Joint Adventures
Knee Replacement

at Northwestern Medicine Central DuPage Hospital
and Northwestern Medicine Delnor Hospital
Hello and welcome to the Joint Adventures Pre Op program at Northwestern Medicine Central DuPage Hospital and Northwestern Medicine Delnor Hospital. By now you’ve met with an orthopaedic surgeon and set a date for your joint replacement surgery.

From this point on, the orthopaedic care team will be with you every step of the way. We look forward to giving you excellent care and service.

Two important things to do before your surgery are to read this book and attend a Joint Adventures class. The information in this book, plus much more, will be covered in detail during the class. Knowing what to do before your surgery and knowing what to expect afterwards can help reduce the stress or fear you might have.

Besides reading this book and attending a class, you may also be advised to watch a web-based Emmi® education program about your joint surgery. Your surgeon’s office can provide you with the web address and access code you’ll need to view the video. Please contact your surgeon’s office for this information.

Most of the questions you might have today should be answered after reading this book, watching the Emmi video and attending a Joint Adventures class. If you still have questions about your surgery schedule, physician appointments or medication, please call your physician’s/surgeon’s office. For other questions, please contact me directly using my cell phone number listed below.

Again, welcome to Central DuPage Hospital and Delnor Hospital. The orthopaedic care team looks forward to helping make your joint adventure a pleasant one.

Sincerely,

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Getting started

To help you better understand the process of knee replacement, it may be helpful to know more about your knee and how it works.

The knee is the largest joint in the body.

The ability to walk easily depends on the specific way the thigh bone (femur) meets the shin bone (tibia). These bones are separated by cartilage which acts as a cushion and allows movement. In front of these bones, the kneecap (patella) glides in a groove and provides a round, protective shield. Much of the knee’s stability and its main movements of bending and straightening depend on surrounding muscles and ligaments.

Arthritis

The word “arthritis” means joint inflammation. Arthritis of the knee is a disease that wears away the cartilage of the knee joint. Without enough cartilage, the femur and the tibia rub on each other—bone on bone. When this happens, the joint becomes pitted and rough. The result is pain, stiffness and instability.

Osteoarthritis, often referred to as degenerative joint disease, usually gets worse with time. It is most common in people over age 50, but can occur at any age. Large, weight-bearing joints, such as the hip and knee, are the most common joints affected by osteoarthritis. People with osteoarthritis often get bone spurs around the joint. This can make it hard to move.

Rheumatoid arthritis is a disease that attacks any part of the body—including joints. In rheumatoid arthritis, the joint fluid contains chemical substances that attack and damage the joint surface. Swelling, pain and stiffness are usually present even when the joint is not used.

Knee replacement

Knee replacement surgery removes damaged and worn parts of the knee and replaces them with artificial parts called prostheses. This makes the knee strong, stable and flexible again. The prostheses include the same basic parts as your own knee. The femoral component is inserted into the thigh bone. The tibial component is inserted into the top of the shin bone. The patellar component replaces the kneecap.

The new joint may be secured in two ways. The cemented method secures the knee joint in place using acrylic bone cement that sets within 15 minutes. The uncemented, or ingrowth, method allows the new joint to be secured into place by the body’s own bone growth. The decision about which method you will have should be discussed with your surgeon.*
However, you need to take a few more to ensure you, your home and your caregiver are fully prepared for your joint replacement surgery.

During the next few days and weeks, you will need to:

- Register and attend a preoperative knee replacement class at the hospital
- Watch educational internet programs as assigned by physician*
- Prepare your home for your return
- Complete and return the Care Coordination Form
- Complete lab work or other tests ordered by your physicians*
- Select a support person to assist you at home for the first week after surgery

**Preoperative class**
The preoperative class and this book were specially created to help patients and family members better understand what to expect before and after joint replacement surgery.

Steps to prepare for the preoperative class
1. Bring this book with you to class and to the hospital the day of your surgery.
2. Select a family member or close friend who can be your “support person” (coach); your support person will need to attend the preoperative class with you to learn and understand how to assist you.
3. Register for class two to six weeks prior to your surgery by calling the Information and Physician Referral Line at 630.933.4234; TTY for the hearing impaired 630.933.4833.

Prior to your surgery, we recommend you watch any web-based programs that have been assigned to you.

*In the spirit of keeping you well-informed, some of the physician(s) and/or individual(s) identified, are neither agents nor employees of Northwestern Memorial HealthCare or any of its affiliates. They have selected our facilities as places where they want to treat and care for their private patients.
Preparing for surgery

Joint replacement is an elective surgery. Therefore, it is important that your state of health be evaluated thoroughly prior to undergoing the procedure.

**Physician visits and lab tests**

Before surgery, most patients will complete an evaluation that may include a preoperative physical exam, lab tests, EKG and X-rays. Please be sure to speak with a pre-admission review nurse before you go for testing; anesthesia guidelines may call for additional tests. Your physician* also may discuss temporarily stopping the use of some medications, such as aspirin or other anti-inflammatory medications, about one week prior to surgery. These medications tend to make your blood thinner and could cause more bleeding during your surgery.

**Dental care before surgery**

Any invasive dental work, including routine cleanings, cavity filling, extractions, root canals or implant work, can introduce bacteria into the bloodstream. If you are scheduled to have dental work within the six weeks prior to your joint replacement surgery, please tell your surgeon's office staff. Your surgeon* may provide specific instructions or guidelines for you to follow. Consult your surgeon regarding the length of time to wait after surgery before scheduling any future dental appointments.

