implantcast

Patient information

Your new hip joint

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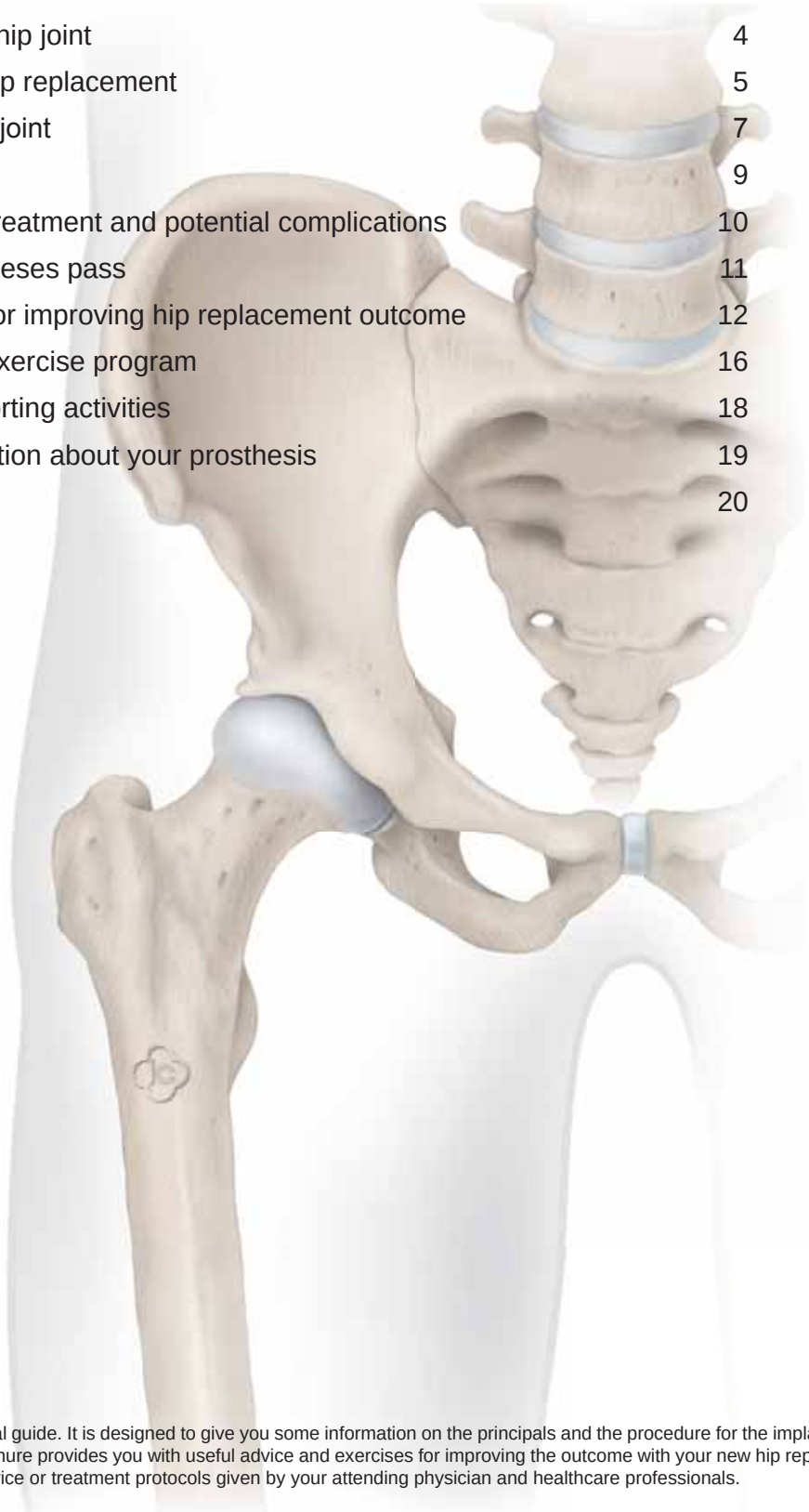
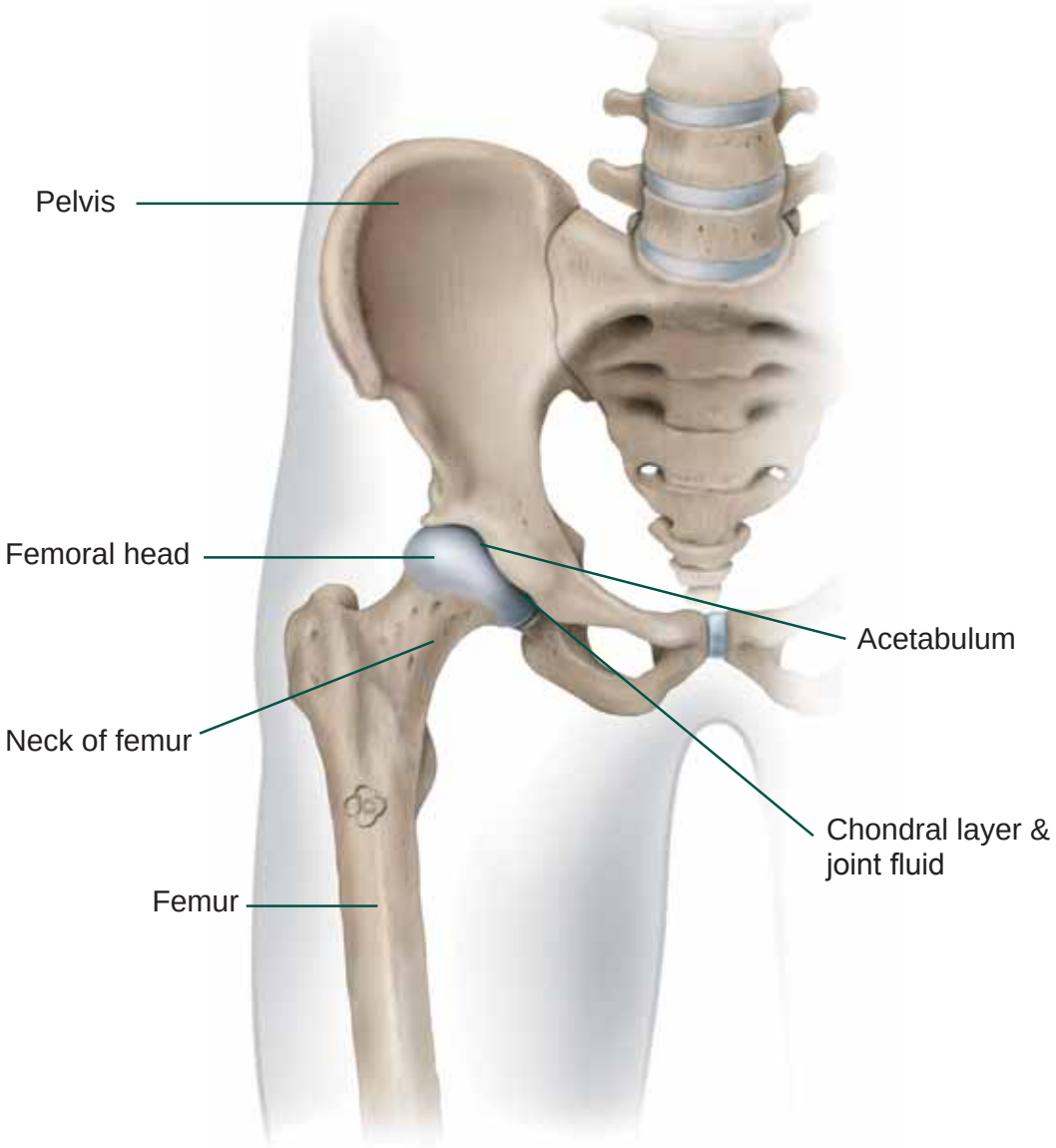


