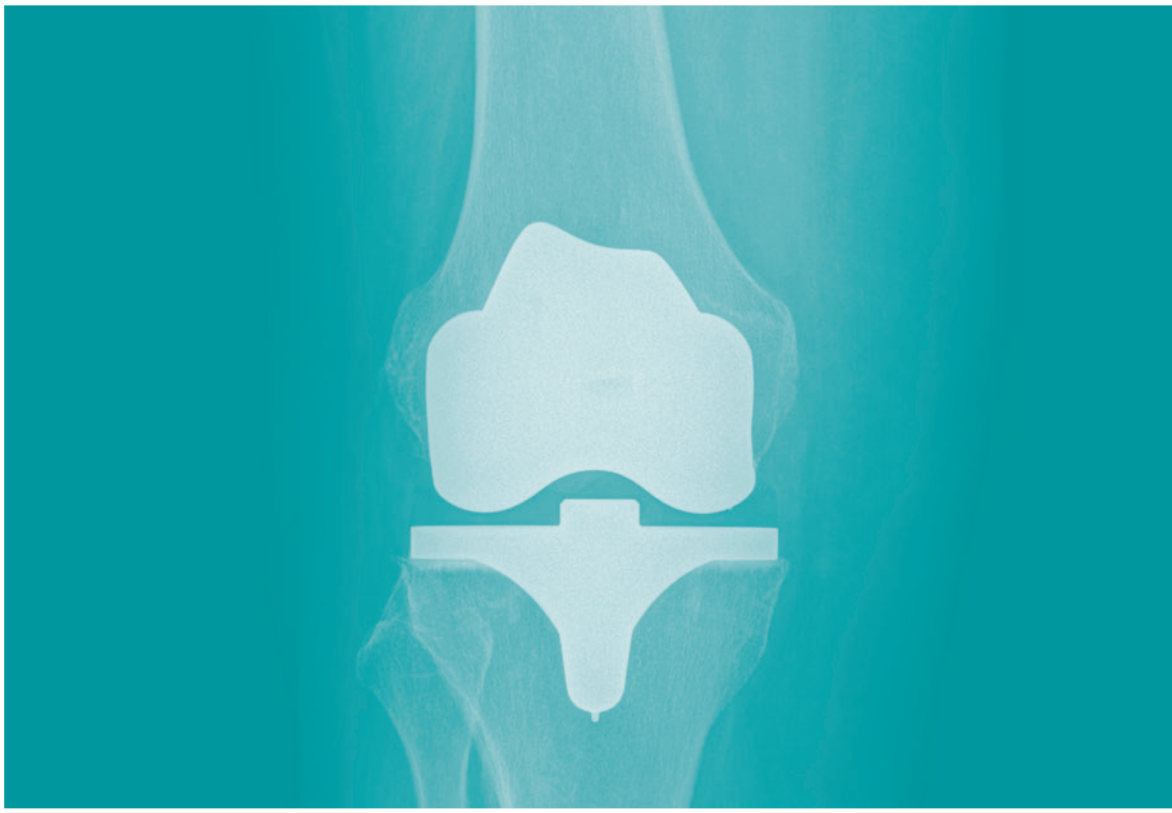
MATHYS
European Orthopaedics

The artificial Knee joint

Patient information brochure



www.my-artificial-joint.com

Editorial

Dear reader

We have written this brochure for patients, family members and all those who wish to know more about the replacement of a knee joint. It will answer basic questions, explain the principle of the implantation of an artificial knee joint as well as the procedure, and relieve you of any misgivings or fears you may have.
Please note that this information cannot replace a conversation with a specialist.

You are most likely reading this brochure because your attending physician has already diagnosed arthrosis of the knee in you or in someone close to you. We are sure that your doctor has prescribed other methods of treatment, such as drugs, physiotherapy or remedial gymnastics. And yet such treatment methods rarely have a long-term, lasting effect on advanced arthrosis.

Pain – especially chronic pain – can become a major problem, and may restrict both quality of life and mobility.
In advanced osteoarthritis of the knee joint, a knee joint endoprosthesis – i. e. an artificial knee joint – can provide relief. Patients can recover their lost mobility, freedom from pain and the resulting quality of life after such a surgery.

