Knee Arthrosis

A guide for more mobility and activity
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Why your knee hurts

Arthrosis or joint wear is the most frequent joint disease in the world and is caused by an imbalance between the load and the load-bearing capacity of the knee joint.

About 16 million people in Germany alone suffer from pain from arthrosis. The risk of suffering from arthrosis increases with age. This often affects the knee joints, followed by the hips, shoulder joint and the hands.

The symptoms of wear are most often seen with age and are more common in women than in men. Arthrosis patients must avoid excessive stress and can slow the course of the disease with specific exercises and drug treatment. The symptoms can be alleviated by wearing bandages and orthoses. These can help to restore everyday mobility.

Do you suffer from joint pain? Then you know the following symptoms only too well: sharp pain, particularly when getting up, phases of inflammation and swelling.

If you have untreated arthrosis for a long period, you will be less mobile and active and your quality of life will be lower. There are however many ways to counteract the progress of the disease. This brochure provides you with information related to arthrosis, including the clinical picture, the causes and possible treatments. This will help you with exercises and provide simple tips for dealing with arthrosis in your daily life.
The Knee Joint

The knee joint links the bone in the upper leg (the femur) to the bone in the lower leg (the tibia). There are smooth structures at the ends of both bones. These form cartilage and are held together by a joint capsule. The knee joint is stabilised by ligaments, muscles and tendons.

One of the jobs of the cartilage is to absorb shocks from sudden intense stress in the joint - to act as a shock absorber. As the cartilage is not linked to the metabolism of the body and does not have its own blood vessels, it can only receive nutrients through the joint lubricant (the synovial fluid). Movement also removes waste products from the joint.
What is arthrosis?

Arthrosis is a painful, non-inflammatory and irreversible degenerative disease of the joints, arising from wear of the joint cartilage. Arthrosis is categorised into 5 stages on the basis of the severity of the disease.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
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<tbody>
<tr>
<td>0</td>
<td>Healthy cartilage</td>
</tr>
<tr>
<td>I</td>
<td>The cartilage layer is still undamaged, but is soft.</td>
</tr>
<tr>
<td>II</td>
<td>Initial damage may occur in the cartilage cell structure. The surface of the cartilage is roughened.</td>
</tr>
<tr>
<td>III</td>
<td>The cartilage surface is damaged. The first deep cracks are formed.</td>
</tr>
<tr>
<td>IV</td>
<td>Total loss of cartilage. The bone is now exposed and rubs against the opposite side.</td>
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The 5 main causes of arthrosis are:
- Accidents, at sport or outside work
- Excessive stress from heavy physical work
- Congenital faulty position of the joints
- Metabolic abnormalities
- Overweight (body mass index >27)
What are the possible treatments?

Arthrosis is not curable. Nevertheless, various therapies can slow down its progress. A distinction is made between conservative (non-operative treatments) and operations. The therapy used depends on the severity of the disease and your own wishes. Your doctor will advise you about the right form of treatment.

1. Conservative Treatment
   • Many different drugs are used to treat arthrosis. These include pain killers (analgesics) and anti-inflammatory drugs.
   • Wearing bandages or orthoses improves the distribution of pressure over the bone and clearly reduces stress.
   • Active substances (such as cortisone or hyaluronic acid) can be directly injected into the affected joints and reduce pain or inflammation.
   • Alternative therapies (acupuncture, ultrasound, magnetic field therapy, etc.) alleviate pain.
   • Specific physiotherapy strengthens the muscles and stabilises the knee joint.

2. Operations
   • Minor operations may be performed during the internal examination of the joint (arthroscopy). These include rinsing the joint (lavage) and smoothing the joint.
   • If the axis of the leg is displaced, this may be corrected (transposition osteotomy).
   • Late stage advanced arthrosis in the knee may be treated with a partial or total prosthesis.
Stay active and mobile.
Little tips with big effects!

Even slight changes in your behaviour can have favourable effects on your knee and really reduce the stress on the joint.

1. If you rest, you rust
What you need for arthrosis is precisely dosed training in moderate types of sport – such as cycling, swimming or Nordic walking. You should avoid movements which may lead to sprains or cracks (as in football, tennis, etc.).

2. Healthy nutrition
Obesity is one of the main reasons for arthrosis. Take care that your nutrition is healthy. Avoid alcohol and nicotine, as they both damage the joint capsule.

3. Avoid carrying heavy weights
Many people carry heavy weights – either at work or outside work – without being aware of this. Just remember – each additional kilogram damages the knee joint. For example, you might use a suitcase on rollers to spare your joints.

4. Relax your muscles
Joints only stay healthy in the long term if you relax them after stress. Spare your joints by taking adequate breaks and by changing your posture when working.

5. Avoid uneven surfaces
Take a safe path when going for a walk. Use the lift or the banisters and walk slowly. This reduces stress on your joints.

6. Select your shoes carefully
Avoid very hard heels. Choose a laced shoe with soft heels and avoid sandals or shoes without a good grip.
7. Help in getting up
Heightening of couch, bed or chair. If you are sitting higher up, there is less strain on your knees when you get up. Each increase in height decrease the strain on the damaged joints. Cushions or an additional mattress in bed may be helpful.

