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NEWS

RSNA Press Release

Too Much Physical Activity May Lead to Arthritis

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At A Glance

- High levels of physical activity may result in knee damage and eventually arthritis for middle-aged men and women.
- MRI showed evidence of knee abnormalities, including cartilage damage and ligament lesions, in active adults with no pain or other symptoms.
- Osteoarthritis affects 27 million Americans.

CHICAGO — Middle-aged men and women who engage in high levels of physical activity may be unknowingly causing damage to their knees and increasing their risk for osteoarthritis, according to a study presented today at the annual meeting of the Radiological Society of North America (RSNA).

"Our data suggest that people with higher physical activity levels may be at greater risk for developing knee abnormalities and, thus, at higher risk for developing osteoarthritis," said Christoph Stehling, M.D., research fellow in the Department of Radiology and Biomedical Imaging at the University of California, San Francisco (UCSF) and radiology resident in the Department of Clinical Radiology, University of Muenster, Germany.

Osteoarthritis is a degenerative joint disease that causes pain, swelling and stiffness. According to the Centers for Disease Control and Prevention, osteoarthritis is the most common form of arthritis and affects an estimated 27 million American adults.

The UCSF study involved 236 asymptomatic participants who had not reported previous knee pain and were enrolled in the National Institutes of Health Osteoarthritis Initiative. Study participants included 136 women and 100 men, age 45 to 55, within a healthy weight range. The participants were separated into low-, middle-, and high-activity groups based on their responses to the Physical Activity Scale for the Elderly (PASE) questionnaire. PASE is a standard test that scores an older individual's physical activity level, based on the type of activity and the time spent doing it. Several factors contribute to the final PASE score, but a person whose activity level is classified as high typically might engage in several hours of walking, sports or other types of exercise per week, as well as yard work and other household chores.

Subsequent MRI analysis by two musculoskeletal radiologists indicated a relationship between physical activity levels and frequency and severity of knee damage. Specific knee abnormalities identified included meniscal lesions, cartilage lesions, bone marrow edema

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and ligament lesions. Abnormalities were associated solely with activity levels and were not age or gender specific.

"The prevalence of the knee abnormalities increased with the level of physical activity," Dr. Stehling said. "In addition, cartilage defects diagnosed in active people were more severe."

The findings also indicated that some activities carry a greater risk of knee damage over time.

"This study and previous studies by our group suggest that high-impact, weight-bearing physical activity, such as running and jumping, may be worse for cartilage health," Dr. Stehling said. "Conversely, low-impact activities, such as swimming and cycling, may protect diseased cartilage and prevent healthy cartilage from developing disease."

Dr. Stehling noted that there is a need for prospective studies to evaluate the influence of low-impact versus high-impact physical activity on disease progression.

Coauthors of the study are Nancy E. Lane, M.D., Michael C. Nevitt, Ph.D., M.P.H., Charles E. McCulloch, Ph.D., and Thomas M. Link, M.D., Ph.D.

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