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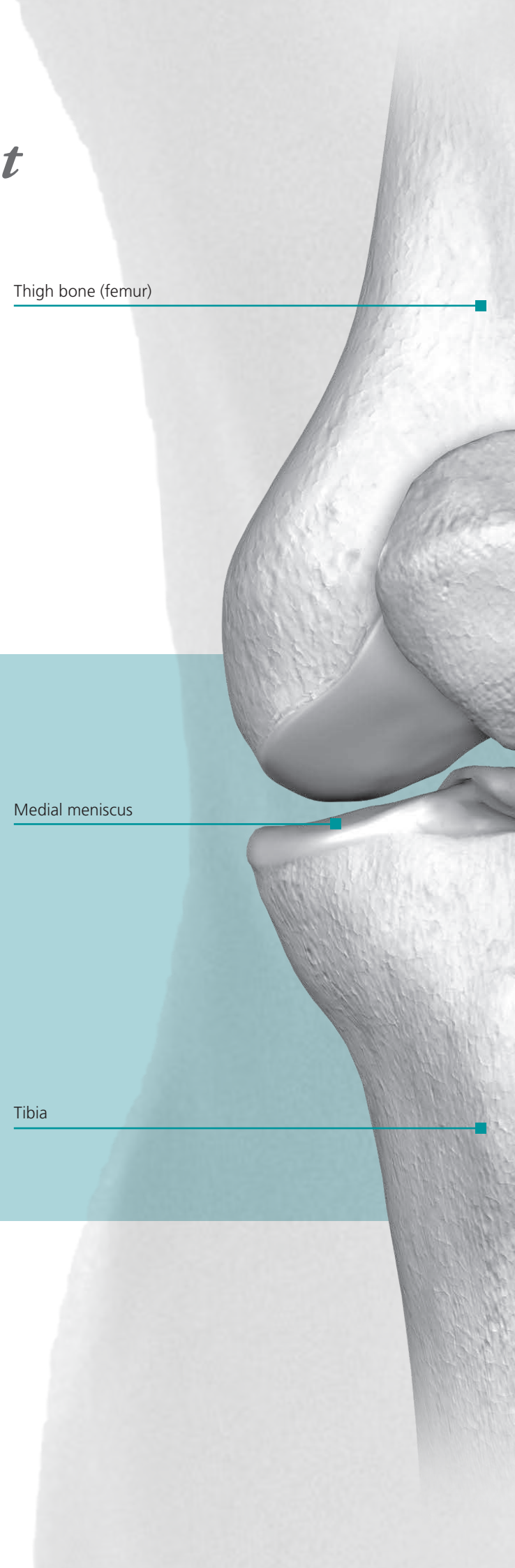
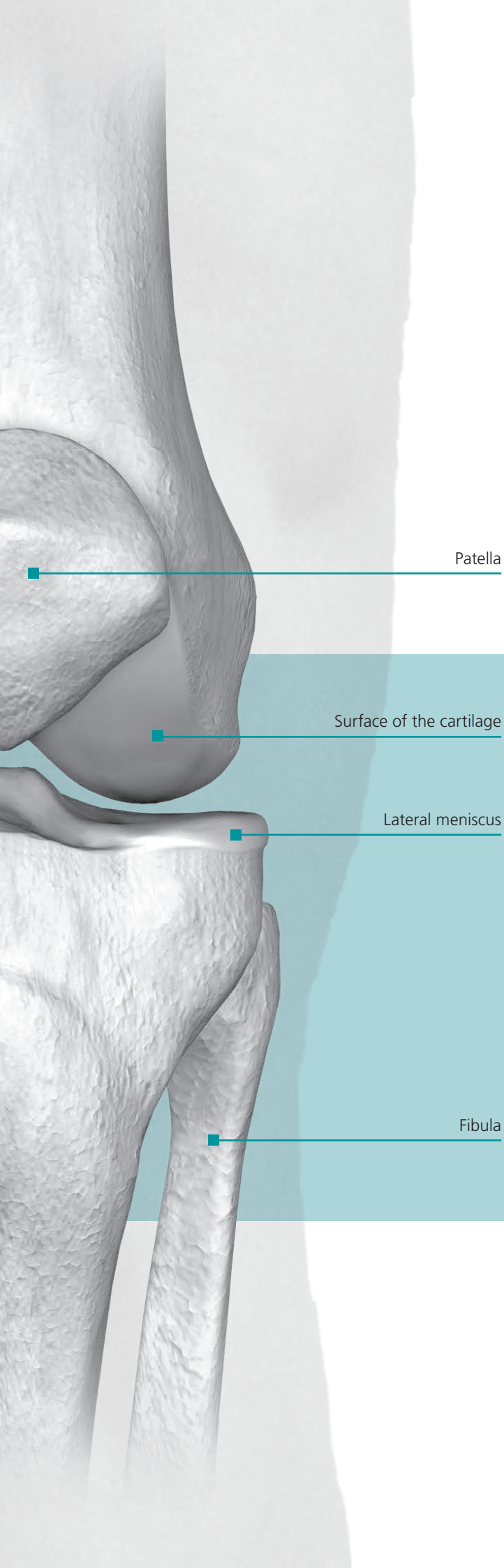
1. The knee joint

The knee joint is the largest joint in the human body and consists of three bones, the movements of which are guided exclusively by muscles, ligaments and tendons. Two crescent-shaped cartilaginous discs – also called menisci – are located between the femoral bone and the tibial bone on the inner and outer side of the knee joint. These discs distribute the load on the joint over a large area and act as a buffer or shock-absorber system. Their structure is clearly different from that of the articular cartilage. The latter is a 1 – 2 mm layer that covers the entire bone surface within the joint. An elastic and aqueous tissue, the articular cartilage permits a low-friction gliding motion sequence.



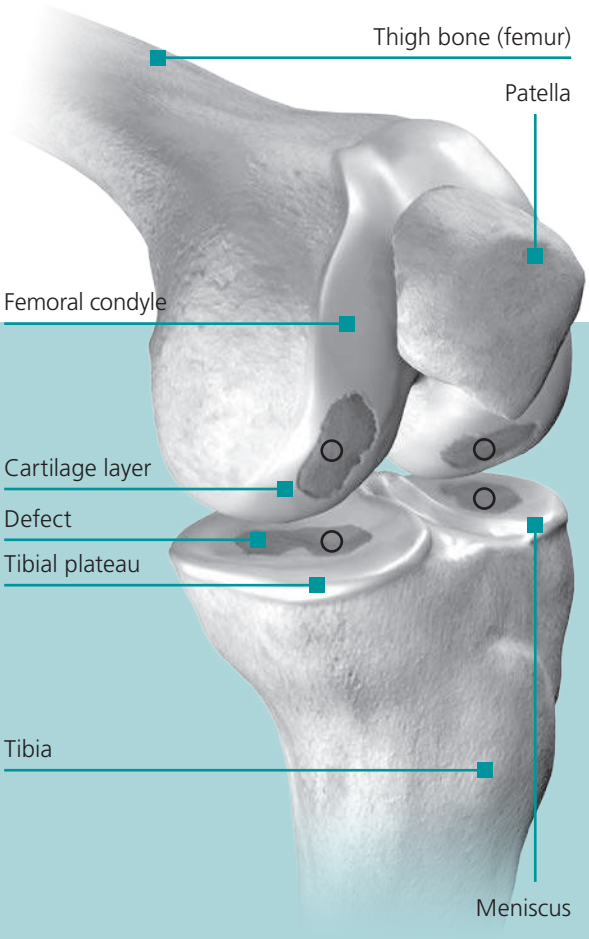


Injury or damage to these structures is often irreparable and can over the medium to long term lead to articular wear – better known as arthrosis.

The knee joint is subdivided into three components:

- The internal surface of the femur and the internal surface of the tibia with the internal meniscus.
- The external surface of the femur and the external surface of the tibia with the external meniscus.
- The glide bearing of the patella at the femur and the rear of the patella.

