

AND INTERNERVOUS APPROACH

Potential advantages of AMIS®

No muscles cut

The preservation of all muscles allows for:

- Shorter hospital stay^[2,12]
- Smaller skin incision^[3]
- Shorter rehabilitation^[3,4]
- Decreased post-operative pain^[1,3]
- Prevention of limping^[6,7,8,9]
- Less blood loss^[3,12]
- Reduced risk of dislocation^[4,5]
- Faster return to daily activities.^[2,10,11]

Better short term results

Not only better short term results

As a result of the AMIS® Technique, risks are decreased when compared to a standard technique **BOTH IN THE SHORT AND IN THE MEDIUM TERM.**

It has been demonstrated that:

- After total hip replacement, trochanteric soft tissue abnormalities may be associated with residual trochanteric pain and limping, in symptomatic patients. Defects of the abductor tendons and fatty atrophy of the gluteus medius and the posterior part of the gluteus minimus muscle are rare in asymptomatic patients^[7,8].
- The use of the anterior approach for primary total hip replacement shows, at one year after surgery, better functional results and a smaller extent of injury in the muscle and tendon units compared to other approaches^[9].



^[1] Arthroplastie totale de hanche par voie antérieure et son évolution mini-invasive; F. Laude et al.; EMC; 2004, 44-667-B

^[2] What's new in hip arthroplasty; MH Huo et al; JBJS Am; 2005 Sep, 87(9):2133-46

^[3] Minimally Invasive total hip arthroplasty: anterior approach; F. Rachbauer; Orthopäde, 2006 Jul;35(7):723-4, 726-9

^[4] Mini-incision anterior approach does not increase dislocation rate: a study of 1037 total hip Replacement; T Siguier et al; Clin Orthop Relat Res, 2004 Sep, (426): 164-73

^[5] Dislocation after hip hemiarthroplasty: anterior versus posterior capsular approach.; JB Bush et al; Orthopedics. 2007 Feb;30(2):138-44

^[6] Muscular damage after total hip arthroplasty: conventional versus minimally invasive anterior approach.; Dr Dora, Dr Kalberer; AOA 2008, Australia, Hobart

^[7] Abductor Tendons and Muscles Assessed at MR Imaging after Total Hip Arthroplasty in Asymptomatic and Symptomatic Patients. C. Pfirmann et al.; Radiology 2005, 235: 969-976.

^[8] MR imaging of the abductor tendons and muscles after total hip replacement in asymptomatic and symptomatic patients. PD Dr. Dora, EFORT 2007

^[9] Der anteriore Zugang für die minimalinvasive HTEP. C Dora; Leading Opinions Sept 2006, 1/2006

^[10] Rapid Rehabilitation and recovery with minimally invasive total hip arthroplasty; RA Berger et al; Clin Orthop Relat Res, 2004, (429): 239-247

^[11] The minimally invasive anterior approach to hip arthroplasty; RE Kennon et al; Orthopäde, 2006 Jul, 35 (7): 731-7

^[12] Single-incision anterior approach for total hip arthroplasty on an orthopaedic table; JM Matta et al; Clin Orthop Relat Res, 2005 Dec, (441): 115-24

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Dr. Randhawa completed his Orthopaedic Advanced Training on the NSW training scheme. He then undertook a sub-specialty fellowship in complex hip & knee arthroplasty and orthopaedic trauma at St Vincent's Hospitals, Sydney. Following this he obtained a coveted fellowship in Melbourne under Associate Prof. John O'Donnell - one of the pioneers of AMIS® and key-hole surgery in Australia. It was here that Dr. Randhawa fine-tuned his experience in anterior hip replacement and hip arthroscopy. He also travelled to Europe extensively to collaborate with world renowned surgeons in France and Switzerland in the AMIS® technique.



Dr. Randhawa also uses patient matched technology for knee replacements to enable minimally invasive, more anatomical, and accurate surgery.



