

Knee Replacement Surgery

KRAMES[®]
PATIENT EDUCATION



Improving
Movement

Replacing a Worn Knee Joint

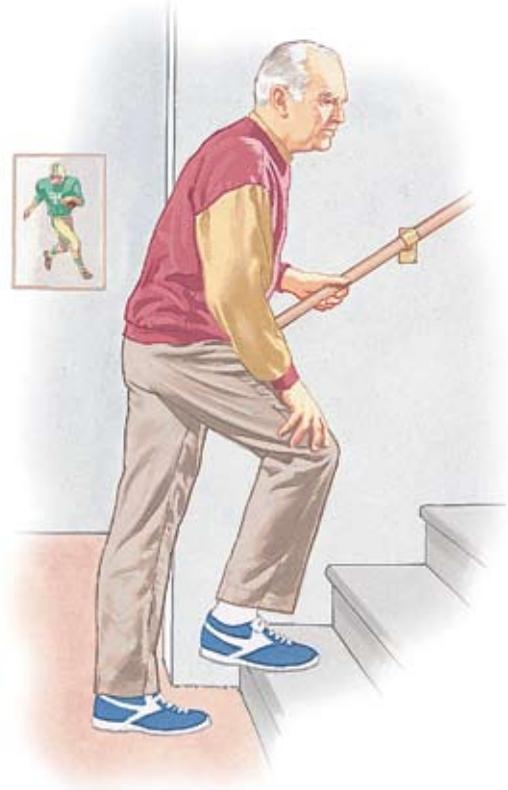
You use your knee every time you take a step. Because of this, living with a worn or injured knee joint can be painful and frustrating. Even simple things, such as squatting to pick up the morning paper, may cause pain. But you don't have to live this way. In many cases, an **orthopaedic surgeon** (a doctor who treats bone and joint problems) can replace all or part of the damaged knee joint. This product will help you learn what knee replacement means for you. It can also help answer many of your questions.



A Problem Knee

No matter what your age, a problem with the knee joint may keep you from activities you enjoy. Pain and stiffness may even limit the daily tasks you can do. Problems with the knee joint tend to build up over time. Your knee pain may be caused by any of the following:

- A bad injury that did not heal properly
- A chronic illness
- Wear and tear from years of constant use



Surgery Can Help

You may not have to live with knee pain for the rest of your life. Knee replacement surgery almost always reduces joint pain. During surgery, the damaged knee joint is replaced with an artificial implant (called a **prosthesis**). For many people, having a knee replacement means a return to pain-free movement.



Benefits of Knee Replacement

After a knee replacement, you can look forward to moving more easily. Most people gain all of the benefits listed below. Knee replacement surgery almost always:

- Stops or greatly reduces joint pain. Even the pain from surgery should go away within weeks.
- Increases leg strength. Without knee pain, you'll be able to use your legs more. This will build up your muscles.
- Improves your quality of life by allowing you to do daily tasks and low-impact activities in greater comfort.
- Provides years of easier movement. Most knee replacements last for many years.



