

# Joint Injections

## Why are joint injections performed?

Joints in the human body consist of articular cartilage. Normally, cartilage surfaces in joints provide a frictionless surface to provide range of motion that is painless.



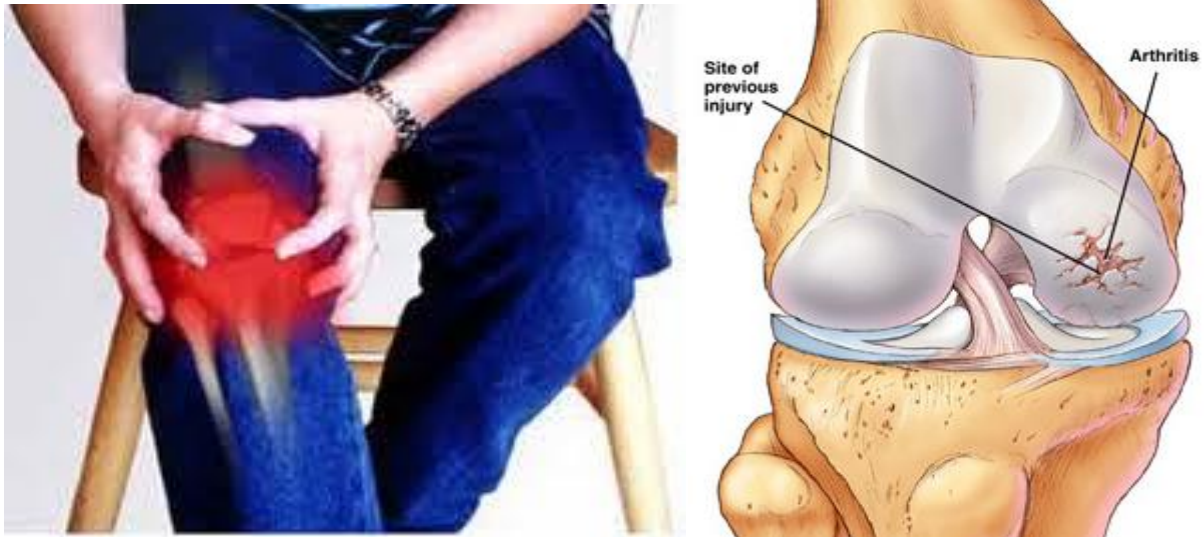
When a person is young, cartilage regenerates at the same rate that it is lost. But as a person ages, cartilage is made at the same rate as before, but the rate of loss increases. So the ratio gets worse, and arthritis begins to occur.

The options available to an individual with the pain from arthritis include multiple nonsurgical treatments and then as a last resort, elective procedure, a total joint replacement or a joint fusion. Joint injections represent an excellent nonoperative treatment to obtain pain relief when arthritis is present.

## Does joint arthritis benefit from injections?

The first answer to that question depends on whether or not the individual is having pain. Plenty of times, people have significant joint arthritis visible on x-rays and no pain whatsoever. Therefore, receiving pain management injections into the joint is predicated on whether or not the person is having symptoms.

Currently, the medication of choice for pain relief into joints is cortisone, also known as corticosteroid. When the steroid is injected into a joint, it acts as a large anti-inflammatory. Back in the 20th century, steroid injections were performed for inflammatory arthritis conditions such as rheumatoid arthritis. They worked extremely well for pain relief in joints with RA, so they began to be used for regular wear and tear degenerative osteoarthritis.



The results in these joints were excellent as well, typically achieving considerable pain relief in over 75% of individuals for weeks to months at a time (Ozlurk et al. Rheumatol Int, 2006). The injections may be repeated every few months.

### **Are steroids harmful to joints?**

This question has not been fully answered. Previous studies in smaller animals showed a potential deleterious effect on cartilage from steroid injections. When joint injections carried over into degenerative osteoarthritis, studies in larger animals showed no harmful effects on cartilage, which then increased the popularity of these injections considerably.

We know that steroid injections do not help repair or regenerate cartilage at all. There is the possibility of some damage occurring but we don't know for sure.

