The more muscle older adults have, the lower their risk of death, according to a new study.

Researchers analyzed data from more than 3,600 older adults who took part in the U.S. National Health and Nutrition Examination Survey between 1988 and 1994. The participants included men 55 and older and women 65 and older.

As part of the survey, the participants underwent tests to determine their muscle mass index, which is the amount of muscle relative to height.

The investigators used a follow-up survey done in 2004 to determine how many of the participants had died of natural causes and how muscle mass was related to death risk. People with the highest levels of muscle mass were significantly less likely to have died than those with the lowest levels of muscle mass.

"In other words, the greater your muscle mass, the lower your risk of death," study co-author Dr. Arun Karlamangla, an associate professor in the geriatrics division at University of California, Los Angeles School of Medicine, said in a university news release. "Thus, rather than worrying about weight or body mass index, we should be trying to maximize and maintain muscle mass."

The study was published online recently in the American Journal of Medicine.

The findings add to growing evidence that overall body composition is a better predictor of all-cause death than body mass index (BMI), according to the researchers. BMI is an estimate of body fat based on weight and height.

However, the study only shows an association, not a cause-and-effect relationship, between muscle mass and risk of death, the study authors noted in the news release.

"As there is no gold-standard measure of body composition, several studies have addressed this question using different measurement techniques and have obtained different results," study leader Dr. Preethi Srikanthan, an assistant clinical professor in the endocrinology division at the UCLA School of Medicine, said in the news release.

Many studies that investigate how obesity and weight affect the risk of death look only at BMI, Srikanthan pointed out. "Our study indicates that clinicians need to be focusing on ways to improve body composition, rather than on BMI alone, when counseling older adults on preventative health behaviors," she explained.

Future research should focus on pinpointing the types and amounts of exercise that are most effective in improving muscle mass in older adults, the study authors concluded.