

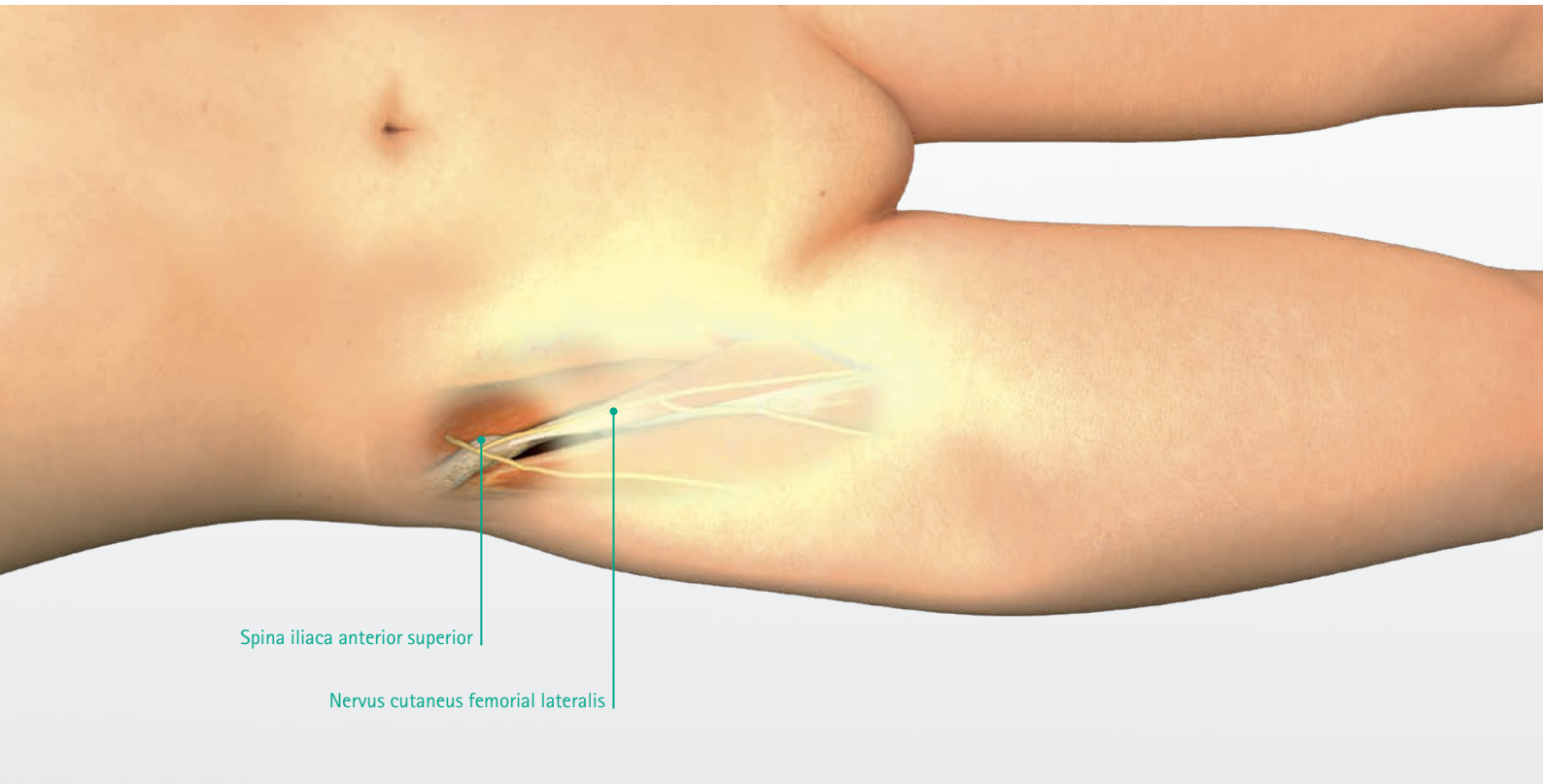
ORTHOPAEDIC SURGERY

AESFULAP[®] MIOS[®]

THE DIRECT ANTERIOR APPROACH TO THE HIP JOINT

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Landmarks

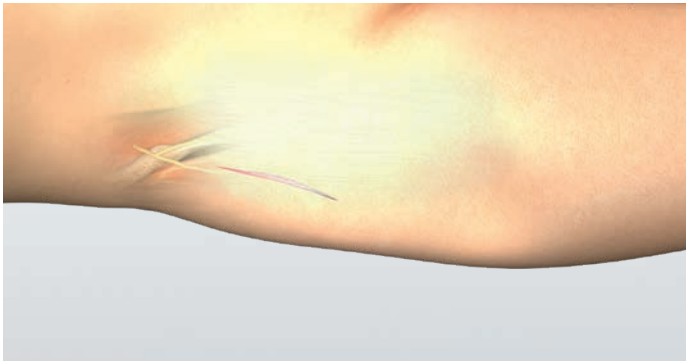
ANATOMICAL LANDMARKS

The direct anterior approach to the hip joint for the implantation of a total joint replacement distinguishes by a particular muscle and soft tissue sparing surgical technique. Whereas the exposure of the acetabulum is quite beneficial even for patients with a heavy soft tissue situation, the preparation of the femur could be demanding especially for patients with strong muscle conditions.