2. What is arthrosis?



The attrition (○) of the menisci and of the articular cartilage is a natural symptom of old age and may involve articular wear. Unlike other types of tissue in the human body (such as the skin), articular cartilage is unable to heal or repair itself, and thus injured or worn articular cartilage is lost forever. This loss of the surface layer of the joint quickly leads to painful functional impairment.

The insidious arthrotic process often takes place over several years. The mortification of individual chondrocytes results in grooves and fissures. As a consequence, the cartilage gets rougher and increasingly frayed under normal loading. Small cartilaginous debris can come off, which irritates the synovial membrane and causes joint inflammations as well as a joint effusion. Mobility worsens steadily and the person concerned suffers from ever more severe pain.

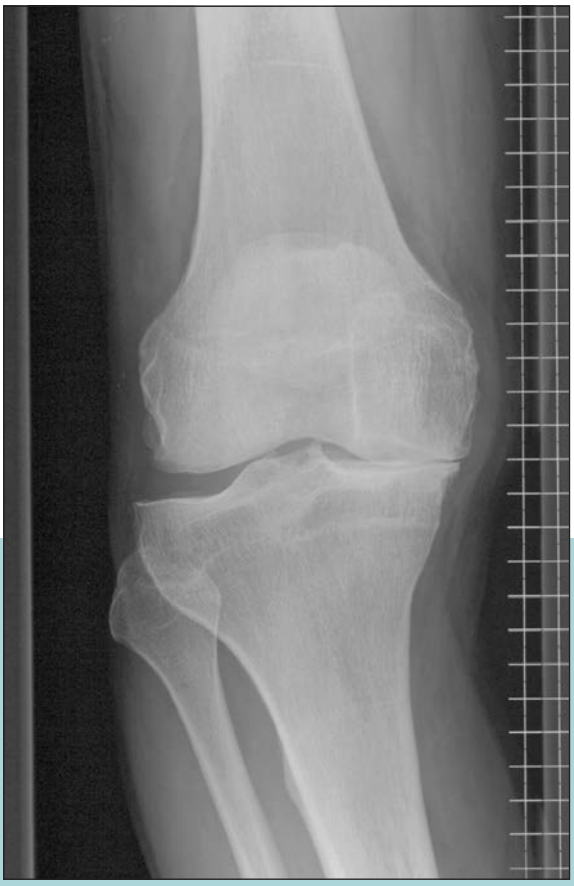
In addition, the joint can build osteophytes as well as new bone. By increasing the bearing surface of the joint the body tries to prevent additional damage of the cartilage, a process that is, however, not effective.

Pain is the main symptom of arthrosis. It occurs either as so-called «starting pains» or, later, as loading pains. The pain frequently causes the sufferer to relieve the joint. This in turn causes the condition of the cartilage, which needs movement for its nutrition, to deteriorate.

A common form of osteoarthritis is so-called primary osteoarthritis (joint wear of unknown cause). This is currently considered a typical symptom of old age. The disease develops slowly over the course of years. The cartilage is already irremediably damaged as soon as pain and restricted movements occur.

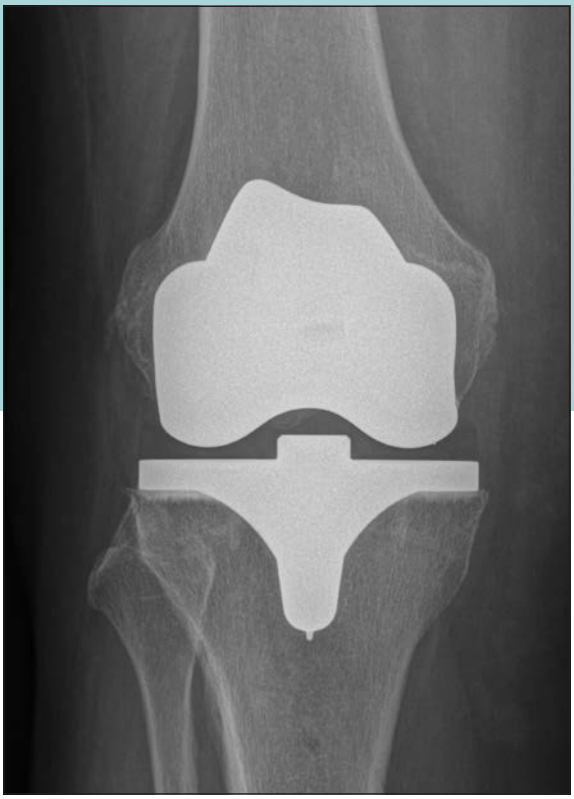
Chronic polyarthritis (articular rheumatism), which frequently involves several joints, can cause the same problems, but with different causes. In a defensive reaction, the body develops substances that swell the synovial membrane and cause a chronic inflammation of the joint with a progressive destruction process.

3. How does arthrosis occur?



The complex process of the formation of arthrosis has yet to be clarified. Orthopaedists and surgeons are able to treat the symptoms, but aetiological healing is not yet possible.

It is known that factors such as overweight or inappropriate straining of a joint, due for instance to a congenital malposition or frequent bearing of heavy loads, favour the formation of arthrosis. People who constantly and excessively overstrain their joints (such as competitive athletes), or those who suffer from injuries involving damages to the joint, are especially at risk.



Especially in the knee, the shape and the axes of the bones must be well coordinated. A dysfunction in this system, in the musculature or in the ligamentous apparatus will foster the formation of arthrosis. In principle, any disease of the articular cartilage, the synovial membrane or the synovial fluid can lead to arthrosis.

