Sostenil® mini

Sodium Hyaluronate

Restoring Synovial Balance ...
... in Small Joints

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Hyaluronan therapy in osteoarthritis

Osteoarthritis is a degenerative joint disease that causes pain and loss of joint function. It can greatly diminish the quality of life of sufferers, particularly when it affects small joints, such as those in the hand.

Ostenil® mini is an isotonic solution of highly purified hyaluronan (sodium hyaluronate) developed specifically for the treatment of osteoarthritis in the small joints. It is administered intra-articularly as a course of 1–3 injections given at weekly intervals. The beneficial effects of a course of therapy of Ostenil® mini may last for up to 6 months.

Ostenil® mini is indicated for the treatment of pain and restricted mobility associated with degenerative and traumatic changes in small synovial joints; for example, the facet joints of the lumbar spine, the saddle joint of the thumb, the interphalangeal joints of the fingers and toes, the proximal joint of the big toe and the temporomandibular joint (TMJ).

The hyaluronan in Ostenil® mini is produced by bacterial fermentation and is highly purified. Ostenil® mini does not contain animal proteins.

Ostenil® mini is a sterile isotonic solution of 10 mg/1 ml hyaluronan. It is presented in pre-filled syringes contained in sealed packs. The syringes are terminally sterilised, using steam, within their packs.

Maintaining healthy synovial joints

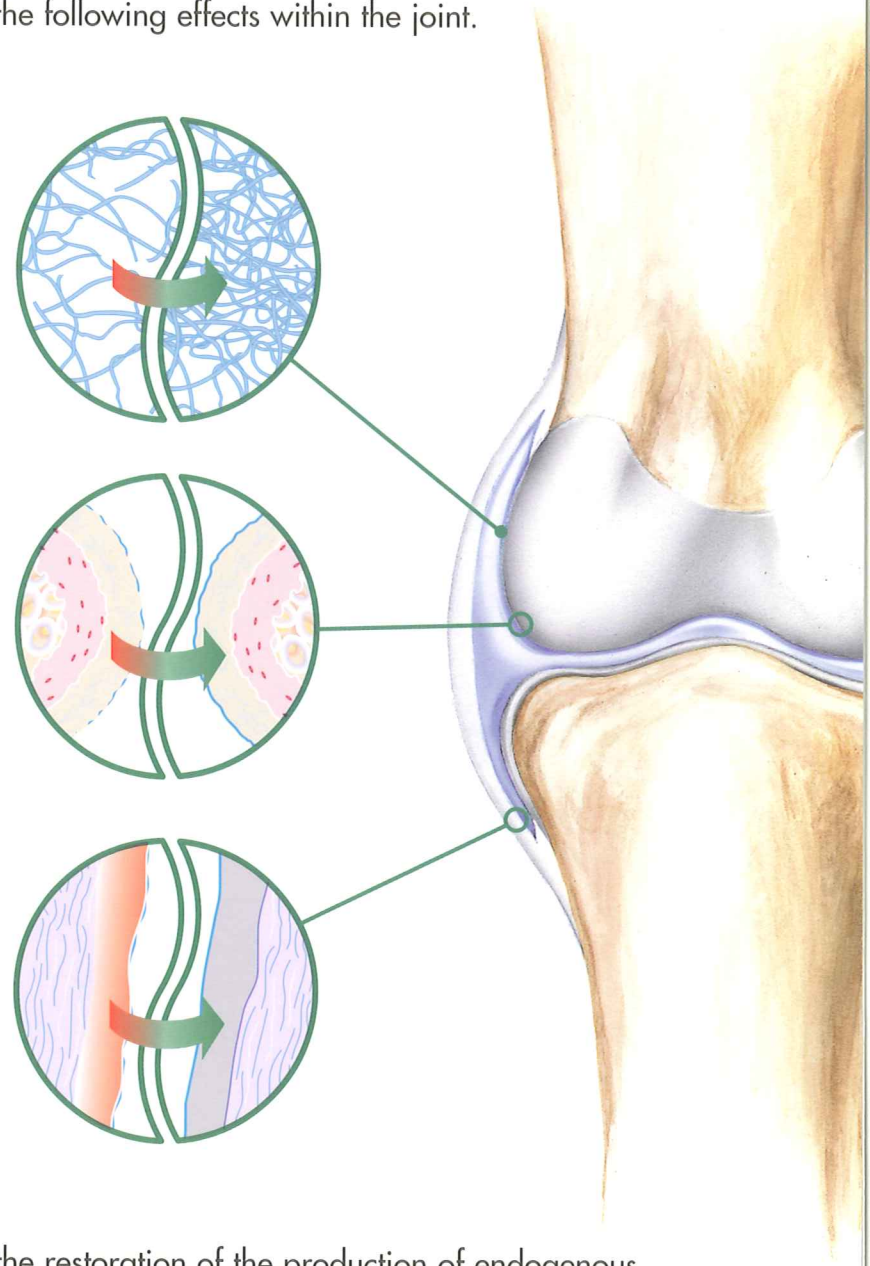
Hyaluronan plays a vital role in maintaining healthy synovial joints. Osteoarthritis causes the homeostasis of the joint to be lost as the hyaluronan in the joint space becomes depolymerised and fragmented. This starts a cascade of events, which ultimately leads to cartilage breakdown.

