# DR. ANDREW NOBLE
# PALM BEACH ORTHOPAEDIC INSTITUTE, P.A.
## PATIENT GUIDE TO HIP AND KNEE REPLACEMENT SURGERY

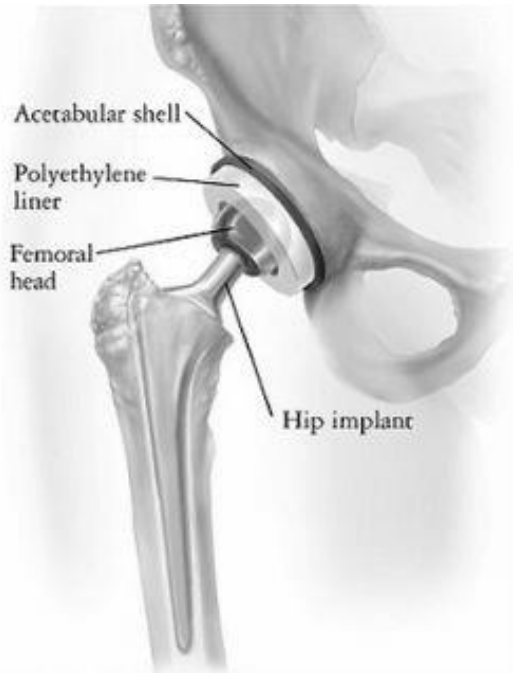
VERSION 6 (June 2020)

**WHAT IS JOINT REPLACEMENT?**

Joint replacement surgery removes the worn-out cartilage and underlying bone and replaces the area with implants that provide a new wear resistant surface. The vast majority of individuals who have joint replacement surgery experience a dramatic reduction in joint pain and a significant improvement in their ability to participate in daily activities and low impact sports.

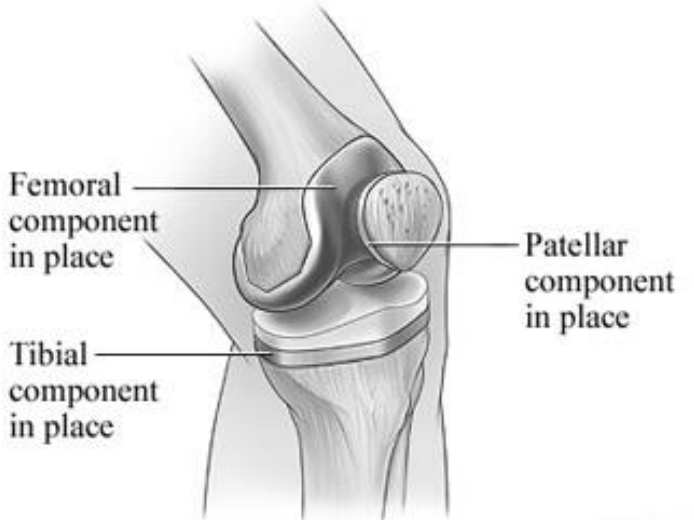
**Total Hip Replacement**

Hip replacement involves replacing the head of the thigh bone (femoral head) and the hip socket (acetabulum) with implants that resemble your existing anatomy. A femoral stem is secured inside the upper end of the thigh bone. Depending on bone quality, the metal stem (made of titanium) will be inserted without cement using a rough surface that promotes bone attachment. When osteoporotic or weak bone is encountered, a cemented implant might be used. The femoral head is connected to the top of this stem and is made from Ceramic or Oxinium (a metal that has the surface characteristics of ceramic). The outer shell of the hip socket is made out titanium metal and is secured with screws. The inner lining of the socket is made of highly cross-linked polyethylene, an advanced medical grade plastic.



