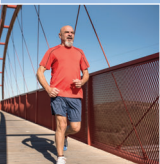


Long-lasting relief of
osteoarthritis knee pain¹

NeoVisc[®] ONE
NeoVisc[®] +



Understanding Osteoarthritis (OA)
Knee Pain and Treatment

A Patient's Guide



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Introduction

Understanding the healthy knee joint is important to understand the development of OA. The knee joint is a sophisticated joint that bears the body weight and also allows for movement. This is made possible by different structures in the knee that together provide support and flexibility **(Figure 1)**.²

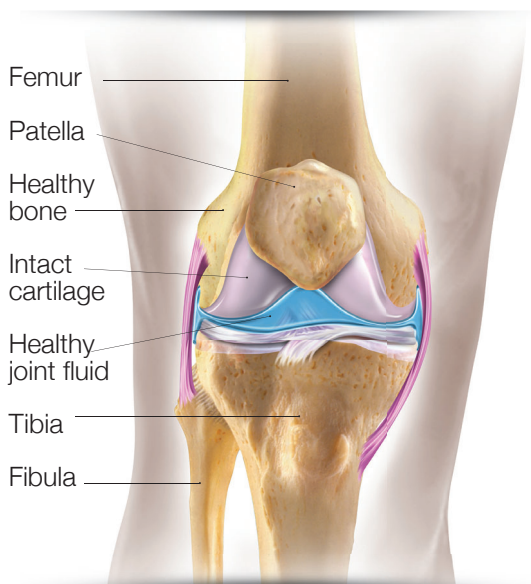


Figure 1: Healthy knee joint²

Understanding different key components of the knee is important to understand the current treatment options available to relieve OA symptoms and/or slow down/halt the disease progression.

The Knee Joint

The knee joint is the most sophisticated joint of the human body. It acts like a hinge for leg movement, allowing flexion and extension of the leg. The knee joint can also rotate to a limited degree. The bones of the knee joint are the femur, tibia, patella and fibula. (see Figure 1).²

Cartilage

The articular (joint) surfaces of the knee are covered with cartilage. Cartilage makes it possible for the bones to move against each other with little friction.²

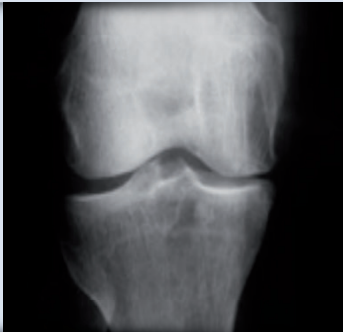
Cartilage is made of approximately 65% to 80% water. The rest is made of:³

- **Chondrocytes** (cartilage cells)
- **Collagen**
- **Proteoglycans** (such as hyaluronic acid)
- **Non-collagenous proteins** (glycoproteins)

On X-rays, the cartilage layer is translucent (allowing light to pass through) and appears as a joint space between the ends of the bones (**Figure 2**).⁴

Figure 2:
Joint space⁴

X-ray of normal knee joint with apparent "joint space"



Synovial Fluid

The knee joint is contained in a capsule called a synovial capsule that provides support and insulation for the bones and produces a viscous (thick and sticky) fluid called synovial fluid.

The different functions of the synovial fluid are:⁵

- Provide nutrition to joint cartilage
- Lubricate the joint to prevent friction and cartilage wear and tear
- Act as a shock absorber



Hyaluronic Acid

Hyaluronic acid (hyaluronan) is an important part of the synovial fluid. It helps the cartilage to stay elastic when a load is applied to the joint. This distributes the load over a broad area.

The main functions of hyaluronan in the knee joint are:⁵

- Lubrication of knee joint
- Shock absorption
- Provides a low-friction gliding surface

When more stress is put on hyaluronan, it becomes less viscous, providing extra lubrication that is needed during high stress such as movement.



Osteoarthritis

Osteoarthritis (OA) is a degenerative disease that causes the cartilage to break down. Gradually, the surface of the cartilage is lost, especially in the weight-bearing joints, such as the knee joints.

In severe OA, the cartilage can become so thin that it can no longer cover the thickened bone ends, resulting in injury to bone **(Figure 3)**.⁶

