

Dietary food for special medical purposes

orthomol

arthro plus



Information for patients

Active exercising

We Value  
Your Health!

orthomol



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## Active exercising

Are you one of the many people who suffer from joint pains or even osteoarthritis? Then you know the symptoms only too well: sometimes the pain is severe, sometimes less so. Above all, you cannot predict when the pain will occur.

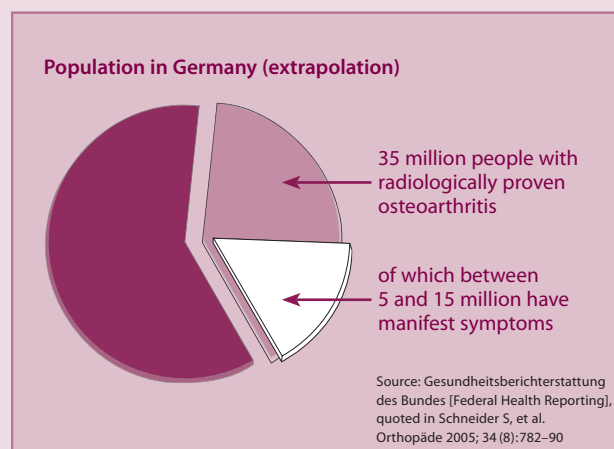
A preconception that stubbornly refuses to go away is that osteoarthritis is a symptom of old age that just has to be accepted – even though we now know much more about the illness and are familiar with the ways of dealing effectively with it.

Osteoarthritis (joint wear) is the most common joint illness worldwide. It usually affects the knee and hip joints, but frequently also concerns the joints in the upper extremities, such as the finger, elbow and shoulder joints

Between 5 and 15 million people suffer from osteoarthritis-related complaints in Germany alone. Whatever the statistics, however, the simple fact is that osteoarthritis greatly impairs your quality of life. Thankfully, modern science has come up with many ways to deal with the illness.

If you are willing to tackle osteoarthritis actively yourself, you can achieve a great deal.

And we are there to help you. This brochure contains important tips and interesting background knowledge about joints. Just one note before you start: to maintain healthy joints, you need the right combination of exercise, relaxation and nutrition.



In order to better understand osteoarthritis as an illness and the limited possibilities for treatment, we must take a close look at the area where the illness is located.

You are certainly familiar with the task performed by a joint, but do you also know how it is structured and what it needs in order to withstand everyday strains? We will explain these processes on the following pages.

## The joint – essential for an active life

The joint is the movable connection between two bones. To ensure that the two joint surfaces do not rub against one another whenever they move, these surfaces are covered in a smooth protective layer of cartilage. This joint cartilage is only 1 to 5 mm thick, depending on the type of joint.

The protective layer of cartilage is closely connected to the joint's bone and, thanks to its water-absorbing characteristics, it functions in a similar way to an elastic buffer or shock absorber. It absorbs the pressure and distributes it evenly over the joint's bone.

However, a possible imbalance between the load and load-bearing capacity results in the degeneration of cartilage tissue. It is precisely here that osteoarthritis originates. As cartilage cannot be replaced by the body, it is particularly important for the development of osteoarthritis to be stemmed early on by means of correct nutrition.

A nutritionally-based treatment concept can be even more successful. If supplements are taken regularly, recent studies have shown that pain can be reduced and mobility improved.

## When joints are in poor health

Maybe your problems also began like this: You noticed a slight pain in one of your knees when you moved after resting for a while. First of all, you thought that there was no reason to worry. But then you found that your joint also hurt a little after strenuous activity. As well as this, you sometimes found walking difficult and jogging extremely painful. So something had to be done about it – starting with a visit to the doctor.



## Osteoarthritis – not just a question of age

Nowadays we know that osteoarthritis does not only affect people who have reached an advanced age. Although many of those affected are aged 60 or older, an increasing number of younger people suffer from prematurely worn joints. Roughly 50% of 35-year-olds notice that their joints are displaying signs of wear or are damaged – in most cases the knee joint.

The causes of this are linked firstly to lifestyle and secondly to physical reasons.



## General or illness-related risk factors

- **Excess body weight** puts unnecessary strain on the joints. Every kilo of weight that is lost means less pressure on your joints (please refer to our nutritional tips on page 14).
- **Insufficient exercise** is very bad for your joints. Exercise is essential in order to ensure that the cartilage receives sufficient nutrients. Take regular walks or try out a sport that places less strain on your joints, such as brisk walking, cycling or swimming.
- If your work involves an activity that puts **extreme, one-sided strain on a joint**, it is vital that you take every opportunity to relieve the pressure. If your work is physically demanding, you should take care to use movements that put less pressure on your joints (information is available at your Employer's Liability Insurance Association).
- Flat shoes are better for your knees than **high-heeled shoes**, because the latter increase the pressure on your knees.
- **Injuries and malpositions** that affect the natural joint function, e.g. foot malpositions, congenital hip dysplasia, knock knees or bow legs, legs of different lengths.
- **Metabolic disorders**, e.g. gout
- **Connective tissue diseases**
- **Rheumatic joint illness**
- If you have a foot malposition or legs of different lengths, it is advisable to wear shoe inlays in order to counteract one-sided joint strain.