This brochure is a general guide. It is designed to give you some information on the principals and the procedure for the implantation of a hip prosthesis. Additionally this brochure provides you with useful advice and exercises for improving the outcome with your new hip replacement. This brochure is not a substitute for advice or treatment protocols given by your attending physician and healthcare professionals.

Structure of the hip joint

The natural hip joint consists of the acetabulum of the pelvis and the spherical femoral head as a part of the femur. In a healthy condition, both joint components are covered with a cartilaginous tissue. The articulated connection is sealed by a joint capsule which produces a nutrient fluid. This fluid acts as a lubricant and provides smooth motion in daily activity. As a ball-and-socket joint, the hip joint allows different movements like rotating, stretching, bending and walking. The hip joint itself relies upon powerful muscles and strong ligaments to improve its stability.



Reasons for the hip replacement

The reasons for a hip replacement are wide ranging.

There are approximately 200.000 total hip replacements yearly in Germany, making the total hip replacement one of the most common orthopaedic procedures performed, so that nowadays it is regarded as a standard orthopaedic procedure throughout the world.

Osteoathritis is by far the most common cause for artificial hip joint replacement. The gradual wearing of the cartilage in the joint, due to an imbalance between pressure and carrying capacity of the hip joint, leads to a limitation of mobility. Pain during walking and in resting position are the consequences. A genetic pre-existing condition, an injury which has not fully healed or a joint malposition can be reasons for arthrosis.

Femoral head necrosis constitutes a change of the metabolic situation. As a consequence, parts of the bony femoral head die due to a lack of blood circulation. The causes for femoral head necrosis are not known in the most cases.

The hip dysplasia describes a congenital joint misalignment which is characterized by a deficient formation of the hip joint, that does not allow the femoral head to glide around in the acetabulum. As a result the femoral head is not positioned centrally. This leads, often also in younger ages, to abrasion of the cartilage layer.

Femoral neck fractures are typical injuries in the elderly, favoured by age-related bone loss (osteoporosis). The fracture can already be caused by small falls or by accidents. Certain fracture forms require either a partial or a complete replacement of the hip joint.

Reasons for the hip replacement

Hip osteoarthritis and femoral head necrosis

The joint space between femoral head and acetabulum is significantly reduced, or can even be non existent. Athrosis is caused by an imbalance between load and load capacity of the hip joint. As a consequence the cartilage tissue is destroyed increasingly over time.

Hip dysplasia

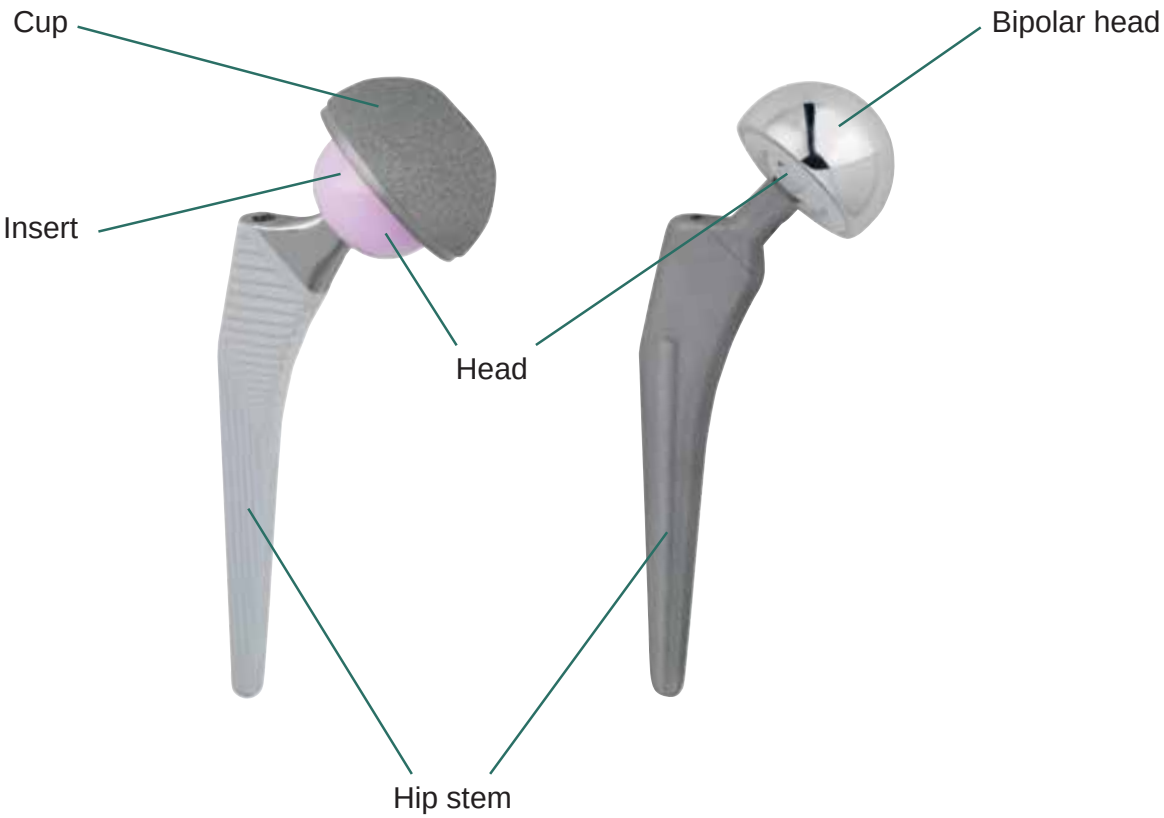
This is a congenital malformation of the acetabulum. The cartilaginous and soft femoral head does not engage correctly in the hip socket which leads to an unstable hip joint.

