

Study aims to define risk factors for falls in post-menopausal women

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A new study appearing in the March issue of the *Journal of Bone and Joint Surgery (JBJS)* showed that women with distal radius (wrist) fractures had decreased strength compared to similar patients without fractures. This could explain why these women were more likely to fall and might sustain future fractures.

The investigators used a variety of balance and strength tests combined with patient-provided information about walking habits to evaluate the physical performance and risk of falls for post-menopausal women with and without previous wrist fractures. Wrist fractures are the most common upper-extremity fractures in older women, but little is known about what factors contribute to the risk of falls for these patients.

Although overall physical performance level was found to be no different between women with and without wrist fractures, differences in the results of two of the strength tests – chair stand (the ability to rise from a chair) and [grip strength](#) – may imply an early subtle decrease in physical ability in the patients with [wrist fractures](#).

"Differences in chair stand test scores and grip strength may imply an early subtle decrease in physical performance level in patients with a distal radial fracture. Further studies are warranted on whether preventative measures such as muscle strengthening exercise would be helpful for preventing future fall events and fractures in patients with previous distal radial fracture," reports study author and orthopaedic surgeon Hyun Sik Gong, MD.

In a companion commentary in *JBJS Perspectives*, orthopaedic surgeon Leon Benson, MD, writes, "At a very basic level, this paper (Gong et al.) helps start to answer the 'why' of fragility fractures and identifies a few clues that might confirm what everyone, both doctors and patients, suspect is true: physical activity is the holy grail of orthopaedic health."

Specific Study Details

The study involved 80 post-menopausal women over age fifty, 40 of whom had fractured their wrist by falling on an outstretched hand. The control group consisted of 40 women with other, unilateral (on one side) upper extremity conditions such as carpal tunnel syndrome, tenosynovitis (inflammation of the sheath that surrounds a tendon), or epicondylitis (tennis elbow).

- The physical performance of the participants was evaluated using the Short Physical Performance Battery, grip strength and the participant's self-estimated amount of time per day that they spent walking.
- The Short Physical Performance Battery consisted of standing balance and walking speed and the chair stand (measured by having the participant repeatedly stand up and sit down as quickly as possible and measuring the speed).

Key Study Findings

- No significant differences were found in the Short Physical Performance Battery summary score and walking hours per day between the patient group and the control group.
- The patient group had a significantly lower score for the chair stand and grip strength tests than the control group.
- No significant differences were found in other potential fall risk

factors between the two groups.

Both the study authors, and the author of the related commentary note that given the frequency, health risks and expense associated with falls for older adults, continued study to determine the causes of falls and any modifiable risks should be a priority.

Provided by American Academy of Orthopaedic Surgeons

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