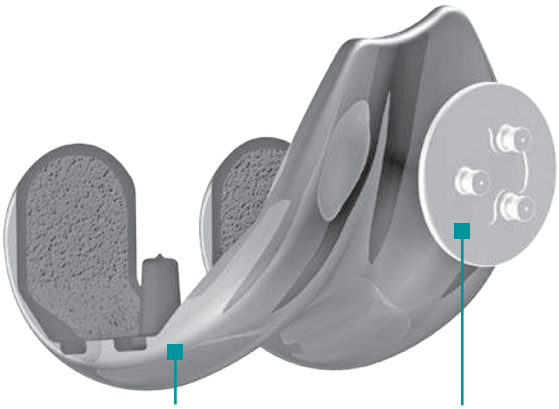
4. Treatment methods

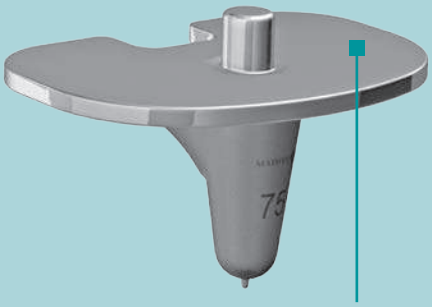
Before implanting an artificial joint, doctors use other non-operative treatment methods to alleviate pain:

- Analgesic, anti-inflammatory drugs (e. g. Voltaren®, Brufen®, Arcoxia® etc.)
- A change of habits (with regard to sports, weight, nutrition etc.)
- The use of orthopaedic aids such as crutches
- Physiotherapy and remedial gymnastics

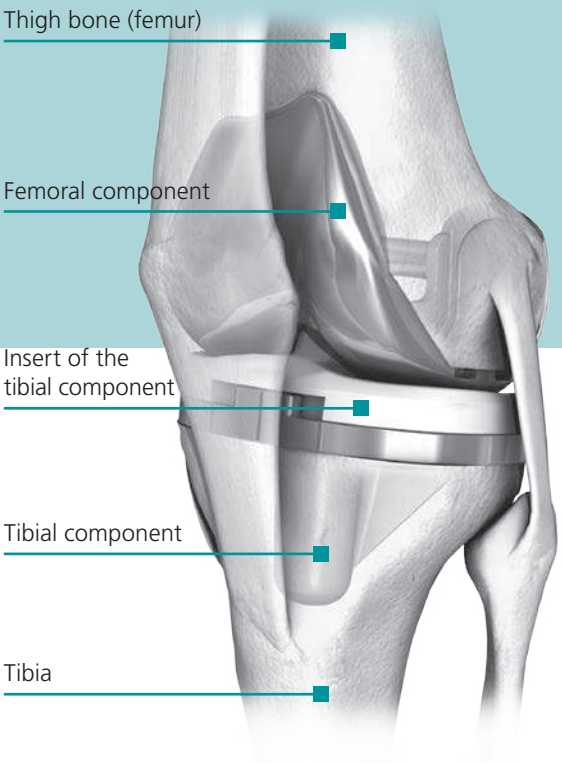
All these measures differ in efficacy from patient to patient. In many cases, actual alleviation of the complaints and restoration of mobility can be achieved only by an artificial joint replacement.

5. The artificial knee joint





The aim of the implantation of a knee endoprosthesis is to restore freedom from pain, mobility and walking ability. Nevertheless, an artificial joint will never be able to completely make up for the natural joint.



Your doctor will explain the operation and its course in advance, and tell you as well what type of knee prosthesis will be used. The exact condition of the joint, however, will only become evident during the intervention itself. It is therefore possible that your doctor will have to deviate from the operating procedure discussed.

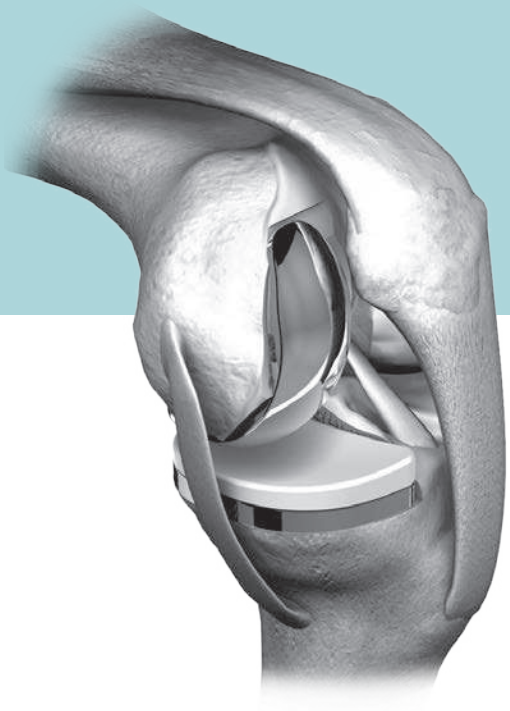
As knee endoprostheses, two options are available:

The total endoprosthesis

This endoprosthesis is used when the entire joint has to be replaced, i.e. when the entire articular surface of the tibial and femoral bones has been destroyed. The ligaments that help to maintain the natural sequence of motion remain.

The partial replacement (slide endoprosthesis)

The unicondylar endoprosthesis – also called slide – is used when only one half of the articular surface is diseased. The healthy part of the joint remains as it is.



6. *Prior to the hospital*

In the first days and weeks after the hospital stay, you will have to face various challenges as you learn how to walk on crutches.

You can prepare your home optimally for the time after the operation:

- Remove rugs and mats, obtrusive cables and any other objects on which the crutches might get caught or which could cause you to slip.
- Place objects you use daily (tableware, clothes, drugs etc.) at a reachable height. We recommend a trolley to transport meals.
- Place various aids in the bathroom: Handholds, a non-skid shower mat, a shower stool or a bathtub seat; increase the height of your toilet seat, use a sponge on a long handle for daily personal hygiene.
- Aids such as dressing aids, gripping pliers, stocking pullers etc. are available in medical supply shops. Inquire about what might be useful or necessary before your hospital stay.
- You will probably get a lot of phone calls from family members and friends after your return from the hospital. Think about acquiring a wireless telephone (if you do not have one yet) which you can carry with you and do not have to walk to.
- Place an electric torch close to your bed, if you cannot activate the light switch from there. This will prevent you from tripping over things when you have to get up at night.
- Prepare your food by deep-freezing it so that you need only heat it up later. You can save yourself a lot of kitchen work in the first days.

7. What happens at the hospital?

You will be examined thoroughly before the operation. This will help to identify any possible risks early on and allow medical staff to take the necessary prophylactic measures. Your doctor will inform you about drugs and anaesthetics.