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Total Hip Replacement

AMIS®: a true intermuscular and internervous approach

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AMIS®: A TRUE INTERMUSCULAR AND INTERNERVOUS APPROACH

The anterior approach

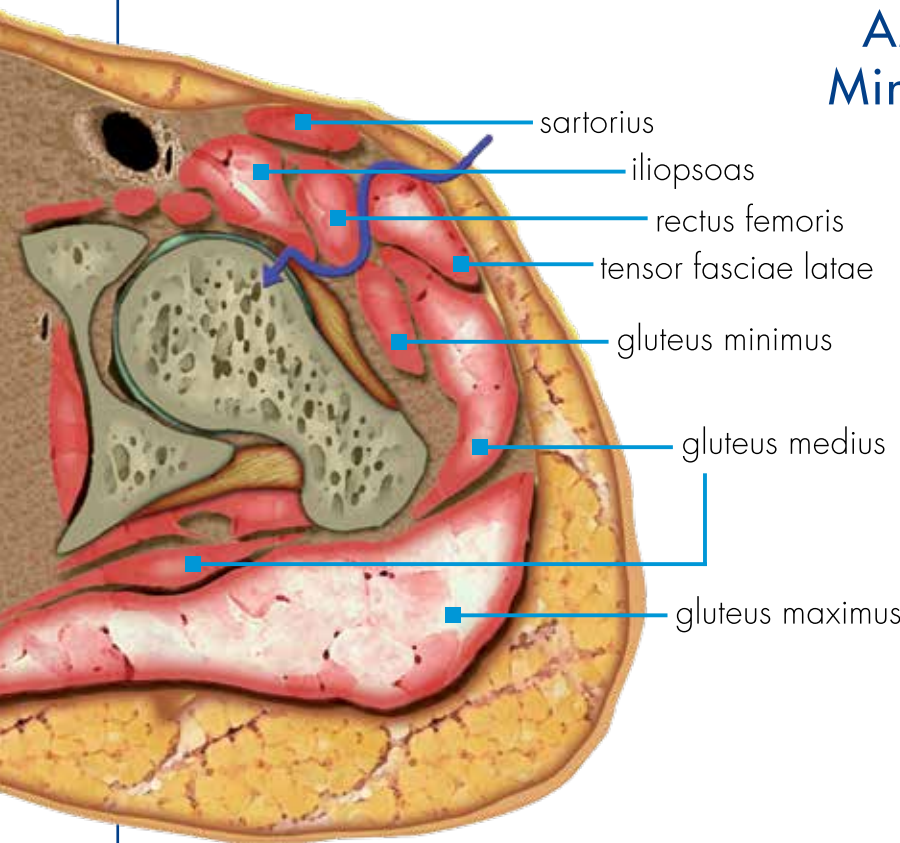
Total Hip Replacement is a safe and clinically proven surgical procedure. Implant manufacturers and orthopaedic surgeons have been working in partnership on total hip replacement for many years, the former improving and mastering the materials used and the latter refining the implantation techniques, introducing many "so called" minimally invasive surgeries.

AMIS® by Medacta®: true Minimally Invasive Surgery

A TRUE MINIMALLY INVASIVE SURGICAL TECHNIQUE is characterized by the preservation of muscles, nerves and tendons encountered during the surgery to the hip joint capsule, offering a reduced skin incision.

AMIS® (Anterior Minimally Invasive Surgery) is a true minimally invasive technique.

Other approaches advertised as minimally invasive (posterior, lateral or double incision approach) are associated with muscle, nerve and/or tendon injury and thus are only reduced skin incision techniques.



The anterior approach, strengthened by several years of clinical experience, is the only technique which follows a path both intermuscular and internervous and therefore reduces considerably the risk of damaging periarticular structures such as muscles, tendons, vessels and nerves.^[1]

The surgical procedure

Access to the hip joint

The surgeon makes a short anterior skin incision to allow access to the hip joint. The hip joint capsule is exposed, preserving all the muscles encountered in the path. Then the surgeon removes the head of the femur.

Prosthesis implantation

The bone of the acetabulum and of the femur is prepared to receive the prosthesis, by removing any remaining cartilage and some surrounding bone with the aid of specialized instruments.

For a cementless procedure the acetabular shell is impacted directly on the bone; a liner is then inserted into the implant. For a cemented technique the cup is positioned after the cement application.

Then a stem is inserted, with or without cement application, depending on the type of implant chosen. A ball head is then added to the top of the stem.

Final reduction and closure

After the implantation, the femoral head is placed into the acetabulum, and the hip joint is recreated.

The skin is finally closed by stitches.

Rehabilitation

Rehabilitation - standing up and walking with arm crutches or a walker - can usually **START THE DAY OF THE OPERATION**, subject to the doctor's approval. The risk of dislocation is minimal and the post-operative limitation of movements, usually prescribed in other techniques, may be unnecessary.

In comparison with standard techniques, the AMIS® approach reduces the post-operative pain^[2,3] and the rehabilitation time.^[3,4]

Thanks to the AMIS® technique, the preservation of the muscles ensures immediate stability of the hip.^[5]

Minimizing muscle damage reduces the chances of limping.^[6,7,8,9]

Due to the AMIS® technique, the return to daily activities is faster.^[2,10,11]



The prosthetic implant

Total Hip Replacement surgery substitutes the damaged bone and cartilage of the joint with polyethylene or ceramic and metallic components.



A hip prosthesis is an artificial articulation composed of a femoral stem with a head (sphere) and a socket cup (acetabular shell and liner, if necessary).

- ① The femoral stem is made of metal (usually a Titanium alloy or stainless steel).
- ② The head is made of ceramic or metal.
- ③ The cup is made of 1 or 2 pieces, depending on the procedure: cemented (usually only one component of polyethylene) or cementless (metallic acetabular shell and liner).
- ④ In the case of a metallic acetabular shell a polyethylene liner articulates against the head.