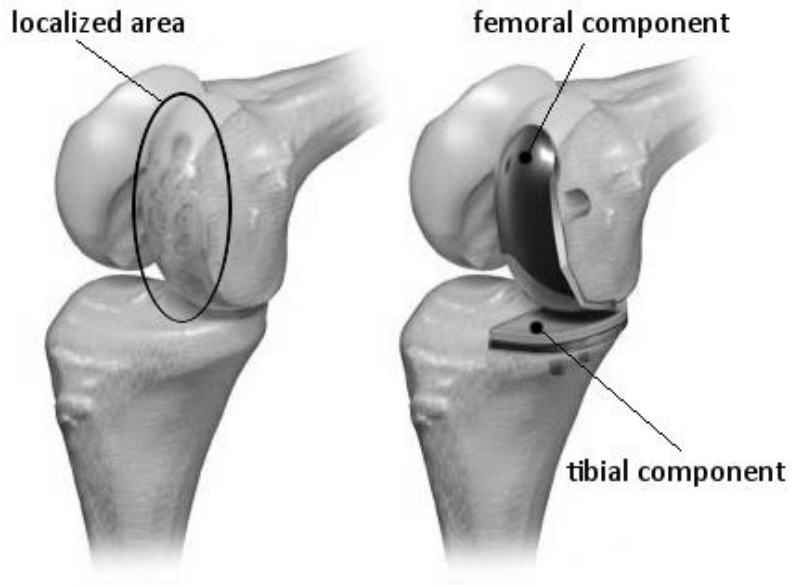

**Total Knee Replacement**

In total knee replacement, all 3 worn out compartments of the knee are replaced with implants that resemble the shape and contours of a normal knee. The femoral component is made of Oxinium (a metal that has the surface characteristics of ceramic) or Cobalt Chrome metal and has a curved shape that fits on end of the thigh bone. The tibial component is made of titanium metal with a medical grade polyethylene plastic that locks into the metal plate. The polyethylene serves as the "cushion" or cartilage space between the metal femoral implant and the tibial base. The underside of the kneecap is resurfaced with polyethylene that articulates with femoral implant. The components are most often cemented to the bone, or in some cases, inserted without cement to allow bone growth onto the implant.



**PARTIAL KNEE REPLACEMENT**

Partial knee replacement is performed for patients who suffer with localized pain and arthritis that affects only one area of the knee joint. Most often, the medial or inner compartment of the knee develops severe arthritis and is resurfaced with an artificial surface. The femoral component is made of metal and has a curved shape that matches the natural contour of the knee. The tibial component has a metal base that is secured to the bone and a polyethylene plastic insert that acts as the cushion. Both femoral and tibial components are attached using cement. This surgery is performed with robotic and computer assistance through a minimally invasive incision using the Mako platform.




# BEFORE SURGERY

**Pre-Op Testing and Physical Exam**

All patients will have routine blood work and urinalysis performed within 1 month from the surgery date. In addition, a chest X-ray and EKG will be completed. Your primary care physician should see you review these studies and provide "Medical Clearance" within 30 days of surgery. You will also need to be cleared by your cardiologist if you have a history of heart disease, stents, or heart attacks. Dr. Noble's staff will help coordinate all necessary labs, tests, and office visits and can make suggestions if you don't already have a medical doctor.

**Dental Care**

It is important to see a dentist on a regular basis to maintain proper dental hygiene. This is especially important if you are preparing to have a knee or hip replacement since your mouth could be a source of infection. If it has been over 6 months since your last dental visit, it is highly recommended that you see a dentist prior to surgery and have a dental clearance letter sent to Dr. Noble's office. Dental procedures such

as extractions and periodontal work should be completed before joint replacement to reduce the potential of infection.

**Skin Ulcers and Non-healing wounds**
The condition of your skin is very important to prevent post-operative infections. Bacteria can enter your blood through a skin wound and cause an infection of your artificial joint. If you have any ulcers, non-healing wounds, or boils you must see a skin specialist (dermatologist) to have complete resolution of these problems before surgery. Please tell Dr. Noble if you have any skin problems.

**Smoking and Nicotine**
There is a higher risk of wound complications and infections in smokers, due to the constriction of blood vessels caused by the nicotine. To reduce your risk of complications, you must stop smoking and not use any nicotine products (including nicotine gum) for at least 6 weeks prior to surgery.

**Physical Therapy**
Physical Therapy (PT) is an important part of your preparation for surgery. Your recovery will be faster and easier if you invest the time and energy before surgery. Dr. Noble recommends and will provide a prescription for "Pre-hab" physical therapy starting 4 to 6 weeks prior to surgery. This will give you an opportunity to work with a physical therapist to learn a strengthening program that should continue (on your own) until you have surgery. Stationary bike, swimming, walking in the pool, or any type of low impact physical activity is highly encouraged in addition to PT.