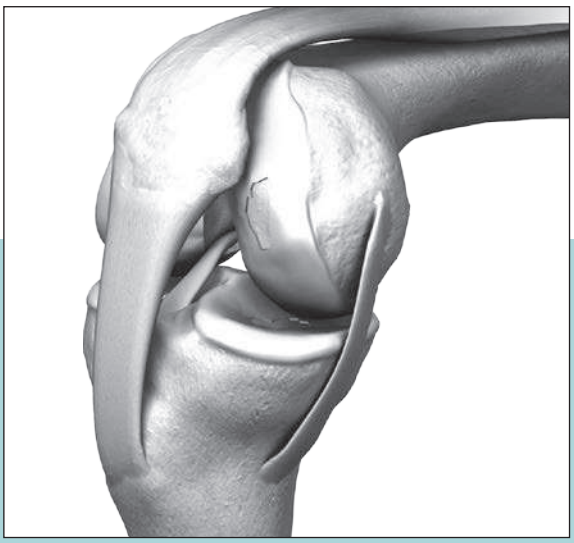
Your examination may include the following questions and items of information:

- Do you suffer from cardiovascular problems or high blood pressure? If so, are your medications well regulated? The nursing staff will measure them and possibly conduct an ECG.
- Are you prone to infection? If you suffer from diabetes, how well does your therapy work? A blood sample may be taken before the operation to clarify these questions.
- Your weight has an influence on the success of the operation. Are you overweight? You may be offered a session with a nutritionist.
- Smoking is a general risk factor – you might like to take the operation as an opportunity to quit. Smoker counselling is available in the hospital.
- Do you take anticoagulant or plateletinhibiting drugs (Aspirin®, Falithrom®, Marcumar® etc.)? If so, they will be stopped approximately ten days prior to the operation and, if necessary, you will receive a substitute by injection.
- The anaesthetist will inform you about the best form of anaesthesia for you.
- You will always have the opportunity to pose your own questions to the operating surgeon or to a ward physician.

8. *The operation*

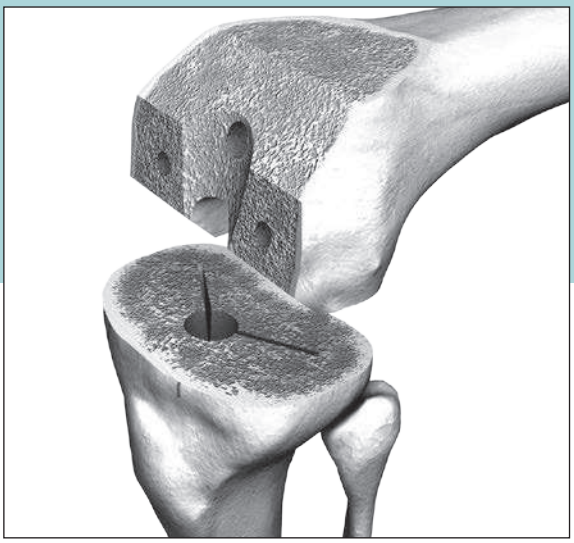
The operating method is similar for all of the above forms of knee prosthesis:
The diseased bone and tissue parts are removed and the remaining bone is shaped with the operating instruments to allow the prosthetic components to fit exactly and be affixed.

Operating on the open joint comprises the following four steps:



The knee joint is prepared for the prosthesis; the defect can be seen clearly.

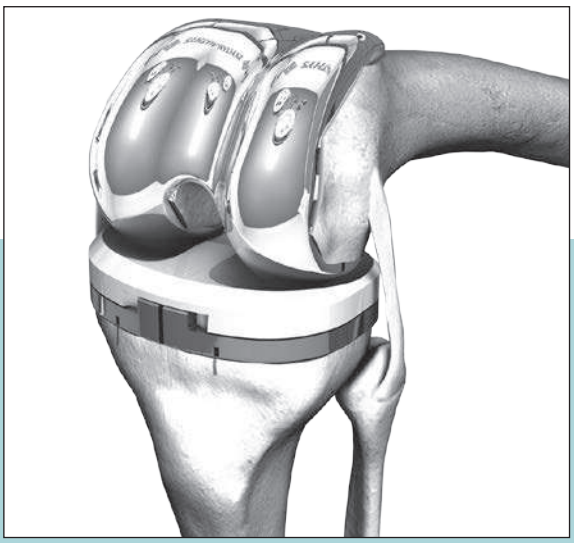
Step 1
The surgeon opens the knee laterally from the front and flexes it. The surgeon removes the menisci, the anterior cruciate knee ligament and the possible osteophytes, and then uses sawing templates to give the bones the correct shape.



The femur and tibia are trimmed in such a way that the prosthesis will then fit exactly.

Step 2
After the final cut has been made and all the holes drilled, a trial prosthesis is inserted. This allows the exact size and optimal position of the permanent endoprosthesis to be determined. This step is decisive for subsequent mobility and stability.

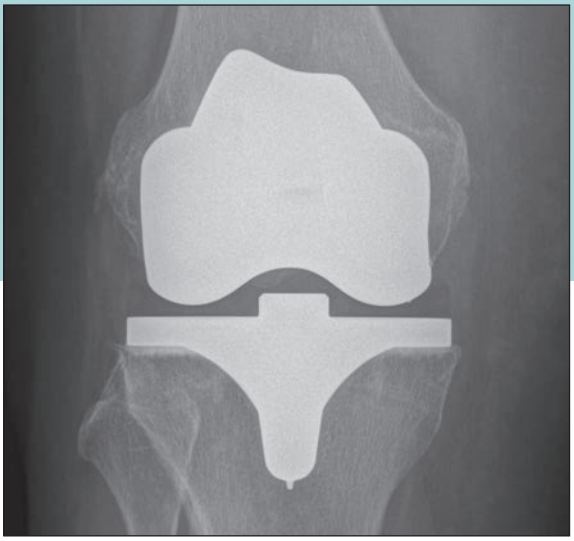
Surgeons often use a so-called arrest of blood supply for this operation. An inflatable pressure sleeve is used to interrupt the blood flow and to provide the operating surgeon with a better overview of the operating field.



The three individual components of the prosthesis are put into place; the knee is once again fully functional.

Step 3

The surgeon implants the suitable final prosthesis and fixes it with so-called bone cement. It is a stable connection between the surface of the prosthesis and the bone. The bone cement is very compatible and hardens fully in a few minutes. The inserted prosthesis can thus sustain full weight bearing very soon after the operation.