## Sport – friend or foe?

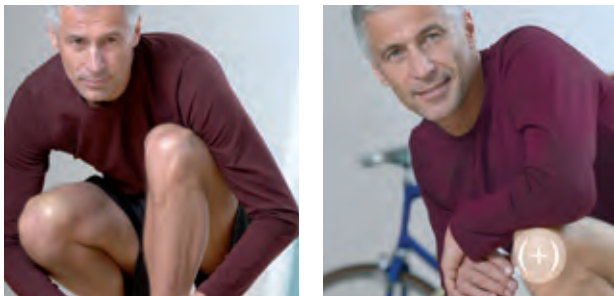
Don't worry! If osteoarthritis has been diagnosed, it certainly doesn't mean that your sporting days are over – as long as you don't overdo it.

However, it has been confirmed that long-distance runners, tennis players and footballers are more prone to knee joint osteoarthritis – prompted by injuries and excess strain. On the other hand, moderate sports that place less strain on your joints, e.g. cycling or fitness walking, contribute more towards keeping your joints healthy: after all, important nutrients can only reach the joint if you exercise.

Daily exercise strengthens your muscles and tendons – as well as guaranteeing that your joints are supplied with nutrients.

## How do food components reach the joint?

The joint cartilage must always receive an ideal supply of food components in order to cope with the intense everyday strain. As the cartilage is not connected to the blood circulation system, it receives its supply from the joint fluid (synovial fluid) which is situated in the intra-articular space between the two joint surfaces. In this process, when it is under strain, the cartilage is squeezed like a sponge and the absorbed fluid is released together with the metabolic slags. At the same time, there is an influx of new synovial fluid which is richer in nutrients. A regular change between applying and relieving strain, and a sufficient supply of nutrients that actively sustain the cartilage, are therefore essential for healthy cartilage. Without exercise, the cartilage would simply “starve”.



## Valuable nutrients for the joint

### Important components for healthy joints and their characteristics and features

#### Cartilage components

The following four groups of substances have been shown to have a favorable influence on the symptoms of osteoarthritis and the cartilage metabolism. They are closely connected with each other in the cartilage metabolism and can enhance the metabolism by adopting a nutritional approach.

**Glucosamine sulphate**

**Chondroitin sulphate**

**Hyaluronic acid**

**Collagen hydrolysate**



**Glucosamine sulphate and chondroitin sulphate** are important components in the cartilage tissue which, among other things, determine the special characteristics of the cartilage under strain. In addition to this, they are antioxidant substances because they scavenge free radicals and contribute towards reducing oxidative stress in the joint.

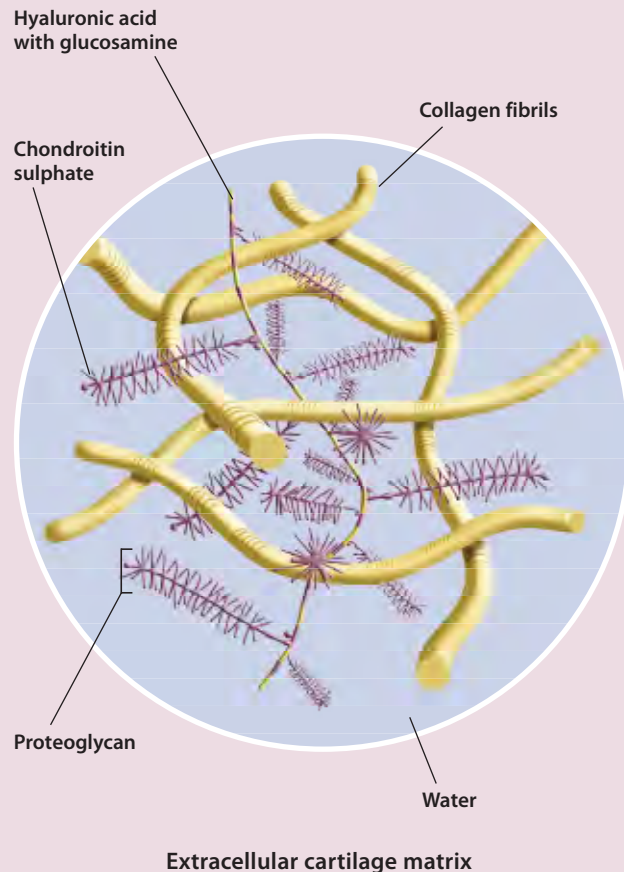
As in all connective tissue, the collagen in the cartilage tissue also plays an important role as structural protein. It provides the supporting substance of the cartilage. Collagen is produced by the body. The process requires the protein components glycine and proline. A large quantity of these protein components is contained in the **collagen hydrolysate**.