Fracture of the neck of the femur

This is a fracture of the femoral neck near the hip joint. A particularly common injury to women due to osteoporosis. The fracture is often caused by falls.

The artificial hip joint

Since the worn articular cartilage cannot be restored, a hip joint destroyed by arthrosis is usually completely replaced. The aim of the artificial hip joint is to restore the mobility and the ability to walk as well as remove the joint pain. An acetabular cup which is pressed, screwed or cemented into the pelvis, a hip stem which is fixed into the thigh bone through a cemented or non cemented option, and a femoral head which is attached to the hip stem so that it articulates with the acetabular cup - thus, the hip joint is artificially recreated. In case of a femoral neck fracture, the bipolar head can be chosen as an alternative to the combination of cup and insert. The bipolar head is mounted on the femoral head and moves in the natural acetabular cup.
The choice of the endoprosthesis depends on the underlying bone quality, the age, the body weight and the physical activity of the patient. Modern implant materials like ceramics, metals and synthetics are used.



The artificial hip joint

Short stem prosthesis

Cementless short stem prosthesis as a bone-saving and thigh neck sustaining procedure is a gentle alternative to conventional total hip prosthesis for young and active patients with good bone quality.

Cemented total hip prosthesis

The joint socket and the joint head will be replaced. The implant components will be fixed with bone cement. Frequently used for elderly people with decreased bone strength.

Cementless total hip prosthesis

Anchoring of the implant components without bone cement. The cup is pressed into the bone. The fixation of the hip stem occurs in the thigh bone by clamping.

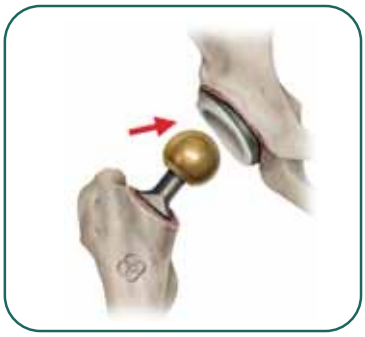
The surgery

The assessment of the extent of the hip osteoarthritis and the surgical planning are made by standardized and digitized radiography. The digitized planning of the implant components is supported by a planning software.
The procedure itself is completly painless, carried out either under general anesthesia or a spinal anesthetic, and takes about 50-120 minutes. The procedure is realized in the operating theatre where the joint is initially exposed. The exposition can be accomplished by different surgical accesses, including a minimally invasive approach. The joint capsule and the destroyed femoral head are removed. Then, a metal acetabular cup or polyethylene acetabular cup is applied. The metal cup is provided with an insert of ceramic or plastic. To anchor the hip stem, the femur needs to be reamed. The hip stem is inserted and anchored either cementlessly or by cementing the stem in the created cavity in the femur. Subsequently, a metal- or ceramic head is mounted on the stem, and the stability and flexibility of the new joint is checked. After that, the soft tissues will be closed.