**Infection prevention**

Infection is a rare complication of joint replacement surgery. If you have any signs or symptoms of infection prior to surgery such as an open sore, flu symptoms, a cut, infected teeth or a bladder infection, tell your physician* immediately. Your surgery may need to be delayed until you receive appropriate treatment.

While in the hospital, you will receive antibiotics before and after surgery to reduce your risk of infection.

If you have any signs or symptoms of infection prior to surgery, tell your physician* immediately.

Your incision needs to be kept clean and dry until it is healed. Your new joint is artificial and does not have your body's natural protection against infection, so it is possible to develop an infection years later. Bacteria can enter your bloodstream and invade your new joint causing it to become loose and painful. Call your physician* immediately if you experience signs or symptoms of infection such as fever, chills, pain, redness or drainage.

Common infections include sore throat, urinary tract infection, deep cuts or an ear infection. Your physician* may prescribe antibiotics.

**Health history**

Once you have a confirmed surgery date, you will need to provide a complete health history. One of our experienced pre-admission nurses will call you to obtain your detailed health history.

After the phone interview you will be given instructions for the next steps (i.e. what tests will be performed, where to go for testing, etc.). Based on your history, required testing will be scheduled at the Pre-Op clinic at Central DuPage Hospital, the Pre-Admission Testing Clinic at Delnor Hospital or one of our Northwestern Medicine Convenient Care centers.

**Pre-Op Clinic at Central DuPage Hospital**

You are encouraged to attend the Pre-Op Clinic prior to the day of surgery. You will meet with a member of our Perioperative Nursing Team. One of our registered nurses will complete a nursing assessment, review surgical consents, review home medications and provide pre- and post-operative education. The Pre-Op clinic also provides patients the opportunity to ask questions in person and become familiar with the hospital before surgery. If the clinic nurse has a concern, or upon request, an anesthesiologist may meet with you during your Pre-Op Clinic visit.

Appointments for the Pre-Op Clinic will be made by a member of the pre-admission testing department when you are contacted for your health history. Please allow 45 minutes to one hour for the visit.

**Pre-Admission Testing at Delnor Hospital**

You will meet with a member of our pre-admission nursing team. One of our nurses will draw blood for labs and other testing, if required. The nurse will provide any preoperative education. During this time, one of our anesthesiologists will meet with you. The pre-admission testing also provides you the opportunity to ask questions in person and become familiar with the hospital before surgery.

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When is my surgery?
We will be able to confirm your surgical time after 2 pm the business day before your scheduled procedure. A member of the Surgical Services staff will call you and tell you when to arrive and also inform you of any day-of-surgery tests that have been ordered.

For patients at Central DuPage Hospital
If you will not be home, or you miss our call, please contact us at 630.933.2647 after 5 pm, Monday through Friday, to confirm your surgery time. TTY for the hearing impaired 630.933.4833.

For patients at Delnor Hospital
If you will not be home, or you miss our call, please contact us at 630.208.4038 after 5 pm, Monday through Friday, to confirm your surgery time. TTY for the hearing impaired 630.933.4833.

When you call, you will be told:
Your scheduled surgery time
What time you need to arrive at the hospital
What time to stop eating and drinking the night before surgery
What medication(s) you are to take, if any, the morning of surgery, including insulin and any medications you should bring with you to the hospital

What to bring to the hospital
Although you’ll be in the hospital for a few days, you don’t need to pack much. In fact, we recommend you pack as lightly as possible.

Here is a suggested list of what to bring to the hospital:

- Insurance and Medicare cards
- A list of all your known allergies (medication, food and environmental) and a description of your allergic reactions to each
- Toiletries: toothbrush, toothpaste, comb, brush, deodorant, lotion, contact case or eyeglasses case, denture case, etc.
- Your C-Pap mask if you use one at night when you sleep
- List of any special dietary requirements
- Underwear, socks, loose comfortable pants or shorts, button-down shirts, and shoes to wear during therapy. (These can be the same clothes you wear to the hospital the day of surgery.)
- This book and any materials provided to you by your surgeon
- The “Do Not” list:
  - Do not wear makeup the day of surgery
  - Do not bring cash or personal items such as jewelry or items of great value

Are you covered?
Healthcare insurance is ever-changing. We suggest you call your insurance provider to discuss your coverage. It is much easier to plan for services and care when you know in advance what your insurance covers.

Care Coordination Form
The Care Coordination Form in your pre-op class folder is very important. This helps us know more about you and your post-surgery care preferences. Please take the time to fill it out and mail it at least two weeks prior to your surgery. If your surgery is scheduled within the next two weeks, please fax the completed form to 630.933.6685 (CDH), 630.208.4218 (Delnor) or email it as an attachment to linda.abella@nm.org (CDH) or jasmin.buthman@nm.org (Delnor).

Northwestern Medicine Home Health & Hospice
If you are discharged to your home, you may need visits from a home health nurse and physical therapist. Northwestern Medicine Home Health & Hospice offers a joint replacement program designed to provide you with excellent care after your joint procedure. These services are available immediately after surgery and continue until you make the transition to outpatient therapy. Northwestern Medicine Home Health cares for more than 150 joint replacement patients each month and is dedicated to maximizing your potential and providing the education required to minimize complications.

Northwestern Medicine Home Health is just one of the choices you have for post-discharge care. If you do not have Medicare, we recommend you check with your insurance provider to see which agencies are in your “network” of providers.

If you would like to speak with a Northwestern Medicine Home Health representative prior to surgery to discuss post-discharge care, call 630.665.7000 or visit the website at nm.org/homehealth.