X-ray check of the implant following a successful operation.

Step 4

Finally, the surgeon opens the arrest of blood supply and stanches the existing haemorrhages. Drains are inserted into the wound to drain off the bleeding. The surgeon sutures the joint layer by layer before applying a compression dressing.

9. Risks and complications

Strictly speaking, every operation involves both general and specific risks. The surgical team always endeavours to treat you in the best possible way and to avoid any complication. The best possible state of health helps to reduce the risks.

General risks include among others:

- The formation of a leg-vein thrombosis (vascular occlusion by a blood clot)
- The formation of a pulmonary embolism (partial or complete occlusion of a pulmonary vessel by a blood clot)
- Infections
- In rare cases, injury to blood vessels or nerves

The administration of blood-diluting drugs (such as Heparin) reduces the risk of a leg-vein thrombosis or pulmonary embolism.

Risks specific to a knee operation are adhesions and deformations in the joint, which can occur if the knee is not moved sufficiently in the days immediately following the operation. Intensive remedial gymnastics helps to prevent this.

Please inform your surgeon or hospital immediately if you experience any new onset of pain in the area of the operation, there is any swelling, the wound is not healing properly, there is any discharge of fluid from the scar or you have an unexplained fever.

10. After the operation

Normally, the drains remain in the knee joint for one to two days, until the last haemorrhage trickles are stayed. This prevents the formation of haematomas that restrict mobility.

Generally, physiotherapy is started on the very first day after surgery. A physiotherapist will guide you and practise daily with you. These exercises will help your knee joint regain good mobility and loading capacity as rapidly as possible.

From about the fourth day on, you will be able to walk on your own with the help of crutches. This partial load on the operated leg in the following four to six weeks helps the tissue layers of the knee joint heal more rapidly. You will receive analgesic drugs and daily injections to prevent thrombosis for several days, until your operated knee is able to bear its full load again.

About a week after the operation, you will be discharged, either to your home or to a rehabilitation centre. Your sutures can be removed as early as two weeks after the operation.

Abide by the following precautionary measures in order not to put the healing process at risk:

- Do not carry excessively heavy objects! A rucksack for a better load distribution is recommended particularly during the period in which you are using crutches.
- Long periods standing, excessive stair-climbing and long walks (mountain hiking) put increased strain on your knee – keep such activities to a reasonable minimum.
- Do not cross your legs when sitting.
- Avoid heavy physical work as well as risky situations (climbing a ladder etc.).
- Do not kneel down!
- **Good shoes protect the joint from overload and keep you safe.**

11. The follow-up treatment

Regular controls by a medical specialist are important and help to monitor the healing process. Coordinate the procedure in detail with your physician. If between or after the controls any complaints should occur, please contact your physician immediately.

It is quite normal to experience some limitations up to a year after the operation – improvement occurs gradually, but steadily.

You will require your crutches for a certain time (about one to two months) after the operation. As long as you depend on them, you will need assistance in the household or for shopping. If you live alone you can enlist the aid of a nursing service. The hospital will inform you about the various services on offer.

12. Sports

We recommend physical exercise, as it upgrades the quality of your social and physical life and prevents illness.
Aspire to good mobility and increased muscle strength following the insertion of a knee prosthesis. Well-developed femoral musculature stabilises the knee joint considerably.

It is important that you increase your physical load appropriately and that you take pain seriously: As a warning sign. It is generally accepted that a lack of exercise has a negative influence on an artificial knee joint.

Perhaps you were already involved in sports activities before the operation. If so, your physician can tell you whether you should continue with them now that you have an endoprosthesis. You should in any case abstain from sports which place inordinate stress on joints, or which pose a high risk of injury (such as football, martial arts, alpine skiing etc.).

Your safety is the top priority! Joint injuries and fractures in persons who have a prosthesis often have serious consequences. Train yourself to move somewhat more slowly and prepare for a gentler sequence of movements. You may still do Nordic walking and gymnastics, go bowling, golfing, biking etc., and play team sports, but with restrictions. In case of doubt, please ask your specialist or the operating clinic.
Always keep in mind that your new freedom from pain can quickly lead to an overload!

13. The implant passport

You will receive an implant passport when you leave the hospital. Please always carry this passport on you! It can be very helpful in case of injuries of the joint or complications outside of your usual surroundings (on vacation or at airport controls, for instance).

14. Tips and exercises at home

In the first six to eight weeks following the operation the new joint is still unprotected, as the musculature has atrophied. It is now necessary to build it up again and to strengthen it, so as to restore the necessary stability and protect your knee against the wrong movements.

The following pages include tips and practical advice on how to pursue your daily routine. The aim is to restore your freedom of movement as quickly as possible, hence your active cooperation is indispensable.

Please consult your attending physician or your physiotherapist if you are uncertain about the following exercises or if you do not fully understand them.

Please make sure to wear good shoes to avoid tripping.

Use the crutches correctly

- To stand, place the two crutches a bit in front and to the side of your feet.
- Keep your hips as straight as possible. A slightly bent elbow will permit you to do so.
- Support yourself firmly on the handles of the crutches when walking.
- **Important:** Carry your weight on your hands – and not on your forearms!
- Always load the operated knee as you were shown at the clinic, but walk as normally as possible. This means that each step should be of the same length, as in normal walking. Load the operated leg with no more than the permitted load.
- If you are permitted to use one single crutch, use it on the healthy side.

Going up and down the stairs

Important: Do not attempt your first trials on the stairs alone!

Going upstairs

- Set the healthy leg on the first step of the staircase.
- Push your weight with the healthy leg and with your hands, so that you are able to lift the operated leg to the same step.
- Repeat this until you have reached the halfway mark or landing.
- Proceed exactly the same way even if the stairs have banisters.

Going downstairs

- Place both crutches on the first step.
- Put the operated leg on the same step.
- Take care to put as much weight as possible on the crutches.
- Place the healthy leg on the same step.
- If your healthy leg is strong enough, you can try to put the crutches and the operated leg on the next step at the same time and to make the healthy leg follow.

