age group has bad symptoms). Osteoarthritis of the knee or hip may also occur in younger people, usually (but not always) because these joints have been overloaded. Possible causes of overloading include sports, jobs involving a lot of lifting and carrying, too much bodyweight and abnormal joint development.

What is Ostenil® Plus, and how does it work?

Ostenil® Plus is a solution containing hyaluronic acid. It is injected into the space in the joint that contains synovial fluid and works by restoring the normal balance between the breakdown and production of hyaluronic acid. This effect of Ostenil® Plus means that it can decrease pain and stiffness and improve the other symptoms of osteoarthritis.

The hyaluronic acid in Ostenil® Plus is very pure and is manufactured using a process called fermentation. It contains no animal proteins, which means it is very unlikely to cause an allergic reaction. The addition of Mannitol (a simple sugar derivative) to Ostenil® Plus allows the Hyaluronic Acid to work for longer and more efficiently in the joint, enabling effective symptom reduction with a single injection. Ostenil® Plus has been extensively tested, and has not been found to cause any serious side effects.

The exact make-up of the hyaluronic acid in Ostenil® Plus has been carefully chosen so that it is as effective as possible in treating osteoarthritis.

What can I expect if I decide to have treatment with Ostenil® Plus?

If you decide to have treatment with Ostenil® Plus, it will be injected directly into the joint affected by osteoarthritis.*

You may not notice any benefit immediately after your injection, but will gradually experience a reduction in pain and stiffness. The improvement in your symptoms is likely to persist for several months, depending on the progression of the degenerative change in the joint being treated.

When the effects of your Ostenil® Plus injection begin to wear off, you can safely choose to have another injection if your clinician agrees it is appropriate. Thereafter, you can continue with Ostenil® Plus therapy whenever necessary.

* In some cases your clinician may give more than one injection.

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Reducing Pain Improving Mobility

OSTENIL® PLUS

Sodium Hyaluronate 2% + Mannitol

Patient Information

questions and answers...

Ostenil® Plus is a treatment for the symptoms of osteoarthritis. It can be used in the knee, or in any of the other joints in the body that are classified as 'synovial'. This leaflet gives you some basic information about synovial joints, about what happens when you get osteoarthritis and about Ostenil® Plus. If you have any questions after you have read this leaflet, please ask your doctor.

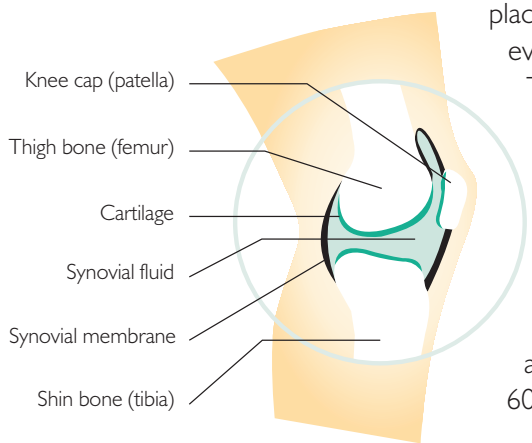
What is a synovial joint?

A synovial joint is one in which the ends of the bones are enclosed in a capsule containing a thick, slippery liquid called synovial fluid. The capsule is made of strong, fibrous tissue and is lined with a membrane called the synovial membrane. The bone ends are covered in a smooth layer of a tough, rubbery substance known as cartilage.

The synovial fluid in the joint capsule has four important functions:

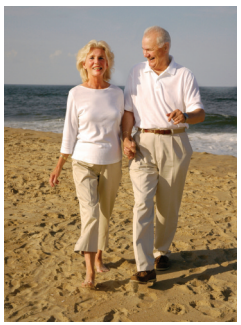
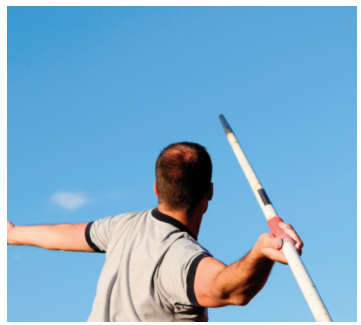
- it keeps the bones slightly apart, protecting their cartilage coverings from wear and tear
- it absorbs shocks, again protecting the cartilage
- it lubricates the joint, helping it to work freely and easily
- it acts as a filter, letting nurtrients reach the cartilage, but blocking the passage of harmful cells and substances.

The most important component of synovial fluid is a substance called hyaluronic acid. It is this substance that lets synovial fluid perform its four different functions all at the same time. Most of the joints in your body are synovial joints. Good examples, besides the knee, include the hip and the shoulder.



What happens in osteoarthritis?

The hyaluronic acid in synovial fluid does not stay there for a whole lifetime, but is continuously broken down and replaced. Normally, there is an exact balance between the breakdown of old hyaluronic acid and the production of new hyaluronic acid. In osteoarthritis, however, this balance is disturbed and breakdown happens faster than production. As a result, the synovial fluid becomes more watery and stops working properly.

Due to the change in the synovial fluid – and for other, more complex reasons – the cartilage in the joint gradually wears away. In some places, in fact, the cartilage may eventually disappear altogether. The thinning of the synovial fluid and wearing away of the cartilage lead to the symptoms of osteoarthritis, which include pain, stiffness and swelling.

Osteoarthritis develops as people get older and is present in almost everybody over the age of 60 (although not everyone in this