

It's never too late to lift weights: Older bodies can still build muscle

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By [Gretchen Reynolds](#)

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Contrary to popular wisdom among many gym-goers and even some scientists, healthy people in their 60s, 70s and beyond can safely start lifting weights and rapidly build substantial muscle mass, strength and mobility.

A new study of resistance exercise and the elderly found that even people in their 80s and 90s — who hadn't weight trained before — showed significant gains after starting a supervised program of lifting weights three times a week.

“It shows that healthy older people can certainly respond to resistance training, that their muscles are still plastic,” said Tommy Lundberg, an exercise researcher at the Karolinska Institute in Sweden, who was not involved in the study.

Lundberg, the author of the new book, “The Physiology of Resistance Training,” said the research shows it's never too late for older people to start lifting weights. “They can increase both their muscle size and their strength,” he said.

Most of all, the study implies that our perceptions of what's physically possible in old age also may need updating.

Aging muscles can grow

“It is often assumed that the oldest old, or, say, people past the age of 80, are less likely to be able to gain muscle mass and strength,” said Luc van Loon, a professor of human biology at Maastricht University, and senior author of the new study.

This idea took hold partly because the oldest old so rarely were studied. Past weight-training research often capped volunteers' ages at about 75, because of worries that older people would be unable to handle the training or that their muscles wouldn't respond if they could manage to lift.

But van Loon and his colleagues were unconvinced. “Muscle tissue is constantly turning over as long as we live,” he said, so why shouldn't an octogenarian's muscles strengthen and grow as well as a youngster's of 65?

To investigate that idea, he and his co-authors recruited 29 healthy, older men and women. The study consisted of two groups. The “younger old” included 17 people between the ages of 65 and

75. Participants in the “older old” group were at least 85. All lived independently and had no debilitating illnesses.

None had regularly weight trained before.

Growing stronger at any age

The researchers measured everyone’s current strength and muscle mass and then introduced them to weight training, with a basic full-body resistance routine using gym machines such as the lat pulldown and leg extension. The volunteers lifted three times a week for 12 weeks, in supervised sessions, using weights set to as much as 80 percent of their full strength.

This program is more intense than some people might expect older people to tolerate. But the volunteers “loved participating in this intervention,” said Gabriel Nasri Marzuca-Nassr, an associate professor at the University of La Frontera in Chile, who led the new study. Attendance was high, injuries rare.

And both the “younger old” and “older old” groups responded powerfully to the exercise, surprising the researchers somewhat. Before the study started, Marzuca-Nassr said, he and his co-authors had expected the oldest men and women to gain strength and mass, but to a lesser extent than among the 65- to 75-year-olds.

However, after three months, the people aged 85 and up had packed on more strength and mass, in relative terms, than the younger group, adding an average of 11 percent to muscle mass and 46 percent to strength, versus 10 percent more muscle and 38 percent more strength among the younger volunteers.

The oldest men and women also improved their scores on a test of their ability to rise from a chair and move around by about 13 percent, versus 8 percent in the younger of the groups.

The oldest group’s greater relative gains were due, in part, the researchers think, to their having had an extra decade of declining muscle size and strength, compared to the younger lifters. They started from a lower baseline.

Never too late to lift

The results persuasively show that “it’s never too late to start training,” said Michael Roberts, a professor of kinesiology at Auburn University in Alabama, who has extensively studied resistance exercise.

The oldest group’s improved mobility was especially encouraging, he added, because “loss of physical function is ultimately what defines frailty.”

The results have caveats. The study was small and lasted only for three months. Plus, the training was supervised, with people’s lifting form and loads monitored and adjusted as needed, a level of attention that could be difficult to replicate for ordinary people.

The study also is not meant to give any of us carte blanche to skip weight training now, in anticipation of starting in retirement. “It’s better to start at an earlier age,” Marzuca-Nassr said, “and continue throughout life.”

Perhaps most important, the older men and women who joined the study were healthy for their ages, with few glaring physical limitations. It may be unrealistic for some older people with serious illnesses or disabilities to begin lifting.

If you’re worried about your readiness for weight training, Marzuca-Nassr said, talk with your doctor.

Anyone past about age 60 who’s interested in starting a new lifting or other exercise routine should probably check first with their doctor and then seek out training programs at a gym or community center specifically designed for older people. The costs often are covered by Medicare or other insurance.

The study’s key takeaway, though, is that there seems to be no age limit or hard stop on our bodies’ ability to adapt and improve, said study co-author van Loon. “You are never too old to start exercising.”