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Oh My Aching Knees

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A person's choice of shoes, especially when used with an orthotic insert, can make a significant improvement in pain for people suffering from knee osteoarthritis, according to a University of Dayton professor.

The disease is expected to affect nearly half of all Americans over their lifetimes, according to the Centers for Disease Control. To alleviate the pain and make it easier to walk, those affected with knee arthritis turn to everything from medication, surgery, weight-lifting, even Chinese tai chi

exercises.

But research by Joaquin Barrios, assistant professor of physical therapy at the University of Dayton, indicates that using a walking shoe with an orthotic can make a difference. Barrios presented his research this month at the national conference of the American Physical Therapy Association in San Diego.

The study found that patients who used walking shoes with an laterally wedged orthotic insert designed to take load off the inside of their knees reported less pain with walking after just a month. Those patients who used a neutral orthotic insert reported improvement after a year.

The findings are significant Barrios said, because they add to the body of scientific knowledge of treatments that are proven effective in reducing knee pain for some people and may allow them to delay surgery.

Barrios said the results came as a bit of a surprise. The study was primarily designed to explore whether using a laterally wedged orthotic insert made a difference in the patients' pain over an extended period of time.

All of the 66 people in the study received walking shoes with an orthotic insert. However, some received shoes with a laterally wedged insert, constructed to take pressure off the inside of the knee.

"The assumption is that if you reduce the load on the knee, down the road you'll see a difference, because it changes the way force is applied to the knee," he said.

Barrios said he and co-researchers Jeremy Crenshaw of the University of Illinois at Chicago, and Todd Royer and Irene Davis, both of the University of Delaware, expected to see an improvement in those patients who received the wedged orthotics. Those who received the special inserts did, indeed, report an improvement, he said.

But those who used the shoes and the neutral orthotic also reported significant improvement. The only major difference was those with the laterally wedged orthotic said they felt less pain with walking only a month, but both groups reported improvement after a year.

"There's no known cure for knee osteoarthritis," he said. "For patients with the advanced disease, oftentimes the only thing that can be done is knee replacement surgery.

"We are looking at how to improve the longevity of a knee that's destined for replacement."

He will continue his exploration of knee mechanics in the University's new motion analysis laboratory.

Barrios' research was published in the March 2009 issue of *The Knee*, an international journal that publishes studies on the treatment and characteristics of the knee.

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