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## **Study Supports Hyaluronic Acid Shots for Knee Osteoarthritis in Certain Patients**

For some people with knee [osteoarthritis \(OA\)](#), hyaluronic acid (HA) injections can relieve pain and improve function – sometimes dramatically. During the procedure, hyaluronic acid– a substance similar to the naturally occurring gel-like lubricant that is found in the synovial fluid surrounding joints – is injected into the knee. Because people with OA have a lower than normal concentration of hyaluronic acid in their joints, the theory is that [adding the lubricant to the arthritic joint](#) will reduce pain and help with movement.

But HA injections, also called viscosupplements, don't work for everyone: Studies have shown that between 30 and 40 percent of patients who are given HA shots for knee OA don't experience a reduction in pain or an improvement in function. And studies have not provided any insight into which patients are most or least likely to benefit from them.

A new study, presented in early June at the European League Against Rheumatism (EULAR) Annual Congress, aimed to identify characteristics or factors that might predict which patients with knee OA would most likely respond to HA injections. A team of French researchers, led by Florent Eymard at Henri Mondor University Hospital, retrospectively analyzed data from 166 patients who had participated in a controlled, randomized, double-blind clinical trial of HA injections for knee osteoarthritis.

For the study, patients received three weekly injections of HA; a patient was considered to be a “responder” if he or she met certain criteria, including changes in pain and function, six months after the injection.

The researchers found that HA shots were least likely to work for patients who were overweight or obese, had more severe arthritis (with more joint space narrowing), were older than 65, and/or had had HA or corticosteroid shots (another type of joint injection) in the past. The factors most strongly associated with a lack of response were being overweight or obese and having more severe arthritis. And the more factors a patient had, the less likely it was that HA shots would help: 100 percent of patients who had none of the factors experienced improvements in pain and function compared to 69 percent of patients who had any two factors and 28.6 percent of patients with all four factors.

## **New Knowledge or Common Sense?**

Although the study was the first to provide evidence of the characteristics (both individual and cumulative) that could predict whether HA shots would work, it didn't add much to what doctors who regularly treat patients with knee osteoarthritis already know, says Struan H. Coleman, MD, PhD, an orthopedic surgeon at the Hospital for Special Surgery, in New York City. “If you see a lot of patients with arthritis, you develop an understanding of who HA injections are going to work best for and in which situations,” says Dr. Coleman, who is also the head team physician for the New York Mets baseball team. “A lot of this is common sense. If I see a person who's thin and doesn't have too much arthritis, maybe HA injections are going to be part of my treatment.”

While Dr. Coleman says the study was too small – with just 166 patients – to provide powerful results, he says it can contribute to good decision-making about HA shots. “It reinforces my thinking that people who do well on HA injections have early arthritis changes on X-ray, are not obese, and haven't had HA injections in the past or have had them and done well. For people with advanced arthritis who are overloading the joint because they're obese, going right to joint replacement may be the way to go,” says Dr. Coleman.

## **Lingering Controversy**

But HA injections are controversial. Many past studies of their effectiveness for knee OA have been criticized for being poorly done and funded by the drug makers. Additionally, the results have been all over the map, ranging from significant improvement in pain and function to small changes that don't make a difference for patients. “There's been a lot written about HA injections, and there's no perfect study,” says Dr. Coleman.

Plus, they have been shown to have a very large placebo effect.

Even among the medical groups, the jury is out. The American Academy of Orthopaedic Surgeons (AAOS) says that there isn't enough evidence that HA injection shots provide "clinically important improvement," and it no longer recommends them for knee OA. The American College of Rheumatology (ACR) "conditionally recommends" these shots for patients aged 75 and older for whom other treatments, including corticosteroid shots, haven't worked well. (A conditional recommendation means that the majority of patients, but not all, would choose the treatment if they were well informed about it, so doctors should ensure that the patient understands and wants the treatment.) The ACR has no recommendations regarding the use of HA in those younger than 75. And the Osteoarthritis Research Society International (OARSI) deems them "uncertain" for [knee OA](#) because of inconsistent study results.

Despite the lukewarm reception by the medical societies, many doctors who treat knee OA say that HA shots are very effective for some patients. Dr. Coleman says that many of his patients have seen dramatic results, and some have improved enough to cancel knee replacement surgery. "It's about choosing the right patient and capturing him at the right time on the curve of arthritis," he says.

*Author: Lori De Milto for the Arthritis Foundation*



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