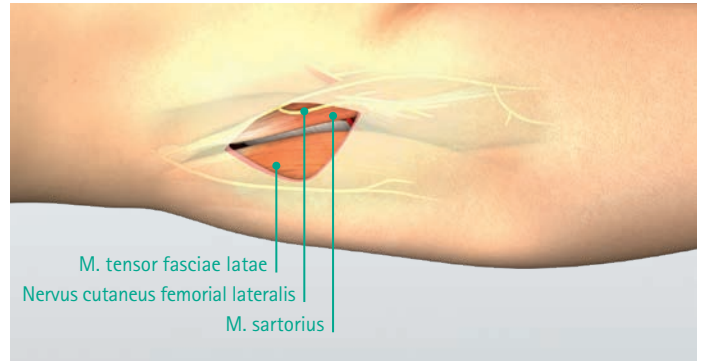
For the preparation of the femur there are surgical techniques with and without a special extension device. In both cases a dedicated management of the leg is decisive during the femoral preparation.

In the following the surgical procedure without extension device is described. Therefore the sterile draping should enable a movement of both legs and the surgical table its lowering.

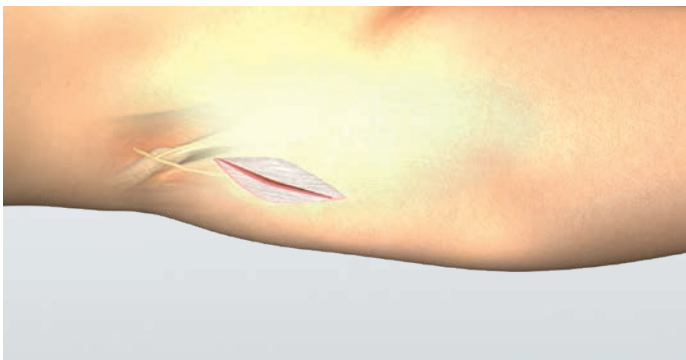




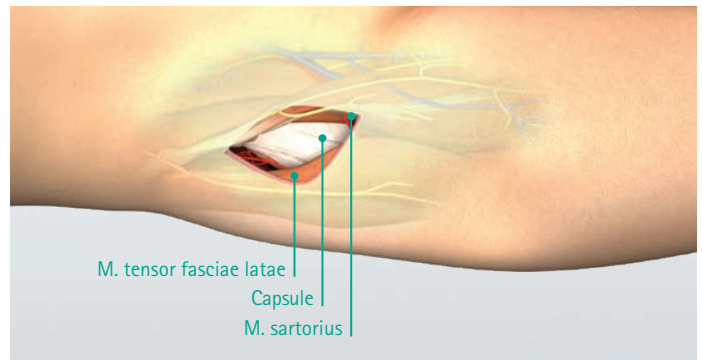
Skin incision



Direct anterior muscle space



Fascia lata split



Capsule exposure

The direct anterior approach uses the intermuscular space between tensor fasciae latae and sartorius muscle.

The incision of the skin is located two fingers lateral and distal of the anterior superior iliac crest and follows distally the fibers of tensor fasciae latae muscle.

The skin incision must not be too far medially, to preserve the branches of the lateral femoral cutaneous nerve.

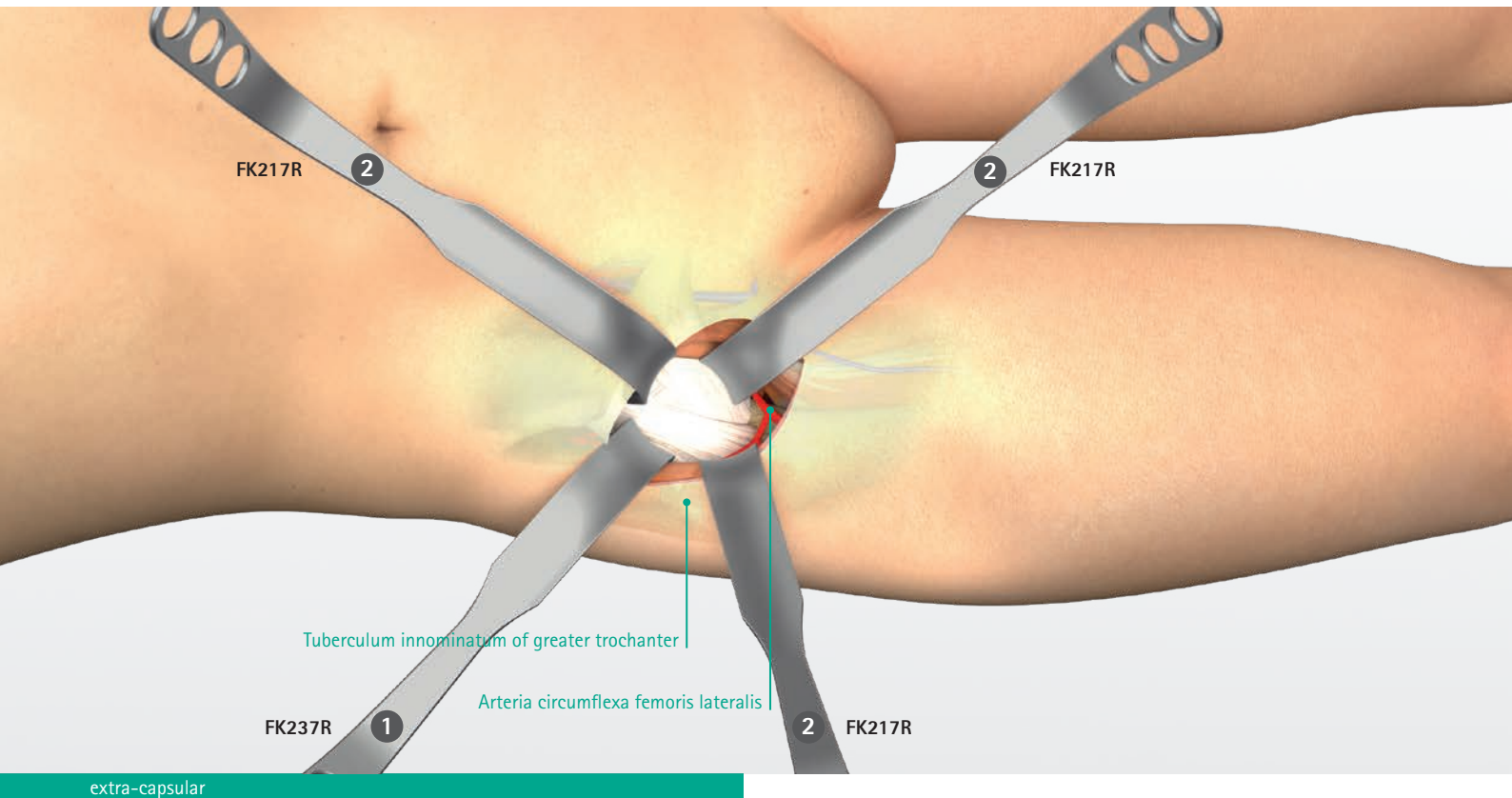
The fascia of tensor fasciae latae muscle is incised lateral from the intermuscular space, again to protect the branches of the lateral femoral cutaneous nerve.

