

# Injection Therapy for Knee Osteoarthritis

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## Background:

Osteoarthritis is the most common type of arthritis, and the knee is the most common joint affected. Knee osteoarthritis is especially prevalent in middle-aged and elderly patients and currently affects approximately 50 million Americans. The symptoms of knee arthritis include pain, joint stiffness, and joint swelling. Risk factors for knee arthritis include increased age, obesity, previous trauma to the joint, joint malalignment, and some genetic characteristics. The process of osteoarthritis is primarily damage to the articular cartilage, underlying bone, and meniscus. This creates inflammation in the joint which leads to pain and further breakdown of cartilage. Currently, there is no cure for osteoarthritis.



## Treatment Options:

Current treatment strategies for knee osteoarthritis focus on symptom management to allow patients to remain as active as possible. These include activity modification, low impact exercise, weight loss, physical therapy to strengthen the muscles of the legs, bracing, non-steroidal anti-inflammatories (NSAIDS such as Advil, Aleve), injections into the knee joint, and possibly surgery. This handout focuses on injection therapy for symptomatic knee osteoarthritis. The goal of intra-articular injections is to decrease inflammation in the knee joint. Some of the more recently developed injection options also have the potential to improve the health of the cartilage.

	What is it?	How does it work?	Pros	Cons	Costs
<b>Cortisone</b> (Steroid – Dexamthasone, Kenalog)	Potent anti-inflammatory naturally produced by our bodies	Broadly block the inflammatory process that occurs in osteoarthritis	<ul style="list-style-type: none"> <li>• Safe</li> <li>• Longest history</li> <li>• Highly effective for acute flare</li> </ul>	<ul style="list-style-type: none"> <li>• Potential for cartilage degradation with long term use</li> <li>• Short term relief (4-6 weeks)</li> <li>• Decreased efficacy with repeated injections</li> <li>• Prefer to wait 3 months between injections</li> </ul>	Covered by most insurance providers
<b>Hyaluronic Acid</b> (Orthovisc, Synvisc, Monovisc, Euflexxa, Supartz, Gel-One)	Naturally occurring component of cartilage and synovial fluid	Acts as a lubricant and shock absorber, may increase body's own natural production of HA, restoring the joint's chemical balance	<ul style="list-style-type: none"> <li>• Safe</li> <li>• May provide more lasting relief than steroid</li> </ul>	<ul style="list-style-type: none"> <li>• Administered as series of weekly injections</li> <li>• Rare post-injection inflammatory response</li> </ul>	<b>Depends on insurance, but usually ~\$325</b>
<b>Platelet Rich Plasma (PRP)</b>	Concentrated platelets filtered from a patient's whole blood	Activated platelets release growth factors/cytokines that increase the production of anti-inflammatory markers, HA, and stimulates the growth and movement of stem cells	<ul style="list-style-type: none"> <li>• Safe</li> <li>• May provide better pain relief and function at 1 year</li> </ul>	<ul style="list-style-type: none"> <li>• Involves blood draw</li> <li>• Post injection inflammatory response common</li> </ul>	<b>\$325</b>
<b>Stem Cells</b>	Human cell that has the capability of become many different types of cells including fat, bone, cartilage, and muscle	Theoretical benefit of differentiation into cartilage like cells capable of improving the status and overall health of residual cartilage. Also release cytokines to help modulate joint inflammation	<ul style="list-style-type: none"> <li>• Safe</li> <li>• Modulate inflammation with potential to improve the cartilage</li> </ul>	<ul style="list-style-type: none"> <li>• Involves procedure to harvest bone marrow or fat tissue</li> <li>• Donor site pain</li> <li>• Lack of high quality studies</li> <li>• Not FDA approved in US</li> </ul>	<b>\$5000</b>