Joint Adventures Preparing for Surgery
After you go home, Northwestern Medicine Home Health can provide the following services:

A registered nurse will assess your overall health, review medications and comfort level, and evaluate the surgical incision.

The nurse and therapist will tailor a home program to meet your specific needs. It will include physical therapy and occupational therapy if needed.

We will conduct a home safety evaluation and offer recommendations for making your environment safer during recovery.

Lab work will be performed as ordered to monitor blood-thinning medications. Results will be reported to your physician.*

When it is time for you to start outpatient therapy, we can provide assistance in determining your needs and preferences.

We will communicate regularly with your physician.*

Choosing a coach
As you prepare for surgery, another important thing to decide is who will be your coach or support person once you’re home. This can be a family member or friend. Whomever you choose should plan to attend the Pre-Op class with you, watch any assigned web-based programs and help prepare your home. Most important, your coach needs to be with you at least the first week after you return home. You may need assistance with meal preparation and daily activities. Your coach also will encourage and remind you to do your home physical therapy exercises.

Northwestern Medicine Home Health & Hospice
690 E. North Ave.
Carol Stream, IL 60188
630.665.7000 24-hour phone
630.933.4833 TTY for the hearing impaired
630.665.7006 Referrals
630.665.7059 Fax
nm.org/homehealth

*In the spirit of keeping you well-informed, some of the physician(s) and/or individual(s) identified, are neither agents nor employees of Northwestern Memorial HealthCare or any of its affiliates. They have selected our facilities as places where they want to treat and care for their private patients.
Calcium

Most of the calcium in your body is stored in your bones and teeth. The rest is used in your blood, muscle and fluid between cells.

Benefits of calcium

- Regulates muscle contraction, including heartbeat
- May help control blood pressure

Recommended Daily Allowance (RDA)

- Adult women age 19-50: 1000 mg
- Adult women age 51-70: 1200 mg
- Adults over age 70: 1200 mg

Tolerable upper limits

- Age 19-50: 2500 mg
- Age 51 and over: 2000 mg

Osteoporosis

Osteoporosis is a disorder where bone becomes weak and brittle. People with osteoporosis have an increased risk for broken bones. Osteoporosis may develop if your body doesn’t get enough calcium.

Osteoporosis risk factors

- Post-menopausal women
- Small-boned women
- Fair-skinned women of Northern European origin
- Physically inactive individuals

Factors that increase calcium absorption

- Lactose
- Vitamin D

Factors that decrease calcium absorption

- Fiber
- Oxalate
- Alcohol

Calcium supplements

Some people may need a calcium supplement because they don’t get enough calcium from the foods they eat. Calcium carbonate is the least expensive supplement and it contains the highest amount of calcium per tablet. Calcium carbonate is available under the brand names OS Cal® and Caltrate® or generic calcium carbonate. Calcium also can be found in Tums®, an over-the-counter antacid.

The ingredient label on the back of the product lists the calcium content. Your body only can accept 500 milligrams of calcium at a time, so do not take more than 500 milligrams in one serving.

FOODS RICH IN CALCIUM

<table>
<thead>
<tr>
<th>FOOD</th>
<th>CALCIUM (MILLIGRAMS)</th>
<th>PERCENT DAILY VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yogurt, plain, low fat, 8 ounces</td>
<td>415</td>
<td>42%</td>
</tr>
<tr>
<td>Yogurt, fruit, low fat, 8 ounces</td>
<td>245-384</td>
<td>25%-38%</td>
</tr>
<tr>
<td>Sardines, canned in oil, with bones, 3 ounces</td>
<td>324</td>
<td>32%</td>
</tr>
<tr>
<td>Cheddar cheese, 1½ ounces, shredded</td>
<td>306</td>
<td>31%</td>
</tr>
<tr>
<td>Milk, non-fat, 8 fluid ounces</td>
<td>302</td>
<td>30%</td>
</tr>
<tr>
<td>Milk, reduced-fat (2% milk fat), no solids, 8 fluid ounces</td>
<td>297</td>
<td>30%</td>
</tr>
<tr>
<td>Milk, whole (3.25% milk fat), 8 fluid ounces</td>
<td>291</td>
<td>29%</td>
</tr>
<tr>
<td>Milk, buttermilk, 8 fluid ounces</td>
<td>285</td>
<td>29%</td>
</tr>
<tr>
<td>Milk, lactose-reduced, 8 fluid ounces</td>
<td>285-302</td>
<td>29-30%</td>
</tr>
<tr>
<td>Mozzarella, part skim 1½ ounces</td>
<td>275</td>
<td>28%</td>
</tr>
<tr>
<td>Tofu, firm, made with calcium sulfate, ¼ cup</td>
<td>204</td>
<td>20%</td>
</tr>
<tr>
<td>Orange juice, calcium-fortified, 6 fluid ounces</td>
<td>200-260</td>
<td>20-26%</td>
</tr>
<tr>
<td>Salmon, pink, canned, solids with bone, 3 ounces</td>
<td>181</td>
<td>18%</td>
</tr>
<tr>
<td>Pudding, chocolate, instant, made with 2% milk, ¼ cup</td>
<td>153</td>
<td>15%</td>
</tr>
<tr>
<td>Cottage cheese, 1% milk fat, 1 cup unpacked</td>
<td>138</td>
<td>14%</td>
</tr>
<tr>
<td>Tofu, soft, made with calcium sulfate, ¼ cup</td>
<td>138</td>
<td>14%</td>
</tr>
<tr>
<td>Spinach, cooked, ½ cup</td>
<td>120</td>
<td>12%</td>
</tr>
<tr>
<td>Instant breakfast drink, various flavors and brands, powder prepared with water, 8 fluid ounces</td>
<td>105-250</td>
<td>10-25%</td>
</tr>
<tr>
<td>Frozen yogurt, vanilla, soft serve, ¼ cup</td>
<td>103</td>
<td>10%</td>
</tr>
<tr>
<td>Ready-to-eat cereal, calcium-fortified, 1 cup</td>
<td>100-1000</td>
<td>10%-100%</td>
</tr>
<tr>
<td>Turnip greens, boiled, ½ cup</td>
<td>99</td>
<td>10%</td>
</tr>
<tr>
<td>Kale, cooked, 1 cup</td>
<td>94</td>
<td>9%</td>
</tr>
<tr>
<td>Kale, raw, 1 cup</td>
<td>90</td>
<td>9%</td>
</tr>
<tr>
<td>Ice cream, vanilla, ½ cup</td>
<td>85</td>
<td>8.5%</td>
</tr>
<tr>
<td>Soy beverage, calcium-fortified, 8 fluid ounces</td>
<td>80-500</td>
<td>8-50%</td>
</tr>
<tr>
<td>Chinese cabbage, raw, 1 cup</td>
<td>74</td>
<td>7%</td>
</tr>
<tr>
<td>Tortilla, corn, ready to bake/fry, 1 medium</td>
<td>42</td>
<td>4%</td>
</tr>
<tr>
<td>Tortilla, flour, ready to bake/fry, one 6-inch diameter</td>
<td>37</td>
<td>4%</td>
</tr>
<tr>
<td>Sour cream, reduced-fat, cultured, 2 tablespoons</td>
<td>32</td>
<td>3%</td>
</tr>
<tr>
<td>Bread, white, 1 ounce</td>
<td>31</td>
<td>3%</td>
</tr>
<tr>
<td>Broccoli, raw, ½ cup</td>
<td>21</td>
<td>2%</td>
</tr>
<tr>
<td>Bread, whole wheat, 1 slice</td>
<td>20</td>
<td>2%</td>
</tr>
</tbody>
</table>

