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More Strength and Better Physical Function Could Reduce Risk of Hospitalization in the Elderly

Exercise programs could reduce disability and hospitalization

(San Francisco, July 30, 2009) Older adults who have less strength, poor physical function and low muscle density are at higher risk of being hospitalized compared to adults with more strength and better function. That's the finding of a new study in the *Journal of the American Geriatric Society*.

The study also found that muscle density, a measure of how much fat compared to lean tissue there is in the muscle, is a more accurate gauge of a person's risk of hospitalization than muscle mass or size.

"Our research suggests that we need to re-think the way we define sarcopenia or age-related muscle loss," says Peggy Cawthon, Ph.D., MPH, a scientist with the California Pacific Medical Center Research Institute and lead author of the study. "Many definitions of sarcopenia today tend to focus on lean mass or muscle size, our study shows that is looking at the wrong factors. We found that muscle strength or performance were much better ways of measuring function."

The researchers followed 3,011 healthy, non-disabled adults between the ages of 70 and 80, for an average of almost five years. They measured their physical function in a number of ways including walking speed, their ability to stand up from a chair repeatedly, the strength of their grip and their leg strength. By the end of the study more than 55 percent of the participants had experienced one or more hospitalizations. Those most likely to end up in the hospital were the adults who scored lowest on the measures of physical function; this held true after allowing age, medical conditions, lean mass or muscle size. They also found that adults with the least dense thigh muscles, namely those with a higher proportion of fat in their thighs, were also at a higher risk of hospitalization compared to adults with more dense thighs.

“The findings are particularly important because they suggest that interventions, such as physical exercise, that improve physical function could help keep more vulnerable seniors out of the hospital,” says Cawthon. “That would not only reduce disability but it would also reduce the huge economic burden associated with hospitalization of the elderly.”

One in five Americans over the age of 65 suffers from sarcopenia. In 2000 the direct health care costs of treating it were estimated to be more than \$18.5 billion. With the number of Americans older than 65 estimated to double by the middle of the century those costs are expected to increase dramatically.

Preventing older Americans from being hospitalized is more than just a matter of saving health care dollars, it may also save lives. Numerous studies show that even short stays in the hospital are associated with a greater future risk of functional decline and disability.

“Most methods of measuring muscle mass or density rely on complex imaging procedures, such as using quantitative computed tomography (QCT). Those are time consuming and expensive,” says Cawthon. “However, we found that much simpler methods – such as measuring walking speed – are much easier and cheaper to do, and are even more accurate in determining a person’s risk of future hospitalization. This gives us the ability to screen larger groups of people and help those at risk with some simple interventions, such as physical exercise.”

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