A course of therapy with hyaluronan has the following effects within the joint.

The viscoelasticity of the synovial fluid, diminished due to osteoarthritis, is increased,[1] thus restoring its lubricating, shock-absorbing and cell traffic-controlling properties.

The protective hyaluronan coating on the inner cartilage and synovial membrane, broken down during the osteoarthritis process, is re-established,[2] protecting the tissues from further damage.

The inflammation in the synovial membrane is reduced.[3,4]



A combination of these effects, as well as the restoration of the production of endogenous hyaluronan,[5] returns the joint to a state of homeostasis.

Evidence exists suggesting that exogenous hyaluronan may slow the destruction of cartilage.[6]

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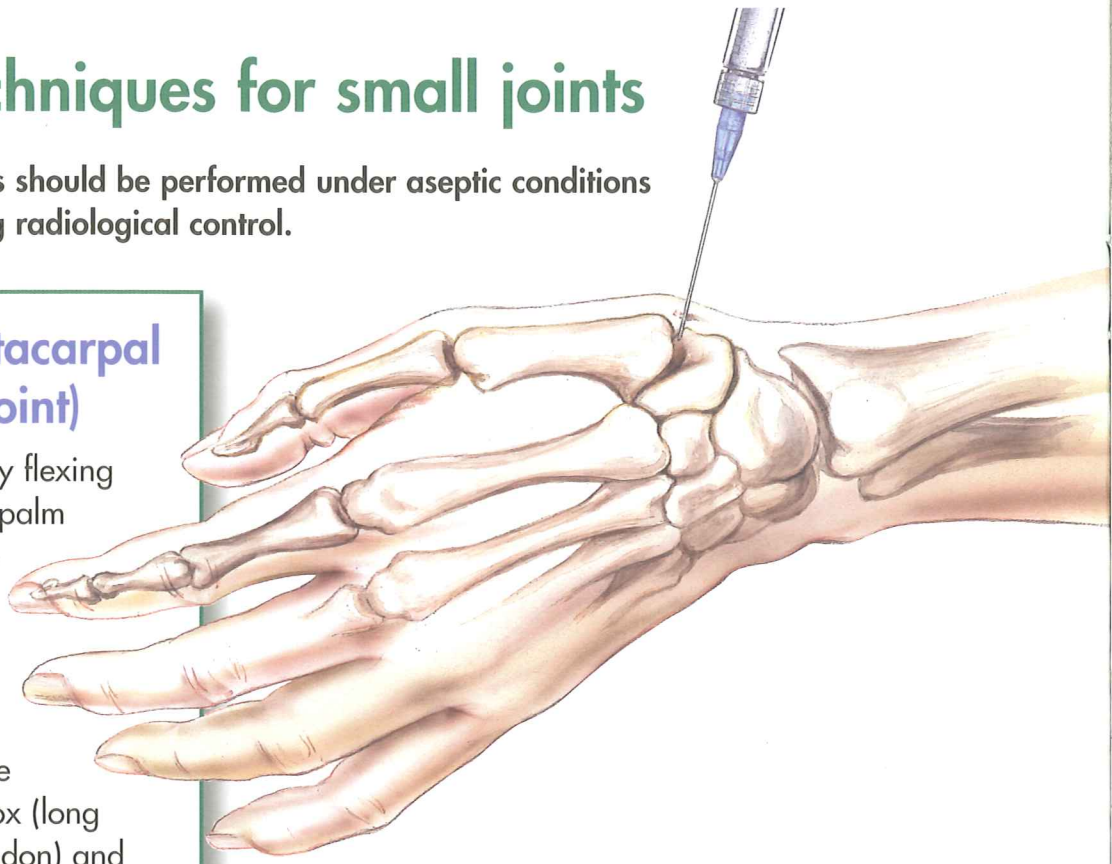
Injection techniques for small joints