OS Cal® is a registered trademark of Glaxo SmithKline, Caltrate® is a registered trademark of Myers, Tums® is a registered trademark of Glaxo SmithKline
**Vitamin D**

Vitamin D is a fat-soluble vitamin that is stored in the body’s fatty tissue. It’s also called the sunshine vitamin because the body makes vitamin D after being in sunlight.

**Vitamin D helps**

- Promote calcium absorption
- Form and maintain strong bones
- Maintain the proper phosphorus levels in blood
- Prevent rickets

**Recommended Daily Allowances (RDA)**

<table>
<thead>
<tr>
<th>Foods Rich in Vitamin D</th>
<th>International Units (IU) Per Serving</th>
<th>Percent Daily Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cod liver oil, 1 tablespoon</td>
<td>1,360</td>
<td>340</td>
</tr>
<tr>
<td>Salmon, cooked, 3½ ounces</td>
<td>360</td>
<td>90</td>
</tr>
<tr>
<td>Mackerel, cooked, 3¼ ounces</td>
<td>345</td>
<td>90</td>
</tr>
<tr>
<td>Sardines, canned in oil, drained, 1¾ ounces</td>
<td>250</td>
<td>70</td>
</tr>
<tr>
<td>Tuna fish, canned in oil, 3 ounces</td>
<td>200</td>
<td>50</td>
</tr>
<tr>
<td>Milk, non-fat, reduced-fat, and whole, vitamin D fortified, 1 cup</td>
<td>98</td>
<td>25</td>
</tr>
<tr>
<td>Margarine, fortified, 1 tablespoon</td>
<td>60</td>
<td>15</td>
</tr>
<tr>
<td>Pudding, prepared from mix and made with vitamin D fortified milk, ½ cup</td>
<td>50</td>
<td>10</td>
</tr>
<tr>
<td>Ready-to-eat cereals fortified with 10% of the DV of vitamin D, ¾ cup to 1 cup servings (servings vary according to the brand)</td>
<td>40</td>
<td>10</td>
</tr>
<tr>
<td>Egg, 1 whole (vitamin D is found in egg yolk)</td>
<td>20</td>
<td>6</td>
</tr>
<tr>
<td>Liver, beef, cooked, 3¼ ounces</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>Swiss cheese, 1 ounce</td>
<td>12</td>
<td>4</td>
</tr>
</tbody>
</table>

**Risk factors for vitamin D deficiency**

- Adults age 50 and older have decreased absorption
- People who don’t get enough sunlight
- People with darker skin tones

**Vitamin D supplements**

Vitamin D is needed to help your body absorb calcium. If you are not consuming the RDA for vitamin D, you should talk with your physician about taking a daily supplement.

Vitamin D supplements are available over the counter from your local drug or vitamin store.
Day of surgery

For the day of your surgery, we have a few suggestions and recommendations to help ensure it goes smoothly for you and your family.

Arrival and parking at Central DuPage Hospital
Use Entrance #1 on Jewell Road and enter the hospital at the East Entrance. Valet parking is complimentary and recommended the day of surgery. Wheelchairs are available if needed. Valet service is available starting at 5 am.

Arrival and parking at Delnor Hospital
Use Entrance #1 on Williamsburg Road and take Delnor Drive to the South Entrance. Wheelchairs are available if needed. Valet services are available at the South Entrance starting at 7:30 am.

Check-in and registration at Central DuPage Hospital
Use Entrance #1 on Williamsburg Road and take Delnor Drive to the South Entrance. Wheelchairs are available if needed. Valet services are available at the South Entrance starting at 7:30 am.

