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**HYALGAN** (*pronounced Hi'-al-gan*) -

is a solution of hyaluronate, a natural substance that acts like "oil" to cushion and lubricate your knee joint.

Hyalgan is injected directly into the knee. Just a single course of treatment (five injections given over 4 weeks) can provide long-lasting pain relief.

Used for more than 12 years - available in 30 countries - approximately 5 million injections given.

Hyalgan is a natural chemical of highly purified Sodium Hyaluronate that comes from rooster combs. It is in the classification of medications that are referred to as visco supplements. Hyaluronate is a natural chemical found in the body and is present in particularly high amounts in joint tissues and in the fluid that fills the joint itself.

The body's own hyaluronate is a lubricant and shock absorber in the joint and is needed for the joint to work properly.

In osteoarthritis there is usually a reduction in hyaluronate in the tissues and the joint and there may be a change in the quality of the hyaluronate itself.

Hyalgan is used to relieve the pain due to osteoarthritis in the knee joint. Like other visco supplements, it is only used if the patient has not obtained adequate relief from simple pain medication, exercise, or possibly physical therapy. Hyalgan contains natural Sodium Hyaluronate and is not chemically modified in any way. Acute inflammatory reactions have not been reported with Hyalgan.

Hyalgan is different from the other visco supplements in that it most closely resembles the hyaluronate of a healthy knee joint. It is injected once per week for a total of five injections rather than three injections.

The manufacturer of Hyalgan has determined, through investigational studies, that the duration of benefit from a course of therapy can be as long as twelve months which is longer than the other preparations that are available. The manufacturer believes that by using five injections rather than three, the duration of pain relief can in many cases be doubled. Hyalgan is the only preparation which is allowed to state that their product can relieve symptoms for up to twelve months.

Hyalgan has been in use throughout the world for more than 12 years. Hyalgan is also approved for re-treatment if the first course of therapy loses its affect.

Some patients have begun to experience pain relief after the third injection of Hyalgan. For others, however, pain relief was not seen until after the fifth injection or beyond.

For 48 hours after the injection is administered, it is probably best to avoid activities such as jogging, heavy lifting, sporting activities, or standing or being on your feet for a long period of time. Discomfort from the injection is usually controlled by the application of ice.

Hyalgan is administered directly into the knee joint after the skin and subcutaneous tissue are

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anesthetized with a local anesthetic. Over the counter pain medications are all that is required following the injection in the great majority of patients.

We are often asked by patients why they would want to have a preparation that required five injections rather than three. The answer is that the potential duration of pain relief is significantly greater with Hyalgan than with the other preparations. This, of course, is not guaranteed, but in studies of very large numbers of patients this fact has been found to be true and Hyalgan has proven to be the safest hyaluronate on the market and does not cause acute inflammatory reactions aka "Hot Knees".

Hyalgan has recently developed a 3-injection regimen that is now available. This is also very effective in relieving pain in knee, but cannot be expected to last as long as the 5-injection regimen.

## **Hyalgan Injection Technique For The Knee Joint**

Hyalgan (Sodium Hyaluronate) is injected into the knee joint as a series of five injections. Each injection is administered once a week on the same day. The following is the procedure that has been used in the office of Thomas Haverbush, M.D., P.C. for the last two years. We present this in order that the patient with osteoarthritis of the knee, who is to undergo the Hyalgan injection series, can understand exactly how it is done in our office.

The following is a description of the technique and pictures of the right knee being injected from the medial side.

### **1. Examination Of The Knee**

The knee is examined to determine the landmarks, particularly the location of the patella, on the anterior aspect of the knee. The medial border of the patella is identified from this examination.



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## 2. Marking The Injection Site

A small plastic circular marker is used to indent the skin definitely marking the injection site that has been determined from examination of the knee.



## 3. Sterilization Of The Injection Site

Betadine swab sticks are used to sterilize the injection site. The sterile area is at least 6cm in diameter and three swabs are used for the preparation of the area.



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## 4. Anesthetizing The Skin

3 cc. of 1% Xylocaine are injected with a 25 gauge needle, anesthetizing the skin, subcutaneous tissue, capsule, and synovium. We then wait ten minutes for the injected area to become fully anesthetized. Waiting this length of time has been very helpful in assuring maximum comfort during the injection of the Hyalgan in most patients.



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## 5. Aspirate Any Existing Joint Fluid

When the 18 gauge needle is inserted into the knee, prior to injection of the Hyalgan, any joint fluid that exists in the knee that can be aspirated is removed.

## 6. Injection Of Hyalgan

2 cc. OF Hyalgan (Sodium Hyaluronate) is injected with an 18 gauge needle directly into the knee joint. By using an 18 gauge needle, it is possible - with experience - to be sure that you are injecting the Hyalgan directly into the knee joint cavity rather than into the soft tissue in or around the knee joint.



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## **7. Remove Betadine and Apply Band-Aid**

After the needle which was used to inject the Hyalgan is withdrawn, the knee is wiped clean of Betadine and pressure is held over the injection site until all bleeding has stopped. Usually there is a very minimal amount of bleeding that results from the injection. A band-aid is then applied and the procedure is over.

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We believe this technique has worked very well for over two years and has resulted in minimal discomfort for our patients.

On the day of injection the patient is instructed to be sensible in his or her activities and to not walk more than is necessary for their activities of daily living on that day. They do not need to use a cane or crutch and can bend the knee as they wish.

After the fifth and last injection in the series is administered, we routinely make an appointment to see the patient back in the office in six weeks for follow-up.

Most of our patients have begun to experience some relief of knee pain during the injection series. Some do not experience relief until the series is completed. One of our patients did not experience any relief of symptoms for six weeks.

A small number of patients have experienced no relief of pain. In those patients their osteoarthritis process is probably too advanced for viscosupplementation to help and we have asked Hyalgan to do more than it is capable of doing.

Overall, we are impressed with the relief that patients obtain from Hyalgan and we continue to use it regularly when orthopaedically indicated.

## **Related web links:**

<http://www.hyalgan.com>

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Please consult Dr. Haverbush or a physician for specific treatment recommendations.

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