**Pre-Op Joint Replacement Class**
Most hospitals offer a pre-operative class in which you and your family members will receive instructions for each phase of your surgical experience. You will meet team members from nursing, physical therapy, anesthesia, and case management.

Jupiter Medical Center REQUIRES all patients to attend the pre-operative class, either in-person, or via a pre-recorded internet program at www.jupitermedorthospine.com If you have any questions about the Jupiter class, including times or location, please contact the Jupiter Orthopaedic Coordinator at 561-263-3633

**Blood Donation is NOT needed for surgery**
Patients do NOT donate their own blood. Research has shown that this is not beneficial and does not reduce the need for additional blood transfusion. If necessary, the patient will receive blood from the hospital blood bank. Hospitals follow universal guidelines in screening blood and blood products to assure the patient's safety as much as possible in this situation.

**Medications**
10 days before surgery you should STOP taking Aspirin and NSAIDs (Advil, Ibuprofen, Aleve, Naproxen, Mobic, Diclofenac) since these medications will affect bleeding. In addition, stop taking Fish Oil, Supplements, Multi-vitamins and Vitamin E 10 days before surgery. It's OK to continue taking Tylenol/Acetaminophen since it's not an NSAID and won't affect bleeding.

Blood thinners should be stopped based upon these guidelines. You should discuss details with your primary care physician or cardiologist before stopping these medications.

Aspirin: 10 days prior to surgery
Plavix: 10 days prior to surgery
Coumadin / Warfarin: 5 days prior to surgery
Pradaxa / Dabigatran: 5 days prior to surgery
Eliquis: at least 96 hours (3 DAYS) prior to surgery
Xarelto: at least 96 hours (3 DAYS) prior to surgery

Bring your list of prescription medications and doses to the pre-operative hospital appointment or have your list available for the pre-operative telephone interview. You will be told which medications to take the morning of surgery. You should take these medications with the least amount of water necessary. Be prepared to tell the admitting nurse the medication and dose that you may have taken on the morning of surgery.

**Reducing the Risk of Infection**

1. You will receive a prescription for Mupirocin antibiotic ointment during your pre-operative visit (with Dr. Noble or the hospital). Apply a thin layer of this antibiotic into each nostril using a Q-tip TWICE per day, starting 5 days before surgery. This antibiotic is used to help eliminate bacteria like Staph that could be colonized in your nose, which could pose a risk for surgical site infection.

2. In addition, you will be given a bottle of Chlorhexidine antiseptic soap from the hospital during your pre-op visit and interview with anesthesia. If you don't have an in-person interview, purchase a bottle of HIBICLENS from Walgreens or CVS. You MUST take a shower with this soap the night before AND the morning of surgery to reduce your risk of infection. Apply the soap to your entire body from the neck down (do not put the soap on your face or in your hair).

**Eating and Drinking before Surgery**

We recommend that you stop drinking alcohol 10 days before surgery to reduce your risk of bleeding. To improve hydration, you should drink a 20-ounce bottle of GATORADE G at LUNCH and DINNER the day before surgery. You can eat solid foods until mid-night the day before surgery, with a light meal recommended for dinner. On the morning of surgery, you can drink 20 ounces GATORADE G 2 hours before our arrival time to the hospital.

**Items to Bring to the Hospital**

All patients should bring their personal toiletries and shaving gear, loose fitting, comfortable clothing, non-skid shoes or slippers (slip on type with closed back preferred), a list of their current medications (including dosages), and any paperwork the hospital may have requested. Please be advised that the hospital provides gowns, slipper socks, and a small toiletries supply.

**When to Arrive at the Hospital for Surgery**

You will receive a call from the hospital 1 or 2 days before surgery regarding the time of your surgery and expected arrival. Patients are generally instructed to arrive at the hospital 2 hours prior to the scheduled

surgery time. This allows time for you to go through the admission process, change into hospital clothing, and meet the anesthesiologist and nursing personnel who will be with you during your surgery and will be able to answer your questions.

**Family Members**
Family members may stay with patients until the patient is taken to the operating room. A family member will often be able to see the patient in the recovery room about 1 to 2 hours after surgery. If desired, a family member can spend the night in the patient's hospital room. Due to the Coronavirus, hospital visitors have been limited and your family or designated person will be contacted by phone after surgery.

