

# Researchers measure gait to reduce falls from glaucoma

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Washington State University researchers have developed a way to carefully analyze a person's gait with sensors, an innovation that could lead to reduced falls and injuries in people with glaucoma, the second leading cause of blindness in the United States.

Led by Hassan Ghasemzadeh, assistant professor in the WSU School of Electrical Engineering and Computer Science, and graduate student Yuchao Ma, the researchers presented their [gait](#) analysis study results at the ACM Wireless Health Conference last week in Bethesda, Md.

Working with a group from the University of California, Los Angeles, they have begun clinical trials.

"Glaucoma is usually diagnosed late," Ma said. "But earlier detection of gait disturbances could make a difference."

Previous studies have shown that glaucoma patients fall more often as their visual deterioration progresses. They walk more slowly, sway, bump into obstacles and have unequal step placement of their feet. However, most patients aren't diagnosed until they suffer from ocular discomfort, which usually occurs later in the disease when it's less treatable.

The researchers developed a sensing platform worn on special shoes to measure, filter and

analyze gait information. The research team can detect and examine specific features of gait, such as step length, equity between feet and evenness of step. In the [clinical trials](#), researchers are comparing the gaits of glaucoma patients and control groups.

The [researchers](#) hope to use the technology someday to diagnose the disease earlier and outside laboratory settings, adding to the current practice of imaging or a visual field test.

The UCLA group is recruiting participants in different stages of glaucoma for the next phase of research in order to provide a more comprehensive look at how glaucoma impacts gait.

**More information:** [www.wirelesshealth2015.org/](http://www.wirelesshealth2015.org/)

Provided by Washington State University

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