

Researchers uncover link between immune function and osteoarthritic pain and progression

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The immune system plays a pivotal role in the amount of pain and disease progression experienced by patients with osteoarthritis (OA), McMaster University researchers have found.

This discovery could lead to new strategies for improving joint pain management and immune function in older adults with arthritis.

The study, published in the medical journal *Osteoarthritis and Cartilage*, found that monocytes, the [white blood cells](#) necessary to regulate immune responses, were more activated and pro-inflammatory in women with osteoarthritis, and that elevated inflammation and [body mass index](#) were associated with this increased activation.

When compared with a control group, this combination created a perfect storm - one that was found to increase the pain and progression of [knee osteoarthritis](#). The study involved 22 women with OA, and 22 women of the same age without OA.

"It is the first study, to our knowledge, to specifically characterize changes in circulating monocytes in individuals with OA compared to healthy women," said senior author Dawn Bowdish, a professor of pathology and molecular medicine at McMaster, and member of the McMaster Institute for Research on Aging.

"We know that changes in monocytes contribute to the development of [chronic inflammatory conditions](#). If we can target these monocytes in OA, we may be able to slow down [disease progression](#) or decrease the risk of other [chronic inflammatory diseases](#)," she said.

Chronic inflammation and osteoarthritis has been linked to an increased risk of heart disease, stroke, diabetes and depression among adults with OA. While the cause of OA remains unknown, multiple factors contribute to its risk, progression and severity.

"We believe these findings are completely novel in the literature about the knees and OA," said senior author Monica Maly, an associate professor in the Department of Kinesiology at the University of Waterloo who was involved in the research while an associate professor of McMaster's School of Rehabilitation Sciences. "[It] will form the basis for ongoing collaboration to explore this phenomenon in a larger sample."

The researchers intend to take this knowledge and apply it to better understanding the impact of exercise on the health of [older adults](#) with osteoarthritis.

The Arthritis Alliance of Canada has reported that effective strategies for managing OA-related pain, specifically in the workplace, would result in savings of \$488 billion over the next 25 years.

Provided by McMaster University

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