Check-in and registration at Delnor Hospital
The surgery registration desk is located near the South Entrance to direct you. You and your family/friends will wait until you are taken to the preoperative holding area. We ask that only one family member accompanies you.

Waiting room at Central DuPage Hospital
During your surgery, your family/friends may wait in the surgery waiting room. The patient tracking board provides up-to-date progress information to your family. Your surgeon* will speak with your family when your surgery is over.

Waiting room at Delnor Hospital
During surgery, your family/friends may wait in the surgical waiting room. The family liaison, our volunteers, and the patient tracking board will provide up-to-date progress information to your family. Your surgeon* will speak with your family when your surgery is over.

Recovery room
The average length of stay in the recovery room is two hours. The medications used in anesthesia may cause you to have blurry vision, a dry mouth, chills, nausea or a sore throat. You may have a drain near your surgical incision. When you are stable, you will be transferred to your room. Once awake, you will be encouraged to breathe deeply and cough. This will help clear out your lungs and prevent pneumonia.

Food and fluids
After surgery, you will be able to have ice chips if you are not sick to your stomach. You can progress to solid food when you and your surgeon* feel you are ready. You will have intravenous (IV) fluids for one to two days after surgery. You will receive antibiotics, fluids and blood, if needed, through your IV.

Visitors
On the day of surgery, we suggest that you keep visitors to a minimum and limit the amount of time they stay. You will feel very drowsy from the medications.

Privacy
To protect your privacy after surgery, you will be requested to communicate directly with your family and friends regarding your condition. You will be asked to choose a password to protect your privacy if you are unable to update your family/friends yourself. Please advise family and friends they will need to provide the password to a nurse in order to obtain updates on your condition.

*In the spirit of keeping you well-informed, some of the physician(s) and/or individual(s) identified, are neither agents nor employees of Northwestern Memorial HealthCare or any of its affiliates. They have selected our facilities as places where they want to treat and care for their private patients.
Your hospital stay

Post-surgery
Your orthopaedic care team will continue to closely monitor you after your surgery. They will check the color, movement and sensation in your legs. They will orient you to your new environment, where:

- A nurse will create a personalized plan of care to meet your individual needs and work with other members of the orthopaedic care team.
- A patient care technician (PCT) will assist you with activities of daily living such as bathing, turning in bed, toileting, etc.

Inpatient physical therapy
Physical therapy is one of the most important parts of your recovery. You will most likely begin physical therapy the day of your surgery. As an inpatient, you will receive physical therapy twice a day. Your surgeon and the rehabilitation services staff work together to develop an individualized therapy plan for you. You are encouraged to take pain medication on a regular basis while hospitalized. It is important to have adequate pain management to complete your rehabilitation.

During your therapy sessions, you will be instructed in exercises to help restore joint motion and strengthen the surrounding muscles. As you become stronger and progress toward your mobility goal, you will learn and practice how to:
- Properly move and turn in bed
- Get in and out of bed and chairs
- Walk and climb stairs—if appropriate to your home setting

Therapy after your discharge will be based on your health status, abilities and the mobility level you achieved in the hospital. Your focus should be to work toward your optimal functional level with your home health therapist.

Bladder and bowel care
Some people may find it difficult to urinate after surgery because of the anesthesia, pain medications and decreased mobility. If necessary, your surgeon* may request a catheter be inserted to drain your urine.

Constipation can become another problem several days after surgery. Drink a lot of fluids and eat foods that are high in fiber. A stool softener and laxatives may be given to you.

Incision care
Your incision will be covered by a dressing. Your wound must be kept clean, dry and covered. Wound care will be discussed before discharge.

Respiratory care
Secretions tend to pool in the lungs and can lead to pneumonia. To prevent this, we will teach you to breathe deeply and cough, as well as how to use an incentive spirometer, which is a breathing device. This allows air to fill the tiny air sacs in the bases of your lungs. The deep breathing also helps to break up the mucus so you can "cough it out."

Circulation
Lack of activity causes the blood to circulate more slowly and pool in the legs. This can lead to the formation of blood clots. To reduce this risk, your surgeon* will order intermittent compression sleeves or foot cuffs for you to wear. Blood thinners also may be prescribed.

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Managing Your Pain
Managing your pain

You are at the center of your healthcare team. For the best possible outcome, we encourage you to be an active participant in your healthcare.

Participation takes many forms and includes:
- Providing information to your team
- Educating yourself about your diagnosis and care plan
- Knowing the medications you are taking
- Expressing your questions and concerns
- Telling your caregivers how you are feeling

Managing your pain

Pain is experienced by people of all ages and can occur anywhere in your body. Feelings can vary from dull aches to severe sensations. You have the right to have your pain assessed and treated. To help us make you as comfortable as possible, we will regularly ask you to rate your level of pain using a numeric scale. The scale is from 0 to 10 with zero being no pain and 10 being the worst pain possible.

We are committed to helping you manage your pain throughout your stay.

**Comfort-function goal**

In order to perform your daily activities, you will need to set a goal for managing your pain. This is called a comfort-function goal. Your comfort-function goal should be a pain rating that allows you to continue your important activities.

To help set your goal, consider:

- The daily activities you need to do after surgery such as coughing or breathing deeply, to prevent complications
- The pain rating that will allow you to manage those activities comfortably

Your caregiver will help you with your comfort-function goal and answer questions about the pain rating scale.