The diseased femoral head is removed from the femur.

Placing the artificial cup socket.

Placing the artificial hip stem.



Finally, the femoral head is fixed on the hip stem and the functionality of the joint is checked. Leg length inequality can be balanced with different neck lengths of the femoral head.

Post-operative treatment

The mobilization already starts on the first day after surgery. The risk of complications is significantly reduced by early mobilization. A cemented hip prosthesis allows for full load immediately post-op while the permitted load of cementless arthroplasty is based on occuring symptoms. The range of movement is limited during the first weeks after hip replacement, for example, certain rotational movements, as well as crossing your legs must be avoided. Intensive physiotherapy promotes muscle building and fast recovery to unaided walking. The rehabilitation program, which is agreed between the doctor and the physiotherapist, is of great importance for the successful outcome and the fast recovery of the patient. The patient's cooperation helps to achieve this goal quickly.

Potential complications

In addition to general surgical risks, such as intra-operative bleeding, secondary hemorrhage and infection, there are also specific complications which can occur during and after surgery. Even with careful surgical technique, damage to major nerves and blood vessels can occur. During or after surgery a fracture of the bone, in which the prosthesis is located, is possible. There may be a dislocation of the artificial joint, or the endoprosthesis becomes loose and changes the leg length. Furthermore potential ossifications in the muscles can cause restrictions of mobility or pain.
As a result of the surgery, there is an increased risk of thrombosis. This risk can be circumvented by an early start of mobilization and physiotherapy, as well as the regulation of blood-thinning medications.

Your endoprostheses pass

After the implantation of an artificial joint, you will receive a patient / endoprostheses pass which will include the following information:

- Personal data
- Type and model of the endoprosthesis used
- Technical data of the implant
- Information which hip was operated
- Date of the surgery
- Information on follow-up and follow-up appointments

Note: Please carry your endoprotheses pass with you at all times. It can be useful in emergency cases.

Tips and tricks for improving hip replacement outcome

The long-term success of a joint replacement is influenced by the treatment and behavior after surgery. After having learnt new patterns of going about things during recuperation, everyday living will have to be faced. This will include all of those occurring situations and strains.

Your new cementless hip arthroplasty takes 7 months to fully integrate into the body. The bone grows on the implant surface, or rather rebuilding-processes in the bone take place.
In this period the prosthesis should not be subjected to heavy loads.

Below are some recommendations for improving the outcome of your surgery, which would be especially important to adhere to in the first 6 months after surgery:

Are to be avoided:

- Abrupt and sudden or jerky movements
- Endurance sports, frequent and prolonged standing
- Crossing the legs
- Sitting in deep seating furniture such as sofas and lounge chairs
- Strong and disproportionate weight gain
- Lifting heavy loads

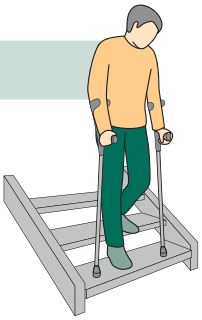
Recommendations for ease of every day functionality:

- Good, flat and non-slip footwear
- Footwear with Velcro or elastic laces
- Seat cushion as an increasing support

Walking with crutches

Lean forward with slightly bent elbows on the handles of the crutches. Carry the weight on the hands and not via the forearms.

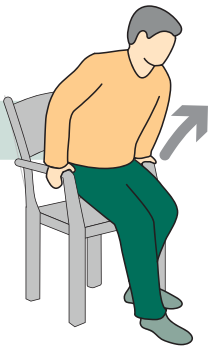
Descent of stairs with crutches



During descending stairs, please turn the healthy leg towards the railing and place the crutches on the next lower step. Then, the affected leg is brought to this level. With the help of the railing and the crutches, the healthy leg is also placed on the step.