Intra-articular injections should be performed under aseptic conditions and, if necessary, using radiological control.

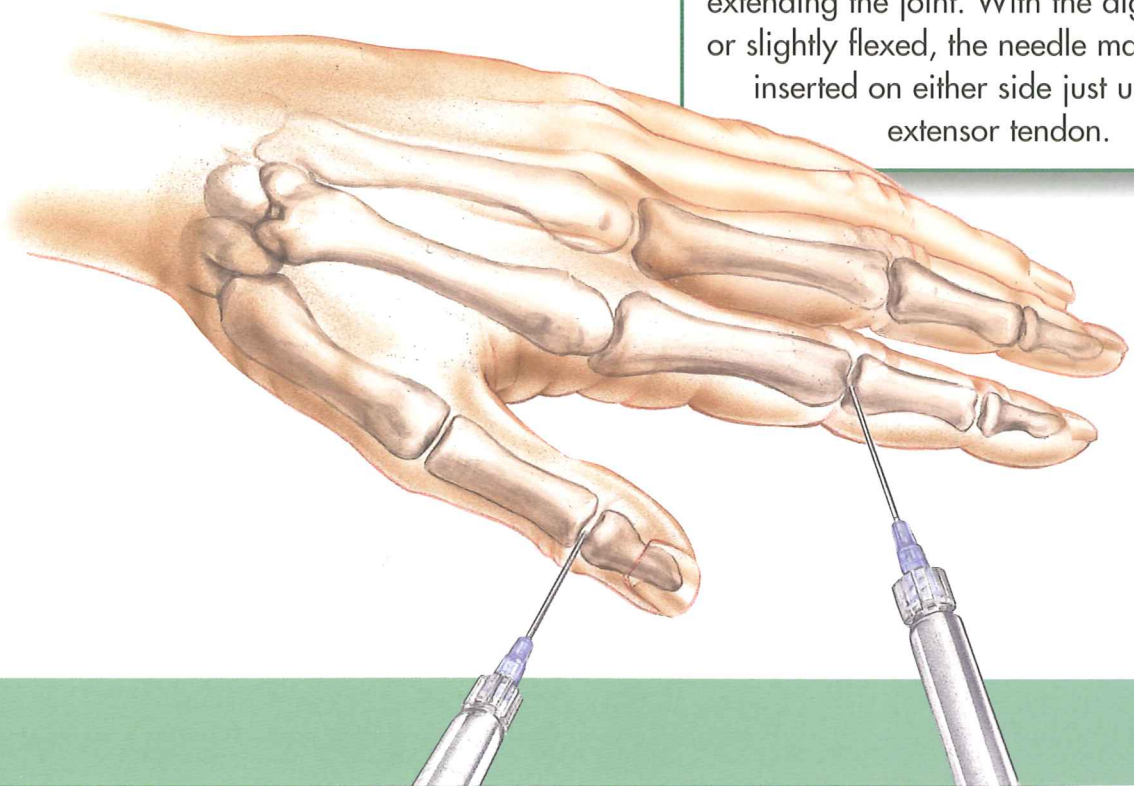
First carpometacarpal joint (saddle joint)