Discharge Instructions and Leaving the Hospital
Discharge instructions

Preparation for your discharge actually started the day your surgery was scheduled. Your orthopaedic care team works with your surgeon* and medical physician* to ensure a timely discharge. Part of the discharge process includes a class you and your family and/or your coach are encouraged to attend. It is very important that everyone involved fully understands the discharge expectations.

Discharge instructions for knee replacements
Before being discharged, the following information will be discussed with you and your family or coach:

- Assistive device
  - Walker
  - Crutches
  - Cane

- Weight bearing status for operated leg
  - Weight bearing as tolerated
  - % of weight bearing
  - Touchdown weight bearing
  - No weight bearing

- No pillows under operated knee

Keep your appointments

Review teaching tools
- Incision care at home
- Prevention of infection
- DVT sheet

- Do not participate in running sports
- Resume driving when surgeon* approves
- Return to work when surgeon* approves

Incision care at home following joint replacement

Your incision will be closed on the outside by one of the following:

- Staples
- Dermabond
- Steri-strips

When you are discharged from the hospital, these will still be in place. You will need to keep the incision clean and dry. If steri-strips are present, keep them in place until seen by your physician.* If the ends come loose and curl up, they may be trimmed off, leaving the remaining steri-strip in place.

Each day, change the dressing that covers your incision until your first post-op visit with your surgeon.* Follow the dressing change instructions provided.

Here are a few suggestions to help promote healing and avoid infection:

- Keep your incision clean and dry. You may not shower until directed by your surgeon.*
- You may wash the area gently with soap and water and pat dry after your first office visit. If you have staples, you may be asked to wait another couple of days after they are removed before showering.
- Do not apply lotion or ointments to your incision unless directed by your surgeon.*

Notify your surgeon* if you notice any of the following:

- Separation of incision line at any point
- Increased temperature greater than 101 degrees or chills
- Increased redness, swelling or warmth of the skin around the incision
- Increased pain at the incision site
- Red streaks on the skin near the incision site
- Tender bumps or nodules in your armpits or groin
- Foul smell from the incision
- Pus leaking from the incision

Please call your physician* with any questions or concerns.*

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Infection prevention
Infection is a possible complication of joint replacement surgery. Therefore, it is very important to take good care of yourself with preventative care, screenings, tests and procedures. If you ever experience signs or symptoms of an infection such as fever, chills, pain, redness and/or drainage from the incision area, call your surgeon.* It is possible an infection could start from a sore throat, urinary tract infection, deep cut or even an ear infection.

Some tests, diagnostic procedures and illnesses can place you at a greater risk for developing an infection in your new joint even years after surgery. That’s because bacteria can be inadvertently introduced into your bloodstream in any number of ways. Once in the bloodstream, the bacteria can travel to your new joint and cause an infection because the artificial joint does not have your body’s natural protection against infection.

Three of the most common healthcare situations you might encounter that can cause an infection are dental care, urological care and colonoscopy.

Dental care
Dental care after surgery can introduce bacteria into your bloodstream through cuts and trauma to the gums and gum lines. In anticipation of this risk, most surgeons* will provide specific recommendations for you to follow. Your surgeon* will have specific instructions and the length of time you need to be followed after joint surgery. Also, make sure your dentist and dental hygienist are aware of your new joint.

Urological care
Invasive procedures involving the urethra, bladder, ureters or kidneys are ways that bacteria can enter your system and contaminate your bloodstream. Needle biopsies of the prostate are included in this risk. Under normal circumstances, the body can usually fight off potential infection associated with these procedures. However, that’s not necessarily true after joint replacement surgery. Make sure to inform any medical personnel about your artificial joint before they perform an invasive urological procedure. More important, talk to your orthopaedic surgeon* before undergoing any urological procedure. Your surgeon* will provide specific recommendations for you to follow. You also will be instructed how long to follow the recommendations after the procedure.

Colonoscopy
Colonoscopies can potentially introduce bacteria into the bloodstream and eventually your artificial joint. Speak with your surgeon* and gastroenterologist* about the precautions that need to be taken because it is important you have routine colonoscopy screenings. You want to make sure you follow their recommendations to protect you and your new joint.

Deep vein thrombosis (DVT)
DVT is the formation of a blood clot within a deep vein, commonly the calf or thigh. The blood clot can either partially or completely block the blood flow in the vein.

DVT can result from leg inactivity brought on by:
- Surgery, especially on legs, hips, knees or abdominal area
- Badly broken leg bones or other trauma
- Immobility or being bedridden
- Cancer
- Myocardial infarction (heart attack) or congestive heart failure
- Severe infection
- Pregnancy
- Use of oral contraceptives
- Decreased circulation
- Prior DVTs

Important activities you can do to increase your blood circulation are ankle pumps. (See exercise on page 49). These involve moving your ankles up and down and tightening your leg muscles. Your physical therapist will show you how to perform these exercises.

DVT signs and symptoms
Because DVT can produce life-threatening complications, it is important for you to know and be able to recognize DVT symptoms.

Deep vein thrombosis (DVT) can result in the formation of a blood clot within a deep vein, commonly the calf or thigh. The blood clot can either partially or completely block the blood flow in the vein. It is important for you to know and be able to recognize DVT symptoms.

Any or all of the following can be a symptom and if noticed, you should call your primary care physician* immediately.

- Swelling in the calf or thigh area
- Pain in the calf area or behind the knee
- Increased pain with standing or walking
- Warmth/redness/tenderness in the affected area
- Low-grade fever

DVT also can occur without any of the above symptoms.

Pulmonary embolism (PE)
The most common and serious complication of DVT is a pulmonary embolism (PE). A PE occurs when a blood clot breaks free from a vein wall and travels to the lung where it blocks an artery. A PE is life-threatening and needs immediate medical attention.

