the post-hospital services, with participants paying a minimal self-pay monthly fee. Please consult your physician or medical plan for eligibility information.

TMC Cardiac Rehabilitation, 2404 E. River Road, Building #1 Phone number: (520) 324-5472



Post-hospital care program

As you enter the outpatient program, you can attend one-hour exercise sessions at our Cardiac Rehab location two or three times a week for up to 18 weeks. During a session, staff closely monitors your heart rhythms and blood pressure, and continues to adjust the intensity of each workout. Your rate of progress will depend on factors such as your age, how active you were before surgery, and any other illness or limitation you may have. Patients are often ecstatic about their results and many become life-long fitness enthusiasts.

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Maintenance exercise program

We also offer a maintenance exercise program for those who have completed the post-hospital care program and have achieved a stable level of exercise.

Home exercise program

Cardiac rehab staff will also give you a home exercise plan that is tailored to your needs. It is a general guide for how much exercise to do. Depending on how you feel at home, you may need to adjust the plan. Pace yourself so that you do not get tired.

Signs that you are doing too much exercise include:

- Dizziness or a fluttering or pounding heart
- A racing heart beat
- Increased shortness of breath, headache, nausea or vomiting
- Chest pain (angina)
- Extreme tiredness (fatigue) during exercise

If you have any of these or other symptoms, stop and rest as needed. If your symptoms continue, call your doctor.

For more information about TMC cardiac rehabilitation, please call (520) 324-5472.

Please put this page on your refrigerator or any place it will be easily accessible for you.

Things to remember

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Cardiologist's phone number	
Cardiac surgeon's phone number	
Cardiac Rehab clinic	
Primary care physician	

Within your first week home, make any follow-up appointments if they are not already made. It may be helpful to refer to your calendar.

Your surgeon may have you make several different appointments to see your:

- Cardiologist
- Cardiac surgeon
- Primary care physician
- Home health/rehab

Make sure you:

- Set up your medication schedule, include all pain medication and stool softeners. Take all medication as directed. Call your doctor if you have any questions.
- Keep a daily log of your weight and blood pressure. You will find a helpful log on pages 6-7. Make sure to bring the log with you to your doctors' appointments.
- Keep your legs elevated and uncrossed. Wear your compression stockings and check your incisions for infection, drainage, redness or swelling.
- Limit your salt, fat and alcohol intake.
- Be active! Remember to warm-up and cool down.
- Continue your deep breathing and coughing exercises. Use your I/S frequently or as directed by your surgeon.

Please avoid:

- **■** Smoking
- Creams or lotions on your incisions
- Alcohol and recreational drugs
- Driving or working until your surgeon gives you explicit permission.

Please put this page on your refrigerator or any place it will be easily accessible for you.

Reminders and precautions for cardiac rehab

*These are guidelines only. Please follow the instructions given to you by Cardiac Rehab staff.

- If you have had a sternotomy, no lifting or pulling over 8-10 pounds in the first few weeks.
- No pulling or pushing (vacuuming/pulling car door closed) more than 5-8 pounds. (gallon of milk = 8 pounds) for two weeks or as instructed by your surgeon and cardiac rehab staff.
- Do not exercise for 1-2 hours after meals.
- Do not exercise outdoors when the temperature is over 85°F, below 40°F or if you are sick.
- No unusual straining or breath holding at any time avoid constipation!
- Exercise where you will be free from distractions such as traffic, children, pets and other obstacles.
- You should feel "recovered" in less than an hour or you did too much!
- Check all incisions daily for signs of infection (redness, drainage, swelling, fever).
- Decrease use of pain medications during the first week as they may cause fatigue, dry mouth, sweating, constipation and dizziness. Substitute extra-strength Tylenol for your discomfort as approved by your doctors.

When to call your doctor

- You experience unusual swelling of your legs.
- You have chest pressure or pain, previous angina symptoms or discomfort in your teeth, jaw, arms or between your shoulder blades.
- More shortness of breath than normal that lasts over 10 minutes.
- Sudden weight gain of 3-4 pounds overnight or a steady weight gain of 5 pounds. in a week.
- Nausea, vomiting or fever over 101°F.
- Pain, swelling, redness, drainage from any incisions.
- Unusual dizziness, light headedness.
- Unusual fatigue that lasts longer than 24 hours.
- Cool, clammy skin with chest discomfort.
- Irregular pulse, heart palpitations.

CALL 911 FOR EMERGENCY

Remember: If you have an artificial heart valve, you will now always require antibiotics before any dental work.

Please put this page on your refrigerator or any place it will be easily accessible for you.

