

# GUIDELINES FOR TOTAL JOINT REPLACEMENT PATIENTS

2009

## INTRODUCTION

Every year, several hundred thousand total joint replacements are performed throughout the world. Improvements in design and surgical technique make this kind of surgery a leader in cost-to-utility benefit for patients suffering from disabling joint conditions. In fact, both total knee and total hip surgery rank among the most cost-effective treatments when compared with expensive surgeries like cardiac by-pass and organ transplantation. Over 90% of patients who undergo a total joint replacement can likely expect more than a decade of life improving benefits. Recent long-term studies demonstrate the majority of uncemented total hips, and knees implanted with bone cement, succeed **at least** twenty years after surgery.

### ARTHRITIS OF THE KNEE AND HIP JOINT

When healthy, a knee or hip joint has good cartilage (smooth substance that covers the bones that make up the joint), strong ligaments and tendons, well-conditioned muscles, and healthy synovial lining (the membrane that covers all joint surfaces beyond the cartilage surfaces). These structures work with each other to support a dependable, pain-free joint. Disease and/or injury can disturb the joint so that pain, loss of motion, severe limping, angular deformity (knees) or instability, makes life almost impossible to enjoy. The most common kinds of arthritis are osteoarthritis, rheumatoid arthritis and traumatic arthritis. Avascular necrosis is another common disease that occurs predominately in hip joints.

- **OSTEOARTHRITIS** is the most common form of joint arthritis. It usually occurs in association with advanced age, but may also arise in patients who have other family members with arthritis. The cartilage wears away from the ends of the bones so that raw bone rubs against raw bone.
- **RHEUMATOID ARTHRITIS** is an immune disorder that causes the synovial lining to destroy cartilage so that bone rubs against bone. Rheumatoid arthritis affects patients at a younger age (at least ten years earlier) than does osteoarthritis. Unfortunately, this disease frequently attacks multiple joints.
- **TRAUMATIC ARTHRITIS** may occur years after joint injuries like fractures and ligament tears. It resembles osteoarthritis in terms of pain pattern and x-ray appearance.

- AVASCULAR NECROSIS (largely hips) can occur as a result of excessive alcohol and /or steroid intake. There are many other precipitating conditions. Many cases occur without a known cause. The ball of the hip joint gradually collapses like a crushed ping pong ball. X-rays and MRIs provide conclusive evidence of this kind of hip joint disease.

## **WHEN IT IS TIME FOR A TOTAL JOINT REPLACEMENT**

Total joint replacement is reserved for patients who have disabling joint pain that no longer responds to conservative treatments. Conservative treatments include anti-inflammatory medications (like aspirin, ibuprofen, and prescription drugs), nutraceuticals (like glucosamine sulfate), joint injection therapy (like cortisone and hyaluronate gels), assistive devices, and life-style changes. Physical therapy may also be recommended. Conservative measures should be tried as long as they provide effective relief of arthritis pain. When joint pain becomes moderate or severe on a daily basis, in spite of non-surgical treatments, joint replacement is a reasonable option. Furthermore, the degree of pain should clearly reduce your ability to perform activities of daily living like walking, stair climbing, and home chores in order for you to be a joint replacement candidate. Your orthopaedic surgeon may point out that your joint surfaces rub bone-on-bone to such an extent that nothing other than a joint replacement could help.

Pain is the most common reason for patients to choose total joint replacement. However, other problems like angular deformity (gross misalignment of the knee) and severely limited range of motion can enter into the list of reasons why you feel disabled by arthritis and choose to have a total joint replacement. Patients who declare that pain is the principal reason for their interest in joint replacement surgery are most likely to benefit from and be highly satisfied with their new artificial joint. Patients who cannot describe the characteristics of their disability prior to surgery are prone to dissatisfaction with joint replacement. Dissatisfaction is very likely if pain is not their most prominent symptom. Your orthopaedic surgeon is best qualified to help you characterize and understand your arthritis disability.

Patients often ask if arthroscopic surgery could help their disabling knee arthritis. Arthroscopic surgery rarely produces anything more than short-term benefit and is usually no more helpful than injection therapy. Some patients are actually made worse by arthroscopic surgery that removes what little cartilage they have, even if diseased. It should be reserved for patients with clearly defined problems like cartilage tears or possibly for early arthritis long before joint surfaces rub bone-on-bone.

You should undergo a joint replacement only after your orthopaedic surgeon thoroughly considers the following:

- The history of your arthritis
- Your past medical history including previous anesthesia and surgeries, allergies, medications and all other health problems besides arthritis
- A review of your general health systems so that surgical risks can be minimized (for example, it is important to know if you have diabetes since diabetic patients are at increased risk for total joint infection)
- An orthopaedic physical exam and if necessary, some or all of a complete physical exam (like checking pulses and nerve functions)
- Inspection of x-rays and other anatomic imaging studies (like MRIs), if relevant
- Confirmation that you have indeed failed previous conservative treatments and have end-stage joint disease (joint surfaces are rubbing bone-on-bone)
- A potential need for additional testing like blood tests, knee joint fluid studies (to exclude the presence of infection) and radioisotope studies (bone scans to clarify the exact diagnosis)

## **HOW TO GET READY FOR TOTAL JOINT REPLACEMENT**

In general, the best way to get ready for total joint replacement is to be sure that you are in the best possible health and that your team of physicians (primary care physician, orthopaedic surgeon, and other necessary specialists) knows about your health problems. Sub-optimal health is not necessarily a reason to forgo recommended total joint replacement, but it must be fully understood and effectively managed in order to reduce the risk of complications associated with this kind of major surgery. For example, diabetes mellitus is associated with up to a five-fold increased risk of infection unless specific measures before, during and after surgery are used (such as antibiotic inclusion in the bone cement).

- **GENERAL MEDICAL AND SPECIALTY EVALUATIONS** must be thorough and up-to-date before your joint replacement. As an example, if you have a history of heart problems, your primary care physician and cardiologist (if you have one) should see you before surgery and review your records and current condition to help prevent heart-related complications. Active dental infections, urinary tract infections and prostate disease, are but three examples of infection sources distant from the site of

your joint replacement incision that must be diagnosed and treated long before you undergo surgery.