Locate the joint line by flexing the thumb across the palm towards the tip of the fifth finger and mark the injection site. Insert the needle at the mark from the lateral aspect near the border of the snuff box (long extensor of thumb tendon) and direct it toward the proximal end of the fourth metacarpal.



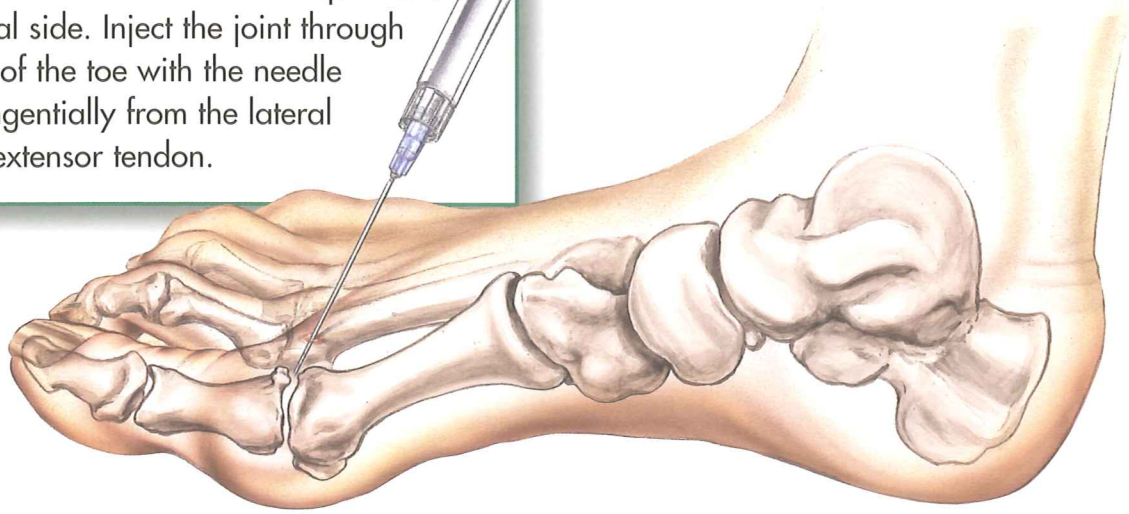
Finger interphalangeal joints

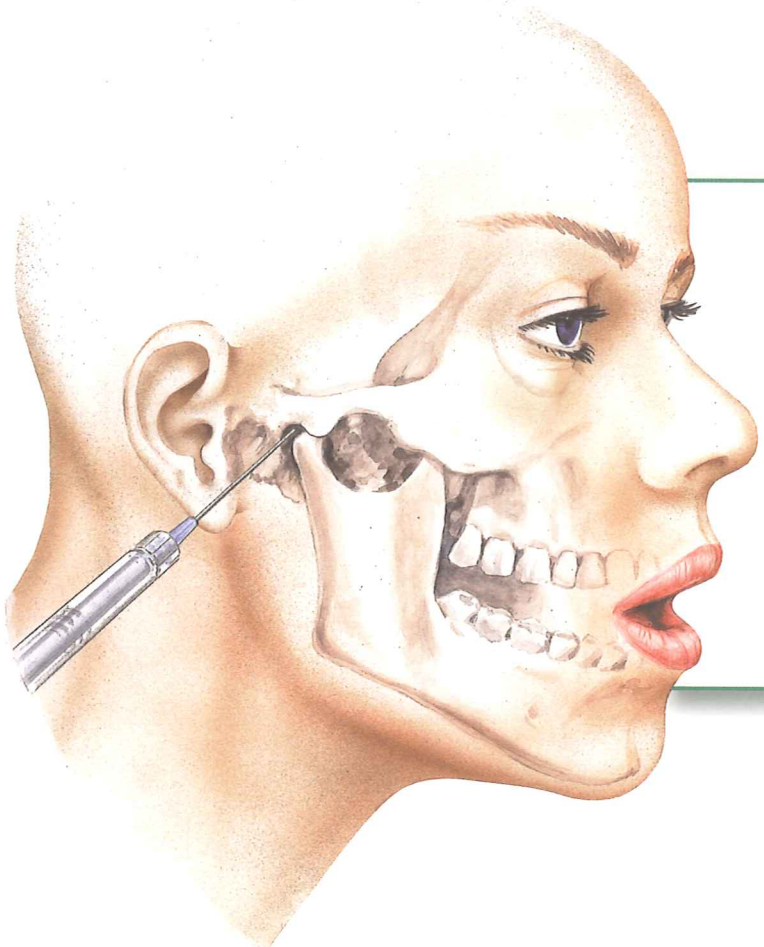
Locate the joint line by gently flexing and extending the joint. With the digit straight or slightly flexed, the needle may be inserted on either side just under the extensor tendon.



