MESSAGE FROM YOUR SURGEONS

We hope that this booklet will be helpful to you as you prepare for your surgery. You are encouraged to take the booklet to the hospital to record any notes you wish to keep regarding your individual care plan.

“It is my belief that a well-informed patient will approach the surgical procedure and postoperative experience with greater enthusiasm and less apprehension.”

CHARLES A. ENGH, SR.

“Our team of doctors, nurses, therapists, case managers, and support personnel is dedicated to making your hospital visit as comfortable and safe as possible.”

GERARD A. ENGH

“Hip replacement is major surgery that can dramatically improve the quality of life. This manual will help our patients prepare for that surgery.”

C. ANDERSON ENGH, JR.

“With the recent advances made in both implants and surgical technique today’s hip replacement offers a faster recovery and long lasting results.”

WILLIAM G. HAMILTON

“Patient education is an important part of our joint replacement program. Understanding the procedure and what to expect afterward can ease recovery and ensure maximum benefit from hip replacement surgery.”

KEVIN B. FRICKA

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An authority on joint replacement, who is recognized worldwide, Dr. Engh has published over 60 articles in scientific journals, contributed chapters to many books on joint replacement, and has written a book on joint replacement. Dr. Engh continues to conduct presentations and grand rounds throughout the United States and in many foreign countries. According to Dr. Engh, “No matter what activities we are involved in, our primary concern is always for the well-being of the individual patient.”

Gerard A. Engh, MD
Dr. Gerard A. Engh, also known as “Dr. Jerry,” is the other half of the team of brothers that has revolutionized orthopaedic implants for the hip and knee. After graduating from Davidson College, he attended medical school at the University of Virginia. Following an internship and residency at Yale-New Haven Hospital, Dr. Jerry spent two years as a major in the Army Medical Corps. He then joined the Anderson Orthopaedic Clinic, founded by his father, Otto Anderson Engh, MD in 1941. In addition to his practice at the Anderson Orthopaedic Institute, Dr. Engh directs knee research efforts at the Anderson Orthopaedic Research Institute and has pioneered the research and development of knee implants. With the collaboration of other physicians at the clinic, he has compiled an invaluable database for tracking the outcomes of hip and knee replacement surgery.

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Dr. Andy is the third generation of his family to practice at the Anderson Orthopaedic Clinic. After graduating from Davidson College, he attended medical school at the University of Virginia and completed his internship and residency in orthopaedic surgery at the Virginia College of Medicine. Dr. Andy then joined his father and uncle in practice at the Anderson Orthopaedic Clinic, continuing the family legacy by specializing in joint replacements and performing research studies on hip and knee replacements.

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Dr. Hamilton has been published in Clinical Orthopaedics and Related Research, The American Journal of Orthopaedics, and Seminars in Arthroplasty. In addition he has prepared book chapters in The Adult Knee, Orthopaedics Knowledge Update, and Instructional Course Lectures. He has presented his research at the American Academy of Orthopaedic Surgeons, the American Association of Hip and Knee Surgeons, and the Virginia Orthopaedic Society.

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Kevin B. Fricka, MD
Dr. Fricka, the newest member of the Anderson Clinic, earned his medical degree at George Washington University and is excited to be returning to this area. Originally born in Chicago, IL, Dr Fricka earned his undergraduate degree at Harvard University where he also was a member of the varsity basketball team. Upon graduation from medical school, Dr. Fricka was inducted into the Alpha Omega Alpha Honor Society and received the Julius S. Nevaizer Award in Orthopaedic Surgery. He completed his orthopaedic surgery residency at the University of California-San Diego. During his residency he presented numerous scientific papers and was awarded the DePuy Orthopaedic Research Award by California Orthopaedic Association. He has been published in the Journal of Arthroplasty, co-authored a book chapter and plans to be involved in the Anderson Orthopaedic Research Institute. He also is a member of the American Academy of Orthopaedic Surgeons.

Dr. Fricka finished his training with a one-year fellowship in Adult Reconstructive surgery at Rush University in Chicago, IL. He performed a large volume of primary and revision total hip arthroplasties, learning his techniques from some of the leaders in adult reconstructive orthopaedic surgery. He brings this knowledge and expertise with him to Anderson Clinic.

“I am proud to be joining Anderson Clinic where patient care, patient education and patient well being are most important. I look forward to meeting with patients and helping them return to their active lifestyle.”
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INTRODUCTION

The information in this manual will help familiarize you with the total hip arthroplasty procedure as performed by the Anderson Orthopaedic Clinic physicians. We will explain in detail the steps you will take to prepare for surgery, what will occur on the day of your surgery, and what you can expect during your postoperative stay at Inova Mount Vernon Hospital. We also describe your home care after surgery. Once you and your physician have decided that hip replacement surgery is needed, you will naturally have many questions. Experience has taught us that each patient has different expectations. It is important to us that all of our patients know what to expect preoperatively and during their hospitalization. Lastly, although a hip replacement is a very good substitute for a healthy hip, it is not a completely normal hip. For instance, it may not withstand some vigorous sport activities as well as a healthy hip. We believe the guidelines in this booklet will help you achieve the greatest satisfaction from your hip replacement.
Total hip replacement surgery has become a common orthopaedic procedure in the United States. Hip replacements are performed to alleviate conditions caused by osteoarthritis, rheumatoid arthritis, fractures, dislocations, congenital deformities, and other hip-related problems. The surgery involves replacing the damaged surfaces of the hip. The head and the neck of the femur (thigh bone) are removed and replaced with a ball and stem, called the femoral component. Then, the damaged hip socket is lined with a metal “cup.” A liner is placed into the cup. The liner can also be made from different materials, but is usually plastic, metal, or ceramic. The ball can be made of different material, such as metal or ceramic. The ball of the femoral component fits into this liner, or bearing surface, creating a new, moveable joint.

Before 1983, most hip replacement surgeons in the United States used acrylic cement to attach the prosthetic parts to the femur and pelvis. This method involved filling the area between the metal prosthesis and the surrounding bone with acrylic cement. In some cases involving cement, deterioration of the cement resulted in prosthetic loosening and a recurrence of pain. In many cases, a second operation, known as a revision total hip replacement, was required. Unfortunately, when this revision operation was done with acrylic cement, the success rate was lower than the rate with the initial surgery. Failures with the cemented technique were particularly apt to occur in young, active patients. In response to the needs of these active patients, the physicians at the Anderson Orthopaedic Clinic, in 1977, began to use porous-coated implants. The porous-coated method, which involves the use of implants with sintered, metal porous surfaces, requires no cement. Our results with this method were presented to the Food and Drug Administration (FDA) in 1982 and in 1983, the FDA approved this cementless method of hip replacement for all patients. Our experience at the Anderson Orthopaedic Clinic using this method now spans over 25 years.

The major difference between our porous-coated prostheses and the cemented ones is the metal surface of the implants. Cemented implants have a smooth surface, while porous-coated implants have a rough surface that resembles thick metal sandpaper. The surrounding bone grows “into” the porous surface of the prosthesis, essentially making it a part of the body. Close contact to bone helps hold the porous-surfaced implant in place until bone ingrowth has occurred. Most patients are allowed to put weight on their hip after surgery. Your surgeon will determine how much weight you can put on your hip based on the fit of the stem and the x-rays taken after surgery. Although this porous-coated method was initially developed for our young, more active patients, our experience in several thousand cases has indicated that this method works equally well in patients of all ages and lifestyles. A porous-coated hip replacement is particularly attractive for patients with active lifestyles, regardless of age. It is also the method of choice for revision operations. If either a cemented or porous-coated prosthesis has failed, the Anderson Clinic surgeons will routinely replace it with a porous-coated one.

Lastly, the immediate benefits of total hip replacements are excellent. In most uncomplicated cases, patients can expect to be relatively pain-free, have full hip mobility, and walk with minimal or no limp 2 months after surgery. The operation usually takes about 1-2 hours, much less time than many other surgical procedures. For most patients, the hospital stay is usually 2 to 3 days. For younger, more active patients the hospital stay can be shorter.
Minimally Invasive Hip

There is a tremendous amount of information available to patients about minimally invasive hip surgery. Most of this is marketing material that is designed to make the surgery more appealing to patients. Long before the marketing craze the doctors at Anderson Clinic were working on minimally invasive techniques. However, we did not focus just on the length of the incision, we focused on a team concept designed to speed recovery and return to work. This team approach included patient education, presurgical planning, less traumatic surgery, better anesthesia, pain control, and faster return of function. All patients are benefiting from these minimally invasive initiatives.

We are using specially designed instruments that allow all patients to have the smallest incision possible. The main factor that determines the length of the incision is the patient’s height and weight. We must make the incision long enough to do your surgery correctly, safely, and in a timely manner. With this approach the length of the incision has not influenced our patient’s recovery. In general, for patients that are not overweight the length of the incision is 3-7 inches.

We use two different surgical approaches: anterior and posterior. Your surgeon will determine which approach is best for your hip. There are some patients that can benefit from all of the minimally invasive advances and go home after just one or two nights. These patients need to have appropriate body weight, be very motivated, and have a caregiver available to facilitate their early return home. For these patients we emphasize weightbearing as tolerated and ambulating with a single crutch or cane. To accomplish these goals therapy is started early and we will use narcotic pain medications only as needed. Instead, we will give you non-narcotic drugs such as Ultracet and Cox-II anti-inflammatories to decrease your pain. In selected patients we will use short-term steroids to decrease the surgical inflammation and post-anesthesia nausea.

Bearing Surfaces

Like minimally invasive surgery there is a tremendous amount of marketing that focuses on the hip ball bearing. Historically, the first hip bearings were metal on metal and metal on polyethylene. In the early 70’s, despite good results, the metal on metal bearings were abandoned because of the manufacturing difficulties and expense. The metal on polyethylene became the standard. However, the older polyethylene and metal balls had high wear necessitating a revision ten to twenty years later.

Improvements in the ball bearing followed three directions: improving the metal balls and polyethylene quality, redeveloping the metal on metal bearings, the development of ceramic on ceramic and even combining a ceramic ball with a metal liner. Currently we do not know which bearing will last the longest. There are pros and cons to each bearing surface; therefore, you and your surgeon can decide which is best for you.
Total Hip Resurfacing

Cementless primary total hip replacement remains the standard in terms of durability and patient satisfaction. However, we are constantly adopting newer techniques that offer potential advantages to our patients. Examples have included computer assisted surgery along with the minimally invasive techniques and bearing surfaces already mentioned.