# DAY OF SURGERY

**Type of Anesthesia**
Most cases are performed under spinal anesthesia with sedation. Special circumstances or personal preference may indicate the use of general anesthesia. The anesthesiologist will explain the procedure and address your questions.

**Length of Surgery**
Surgery times may vary depending upon the difficulty of your case. Generally, you may spend 2 to 3 hours in surgery and about 1 to 2 hours in the recovery room.

**Meeting with Family Members**
Dr. Noble will discuss the procedure with your family members immediately after the surgery. If for any reason your family members are unable to stay, Dr. Noble would be happy to contact them by phone to discuss the surgery.

# HOSPITAL STAY

**Pain Control**
Good pain control is a big priority after surgery. Dr. Noble has developed a very effective multi-modal pain control regimen with the objective of using the least amount of narcotic pain medication. This starts before surgery with medications provided to you in the hospital pre-operative area. These medications include Tylenol in the IV, Celebrex (unless contraindicated), Lyrica (nerve calming medication), and Ultram/Tramadol (a non-narcotic pain medication). These medications when taken before surgery, reduce your body's pain response and will decrease the amount of pain felt after surgery.

During surgery, Dr. Noble injects the joint and tissue around your incision with a combination of anti-inflammatory, numbing, and pain medication. This dramatically reduces the amount of immediate post-operative pain.

After Surgery, you will be started on a non-narcotic schedule of medications which includes Tylenol, Ultram/Tramadol, Gabapentin/Neurontin, and Celebrex. Dr. Noble's patients are no longer requiring PCA pain pumps after surgery since there is such a reduction in post-op pain using this protocol. If you do experience pain, you can ask for additional pain medications when needed.

**Blood Clot Prevention - Anti-Coagulation and SCD's**

1. You will take Baby aspirin 81mg twicer per day for 1 month after surgery to prevent blood clots.

Dr. Noble prefers Aspirin (instead of Coumadin or Lovenox) for blood clot prevention due to the proven effectiveness with reduced risk of developing surgical site bleeding and hematomas. An alternative blood thinner will be utilized if you have a history of blood clots, or if you were already taking a blood thinner before surgery – this needs to be discussed with Dr. Noble.

2. Compression TED hose stockings will be provided at the hospital after your surgery. These help to reduce leg swelling and should be worn during the daytime for the first 2 weeks. The stocking can be removed at night.

3. SCD's – Sequential Compression Devices are inflatable wraps that are placed around the calf to mechanically assist venous blood flow and prevent blood clots. These will be worn while you are in bed in the hospital. Portable SCD's are now available for HOME use and can be purchased for $300 at PBOI during your pre-op visit with Dr. Noble.

**Physical Therapy (PT)**

Physical therapy will begin on the same day as your surgery, with the goal of standing and walking once the anesthesia/spinal has worn off. You will receive PT twice a day while in the hospital for strengthening and gait training. You will also be instructed on activities such as bathing, dressing, using the bathroom, getting into and out of a car, and stair climbing.

**Foley Catheter**

A Urine (Foley) catheter may be placed during the time of surgery. This will allow your bladder to empty without having to use the restroom. The catheter allows the nursing staff to monitor your urine output. The catheter is recommended for men who have an enlarged prostate and for women who have stress incontinence. The catheter will be removed the morning after your surgery. Not all patients require the catheter, and you should discuss your preference with Dr. Noble prior to surgery.

**CPM Machine for Total and Partial Knee Replacement**

The use of CPM machines after surgery is discouraged by the Joint Commission for Hospital Accreditation. Dr. Noble has followed these recommendations, and has limited the use of CPM machines, since research has not proven a benefit for most patients.

Your knee range of motion will be evaluated by the Physical therapist, and if you have more than 80 degrees of bend in the hospital, a CPM machine is not required. If you have limited flexion after surgery, a CPM

machine will be utilized in the hospital and also upon discharge to home. The CPM should be used 1 to 2 hours twice per day for a total of 2 to 3 hours per day, with gradual increase in the flexion up to 120 degrees.

**Seeing your Doctor while in the Hospital**
Dr. Noble or his Physician Assistant/Nurse Practitioner will see you daily to discuss your progress and address any questions. The case manager will also meet with you (and family members if necessary) in order to assure the proper discharge plan.