First metatarsophalangeal joint

Exert a gentle traction on the joint of the toe to locate and mark the dorsolateral joint line on the lateral side. Inject the joint through the dorsum of the toe with the needle entering tangentially from the lateral side of the extensor tendon.





Temporomandibular joint

Locate the joint space by placing the finger 1 to 2 cm anterior to the tragus and feeling the condyle moving on opening and closing the mouth. A mark is made and, with the patient's mouth open, enter the upper joint space by inserting the needle perpendicular to the skin and directing it slightly posteriorly and superiorly.

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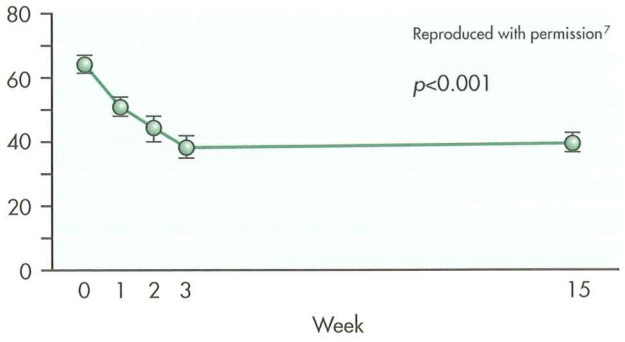
Effective and lasting relief from symptoms

The efficacy and tolerability of intra-articular (i.a.) hyaluronan in the treatment of osteoarthritis of the small joints has been assessed in a number of clinical trials.[7–12] These studies demonstrate hyaluronan to be effective in reducing pain and improving joint function.

Effective pain relief

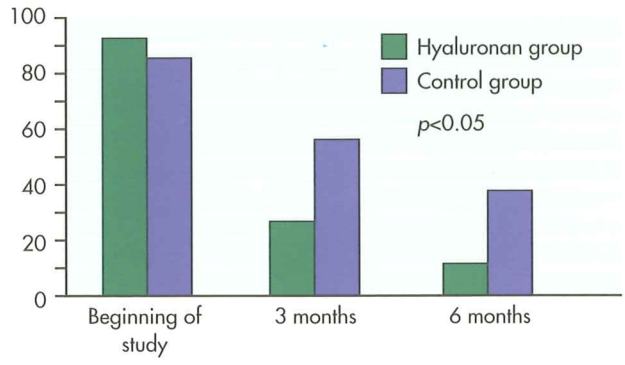
In an open, prospective clinical study,[7] 22 patients with osteoarthritis affecting the carpometacarpal joint received a course of 2–3 i.a. injections of Ostenil® mini. The injections were performed 1 week apart. All patients included in the study had suffered continuously from pain for at least 3 months prior to the study. Pain relief was assessed using a visual analogue scale (VAS) immediately before each injection, as well as 1 and 12 weeks after the final injection. Results revealed a significant reduction in pain after the second injection, which persisted for up to 12 weeks after the treatment ended ($p<0.001$; Figure 1). Patients also showed significant improvement in joint function and grip strength.