Starting in 2006, shortly after FDA approval, we began using total hip resurfacing in selected patients. The primary advantage of this technique is that less bone is removed.

Although the technique is not new, the adoption of a metal on metal bearing surface and refinements in the surgical technique have improved the results. Currently the procedure is indicated in patients less than 60 years old who do not have major bone deformities, and have bone strong enough to support the smaller implant. While the incision is slightly longer the hospital stay and recovery are identical to cementless primary total hip replacement. Your surgeon will tell you if this procedure is a good option to treat your hip pain.

REVISION HIP REPLACEMENT

The most frequent reason for revision of a cemented total hip replacement is loosening of the implant from surrounding bone. This loosening usually is caused by fracture of the cement. In our experience, loosening of a porous-coated, cementless implant is very rare. The revision of porous-coated components usually is necessary because of wearing out of the polyethylene liner in the cup. In many cases patients may have no symptoms, and the diagnosis of a damaged joint surface is made from patients’ x-rays. Revision surgery is advised in these cases to prevent further bone damage that could lead to a more complex procedure later.

For this reason, we ask our patients with well-functioning hip replacements to see us annually for 3 years then every other year. This is necessary to monitor signs of wear from our long-term patients’ x-rays. These signs usually begin to appear in the first 10 years after surgery, and we predict that some of our patients, possibly as many as 10-15%, may eventually require a reoperation to have their ball bearing exchanged.

Scanning electron microscopic photo of a porous-surfaced implant shows that the bone (top gray area) has grown into the beads (white) covering the implant surface.
Preparation for revision surgery is more complex than for an initial surgery. Revision patients who had their primary surgery at another institution can help us by obtaining detailed records of previous surgeries so that we know exactly what types of damaged parts need to be replaced. Revision surgery can be relatively simple when it involves just the exchange of a ball and liner. However, the procedure is complex when it involves replacing a failed cemented stem or cup, since cement removal is tedious and time consuming. When the procedure includes removing cement or repairing damaged bone, the operation takes longer, and a patient’s recovery time might be longer than for the first-time hip replacement.

Scar tissues from previous surgery and bone from the failed hip replacement require special attention both during and after surgery. For example, bone grafts may be used to rebuild areas where bone loss has occurred. Patients also may require multiple blood transfusions when revision surgery takes longer.

We customize the rehabilitation plan for each revision patient on the basis of the difficulty and the extent of surgery. Customized rehabilitation can be as simple as limited exercise or limited weight bearing, or as complex as using a brace for 6 to 12 weeks.

**Bone Graft**

In a small percentage of primary and revision hip replacement surgeries, a bone graft is needed to correct a deficiency in the patient’s hip anatomy. This topic will, in most cases, be discussed at the time of the initial office visit. The bone graft, which is obtained from a bone bank, has been tested for disease. While the testing process for bone graft is even more stringent than the testing process for blood, there is a small risk of disease transmission. The surgeon and his assistants will be glad to answer any questions about bone grafting and will review the advantages and disadvantages with you.

**Heterotopic Ossification and Radiation**

Following total hip replacement, some patients may develop abnormal bone formation in the muscles and ligaments surrounding the hip joint. This condition, known as heterotopic ossification, can cause stiffness in the joint. In most cases, but not all, we can identify patients who are at higher than normal risk for developing heterotopic ossification. Radiation therapy, given before surgery, can significantly reduce the risk of heterotopic ossification for these patients. Radiation therapy is low dose, painless, and does not cause sickness. The decision for radiation therapy is made before surgery, and the therapy is usually done in the Radiology Department at Inova Alexandria Hospital or Inova Fairfax Hospital.

**Scheduling Radiation Therapy for Heterotopic Ossification**

If radiation therapy is needed before surgery, the office will schedule the appointment for early in the morning of the day of your surgery. It is important to be on time for the appointment, so that you will have ample time to return to Inova Mount Vernon Hospital for your operation.

When you arrive at the Radiation Center, a nurse will assess your current health and physical status. You will then have a consultation with physician, who is the radiation oncologist. The next step in preparing for treatment is “simulation,” the process of mapping or marking the exact location to be treated and determining the size of the radiation field. Once the simulation or marking is complete, there will be about a one-hour delay to prepare the shield for the surrounding areas and to calculate your treatment dose. An ink marker is used to outline the radiation field on your skin, and these markings may be removed after treatment. Once the calculations and shielding are complete, the radiation therapist will take you to the treatment room. The actual treatment takes about 2 minutes. An intercom system in the treatment room allows constant communication between you and the therapist. Overall, the procedure may take 1 to 2 hours.
SURGICAL COMPLICATIONS

Along with the advantages of hip replacement, the possibilities of complications exist. Complications may include infection, hip stiffness, nerve palsies, blood-clot formation, leg-length inequality, hip dislocation, or fracture of the femoral bone during insertion of the stemmed prosthesis. The risks of these problems are small (approximately 5%), and they are usually correctable. We hope that by making you aware of these potential problems and by discussing them openly, you will have more confidence in our expertise and ability to avoid complications.

Dislocation, which occurs when the ball at the top of the femoral component comes out of the hip socket, is seen in about 1-2% of primary total hip arthroplasties and in about 5 to 10% of revision arthroplasties. Dislocations are treated initially without surgery, and most patients who dislocate never require further surgery. We will discuss preventative measures for dislocations and the treatment of dislocations in a later section.

Patients with arthritic hips often develop shortening of the affected leg. One of our goals with a hip replacement is to equalize leg-length as much as possible. While this is possible in more than 90% of our cases, it may not be feasible with large differences in leg lengths. In revision cases and in some primary cases, muscle and bone loss associated with revision surgery requires us to lengthen your leg to optimize the stability of your hip.

Less than 1% of primary and revision patients have any nerve injuries, and most individuals with such injuries recover with time. These injuries are usually the result of scar tissue that developed around the nerve from previous surgeries. To avoid this problem we surgically remove the scar tissue from the nerves.

Fractures of the femur occur during surgery in less than 2-3% of patients. In almost all of these cases, the fractures consist of very small cracks in the bone. These heal rapidly and do not interfere with the patient’s normal recovery from joint replacement. If the fracture is large, it may require operative treatment and also restricted weight bearing for a longer period than that required for an uncomplicated total hip replacement.

Infection occurs in less than .5% of primary hip patients and in 1 to 2% of revision patients. If the infection is diagnosed quickly, a thorough washout of the hip may be all that is needed to cure the infection. If it develops into a chronic infection, then the implants must be removed for 2 to 6 months to allow treatment with antibiotics. After the infection is cured, new hip components are reimplanted.

The most common complication of any hip surgery is a deep venous thrombosis (a blood clot in the leg). This can happen to about 5% of patients treated with blood thinners and to more than 10% of untreated patients. To avoid this complication, we treat patients with Coumadin or some other blood thinner, pneumatic compression, and elastic stockings during hospitalization. These blood clots usually do not cause any symptoms and are diagnosed by a vascular scan done several weeks after surgery. If a blood clot is diagnosed despite treatment, we will continue the anticoagulation medication for 3 months or readmit the patient and start a new medication.

Risks from anesthesia also exist and vary for different patients and types of anesthesia. We encourage patients to discuss their options with the anesthesiologist on the day of surgery. We believe that well-informed patients approach the surgical procedure and postoperative experience with greater enthusiasm and less apprehension. By discussing your procedure, its risks and benefits, as well as our techniques, alternative treatments, and expected outcomes, we hope to reassure you that we are committed to your well being.
Office Visit and Consultation

Planning begins with your first office visit. At that time, if possible, you should bring recent x-rays of your hip, a medical summary that describes your current health status, a list of current medications and doses, and insurance information.

Your initial office visit is usually a lengthy one, and can take an hour or more. You will be seen by the surgeon and several members of the joint replacement team. The objective of this first office visit is to determine if hip surgery is necessary. We base this decision on many factors, including the degree of pain, severity of a limp, the extent of decreased mobility, how much these problems interfere with your activities or quality of life, and your overall dissatisfaction with non-operative treatment methods. Another important consideration is your current health status. After evaluating your x-rays and completing the physical examination, the doctor will be able to discuss with you the relative advantages and disadvantages of the surgical procedure and what the outcome should be.

Our joint team includes the surgeon, the Fellow (an orthopaedic surgeon who assists with surgery, clinic appointments, and hospital rounds), the physician’s assistant, consulting physicians, physical and occupational therapists, nurses, case managers, and the surgical secretary.

These highly skilled members of our joint team will be an integral part of your overall care, and are available to answer any questions you may have. If requested, they will also put you in touch with other patients who have had similar problems treated by hip surgery.
Radiography

Although you may already have x-rays of your hips, we may request that new x-rays be taken in our office. By reviewing x-ray pictures of your hip we can determine the extent of damage and plan your surgery. For this reason, the x-rays must be taken according to specific guidelines. The legs must be positioned at the correct distance from the x-ray machine. This positioning is necessary so that magnification can be controlled and accurate measurements obtained to determine the size and the shape of the prosthesis. Since we do not use cement in hip replacement surgery, an exact (tight) fit is necessary to ensure that the implants are stable within the bone. Three x-rays are used during the preoperative planning. The patient’s position and the appearance of each of the x-rays are shown in the accompanying diagrams. We have described these x-ray techniques in detail, because sometimes patients or their physicians send us x-rays for a second opinion regarding treatment. If the x-rays have been obtained by our recommended techniques, it is possible for us to give a better second opinion. An x-ray is also taken in the recovery room immediately after surgery to observe the placement of the prosthesis. X-rays are also an important part of your annual follow-up visits. They ensure that there are no problems or show any possible problem that could be developing despite the lack of symptoms.

(X-ray photos)
Patient positioning for the AP pelvic x-ray. The x-ray beam is centered 3 inches below the symphysis pubis. A 14" x 17" film cassette is used. The x-ray must show the top of the acetabulum. The pelvis above the acetabulum is not needed on this x-ray, but at least 8 inches of both femurs must be shown.