8. Sitting and standing better
Kneeling down – during domestic work or during employment – stresses the knee joint. It is better to sit or to stand. In general, movement is better than stress.

9. Cool down after stress
The inside of an arthritic joint is weakened and this tends to lead to pain and inflammation after stress. Cold (cooling systems, ice etc.) helps to stop inflammation and to alleviate pain.

10. Joy in life
A balanced life supports health. You should avoid stress. If you have fulfilling duties, this will make you happy, divert you and help you to relax.
Six exercises for the Home

If you perform the proper exercises for each stage, this will be painless and will help your knee joint to counteract the progress of the arthrosis. The exercises described here are not only good for the knee; training the whole locomotor system will help you to remain active and mobile.

You should only select exercises after discussing this with your doctor and may have to ask a physiotherapist for advice. Perform the exercises in a concentrated manner and with proper care, if you wish to achieve the maximum effect.

**First exercise**
Lie on your back, bend your legs slightly, then lift them. Make cycling movements in the air with your legs for two to three minutes. Take a break for 90 seconds. **Repeat this exercise twice.**

**Second exercise**
Sit on a chair. Alternately raise the toes and then the heels of both feet. The rest of the foot stays on the floor. **Repeat this exercise ten times.**
Third exercise
Stand with your back against a smooth wall. Slowly bend your knees, so that your back slips down the surface of the wall. Continue until your thighs are horizontal. Keep this posture for 10 seconds. Repeat this exercise five times.

Fourth exercise
Sit on a chair. Wedge a flat object (such as a book) between your feet. Now lift the object, by stretching out your knees. Keep this position for 5 seconds. Before starting again, take a 10 second break in the starting position. Repeat this exercise ten times.
Fifth Exercise
Lie on your back, with your knees slightly bent and your feet flat on the floor. Stretch your right leg straight six to ten times in the direction of the ceiling and then lower it. Stretch your left leg straight six to ten times in the direction of the ceiling and then lower it. Break for 90 seconds. Repeat this exercise three times.

Sixth exercise
Lie on your side on the floor, with your lower leg slightly bent. Stretch the other leg and raise it laterally. Keep it in this position for 5 seconds. Then rest the leg for 10 seconds in the starting position. Repeat this exercise five times for each leg.
More mobility and quality of life with medi bandages and orthoses

Movement is of central importance in the treatment of arthrosis. People with arthrosis are often unable to remain active, due to the intense pain. medi offers effective help to improve your mobility and to restore your quality of life.
Genumedi®
Knee bandage for stabilisation and stress reduction

Areas of use
For mild instability of the knee joint and/or arthrosis (grade 0–I)

Why Genumedi?

- **Less pain and pressure**
  The open mounting of the silicone patella ring effectively reduces stress on the joint and also prevents painful pressure on the kneecap.

- **Secure fit**
  The top bands incorporated into the side guarantee optimal fit and prevent the bandage from slipping.

- **Active in respiration**
  The fabric is active in respiration and conducts moisture. This maintains a pleasant skin climate.

**medi compression technology**

**Intelligent and effective products**
medi compression is the brand mark that makes medi products stand out. More than 60 years of experience with German design, research and manufacture have been applied to bring you quality garments. Accurate graduated compression is guaranteed. medi compression – the key to quality in medicine, lifestyle and sports.
Collamed®OA
Soft orthosis for correction and stress reduction

Areas of use
Mild to moderate arthrosis (grades I-II), permanent long term care where surgery is contra-indicated

Why Collamed OA?

• Easily applied without pain
  Thanks to the wrap around construction, you don’t have to bend your leg during application.

• Secure fit
  Optimal imitation of the knee’s movement with the physioglide technique (lateral joints). This ensures that the orthosis is stable. The laterally incorporated adhesive straps help to ensure that the support is secure.

• Pleasant to wear
  Net material at the back of the knee aids comfortable flexion and extension.

• Active in respiration
  medi airtex is active in respiration, elastic and conducts moisture. This material ensures that the skin climate is pleasant.

• Ideal for sports
  Thanks to the covered hinge, you can use the soft orthosis in contact sports without any risks.

• Individually adjustable
  The inflatable off-loading condyle pad allows simple custom adjustments.
M.3*s OA
Hard frame orthosis for correction and stress reduction

**Areas of use**
light to medium gonarthrosis (grades I-II), permanent care where surgery is contra-indicated.

**Why M.3s OA?**

- **Pleasant to wear**
  Light and flexible construction ensures comfort - especially for lightweight patients.

- **Flat design**
  Low profile designs allows brace to be worn under clothing.

- **Simple adjustments**
  During the healing process the bracing demands change. The M3s OA brace can be readjusted with an allen key according to individual circumstances.
**M.4°s OA**
Hard frame orthosis for stabilisation and protection

### Areas of use
For severe arthrosis (at least grade II) and to reduce stress in bandy legs and knock-knees.

### Why M.4°s OA?

- **Effectively reduces stress**
  Individually adjustable joints on the side of the orthosis ensure stability and perceptible reduction of the stress on the knee joint.

- **Secure stabilisation**
  With high quality frame construction.

- **Secure fit**
  The orthosis fits reliably on to the leg, thanks to the innovative cushion material.

- **Flat design**
  Because of its low profile design, you can wear the orthosis under your clothing.