- The **CONDITION OF YOUR SKIN** is extremely important to help prevent infection. This is especially true for the skin over your legs and around the incision site. Open sores, areas of infection or irritation, swelling and old incisions can increase the risk of problems like surgical site infection and poor wound healing. Your orthopaedic surgeon must have current knowledge of the condition of your skin. You must let your orthopaedic surgeon know if any skin changes occur between your last office visit and the day of surgery.
- **LEG PAIN** can be due to arthritic joint disease, but may also be caused by limited blood flow and/or nerve impulses throughout the lower limb. Patients with peripheral vascular disease (narrowed blood vessels from the abdomen to the feet) can have leg pain that worsens with activities like walking and riding a bike. Patients with spinal stenosis (severe narrowing of the spinal canal) can also have leg pain associated with walking. In both cases, the pain usually goes away after a few minutes of rest, only to recur with additional activity. This kind of pain pattern is not corrected by joint replacement and will continue after a joint replacement. It can severely limit the benefit from and safety of a total joint replacement. You should discuss any and all leg pain with your orthopaedic surgeon and be confident that he or she has both understood your complaints and examined the pulses, sensation and strength in your legs. Additional tests like noninvasive blood flow studies and EMG needle exams of nerve function may be necessary before surgery. Also, some knee pain can originate from an arthritic hip above. Your orthopaedic surgeon will need to exclude this type of occasional pain pattern before joint replacement surgery is recommended.
- **ALL MEDICATIONS** (prescribed and over-the-counter) must be known by your orthopaedic surgeon before you undergo total knee replacement. Some of them like blood thinners (Coumadin) and anti-inflammatories (e.g., ibuprofen, naproxen, diclofenac, etc.) must be stopped a week or more before surgery to prevent excessive bleeding. Your orthopaedic surgeon will tell you which ones must be stopped and how long before surgery. Some patients who must be protected with blood thinners even up to the joint replacement may be “bridged” with injectable products like Lovenox™. Your surgeon will write such a prescription and communicate with your primary care physician and specialists as might be relevant (e.g., cardiologist).

- **SMOKING** must be stopped before surgery and not resumed after surgery in order to reduce the risk of wound infection and delayed healing. Recent studies more strongly condemn smoking as a major surgical risk factor than previously acknowledged.
- **ALCOHOL DEPENDENCE** can result in fatal post surgical complications like delirium tremens (acute withdrawal syndrome) and even an increased risk of infection. Additionally, alcohol dependant patients are at greater risk of falling and can severely disrupt the healing of skin, tendon, ligament, and bone structures. Alcohol dependence must be diagnosed and treated long before total joint replacement surgery.
- Your orthopaedic surgeon will provide **BLOOD DONATION** recommendations. Recent studies suggest that most joint replacement patients will probably not require a transfusion after surgery. This is especially the case if patients are in good health and do not have anemia or bleeding tendencies before joint replacement. New surgical techniques and blood conserving technologies make it unlikely that a blood transfusion will be needed during hospitalization. However, patients who want to minimize the chance of needing other donors' blood, and patients undergoing bilateral knee replacements, are but two examples of those who **may choose to** have special preparation for surgery like autologous (a patient's own blood) donation. This type of blood strategy must be carried out several weeks before surgery. All patients should discuss their concerns about blood transfusions, and understand the risks of surgical and post-operative blood loss.
- Approximately two-three weeks before surgery, you will attend a comprehensive **TOTAL JOINT PROGRAM Class** at the hospital. At that time, your **PRE-ADMISSION TESTING** will be completed. This will include blood and urine tests, an EKG and a nasal swab. A chest x-ray may be done if medically indicated. You will receive additional instructions about preparing for surgery, as well as helpful advice about surgery, your hospital stay and discharge planning to return home or for extended rehabilitation. Feel free to ask questions pertaining to any aspect of your upcoming surgery and recovery.
- In addition to attending a **TOTAL JOINT PROGRAM Class**, you will also need to have a **HISTORY AND PHYSICAL FORM** completed by your Primary Care Physician within 30 days of your surgery. If your primary care physician does not have privileges nor routinely follows patients at the hospital where your surgery is scheduled, a Hospitalist will follow you, as needed. The Hospitalist is responsible for any non-orthopaedic medical needs you may have while you are in the hospital.

**WHAT TO EXPECT  
THE DAY BEFORE AND DAY OF SURGERY  
AT THE GOOD SAMARITAN HOSPITAL  
ORTHOPAEDIC CENTER OF EXCELLENCE (GSH OCE):**

- Do not eat or drink anything after midnight on the night before surgery. This includes chewing gum, sipping water while brushing your teeth and drinking coffee. You must have an empty stomach to avoid complications or cancellation of your surgery.
- Necessary medications and insulin shots, under the direction of the anesthesiology physician, may be needed even after midnight. You will receive specific instructions as to what medications should be taken with a sip of water or by means of injection.
- Use the nasal ointment (for patients with nasal cultures positive for MRSA) and take showers with chlorhexidine soap if ordered by your physician.
- Please leave all jewelry and other valuables at home or with your family.
- Do not wear contact lenses, make-up, nail polish (even on your toes) wigs, or false eyelashes.
- Do not put lotion or powder on your skin before surgery.
- Have someone drive you to the hospital and plan to take you home several days after surgery.
- Please arrive at Pre-Surgical Services on the 5<sup>th</sup> floor at least two to three hours, or as directed, before your scheduled surgery time.
- Prior to surgery, your nurse will complete any further tests that have been ordered by your doctor, review your history, start your intravenous (IV) and give you medication ordered by your doctor.
- Before surgery, the location of your surgery will be confirmed by writing the word “yes” on the area where the joint is being replaced.
- When you are taken to surgery, your family will be directed to the Surgery Waiting room on the 6<sup>th</sup> floor.