Ascent of stairs with crutches

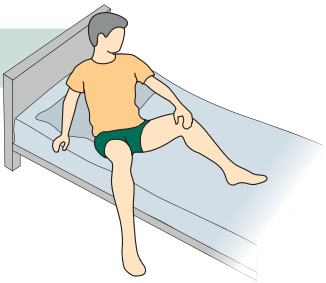
You should always go up the stairs with the affected side closest to the railing. Take the second crutch in the other hand and carry it parallel to the ground. Start the climb with the healthy leg, put the crutch on the same step and pull up the affected leg. Repeat this process step by step.



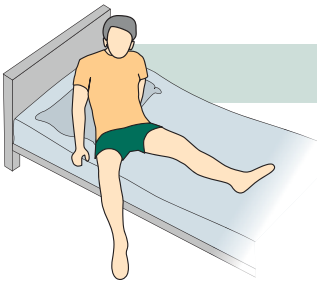
Sitting and standing

It is recommended to use a chair with arm rests, which supports sitting down and getting up. It is important to ensure that while sitting the knee joints will not be higher than the hip joint. Crossing your legs should be avoided while sitting.

Going to bed



To do this, first raise the healthy and then the operated leg into the bed. Stay straight, but lean a little back. For side sleepers it is recommended to use a pillow which is placed between the legs in order to prevent crossing the legs while sleeping. The ideal sleeping position would be lying on the back with your legs slighlty opened.



Getting up from bed

Bring your buttocks towards the edge of the bed. First lift the healthy, then the operated leg on the floor. A bed height of 70cm is the optimum. If your bed is to low, consider adding a second mattress in order to achieve a more optimal height.

Dressing

As a tool, consider using a dressing stick or especially for socks a stocking puller. While sitting you catch the waistband of the garment with the clamp of the stick and pull it first over the affected leg, then over the healthy leg. With the help of the crutches, you can stand up and pull the garment up completely.

Sexual intercourse

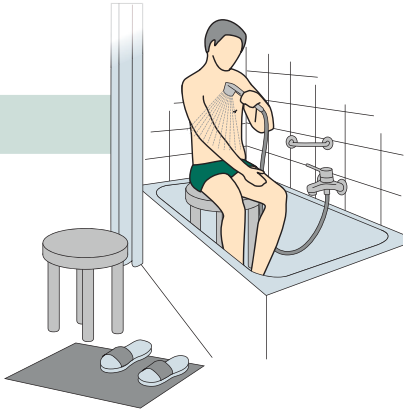
Sex is allowed after 6-12 weeks but only by utilizing limited movements initially. Hip extensions of more than 90° should be avoided.

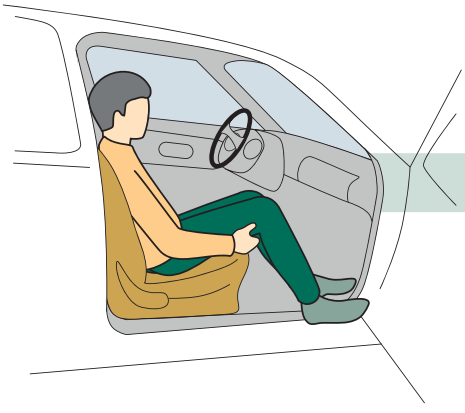
Showering

Utilise non-slip mats in front of and in the shower, in order to avoid slipping. Additionally, a standing solid stool and a grab handle are possible tools. You should enter the shower stall with the healthy leg first, followed by the operated leg.

Bathing

Again, the following tools are recommended: standing solid stool, grab handle and non-slip mats. First place the healthy leg in the bathtub. Then, lift the operated leg carefully over the edge. At the same time grab your thigh with your hands.





Entering a car

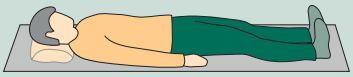
If both legs are fully loadable, it will be possible to drive a car. Extend the seat as far back as possible and sit down sidewards. Your legs are still outside the car. Then turn the entire body with the legs into the car. Use your hands to support your leg by lifting the thigh into your car.

Exercise program at home

The exercise program should be carried out at least up to the eighth week after the surgery, or better still longer. Perform the exercises 1-10 daily over a period of 30 minutes.