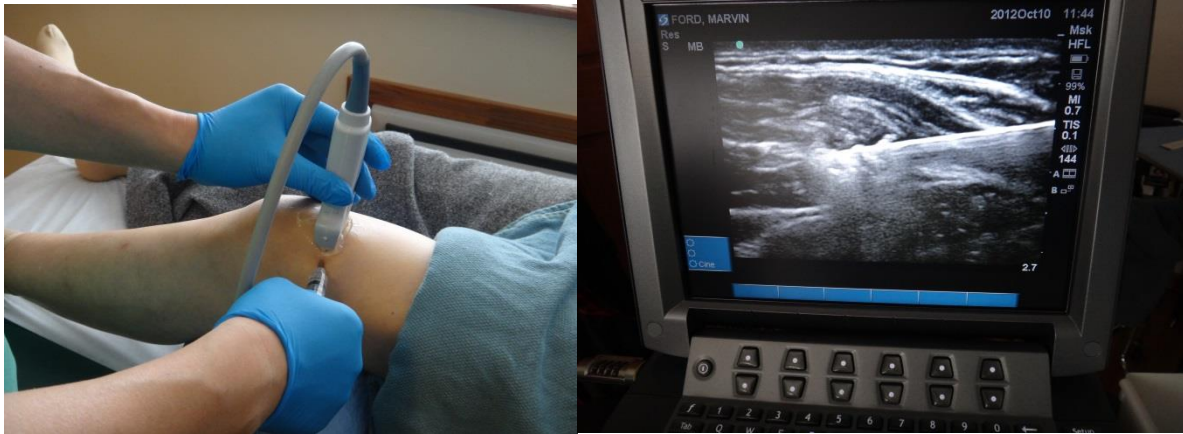
### **How do steroid injections work?**

The cortisone used in steroid injections is a hefty anti-inflammatory. Because anti-inflammatories work well for pain relief in arthritis, we know that inflammation is a significant pain generator in both rheumatoid and degenerative arthritis.

As mentioned, there is significant variability for how long joint injections work. At times, patients may not get relief at all, and in others, patients may get over six months of pain relief. Steroid injections do not help joints make more cartilage or repair damage in joints. All they do is act as proverbial "Band Aid" for pain relief.

### **How often can joint injections be performed?**

This question has also not been definitively answered. Most pain management doctors will perform steroid injections into joints every three months or so.



The concern with doing them more frequently is the volume of steroid may cause patient symptoms if some makes its way into the bloodstream. This may include temporary elevations of blood sugar, weight gain, and problems with the adrenal glands.

### **How are joint injections performed?**

For joints that are not deep, such as the knee joint, injections in an office setting work well. Typically, the joint injection consists of numbing medicine along with whichever version of steroid the pain doctor is used to.

The area overlying the skin is sterilized and landmarks are used to make entry into the joint. For joints that have considerable soft tissue between the skin and the joint capsule, fluoroscopy is recommended for higher accuracy.

Once the joint space is reached, the pain doctor will inject numbing medicine along with cortisone. The numbing medicine works right away and wears off after about 12 hours. The cortisone will “kick in” within 2-3 days with lasting pain relief.

### **Are there other substances available for joint injections?**

The most widely used medication is cortisone. However, hyaluronic acid injections such as Synvisc and Hyalgan are very popular and work quite well. Hyaluronic acid is a normal component of joint fluid and acts as the human equivalent of motor oil in a normal functioning joint.

Hyaluronic acid injections are made from rooster combs and help to lubricate arthritic joints, along with providing the potential to help the joint make more hyaluronic acid and cartilage. They are FDA approved, and overall studies have shown 65% good to excellent results at 6 to 12 months after the injections.



Stem cell injections for arthritis are becoming mainstream.

Stem cell injections are slowly becoming mainstream, and small studies have shown excellent outcomes for joint arthritis. The stem cell material used in these injections either comes from the patient's own bone marrow or fat, or an external source such as amniotic fluid. As larger studies are performed, we will know exactly how well each source works.

In addition, platelet rich plasma, known as PRP, is being used for joint arthritis injections as well. These injections include a patient's own blood, that is spun down in a centrifuge to create the PRP. Injections consist of platelets and growth factors, along with having a strong ability to call in stem cells which can repair the degenerative joint damage.

As with regular stem cell injections, initial results in small studies have been encouraging but larger studies are ongoing. Three professional sports leagues have promoted the use of PRP for injections to help heal tendon and ligament injury. Joint arthritis has started to also see satisfactory results with platelet rich plasma.

### **What's the bottom line with joint injections?**



This person has severe knee arthritis in the inside (medial) compartment. Steroid injections can help considerably.

As much as we know about arthritis currently, there's exponentially more that we still need to find out. Currently, joint injections are an excellent nonoperative method of pain relief for arthritis in the hip, knee, spine, ankle, shoulder, wrist, toes, fingers, etc.

Joint replacement or fusion is an elective, last resort method of pain control that is best avoided if at all possible. Joint injections with cortisone currently represent the gold standard for pain management with osteoarthritis, while regenerative medicine injections with stem cells and PRP are on the horizon with larger research studies pending.