The intermuscular space between tensor fasciae latae and sartorius muscle is now visible. The surgeon can perform its blunt preparation.

After the exposure of the intermuscular space the joint capsule is detectable.

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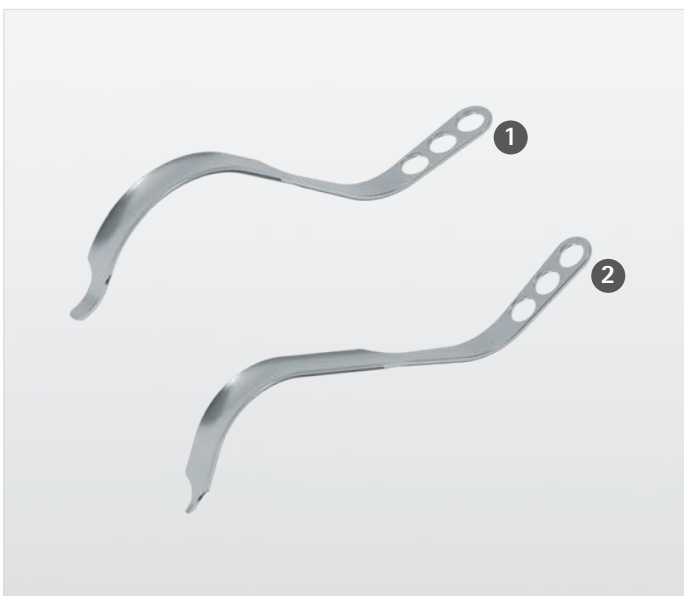
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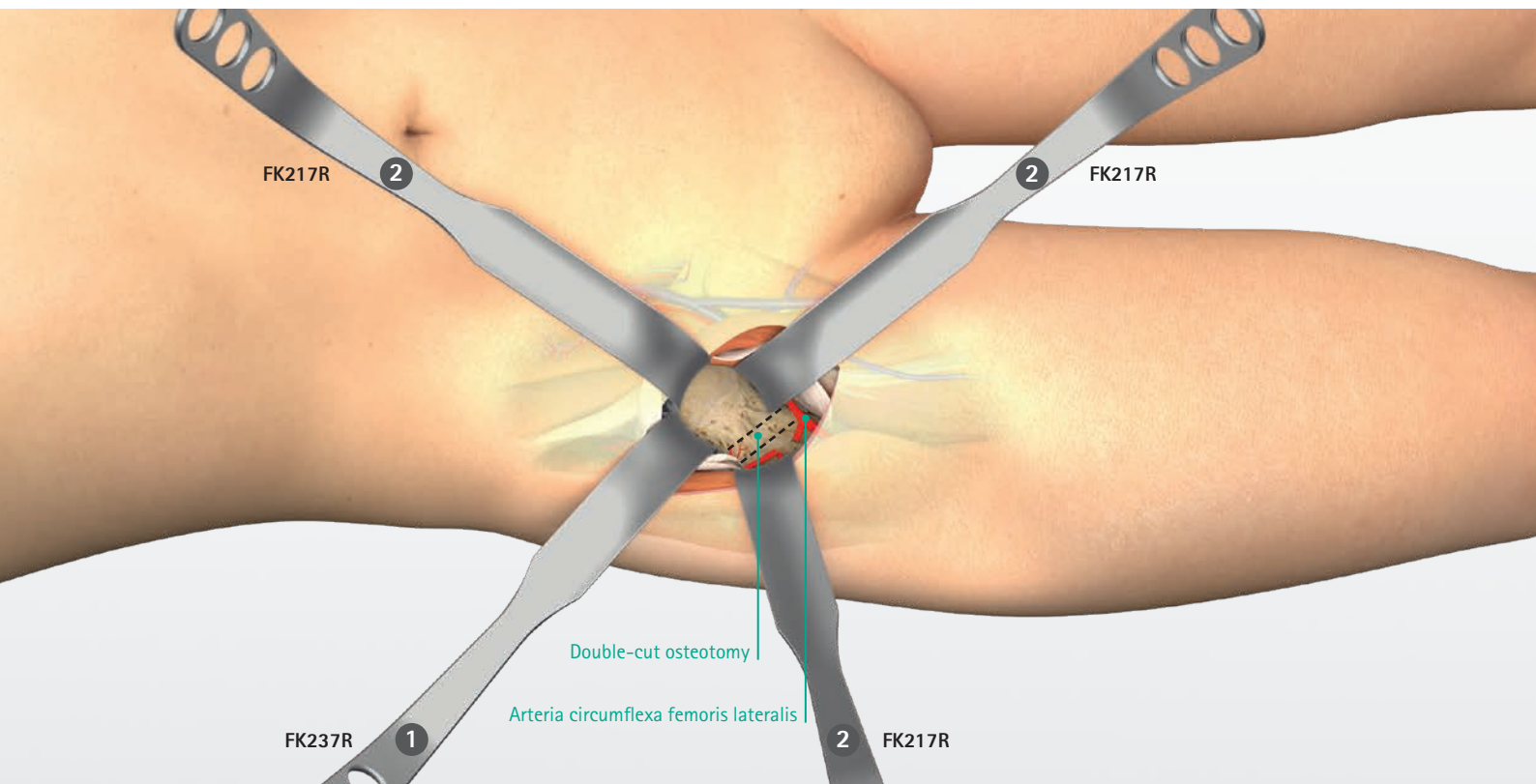


