

## HIP AND KNEE REVISION SURGERY

In the hands of experienced orthopaedic surgeons, hip and knee replacement surgery has a high success rate and a low complication rate. In general, it is accepted that joint replacement surgery helps diminish pain caused by hip and knee cartilage degeneration and restores a patient's quality of life.

In the United States alone, some 400,000 hip and knee replacement surgeries are performed in a year. Of all these surgeries, more than 10% will eventually need a second surgical intervention because of failure of the implant. This implant failure can happen either in the short term or over a longer time period. There are different factors that influence premature failure of hip and knee implants. Such factors usually are patient related:

- **Obesity**
- **Young age**
- **High impact activities or overloading**
- **Mental problems**
- **Drug or Alcohol abuse**
- **Social Abandonment**
- **Etc.**
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Hip or knee revision surgery consists of three basic steps:

1. Removal of old, worn or loose implants.
2. Bone reconstruction with the use of bone graft to better patient's bone quality.
3. Re-implantation of new hip or knee prosthesis.

Hip and knee revision surgery is considered a highly demanding and technically complex procedure that requires ample experience and surgical skills by the operating surgeon and his team. It also requires a specialized hospital centre that can provide proper facilities, equipment, technology and staff required for this complex surgical procedure.

Patients who require a revision surgery fall into three categories:

1. **Aseptic loosening of hip or knee implants:** 85% of all hip and knee revisions fall into this category. Aseptic loosening of knee and hip implants is the most common cause of revision surgery. Old implants generate wear particles or debris, caused by friction. Debris generates inflammatory response resulting in bone destruction and finally implants become loose from their previously fixated position in the bone. The resulting loosening of implants generate further bone destruction, pain and disability.
2. **Infection:** This is the most devastating complication after a hip or knee replacement surgery causing serious disability in patients and becoming a major problem for the patient, family and surgeon. Surgery infection of post primary hip or knee replacement can happen in .05 - 3% of all

patients. Usually it is related to patient's medical condition such as diabetes, rheumatoid arthritis, urinary tract infections, immune compromised patients, etc. Infected implants usually become loose and painful and they have to be removed to be replaced by new implants during one or two more surgical procedures.

3. **Dislocation:** This implies the loss of articular congruence between prosthetic components. It is much more common in patients with hip replacement and it can happen in 2-10% of all primary hip replacements. Less common is patellar dislocation in patients with a total knee replacement.
4. **Peri-prosthetic fractures:** This is a serious complication that can leave permanent disabilities in patients who have a joint prosthesis. Peri-prosthetic fractures always require surgical intervention in the form of plates, screws, pins, rods, wires or implant removal and placement of a new special revision prosthesis.

Hip and knee revision surgery is considered major surgery; it is technically demanding and requires precise pre-operative planning. Surgical risks and complications are higher than in primary joint replacement, the most common complications encountered are:

- Infection
- Nerve injury
- Vascular injury
- Excessive bleeding
- Peri-prosthetic fractures during surgery
- Dislocation
- Leg length discrepancy
- Limping
- Deep venous thrombosis
- Death (rare)
- Etc.

### **When is a hip or knee replacement surgery indicated?**

All patients are different and have to be assessed on an individual basis, but every patient that has a primary hip or knee prosthesis is a potential candidate for revision surgery. Depending on the cause and severity of implant loosening and wasting your doctor will determine if you are a proper candidate for revision surgery. Patients are carefully studied and monitored with x rays, Cat scans, MRIs, bone scans and special lab tests to reach a proper diagnosis.

Whatever the cause of implant loosening and wasting, it is considered a major cause of pain and disability and has to be surgically removed and replaced by a new implant in order to restore proper prosthetic function.

### **What are other alternatives to hip or knee revision surgery?**

When a primary hip or knee replacement fails and either bone quality or the patient's general medical condition is not satisfactory, then other surgical

options exist that your attending physician can use. These other surgical options, known as salvage procedures, perhaps are not as functional as a revision surgery but they are considered viable solutions when revision is not an option.

- **Implant removal:** Also known as Girdlestone resection arthroplasty. This surgical procedure consists of the complete removal of all prosthetic implants from the hip. After implant removal, extensive internal scarring occurs and the scar tissue functions as a “cushion” between the proximal femur and acetabulum. Patients are left with an important leg length discrepancy and poor muscle control of the operated limb. A special high shoe is required and patients will always need the use of a walker or crutches.
- **Knee arthrodesis:** This procedure consists of the complete removal of all knee prosthetic components and fusion of the knee in the extended position using special steel plates or rods and screws to achieve this goal. After surgery patients are able to walk using a cane in the opposite hand and a special high shoe.

As you can see, hip and knee revision surgery is a complicated and technically demanding surgical procedure designed to solve primary implant failure due to loosening and wear. This implant failure clinically manifests itself as progressive pain, rigidity, loss of function and limping. Thanks to modern medical advances and experience we are capable of solving these serious complications.

Because hip and knee replacement surgery is becoming so popular in treating younger patients, we will be doing even more revision surgeries in the near future.

Dear patient: if you have any doubts or questions regarding revision surgery, please contact us to let us know all your worries. Remember that we are here to help you.

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NOTE: The main reason for the above information is to aid patients. We are not responsible for the decisions made by patients without previously consulting their attending physician.