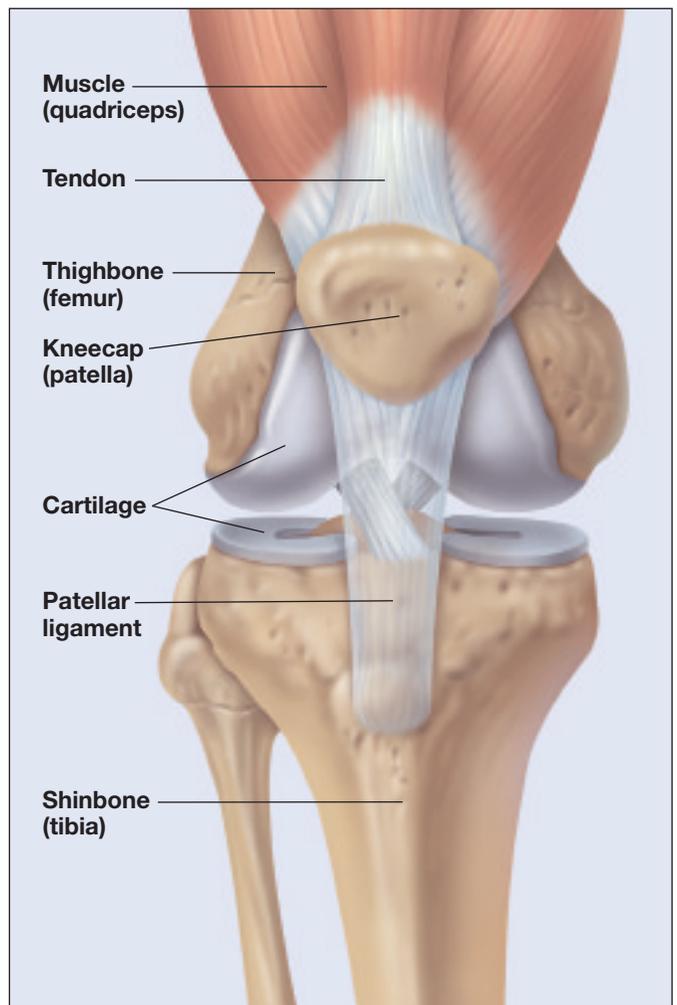
How the Knee Works

A healthy knee bends easily. The joint absorbs stress and glides smoothly. This allows you to walk, squat, and turn without pain. But when the knee is damaged, the joint may lose its ability to cushion stress. You may feel pain during movement. Sometimes a damaged knee joint will swell and hurt even when you are at rest.

A Healthy Knee

The knee is a hinge joint, formed where the thighbone and shinbone meet. When the knee is healthy, the joint moves freely. This is because the joint is covered with slippery tissue and powered by large muscles.

- **Cartilage** is a layer of smooth, soft tissue. It covers the ends of the thighbone and shinbone, and it lines the underside of the kneecap. Healthy cartilage absorbs stress and allows the knee to glide easily.
- **Ligaments** are another type of soft tissue. They hold the bones of the joint together.
- **Muscles** power the knee and leg for movement.
- **Tendons** attach the muscles to the bones.



A Damaged Knee

When one or more parts of the knee are damaged, joint movement suffers. Over time, cartilage starts to crack or wear away. Because cartilage cannot fully repair itself, the damage may keep increasing. At first, your knee may just be a little stiff. But as the bones of the joint begin rubbing together, you're likely to feel pain.

Osteoarthritis

Years of normal use can cause cartilage to crack and wear away (**osteoarthritis**). As exposed bones rub together, they become rough and pitted. The joint grinds. Being overweight or having an alignment problem, such as knocked or bowed knees, puts extra force on the joint. This may speed up the damage.



Inflammatory Arthritis

A chronic disease, such as rheumatoid arthritis or gout, can cause swelling and heat (**inflammation**) in the joint lining. As the disease progresses, cartilage may be worn away and the joint may stiffen.



Injury

A bad fall or blow to the knee can injure the joint. If the injury does not heal properly, extra force may be placed on the joint. Over time, this can cause the cartilage to wear away (**traumatic arthritis**).



Is Surgery Right for You?

Your doctor may have tried to reduce your knee pain with medications. You may even have had minor surgery (arthroscopy) to help treat the problem. But if this didn't help enough, replacing all or part of the joint might work for you. To find out, your surgeon will evaluate your knee joint. You'll have a full exam and x-rays. When forming a treatment plan, your surgeon thinks about how surgery can best benefit you over your lifetime.