A photographic example of an AP pelvic x-ray, showing that both femurs are nearly parallel to each other. An attempt was made to internally rotate each leg as much as possible.
Patient positioning for the lateral femoral x-ray. The lateral view should be taken in a modified “front-leg” position (both the knee and the ankle touching the table top with the patient’s pelvic slightly oblique). This modified “frog-leg” lateral technique standardizes femoral rotation. The x-ray beam is centered over the upper half of the femur at a 90° angle to the femur and the table top. Cross-table lateral views (usually obtained with the x-ray beam at a 35° angle to the femoral shaft) are less desirable. It is important for the technician to take the x-ray so that as much bone as possible is clearly visible. Overweight patients and those who have limited motion may require a spot film of the acetabulum so that the combination of films will reveal all the pertinent areas.

A photographic example of the lateral x-ray. The film technique should be adjusted to show the femoral shaft, not the femoral head, which often will appear under-penetrated.
Scheduling Surgery

Once a decision has been made to have the surgery, a surgical secretary or the office nurse will help you select a surgery date. The office staff will schedule the date of your surgery and help you begin the steps to prepare for surgery.

Surgery is usually scheduled several (about 6-8) weeks after your office visit. Several factors influence the scheduling date. The most important factors are your general health, the time needed to donate your own blood, and in some cases, the time required for us to have a custom implant made. All of our surgical procedures are performed at Inova Mount Vernon Hospital in Alexandria, Virginia.

Medical Clearance

Many patients having joint replacement surgery may have other medical problems that we like to have evaluated by a medical specialist before surgery. To be sure the medical clearance is correct it must be done not more than 30 days prior to surgery. The medical clearance must include a complete history and physical, laboratory tests, blood profile, and urinalysis. Depending on your age and medical history, you may also need a chest x-ray or electrocardiogram, which must be legible. We prefer that the history and physical be performed by a staff internist at Inova Mt. Vernon Hospital. If your insurance company (HMO’s) requires you to see your own primary care physician, the history and physical and all tests will need to be faxed to the surgical liaison office at Inova Mt. Vernon Hospital at least 48 hours prior to surgery. The fax number is (703) 664-7095. You will receive a History and Physical form from the office staff if you are going to be medically cleared by your own physician.

We often prefer having our patients see an internist who has privileges at Mt. Vernon Hospital prior to surgery. Not only do these physicians have extensive experience evaluating patients for joint replacement surgery, they will see you post-operatively during your hospital stay. Having this continuum of care can help to improve the speed and quality of treatment should a medical complication arise. If your own internist does not regularly come to Mt. Vernon Hospital, we can help arrange this visit for you.

Reducing the Risk of Infection

The possibility of hip infection caused by bacteria already within your system must be minimized. The most likely sources of these bacteria would be a dental or kidney infection. Abscessed teeth and pending dental work should be taken care of at least one month before surgery. A urinary tract infection (UTI) might affect your new hip. Although frequency, urgency, and burning are symptoms of a urinary tract infection (UTI), you may have an infection without symptoms. As a part of your medical clearance, a test of your urine will be performed and, if an infection is found, antibiotic treatment may be required before your operation.

Preoperative Medications

Patients should stop taking aspirin 21 days before surgery and other anti-inflammatory medicines at least 10 days before surgery. The most common non-steroidal, anti-inflammatory medicines that must be stopped include: Advil, Anaprox, Ansaid, Butazolidin, Clinoril, Daypro, Dolobid, Feldene, Ibuprofen, Indocin, Lodine, Meclomen, Motrin, Nalfon, Naprosyn, Orudis, Ponstel, Relafen, Tolectin, and Voltaren. Patients who take estrogen supplements should ask their medical clearance physician about when to take them. You may take Tylenol for pain during this time. Many vitamins and herbal treatments can cause bleeding or interact with medications given during surgery. We recommend that supplements not prescribed should be stopped a week before surgery.
Hospital Preoperative Appointments

Once your surgery is scheduled, you will be contacted by the Inova Joint Replacement Scheduling Center to assist you in coordinating all of your preoperative interviews and tests at Inova Mount Vernon Hospital. Because these preoperative visits may take 2 to 6 hours, every effort is made to schedule all of your visits on the same day. In the back of this booklet, you will find a preoperative checklist that you can use to keep a record of your appointments.

It is very important that you arrive on time for all preoperative scheduled appointments at the hospital. If you have difficulty walking, the volunteer at the hospital information desk will provide a wheelchair. However, we encourage you to bring someone with you to help you get to your appointments on time. The best person to accompany you for this visit is the friend or relative who will be assisting you when you leave the hospital after your surgery.

Preoperative Surgical and Anesthesia Interview

The surgical liaison nurse will review your past medical history, confirm doses of current medications, and give you instructions for the night before surgery. The surgical liaison nurse will also tell you exactly when and where to report the day of surgery.

Preoperative Physical Therapy Consultation

Part of your preoperative preparation includes a visit with a physical therapist at Inova Mount Vernon Hospital. We encourage any family member or caretaker to accompany you to these sessions to help you with your exercises. The therapist will teach you strengthening exercises, how to use a walker or crutches, stair climbing and dislocation precautions. Because of the many months of pain and decreased physical activity you may have had before surgery, your muscles may not be in the best condition. We have found that patients often do better after surgery if they attend this therapy session and work on the exercises before surgery.

During the preoperative visit, the physical therapist will also ask about your home environment and any special home equipment needs you may have. It is important that the equipment fit both you and your home. We recommend that you do not purchase any equipment until you have discussed it with the therapist. The therapist will ask you about the layout of your bathroom, and request measurements of the shower stall and bathtub. For the bathtub, measure the floor itself; do not include the back or side slants of the tub. Almost everyone will need a 3-in-1 elevated commode seat with arm rests and adjustable legs, a shower bench, a long-handled shoe horn, a long-handled sponge, and a reacher for dressing. Insurance coverage for the purchase of equipment depends on your policy. You can check your policy for coverage of “durable medical equipment.” The hospital case manager can also assist you in finding out your share of the cost for equipment; your therapy team will help order the equipment once you are in the hospital.
Preoperative Exercises

If you are unable to tolerate any of the exercises because of pain, DO NOT continue the exercises.

1. **Ankle Pumps**: Move your feet up and down at the ankle to stretch your calf muscles and promote leg circulation. Repeat up to 100 times a day.

2. **Isometric Adduction/Abduction**: Sitting in a chair, place hands along the outside of the thigh. Try to push the legs apart, while resisting with the hands for ten seconds. Place the hand on the inside of the thighs. Try to bring the knees together, while resisting with your hands for ten seconds. Repeat up to 100 times a day.
3. **Quadriceps Exercise (Knee Tighteners):** Lying on your back with your legs straight, push the back of your knee against the bed, tightening the muscle on the front of the thigh. Hold for five seconds, then relax. Repeat up to 100 times a day.

![Quadriceps Muscle](image1)

4. **Gluteal Isometric Contraction (Buttock Tighteners):** This exercise can be done lying down, sitting, or standing. Squeeze your buttock muscles together. Hold for five seconds, then relax. Repeat up to 100 times a day.

![Gluteal Muscle](image2)

5. **Short Arc Quads:** Lie on your back with a towel, or blanket roll under your knees. Rest the weight of the thigh on the roll. Lift the heel off the mat, straightening the knee. Do not lift your knee off the towel roll. Hold your leg straight for five seconds, then slowly lower your foot to the bed. Repeat 20 to 50 times, using 1 to 2 pounds of weight for each leg. Increase weight to 10 lbs.

![Short Arc Quads](image3)
6. **Straight leg raises:**
   Lie on your back with your left leg bent at the knee. Tighten your right knee and thigh and lift your leg off the bed. Hold for 3 seconds. When lowering the leg, try to keep the leg straight so that the back of the knee touches the bed before the heel does. Repeat the exercise with the left leg. Repeat to fatigue.

7. **Chair Push-Ups:** Sitting in a chair with armrests, raise your bottom up using your arms. Begin by using your feet to assist you, then progress to putting more weight onto your arms to lift yourself up. Hold three seconds. Repeat 10-20 times.

8. **Elbow extension:**
   Sitting in a chair raise your arm above your head. Slowly bend the elbow until your elbow is pointing towards the ceiling. Hold five seconds, then slowly straighten the elbow. Repeat to fatigue. Switch arms. Progress to doing with a 5-pound weight in your hand.
Case Management/Discharge Planning Interview

Each joint replacement patient is assigned to a case manager who works as a liaison with the Joint Replacement team, insurance companies, and the patient to promote a continuum of care that follows a care map. The Joint Replacement Clinical Pathway provides a plan of events beginning before surgery and ending 4-6 weeks after discharge home from the hospital. The continuum of care promotes discharge to your home and an efficient delivery of services to ensure quality patient care. Your case manager is responsible for coordinating activities to make sure that you receive comprehensive preoperative teaching, intensive rehabilitation in the hospital, family training on how to manage at home, and the necessary home care services.

The hospital case manager will meet with you before surgery to help you determine the kind of help you may need after discharge and to advise you of some of your care options. If home care services are recommended, the case manager will verify your insurance benefits and contact an agency that can provide these home care services. The case manager will assist you in arranging other community services such as transportation, meals-on-wheels, homemaker help services, and 24-hour companions, if needed.

It is very important that your discharge plan be worked out with the case manager before your surgery. A normal hospital stay is about 2-3 nights. When you first return home, you may need help getting in and out of bed safely, going up and down stairs, bathing, getting a meal, putting out the trash, or caring for a pet. Therefore, it is important to arrange for someone to be at home with you for the first week after discharge from the hospital. We think patients recuperate much better at home with the help of family and friends. Patients who cannot arrange for help at home may need to consider a skilled-care facility. We do not recommend skilled nursing facilities but when there is no alternative, we recommend that you or your family tour several skilled-care facilities beforehand. The case manager can provide a list of skilled care facilities.