After checking in, you will be taken to a holding area next to the operating rooms where a member of the anesthesia team and operating room personnel will meet with you to prepare you for surgery. Anesthesia options should be somewhat familiar to you based on preadmission education, but will be finalized in the holding area. General anesthesia (you go to sleep during the procedure) and regional anesthesia (a spinal/epidural or peripheral

nerve block technique to anesthetize your legs) are the most common types of anesthesia. You will be able to discuss with your surgeon and anesthesiology physician, the kind of anesthesia you prefer.

It is helpful to remember these important steps:

- Pack a bag in advance of your hospital stay with items you would like to have throughout your hospitalization or additional rehabilitation.
- Try to relax and trust that your surgeon and supporting surgical team will do their best to provide you with a comfortable, safe surgery.
- If personal faith is a major coping priority, as it is for most patients surveyed on the importance of prayer, ask your pastor, family and friends, and your surgeon (if both of you are comfortable) to pray for you before and during surgery.

**Personal items you may want to have with you at the hospital:**

- Hair brush/comb
- Toothbrush/paste, toiletries and Deodorant
- Slippers (with a back and non skid soles. No flip-flop type slippers).
- Comfortable, well fitting shoes with ties or Velcro closures.
- Loose-fitting clothing – remember your clothes have to fit over your bandages.
- Two sets of comfortable street clothes (pants, shirts, underwear, socks. Sweat suits work well)
- Pajamas or a full length robe
- Favorite reading materials
- Important phone numbers
- A walker if you have one (with your name clearly marked)
- You may leave your medicines at home, but bring a list of them and how often you take them. We will provide them. If you are using special eye drops or inhalers, please bring them.
- An extra cushion or pillow to place in your car to elevate your seat when you are discharged.

## **SURGERY**

### **KNEE REPLACEMENT**

Patients frequently expect total knee replacement surgery to exchange virtually all skeletal structures from the end of their femur (thigh bone) to the top of their tibia (shin bone). Additionally, they think that a knee joint is a simple hinge and that the replacement will look like and function as a hinge. Very little bone is removed during a total knee replacement – usually less than a half inch on all sides of the joint. For the most part, the patient's tendons and ligaments are preserved to allow the new artificial surfaces to glide and rotate much like a normal knee joint. The worn, arthritic surfaces are removed and replaced with the artificial joint, while the healthy tissue is left intact.

The surgery will take from one to two hours, depending on the complexity of your knee deformity and soft tissue flexibility. Your orthopaedic surgeon will enter your arthritic knee through a short midline incision. After opening the knee, ligament balancing and deforming bone spurs will be addressed. Bone cutting jigs will be secured to the knee bones so that precise shaping can occur. Only the arthritic surfaces and adjacent bone are removed. The angle at which bone is removed determines the orientation of your new total knee. Realigning your knee so that it is properly positioned between your hip and ankle is critically important for proper function and long-term durability. The actual implants will then be secured to your knee bones with cement or through a press-fit technique. Your surgeon will choose which method is best for you.

The materials used in modern total knee replacement have been developed over many decades of laboratory research and clinical application. Even though several different materials and designs are available to your surgeon, most femoral components (applied to the end of your thigh bone) tibial components (applied to the top of your shin bone) are made of various metals. The space between the two metal components is filled

with either a fixed or snap in high-density plastic material. The undersurface of the patella (kneecap bone) is left untouched or replaced with a cemented plastic button.

Recently, high function and high flexion knee implant designs are available for younger and more active patients. The implants vary between full resurfacing designs and variable partial designs. **Your surgeon will determine which is best suited for you based on his or her extensive experience, as well as on valid scientific literature. The selection will NOT be based on unproven or market-hype information.**

After the implants are secured to your knee bones, your orthopaedic surgeon will test the new knee for balance and tracking of the kneecap. In some respects, these final checks are among the most important steps in total knee replacement. Final adjustments can be done to maximize the range of motion and stability of your knee. Then deep and surface tissue layers are securely reattached to allow early motion and purposeful physical therapy. The ultimate motion can be largely predicted by how much your new total knee moves after all tissues are closed. The actual motion will be achieved if you work long and hard in therapy and on your home exercises. It can take up to two years after a total knee is inserted to achieve the fullest range of motion. Patience, a positive attitude, and purposeful exercising are essential ingredients to the best possible total knee result.

## HIP REPLACEMENT SURGERY

Patients frequently expect total hip replacement surgery to exchange virtually all skeletal structures from the upper end of their femur (thigh bone) to the pelvis. Additionally, they think that a hip joint is a ball and socket joint, which it is. A relatively small amount of bone is removed during a total hip replacement. For the most part, tendons and ligaments are preserved to allow the artificial surfaces to rotate much like a normal hip joint. The worn, arthritic surfaces are removed and replaced, while the healthy tissue is left intact.

The surgery will take from one to two hours, depending on the complexity of your hip deformity and soft tissue flexibility. Your orthopaedic surgeon will enter your arthritic hip through as short an incision as is feasible. After opening the hip, the supporting capsule will be cut and adjusted to allow for secure repair at the end of the case. Bone cutting saws and reamers will be used to accurately prepare the bones so that precise shaping can occur. Only the arthritic surfaces and adjacent bone are removed. The angle at which bone is removed and the orientation of the joint implants will largely determine the success of your hip replacement. The actual implants will then be secured to your hip bones with cement or through a press-fit technique. Your surgeon will choose which method is best for you.

GSH OCE surgeons helped develop less invasive hip replacement techniques that have virtually eliminated prosthetic dislocation and serious leg-length discrepancies. A specific patient's hip problem, as well as body mass will influence the exact type of approach your surgeon selects. They will discuss new techniques but always resist adopting methods that are not adequately proven safe and effective. Innovative surgical methods that facilitate recovery and functional optimization are always pursued at the GSH OCE. .

