

Anterior Minimally Invasive Total Hip Replacement

One of the most significant advancements in total hip replacement is that the procedure can be done with much less invasive techniques which allow the patient to recover faster. This has even progressed to the point that some patients are able to have their surgery accomplished as an outpatient procedure. True AMIS Minimally Invasive Surgery is characterized by the preservation of muscles and tendons encountered during the surgery AND no muscles or tendons are cut. The blood loss is reduced and the pain is minimized. The approach to the hip joint offers a reduced skin incision of only 6-8 cm.

Other approaches advertised as minimally invasive (posterior, lateral or double incision) are only reduced skin incision techniques and are associated with the same muscle and/or tendon injury as “conventional” approaches.

ANTERIOR MUSCLE SPLITTING MINIMALLY INVASIVE APPROACH DOES NOT CUT MUSCLES, TENDONS OR NERVES and REQUIRES MINIMAL POST-OP MOVEMENT RESTRICTIONS and PRECAUTIONS. THE CHANCES OF POST OPERATIVE HIP DISLOCATION IS SO SMALL THAT NO BRACE OR SITTING RESTRICTIONS ARE REQUIRED.

New implants have been designed to reproduce the normal motion and function of the replaced joint. These new designs incorporate new materials (metals, plastics, and ceramics) and new biologically active coatings for the implants. These materials include highly cross-linked polyethylene for the hip. This new plastic has been approved by the F.D.A. for regular use in the United States. Laboratory tests have shown metal and ceramic implants to last two or three times as long as previous types. Unfortunately, metal on metal hip prosthetic components produce high concentrations of metal ions which seems to be causing inflammation and most joint replacement surgeons are starting to avoid this type of design as it is a fad to be reserved for only specific individuals.

The Dual Mobility™ cup from Medacta is a ceramic head in a mobile bearing cross-linked polyethylene insert. It has reduced wear rates because the load is distributed across the 2 surfaces of the mobile bearing. In addition, it provides excellent stability with low dislocation risk because of the captured ceramic head.

PROSTHETIC ARTICULATING SYSTEMS WITH TWO DISTINCT ARTICULATING SURFACES, SO CALLED DUAL MOBILITY SYSTEMS (BIPOLAR), WERE CONCEIVED WITH THE AIM OF:

- ◆ Decrease wear AND eliminate metal ion particles.
- ◆ Better replicate the physiological Range of Motion.
- ◆ Increase Hip stability.
- ◆ Decrease shear stresses.

The new implant designs can be inserted using minimally invasive techniques resulting in less trauma to the patient and the tissues surrounding the hip. The benefits for the patient are that the scar is significantly smaller and less to heal and the second major advantage is faster recovery from surgery due to less tissue disturbance with much less post-operative pain. When

hip replacement surgery is accomplished with smaller incisions, the patients will require fewer if any blood transfusions, will have shorter hospital stays, full weight bear almost immediately and will return to work or recreation sooner. Patients report that a joint replaced with these new techniques is significantly less painful than with the previous, more generous, surgical exposures. Minimally invasive hip replacement can best be performed through one 2½ to 3½ inch incision. We try to use this limited exposure on all patients but those patients who are significantly overweight will have a slightly larger scar and a larger, more extensive exposure.. Our first priority in performing the operation is to be able to see anatomy adequately.

Minimally invasive hip replacement surgery can be performed as an outpatient on some selective patients. In this situation, the patient receives appropriate education before surgery and then comes to the hospital the morning of surgery. After the operation, the patient is able to leave the hospital on crutches and be driven home to recover. The most current anesthetic techniques are used including numbing cocktails injected into the incision, and peripheral nerve blocks and appropriate medications given to minimize any risk of nausea and decrease pain.

The following pre-requisites are necessary:

1. The patient is in a stable medical condition.
 - a. Minor medical conditions should be well controlled: hypertension, asthma, thyroid conditions, stomach or gastrointestinal problems.
 - b. Contraindications include: diabetes, altered mental function (dementia, Parkinson's disease), obesity, unstable cardiac status, renal failure, sleep apnea, and significant prostate obstruction interfering with adequate urination.
 - c. Age itself is not very important as long as other considerations are fulfilled.
2. The patient is willing to attend physical therapy before coming to the hospital. The patient must learn the use of crutches and the appropriate dislocation precautions before surgery.
3. There is an appropriate caregiver to help take care of the patient at home for the first few days after surgery. This is the same as for any outpatient surgical procedure.
4. The patient strongly desires to have the operation as an outpatient.