Sitting correctly

- Abstain from sitting in deep armchairs, especially during the early days.
- Ideal are high, stable chairs with armrests. If necessary, you can increase the height of your seat with a pillow.
- **To sit down:** Move backwards to the chair until you feel its edge.
- Move both crutches to the side of the healthy leg.
- Support yourself on the armrests to sit down – stretch the operated leg slightly forward.
- Angle your legs slightly and sit upright.
- Slip forward to get up. Use the armrests to stand on your healthy leg. Continue to stretch out the operated leg slightly.
- Take the crutches in both hands to stand on the operated leg.

Going to the bathroom

- Move both crutches to the healthy side. Grip either an armrest on the toilet (if available) or a handhold next to the toilet.
- Sit down slowly and stretch out the operated leg slightly.
- Get up as from a chair: Support yourself on the armrests or on the handhold. Put the operated leg slightly forward.

Having a shower

- To keep your balance, use an anti-skid mat (not illustrated) and a handhold on the wall.
- Mix the water to the right temperature before taking a shower.
- Start by putting the healthy leg into the shower. The crutches remain outside the shower, but close by.
- A sponge with a long handle keeps you from having to bend forward.
- Leave the shower with the operated leg first.

Taking a bath

Bathing is not recommended in the first six weeks following the operation. If you do not have a shower, the following tips will show you how to get in and out of the bathtub.

- Go to the broad side of the bathtub on your crutches.
- Mix the water to the right temperature before entering the tub.
- To get into the tub, sit down on the edge or on a chair (not illustrated) which is higher than the bathtub and positioned directly next to it.
- Lift the operated leg first and then the healthy one over the edge. If possible, sit down opposite the water tap when you are on the edge of the tub. Place your hands under the femur to lift the leg in the tub.
- Lift your legs carefully over the edge to leave the bathtub.

Going to bed

- Sit down backwards on the bed in the vicinity of the head end.
- Move your bottom slightly backwards and lift the healthy leg onto the bed.
- The operated leg is next: If you do not yet have enough strength to lift it yourself, support it with the healthy leg or place your hands under the femur for support. Now you can lie on your back.
- **Important:** Move your pelvis and legs evenly. Keep your legs slightly spread.

Rising

- Stand first on the operated leg. Use your hands to assist you. Stretch the leg slightly forward to get your balance. Now lift the healthy leg from the bed.

Sleeping

- The best thing is to sleep on your back.
- If you prefer to sleep on your side, place a pillow between your legs to prevent them from crossing in your sleep and your hip from turning on one side.

- We recommend using a dynamic splint at the beginning. This will prevent the operated leg from external and internal rotations.

Getting dressed

- Select comfortable clothing.
- You will need help from others at first, or a dressing aid. If you choose a dressing aid, use the hook to grasp the waistband of your clothing and pull it first over the operated leg and up over the knee.
- Use a crutch to stand on the healthy leg and then finish putting on the item of clothing.

Undressing

- Remove the clothing from the healthy leg first.

Socks and stockings

Important: Practise flexion of the knee. If you achieve 90°, it is sufficient to grab the foot with your hands. Otherwise a stocking puller can help:

- Start by putting your socks on the puller. The heel and toe parts should fit tightly in front.
- Firmly hold the lateral ties, slip in the sock, and use the stocking puller to pull them up.
- Lift the foot on the healthy side to put on the sock. Do not bend!
- To undress, hook in the stocking puller at the heel and remove the sock from the foot.

Shoes

- Flat, firm shoes that are easily slipped on and do not have shoelaces are best, as you do not have to bend over to put them on.
- Pay attention to good soles. Leather soles are unsuitable, as they are very hard and do not absorb shocks.
- Use a dressing aid or a shoehorn with an extra long handle.

In the kitchen

- An apron with several pockets can be of help.
- Transport hot fluids in containers with a lid.
- Slide things on the counter or working surface instead of carrying them.
- Take small steps instead of turning your body; do this when walking as well.
- Use gripping pliers to pick up objects.
- Do not bend when reaching for something in a lower drawer or in an oven – place the extended leg in front.
- You may also sit on a chair. Position it so that the operated leg is turned toward the drawer or the oven.
- Use a trolley to transport tableware. It will also help you avoid unnecessary extra trips.

In the car

- Do not drive a car until your doctor permits it and when you no longer need crutches.
- Get into the car on the side with the most legroom (normally the passenger side).
- Sit down backwards on the car seat.
- Lift your legs carefully and slowly into the car. Support your legs with your hands under the femur or with the healthy leg.
- **Important:** Move your pelvis and legs as uniformly as possible and keep your body as straight as possible.

Taking a walk

- Begin taking regular walks on well-constructed paths soon after the operation. Start with a short walk of five to ten minutes.
- Gradually increase your walking distance.
- **Important:** Avoid uneven and slippery roads. Always wear sturdy shoes.

Recommendable

- Move your knee joint as much as possible. Sit down on a chair and place a towel on the smooth floor. «Mop» the floor by moving the towel back and forth.
- If you have a home trainer and achieve sufficient flexion of the knee joint, then use it daily for about ten minutes on low resistance.

15. Frequently asked questions

On the following pages, you will find the answers to questions frequently asked by patients. Some of the answers may be of assistance to you.

How long does the operation take?

The implantation of artificial knee joints is a routine intervention and takes around one hour.

How long do I have to stay at the hospital?

The duration of your stay depends for the most part on your general state of health. Prepare yourself for one to two weeks, although your doctor will be able to inform you more precisely.

How long will I be unable to work?

Discharge from the hospital is normally followed by a stay at a rehabilitation centre. After that, your physical strain will be restricted for approximately another four to six weeks. You should use this time for further remedial gymnastics.
If you have a job, the resumption of your professional activities will depend on your daily physical stress. You will be fit for work sooner if your job entails sitting for long periods and walking only short distances; heavy work will take longer to resume.

How long after the intervention can I walk again without crutches?

As a rule, you can leave your bed on the first or second day following the operation. On the third day, you will learn to walk with crutches or with other aids. This will help avoid incorrect loading of the operated knee joint as well as making you feel more secure. The majority of patients are able to walk without crutches six to eight weeks after the operation.

How long does the implant last?