The materials used in modern total hip replacement have been developed over decades of laboratory research and clinical application. Even though several different materials and designs are available to your surgeon, most femoral components (applied to the inside of your thigh bone) and acetabular components (pressed into the cup-like part of your outer pelvic bone) are made out of special metal alloys. These alloys are very strong and can be shaped to be used with cement or, as in the case of porous, beaded surface implants, can be used without cement. The bearing surface between the implants will be made out of ceramic-on ceramic materials, metal-on metal materials; or a combination of super strong polyethylene (super plastic) and either ceramic, metal, or new super smooth and scratch-resistant metals (like Oxinium™). **Young, active patients may even be approved for hip resurfacing arthroplasty (HRA) if they and their surgeon have reviewed the special considerations unique to this replacement option.** There are advantages and

potential risks to any of these combinations. Your orthopaedic surgeon should be well versed in the latest scientific literature and eager to answer your questions with clarity.

After the implants are secured to your hip bones, your orthopaedic surgeon will test the new hip for correct leg length and optimal stability. In some respects, these final checks are among the most important steps in total hip replacement. Final adjustments can be done to maximize the range of motion and stability of your total hip. Thereafter, deep and surface tissue layers are securely reattached to allow early motion and purposeful physical therapy. The actual motion will be achieved if you work long and hard in therapy and on your home exercises. Patience, a positive attitude, and purposeful exercising are essential ingredients to the best possible total hip result.

## **YOUR RECOVERY IN THE HOSPITAL**

The primary goal of your hospital stay is for you to safely recover from surgery and be ready for outpatient therapy. To achieve this goal you will likely experience a progressive daily routine:

You will have your blood sugar checked. It is not unusual to have a higher level of blood sugar after surgery. You will be given insulin to control your sugar levels if needed. This will promote healing.

You will be on medications to thin your blood to prevent blood clots. You will have some blood testing to assist in adjusting the doses. You may also have special tight stockings and pumps on your legs. The squeezing action of the pumps keeps blood from pooling in your legs while you are in bed and prevents blood clots. The nurse will assist in removing and reapplying your stockings.

Pain control - Your doctor and nurse will do all they can to minimize your pain while in the hospital. You will be asked to rate your pain on a scale of 0 – 10. 0 means no pain and 10 means the worst possible pain. This will help your nurse and you evaluate if your pain treatment is effective. It is important that you are as comfortable as possible to make your therapy sessions effective; therefore, you should take your pain medication before you have your therapy.

Orthopaedic surgeons at GSH OCE are well known for the development of effective multimodal pain management techniques in total joint replacement surgery. These include, but are not limited to: spinal anesthesia, nerve blocks, wound injection drug “cocktails”, and pre-operative dosing with medications like Celebrex™ (diminishes wound pain) and Lyrica™

(interferes with central nervous system reaction to nerve pain emanating from the site of surgery). Patients may be precluded from some of these based on drug intolerance and/or allergy. Your surgeon will review risks and adjust accordingly.

## **IN THE RECOVERY ROOM**

After surgery is completed, your doctor will update your family on your progress and answer any questions. You will be taken to the recovery room where you will stay for about two hours as your vital signs are carefully monitored and you begin to awaken. Once your vital signs are stable and you are able to answer questions, you will be taken to a room on the orthopaedic surgical floor. During your recovery room stay, and the remaining days in the hospital, pulses and nerve function will be regularly assessed to reduce the risk of serious complications.

Pain control will begin in the operating room and extend throughout your hospital stay. In the operating room, your surgeon may inject your incision area of soft tissues with a “cocktail” mixture of diluted narcotic, local anesthetic and anti-inflammatory chemicals. Your anesthesia and medications after surgery may be combinations of narcotics, anti-inflammatory meds, and even drugs that reduce your brain’s awareness and memory of pain. Many different methods of pain control can be effective. Compassionate attention to your pain needs will be of great importance during your hospitalization.

After surgery, a catheter may be inserted to help drain your bladder. Removal of the catheter will be done as soon as possible in order to reduce the chance of bladder weakness and/or infection. Blood clots in your legs after surgery are a concern. One of the means to reduce this risk of blood clots in your leg veins is to apply soft, mechanical pump devices around your feet or legs. Additionally, medications to “thin” your blood will be employed.

## **IMMEDIATELY AFTER SURGERY**

After you leave the recovery room you will be taken to your orthopaedic surgical room. Nurses and other staff will be sure you are comfortable and will check vital signs, peripheral blood vessel and nerve function, and blood tests to be sure you have not lost too much blood.

Pain control will be accomplished through the means started in surgery and/or the recovery room. On occasion pain control requires supplemental doses of narcotics. Great care will be taken to keep you from being “overdosed.”

The soft devices applied to your legs to prevent blood clots will continue.

If you have had a knee replacement, many orthopaedic surgeons utilize a CPM (continuous passive motion) machine to help you begin range of motion exercises.

You will be asked to do breathing exercises to prevent lung congestion.

### **DAY ONE (first full hospital day)**

Your activity will increase this day. You will be out of bed on several occasions; and you will work with physical and occupational therapy in your room or in the therapy department. Walker or crutch-assisted weight bearing begins on this day. You will be asked to begin efforts to lift your operated leg a few inches off the bed. Through this effort you will begin to regain quadricep (frontal thigh muscle group) function, and buttock muscle function which is critically important to transferring in and out of bed, as well as safe walking. Additionally, the following take place:

- Intravenous antibiotics are usually discontinued by the end of this day.
- Pain control will increasingly rely on oral medications.
- Your diet will begin to progress from liquids to solids if bowel function is evident (passing flatus and/or having a bowel movement).
- If you had a knee replacement, the CPM range of motion setting will increase. This device is usually used three times a day. Knee pain may initially increase when the CPM is used, but actually decreases the more you use the device and the more you allow your range of motion to increase.
- In order to prevent blood clots, and in addition to the mechanical foot/leg pumps, your orthopaedic surgeon may utilize blood thinners. These will continue throughout hospitalization, and often for a week or more after discharge.
- Blood tests are usually ordered during the first 48 hours after joint replacement surgery. Your surgeon may order a blood transfusion (your donated blood, if available) if your red cell count is too low (this is determined for each individual patient rather than a rigid formula).
- Again, you will be asked to prevent lung congestion through breathing exercises.