**Length of Hospital Stay**
For total knee and hip replacement surgery, most patients stay in the hospital for 2 days. Due to better pain control and patient preparation prior to surgery, some patients are being discharged to home after 1 night. Occasionally, some patients will stay for 3 nights based upon their progress and medical issues. If you are undergoing Makoplasty partial knee replacement, you may be discharged the same or next day after surgery.

**Discharge to Home vs. Rehab Facility**
Discharge to home is preferred. A physical therapist and nurse will come to your house for the initial 2 to 3 weeks, to provide strengthening, range of motion, and walking exercises. The home care team will also change your dressing and contact Dr. Noble if there are any concerns during your recovery. You should plan to have a family member or friend stay with you for the first week after surgery. Due to the Coronavirus, we recommend that you plan to recover at home instead of a Rehab/Nursing home facility.

# AFTER DISCHARGE AND RECOVERY

**Pain Mediation**
Good pain control is required to have a good recovery and return to normal function. Dr. Noble has developed a structed regime of scheduled non-narcotic medications, to control and ideally prevent pain. These medications will be started in the hospital and continued after your discharge.

## The Scheduled NON-narcotic medications include the following:

1. Tylenol/Acetaminophen 650mg (pain reducer)

2. Ultram/Tramadol 50mg (non-narcotic pain reducer)
   There is a low risk of having an interaction between Tramadol and anti-depressant medication. The Tramadol will be discontinued if you experience tremors, restlessness, fever, rapid heart rate, confusion, or visual hallucinations. If you are unable to take Ultram/Tramadol, a slow release narcotic pain medication called Oxycontin might be prescribed for the first 1 to 2 weeks.

3. Neurontin/Gabapentin 100mg (reduces nerve pain)
   **PLEASE NOTIFTY DR. NOBLE** if you ALREADY take Neurontin/Gabapentin, so he can adjust the post-op dosing.

4. Celebrex/Celecoxib 200mg (anti-inflammatory)

If Celebrex is too expensive or you have a severe Sulfa allergy, other NSAID's could be taken, such as Mobic/Meloxicam 15 mg daily.

## Narcotic Pain medication – taken as needed for break-thru pain

Oxycodone is prescribed when patients experience additional pain. Total knee patients may benefit from taking this medication 1 hour prior to doing Physical Therapy for the first several weeks after surgery. Total hip patients will usually require less of this medication for a shorter duration after surgery.

**Blood Clot Prevention - Anti-Coagulation and SCD's**

1. You MUST continue taking Baby Aspirin 81mg twice per day for 1st month after your discharge, to prevent blood clots and pulmonary embolus. If you were already taking a blood thinner before surgery (Plavix, Xarelto, Coumadin, Eliquis, Pradaxa, etc) you will be given instructions at discharge regarding the appropriate blood thinner and dosage.

2. The Compression TED hose stockings should be worn for the first 2 weeks to reduce leg swelling. You need to periodically remove the stockings for an hour to check your skin. The TED stocking can be removed at night and put back on in the morning. You can stop wearing the stockings once the swelling has resolved in your leg.

3. The VenaPro home Sequential Compression Devices (SCD's) should be applied to both calves and worn when you are sitting for more than 30 minutes as well as when you are in bed, and at nighttime. It is recommended to wear the SCD's for at least 8 hours in a 24 hour period for the first 3 to 4 weeks after surgery.

**Physical Therapy**

You will receive home Physical therapy for 2 to 3 weeks. Patients with a total hip will continue at home with a self-directed program of walking and strengthening and will usually not require outpatient PT. Knee replacement patients will transition to outpatient PT after the home therapy is completed. This will continue for 4 to 6 weeks.

**Walker, Crutches and Cane**

A walker (or crutches) is normally used for the first 1 to 3 weeks after surgery. You and your physical therapist will determine when you're ready to start using a cane, based upon your motion, strength, and balance. Patients then use the cane for the next several weeks based upon recommendations by the physical therapist as well as your comfort.

**Bandage**

A silver backed waterproof dressing will be applied over the incision in the operating room. This bandage will be changed by the home nurse 7 to 10 days after surgery.