EXPOSURE OF THE CAPSULE

The surgeon places the extra-capsular retractors lateral of the femoral neck (1 FK237R) and on the innominate tubercle of the greater trochanter (2 FK217R). For the intraoperative application the retractors are coded by numbers. The blunt femoral neck retractor (1 FK237R) protects the tip of the greater trochanter during the osteotomy and retracts together with a sharp retractor (2 FK217R) tensor fasciae latae muscle out of the surgical field.

The lateral circumflex vessel can now be identified over the anterior aspect of the capsule, which is cauterized or ligated.





FEMORAL NECK OSTEOTOMY

After the positioning of two more retractors medially on the femoral neck (2 FK217R) and on the anterior rim of the acetabulum (2 FK217R) the capsule is resected.

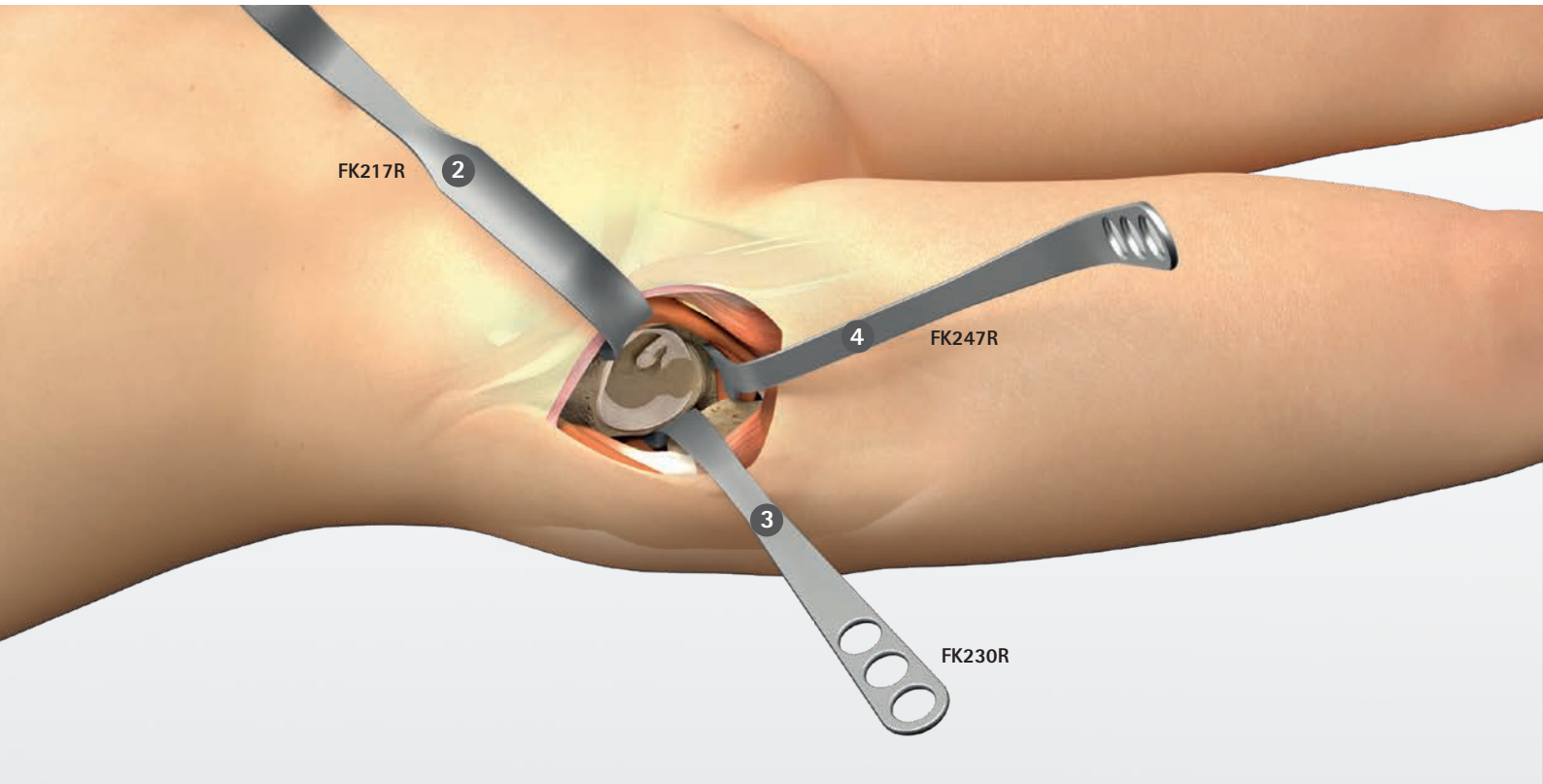
Depending on the surgical technique the surgeon could also incise and preserve the capsule.