### **DAY TWO THROUGH DISCHARGE**

By the second full hospital day, most patients feel considerably better, though they still require pain medication. Fevers, which are common during the first 48 hours after surgery, tend to lessen. This is particularly the case when breathing exercises are performed with vigor. When fevers persist beyond the first 48 hours, blood tests, urine tests, chest x-rays, additional inspections of the surgical incision are a few of the methods your

orthopaedic surgeon may use to track down the source of continued fever. Fortunately, the rate of deep total joint replacement infection is less than 0.3% for the GSH OCE surgeons.

Activity levels continue to increase, as do the range of motion and muscle strength in your operated leg. Full weight bearing is permitted in almost every total joint patient and may serve to reduce the risk of blood clots. Most patients are ready to go home by the second or third day. Those who have not progressed to the point of safety with walking or cannot perform activities of daily living without a great deal of assistance, may be transferred to the hospital's rehabilitation unit (if available) or an off-site facility for further rehabilitation. Final blood tests may be ordered before discharge to check your blood count and degree of blood thinning.

The typical requirements for discharge to home include safe walking technique, little or no fever, acts of daily living require the assistance of one other person, and exercises for strength and range of motion can be independently performed. Hospital staff will confirm arrangements for help at home, nursing visits and therapy. Not all of these arrangements may be covered by your health insurance. Discharge planning staff at the hospital can let you know if benefits are restricted or sufficient for home care services.

## **PHYSICAL THERAPY**

It is important to your recovery that you begin moving very soon after surgery. Physical therapy is an essential part of your recovery. While in the hospital you will participate in a very intensive therapy program.

You are expected to attend all sessions unless a medical condition prohibits you. Continuing to do your exercises on your own is important to your recovery, even in the hospital.

You will be seen 2 times a day by physical therapy in your hospital room. Remember to ask for pain medicine 30 minutes before therapy. A transporter will be available to take you to your therapy if it is to be done in the department.

Visitors should limit visiting time when necessary. Physical therapy can be exhausting to some patients and rest between sessions is very important!

## **OUTPATIENT PHYSICAL THERAPY**

Most patients are able to begin physical therapy at an outpatient center within a few weeks after surgery. It is here that the greatest gains in strength and flexibility can be achieved. This kind of therapy is usually required for two months, though some patients may require more visits. The physical therapist will help you refine your skills with a walker, crutches, or a cane. Most patients do not require walking aides by six weeks after surgery. He or she will stretch your legs and use weights to improve your strength. Only a few patients require limited time in physical therapy. Most patients would never achieve range of motion and strength goals without the expert help of a physical therapist. The physical therapist should work in close communication with your orthopaedic surgeon.

## **OCCUPATIONAL THERAPY**

While you are in the hospital, the occupational therapist will teach you to use various pieces of equipment you may need. This equipment will help you perform daily living activities, such as bathing, dressing, and transferring to and from the chair so stress on your new joint is minimized. You will also be taught to transfer to and from the bedside commode, toilet, tub and/or shower.

Your occupational therapist will review activity restrictions that are necessary following total joint replacement surgery and give you a booklet detailing these restrictions. Please take the time to read it.

The person who is going to take care of you at home must attend the physical therapy and occupational therapy with you prior to discharge. Please discuss the best time for them to attend with your therapists.

Activity quickens your recovery. Your doctor will order the level and amount of activity you may perform. Typically, you will be out of bed to a chair on the evening of surgery. You will have therapy two times a day during the rest of your stay. Your activity level will progress daily according the program that had been planned for you.

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### **KEY POINTS TO REMEMBER ABOUT YOUR HOSPITAL STAY**

- YOU must participate in your recovery. No one can do this for you, though you will receive assistance.
- YOU must communicate your pain levels so adequate medication can be used to help you.
- YOU must progress in your exercises in order to maximize your best outcome.
- YOU must comply with and become proficient in joint precautions.
- YOU must follow doctors' orders so that complication risks are lessened. Medications, blood clot prevention devices, blood tests and potential transfusions, exercises, etc. are prescribed to maximize the safety of your surgery and recovery.
- YOU must clearly communicate concerns about any aspect of your care and recovery so that problems can be addressed.

### **WHAT YOU CAN DO:**

- Do your breathing exercises.
- Remember the joint precautions you were taught.
- Be as active as possible in your therapy.
- Move your ankles and feet often.
- Ask questions about your progress.
- Remember to ask for pain medicine before therapy.
- Have a list of any questions or concerns ready.
- Bring up any concerns you have about going home.
- Let the staff know if you do not understand any instructions for your care at home.
- Understand that you will have some good and bad days.
- Keep a positive attitude

### **WHAT YOUR FAMILY CAN DO:**

- Keep informed by reading the information given, including this booklet.
- Encourage you as you progress.
- Become familiar with your treatment plan, limits, precautions, and exercises and when to call the doctor.
- Participate in making plans for your recovery once you leave the hospital.
- Your family may attend any of the therapy sessions.

### **POTENTIAL COMPLICATIONS OF TOTAL JOINT REPLACEMENT**

Fortunately, complication rates after total knee and hip replacement are low. Some complications are very serious and potentially permanent, while others are bothersome and reversible. Your orthopaedic surgeon, and the team of doctors and allied health professionals with whom he or she works, should utilize the most up-to-date treatments and techniques. Their professional training and continuing medical education enable them to use scientifically validated materials and methods recommended to minimize potential complications and maximize the longevity of your total joint. However, serious complications can and do occur after even the most expert total joint replacement surgery.