Figure 1. Pain reduction following treatment (visual analogue scale, mm)



In another study,[8] hyaluronan was seen to significantly reduce pain for up to 6 months after treatment in patients diagnosed as having non-reducing disc displacement of the TMJ. A group of 26 patients were treated by lavage of the superior joint space with injections of hyaluronan, while a control group of 50 patients received no treatment. Clinical signs and symptoms were examined periodically during a 6-month period. The frequency of patients experiencing tenderness of the TMJ (measured using the VAS) was assessed 3 and 6 months after treatment ended (Figure 2). A significant difference was seen within each group between the study beginning and each follow-up (chi-squared test, $p<0.001$), and there were significant differences between the hyaluronan and control groups ($p<0.05$). The frequency of patients experiencing pain was found to be reduced by 81% after 6 months in the experimental group, as opposed to 48% in the control group. In addition, the frequency of patients with successful clinical resolution in the experimental group (73.1%) was significantly higher than that in the control group (36.0%) at the 6-month follow-up ($p<0.05$).

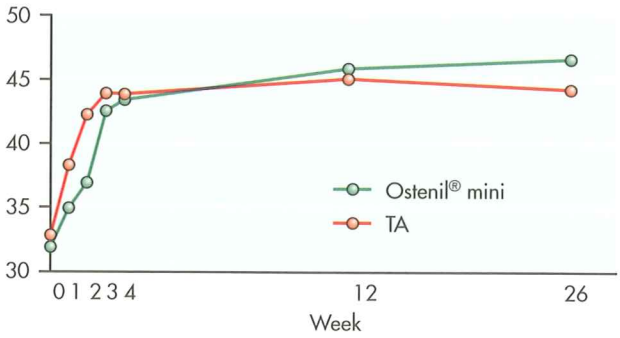
Figure 2. Frequency of patients with pain (%)



Improving joint function and quality of life

A blind-observer, controlled, clinical study[9] was carried out to compare the efficacy and tolerability of Ostenil® mini with triamcinolone acetonide (TA) in the treatment of non-radicular pain in the lumbar spine. A total of 60 patients were randomised to receive Ostenil® mini, i.a., or TA, 10 mg i.a., per facet joint on both sides of the lumbar spine. Each level (levels S1–L5, L5–L4 and L4–L3) was treated 1 week apart. Injections were administered under CT guidance. Patients were assessed 1 week after each injection, as well as 3 and 6 months after treatment ended, in order to assess the carry-over of therapeutic effects. The Low Back Outcome Score (LBOS), among other functional indices, was used to record each patient's physical functioning, with a higher score representing a lesser degree of functional impairment. Evaluation of the LBOS results showed Ostenil® mini to have a more pronounced carry-over effect compared with TA,† producing a lesser degree of impairment, which persisted up to 6 months after treatment (Figure 3). Similar results were seen with other functional indices.

Figure 3. Increased physical functioning (mean value Low Back Outcome Score, score points)



†Analysis of the LBOS results using the Mann-Whitney superiority test showed observed mean superiority and proven superiority of hyaluronan at week 12 and observed superiority and proven non-inferiority of hyaluronan at week 26.

Good tolerability profile

Studies show that Ostenil® mini is well tolerated,[7,9] with no significant adverse events reported. In fact, a comparative risk-benefit analysis for hyaluronan and glucocorticoids argues in favour of hyaluronan as the preferred i.a. treatment for facet joint osteoarthritis. Unlike hyaluronan, a number of contraindications, possible side-effects and interactions considerably restricts or forbids the use of glucocorticoids.