Before the osteotomy of the femoral neck the surgeon positions the retractors inside the capsule.

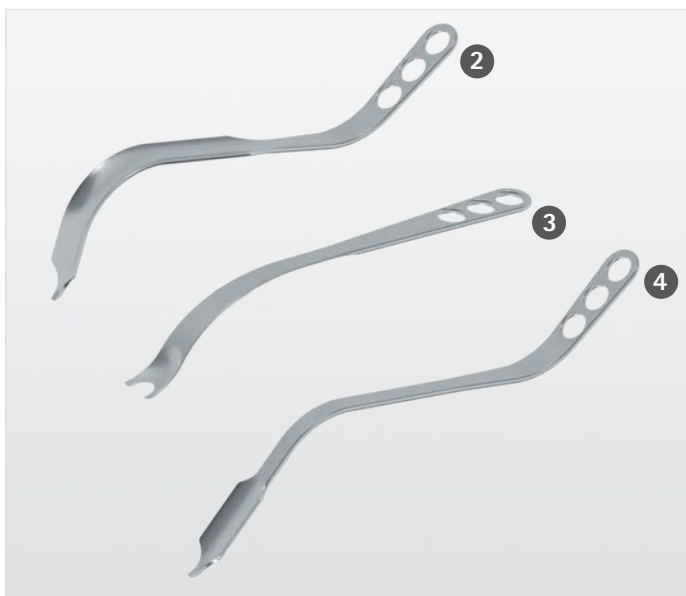
In most cases a double-cut osteotomy is helpful. The removal of a ring of the femoral neck facilitates the extraction of the femoral head.

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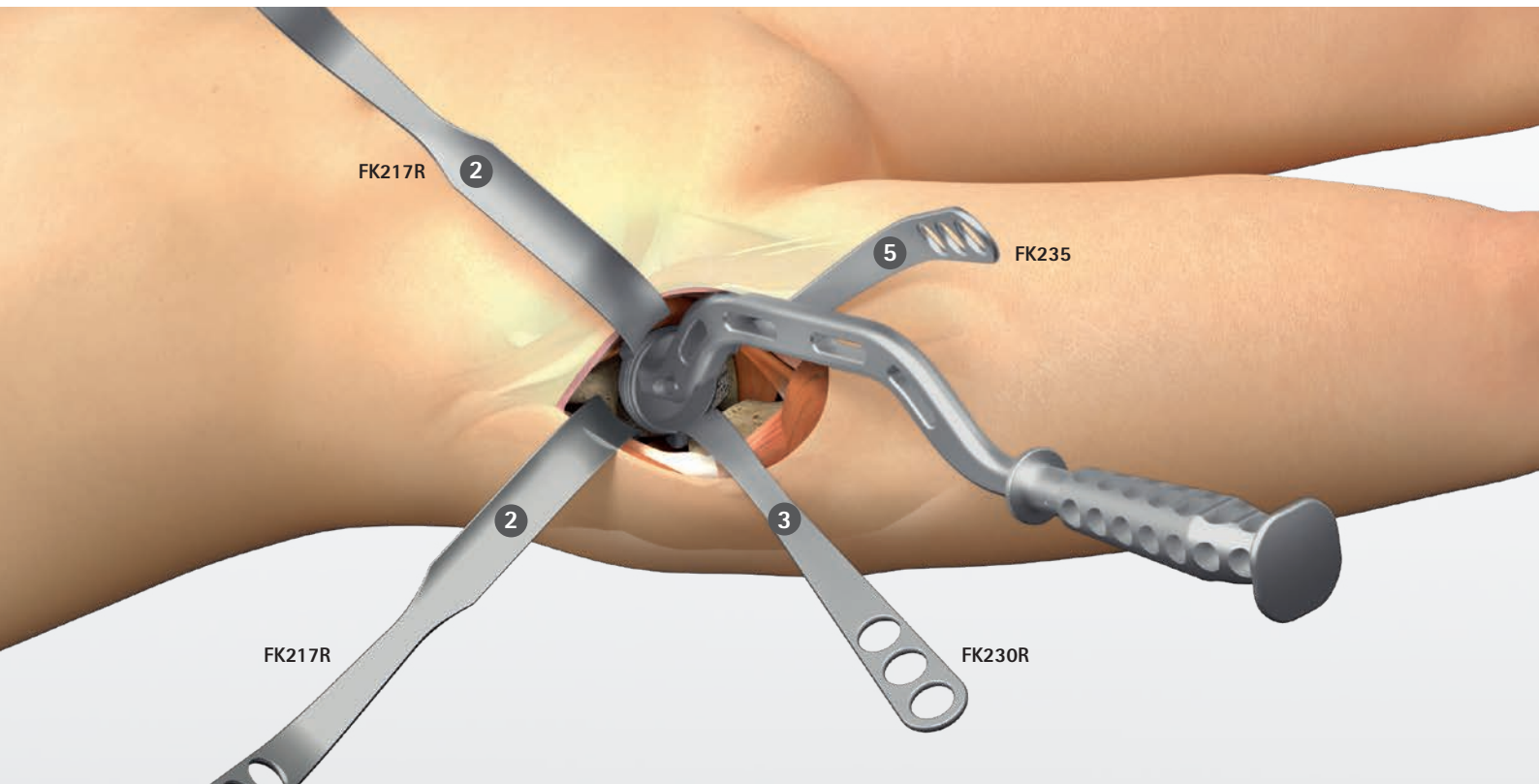
EXPOSURE OF THE ACETABULUM