- The MOST COMMON complication after joint replacement is blood clots in the leg veins.
- The MOST SERIOUS complications include death, heart attack or stroke, pulmonary emboli (blood clots that travel to the lungs), nerve and vascular injuries, extensor mechanism rupture (rupture of tendons that let you move your knee) and deep wound infection. The most serious complications are uncommon, and are more likely to occur in patients with chronic illnesses.
- LESS SERIOUS complications include retention of urine and bladder infections, temporary bowel paralysis (ileus), delayed wound healing and prolonged fever.
- UNIQUE TO A TOTAL HIP patient is the risk of prosthetic dislocation. Your surgeon will do everything possible to reduce this risk, but YOU must comply with joint position precautions. Fortunately, less invasive surgical methods and prosthetic improvements have led to much lower rates of dislocation.

## PREVENTING PROBLEMS

INFECTION occurs in less than 1% of first time total joint replacements. Patients at higher risk include those with inflammatory arthritis (rheumatoid arthritis), immune suppression (chemotherapy), diabetes mellitus, previous or current infections in and around the arthritic joint, open skin lesions, and remote sites of infection (dental infections and urinary tract infections). Patients who are at increased risk can undergo a total joint replacement with reasonable safety if their infectious problems are treated and controlled, and if antibiotics are included in the bone cement used to anchor their implants. Patients without any of these problems are at little risk of infection.

Most infections are blood borne from remote sites such as diseased teeth and the urinary tract. Skin infections can also spread to the region of the total joint. It is not surprising that your orthopaedic surgeon will advise you to take antibiotics before dental procedures or when bacteria could become blood borne to your surgery. Always notify your orthopaedic surgeon if you are undergoing other surgical procedures or if any part of your body becomes infected. Preventive and therapeutic antibiotics are essential to protect your joint from infection.

Signs of a possible infection include:

- Increasing pain at rest and with activity
- Increasing swelling, redness or tenderness in the area of the incision
- Persistent fever with chills
- Drainage from the incision

Immediately report any of these signs to your orthopaedic surgeon and nurse! Early treatment and even re-operation to remove pus and bacteria can prevent chronic (long-term) infection.

BLOOD CLOTS are the most frequent complication after total joint replacement. If preventive measures like blood thinners and foot/leg pumps are utilized after surgery, the threat of a blood clot is quite minimal. Additionally, death from a blood clot is close to zero risk if preventive measures are used.

Signs of a blood clot in the leg veins include:

- Increasing calf and/or back of knee pain
- Increasing swelling in the lower leg
- Redness or tenderness along the inside of your calf or thigh

Immediately report these signs to your orthopaedic surgeon or nurse. Diagnostic tests like an ultrasound can help detect blood clots and help your physicians begin early blood thinners to help prevent clot progression and potential embolus to your lungs. A blood clot that goes to your lungs is far more serious than one that is in your leg veins.

Signs of a clot to your lungs include:

- Sudden shortness of breath
- Sudden chest pain
- Occasionally chest pain made worse with deep breathing or coughing
- Occasionally blood in your phlegm

Immediately report these signs to your orthopaedic surgeon. It is best to be urgently taken to the emergency room of either the hospital where your surgery was performed, or to the nearest hospital. Blood thinners are usually started even before definitive diagnostic tests in order to lessen the chance of a fatal outcome.

Traumatic injuries to the bones, tendons and ligaments can occur if you fall. Elderly patients are at much greater risk of falling due to imbalance and slower recovery of strength and endurance. Most falls occur at home when a patient loses balance on stairs. Prevention of falls by means of using walking aides and handrails, rapidly rehabilitating to gain strength and endurance, and depending on the help of others is the best way to avoid these injuries.

An active lifestyle, often afforded by total joint replacement, will improve your general health and quality of life. In this state of improved wellness, you should be less likely to fall. Be sure to follow your orthopaedic surgeon's warnings regarding dangerous activities and inadequate exercise.

### **PROBLEMS SPECIFIC TO KNEE REPLACEMENT:**

- LONG-TERM complications include malfunction of the kneecap and surrounding soft tissues, wear of the plastic and/or metal materials, loss of bone structure, loosening of the total knee implant, instability of the knee (slips and shifts too much) and even late onset infection.
- BOTHERSOME PROBLEMS include stiffness, swelling, frontal knee pain, soft grinding and/or clicking, and muscle weakness.

## PROBLEMS SPECIFIC TO HIP REPLACEMENT:

- LONG-TERM complications wear of the plastic, ceramic and/or metal materials, loss of bone structure, loosening of the total hip implant, instability of the hip (slips and comes out of the socket too much), and even late onset infection.
- Throughout the U.S., dislocation occurs in about 2 to 7% of patients, and is almost always directly related to noncompliance with precautions or an accidental fall. New surgical methods like “Less Invasive Surgery” may lower the dislocation rate, but will never take the place of a responsible patient who steadfastly follows precautions and avoids injury.
- Leg length discrepancy is reputed to be the leading reason for patient dissatisfaction with hip replacement. In the majority of cases this can be prevented by careful pre-operative leg length assessments and precise surgical technique. Some patients have low back and pelvic tilting which can give the appearance of leg length discrepancy. On occasion your surgeon may have to leave a leg somewhat longer to achieve hip stability and correct severe deformities. Shoe lifts are frequently all that is required to achieve limb length balance. **If you have spinal disease, you might perceive a leg length inequality even though the new total hip has not directly contributed to an inequality. Your surgeon can clarify this issue with you before and after surgery.**

You should realize that the safety of joint replacement is at an all time high due to careful patient selection for this kind of surgery, improvements in total joint design and materials, better surgical technique, and strategies for risk reduction. The durability of a replacement is greater than ever. The vast majority of patients can expect that their new joint will function well for the rest of their life. This is most likely the case for patients who are 55 or older when they have their surgery done. Furthermore, any patient who follows preoperative and postoperative instructions, exercises caution in their daily activities, and adheres to a healthy lifestyle (no smoking, no abuse of drugs or alcohol, body weight control, accident prevention) can expect a durable result.