Signs and symptoms of a PE include:
- Sudden onset of chest pain
- Sudden unexplained cough or coughing up blood
- Shortness of breath
- Lightheadedness, dizziness or cold sweats
- Feelings of restlessness, anxiety or rapid heartbeat
- Sense of impending doom

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Leaving the hospital

**Discharged**
Once your physicians* and orthopaedic care team determine you are ready to be discharged from the hospital, you will embark on your next level of rehabilitation. You and your physician will discuss your discharge plan. Your post-discharge plan will be designed to meet your needs.

We strongly recommend you have someone stay with you for at least one week after your discharge to help ensure a safer recovery.

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Safety precautions

Your orthopaedic care team will teach you safety precautions. Your incision site and body need time to heal and adjust to the new joint. Your surgeon will instruct you on when you can resume normal activities.

Before leaving the hospital, you will practice walking, transferring from your bed and a chair, and dressing yourself. If your home has stairs, you will also practice climbing stairs.

These basic tasks require you to use safety precautions to prevent injury to yourself and your new joint.

Transfers in and out of bed (Illustration A)

Back up to the bed until you feel the back of your knees touching it.
Place your operated leg out in front of you.
Reach for the bed with one arm and keep the other arm on the walker.
Slowly lower yourself onto the bed.
Scoot back onto the bed as much as possible.
Lift one leg at a time onto the bed until both legs are supported.
Continue to move legs to the center of the bed.
Recline back.
To get out of bed, reverse the steps.

Transfers into and out of a chair

Into a chair:
Back up to the chair until you feel the back of your knees touching it.
Place your operated leg out in front of you. If using crutches, move both crutches to one arm.
Reach for the armrests and slowly lower yourself onto the chair. Continue to keep the operated leg straight.
Scoot to the back of the chair.

Out of a chair:
Scoot forward to the edge of the chair so both feet are on the floor.
Place your operated leg out in front of you and keep it there.
Bend your knee and hip on the non-operated leg and try to keep most of your weight on this leg.
Using your hands on the armrests, push yourself with your arms and non-operated leg to stand.
Do not use a walker to pull yourself up; that may cause the walker to tip and could result in a fall.
If using crutches, move crutches to one arm and push to stand with one arm on crutches and one arm on armrest.

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Transfers in and out of a car

Car transfers (Illustrations B and C):

Have the driver open the passenger-side front door for you and make sure the front seat is as far back as possible. You also can have the backrest reclined to maximize your space.

Back up to the car using your walker until the backs of your knees touch the edge of the car.

Place your operated leg out in front of you and keep it straight throughout the transfer.

Place one hand on the walker and the other hand on the frame of the vehicle.

Slowly lower yourself onto the edge of the seat.

Scoot as far back as possible on the seat.

Turn towards the dashboard (making sure not to bend torso/head forward) as you bring one leg into the car at a time.

Reposition the seat to allow for proper seatbelt function and comfort.

Have the driver close the door for you.

To get out of the car, reverse the steps.

Recommendations:

Use a plastic trash bag on car seats for easier scooting and sliding.

Do not drive until your surgeon* gives you permission.

Stairs

Going up stairs (Illustration D):

Use crutches or cane in one hand and with the other hand hold onto the railing. Support your weight evenly and lift non-operated leg onto the step.

Bring your operated leg up onto step and then bring up cane or crutches.

If no railing, use crutches in both arms.

Going down stairs (Illustration E):

Use crutches or cane in one hand and, with the other hand, hold onto the railing.

Lower crutches or cane onto step below.

Support your weight evenly and bring down operated leg.

Lower non-operated leg.

If no railing, use crutches in both arms.

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Home precautions
To reduce the risk of falls or injury in your home following surgery, it is important for you to make it as safe as possible. This is fairly simple to do and can actually be done before your surgery. Most of the suggested modifications require no extra equipment or expense.

Check hallways, stairs or traffic areas of your home for potential tripping hazards such as loose carpeting or throw rugs. Remove any clutter on the stairs. Check the location of extension cords or phone cords to make sure they are not in a pathway. Remove furniture that may cause a fall such as a rocking chair, glider, coffee table or ottoman.

The bathroom is the most accident-prone room in your home. Use non-slip strips on the bottom of the tub or shower. Remove all throw rugs around the house and in the bathroom.

Install grab bars by the toilet and in the shower or tub area. Soap dishes, towel bars or doorknobs are not acceptable substitutes for grab bars. Your home care therapist will make recommendations for any other items you might need in the bathroom during the first visit following your discharge.

Place frequently used kitchen items in easily accessible places such as on the countertop or tables at or just below waist level, or just at shoulder height. Do not use a “reacher” for overhead items. If possible, have your bed accessible from both sides. Do not use furniture that has casters. Place portable phones in rooms where you will spend most of your time and in your bedroom.

Use nightlights in heavily traveled hallways and in bathrooms.

Adaptive equipment

3 In 1 commode
Raised toilet seat
Toilet safety frame
Shower chair
Bathing sponge
Elastic laces
Spiro elastic laces
Raised toilet seat with arm and clamp
Outpatient physical therapy

Physical therapy is the most important part of your joint recovery. Your surgeon* can implant a new joint, but it is your job to do the required physical therapy exercises to ensure your joint returns to an optimum functioning level. We recommend you work with a physical therapist specially trained in orthopaedics and joint replacement.

The physical therapist will instruct you on the correct exercises, as well as how and when to increase your exercise time and repetitions to move your recovery along at a safe and beneficial pace.