The retractor on the anterior acetabular rim (2 FK217R) remains in this position. After the resection of the labrum the surgeon might slightly adapt it. A double tip retractor (3 FK230R) on the posterior acetabular rim pushes the proximal part of the femur downwards.

An angled retractor (4 FK247R, alternatively 5 FK235R) holds the structures on the medial acetabular rim out of the surgical field.

A fourth retractor laterally on the acetabular rim increases the visibility (e. g. 2 FK217R) additionally.

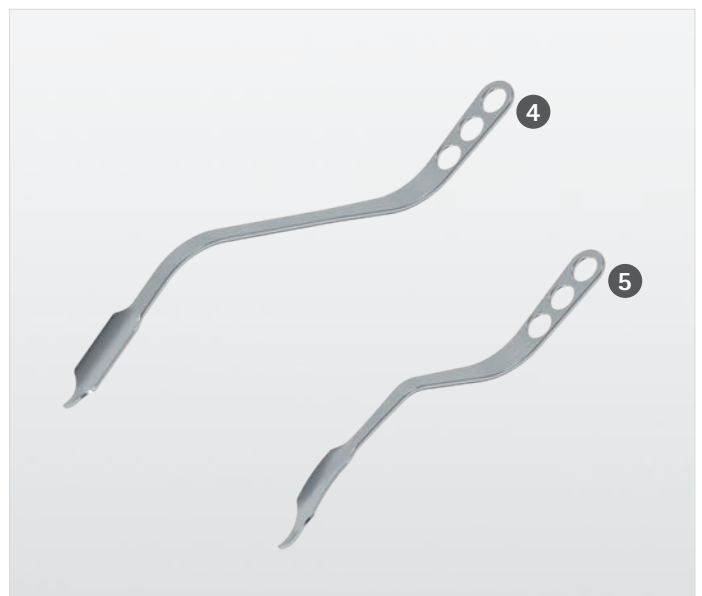


During the reaming of the acetabulum it might be helpful to use a reamer shank with open coupling.

The surgeon can now insert the reamer head first and connect it to the shank in situ.

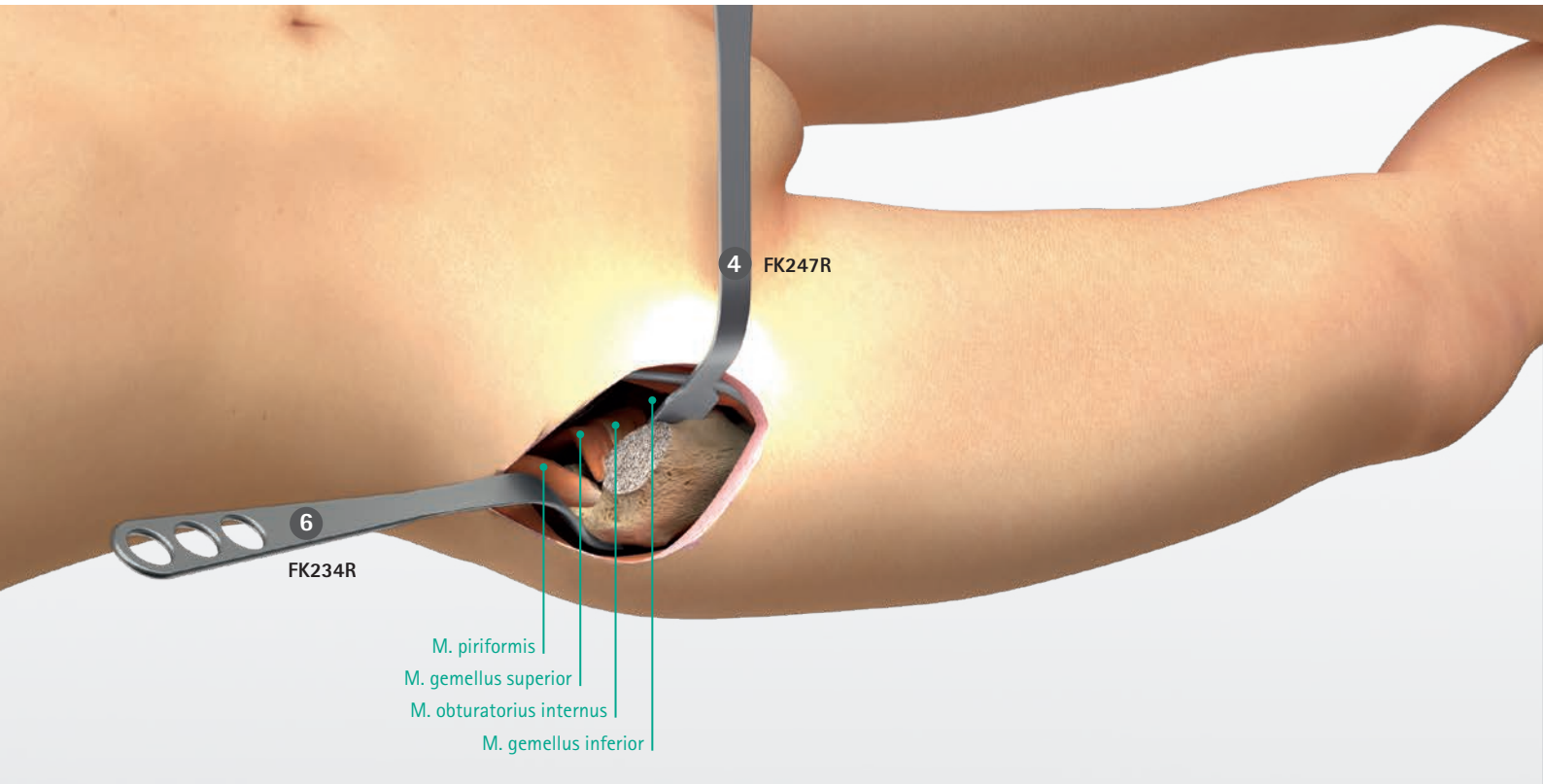
A curved insertion instrument facilitates the positioning of the cup implant.