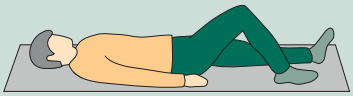
For questions or problems please contact your surgical team or your physiotherapist.

1. From a supine position stretch your hips and extend your arms next to your body. Tense your abdominal muscles, push the hollows of the knee to the base and pull the tips of your toes to your body. Hold for 5 seconds.



☐ times daily ☐ repetition

2. From the supine position raise the foot of the affected leg until the hip is about 90 ° of flexion. From week 2, you can try to bend the hip completely by moving the knees with your hands to your torso.



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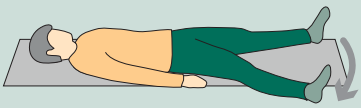
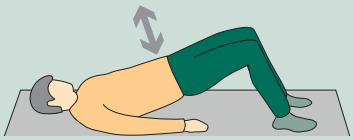
3. From the supine position, lift the leg with stretched knee about 10cm, maximally abducted and moving again without a break.



☐ times daily ☐ repetition

4. From the supine position bend both knees and slowly lift the hips up from the base.



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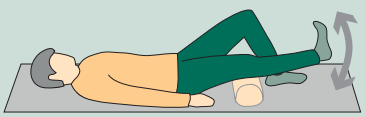
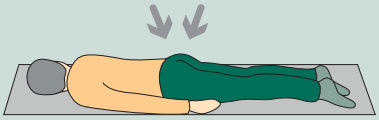
5. Lie down on the back with a roll under your knees. Lift the foot off the base by tightening the muscles. A weight around the ankle can increase the muscle training.



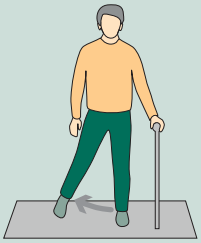
☐ times daily ☐ repetition

6. Lie on your stomach with your arms put next to your body and tensed gluteal muscles so that the spine bends into a hollow back.



☐ times daily ☐ repetition

7. Stand on the non-operated leg and grip a handle. Extend the operated leg to the side and put it slowly back in starting position. Please keep your body straight.

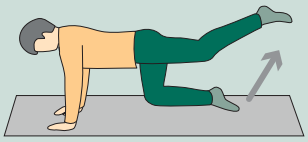


☐ times daily ☐ repetition

8. Place the operated leg on a flat stair. Shift your body weight slowly on the foot of the operated leg. Do not lift up the heel from stage during the exercise.

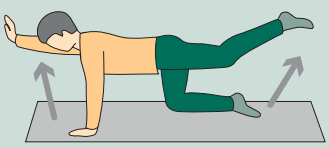
☐ times daily ☐ repetition

9. Get into an all-fours position. Supported on hands and knees, alternately lift the right and the left leg stretched and go back to the starting position.



☐ times daily ☐ repetition

10. Supported on hands and knees, lift the left arm and right leg stretched. Hold this position for approximately 5 seconds. After that, switch sides.



☐ times daily ☐ repetition

Returning to sporting activities

After the integration of the prosthetic components into the bone, a high stability is achieved. However, an artificial joint does not compare with a natural joint. So some adaption may be required, for example during sports.

Especially impacts as jumping from great heights, or loads that require sudden movements and fast returning cycles or a high range of motion should be avoided.

Suitable sports:

- Cycling
- Swimming
- Hiking
- Nordic walking
- Cross-country skiing
- Dancing

In consultation with your doctor the following sports can be operated:

- Golf
- Jogging
- Weight training

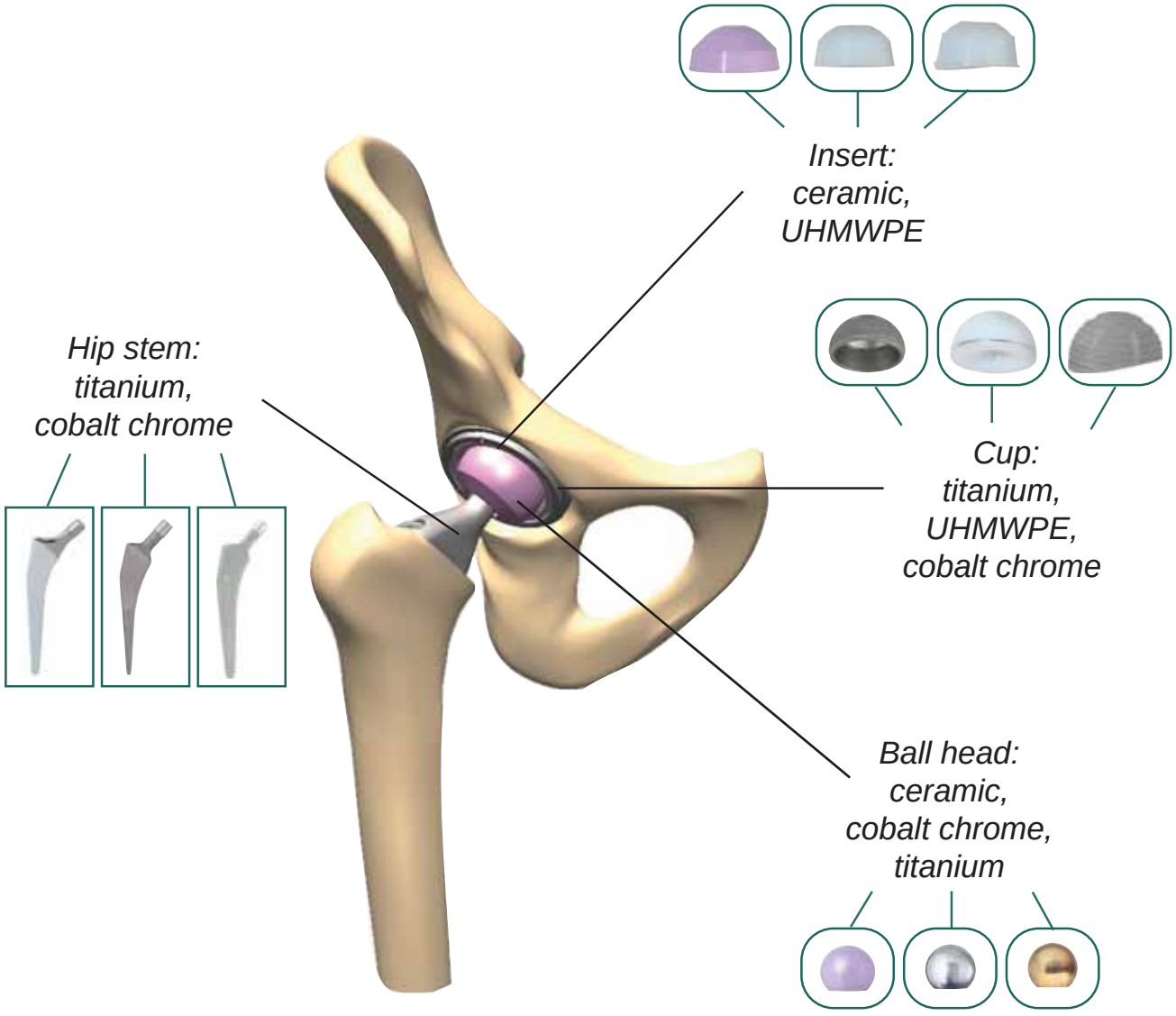
Less suitable sports:

- Ball game, e.g. Soccer
- Squash
- Horseback riding
- Tennis
- Alpine skiing

The points listed above do not correspond to any general recommendation and can vary from patient to patient. Your age, your athletic experience as well as your general physical condition affect the general situation. Please consult your attending physician directly with any questions.

General information about your prosthesis

The artificial hip joint consists of an artificial acetabulum, a hip stem, and a spherical head which is placed on the hip stem and moves in the cup. These components are made of various materials, all of which have to fulfill the highest standards. The various materials are briefly outlined below.



Demands on these materials:
- Highly resistant to corrosion
- Biocompatible
- High resistance to wear and friction
- Mechanical loading capacity

Notes / questions to the surgeon

Notes / questions to the surgeon

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