

TREATMENT

Minimally Invasive Total Hip Replacement

Total hip replacement (also known as hip arthroplasty) is a common orthopaedic procedure and, as the population ages, it is expected to become even more common. Replacing the hip joint with an implant, or prosthesis, relieves pain and improves mobility, enabling you to resume your normal, everyday activities.

The [traditional surgical approach to total hip replacement](/en/treatment/total-hip-replacement/) uses a relatively long incision, with extensive soft tissue exposure, to view and access the hip joint. A variation of this approach is a minimally invasive procedure in which the surgeon uses one or more shorter incisions, or changes the location of the incision.

The goal of using shorter incisions or changing the location of the incision is to reduce pain and speed recovery. Minimally invasive techniques may not, however, be suitable for all patients. Your orthopaedic surgeon will discuss different surgical options with you.

Description

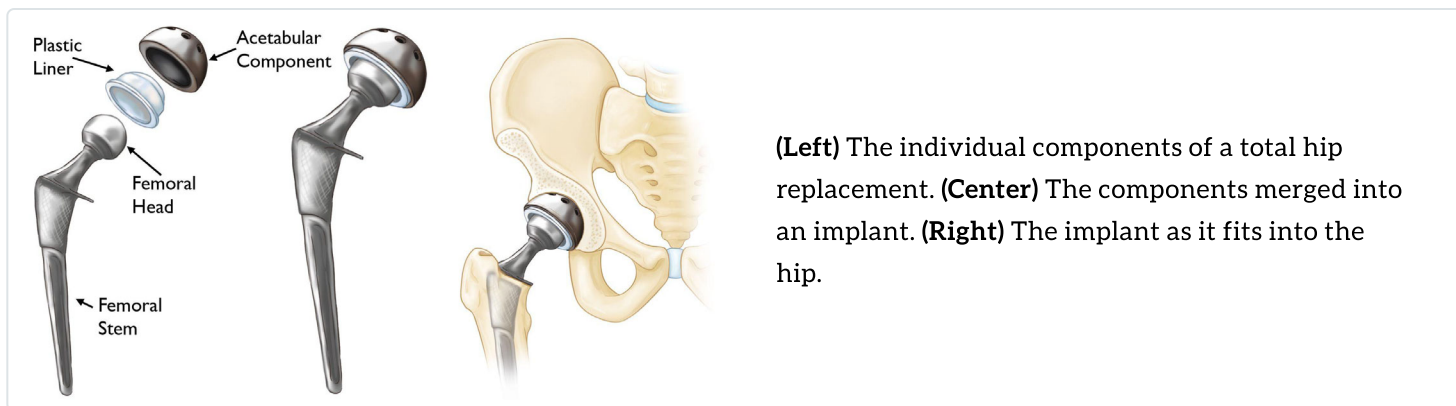
During any hip replacement surgery, the damaged bone is cut and removed, along with some soft tissues. In minimally invasive surgery, the surgeon makes a smaller surgical incision and cuts or detaches fewer muscles around the hip.

Despite this difference, however, both traditional hip replacement surgery and minimally invasive surgery are technically demanding and have better outcomes if the surgeon and operating team have considerable experience.

Traditional Hip Replacement

To perform a traditional hip replacement:

- The surgeon makes a 10- to 12-inch incision on the side of the hip, then splits or detaches the muscles from the hip, allowing the hip to be dislocated and fully viewed.
- The surgeon removes the damaged femoral head and inserts a metal stem into the hollow center of the femur. The surgeon then places a metal or ceramic ball on the upper part of the stem. This ball replaces the damaged femoral head that was removed.
- The surgeon removes the damaged cartilage surface of the socket (acetabulum) and replaces it with a metal socket. The surgeon may use screws or cement to hold the socket in place.
- The surgeon inserts a plastic, ceramic or metal spacer between the new ball and the socket to allow for a smooth gliding surface.



Minimally Invasive Hip Replacement

The goals are similar with minimally invasive total hip replacement, but the surgeon cuts less of the tissue surrounding the hip. The artificial implants used are the same as those used for traditional hip replacement. However, specially designed surgical instruments are needed to prepare the socket and femur and to place the implants properly.

Minimally invasive total hip replacement can be performed with either one or two small incisions. Smaller incisions allow for less tissue disturbance.

Minimally invasive surgery based on a small incision or multiple incisions

Small-incision surgery using the posterior, lateral, or anterolateral approach

- For this type of minimally invasive hip replacement, the surgeon uses a single incision that usually measures 3 to 6 inches. The length of the incision depends on the size of the patient and the difficulty of the procedure.
- The surgeon makes the incision on the side or back of the hip. The muscles and tendons are split or detached from the hip, but to a lesser extent than in traditional hip replacement surgery. They are routinely repaired after the surgeon places the implants. This encourages healing and helps prevent [dislocation of the hip\(/en/diseases--conditions/hip-dislocation/\)](#).

Multiple-incision surgery

- Some surgeons perform a hip replacement through two separate small incisions. The concept behind two incisions is to approach the pelvis (cup) through one incision and the femur (thighbone) through a separate incision.
- Approaching the hip in this manner may allow for less disruption of the underlying tissues compared to using one incision.
- For this procedure, surgeons often use X-ray guidance during surgery to ensure proper placement of the implants.

Minimally invasive surgery based on incision location

Direct anterior approach

Another approach to minimally invasive surgery is to change the location of the incision. In the past decade, the direct anterior approach has become popular because it requires less disruption of the underlying tissue and muscle.

- In this approach, the surgeon makes the incision on the front of the hip.
- Less cutting of the muscle is necessary, and recovery has been reported to be faster.
- The anterior approach is often performed with the use of a special operative table and instruments.

As with traditional hip replacement surgery, after minimally invasive hip replacement, you will either go home the same day or spend 1 to 3 days in the hospital.

Physical rehabilitation is a critical component of recovery. Your surgeon or a physical therapist will provide you with specific exercises to help increase your range of motion and restore your strength.

Candidates for Minimally Invasive Total Hip Replacement

Minimally invasive total hip replacement is not suitable for all patients. Your doctor will conduct a comprehensive evaluation and consider several factors before determining whether the procedure is an option for you.

In general, candidates for minimal incision procedures are thinner, younger, healthier, and more motivated to participate in the rehabilitation process, compared with patients who undergo the traditional surgery.

Minimally invasive techniques may be less suitable or create a higher risk of complications for patients who:

- Are overweight
- Have already undergone other hip surgeries
- Have a significant deformity of the hip joint
- Are very muscular
- Have health problems that may slow wound healing

Conclusion

Minimally invasive and small incision total hip replacement surgery is an evolving area. Surgeons continue to refine the techniques and instrumentation to improve recovery after surgery. Special training is needed for these approaches, and more research is needed on the long-term results.

The benefits of minimally invasive hip replacement have been reported to include less damage to soft tissues, leading to a quicker, less painful recovery and more rapid return to normal activities. Current evidence suggests that the long-term benefits of minimally invasive surgery do not differ from those of traditional hip replacement.

Like all surgery, minimally invasive surgery has a risk of complications. These complications include:

- [Infection\(/en/diseases--conditions/joint-replacement-infection/\)](#)
- Blood clots
- Dislocations
- Nerve and artery injuries
- Wound healing problems
- Fracture of the femur
- Leg length differences

Like traditional hip replacement surgery, minimally invasive surgery should be performed by a well-trained, highly experienced orthopaedic surgeon. Your orthopaedic surgeon can talk to you about their experience with minimally invasive hip replacement surgery, and the possible risks and benefits of the techniques for your individual treatment.

Last Reviewed

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