Some surgical techniques use a self-retaining retractor system, which replaces the retractors on the anterior and posterior acetabular rim. The retractor on the medial rim (5 FK235R or 4 FK247R) remains unchanged.



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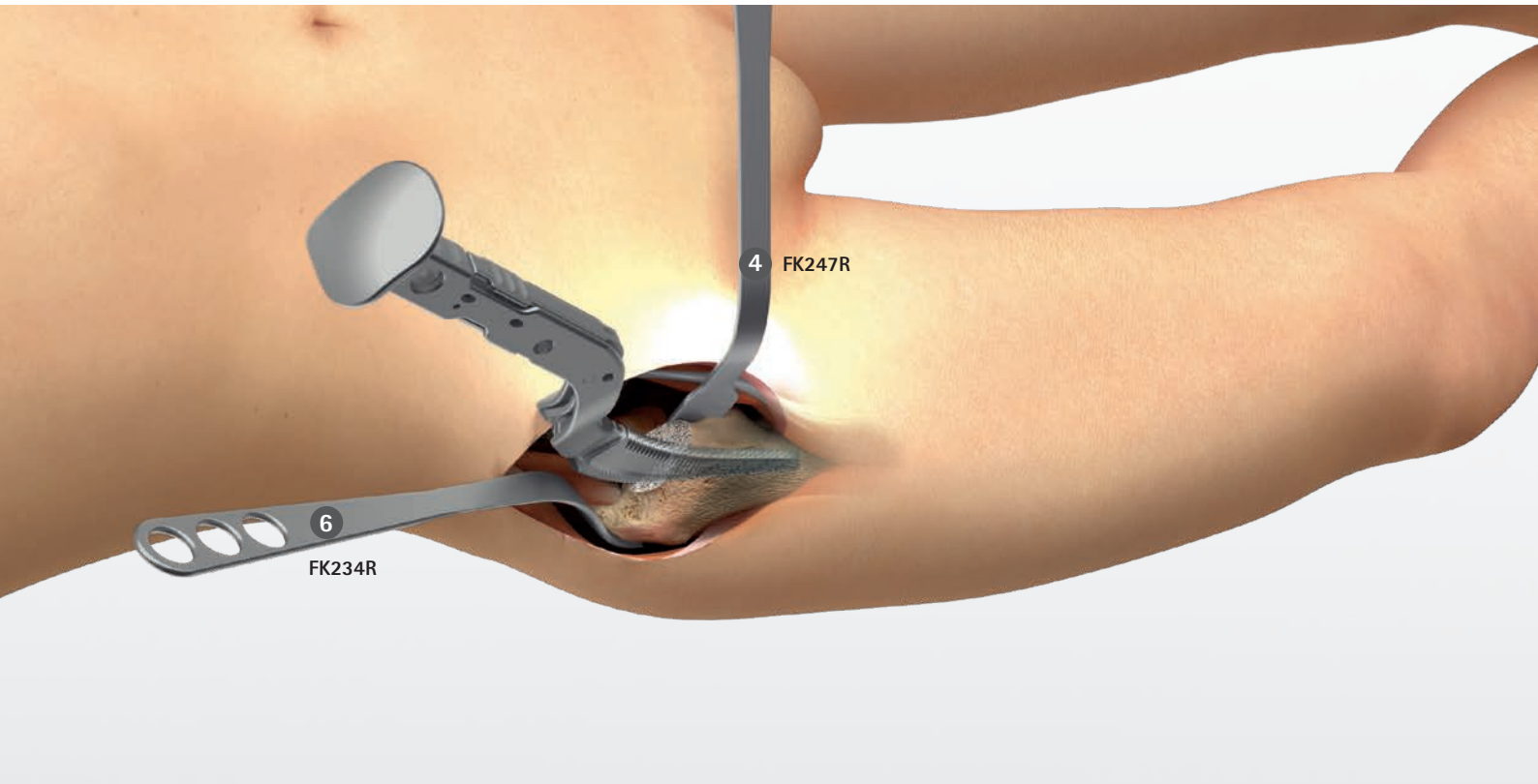
EXPOSURE OF THE FEMUR



For the exposure and preparation of the femur the legs are lowered by 30-40°. Thus a hyperextension of the hip is realized. The surgeon adducts the operated leg and transfers it in external rotation. The leg is afterwards placed slightly under the contralateral side.