Caudex Medical – Oxford – UK – TRO029 – 05/03

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Prescribing Information

OSTENIL® mini – Sodium hyaluronate 1.0%.
Viscoelastic solution for injection into small joints.
Sterile by moist heat.

Composition: 1 ml isotonic solution contains 10.0 mg sodium hyaluronate from fermentation and sodium chloride, sodium monohydrogenphosphate, sodium dihydrogenphosphate, water for injection.

Indications: Pain and restricted mobility in degenerative and traumatic changes of small synovial joints, for example, the facet joints of the lumbar spine, the saddle joint of the thumb, the interphalangeal joints of the fingers and toes, the proximal joint of the big toe and the temporomandibular joint.

In the treatment of bigger joints, for example the knee, hip or shoulder, OSTENIL® prefilled syringes of 20 mg/2.0 ml should be used.

Contra-indications: OSTENIL® mini should not be used in patients with ascertained hypersensitivity to one of the constituents.

Precautions: Caution should be exercised in patients with known hypersensitivity to drugs. The general precautions for intra-articular injections should be observed, including measures to avoid joint infections. OSTENIL® mini should be injected accurately into the joint cavity, if necessary under imaging control. Avoid injections into blood vessels or surrounding tissues! As no clinical evidence is available on the use of hyaluronic acid in children, pregnant and lactating women or in inflammatory joint diseases such as rheumatoid arthritis or Bechterew disease, treatment with OSTENIL® mini is not recommended in these cases. Do not use if the pre-filled syringe or sterile pack are damaged. Store at below 25°C! Do not use after the expiry date indicated on the box. Keep out of the reach of children.

Side effects: Local secondary phenomena such as pain, feeling of heat, redness and swelling/joint effusion may occur in the joint treated with OSTENIL® mini. Application of an ice pack for five to ten minutes onto the treated joint will reduce the incidence of these events. In isolated cases the occurrence of side effects may be due to the intra-articular injection itself.

Interactions with other products: Avoid using OSTENIL® mini with instruments sterilised with quaternary ammonium salts solutions. No information on the incompatibility of OSTENIL® mini with other solutions for intra-articular use is available to date. The concomitant use of an oral analgesic or anti-inflammatory drug during the first few days of treatment may be helpful for the patient.

Dosage and administration: Inject OSTENIL® mini into the affected joint once a week for a total of 1–3 injections. Several joints may be treated at the same time. Depending on the severity of the joint disease the beneficial effects of a treatment cycle may last at least six months. Repeat treatment cycles may be administered as required. In case of joint effusion it is advisable to reduce the effusion by aspiration, rest, application of an ice pack and/or intra-articular corticosteroid injection. Treatment with OSTENIL® mini can be started two to three days later.

The contents and outer surface of the OSTENIL® mini pre-filled syringe are sterile as long as the sterile pack remains unbroken. Take the pre-filled syringe out of the sterile pack, remove the Luer lok cap from the syringe, attach a suitable cannula (for example 19 to 25 G) and secure it by turning slightly.

Characteristics and mode of action: Synovial fluid, which is viscoelastic due to the presence of hyaluronic acid, is found in all synovial joints, where it ensures normal, painless movement due to its lubricating and shock-absorbing properties. It is also responsible for the nutrition of the cartilage.

In degenerative joint disorders such as osteoarthritis, the viscoelasticity of the synovial fluid is markedly reduced thereby decreasing its lubricating and shock-absorbing functions. This increases mechanical loading of the joint and cartilage destruction which ultimately results in pain and restricted mobility of the affected joint. Supplementing this synovial fluid with intra-articular injections of highly purified hyaluronic acid can ameliorate the viscoelastic properties of synovial fluid. This improves its lubricating and shock-absorbing functions and reduces mechanical overload of the joint. As a rule this results in a decrease in pain and an improvement in joint mobility which may last for several months after a treatment cycle.

Presentation and package size:
One pre-filled syringe of 10 mg/1.0 ml OSTENIL® mini in a sterile pack.

OSTENIL® mini is a medical device.

To be used by a physician only.

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