Blood Donation

In total hip replacement surgery a blood transfusion may be necessary. Blood is available at the Inova Mount Vernon Hospital Blood Bank for your surgery; however, you may want to donate your own blood (autologous blood). If you choose to do this, your blood will be tested at the hospital and available for you on your day of surgery. If you live outside the area, we will assist in making sure that blood you donated at another facility, such as your own community hospital, blood center, or local American Red Cross, is received by Inova Mount Vernon Hospital in time for your surgery. We do not recommend donations from a friend or relative (which is called donor-directed blood). We understand that certain religious groups do not allow transfusion of blood products. If this is the case, notify us preoperatively to make appropriate arrangements.
Some people are unable to donate their own blood. For example, if you are being treated for an infection in any part of your body, bacteria may grow in your donated blood even during refrigerated storage. If you have an infection or are taking antibiotics for an infection, you must postpone the autologous blood donation until the infection has cleared. If you are taking antibiotics for prophylactic reasons (to prevent infection), then you may donate blood. If you have any doubts, please discuss this with the donor room coordinator or the director of the blood bank at Inova Mount Vernon Hospital (703-664-7229).

We usually recommend that you donate 1-2 units of blood. The first donation is usually scheduled several weeks before surgery. Subsequent donations are made at weekly intervals thereafter. When you donate blood, you will sign a consent form allowing your blood to be tested for 8 disease markers. These include tests for AIDS, hepatitis, and syphilis. If any of these test results are positive, the blood bank will inform you. Patients testing positive for hepatitis can donate blood for their personal use only. Blood can be stored fresh for up to 42 days before your operation. If your surgery is postponed, your blood may become outdated before your rescheduled surgery, unless you arrange to have it frozen. The cost of freezing blood is approximately $500 per unit and is the responsibility of the patient. If any of the blood you have donated is not used at the time of surgery, the remainder is discarded in accordance with FDA regulations.

Patients may become anemic after donating blood or from the loss of blood during surgery. We recommend that you take 1 tablet of Vitron C or Ferrous Sulfate (iron) once a day starting a week before donating blood. After your first donation, begin taking the iron 3 times per day with meals until the day you are admitted to the hospital. When possible, take the iron with orange juice, since the ascorbic acid (Vitamin C) promotes better iron absorption. You may notice that your stool becomes very dark when you are taking iron tablets. This is nothing to be concerned about. Some patients may develop diarrhea or constipation from the iron. If this occurs, you should contact the office; the doctor may have you stop taking it. Food sources that are rich in iron include: liver, oysters, lean meats, kidney beans, whole wheat bread, kale, spinach, egg yolk, turnip greens, carrots, apricots, and raisins.

Joint Replacement Orientation Program

The Joint Replacement Team at Inova Mount Vernon Hospital sponsors two Joint Replacement Orientation Programs monthly. They are held in the Engh Conference Room on the second floor at the Inova Mount Vernon Hospital. An afternoon program is held on the second Tuesday of every month between 2:00 and 4:00 p.m. An evening program is available on the last Tuesday of every month between 7:00 and 9:00 p.m. The purpose of the meeting is to help patients approach their surgical procedure and postoperative experience with greater enthusiasm and less apprehension. You will have an opportunity to meet hospital Joint Team members and former patients. They will show you some of the equipment that you will be using during your hospitalization and give you some tips on how to manage at home. At these meetings, there is plenty of opportunity for questions and answers. Patients who have attended the orientation program tell us that the program is very helpful, and we ask that everyone attend in preparation for joint replacement. The Inova Scheduling Center will arrange this meeting for you when they schedule your other preoperative appointments. We encourage you to have the person most responsible for helping you at home after your surgery accompany you to this orientation session.
Financial Arrangements

Anderson Orthopaedic Clinic will make every effort to assist you in conforming to the policy requirements of your insurance company. You should find out if your insurance carrier requires pre-authorization or a second opinion before surgery. A call to your insurance carrier will answer these issues, if they are not clearly stated in your policy. If a second opinion is necessary, it is your responsibility to obtain one.

We accept Medicare assignment and participate in a number of health care plans with fixed-fee schedules. We will be happy to provide you with information about our participation in your plan. The Anderson Orthopaedic Clinic will bill Medicare or commercial insurance companies for the cost of surgery. You are responsible for the balance as stipulated by your type of insurance. The Anderson Clinic will also bill you for the services of the assistant surgeon who assists during surgery and throughout your hospital stay and follow-up care. The Anderson Clinic Patient Accounts Office and office staff are available to assist you with questions about reimbursement and billing procedures.

Occasionally patients tell us that some of the care we prescribe is not covered by their particular insurance plan. We encourage you to review your policy provisions with your insurance company before surgery and to notify your employer or contracting agent when payment for prescribed services is denied.

Your hospital bill includes many items such as room and board, general nursing care, special tests, lab tests, hospital staff services, prescription drugs, etc. Your doctor’s fees and some specialists’ fees are not included in the hospital bill. Physicians will bill you separately. You will receive a summarized statement of what the hospital billed to your insurance company, and a final bill showing any remaining balance will be sent to you. Before your discharge from the hospital, you will be asked to pay any insurance deductible or co-payment of your bill at the Hospital Cashier’s Office located on the first floor, inside the Patient Registration Department. If you have any questions about your hospital bill, please contact the Inova Mount Vernon Hospital Patient Accounts Office at (703) 645-2864, Monday through Friday, 8 a.m. until noon.

Clinical Trials

At times, the doctors of The Anderson Orthopaedic Clinic participate in clinical trials of new treatment programs. These clinical trials are always conducted under the guidelines and the approval of the FDA and the Institutional Review Board of Inova Mount Vernon Hospital. If a clinical trial is being performed at the time of your surgery, your surgeon and the clinical trial nurse will discuss with you the potential advantages and disadvantages of this new method of treatment. You may then decide whether or not you wish to participate in the clinical trial and if you do you will be asked to sign a medical release form which allows us to use the information from your surgery in our follow-up research studies.
THE DAY OF SURGERY

Reporting to the Hospital

On the day of surgery, you will come to the Yellow Entrance. You will report to the Same Day Surgery Office on the first floor of the hospital near the Anderson Clinic entrance on Holland Road. You will be escorted to an area where you will receive an identification bracelet and be asked to change into a hospital gown. An admission nurse will check to make sure that your medical work-up has been completed and all necessary information, including a copy of your preoperative history and physical, lab tests, EKG and chest x-ray report has been received. You will then be assisted onto a stretcher and escorted to a holding area where a member of the Anesthesia department will start an IV in your arm. The holding nurse will make you comfortable and provide warm blankets. She will put elastic stocking on the non-surgical leg to reduce the risk of blood clots. The relative or friend who is assisting you through the joint replacement can be with you in the holding area. Before going into the operating room, you will see your surgeon and the Fellow who will be assisting with your surgery. During this time, many of the individuals will confirm the side of your surgery, one of them will mark your surgical site with a pen.

Typically, the surgery will take approximately 1-2 hours. Revision surgery may take slightly longer, because the existing prosthesis will need to be removed. Following the surgical procedure, you will remain in the Post Anesthesia Care Unit (PACU), often referred to as the recovery room, where the nurses will monitor your vital signs and oversee your recovery from anesthesia.

Family Waiting Area

Family members are asked to wait in the hospital on the first floor in the Family Waiting Area. Hospital volunteers are available to answer questions and keep family members posted on your progress. At the end of the surgery, your surgeon or the Fellow assisting will meet with family members to discuss your surgery. If members of the family leave the waiting area or are unable to be at the hospital on the day of surgery, they are encouraged to either leave a phone number where they can be reached or telephone the surgeon’s office that afternoon.

Family members are not permitted to visit with patients in the PACU. Once family members have talked with the surgeon, they are encouraged to go back to the waiting area on the first floor. The Joint Replacement Unit volunteer there will notify them when you are transferred to your room in the Joint Replacement Unit on the fourth floor of the hospital, where they will then be able to visit you.
Post-Anesthesia Care Unit (PACU)

When you awaken in the PACU, you will find pillows or a triangular foam wedge placed between your legs. These are used to keep the operated leg in the correct position. You will receive oxygen through nasal breathing tubes for 24 hours to help you breathe, and you will have an intravenous tube in your arm through which antibiotics and pain medication will be administered for 48 hours. There will be a bandage on the surgical incision. Surgical drainage tubes, which will be evident from underneath the bandage, lead to a container that will siphon any blood that may have collected around the new joint inside your leg after the wound was closed. Elastic support stockings will be applied to both legs to help improve circulation. In addition, pneumatic compression stockings will cover your lower legs. These are synthetic stockings containing air-filled pressure compartments. An air pump inflates and deflates these compartments within the stockings. This rhythmic change in pressure promotes blood flow and helps prevent blood clot formation. To empty the bladder, you will have a urinary catheter, which will be removed on the first or second postoperative day. There will be trapeze over your bed to help you to sit up and change position. The nurses will encourage you to begin some of your exercises, such as deep breathing to prevent lung congestion and ankle pumps to prevent blood clots. Most patients are monitored in the PACU for approximately 2 hours before being transported to their own room in the Joint Replacement Unit.
POSTOPERATIVE COURSE

Joint Replacement Unit
When patients first reach the Joint Replacement Unit, the nurses will monitor the patient’s vital signs, equipment, and medications. This unit is designed especially for patients who have had joint replacement. It includes a gym, a small visiting area with a game table, and a team of nurses and therapists who specialize in joint replacement. Each bed features a telephone, television, and bedside table. There is also a small closet available for storing your clothes.

Your surgeon will direct your care on the unit. To monitor your progress, your surgeon and/or a Fellow will visit you daily. On the first or second postoperative day, the wound drains, IV lines, and urinary catheter are removed. It is not unusual to have an elevated temperature for several days after surgery. Some patients may have difficulty urinating after anesthesia. Occasionally, it is necessary to have the nurses insert another catheter to empty your bladder. This condition usually resolves in a few days.

Pain Management
Patients may experience some pain for 24 to 36 hours following hip replacement surgery. We want you to be comfortable but awake and alert enough to do some exercises. When you have recovered from anesthesia, your pain will be managed by either the epidural or intravenous methods described below. You may experience some thigh and groin pain for several weeks after surgery, but this should not interfere with your exercises or normal activities.