Now the surgeon checks the mobilization of the femur with the help of a blunt bone hook, which is lifted in lateral and ventral direction. To achieve a sufficient mobilization of the femur, the surgeon releases the posterior parts of the joint capsule. The muscle attachments of the external rotators are preserved.

In very rare cases a tenotomy of the piriformis muscle might be necessary.

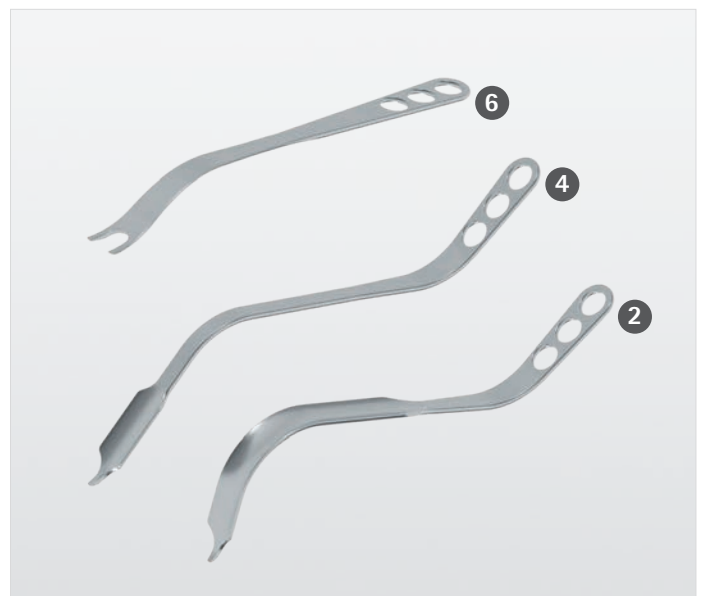


After a sufficient mobilization of the femur the surgeon places a flat retractor with U-tip (6 FK234R) under the greater trochanter, which is held by the assistant without any force.

This retractor protects tensor fasciae latae muscle during femur preparation with the rasp. A sharp retractor (4 FK247R or 2 FK217R) medial enables an adequate exposure of the femur.

Rasp handles with an offset for the left and the right side are useful during this surgical step.













An extension device could support the leg management during the exposure and preparation of the femur.



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INSTRUMENT OVERVIEW

Soft tissue management

Code	Tip	Geometry	Art. no.	Description	Application
1			FK237R	MIOS®-90 plus Standard	Femoral neck exposure/ Osteotomy protection
2			FK217R	MIOS®-90 plus Standard Sharp	Acetabular rim anterior/ lateral Greater trochanter
3			FK230R	MIOS®-60 Standard U-sharp	Acetabular rim posterior
4			FK247R	MIOS®-60 plus Standard Sharp	Acetabular rim medial/ Femoral preparation
5			FK235R	MIOS®-45 plus Narrow Sharp	Acetabular rim medial
6			FK234R	MIOS®-30 Standard U-flat	Femoral elevation

Acetabular preparation

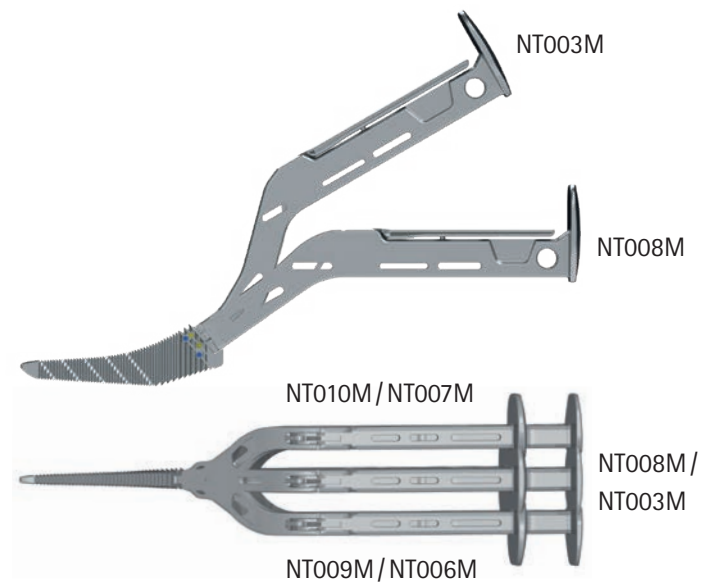


Angled reamer shank	Art. no.
Reamer shank ZIMMER	NF935R
Reamer shank HARRIS	NF936R
Reamer shank AO	NF937R

Angled cup impactor	Art. no.
Cup insertion instrument Curved 442 mm	NT411R
Screw driver SW 4.5	NT412R

Femoral preparation

Angled rasp handles	Art. no.
Parallel to shaft axis	
Straight	NT008M
Offset left	NT009M
Offset right	NT010M
Directing to shaft tip	
Straight	NT003M
Offset left	NT006M
Offset right	NT007M



AESCULAP® – a B. Braun brand

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