No clear link between weather and common muscle and joint symptoms, says study

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There is no clear connection between the weather and back, knee or hip pain, a University of Sydney led study has found, challenging a common belief that changes in weather parameters, such as temperature and humidity can trigger musculoskeletal pain or arthritis.

There is a longstanding belief that changes in weather conditions, such as impending rain or temperature, can trigger or worsen muscle and joint pain but Australian researchers have found no clear pattern between the two.

The research found that high temperatures and low humidity may double the risk of a gout flare with the findings showing warm weather could lead to dehydration and increased uric acid concentration in people with gout.

The study results highlight a wider issue: although more than a quarter of Australians are affected by a chronic musculoskeletal condition, there are still widespread misconceptions and limited treatment options.

Researchers say patients are often left to navigate and understand their medical condition without proper support.

"There is a common perception that there is an increase of musculoskeletal symptoms such as back pain, hip pain or arthritic symptoms during certain types of weather," said lead author, Professor Manuela Ferreira from Sydney Musculoskeletal Health, an initiative of the University of Sydney, Sydney Local Health District and Northern Sydney Local Health District.

"Our research challenges that thinking by showing that come rain or shine, weather has no direct link with most of our aches and pains," said Professor Ferreira who is based at Sydney's Kolling Institute.

Researchers pooled data from existing international studies on weather and musculoskeletal pain that involved over 15,000 participants reporting over 28,000 new episodes or worsening of muscle or joint pain.

Knee or hip osteoarthritis were the most common conditions reported, followed by low back pain and rheumatoid arthritis.

The review found changes in air temperature, air humidity, pressure and rainfall do not seem to increase the risk of knee, hip or lower back pain symptoms and are not associated with new care seeking events for arthritis.

This is the first study to evaluate data from studies specifically designed to look at the role of transient, modifiable risk factors, such as weather, on muscle and joint symptoms.

The researchers say the findings 'debunk' a common medical myth while also issuing an important warning to patients to not let the weather impact treatment options.

"When seeking pain prevention and relief, both patients and clinicians should focus on how to best manage the condition, including weight management and exercises, and not focus on the weather and let it influence treatment," says Professor Ferreira.

The study was published *Seminars in Arthritis and Rheumatism*.

More information: Manuela L Ferreira et al, Come rain or shine: Is weather a risk factor for musculoskeletal pain? A systematic review with meta-analysis of case-crossover studies, *Seminars in Arthritis and Rheumatism* (2024). DOI: 10.1016/j.semarthrit.2024.152392

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