**Hyaluronic acid** is contained within the body and is a component that plays a central role in various tissues throughout the body due to its ability to bind large volumes of water. Hyaluronic acid is particularly important for all joint cartilage because it preserves the body's elasticity and sustains its shock-absorbing characteristics.

As “the body's intercellular cement”, hyaluronic acid helps to form the supporting substance of the cartilage and promotes the cartilage metabolism together with the collagen fibers. The body's own production of hyaluronic acid can be disturbed for many reasons. A lack of hyaluronic acid reduces the viscosity of the joint fluid and thus increases the amount of wear endured by the cartilage tissue.



### Essential cartilage components





### **Omega-3 fatty acids**

These polyunsaturated fatty acids can have a soothing influence on the inflammation process in the joint.

**Omega-3 fatty acids** are found above all in fatty sea fish, in walnut oil, flaxseed oil and nuts.

### **Antioxidants**

As a result of the general metabolism, “free radicals” are continually developed in the body and are neutralized by a number of nutrients that act as **antioxidants**.

Nutrients that are particularly effective include **vitamins A, E and C, phytonutrients such as beta-carotene and citrus bioflavonoids** as well as the **trace elements selenium, zinc and copper**. A higher number of free radicals appear during inflammation processes in the joint and damage the cartilage tissue. For this reason, there is a greater need for antioxidants in order to promote the natural and healthy balance in the joint.

### **Cartilage and bone metabolism**

In order to enable the bone metabolism to be sustained or to meet the increased need for nutrients brought about by osteoarthritis, it is advisable to make sure that there is a sufficient supply of bone components.

**Calcium** is particularly important here because it is the central element of the bone tissue. **Vitamin D<sub>3</sub>, Vitamin B<sub>6</sub> und Vitamin C** are also good for the bone metabolism. The degradation process of **acetylcysteine** produces sulphate, a sulphur-containing component that serves to interconnect the cartilage components.

A well-balanced diet should be a priority to ensure that the whole joint is adequately supplied with nutrients that actively sustain the cartilage and bones.

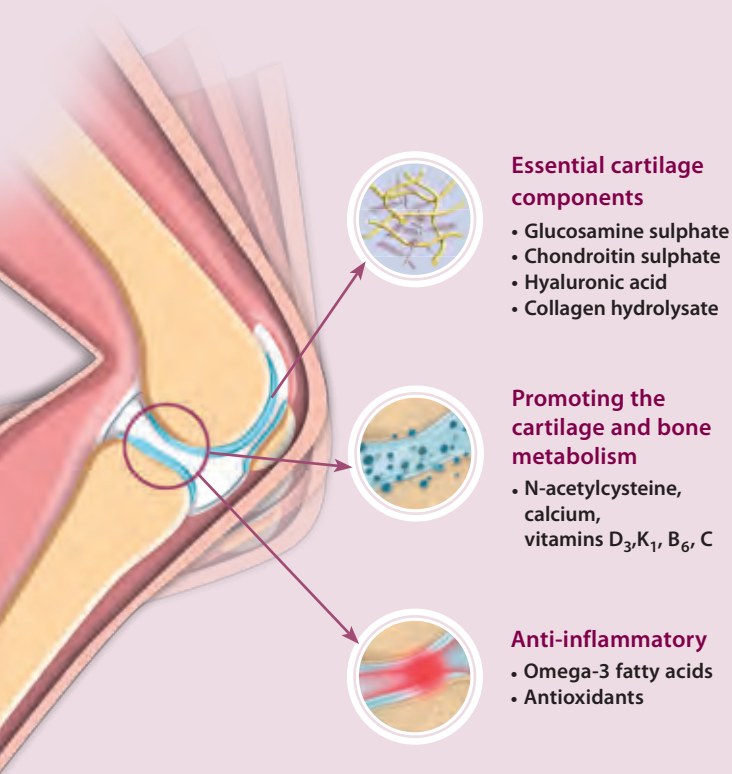
In many cases, however, it is almost impossible to ingest sufficient quantities of these “micronutrients” through food alone, particularly since even greater quantities are required due to existing joint problems. A sufficient supply of all these substances helps to restore the biological balance in the joint.