Activities Do's and Don'ts



Weeks 1 and 2

 Shower, shave and wash your hair. Prepare basic foods if able. Wash dishes, do light dusting and make beds (do not change sheets) – light housework. Write, read and type – desk work. Read, watch TV and listen to radio programs and music. Sew, knit and do other crafts. Play cards and board games. Ride in a car as a passenger, short trips only. Walk as prescribed by your cardiac rehab program using a cane or walker for balance as needed. Lift more than 5-8 pounds. (gallon of milk = 8 pounds) Lift infants, small children or pets. Vacuum, sweep, scrub floors or the tub. Shovel, dig or cut grass or hedges. Walk a medium- or large-sized dog. Do competitive sports. Any strenuous activity. Drive. Walk up grades or hills. Take any chances of falling by not using an assistive device as needed. 		
 Prepare basic foods if able. Wash dishes, do light dusting and make beds (do not change sheets) – light housework. Write, read and type – desk work. Read, watch TV and listen to radio programs and music. Sew, knit and do other crafts. Play cards and board games. Ride in a car as a passenger, short trips only. Walk a prescribed by your cardiac rehab program using (gallon of milk = 8 pounds) Lift infants, small children or pets. Vacuum, sweep, scrub floors or the tub. Shovel, dig or cut grass or hedges. Walk a medium- or large-sized dog. Do competitive sports. Any strenuous activity. Drive. Walk up grades or hills. Take any chances of falling by not using 	DO	DON'T
a cane of warker for barance as needed.	 Prepare basic foods if able. Wash dishes, do light dusting and make beds (do not change sheets) – light housework. Write, read and type – desk work. Read, watch TV and listen to radio programs and music. Sew, knit and do other crafts. Play cards and board games. Ride in a car as a passenger, short trips only. 	 (gallon of milk = 8 pounds) ■ Lift infants, small children or pets. ■ Vacuum, sweep, scrub floors or the tub. ■ Shovel, dig or cut grass or hedges. ■ Walk a medium- or large-sized dog. ■ Do competitive sports. ■ Any strenuous activity. ■ Drive. ■ Walk up grades or hills.

Weeks 3 and 4

DO	DON'T
 Dine out and prepare meals. Shop for groceries and run errands (remember to avoid lifting). Go to church, bingo and the movies. Play musical instruments. Wash dishes, do light dusting and make beds (do not change sheets) – light housework. Pump gas. Walk up mild grades with assistance as needed. 	 Lift more than 8-10 pounds. Lift infants, small children or pets. Vacuum, sweep, scrub floors or the tub. Shovel, dig or cut grass or hedges. Do carpentry or paint. Hunt. Bowl. Walk a medium- or large-sized dog. Do competitive sports. Drive. Walk up steep grades or hills.

Weeks 5 and 6

DO		DON'T
 Sweep with a broom, do laundry, clean windows – moderate housework. Paint, do light carpentry and make house repairs (no ceiling work or anything that requires a ladder). Ride the mower and garden. 	 Light car maintenance. Dance and play golf (putting only). Walk the dog if the dog doesn't pull. Get out in the fresh air and walk. Have sex as an active partner. Drive and travel by plane. 	 Lift more than 20 pounds. Shovel heavy loads. Do contact sports. Walk up steep hills.

Guidelines for a heart-healthy diet

Eating well-balanced meals that are low in fat, cholesterol and sodium, and high in fiber is important for your continued health. Heart-healthy foods help to lower cholesterol, decrease blood pressure and reduce weight.

It is not always easy to change your eating habits. You can still enjoy food when you follow these guidelines:

- Decrease your sodium
- Read food labels and be aware of what is in the foods you're eating
- Choose creative seasonings, spices or flavor enhancers such as garlic
- Avoid foods that are high in saturated fat and cholesterol

WEIGHT CHART

	Sun.	Mon.	Tue.	Wed.	Thur.	Fri.	Sat.
Week of							
Week of							
Week of							
Week of							
Week of							
Week of							
Week of							
Week of							

Dietary guidelines: Fats

To make heart-healthy food choices, you need to know about the different kinds of fats.

Cholesterol

Cholesterol is a soft, odorless, waxy substance found in all body cells. Cholesterol is important to help the body function, but is needed only in small amounts. Too much cholesterol in your body may cause heart and blood-vessel diseases. Animal products such as meat contain cholesterol.

Saturated fats

Saturated fats are solid at room temperature. These fats tend to raise your total cholesterol and LDL (bad cholesterol) levels. To reduce the amount of saturated fats in your diet,

continued on page 8

BLOOD PRESSURE CHART Wed. Mon. Tue. Thur. Fri. Sat. Sun. Week of Week of

avoid fatty cuts of meat, poultry skin, whole-milk products, butter, tropical oils such as coconut and palm oil, and hydrogenated foods.

Unsaturated fats

Unsaturated fats tend to be liquid at room temperature. They do not raise your cholesterol like saturated fats do. Monounsaturated fat lowers blood-cholesterol by lowering your LDL (bad cholesterol). These fats are in olive, canola and peanut oil. Poly-unsaturated fat lowers the total cholesterol level. These fats are in soybean, sunflower, safflower and corn oils.

