

Foot positioning during walking and running may influence ankle sprains

30 June 2011, By Michael Childs

(Medical Xpress) -- The position of the foot just before ground contact during running and walking may put people at risk for ankle sprains, according to a new study published by a University of Georgia kinesiology researcher.

The results of the study, which appear in the June online edition of the American Journal of [Sports Medicine](#), found that people who have a history of repetitive ankle sprains demonstrated lower clearance heights between their feet and the floor during running, and pointed their [toes](#) down more during walking. Ankle sprains are the most common sports-related injury, and many who experience a sprain will go on to develop chronic instability, suffering repeated sprains during their lifetime.

"Almost everyone who is physically active will suffer an ankle sprain at some point," said the study's lead author, Cathleen Brown Crowell, an assistant professor in the UGA College of Education's department of [kinesiology](#). "Many people develop repetitive ankle injuries that are painful, can decrease performance and increase the risk of ankle osteoarthritis. We were able to identify factors in foot positioning prior to contact with the ground that may pre-dispose some people to these repetitive injuries. These findings can help clinicians develop rehabilitation programs that address movements that may have been ignored in the past."

The study collected data on more than 30 male recreational athletes, some with a history of repetitive ankle sprains and some without. Motion capture equipment analyzed joint movements and forces in the participants during walking and running. This study was unique in that it analyzed all three possible motions of the ankle, and included participants who had different types of ankle instability, explained Brown Crowell.

While such motion capture equipment may not be

available for analysis of patients in rehabilitation clinics, the findings can be applied to physically active individuals at any level who sprain their ankles.

"We can apply our findings to clinical practice," said Brown Crowell. "Our study demonstrates there are differences in movements at the foot and ankle in an injured population, which may respond to rehabilitation interventions beyond typical stretching and strengthening. The next step is to see if targeted interventions, trying to influence how people run and walk, can treat and even prevent ankle sprains."

More information: Brown Crowell's article in American Journal of Sports Medicine is available in its entirety at ajs.sagepub.com/content/early/.../408872.full.pdf+html

Provided by University of Georgia

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