

# MINIMALLY INVASIVE (MIS) TOTAL KNEE ARTHROPLASTY (TKA)

## WHAT DOES MIS MEAN?

MIS is a new method of performing total knee replacement. It has been developed over the past 3 years, and entails replacing the knee joint surfaces with titanium/cobalt chrome and plastic components. Although, the knee components are the same as those used in the traditional surgery, the procedure differs from the traditional procedure in two major respects.

- 1) The operative procedure is done through an incision that is less than half the length of the standard total knee incision, yet the same result is accomplished—knee pain from disabling arthritis is gone.
- 2) The MIS approach allows your surgeon to avoid muscle and tendon cutting, thereby minimizing trauma to the knee. As a result, there is much less post-operative pain and patients are routinely able to begin walking and exercising the day of surgery. This accelerated rehabilitation enables patients to go home from the hospital earlier (usually after 1 or 2 days) and return to a normal lifestyle much earlier than with traditional surgery.

## WHAT ARE THE DETAILS OF THE MIS PROCEDURE?

MIS total knee arthroplasty is usually accomplished through an approximately 4-inch incision. The development of new instruments has made this surgery possible. The components are the same as those used in traditional TKA, but the degree of surgical exposure is minimized. The quadriceps tendon and muscle are not cut and the kneecap (patella) is not dislocated. Special retractors and guides are used to accomplish the replacement. This less invasive approach dramatically minimizes the discomfort after surgery.

## WHO IS A CANDIDATE FOR MIS TKA?

Most patients with painful disabling arthritis are candidates for this surgery. Exceptions are patients with very large legs due to obesity or heavy muscles. However, even these patients can benefit from many of the techniques used in MIS surgery and realize a decrease in post-operative pain and disability.

## CAN BOTH KNEES BE DONE AT THE SAME TIME?

National studies have shown an increase in the complication rate when two knees are done at the same time. We recommend six to eight weeks between knee replacements; however, both knees can be done at once in some circumstances. Consult your physician for specific recommendations.

## WHAT CAN I EXPECT ON THE DAY OF SURGERY?

You will arrive at the hospital about two hours before the surgery. You will be given an oral anti-inflammatory/pain medicine, and you will meet with your surgeon and the anesthesiologist. Usually, the MIS TKA is performed under spinal anesthetic. This enables the nurses to administer oral pain medicine after the surgery, but before the spinal anesthetic has “worn off.” This effectively treats pain before it is felt. A long acting novocaine-type drug is also injected into and around the knee during surgery. However, while this will help with post-operative pain, it also may cause temporary numbness in the foot

that can last as long as 24 hours. If needed, the nurses will administer additional IV pain meds. Patient controlled morphine pain pumps have not been necessary.

This pain management protocol allows the patient to stay alert, yet comfortable. It also enables the physical therapist to begin treatment on the day of surgery. Therapy includes the use of a CPM (continuous passive motion) machine, light muscle exercises, and walking in your room. Oral pain medications are continued overnight and the next day as needed.

### HOW LONG WILL I BE IN THE HOSPITAL?

About half of the patients who have MIS TKA are discharged the day after surgery. Most of the remaining patients go home the second day after surgery. In any case, you will be discharged when you are independent and able to care for yourself. If you have other medical conditions that impair your recovery and rehabilitation, transitional care may be necessary.

### WHAT CAN I EXPECT WHEN I GO HOME?

You will be sent home with a prescription for an oral pain medication (usually Percocet) to be taken as needed and an anti-inflammatory medication to be taken for about two weeks. In addition, most patients will be instructed to take an 81-milligram aspirin daily to minimize the risk of blood clots. White surgical stockings should be worn during the day until your surgeon or his assistant tells you to discontinue them.

Your incision requires little care. If your incision is dry, you may shower. However, don't soak the incision in the bath or a hot tub. Keep a light dressing on between showers. There will be skin tapes, called steri-strips on your incision. Leave these on for two weeks. If they fall off early, replace them with fresh strips—they can be purchased at most drug stores. Don't apply any oils or creams to the incision until after the steri-strips come off. If there is any significant change in the status of the incision, call your doctor. When you are two weeks post-op you may gently remove the steri-strips and cut off the ends of the dissolvable suture that protrudes from each end of the incision. Do this with a small scissors cleaned with rubbing alcohol.

You should avoid prolonged sitting, walk comfortable distances, and do your exercises at least three times per day. Before discharge from the hospital, the physical therapist will make any necessary recommendations for outpatient therapy, though many patients will only need home exercises.

A common mistake is to “over-do it” after surgery because you will feel so good. Activities like mowing the lawn, working around the house, and excessive walking can cause discoloration and swelling for at least two weeks after the surgery. This will only prolong your full recovery. Any dental work and long trips should also be avoided for six weeks after surgery.

The discomfort in your knee should lessen daily, though occasional mild setbacks are normal. Any *excessive* increase in pain, swelling, temperature (oral temp over 100°) or pain in the calf area of either leg should be reported immediately to your surgeon. Normal occurrences after surgery include an increase in warmth in the operative knee, clicking in the knee, stiffness after sitting, and mild pain in the shin or thigh areas. These normal symptoms will eventually disappear, but may last for 6 to 12 months in some patients. Applying ice to your knee twice a day for 30 minutes will help control swelling and pain. You

will notice numbness on the outside of your knee. This area of numbness will decrease in size with time, but a small area of decreased feeling may be permanent.

#### WHAT ARE THE POTENTIAL COMPLICATIONS OF MIS TKA?

The complications of MIS TKA are the same as for standard TKA. The most devastating complications are infection and blood clots. The frequency of each of these is less than 1 percent but, unfortunately, potential for risk cannot be eliminated. We minimize the likelihood of infection by giving antibiotics during and after the surgery. Blood clots are prevented by early mobilization (walking the day of surgery) and the use of blood thinners (usually aspirin) immediately after surgery. Other potential complications include, but are not limited to, stiffness of the knee, injuries to the blood vessels and nerves, failure or loosening of the prosthesis and instability of the knee or the knee cap.

#### HOW LONG IS THE HEALING PROCESS AND WHEN CAN I RETURN TO NORMAL FUNCTION?

When you go home you will be able to walk independently, with or without a cane. Driving is allowed when you are no longer taking narcotic pain medications—usually in 1 or 2 weeks. Going for walks is usually possible in 2 weeks and more vigorous activity, such as golf, in 6 to 8 weeks. You may return to a desk job in 3 to 4 weeks and more vigorous labor in 2 to 3 months. These are only guidelines, however, and may vary considerably from individual to individual. Your doctor will advise you of your limitations as you progress with your recovery and therapy. Permanent limitations include running and jumping, full squatting and kneeling (possible for only short periods of time).

#### WHAT ARE THE LONG-TERM EXPECTATIONS OF MIS TKA?

Most knee replacements will last from 12 to 15 years. If necessary, revision of your knee replacement can then be done. Factors that accelerate wear of the components include heavy weight, young age, and impact loading of the prosthesis. We recommend that patients avoid running and jumping and control their weight through a walking program and diet. You will be required to take antibiotics for all dental procedures for at least two years after surgery. Your prosthesis will probably set off the metal detector at the airport. We will give you a card that will inform the security personnel that you have a joint replacement, but expect screening anyway.

Routine follow up of your TKA should be in 5 years. You are responsible for making an appointment with your doctor at that time. If you have any unusual symptoms in the interim, contact your surgeon immediately. Most importantly, enjoy your knee replacement and many years of pain free function.