

Unequal leg length tied to osteoarthritis

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Queen's University adjunct professor Derek Cooke studies misalignment and leg length differential. Credit: Photo by Kristyn Wallace

A new study shows that arthritis in the knee is linked to the common trait of having one leg that is longer than the other. Whether or not leg length differential is a direct cause of osteoarthritis is not clear, but the findings may allow people to take preventive measures before the onset of the chronic and painful condition.

Developing early strategies for treatment may be possible, says Derek Cooke, Queen's University adjunct professor and a co-author of the study.

"Most pediatricians adopt a 'wait and see' attitude for children with limb misalignment when they're growing," says Dr. Cooke. "If we can spot factors creating changes in alignment early in [bone development](#), theoretically we could stop or slow down the progression of osteoarthritis."

The data was collected using x-ray images from more than 3,000 adults aged 50 to 79 who either had [knee pain](#) or risk factors for [knee osteoarthritis](#) as a part of the Multi Centre Osteoarthritis Study (MOST). Subjects were reassessed after a 30-month period and the researchers found that osteoarthritic changes in the knee were most significant in individuals with pronounced (more than 1 cm) leg length inequality, the shorter leg being most affected.

Leg length inequality is difficult to detect. A small leg length differential - 1 cm or less - can be corrected with a shoe insert, while a bigger one can be corrected with surgery. But because the condition often goes undiagnosed, many people don't realize they have a leg length differential until they're diagnosed with osteoarthritis.

Arthritis in the knees can cause pain, swelling and stiffness, and limit mobility. [Osteoarthritis](#) is very common, affecting 1 in 10 Canadians. The older a person gets, the greater the chance he or she has of developing the disease.

OAISYS Inc. undertook the image analysis work, collecting the limb length and angles measurements for the MOST project.

William F Harvey from Boston University, currently at Tufts Medical Center, was the lead author on the paper, which was recently published in the journal *Annals of Internal Medicine*.

Provided by Queen's University

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