When you use an intravenous method for pain control, the intravenous catheter is usually connected to the IV tubing in your arm. The epidural pain medication is given through a tiny catheter placed in your back by the anesthesiologist. With both methods, catheters are connected by tubing to a patient-controlled analgesia (PCA) pump, which allows you to have control over your pain medication. When you feel discomfort, you simply push a button to give yourself a dose of medicine. The pump delivers the correct amount of medicine safely and quickly. If you do not get adequate relief, be sure to let your nurse know so that we can make appropriate adjustments in the dose of medicine and shorten the time intervals between doses. Family members should not press the button for you. The epidural and intravenous catheters will be removed on the first or second day after surgery, and you will then begin taking oral medication for your pain. You will find that you feel progressively better each day with the increase of activity. It is also helpful to take pain medication 30 minutes before therapy, so that you are comfortable enough to tolerate a good workout. By the time you are discharged, you should be experiencing less pain and tapering your pain medication.

All medications have potential side-effects, and pain medications are no exception. A few people may experience side effects such as itching, nausea, drowsiness, or constipation. Please let your nurse know if this occurs, so that your doctor can prescribe something to control the side-effects. We have listed below the answers to the most frequently asked questions regarding pain control.

We are constantly trying to improve our regimen of pain control to decrease pain and improve the patients experience. A multimodel pain regimen is commonly used to achieve this goal, and consists of combining several milder pain medications whose mechanism of action differ. This can decrease your dependence on narcotics whose side effects tend to be more severe. Celebrex, Tylenol, Tranadol (Ultran), and steroids are examples of medications that may be used around the time of surgery. As with everything, these regimens are individualized for each particular patient.
Frequently Asked Questions about Pain Medication

**How do I use the pump?**
You will have a control button. When you feel discomfort, you simply push and release the button. Once a dose is received, the pump will not give another dose for a short time, so relax and give the medicine a little time to work. Throughout the day, whenever you feel uncomfortable, just press the button to receive your medication. That’s all there is to it.

**Can I get too much medicine with the pump?**
No. Your doctor prescribes the amount of medicine you receive. The nurse sets the machine to give you that amount. Built-in timers make sure your doses are spaced apart safely so that you get only the amount you need. The settings on the pump can only be changed by a nurse with a key.

**How do I know when I need medication?**
Only you can know when you are uncomfortable enough to need medication. Do not wait until pain is severe, as medication works best if given before you become tense from discomfort. Patients recover more quickly if they are comfortable. With intravenous analgesia, some sleepiness and drowsiness is normal; but if you feel very sleepy, try to wait until you feel definite discomfort before pushing the button again. Epidural pain medication may cause you to have some weakness and/or numbness in your legs. This is normal, but you will therefore have to be careful if you are asked to sit or stand while you are still receiving epidural medication.

**What if the medicine doesn’t work?**
Call the nurse; your comfort is our goal. If the medication does not seem to be working, your nurse will contact the doctor to make adjustments in the dose of medicine and time intervals between doses. The nurse will check on you frequently to monitor how much medicine you are receiving and to evaluate its effect on you. A nurse will always be available to assist you or answer your questions.

**Can I move, or will I dislodge the epidural catheter in my back?**
The epidural catheter is taped securely to your back, and you are able to move without fear of dislodging it. It is important to turn in bed every few hours after surgery, and the nurses will help to get you positioned safely and comfortably.
Preventing Blood Clots

Exercising your leg muscles immediately after surgery will help prevent clots. We also use elastic support stockings along with the compression stockings mentioned previously. To lessen the chances of having blood clots and pulmonary embolism, most hip replacement patients are also treated with anticoagulation medicine called Coumadin. In the hospital, this medicine is regulated by a daily blood test (Prothrombin Time) that tells us how fast your blood is clotting. You will receive an appropriate dose of Coumadin each evening based upon the lab results of the blood test.

Patients generally remain on Coumadin for about a month. It is very important to follow the medication directions carefully while on Coumadin, as this medication has many risks when uncontrolled. It is important to avoid alcoholic beverages, certain foods, and non-steroidal anti-inflammatory pain medication while taking Coumadin. While you are in the hospital, the nurses will show you a video about Coumadin therapy and provide a booklet of information that will help you plan your meals at home.

The results of weekly Prothrombin Times must be monitored and reviewed by a doctor. Sometimes your own internist assumes this responsibility after you are discharged from the hospital. The office nurse will discuss this with you before surgery.

Vascular Imaging

Vascular imaging is a non-invasive imaging technique that uses ultrasound to examine the veins of your legs. This painless test permits us to see clots in your veins. This procedure is sometimes done before surgery, occasionally during your hospitalization, and usually when you return to the Anderson Clinic for your follow-up visit. Although not all blood clots require medical treatment, larger clots or clots in the thigh or groin are often treated. If a clot develops while you are in the hospital, your hospital stay may be prolonged while you receive intravenous medication. If a clot is found at the time of your follow-up visit, you may be admitted to the hospital for intravenous medication for 3 to 5 days. If your ultrasound examination at the follow-up visit is normal, anticoagulation medication will be discontinued at that time.

Driving

Previously, patients did not drive until 4-6 weeks after having surgery. With minimally invasive surgery, some patients are able to drive as early as 2-3 weeks after their surgery. However, there are some concerns. After a major surgery on your leg, your strength and reflexes are decreased. You should never drive while taking narcotic pain relievers. Lastly, when you begin to drive you will no longer be eligible for home care services. Please check with your doctor or a staff member for more information regarding this.
Meals

On the day of surgery, you probably will have little appetite for food. At first, you will be offered only liquids and will gradually progress to a normal diet 1 or 2 days after the surgery. Patients who follow a special diet, such as a low-fat, low-sodium, cardiac, or diabetic diet, should let the nurse know, so it can be ordered for you. After surgery, you will be able to select your meals from a daily menu. Special write-in requests (such as fresh fruit, soup, or a turkey sandwich) are also honored, if available. Juices, sodas, crackers, toast, and ice cream are available between meals on the unit. There is also a cafeteria in the hospital that is open for breakfast, lunch, and dinner. Family members may purchase a meal there and join you for a meal in your room, if desired. We encourage patients to be out of bed for 2 out of 3 meals.

Clothing

Hospital gowns are suggested for the first day after surgery. Jogging clothes, T-shirts, pajamas, sweat pants, or shorts are suggested for the rest of your stay, so that you will be more comfortable during therapy sessions in the gym and when you are walking around the hospital. Boxer shorts are recommended for both men and women. Brief shorts tend to be too tight around the operated leg, which is usually swollen for several days after surgery. You are encouraged to wear loose fitting, comfortable clothing with elastic waistbands. Shoes should have a non-skid sole with Velcro closings, if available. Tennis shoes, loafers, or comfortable shoes should be worn; we do not recommend bringing new shoes that have not been broken in. If you plan to purchase a pair of Velcro-closure shoes, be sure to break them in before coming to the hospital.

Abduction Brace

In rare cases, we recommend that patients wear a brace to maintain hip stability and to prevent hip dislocations. The brace blocks the movement in the hip, keeping it in the proper position until the muscles around the hip become stronger. Usually worn 24 hours a day for 6 weeks to 3 months, this brace allows you to be active without risking dislocation or jeopardizing the healing. The brace is made of a fiberglass material and is both lighter and cooler than a plaster cast.

Some patients prefer to wear an extra-long T-shirt under the brace. Clothing, which must be worn over the brace, should be one size larger than what you normally wear. We recommend lightweight sweat suits or loose-fitting casual wear that stretches easily. Other suggestions include pants and skirts with elasticized or drawstring-gathered waists that will provide fullness around the hips. You and your family will need to learn how to put the brace on and adjust it for comfort. Showering is sometimes permitted, but ordinarily we recommend that you loosen the brace and simply sponge bathe at the sink until your hip is more stable. Therapists will show you how to manage activities of daily living with your brace.
Regaining muscular control of your leg is our first and most important goal after surgery. All patients receive physical and occupational therapy to help strengthen muscles and also to reinforce postsurgical precautions to prevent dislocation. We want to encourage your independence and discharge to the comfort of your own home.

Family members or friends who may be assisting you after discharge are encouraged to attend several therapy sessions to learn about the appropriate techniques and the amount of assistance that they should offer you after your joint replacement. By being independent, you will be using your own muscles to strengthen and protect your new joint.

Before discharge all joint replacement patients should have practiced how to:
- Dress and bathe
- Get in and out of a bed, chair, shower or bathtub, and a car
- Use the 3-in-1 commode
- Walk with a walker or crutches
- Go up and down stairs
- Carry out the specific home exercise program

Your Rehab Team

We believe that you and your family are an important part of the rehab team who will work with you to develop goals based on your individual needs. The rehab team includes your surgeon, the surgical Fellows, nurses, occupational and physical therapists and case managers. Family members or friends are urged to attend both physical and occupational therapy sessions to learn appropriate techniques of care and how to assist you at home.
Postoperative Physical Therapy

A comprehensive physical therapy regime during your hospital stay is crucial to your full recovery. Physical therapy will start the day of or day after surgery and may continue at home. Your first session will include a group of simple exercises in bed as well as practice sitting on the edge of the bed. On the first or second postoperative day, the therapist will assist you in walking to a wheelchair. Usually by the second postoperative day, you will start to receive physical therapy in the gym. You can expect to use a walker or 2 crutches for a period of 2-4 weeks after surgery, followed by a cane for another 2-4 weeks.

Therapy programs are individually designed by your surgeon based on findings at the time of surgery. Most patients are allowed full weight bearing with the use of a walker or crutches for support. In the weeks that follow surgery, transitioning to a cane is encouraged as patients begin to feel more comfortable with walking. The therapy program may also vary for patients depending on the clinical scenario. The surgical approach also will determine the design of your physical therapy program. All therapy programs are individually designed by your surgeon on the basis of his findings at the time of surgery. Before discharge, you should understand the specifics of your exercise program.

Before surgery, it is not unusual to find that an arthritic hip has caused that leg to become shorter. The surgery should help restore leg-length equality, but you may not appreciate it for several months following surgery or until your normal gait pattern is restored.

Postoperative Occupational Therapy

Your occupational therapist will help you become independent in your self-care skills after surgery. You will learn how to use a reacher, a sock aid, and a long-handled shoehorn to dress yourself. The occupational therapist will also show you how to use the 3-in-1 commode and tub bench while you are in the hospital. These skills help to ensure your safety and the proper positioning of your new hip.