Hydrogenation and trans fats

Hydrogenation is a process that changes a liquid oil into a solid. For example, hydrogenated oil becomes margarine. The more solid the liquid becomes, the more saturated fat it has. The process also creates trans-fatty acids (trans fats). Both trans-fatty acids and hydrogenated oils can increase blood-cholesterol levels.

Omega-3 fatty acids

Omega-3 fatty acids may lower the total cholesterol and LDL (bad) cholesterol levels. Good sources are tuna, mackerel, salmon, herring, sardines, trout and whitefish. It is recommended to eat fish two to three times a week for a healthy heart. Flaxseed and walnuts also contain omega-3 fatty acids. If you do not eat fish, ask your dietitian for other ideas to put omega-3 fatty acids into your diet.

Tips to reduce fat and cholesterol

- Choose low-fat and skim dairy products
- Eat lean meat. Trim the fat from meats and poultry before cooking. Remove the skin from poultry.
- Bake, roast, braise, grill or poach food. Avoid fried food.
- Watch for hidden fats in gravies, salad dressing and processed foods.
- When using fat in your diet, choose liquid oils. Limit liquid oils to one to two teaspoons at a meal.
- Read labels to avoid hydrogenated oils such as margarine.

continued on page 9

continued from page 8

Dietary guidelines: More heart-healthy tips

Fiber

Fiber is part of the plant that is not digested. There are two forms of dietary fiber: soluble and insoluble. Both forms of fiber provide many health benefits.

- Soluble fiber: Helps control blood-cholesterol levels. It binds to some of the cholesterol in your digestive tract and eliminates it. Good sources include apples, oats, dried beans, barley, oranges and broccoli.
- Insoluble fiber: Absorbs moisture and helps prevent constipation. Good sources include wheat bran, whole-grains and most vegetables.

Increase fiber in your diet by eating more whole-grains, fruits and vegetables. Eat three servings of whole-grain starches each day, such as whole wheat bread, brown rice and oatmeal. Eat three servings of fresh fruit and three to five servings of vegetables each day.

Plant stanols

Plant stanols or sterol esters occur naturally in plant foods. Plant stanols are thought to decrease LDL (bad) cholesterol without affecting HDL (good) cholesterol. It appears that cholesterol attaches to the plant stanol in the digestive tract and then is eliminated. Plant stanols are used in some margarine spreads, such as Benecol and Promise Activ brands.

Caffeine

Examples of foods that contain caffeine are coffee, tea, chocolate and many soft drinks. Ask your doctor if you need to limit caffeine in your diet.

Soy

Studies have shown that soy protein may help lower your cholesterol. Soy is available in the whole soybean form, tofu, soymilk, soy burgers and soy flour. Soy protein is now found in some cereals.

Make recipes heart-healthy

It's easy to make recipes more heart-healthy. This chart gives you some tips on how to do this.

If the recipe calls for:	Use instead:		
1 whole egg	Egg substitute (per package instruction) or 1 egg white with 1 teaspoon vegetable oil or 2 egg whites		
1 cup butter	1 cup tub margarine (may not work in all recipes because of margarine's water content) or 1 cup applesauce		
1 cup shortening	³ / ₄ cup vegetable oil		
1 cup whole milk	1 cup skim milk		
1 cup light cream	1 cup evaporated skim milk or 3 tablespoons oil with skim milk to equal cup		
1 cup heavy cream	1 cup evaporated skim milk or 2 to 3 cups skim milk with ½ cup oil		
1 cup sour cream	1 cup plain yogurt or 1 cup blenderized, low-fat cottage cheese with lemon juice		
1 oz. baking chocolate	2 tablespoons powdered cocoa and 1 tablespoon oil		
Cream cheese	4 tablespoons margarine with 1 cup dry low-fat cottage cheese and a small amount of skim milk to blend		
Cream soup	½ can low-sodium, low-fat soup and ½ can skim milk		
Sour cream	Non-fat, plain yogurt with 1 tablespoon flour for each cup of yogurt		
High-fat cheese	Low-fat cheese (less than 3 grams of fat per ounce)		
Mayonnaise	Non-fat yogurt or half non-fat yogurt with half light mayonnaise or light imitation mayonnaise		
Canned tomatoes or sauce	Canned tomatoes or tomato sauce with no added salt, fresh tomatoes, tomato paste, tomato puree without added salt		
Canned broth or bouillon cubes	Fresh chicken stock or low-sodium chicken bouillon cubes		
Salt	In some recipes, omitting salt does not change the taste. Use fresh herbs when possible. Add dry mustard to vegetables, salads and grains. Use flavored vinegars in soups, sauces and salad dressings.		