

# Protein preserves muscle and physical function in dieting postmenopausal women

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Dieting postmenopausal women who want to avoid losing muscle as they lose fat should pay attention to a new University of Illinois study. Adding protein throughout the day not only holds hunger pangs at bay so that dieters lose more weight, it keeps body composition -- the amount of fat relative to muscle -- in better proportion.

"A higher-protein weight-loss diet is more protective of muscle," said Ellen Evans, a former U of I associate professor of [kinesiology](#) and [community health](#) and member of the university's Division of [Nutritional Sciences](#).

Scientists in Evans's Illinois lab wanted to study the way [body composition](#) relates to physical function because older women who diet risk losing muscle as well as fat.

"That loss can affect their strength, balance, and how well they perform everyday tasks, such as climbing stairs and getting up out of a chair," said Mina Mojtahedi, a researcher in Evans's laboratory.

The study shows that higher [protein intake](#) during weight loss can offset negative effects on [muscle mass](#) by maintaining more muscle relative to the amount of weight lost. Women who ate more protein lost 3.9 percent more weight and had a relative gain of 5.8 percent more thigh muscle volume than woman who did not, she said.

"When a woman has less weight to carry, even if she's lost a bit of lean

mass in her legs, the effect is that she has better physical function," she said.

It's likely that such women will be better able to maintain their mobility and independence as they age, she added.

In the six-month double-blind study, 31 healthy, postmenopausal [obese women](#) were divided into two groups. Each group followed a 1,400-calorie weight-loss diet based on USDA's My Pyramid, but one group received a powdered whey protein supplement in the morning and again in the afternoon or evening; the other received a placebo that contained carbohydrates.

"We believe it's important to eat protein in the morning and through the day so those [amino acids](#) are always available. Unfortunately, American women tend not to eat much protein, especially when they're trying to cut calories. But it's easy to add protein powder into a smoothie or eat a high-protein snack and incorporate a healthier diet into a busy lifestyle," she said.

Both groups were encouraged to engage in light exercise (walking and stretching) and given diet education, including examples of healthy daily menus and a scale to measure portion size.

Before and after the study, participants were assessed for strength, balance, and the ability to perform such physical tasks as walking 50 feet, standing up five times from a chair, and lifting a book 12 inches above shoulder height.

Magnetic resonance imaging (MRI) was used at the beginning and end of the study to measure muscle volume of the right thigh, the amount of fat around the thigh, and the amount of fat within the thigh muscle.

In both groups, strength decreased as weight decreased. However, the study suggests that an increase in the amount of muscle relative to fat had beneficial effects on balance and performance, Evans noted.

And, even though weight loss in these [older women](#) had a negative effect on strength, their reduced weight helped with other aspects of physical function, she said.

"We hypothesize that more vigorous exercise—in particular, resistance training—would preserve even more muscle," she said.

**More information:** This research, reported in Mojtahedi's doctoral dissertation, is available pre-publication [online](#) in the *Journal of Gerontology: Medical Sciences*.

Provided by University of Illinois at Urbana-Champaign

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