The occupational therapist reviews the list of activities you can and cannot do after surgery and provides practice sessions to reinforce precautions against dislocation, to improve arm and leg strength, and to increase overall endurance before you go home. The occupational therapist can also provide detailed instructions on how to engage in “safe sex” after a total hip replacement. If you have any questions about sexual relations after surgery, please do not hesitate to discuss your questions with the occupational therapist or your surgeon at the follow-up visit.
Joint Replacement Nurses

You will find that specially trained nurses encourage you to assume responsibility for as much of your care as you are able to manage so that you have an opportunity to practice self-care tasks before going home. You may be asked to sponge bathe and dress yourself every day. The nurses work closely with the physicians and therapists to reinforce independence and safety with all routine activities. The nurse will provide you with a daily therapy schedule, and you should be prepared to participate in all physical and occupational therapy sessions.

Using every opportunity to get in and out of bed and move around will help strengthen your muscles and increase your endurance before discharge. The nurse will guide you in managing pain so that you are able to actively participate in therapy, continue to monitor your temperature, and assist in ensuring that your bowel and bladder activity returns to normal. The nurse is responsible for teaching you about your medications and will have you view a video about Coumadin therapy. At the time of discharge, the nurse will review all of the discharge instructions with you, and give you prescriptions for pain medication and Coumadin, if needed.

Preventing Postoperative Hip Dislocations

Dislocations are rare but are most apt to happen during the first 3 months after surgery. If this occurs, the patient must go to the emergency room so that the surgeon or one of his associates can return the ball into the hip socket. This procedure, called a closed hip reduction, usually requires sedation and a strong, steady pull on the leg to pop the ball of the prosthesis back into its socket. If a dislocation occurs, patients generally need to call an ambulance for transportation to the emergency room at Inova Mount Vernon Hospital. Because the reduction is usually done under sedation or anesthesia, it is often followed by a 24-hour hospital stay.

Before surgery, the physical therapist begins teaching you special precautions and how to avoid dislocation. After surgery, everyone will be reminding you not to bend the hip too much, not to twist at the waist, and to avoid turning your leg in or out. The precautions will be posted at the foot of your bed when you are in the hospital, and should be followed until your 4-6-week follow-up visit with your surgeon.

NOTE: Many patients hip joints are so stable after surgery that they do not have dislocation precautions. If you are one of these patients, the therapist will tell you not to worry about dislocation but you should still avoid extreme bending and twisting. Again, your therapist will go over this after surgery.
DO NOT STAND WITH LEGS TURNED
(Keep toes straight forward)

DO NOT TWIST WHEN REACHING FOR OBJECTS
(Keep frequently used items close)

DO NOT CROSS YOUR LEGS
(Keep legs apart)

DO NOT PULL BLANKETS UP LIKE THIS
(Use your reacher)

DO NOT LIE WITHOUT PILLOWS BETWEEN LEGS
(Use your abduction pillows)

DO NOT GET UP LIKE THIS
(Scoot to the edge and place bad leg out in front)

DO NOT SIT ON LOW TOILET OR CHAIR
(Always use your 3-in-1 commode)

DO NOT BEND WAY DOWN
(Use your reacher)
DAY OF DISCHARGE

The day of discharge is a busy one. Usually, patients will leave the hospital around 11:00 am after they complete the morning physical therapy session. Your rehabilitation will continue after hospital discharge, and you will be given an individual exercise program designed by your surgeon and the physical therapist on the basis of your progress. These exercises are to be performed at home 3 times daily until your follow-up visit at the Anderson Orthopaedic Clinic. Repetitions of these exercises help strengthen your muscles, provided you do not overwork them. If the exercises produce lasting pain, exhaustion, or fatigue, you may be overworking the muscles. Often, for a week or two, a family member is needed to assist with some of the exercises. If family or friends have not attended therapy sessions before this time, they are encouraged to do so on the day of discharge. This will give them an opportunity to learn how to assist you at home and to ask any questions they might have about your care. The surgical Fellows will see you on the day of discharge to review the written discharge instructions, write prescriptions, and answer any questions you or your family may have. Before leaving the hospital, be sure to review your discharge checklist.

Home Health Care Services

If home health care services are necessary, the case manager will confirm insurance coverage, and make the necessary arrangements. She will let you know the name and telephone number of the home health agency serving you, and identify the services to be provided. These services might include a visiting nurse, a physical therapist, an occupational therapist, and/or a home health aide.

Prescriptions

At the time of discharge, the nurse will give you prescriptions for the medications you are to continue at home. Most patients receive a prescription for an analgesic (for pain) and for Coumadin. If you live in a state other than Virginia or Maryland, it is sometimes difficult to have these out-of-state prescriptions filled at home. Out-of-state patients may decide to have the prescriptions filled at a local pharmacy.
Going Home

By Car
Most patients are able to go home by car after hip replacement surgery. You may sit in the front passenger seat of the car with the seat pushed far back, or you may sit lengthwise in the back seat of a 4-door car. The therapist will review the best method for your particular car and will let you know how many pillows are needed for proper positioning. It is important that the therapists show you how to get in and out of the car safely. We encourage you to have your driver arrange time with the therapist to practice helping you get in and out of your car.

Please remind the driver to bring the necessary pillows on the day of discharge. If your trip by car is a long one, it is a good idea to do your ankle pump exercises frequently during the drive and to stop at 2-hour intervals to stretch, change positions, and walk around using your walker or two crutches.

By Ambulance
Ambulance transportation can be arranged for patients. Your case manager will assist with the arrangements. Costs of a wheelchair van or ambulance may not be covered by insurance, and payment is the responsibility of the patient at the time of service.

By Airplane
If you need to travel by air, it is important to request a bulkhead or first-class seat, so that you will have enough room to stretch out your leg during the flight. It is advisable to have a travel companion, who can help with your luggage and with getting on and off the plane. Occasionally, your surgeon may recommend that a long airplane ride be postponed for several days after discharge from the hospital. The case manager can recommend appropriate lodging locally until you are ready to go home and will also help you arrange transportation to the airport by taxi, limousine, or wheelchair van. It is a good idea to do your ankle pump exercises frequently during the flight.

Getting into Your House/Using Stairs at Home
The physical therapist will teach you how to go up and down steps. However, when you arrive home, you should have someone to take your arm for balance and guidance on curbs, steps, and at doorways, especially if there are no railings for support. Please remember to go up the stairs with your unoperated leg first and to go down the stairs with the operated leg first. Your crutches go under your arm on the opposite side from the railing. When you climb stairs inside the house, you should start out with a helper guarding you from behind. When you go down the stairs, your helper should be in front of you. You should have someone help you with steps until you are comfortable and secure with them.

Bathing/Showering at Home
You may shower if there is no drainage from your hip incision. You may wash around the incision, and let the water run over it. Be sure to pat the area gently until dry.
RETURNING FOR YOUR FIRST POSTOPERATIVE VISIT

We like to see all of our postoperative hip replacement patients about one month after the date of surgery. Patients will see a Fellow or staff physician at this visit. Our staff will make every effort to schedule this follow up appointment as well as appointments with the physical therapist and vascular imaging on the same day. You should expect to receive this information in the mail.

This first follow-up visit will include an x-ray of the operated hip to evaluate the alignment and fixation of the implant. We will also assess hip motion, strength, and gait. You may need to schedule appointments with the physical therapist and Vascular Imaging at the Anderson Orthopaedic Clinic for the same day. Your surgeon will let you know whether this is necessary prior to admission to the hospital.

If your surgery was a revision surgery, your physical therapy appointment should be arranged to follow the doctor’s appointment, if possible. The reason for this is that sometimes revision patients are not quite ready to increase the weight bearing on the operated leg or progress to the next phase of exercises. The surgeon wants to assess your X-ray and progress before allowing you to advance. At that time you may be given a new set of exercises. You will receive new instructions concerning the amount of weight you can put on the operated leg, and the time when you can begin activities such as driving a car, returning to work, swimming, and golfing. Active sports are generally not resumed for 6 to 12 months after surgery. The time when you return to these activities is determined on an individual basis.

If you need to visit Vascular Imaging, try to schedule the appointment before seeing the doctor. An ultrasound will be done on your lower legs to make sure that there are no blood clots. Coumadin therapy is usually discontinued at this time, depending upon the results of the ultrasound.

If you live outside of Virginia and are unable to return for this visit, we will assist you in arranging an office visit with an orthopaedic physician in your local area, if necessary. We will need to have copies of x-rays mailed to us. We suggest that you mail the x-rays yourself to the attention of your surgeon, either using first class mail, Federal Express, or UPS.
LONG-TERM CONSIDERATIONS

The Use of Antibiotics to Prevent Hip Infections

In the United States more than 400,000 hip and knee joint replacements are performed each year. The infection rate for these procedures is very low, averaging less than 0.5%. Joint replacement surgeons attempt to lower the infection rate by using intravenous prophylactic antibiotics during surgery and 24 hours after surgery.

Infections that develop around the hip weeks or months after discharge are also rare; however, even 1 in 1000 is a serious consideration. Infections occurring after 6 months are usually the result of an infection occurring elsewhere in the body, which then spreads by bacterial “seeding” and travels to the hip joint through the bloodstream. Urinary tract, skin, dental, or respiratory infections are potential causes of such hip infections and should, therefore, be treated aggressively.

In addition, since bacteria are normally found in the mouth and intestines, “seeding” might occur during some dental procedures, bronchoscopy, or endoscopy and cause infection around your joint. It is therefore very important to let your dentist and internist know that you have an implanted hip prosthesis. Your dentist or internist will decide whether you need to take antibiotics before and after dental or diagnostic procedures and if there is a risk of infection.

Follow-up Visits and Postoperative X-rays

Follow-up visits are scheduled at one month, 4 months, 1 year, 2 years, and 3 years after surgery. Thereafter, we strongly recommend a return visit to the Anderson Orthopaedic Clinic every other year. These visits are important whether or not you are having problems with your hip. Over 90% of total hip replacements continue to function well for more than 10 years, but the implant may wear with increasing years of pain-free use. The ball bearing may show signs of deterioration. This can only be determined by comparing your follow-up x-rays to previous x-rays. If patients living outside of the area are unable to return for follow-up x-rays at the Anderson Clinic, the appropriate x-rays can be taken as illustrated in this manual (pages 8 to 10) at regular intervals and sent to your surgeon for evaluation via first-class mail, Federal Express, or UPS.