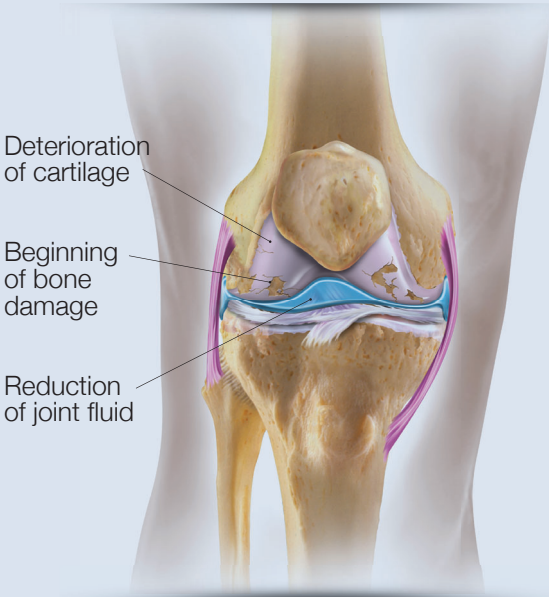


Figure 3: Knee joint with osteoarthritis²

Creation and turnover of hyaluronan change with both age and disease. In OA, there is faster turnover due to increased destruction of hyaluronan compared to production. There are also changes in the quality and quantity of hyaluronan in the joint.⁷

Causes and Symptoms

What causes knee osteoarthritis?

The actual cause of knee OA is not known. However, there are many things that can contribute to getting the disease. For some people, genes or family history can affect their chances of developing the disease. For others, their OA knee pain might stem from being overweight or from injuries suffered during a previous accident. Sometimes, people with sports-related injuries or very active lifestyles can develop knee OA. OA also becomes more common with age.²

What are the symptoms of knee OA?

Some of the early symptoms may be pain when moving, standing, or sitting. Many people with OA notice that the pain gets worse with exercise, but goes away when resting. As time goes on, the knee becomes less and less flexible. Stiffness, swelling, and redness are other common symptoms. Some people with OA experience a grating sensation in the knee during movement. These symptoms are often painful and frequent, but they can be managed.⁸

Talking to Your Doctor

When should I talk to my doctor about knee OA?

The sooner you speak with your doctor, the sooner you can begin treating your symptoms. Your doctor will conduct a physical checkup and may order an X-ray of your knee. In order to rule out other problems that could be causing your symptoms, your doctor may also draw blood samples and joint fluid samples from your knee for testing.⁹

How can my doctor help me with my OA knee pain?

Although there is no cure for OA, there are many ways to manage its symptoms. Your doctor can help determine the best approach for you.⁸

There are some options for managing OA knee pain that do not involve taking drugs or getting surgery. If your OA symptoms are mild, your doctor may recommend physical activity or a weight loss program. Your doctor might also suggest that you participate in an OA education program or support group.

If your OA knee pain is more intense, your doctor may advise taking non-prescription pain relievers such as acetaminophen, ibuprofen or naproxen sodium. There are prescription medications that your doctor might also recommend. Other options include knee injections with hyaluronates or corticosteroids. Depending on how severe your symptoms are and how they are affecting you, your doctor may also recommend surgery.

What is NeoVisc?

NeoVisc is a gel-like substance manufactured from hyaluronic acid that is injected directly into your knee joint by your doctor. In knee OA, the joint fluid does not have enough hyaluronic acid, leading to pain and joint stiffness. NeoVisc acts as a lubricant and shock-absorber inside the knee joint, enabling it to work properly. NeoVisc is a naturally derived product made by biofermentation.¹⁰

NeoVisc relieves the pain of knee osteoarthritis and improves mobility so you can get back to your favourite activities.¹¹



What can I expect from NeoVisc treatment?

NeoVisc is proven to work! It has helped millions of people all over the world manage their OA knee pain.

- NeoVisc ONE is given as a single injection into the knee joint. The treatment may be repeated every 6 months if needed to maintain the benefits over time.¹⁰
- NeoVisc+ is given once weekly for 3 weeks, and people may repeat the treatment if needed to maintain the benefits over time. Talk to your doctor about the most appropriate treatment plan for you.¹⁰

NeoVisc has been proven to provide **long-lasting relief** of OA knee pain.¹ Everyone responds differently, but in a medical study, patients experienced pain relief starting 2 weeks after the third treatment with NeoVisc (given once weekly for 3 weeks).¹²

To get the best treatment plan for your OA knee pain it is important that your doctor knows exactly how you are feeling and how your joint pain is affecting your life.



Information for patients:

NeoVisc may not be suitable for everyone. Talk to your doctor if you have questions regarding NeoVisc, or for more information on pain associated with knee OA.

Please consult the Instructions for Use at <https://www.miravohealthcare.com/products/> for important information about contraindications, precautions, adverse reactions, drug interactions, dosing and directions for use. You can also call 1-866-391-4503 to get a copy of the Instructions for Use.

Information for medical professionals:

Indications for use: NeoVisc HA 1.5% is indicated for treatment of pain and improvement of joint functionality in patients affected by degenerative (age-related changes) or mechanical arthropathy (related to overuse) of the knee.¹⁰ Hyaluronic acid viscosupplements are often used to treat osteoarthritis of the knee.¹¹



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*If you have OA knee pain,
ask your doctor if NeoVisc
is right for you.*



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