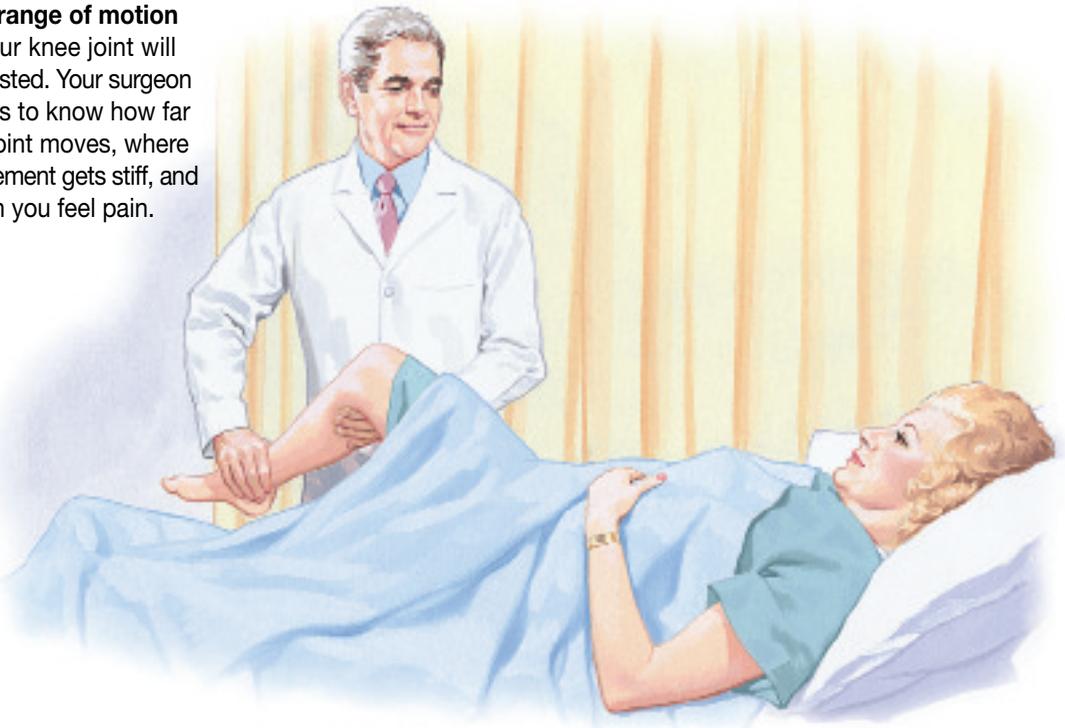
Your Medical History

Your surgeon will ask you about any past medical problems. He or she is likely to ask where your knee hurts and what makes the pain worse. Tell your surgeon about any other joint problems or any injuries to your knee or leg. If surgery seems likely, be sure to mention any past problems with anesthesia or bleeding.

Your Physical Exam

Your surgeon will fully examine your knee. He or she will feel for swelling around the joint. Nearby muscles and tendons may also be checked. The joint itself will be tested for strength, stability, and range of motion. Your surgeon may also look for other problems, such as a pinched nerve, that may be causing pain in or near the knee.

The range of motion in your knee joint will be tested. Your surgeon wants to know how far the joint moves, where movement gets stiff, and when you feel pain.



X-rays

X-rays will be taken to provide an image of your knee joint. An x-ray may show changes in the size and shape of the joint. A buildup of bone (**bone spur**), a cyst, or pitting in the bone may also show up. These problems often form where cartilage has worn away. X-rays can also help your surgeon plan your knee replacement. He or she may use x-rays to decide exactly where in the bone to place the prosthesis.



Your Treatment Plan

Your surgeon uses the results of your exam and tests to form a treatment plan that's right for you. Depending on your age and the amount of damage to your knee, you may discuss replacing all or only part of the joint. Either way, the new prosthesis will provide a smooth surface for easier joint movement. Current implants last many years, so a knee replacement is likely to bring improved movement for years to come.

A total knee prosthesis

replaces all the parts of the joint that rub together.



A partial knee prosthesis

replaces only a damaged section of the joint. The right or left side of the joint can be replaced.



Getting Ready for Surgery

You may want to make a few simple changes around the house before surgery. This will help make life easier during recovery. Be sure to see your primary care doctor or dentist. Treating health and dental problems ahead of time helps improve healing after a joint replacement. If you're a smoker, do your best to stop or cut down. Your surgery risks and recovery rate will improve.

Prepare at Home

You can make life easier and safer after surgery. Start by reducing household hazards. Also, limit the amount of reaching and stair climbing you'll have to do. Try these tips.



Stock up on canned and frozen foods. Store food and supplies between waist and shoulder level.



Prepare a room on the main living level if you normally sleep upstairs. Or set things up so you have to go upstairs only once a day.

Pick up clutter. Remove any throw rugs and tape down electrical cords.

Arrange for Help

After your knee replacement, you won't be able to drive for the first few weeks. Perhaps a family member or friend can deliver groceries and help you run errands. If you live alone, ask someone to stay with you for a few days after surgery. By planning ahead now, you'll have less to worry about during recovery.