Patient Forms, Appointments, Fees

Your health insurance does not cover completion of many types of forms including disability forms and Department of Motor Vehicle handicap forms. Because the forms must be reviewed, signed, copied and filed, there is an administrative fee that ranges from $25-50 per form.

Appointments

At times there will be a slight wait while you’re here for your routine follow-up visit. In order to stick to our scheduled appointments, we ask that all patients be on time. If you can not make your appointment, please call the office at (703) 892-6500 to cancel or reschedule. If you do not cancel and there is no record that you called, there will be a no-show charge of $50 added to your account.
SOURCES OF ONGOING INFORMATION

The Anderson Orthopaedic Research Institute (AORI)

Founded in 1972, AORI is a not-for-profit organization dedicated to scientific research and discovery in the joint replacement field. It is supported by contributions from the patients and physicians of the Anderson Orthopaedic Clinic.

AORI maintains a clinical database of over 5000 patients who have been treated for hip disease and hip replacement. Before surgery and at each postoperative office visit, the doctors ask their patients to fill out a questionnaire. Results of the patient satisfaction questionnaire, annual exams, and all postoperative x-rays are documented on scannable computer forms for ongoing analysis.

In addition, microscopic evaluation of hip specimens retrieved after death is another important part of the research institute’s work. We have been extremely fortunate to have patients who are interested in the advancement of science and who have agreed to donate their artificial hip and surrounding bone after death. Because of such donations, we are able to conduct important research at a microscopic and cellular level. The Anderson Orthopaedic Research Institute encourages and gratefully appreciates your participation in this program. Details on how to donate and become a part of these invaluable research studies can be obtained from the Appendix of this booklet.

We believe that our research benefits future patients who will need for joint replacement surgery. Analysis of the data allows us to accurately inform our patients about the expected long-term outcomes of hip replacement surgery, and helps us to modify the joint replacement program to ensure the highest quality of care and patient satisfaction.

AORI has received many prestigious awards for studies examining the bonding of artificial and living structures, implant wear, the response of human tissues to wear debris, and many patient outcomes studies. The AORI project directors, as well as the physicians and the Anderson Clinic Fellows, are invited to publish the results of their research in prestigious orthopaedic journals in the U.S. and abroad. Their research findings are also recognized and presented nationally and internationally at orthopaedic meetings, medical universities, and academic institutes.

The Joint Journal

Our newsletter, the Joint Journal, published quarterly, keeps our hip and knee patients up-to-date with the results of our research, other research related to joint replacement, and activities at the Anderson Orthopaedic Clinic. Following joint replacement surgery, you will automatically be placed on the Joint Journal mailing list. If for some reason you do not start to receive our newsletter, please contact the office. We invite you to send interesting information relative to your personal experiences with joint replacement surgery that might be included in the newsletter. You may contact the editor of the Joint Journal by e-mail at research@aori.org.
## Appendix

### Care Map for Hip Replacement

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### Before Surgery
- Attend Hospital Orientation Program
- Attend physical therapy session/practice exercises
- Donate blood, if indicated
- Meet with hospital case manager
- Obtain medical clearance from physician
- Meet with surgical liaison nurse at hospital (take all medications with you to verify dose)

### Day of Surgery
- Pain relief and control
- Turn on your side every few hours
- Compression stockings on legs
- Begin deep breathing exercises every hour
- Begin clear liquid diet
- Sit and stand at edge of bed & progress as appropriate
- Do ankle pumps and isometric exercises every hour
  - Learn about
    - Reporting pain to the nurse
    - How to use the bed pan/urinal
    - How to use the trapeze
    - How to breathe deeply and cough
    - Do’s and don’ts and precautions

### Day 1
- Turn on your side every few hours
- Continue deep breathing exercise every hour
- Advance to regular diet gradually
- Attempt to get out of bed and walk to the chair
- Do ankle pumps/isometric exercises every hour
- Work with therapists/discuss home equipment needs/begin exercise
- Review discharge plan with case manager
- Urinate within eight hours after having catheter removed
√Check when Complete

Day 2 (Day 3 if needed)
- Do deep breathing exercises every four hours
- Walk to bathroom; use 3-in-1 commode seat
- Learn how to manage dressing/hygiene
- Dress in gym clothes; therapy at gym
- Try to sit up in chair for two meals every day
- Increase walking distance
- Practice tub and/or shower transfers
- Review Coumadin video (if prescribed)
- Attempt bowel movement or request laxatives
- Include family or caretaker in therapy sessions
- Remove all IV lines
- Begin going up and down stairs
- Practice getting in and out of a car

After discharge until follow-up appointment
- Blood drawn weekly, if taking Coumadin
- Coumadin dose regulated by clinic nurse or family physician
- Continue same exercises several times a day
- Maintain weight-bearing status
- Use pillows between your legs when lying in bed
- Increase walking distance daily
- Taper to Tylenol for pain
- Call surgeon to report increased pain, fever, or wound irritation

Long-term follow-up
- 4-6 week follow-up visit—including the following:
  - x-rays of hip
  - Vascular imaging
  - Discontinuance of Coumadin
  - Physical therapy consultation
  - Advance to Phase II exercises
- 4-month follow-up visit—make this appointment when leaving 4-6 week check
- Annual x-rays for 2 years, then as needed
- Ten-year x-rays
Discharge Checklist

Before you are discharged from Inova Mount Vernon Hospital, your nurse will go over this information with you.

____ Received prescriptions and instructions for taking them
____ Received copy of exercise program and therapy summary from physical and occupational therapists
____ Received a list of DO’s and DON’Ts
____ Received equipment for home and instructions on use
____ Have name and phone number of Home Health Agency providing services

My Physical Therapist was: _______________________________________________________

My Occupational Therapist was: _________________________________________________

My Case Manager was: __________________________________________________________

My Home Health Agency is: ______________________________________________________

Upcoming Appointments at the Anderson Orthopaedic Clinic

Post-op follow-up visit in our office: Date: _________________ Time: ______________

Post-op Physical Therapy: Date: _________________ Time: ______________

Post-op Vascular Imaging: Date: _________________ Time: ______________
Discharge Instructions

1. Elastic stockings may be discontinued at the time of discharge. Since you will be out of bed more often at home, it is not unusual to have some swelling in your lower legs. Walking every hour and doing your exercises will help strengthen your muscles and resolve the swelling. If you have swelling, we recommend that you wear the elastic stockings during the day, lie down periodically and elevate your legs with pillows. If the swelling does not go away over night or you develop pain with the swelling, please call the office.

2. If you are taking Coumadin, please take it as directed at discharge. A nurse or lab technician will come to your home to draw your blood once a week. The nurse monitoring you lab blood work will call you each week to let you know what dose of Coumadin to take. It is not unusual for your Coumadin dose to change each week. If someone does not draw your blood, or you do not hear from someone each week about the dose of Coumadin, please call our office. It is very important that you continue to take the Coumadin until you return for your follow-up appointment.

3. Your physical therapist will give you a copy of your home exercise program. You should do these exercises several time every day. The exercise program should not be changed without your surgeon’s approval. When appropriate, your therapist may increase the amount of weight that you use with the leg exercises, but only up to a maximum of 10 pounds. If you experience pain in your leg or suddenly have difficulty doing the exercises, please call the clinic.

4. You may continue to have hip soreness for several weeks after surgery. We recommend that you gradually taper the frequency and amount of pain medication to Tylenol. You may apply an ice pack to your leg for 15 minutes after exercises to help ease the soreness. We do not recommend the use of sleeping pills after discharge from the hospital.

5. Use 2 pillows or the abduction wedge while you are in bed and use a pillow between your legs while you are sitting. Continue to observe your dislocation precautions.

6. Some doctors and dentists recommend that joint replacement patients take antibiotics for certain dental and medical procedures. If so, they will prescribe the appropriate antibiotic for you. We leave this decision to their discretion.

7. Approximately 1 month and again at 4 months from the date of surgery, you will need to return to the Anderson Clinic for follow-up appointments. The first appointment is already scheduled for all patients, and confirmation of the appointment should be received in the mail by the time you get home from the hospital.

Call if you experience fever, redness & drainage from wound site, change in color of drainage increased pain or swelling in thigh or calf.

If you have sudden onset of chest pain or shortness of breath, do not call the clinic office, call 911.
DO’S AND DON’TS AFTER HIP REPLACEMENT

These are general guidelines. Your surgeon may make exceptions to the activities below, so be sure to ask about each of them.

AT THE TIME OF DISCHARGE:

- **DO** have someone help support your leg when you are getting out of bed until you have enough strength to keep your leg from falling off the bed to the floor. (If your leg drops to the floor it can lever off of the bed and possibly dislocate your hip.)
- **DO** get up from a chair by first moving to the edge of the chair. Place your operated leg in front of you as you rise, and keep the unoperated leg well under the chair for better balance.
- **DO** use your 3-in-1 commode.
- **DO** take short walks every 2 hours.
- **DO** your exercises several times a day.
- **DO** not add new exercises or increase your weight-bearing status without your surgeon’s permission.
- **DO** keep your knees apart and toes pointed outward like a duck, when you bend forward or shave your leg.
- **DO** limit yourself to light housework with no bending or lifting until directed by your surgeon.
- **DO NOT** cross your legs when you are lying down, sitting, or standing.
- **DO NOT** sit on low stools, low chairs, or low toilets. Elevate your seats so that your hip doesn’t bend more than it should.
- **DO NOT** sit on armless chairs. Chair arms are needed to aid in rising to a standing position without twisting.
- **DO NOT** bend way down to put on your own shoes and socks, or to pick up objects from the floor, lower cupboards or drawers without using a reacher.
- **DO NOT** twist across your body when you are reaching for objects. Use your reacher.
- **DO NOT** take chances, i.e., be careful walking on uneven ground, ice and snow, tile or waxed floors. Remove all scatter rugs from your house.
Common Questions asked about Hip Replacement

Q. How does the doctor decide if I need a total hip replacement?
A. This decision is based on the degree of pain you have, how difficult it is for you to walk, and how much these problems interfere with your activities or quality of life. Other important factors in the decision include evaluation of your x-rays and your health status.