If there is worsening bloody drainage, the bandage should be changed daily, until the drainage stops. If the drainage continues for more than 3 to 4 days, please call Dr. Noble or Sharon. Do NOT apply any ointment to your incision for the 1st month.

**Showering and Bathing**
Do not get your incision wet for 10 days. It is OK to get in the shower. When you get in the shower, keep the dressing in place (remove the ACE bandage if you had knee replacement) and apply clear food wrap over your dressing to prevent any water from getting under the bandage.

After 2 weeks, your incision can be open to air and you can get the incision wet in the shower if there is no incisional drainage. DO NOT go swimming or submerge your incision for at least 5 to 6 weeks after surgery, since the skin needs to be completely healed and sealed.

**Ice Management and Swelling**
The use of ice or a cryo-cuff/ ice management system is extremely important for healing, pain control, and helping to reduce swelling. Elevation of the leg is also important to reduce swelling.

Patients will be provided a Cryo-cuff knee or hip wrap system in the hospital. This device belongs to the patient and should be taken to rehab or home. To prevent frostbite and skin sensitivity, an empty pillow case can be applied over the knee, before placing the cryo pad. The system should be used during times of rest and after physical therapy for 4 to 6 weeks after surgery.

**Climbing Stairs**
Stair climbing will be practiced in the physical therapy program before you leave the hospital or rehab. You are allowed to climb stairs at home, and this can be done one or two times per day after discharge. Patients undergoing Total Hip Replacement need to refrain from climbing stairs too often during the first 2 months, since this activity places high torque on the implants, and could delay proper healing.

**Going Outside and Making Local Trips**
To reduce the chance for infection, falls, and excessive swelling, Dr. Noble recommends that you stay at home for the first 7 days after discharge from the hospital. Comfort and safety should be the primary guidelines for going outside your house. It is suggested to start with short trips as the passenger, perhaps to physical therapy or your local supermarket or church if nearby. Gradually increase the number and length of outside activities as you feel more comfortable.

**Driving**
You need to wait 4 weeks before driving if you had RIGHT sided surgery and 2 weeks if you had LEFT sided surgery. Before driving, you should be walking easily with or without a cane, you must stop taking your narcotic pain medication.

**Return to Work**
Returning to work varies with each patient, the type of surgery, and the particular job duties. The amount of time can vary between 2 to 8 weeks and is most dependent on the level of activity expected of the patient. Dr. Noble will discuss the details about your return to work and will provide out of work and return to work notes when required.

**Return to Sports**
Initially patients return to low impact, less strenuous activities such as walking, stationary cycling, and swimming after 4 to 6 weeks. As your physical therapy progresses and your strength and balance return, patients gradually return to hiking, doubles tennis, cycling, and golf at 2 to 3 months. High impact activities such as running, racquet ball, and basketball should be avoided.

**First Office Visit After Surgery**
Your first post-op office visit with Dr. Noble's team will be about 2 to 3 weeks after surgery. X-rays will be taken in the office. Your incision will be checked as well as range of motion and your ability to walk. Additional visits will be made at 6 weeks and 3 to 4 months after surgery.

# TAKING CARE OF YOUR JOINT REPLACMENT

**Dental Visits**
During the first 6 months after surgery, you should take an antibiotic (Amoxicillin 2,000mg or Clindamycin 600mg if you have Penicillin allergy) 1 hour before any dental procedures or cleaning. Afterwards, an antibiotic is not required for routine cleanings if you have a normal immune system. All patients should take an antibiotic 1 hour before DEEP dental procedures such as a root canal. You should maintain good dental hygiene to prevent the spread of infection from your mouth to the replaced joint.

You MUST take antibiotics before dental cleaning and procedures if you have poorly controlled diabetes, Rheumatoid arthritis, Psoriatic arthritis, take a Chemotherapeutic drug, have previous infections of a joint replacement or are overall susceptible to infections.

**Routine Orthopaedic Follow-Up**
After the first year from surgery, you will have routine follow-up with x-rays every 5 years. If you experience a new onset of pain or swelling in the joint associated with fevers, please make an appointment as soon as possible to see Dr. Noble.

**Sports and Walking after Joint Replacement**
You should avoid repetitive high impact activities such as recreational running. You can walk as much as tolerated and participate in sports like tennis, golf, hiking, biking and working out at the gym.