The physical strain, the quality of your bones, your lifestyle and especially your weight have an influence on the longevity of the artificial joint. National implant registries and studies show that ten years after the implantation/the surgery of a total knee endoprosthesis, respectively, in about 90 % of patients no revision (replacement of the artificial joint or individual components) has become necessary. In patients with unilateral so-called unicondylar knee prostheses, this rate was below 90 %.

I occasionally have an allergic reaction to metal. Is this a problem?

Inform your doctor of your allergies to specific metals. If available, provide the doctor with your allergy passport. The materials we use for the implants and the coatings very rarely cause an allergic reaction. Special solutions are required in only a few cases.

I feel very well after the operation – do I have to go to the follow-ups anyway?

You should observe your follow-up dates without fail, even if you are not in pain and feel well. They allow your specialist to keep track of your rehabilitation and to recognise complications early on. In the first year after the operation, several follow-up examinations will take place. Later, these examinations will be required only once a year, then every two or three years. Your doctor will determine the ideal interval.

I am in great pain – yet I was told to wait with the implantation of an artificial joint. Is this correct?

Although it is ultimately up to the patient whether and when to have a prosthesis implanted, the decision should be taken in consultation with a specialist. The essential factors that influence such a decision are as follows:

- In your medical checkups and X-ray pictures, your specialist has found advanced arthrosis of the knee.
- Pain interferes so much with your quality of life that you are no longer able to cope with the daily routine without daily and permanent discomfort. Your walking distance and mobility are clearly reduced.
- Alternative treatment methods (e. g. physiotherapy) will no longer be successful.
- You depend on a constant intake of drugs. These are no longer sufficient despite increased dosage.

If these factors apply to you, an operation should be considered regardless of your age.
If the above circumstances do not apply to you, it is advisable to postpone an operation and to look for further non-operative treatment methods.

Which risks does the implantation of an endoprosthesis involve?

In Europe, an average of 550 000 artificial hip joints and 230 000 knee joints are implanted per year. Today, the operation is a routine intervention.
However, risks of such things as haematomas, drug allergies, thromboses, embolisms or infections cannot be fully excluded.
Preventive measures, such as the administration of drugs and physiotherapy, limit these risks to a large extent. Your doctor will provide you with exhaustive information on the subject.

Do I need blood conserves during the operation or immediately after it?

Nowadays, blood conserves are used only if the patient loses a large amount of blood during the operation. The risk of an infectious disease transmission in foreign blood transfusions is extremely slight due to the excellent system of checks.
If you are still sceptical, you can donate your own blood. This involves giving blood some time before the operation, and having it preserved.

How do I proceed if I wish to donate my own blood?

Currently, the majority of clinics can collect wound blood from the drains, clean it in a special machine and re-administer it to patients. This makes the donation of one's own blood unnecessary.
Should you still wish to do so, your attending physician will clarify whether you are suited for such a procedure. Special diseases, such as those of the heart or blood-producing organs, may restrict one's ability to donate blood.
You should donate your blood early on to give your body the time to rebuild sufficient new red blood cells. Your doctor will inform you about the best time and procedure, and will take the necessary steps.

When will I be able to drive a car again?

You should only get behind the wheel when you feel fit to drive. You are the one responsible for this! We recommend that you consult with your attending specialist first. Most patients are fit to drive after three to five months, but this can vary widely from patient to patient. Never drive under the influence of strong pain relievers!

When can I be sexually active again?

You should not make any strong knee-bends in the first six to twelve weeks after the operation, in order to prevent an irritation of the joint or a feeling of strain.
Other than that there is nothing else that argues against sexual intercourse. Your doctor will be happy to answer all of your questions.

16. Epilogue

Along with the practitioners of the medical arts, you are responsible for your artificial knee joint and can contribute a great deal to your therapeutic success. Your cooperation is of the utmost importance. We hope that this brochure has explained the most important factors and procedures. Visit www.my-artificial-joint.com for additional interesting and useful information. You should ask your attending physician any further questions not answered here or on our site.

Aftercare appointments

Date & Time	Note

MATHYS
European Orthopaedics

Australia
Mathys Orthopaedics Pty Ltd
Lane Cove West, NSW 2066
Tel: +61 2 9417 9200
info.au@mathysmedical.com

Austria
Mathys Orthopädie GmbH
2351 Wiener Neudorf
Tel: +43 2236 860 999
info.at@mathysmedical.com

Belgium
Mathys Orthopaedics Belux N.V.-S.A.
3001 Leuven
Tel: +32 16 38 81 20
info.be@mathysmedical.com

France
Mathys Orthopédie S.A.S
63360 Gerzat
Tel: +33 4 73 23 95 95
info.fr@mathysmedical.com

Germany
Mathys Orthopädie GmbH
«Centre of Excellence Sales» Bochum
44791 Bochum
Tel: +49 234 588 59 0
sales.de@mathysmedical.com
Hotline: +49 1801 628497 (MATHYS)

«Centre of Excellence Ceramics» Mörsdorf
07646 Mörsdorf/Thür.
Tel: +49 364 284 94 0
info.de@mathysmedical.com

«Centre of Excellence Production» Hermsdorf
07629 Hermsdorf
Tel: +49 364 284 94 110
info.de@mathysmedical.com

Japan
Mathys KK
Tokyo 108-0075
Tel: +81 3 3474 6900
info.jp@mathysmedical.com

New Zealand
Mathys Ltd.
Auckland
Tel: +64 9 478 39 00
info.nz@mathysmedical.com

Netherlands
Mathys Orthopaedics B.V.
3905 PH Veenendaal
Tel: +31 318 531 950
info.nl@mathysmedical.com

P. R. China
Mathys (Shanghai) Medical Device Trading Co., Ltd
Shanghai, 200041
Tel: +86 21 6170 2655
info.cn@mathysmedical.com

Switzerland
Mathys (Schweiz) GmbH
2544 Bettlach
Tel: +41 32 644 1 458
info@mathysmedical.com

United Kingdom
Mathys Orthopaedics Ltd
Alton, Hampshire GU34 2QL
Tel: +44 8450 580 938
info.uk@mathysmedical.com

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Robert Mathys Strasse 5
P. O. Box
2544 Bettlach
Switzerland

www.mathysmedical.com

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