

New early warning sign of knee osteoarthritis

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People who are at higher risk to develop knee osteoarthritis (OA) from being overweight or having injured their knee in the past may have normal x-rays, but worsening lesions or damage appearing on their MRIs predicts a significantly higher risk of soon developing knee osteoarthritis or painful symptoms, reports a new Northwestern Medicine study.

Depending on the type of lesion, their risk of developing knee OA within three years as diagnosed by x-ray is three to 20 times greater.

"These worsening lesions are an early warning sign and an opportunity to intervene before a person develops the debilitating disease," said lead investigator Dr. Leena Sharma, a professor of medicine at Northwestern's Feinberg School of Medicine and a Northwestern Medicine rheumatologist. "If we employ aggressive [prevention strategies](#) in persons with these lesions before they develop knee osteoarthritis, we may be able to delay disease development or alter its course."

Prevention strategies include paying attention to weight and carefully reviewing physical activity to avoid potentially damaging activity and injury, said Sharma, also the Solovy Arthritis Research Society Research Professor.

This is the first study to examine and determine the impact of knee lesions in persons at higher risk for knee OA with normal x-rays. Previously, it wasn't known whether the lesions predicted the new development of OA or future symptoms such as frequent knee pain. Many scientists had thought these lesions were insignificant and simply

the result of aging, though in the last few years, the lesions have sparked more suspicion.

The study was published in October in the *Annals of the Rheumatic Diseases*.

Among Americans 55 years and older, 40 percent have frequent knee pain or [knee osteoarthritis](#). In the elderly, knee OA is responsible for as much chronic disability as cardiovascular disease. Current treatments may help symptoms but do not delay progression of the disease.

Factors that placed the study sample at higher risk included being overweight (21.3 percent), frequent knee bending activity (71 percent), climbing more than 10 flights of stairs most days (54 percent), squatting or deep knee bending 30 minutes or more at least one day in the past 30 days, (13 percent) and lifting or moving objects weighing more than 25 pounds at least one day in the past 30 days (34.5 percent).

The study included 849 Osteoarthritis Initiative (OAI) study participants, an average age of 60, without evidence of OA in either knee on the baseline x-ray. The OAI is a National Institutes of Health sponsored prospective, observational study of persons with or at higher risk for knee OA who have undergone annual evaluations for several consecutive years. Sharma and colleagues assessed cartilage damage, bone marrow [lesions](#) and a tear in the meniscus on the MRI images for at two time points three years apart. If damage on MRIs worsened during that period, study participants were at higher risk for the new development of knee OA during the three-year period of the MRI imaging or [knee](#) symptoms (pain, stiffness and/or swelling) in the subsequent three years.

More information: Leena Sharma et al. Clinical significance of worsening versus stable preradiographic MRI lesions in a cohort study of persons at higher risk for knee osteoarthritis, *Annals of the Rheumatic*

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