See Your Doctor

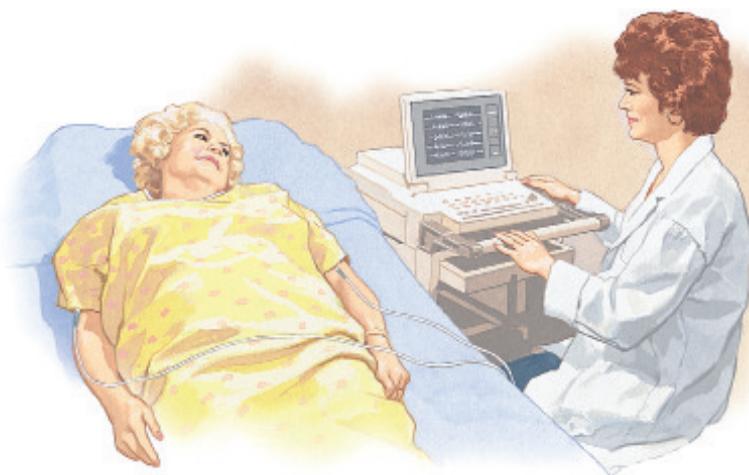
Your primary care doctor makes sure you're in shape for surgery.

- You may have an **ECG** (electrocardiogram) to find out what type of anesthesia is best for you. You also may have a chest x-ray and lab or blood tests.
- Your doctor will talk with you about health problems that need to be better controlled before surgery. Diabetes and high blood pressure are two common ones.
- For your best recovery, maintain proper nutrition and reduce alcohol intake.
- If you smoke, quit before surgery. This may improve healing and reduce complications after joint replacement.

Manage Blood Loss

Blood lost during surgery may need to be replaced.

- You may be able to donate your own blood before surgery.
- You may receive blood donated by another person. This blood is always screened to rule out disease.
- A drug called epoetin alfa may be given before surgery. This can sometimes reduce the need for transfusion.



An ECG shows your heart rhythm. It is a simple test that takes only a few minutes and causes no pain.

Discuss Your Medications

Your surgeon will want to know about *all* of the medications you take. This includes over-the-counter ones, too. Some medications don't mix well with anesthesia. Others— aspirin, ibuprofen, and blood thinners, for instance— can increase bleeding. To avoid problems during surgery, you may need to stop taking certain medications before your joint is replaced.

Finish Dental Work

Have tooth or gum problems treated before surgery. Also, finish any dental work that is under way. If you don't, germs in your mouth could enter the bloodstream and infect the new joint. This could delay your recovery. In an extreme case, an infection in the new joint might mean that the prosthesis would have to be removed.

Your Knee Replacement Surgery

You will most likely arrive at the hospital on the morning of surgery. In many cases, pre-op tests are done days or even weeks ahead of time. Follow all of your surgeon's instructions on preparing for surgery. When you arrive, you'll be given forms to fill out. You may also talk with the **anesthesiologist** (the doctor who gives the anesthesia), if you haven't done so already. It's normal to feel nervous. But rest assured. Knee replacement tends to have very good results.

Preparing for Surgery

You will be told when to stop eating and drinking before surgery. If you take a daily medication, ask if you should still take it the morning of surgery. At the hospital, your temperature, pulse, breathing, and blood pressure will be checked. An **IV** (intravenous) line may be started to provide fluids and medications needed during surgery.

Risks and Complications

As with any surgery, knee replacement has possible risks and complications. These include the following:

- Reaction to the anesthesia
- Blood clots
- Infection
- Damage to nearby blood vessels, bones, or nerves
- Dislocation of the kneecap

The anesthesiologist or nurse anesthetist may meet with you before surgery.

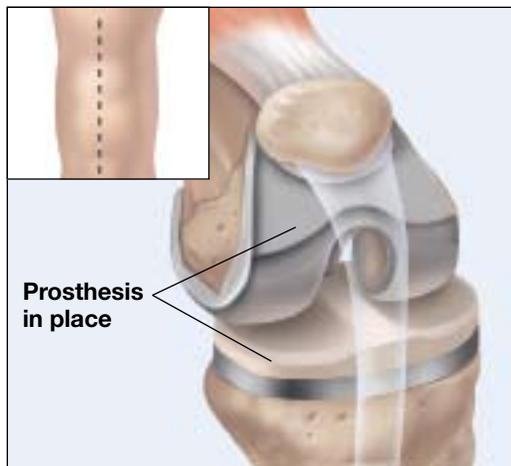


The Surgical Procedure

When the surgical team is ready, you'll be taken to the operating room. There you'll be given anesthesia. The anesthesia will help you sleep through surgery, or it will make you numb from the waist down. Then an incision is made on the front or side of your knee. Any damaged bone is cleaned away, and the prosthesis is put into place. The skin incision is closed with staples or stitches.