**Micronutrients are natural substances that are important for your health. They include vitamins, minerals, trace elements, phytonutrients, as well as essential fatty acids and protein components.**



## Orthomol® Arthro plus – active exercising

Orthomol® Arthro plus is a dietary treatment concept for patients with osteoarthritic joint changes. The following nutritive characteristics and features are contained in the active joint complex:



Orthomol® Arthro plus contains a specific combination of the cartilage components and micronutrients that actively sustain the joints and whose effects suitably complement each other. In order to restore the biological balance in the joint, numerous micronutrients are necessary in the same place in addition to the essential cartilage components. The micronutrients promote the cartilage and bone metabolism and contain anti-inflammatory characteristics.

Taking Orthomol® Arthro plus on a daily basis can help to regain active exercising: Orthomol® Arthro plus can contribute to alleviating pain, increasing mobility and enhancing the quality of life.

**Ask your doctor or pharmacist about supporting your osteoarthritis therapy nutritionally with Orthomol® Arthro plus.**

## Tips and tricks for everyday life

### Losing weight – simple ways to slim down quickly

- Burn more calories by **exercising regularly**. In addition to the gymnastics exercises on the following pages, you should walk short distances instead of driving and take the stairs instead of the elevator.
- Choose **low-fat foods, particularly when it comes to meat, cold meats and dairy products**. Consume dairy products every day and eat fish 1–2 times per week.
- Try to structure a well-balanced and varied diet. Eat **lots of fresh fruit and vegetables, as well as wholemeal products and potatoes**. Unlike products that are made with white flour, there are lots of healthy nutrients in wholemeal rice, pasta and bread. They also fill you up for longer.
- You often feel hungry when you are actually thirsty. Drink **at least 2 liters of water, fruit juice mixed with water, or herbal tea every day**.
- When the urge to snack comes, **reach for an apple** instead of cake or biscuits.
- **Alcohol is chock-full of calories**. So it is better to stick to just one glass of wine or beer.

### Gymnastics – easy exercises for stressed joints

Daily exercise strengthens your muscles and tendons – as well as guaranteeing that your joints are supplied with nutrients. Here are three gymnastics exercises that are helpful for knee and hip joint osteoarthritis.

#### Exercise 1: For the knee joint

Sit on a chair with a back that is as upright as possible. Hold onto the seat with both hands and put your feet on the ground with your legs at a right angle.

Now stretch out your legs in turn, one after another, straightening your knee joint. Your toes must be pulled upwards. Hold this position for 10 seconds. Perform this exercise 5 times in succession with each leg.



### Exercise 2: For the hip joints

Lie down on your side, with your head resting on the arm that is stretched out along the floor. The other hand should be supporting your body, level with your chest. Now pull your toes up on the uppermost leg, stretch your knee, lift your leg slightly and hold for 10 seconds. Repeat this exercise 10 times with each leg.



### Exercise 3: For mobilization

Lie down on your back. One leg should be propped up on the floor, slightly bent. Now move the other leg as if you were cycling – always until it is fully stretched out. Repeat this exercise 10 times forwards and 10 times backwards with each leg.



### Exercise 4: Stretching the lower spinal erector muscle

On your hands and knees, curve your back fully, pulling it up towards the ceiling. Your bottom should not rest on your heels. You will feel your back stretching.



### Exercise 5: For the hip joints

Lie down on your side, with your upper arm supporting at the front and your upper leg bent. Raise and lower your lower leg about 20 cm from the floor without allowing it to touch the floor in between.



## A few final words

### Dear Reader,

We hope that this brochure has given you an interesting and easily understandable insight into osteoarthritis. We also hope that your life will become even more active – with the help of the tips contained in this brochure and maybe with Orthomol® Arthro plus as well.

Wishing you the very best of health,

Your Orthomol® Arthro plus Team

### Exercise 6: Hamstring muscles

Lie down on your back and put your hands underneath your knee. Pull your thigh towards your stomach and then stretch your knee until you can feel your hamstring muscle stretching. Do not pull up your forefoot. The leg on the floor should be pressed firmly against the mat.





# Orthomol® Arthro plus

**Orthomol® Arthro plus** is a dietary food for special medical purposes for the dietary management of osteoarthritic joint changes:

- Glucosamine sulphate
- Chondroitin sulphate
- Hyaluronic acid
- Collagen hydrolysate
- N-acetylcysteine, calcium, vitamins D<sub>3</sub>, K<sub>1</sub>, B<sub>6</sub>, C
- Omega-3 fatty acids
- Antioxidants
- In a well-balanced combination with other important micronutrients



Powder



Capsules



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