Q. How long does the surgery last?
A. The surgery lasts approximately 1-2 hours, depending on the condition of your hip at the time of surgery.

Q. How big will my incision be?
A. The incision depends mostly on your body size. Heavy patients require longer incisions. We always try to make the smallest incision possible. For thin patients, the incision is usually less than 5 inches.

Q. How long can I expect to have pain after surgery?
A. The time varies for each patient. Many patients report that there is very little pain right after surgery, but postoperative soreness may continue for 3 – 4 weeks.

Q. How long until bone ingrowth occurs?
A. Bone ingrowth occurs between 6 weeks and 1 year.

Q. How long after surgery will I have to limit weight bearing on my leg?
A. Your doctor will let you know exactly how long you should wait. Weight bearing is often increased at 4 – 6 weeks. The amount of weight you are allowed to put on your leg varies from full weight bearing to just the weight of your foot. Several surgical factors are considered in making this decision and your surgeon will inform you of your weight bearing status following the procedure.

Q. Why do I have to take a blood thinner after surgery and how long will this continue?
A. A blood thinning medicine is recommended to prevent blood clots and is usually discontinued after your first follow-up appointment.

Q. Can I sleep on both sides?
A. Yes, you can sleep on both sides if you have 1 or 2 firm pillows between your legs.

Q. Can I sleep on my stomach?
A. We do not recommend that you sleep on your stomach in the first month because it is difficult to turn over without twisting and risking dislocation.

Q. When are the staples or sutures removed?
A. If you have staples, they are removed in 10 to 14 days after surgery, if there is no drainage from the wound site. Dissolvable sutures are often used and do not require formal removal, although the wound should be intermittently checked for redness or drainage.

Q. What will happen to the unused blood I donated?
A. It will be discarded in accordance with FDA regulations.
Q. How long will it be before I can take a shower or bath?
A. You may shower, if there is no wound drainage. You must use a tub bench for at least 4 weeks.

Q. How far can I bend forward when I have a new hip?
A. Generally you should not flex more than 90˚ in the first month. This amount may vary depending on the incisional approach used by your surgeon. Your joint replacement team members will review your precautions with you frequently before you leave the hospital.

Q. When can I stop using the elevated commode?
A. You can stop using the elevated commode 4-6 weeks after surgery unless otherwise instructed.

Q. When can I resume sexual activities?
A. You can resume sexual activity 3 – 6 weeks after surgery. The occupational therapist will review safe techniques.

Q. When can I drive a car, swim, or ride an exercise bike?
A. The doctor may allow you to do these things after your 4-week visit; the timeframe depends upon the stability of your hip and the type of vehicle you drive or exercise bike you own.

Q. When can I start playing tennis or golf?
A. Active sports are generally not resumed until 3 – 6 months after surgery.

Q. When will I be able to return to work?
A. This depends on the type of work you do. The earliest is 3 – 4 weeks after surgery, but your doctor will let you know after your first follow-up visit.

Q. How long should I keep doing the exercises?
A. You should do the exercises given to you at discharge until you return for your visit. At that time, you may be given a new set of exercises. You should continue to exercise until your muscles are pain-free and you can walk without a limp. It is a good idea to continue your exercises as a lifetime commitment to keeping your muscles strong.

Q. Can I ever cross my legs again?
A. Yes. This will be discussed at your follow-up visit.

Q. Do I need an x-ray at 12 months, if my hip feels fine?
A. Yes. X-rays are an important part of each follow-up visit and are essential in determining the amount of bone ingrowth, position of the prosthesis, and the condition of the bone around the prosthesis. A patient may not have any symptoms, and x-rays assure us that there are no problems developing.

Q. Approximately, how many total joint replacements are performed each year?
A. Anderson Clinic surgeons do approximately 1600 hip and knee replacements each year.
Directions to Anderson Clinic—Arlington Office

From Crystal City:
From Route 1 northbound, take the 15th Street South/Pentagon City Exit. Turn left onto 15th Street. Take a right at the 2nd traffic light onto South Eads Street. Then turn left at the 2nd traffic light onto Army Navy Drive, pass Pentagon City Mall, for approximately 2.1 miles. Anderson Clinic will be on your left.

From Fairfax/Falls Church:
Head east on I-66 (Washington). Take Exit 75 (Route 110 South – Pentagon/Alexandria). Follow the signs for Route 1 South (Alexandria). Just after passing under I-395, take the 15th Street South/Pentagon City Exit. Turn right onto 15th Street. Take a right at the 1st traffic light onto South Eads Street. Then, turn left at the 2nd traffic light onto Army Navy Drive. Stay on Army Navy Drive, past Pentagon City Mall, for approximately 2.1 miles. Anderson Clinic – Arlington will be on your left.

From National Airport/Old Town Alexandria:
Take the George Washington Memorial Parkway North (toward Washington) to I-395 South. Follow directions for “From I-395 South (to Richmond)” given below.

From I-395 South (to Richmond):
Take Exit 8 (Arlington Ridge Road) and turn right at the yield/stop sign onto Arlington Ridge Road. Turn right at the 1st traffic light onto 23rd Street. Follow 23rd Street to the end. Turn left onto Army Navy Drive for approximately 0.3 miles. Anderson Clinic – Arlington will be on your left.

From I-95/395 North (to Washington):
Take Exit 8C (Pentagon City) and turn right at the traffic light onto Army Navy Drive. Stay on Army Navy Drive for approximately 1.8 miles. Anderson Clinic – Arlington will be on your left.

From Rosslyn/Key Bridge/Georgetown:
Follow Route 110 South to Crystal City. Just after passing under I-395, take the 15th Street South/Pentagon City Exit. Turn right onto 15th Street. Take a right at the 1st traffic light onto South Eads Street. Then, turn left at the 2nd traffic light onto Army Navy Drive. Stay on Army Navy Drive, past Pentagon City Mall, for approximately 2.1 miles. Anderson Clinic – Arlington will be on your left.

From Capital Beltway (I-95/495):
Follow I-95/495 to I-395 North (to Washington). Follow directions for “From I-395 South (to Washington).”

From Downtown, Washington DC:
Go south on 14th Street, crossing 14th Street bridge, onto I-395 South (to Richmond). Follow directions for “From I-395 South (to Richmond).”

From METRO/Mass Transit:
Take the Yellow/Blue line to Pentagon City Metro Station. Bus Route 22A (7 Corners) or 22B (Ballston) will drop you in front of Army Navy Drive diagonally across from the Anderson Clinic.
Directions to Anderson Clinic –
Mount Vernon and Inova Mount Vernon Hospital

From the Capital Beltway (I-95/495):
Take Exit 177A. Go approximately 5 miles on Route 1 South and turn left (Wal-Mart on right) onto Sherwood Hall Lane. After passing through the 1st traffic light, take the 2nd right onto Holland Road. Turn left into the hospital entrance, then right to reach the Anderson Orthopaedic Clinic entrance.

From National Airport/George Washington Memorial Parkway:
Go South on the Parkway. After passing through Old Town Alexandria, continue driving south approximately 8 miles on the parkway. Exit right at Morningside Lane. After the first light, Morningside Lane becomes Sherwood Hall Lane. Continue through the 2nd traffic light and make a right immediately past the fire station on your left onto Holland Road. Turn left into the hospital entrance, then right to reach the Anderson Orthopaedic Clinic entrance.

From the South:
Follow Interstate 95 North to Exit 161 – Route 1 North. Follow Route for 10 miles. After passing the Multiplex Cinema on your left, turn right onto Sherwood Hall Lane. Go through the 1st traffic light and then make a right onto the 2nd street on your right (Holland Road). Turn left into the hospital entrance, then right to reach the Anderson Orthopaedic Clinic entrance.

From METRO/Mass Transit:
Take the Yellow Line to Huntington Metro Station and get on the Fairfax Connector bus to the hospital.
Implant Retrieval Program

Patients interested in the advancement of medical science that will benefit others have agreed to donate their implant, surrounding bone, and the opposite hip for comparison and for intensive studies of artificial joint replacements after the time of death. This research enables scientists to determine the best materials for prosthetic devices and the most effective methods for attaching them to the bone. The Anderson Orthopaedic Research Institute encourages and gratefully appreciates your participation in this program.

Commonly Asked Questions about the Program

**Who should participate in this program?**
We encourage all patients who have had a hip or knee replacement to participate. We are interested in cemented, non-cemented (cementless), and a combination of both types of implants. This program involves all consenting patients in the United States at the time of death.

**Who does the removal?**
A team of Anderson Orthopaedic clinic physicians and assistants will remove the artificial joint(s) and the surrounding bone. The Anderson Orthopaedic Research Institute covers all expenses for the retrieval.

**What is removed at the time of retrieval?**
The surgeon will remove the artificial joint and the adjacent bone attached to the implant. It is also necessary to remove the corresponding amount of bone on the opposite leg so that we may compare the implanted side and the normal side. The incision and closure are performed like the original surgical procedure. All bone that is removed is replaced with artificial bone. The tissue is treated with the same respect as tissue donated for organ transplants.

**Where will the retrieval take place?**
The retrieval will take place in a hospital or in a funeral home. Once the Anderson Orthopaedic Clinic has been notified of the death, the retrieval team contacts the funeral home or hospital to make the necessary arrangements. Ideally, the implant should be removed within 24 hours of death. It does not matter if the body has been embalmed. Much consideration will be given to the funeral or cremation plans.

**What should be done at the time of my death?**
At the time of death, the family should immediately notify the Anderson Orthopaedic Clinic switchboard at (703) 892-6500. At night or on weekends, this call will be received by an answering service that will notify the physician to plan the retrieval. The family will not be burdened with the arrangement.

**How do I enroll?**
If you would like to enroll in the Implant Retrieval Program, please send your full name, address, and phone number to the Implant Retrieval Program, Anderson Orthopaedic Research Institute, PO Box 7088, Alexandria, Virginia 22307. We will send you a consent form and instructions to enroll in the program. When we receive the completed consent form from you, we will send you a donor card stating that you are participating in our Implant Retrieval Program.