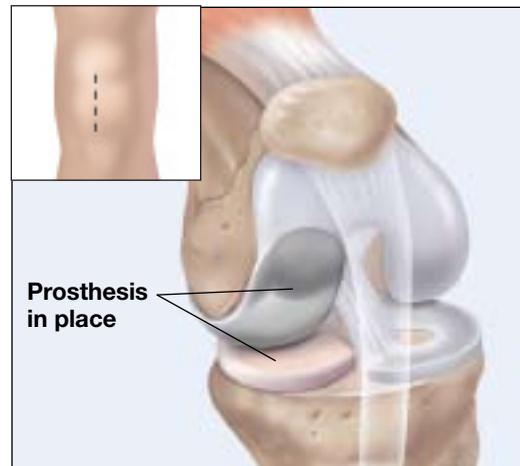
- **Preparing the bone.** Whether all or only part of your joint is being replaced, your surgeon starts by preparing the bone. The surfaces of the joint are cleaned and shaped to hold the prosthesis. Then the parts of the prosthesis are put in place. At this point, your surgeon tests the fit and alignment of the prosthesis.
- **Joining the new parts.** If the prosthesis fits correctly, its parts are secured to the thighbone, kneecap, and shinbone. The parts are then joined, forming a new joint.

Total Knee Replacement



The incision is about 8 to 10 inches long, and is often on the front of the knee.

Partial Knee Replacement



The incision is about 3 inches long, and is often on the front of the knee.

In the Recovery Room

After surgery you'll be sent to the recovery room, also called the **PACU** (postanesthesia care unit). Your condition will be watched closely, and you'll be given pain medications. You may have a **catheter** (small tube) in your bladder and a drain in your knee. A **CPM** (continuous passive motion) machine may be used on your knee. This machine gently bends the knee to keep it from getting stiff.

Your Hospital Stay

You'll be moved to your room when you are awake. By then your family or a friend will be able to join you. To gain the best pain relief, answer honestly when you are asked how badly you hurt. Soon after surgery, specially trained therapists will start working with you. The length of hospital stay and recovery will depend on the type of surgery you had.

In Your Hospital Room

You'll be watched closely on the day of surgery. Any or all of the equipment below may be provided.

- A **CPM machine** may be used to keep your knee flexible.
- A **bar** (trapeze) may be hanging over the bed. Use it to help lift your body when you change positions.
- **Special stockings** may be used to reduce the risk of blood clots. You may also be given medications to help prevent clots.



A **CPM machine** slowly increases your knee's range of motion.

Managing Pain

You may be given pain medications by injection or IV for the first few days. Expect to feel some pain, even with medication. This is normal. But if the medication doesn't reduce your pain at all, be sure to tell the nurse.

You're in Control with PCA

PCA (patient-controlled analgesia) allows you to control your own pain medication within safe limits. When you push a button, pain medication is pumped through an IV line. PCA pumps can provide a steady level of pain relief.



Special Therapies

During your hospital stay, you'll learn skills that will help you return to normal life. You will be shown how to strengthen your leg, walk, and clear your lungs. To make moving easier, use the PCA pump or ask for pain medication before your **physical therapy (PT)** sessions.

Gaining Strength

Your PT program is likely to start with gentle exercises. You may be shown ways to increase blood flow and control swelling. Working the **quadriceps** muscles (in the front of your thigh) builds leg strength. This helps protect your new joint by keeping the knee more stable. Exercises also help you bear weight without pain — a goal you can work toward.