## **PLANNING FOR RETURNING HOME**

You will need a lot of help once you go home. If family members and friends are available to help you after discharge, you should let them know around the clock assistance may be needed. Cooking, cleaning, shopping, bathing and laundry are sometimes daunting challenges during the first few weeks after surgery. Most patients are able to go home two to three days after surgery and progress well with a visiting nurse, therapy and the help of family and friends.

It is advised that you make arrangements for someone to be available for you 24/7 the first two weeks following surgery. If you live alone or are not strong enough to be at home, special arrangements may be needed for extended care in the hospital rehab unit or skilled nursing care facility. There are facilities throughout the city that you may want to consider. Sometimes your insurance will have specific providers or you can inquire on your own. The hospital care coordinator will help with this. If you require a skilled nursing facility stay, it is usually for 1-2 weeks.

A care coordinator will assist you in discharge planning, financial and family counseling as well as in determining insurance and Medicare coverage needs. They will work with you and your family to evaluate your needs for support and home care after surgery and to obtain the proper equipment for your home use.

## **RECOVERING AT HOME**

Recovery during the first few weeks after total joint replacement ultimately determines the final result! You must follow your surgeon's orders and progress through exercises and activity requirements as instructed. There are several aspects of recovery that must be understood and prioritized to maximize your chance of obtaining the best possible result:

- PAIN is a natural feature of your recovery. Pain medications should be used as directed so that you can progress with your exercises and activity. Pain will gradually subside and is usually only mild after six weeks. Icing your knee for 20 minutes several times a day can help lessen pain. If you have a Polar Care device, this can be used in lieu of an ice bag. Always place a clean cloth or bandage between your incision and the icing device.

- **INCISION** care is important to prevent infection or delayed healing. Your incision is securely closed with sutures beneath the skin and staples or sutures on the surface. Do not get your incision wet. Do not disturb dressings unless told to do so by a physician or their designated allied health care personnel. Surface staples and sutures are usually removed 10 to 14 days after surgery. If your first follow-up office appointment is later than two weeks after surgery, a visiting nurse may be authorized to remove the staples or sutures at home. Your orthopaedic surgeon may allow bathing/showering 48 hours after the staples or sutures are removed, and if the wound is well sealed without redness or drainage. Swimming is usually delayed for several weeks.
- **ACTIVITIES OF DAILY LIVING** will become easier as you progress with your exercises. As pain lessens and your endurance increases extended walking, house chores, bathing and dressing, shopping and entertainment will become easier and more enjoyable. Patients differ in their ability to progress through rehabilitation. Your experience should not be compared with others.
- **DRIVING** requires sufficient range of motion and muscle strength to help prevent an accident. Most patients are given permission to drive after four weeks. You should get permission to drive from your orthopaedic surgeon.
- **RETURN TO WORK** is possible a few weeks after surgery if pain is minimal and you no longer require pain medications. Your orthopaedic surgeon will work with you to permit the earliest possible return to work.
- **SWELLING** is common after total joint replacement. It should decrease on a weekly basis. Many patients experience enough swelling to make their knee feel stiff for several months. Elevation of the leg can usually ease the swelling, and is recommended during the first several weeks after surgery. Progressive swelling throughout the leg that does not improve with elevation can be a sign of a blood clot. It can also be due to bleeding, or even infection. You should always contact your orthopaedic surgeon and be prepared to schedule an appointment if swelling and pain are progressively worse. You may be asked to go to the hospital if special tests are ordered to exclude problems like blood clots.
- **DIET** improves with time after surgery. During the first few weeks, many patients experience some loss of appetite. However, consuming a balanced diet with vitamin/iron supplements is critically important. Malnutrition is a leading cause of

wound complications including infection! If you are unable to progress towards a balanced diet, you should notify your surgeon and your primary care physician.

- EXERCISES at home must be performed with regularity and diligence. Use of the CPM, the help of a visiting therapist, leg lifts and active bending of the legs are some of the most important methods to progress towards successful recovery. Failure to do these exercises or failure to progress in strength and range of motion can severely compromise your progress. Once a few weeks have passed, you should enhance regimented exercises by extended walking, cycling, swimming and social activities. Exercising can improve your sense of well being and ability to return to productive living.

## HOME SAFETY TIPS

Specific preparations at home to ease your recovery may include:

1. Remove throw rugs
2. Be aware of uneven floor surfaces
3. Keep small objects, pets, and unnecessary items off the floors where you will be walking
4. Be sure you have good lighting, especially at night
5. Keep extension cords and phone cords away from where you walk
6. Safety bars and/or handrails in the bathroom, and firmly anchored handrails up and down your stairways
7. Elevated chair and elevated toilet seat
8. A shower or bath chair with no slip pads, adjustable height legs and a back
9. Do not run any wires under carpeting
10. Plan ahead for meals – gather all your supplies at one time, then sit to prepare your meal
11. Place frequently used supplies where they can be reached without too much bending or stretching
12. You can tape plastic bags to your walker to help carry light objects
13. Use a travel mug with a lid to carry drinks
14. Use the long handled tools to reach items
15. Don't wear open toe slippers, shoes without backs, or socks without non-skid bottoms
16. Sit in chairs with arms. It makes it easier to get up and down, especially for hip replacement precautions
17. You can put blankets or pillows on the seats to raise the heights
18. Repair loose carpet and floor boards
19. Cover slippery surfaces with carpeting that is firmly anchored to the floor or have non-skid backing
20. Create an open unobstructed path between every essential place in your house
21. Set up a living area on one floor, if possible

## HOW TO SUCCESSFULLY LIVE WITH YOUR NEW JOINT

Your recovery process will continue over the course of months. During that time, your strength and endurance will build. You will rely on equipment less and increase your physical activity. Your doctor will continue to evaluate your progress. At follow up visits after surgery, your doctor will answer any questions you may have about caring for your new joint. As you move at a pace compatible with your progress, you eventually will achieve greater movement and independence.

All joint replacement patients need to have a regular exercise program to maintain their fitness and health of the muscles around the new joint. Your therapist will help you gradually increase your walking, the number of tasks you are able to perform for yourself and your exercise program. It is important to push yourself to extend periods of standing for as long as you are comfortable and to stop when you become uncomfortable. As your joint heals you will be able to do more.

