

Team discovers new strategy to effectively treat, prevent osteoarthritis

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Think new discoveries are the bee's knees? This one is even better—this research out of Rhode Island Hospital is the mice's knees. Researchers have found that adding lubricin, a protein that our bodies naturally produce, to the fluid in our joints may reduce the risk of or even prevent osteoarthritis (OA).

The findings, in a paper by Gregory D. Jay, M.D., Ph.D., of the department of [emergency medicine](#), is published online in advance of print in the journal *Proceedings of the National Academy of Sciences*.

The discoveries were made in part by studying the knees of mice, which genetically lack lubricin, causing an aggressive arthritis in spite of high levels of [hyaluronic acid](#) in the synovial fluid. A lack of lubricin, resulting in higher friction, leads to cartilage cell death - even in the presence of high levels of hyaluronic acid, a [viscous fluid](#) that cushions the joints. This discovery appears to challenge the practice of injecting hyaluronic acid alone into a patient's joints.

"The lubricant is a protein, not hyaluronic acid, and currently, there are no disease-modifying treatments for osteoarthritis," Jay said. "Patients suffering from this [degenerative joint disease](#) either go through a total joint replacement, or are forced to live with pain every day. This discovery, however, supports that adding a lubricin replacement to the fluid in joints may in fact prevent osteoarthritis in those who have a [genetic predisposition](#) to the illness, or who have suffered significant trauma to the joints."

Jay added, "We are working to create a replacement for natural lubricin that we hope will significantly improve the treatment options, and ultimately prevention measures, for those with early osteoarthritis, or those with joint injuries."

OA, the most common form of arthritis, is a painful joint disease that can place severe limits on daily activity and quality of life. It causes pain, swelling and reduced motion in the joints, and while it can occur in any joint, it is most common in the hands, knees, hips or spine. The prevalence of OA increases beginning at age 45, according to the Centers for Disease Control and Prevention, and affects 27 million adults in the U.S. Risk factors include obesity, aging and injury/trauma to a joint.

"While many Baby Boomers are living longer, more active lives, obesity is a major problem in our country for many age groups," Jay said. "Both excessive weight, and injury to the joints can lead to osteoarthritis, which results in a more sedentary lifestyle. This discovery supports our ongoing efforts to produce a new therapy to protect cartilage among those with a transient loss of that protection, which places the cartilage at risk."

Provided by Lifespan

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