After discharge, your therapy can continue at home with another member of the orthopaedic care team—a Northwestern Medicine Home Health physical therapist.

Northwestern Medicine outpatient physical therapy
You will continue physical therapy at home until your therapist and surgeon* decide you can progress safely to outpatient physical therapy. At this point, you have an important decision to make on where to continue your physical therapy. You can continue with yet another member of our orthopaedic care team—a Northwestern Medicine outpatient physical therapist.

At Northwestern Medicine Central DuPage Hospital and Northwestern Medicine Delnor Hospital, you have access to 20 outpatient locations in the western suburbs for your physical therapy. Our licensed physical therapists will work together and communicate with your physician* during your rehabilitation process. They also will develop a program to meet your individual needs and goals. Your one-on-one therapy sessions can be with the same therapist during your entire outpatient treatment. This helps to ensure continuity and the ability to measure and accurately report your progress to your physician.* Plus your medical records are accessible 24/7 to both your physician* and therapist.

When deciding where you will go for outpatient therapy, consider the following:

Is the therapist licensed or a trainer/instructor?
Will you be working one-on-one with that therapist during your entire therapy session?
Will you have therapy with the same individual throughout your rehabilitation?
How will the therapist communicate your progress to your surgeon*?
Will the therapist have access to your medical records?

Ask the following questions about the facility:

What type of accreditation does this outpatient facility have?
How long has it been treating patients?
What is the most common type of treatment performed at this facility?
How much experience does it have with joint replacements?
How many joint replacement patients has it treated?
Does it have evening and weekend appointment times?
Is this facility in your insurance network?

Pain management during physical therapy
It is important to have adequate pain management to reach your optimal functioning level, but still be able to exercise. If you haven’t had any pain medication within three hours of your scheduled physical therapy session, we suggest you take some at least 30 minutes before you begin exercising.

With time, you should be able to decrease the amount of pain medication required. Make sure you talk to your therapist about your pain level and the need for medications if your pain doesn’t decrease after several weeks.

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Exercises

Exercise is very important following your knee replacement surgery.

The exercises on the next few pages are recommended before and after surgery. Your physical therapist also may give you additional exercises not listed in this book. Do only those exercises approved by your physical therapist.

Begin with 10 repetitions of each exercise at least two times a day. As you get stronger, you can increase the number of repetitions and duration. Remember, the exercises should be done on a firm surface. Don’t hold your breath while doing these exercises. It also is important to have adequate pain management to reach your optimal functional level. Therefore, we recommend you take your pain medication 30 minutes before your therapy session if you haven’t had any in the past three hours.

ANKLE PUMPS

With your legs straight, gently flex and extend your ankles moving through full range of motion. Repeat 10 times for each leg.

QUAD SET

With your legs straight, tighten the TOP of your thigh to make the knee as straight as possible. Hold the contraction and count to five. Relax. Don’t forget to breathe. Repeat 10 times for each leg.
**HAMSTRING SET**

Lie on your back with your operated leg slightly bent; push your heel into the bed. Hold for a count of five. Relax. Repeat 10 times.

**GLUTEAL SET**

With your legs straight, squeeze your buttocks together and count to five. Relax. Repeat 10 times.

**SHORT ARC QUAD**

With a rolled up towel or pillow under your knee, tighten your thigh to lift your heel off the bed and straighten your knee. Hold for a count of five. Don’t forget to breathe. Slowly lower your leg. Repeat 10 times for each leg.

**HEEL SLIDES**

Lie on your back with your legs straight. Bend your knee by sliding your heel toward your buttocks as far as possible. Hold and count to five. Slide your heel and leg back to a straight position. Relax. Repeat 10 times for each leg.

**STRAIGHT LEG RAISE**

Lie on your back. Tighten muscles on front of your thigh, then slowly lift your leg 6 to 8 inches while keeping your knee straight. Then, slowly lower your leg. Repeat 10 times for each leg.
PRONE KNEE FLEXION

Lie on your stomach. Slowly bend your operated knee as far as you can toward your buttocks. Then with your other leg, gently press the operated leg to try and bend it more. Hold for five seconds. Repeat 10 times.

SITTING HEEL SLIDE

Sit in a chair with one leg extended and that foot resting on a piece of wax paper or aluminum foil on a carpeted surface or a towel on a smooth surface. Press down on your extended heel and slide it toward the chair keeping your heel flat and on the floor. With your heel still on the wax paper or foil, extend your leg pushing your foot away from the chair. Make sure to keep your heel on the floor. Repeat the forward and back movements 10 times for each leg.

SITTING KNEE EXTENSION

Sit in a chair with your feet on the floor. Slowly, extend one knee as straight as possible tightening the top of your thigh. Hold for a count of five and then slowly lower your leg. Repeat 10 times for each leg.
STANDING HEEL RAISES

Hold the back of a chair or a counter for balance. Slowly, raise both heels off the floor so you are standing only on your toes. Repeat 10 times.

STANDING HIP EXTENSION

Hold the back of a chair or a counter for balance. Slowly, extend one leg behind you keeping your knee straight. Then, slowly lower the leg to a standing position. Repeat 10 times for each leg.

STANDING HIP ABDUCTION

Holding the back of a chair or counter for balance, slowly raise one leg out to the side keeping your leg straight. Then, slowly return the leg to a standing position. Repeat 10 times for each leg.

MINI SQUAT

Holding the back of a chair or counter for balance, stand with your feet flat on the floor and shoulder width apart. Slowly, bend both knees to a comfortable range and then slowly straighten both legs to a standing position. Repeat 10 times.