Medical Xpress

# Obesity has negative impact on metabolic quality of muscle

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(HealthDay)—Among older men, obesity has a negative effect on the metabolic quality of skeletal muscle, according to a study published online May 26 in *Diabetes*.

Andrew J. Murton, Ph.D., from the University of Nottingham Medical School in the United Kingdom, and colleagues examined the effect of obesity on muscle protein turnover in older adults. Data were included for 11 obese and 15 healthy-weight older men. Muscle protein synthesis (MPS) and leg protein breakdown (LPB) were assessed under post-absorptive and postprandial conditions.

The researchers found that obesity correlated with systemic inflammation, greater leg fat mass, and mRNA expression patterns consistent with muscle deconditioning; no difference was seen in leg lean mass, strength, and work done during maximal exercise. MPS and LPB

were equivalent between the groups under post-absorptive conditions. In healthy-weight individuals only, insulin and amino acid administration increased MPS, while in obese there was a correlation with lower leg glucose disposal (LGD). Among obese participants, blunting of MPS was offset by an apparent decrease in LPB, which was not seen in healthy-weight individuals.

"Obesity in older men is aligned with systemic, but not muscle, inflammation. We found no evidence that obese, non-frail, older men are at increased risk of accelerated muscle mass loss or impaired contractile function (strength and fatigability) compared to their healthy-weight counterparts," the authors write. "However, our results highlight the negative effect that obesity has on the metabolic quality of skeletal muscle in older adults."

**More information:** Abstract
Full Text (subscription or payment may be required)