Many of the exercises and skills you learned while in the hospital can be adapted directly to home. You may need to make adjustments as you begin using stairs, and sitting in different chairs.

You will need to follow your joint precautions. Your doctor's home recovery instructions are especially important during the first few months of healing. Your family and friends can help you.

When your recovery is complete, playing golf, swimming, upper body exercises and other moderate activities can be resumed. Once the benefit of a total joint replacement is realized, a more active lifestyle can begin. Self-control and realistic expectations are of paramount importance to long-term durability of the new joint. Most activities are appropriate, but some are responsible for early failure of a joint replacement.

Activities that are encouraged include: Walking, hiking, cycling, swimming, and light weight low-impact aerobics, golfing, doubles tennis (without running for balls), ballroom dancing

Activities that are to be avoided at all times include: Any high impact sport or exercise program, specifically, basketball, baseball, football, soccer, running, rock climbing.

Activities that can be pursued if done CAUTIOUSLY include: Skiing, skating, hunting, weight lifting.

Remember that a JOINT replacement is the installation of a mechanical device into a living joint. As such, it will never feel exactly like your natural joint. You will likely be very grateful for the pain relief afforded by total joint replacement. However, learn to live with some of the mechanical characteristics, and even soft tissue alterations that occur as a result of this surgery. Your expectation of a total joint surgery should be less pain, improved alignment and possibly range of motion, and joint stability. Additionally, you can expect these improvements to lead to greater ease with activities of daily living including a return to approved recreational pursuits previously thwarted by your disability. Some of the minor disturbances of a total joint replacement include:

- Clicking of the joint surfaces with stairs and walking
- A sense of stiffness after periods of inactivity
- Numbness on the outside of the knee ( Knee replacements only)
- Activation of metal alarms in airports
- Discomfort with kneeling ( Knee replacements only)
- Prolonged or even lifetime use of handrails to go up and down stairs

Almost all patients become less aware of these disturbances over time. Survey questions geared to measure satisfaction and improved function yield good or excellent scores in greater than 90% of patients by one year after surgery. In other words, the vast majority of patients are highly satisfied and relieved to be rid of the pain and limited function they experienced before surgery.

Consider requesting a card from your care coordinator/doctor that states you had a joint replacement. This card might benefit you if you set off security alarms at airports or malls. **Realize that a total joint card will not prevent security personnel from insisting that you undergo additional scrutiny.**

When you travel, make sure you change your position and move your legs frequently to improve your circulation. Patients with a history of venous thrombosis, very recent joint replacement, prolonged flight times, and who are frequent travelers may be at increased risk for both thrombosis and even emboli to the lungs. Consult your physician before travelling if you are in any of these risk groups, or if you are uncertain about any other risk question.

**IT WILL BE NECESSARY FOR YOU TO KEEP YEARLY OR EVERY OTHER YEAR APPOINTMENTS WITH YOUR ORTHOPAEDIC SURGEON FOR ROUTINE EXAMS AND X-RAYS.** These are needed to allow him or her to detect early signs of potential or actual implant failure. Early detection is often effective in minimizing the extent of revision surgery that may be needed. Unfortunately, too many patients ignore their need for regular follow-up. Worse yet, they fail to detect changes in how the replaced joint feels like swelling, increased pain, or a diminished range of motion. Any of these signs and symptoms can indicate material wear and/or loosening of the joint, and should be brought to the attention of their orthopaedic surgeon.

## **AIDS TO RECOVERY**

You may have some of the following equipment:

**Abductor pillow** – a triangular shaped foam rubber pillow to keep your legs apart. If your doctor has ordered this, it is important to use this pillow as instructed after surgery.

**Cooling Device** – a machine that serves as a continuous ice pack. If used, it usually is applied to the incision area for the first 48 – 72 hours after surgery to decrease swelling.

**CPM – Continuous Passive Motion** – this is a machine your doctor may order to keep your knee flexible after surgery

**Knee Immobilizer** – This brace may be placed on your leg after surgery to keep your knee straight and to support your knee when you first stand and walk.

**Incentive spirometer** (lung exerciser) – You will be taught how to use an incentive spirometer before surgery to prevent lung problems. The spirometer is a plastic tube you should use every 1-2 hours which encourages you to take long, slow, deep breaths. You should practice using the incentive spirometer at home before you come to the hospital for surgery.

**Standard Walker** – You will be taught how to use this by your therapist. If you have one at home, please bring it to the hospital with your name on it. If you do not have one, we will obtain one for you.

## PERSONAL NEEDS

**Nutrition** – You will have an IV (intravenous line) inserted before surgery. It will be removed once you are able to tolerate eating and drinking. You will be back on your regular diet before going home. Please let us know if you have special diet needs. You should maintain a healthy diet before and after surgery. Be sure to eat protein such as eggs, peanut butter, lean meats, fish and poultry to help build healthy muscle tissue.

**Toileting** – You may have a catheter (tube for urinary drainage) in your bladder after surgery. It is usually removed 24 – 48 hours after surgery. Remember not to pull on the catheter.

**Constipation** – It is a side effect of limited mobility and pain medications. Your nurse can assist you in managing this problem. Drinking plenty of fluids will help. Add fruits and fiber to your diet as much as possible.

**Sleep** – It is important that you get enough rest to promote your recovery. Sometimes it is necessary to provide care during the night, which may interrupt sleep. We will try our best not to interrupt your sleep. If you are having trouble sleeping, talk to your nurse or doctor.

**Bathing** – The day after surgery you may need help to bathe while sitting in bed or at the bedside. Your nurse and/or family may help you. Each day you will be encouraged to do more for yourself. You will be able to shower when your doctor says it is okay. Usually you are able to bathe and dress independently when you go home.

## RESOURCES:

For more information about total joint replacement and arthritis:

- [www.aaos.org](http://www.aaos.org)
- [www.ahks.org](http://www.ahks.org)