Walking Again

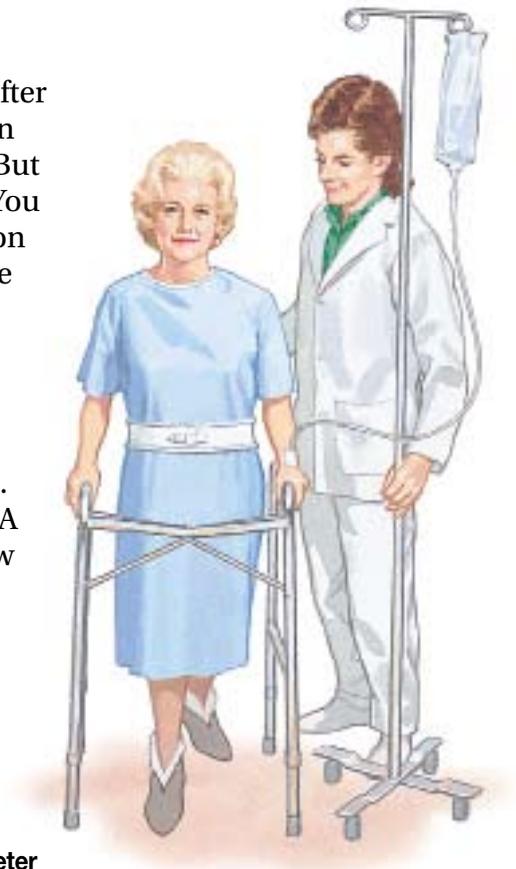
You may begin to stand and walk within hours after surgery. An IV and catheter are likely to still be in place, so using the walker may be a little tricky. But don't worry. A physical therapist will help you. You will be taught how much weight, if any, to bear on your new joint. With practice, you'll soon be able to walk with just the aid of a walker.

Clearing Your Lungs

Fluid can collect in the lungs after any surgery. To avoid pneumonia, breathe deeply and cough. You should do this a few times an hour, at least. A respiratory therapist or nurse may show you how to use an **incentive spirometer**. This machine can help you breathe more deeply.



The incentive spirometer helps you breathe in and out the right way.



During Your Recovery

Whether you're recovering at home or in a rehabilitation facility, you need to protect your new knee. Practice your exercises. Those shown here help build strength and increase range of motion. For the best recovery, avoid risky moves and see your surgeon for scheduled follow-up visits. Return to activity slowly, and don't be surprised if your new joint feels a little stiff at first.

Build Muscle Strength

Strong thigh muscles reduce the amount of force placed on your knee. This helps the joint last longer.

Quad Set

- Sit against the head of a bed. Place the leg with the new joint straight out in front of you.
- Tighten the front leg muscles, which pull the kneecap toward your thigh. Then press the back of your leg toward the ground.
- Hold for a count of 5. Repeat as directed.



Improve Joint Motion

Range-of-motion exercises help your new knee bend more smoothly. Practice flexing and extending your knee as you were taught.

Sitting Knee Bends

- Sit in a chair with a towel under the new knee joint.
- Straighten your leg as much as you can. Hold for a count of 5.
- Then bend your leg back as far as you can. Hold for a count of 5.
- Repeat as directed.



See Your Surgeon

Post-op visits allow your surgeon to make sure your knee is healing well. Sutures or staples are often taken out about 2 weeks after surgery.

When to Call Your Surgeon

Call your surgeon if you have any of the symptoms below:

- An increase in knee pain
- Pain or swelling in a calf or leg
- Unusual redness, heat, or drainage at the incision site
- Trouble breathing or chest pain
- Fever over 101°F



Avoiding Risky Moves

Some movements put too much strain on the new joint. This could cause the prosthesis to wear out more quickly. Protect your new joint:

- **Do not** twist your knee, as can happen when you turn your body without moving your feet.
- **Do not** perform high-impact activities, such as running, jumping, race walking, or playing basketball.

Returning to Activity

To build strength, walk every day. Try to do more each week. But be aware that some days you will feel better than others. You may be ready to drive or return to a desk job within weeks of surgery. But if you do more active work, you may need to wait 3 or 4 months before going back. Your rate of recovery will also depend on the type of surgery. Keep in mind, knee replacement is a major surgery. Don't be surprised if it takes a few months before you feel really good.



Your Surgical Checklist

Use a checklist such as the one below to help remind you what to do before and after your knee replacement. Always tell a dentist or doctor that you have an artificial joint. To prevent infection, you may need to take antibiotics before medical or dental procedures. Also, be sure to keep walking. Get back on your feet and enjoy daily living. That's why you had surgery in the first place!

Before Surgery

- See your primary care doctor.
- Finish any dental work.
- Ask about your blood management options.
- Stop taking aspirin or ibuprofen as directed before surgery.
- Stop taking any prescriptions as instructed by your doctor.
- Follow your surgeon's orders on when to stop eating and drinking before surgery.

After Surgery

- Schedule your first post-op visit as advised.
- Keep your incision dry until all stitches or staples are removed.
- Call your doctor if you have any signs or symptoms of an infection.
- Complete your physical therapy program. It will help you walk normally again.
- Return to work only when your doctor feels you are ready.
- Ask your doctor if there are any activities you should avoid.

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