

What's New In Total Joint Replacement Surgery

Millions of Americans suffer from arthritis of the hip and knee. Most can be successfully treated conservatively with rest, heat, ice, and anti-inflammatory medications. At some point the pain and loss of mobility begins to affect the lifestyle of the patient and even his ability to work. Sometimes small procedures such as arthroscopy or arthroscopic cartilage transplantation procedures can help, but usually with advanced arthritis, joint replacement becomes the best option to eliminate severe pain and restore patients to their usual lifestyle.

Total joint replacements were introduced in the United States in the 1970's. The total hip and the total knee have been the most frequently performed joint replacements; although, total shoulders, total elbows and ankle replacements are successful and are being done around the country. The total hip replacement may be one of the best operations in the past century, and can actually restore a patient's function to a level that they forget that they even have a joint replacement.

These are not small operations and usually require 3-5 days of hospitalization plus up to 1-2 weeks of Inpatient rehabilitation before the patient is able to return home. As the operations proved very successful, they began being done in younger and younger individuals who are more and more active and this caused the joint replacements to wear out or become loose. Many recent advances in joint replacement design have addressed these issues.

In the past 5 years, total hip replacement has undergone a number of design innovations beginning with the introduction of highly crosslinked polyethylene in the socket. One of the biggest problems with total hip replacement was wear of the plastic socket. The wear particles from the plastic caused loosening of the entire joint replacement. Newer plastics offer the promise of much less wear and longer life. Metal-on-metal hip replacements, where the ball is metal and the socket is metal, have been around since the 1970's, however, they fell out of favor until recently. They were reintroduced in Europe and then in the past 5 years in the United States.

Metal-on-metal implants in total hip replacement have been introduced with the goal of reducing wear particles and increasing the life of the total hip replacement. There have been some concerns that metal particle levels in the blood stream were elevated in patients with metal-on-metal prostheses. This has not been a problem to date, but caution should be used in patients who have preexisting kidney disease and in women of childbearing ages because of elevation of the cobalt and chromium particles circulating to the baby.

Within the past 2 years, ceramic implants have been released in the United States. These too have been around for a number of years and have been taken off the market at times for breaking and failure.

However, the newer designs are constructed with aluminumoxide ceramic, which promises lower incidence of breakage and wear. Early reports of these ceramic -on-ceramic devices show extremely low wear rates and minimal particle release from wear. These implants have been used in Europe more than 25 years, but the FDA approval did not come in this country until 2003. These implants look very promising for young people. Anyone with a job that requires jumping and impact should tread cautiously until we are sure the breakage will not be a problem.

Total knees, which were introduced in this country in the late 1970's, have undergone a slow but steady design improvement and newer designs offer more normal flexion and improved wear rates. Many of today's designs can be expected to last 15 to 20 years.

Some of the newer designs such as the DePuy rotating platform offer rotational motion as well as flexion and extension to reduce wear, and designs by Zimmer and some of the other companies have improved flexion to a degree that approach that of the normal knee.

Many patients' knees began to wear only on the inside half of the knee with the outside portion and the knee cap portion of the knee remaining good. In 2001, the Unispacer device was introduced to the United States as a minimum incision procedure where a metal spacer is inserted after an arthroscopy of the knee through a very small incision for treatment of wear of the medial compartment. For the patients who do not desire a complete total knee replacement and only have wear in the inside portion of the knee, this offers a very attractive surgical option. This can be done in patients regardless of their weight and patients can be up walking, full weight bearing on these spacer devices immediately and back to their usual lifestyle in three months. Due to the interest in the Unispacer device and its subsequent direct-to-patient marketing, patients have flocked to physicians in search of easier alternatives to the full joint replacement surgery.

Unicompartment knee replacement is the next step above the Unispacer for those patients who are not over 200 pounds and have arthritis confined only to the inside of the knee. The Unicompartment knee replacement is a slightly larger procedure than the Unispacer but in many cases they offer improved function and less pain, particularly in those whose arthritis may be too advanced for a Unispacer procedure.

Minimal incision surgery (M.I.S.) with total hips and total knees offer the patients the same small incision that one gets with the partial joint replacement and an earlier return to function and in many cases allows the rehab to progress quicker with less pain. In a total knee replacement, these small incisions are designed not to violate

the quadriceps muscle, which is the muscle on the front part of the thigh that controls the extension of the knee. By not cutting into this muscle, the patient's rehab goes much faster. They are able to weight bear with less pain with an early return to walking. Minimum incision total hip replacement is still in its infancy but early reports are encouraging. Minimal incision total hips may lead to less scarring, smaller incisions, less blood loss and earlier rehabilitation than traditional total hip replacement. Both total hips and total knees demand precision in the implementation and not all patients are candidates for this type of surgery. Those who are overweight or have severe deformities of either the hip or knee are not candidates for minimal incision type surgery.

Direct-to-consumer marketing of orthopaedic implants has begun. The public is getting used to Viagra race cars and multiple advertisements in their favorite magazines for blood pressure and arthritis drugs. We are now seeing famous, aging golfers pitching certain types of total hip replacements. For patient's seeking advice on joint replacement, their best source of information is to sit down with their Orthopaedic surgeon and go over all these new options and decide which is right for them. The choice of which, if any, of these new technologies is best left in the hands of an experienced Orthopaedic surgeon knowledgeable in joint replacement. He has had years of training and experience and knows what works best for him in a particular situation and that source of information is far superior to that found on the Internet, TV, or printed advertisements.