

Abstract

Am J Clin Nutr. 2007 Aug;86(2):347-52.

Association of low plasma selenium concentrations with poor muscle strength in older community-dwelling adults: the InCHIANTI Study.

Lauretani F, Semba RD, Bandinelli S, Ray AL, Guralnik JM, Ferrucci L.

Tuscany Regional Agency, Florence, Italy.

BACKGROUND: Although selenium plays an important role in muscle function, the relation between circulating selenium and muscle strength in elderly adults has not been characterized.

OBJECTIVE: The objective was to examine the hypothesis that low plasma selenium is associated with poor muscle strength in older adults.

DESIGN: We measured plasma selenium and hip, grip, and knee strength in a cross-sectional study of 891 men and women aged ≥ 65 y from the Invecchiare in Chianti (InCHIANTI) Study, a population-based cohort study in Tuscany (Italy). Poor muscle strength was defined as the lowest quartile of hip flexion, grip, and knee extension strength.

RESULTS: Overall, mean (\pm SD) plasma selenium was 0.95 ± 0.15 $\mu\text{mol/L}$. After adjustment for age, sex, education, total energy intake, body mass index, and chronic disease, participants in the lowest versus the highest quartile of plasma selenium were at higher risk of poor hip strength [odds ratio (OR): 1.69; 95% CI: 1.02, 2.83; $P = 0.04$, P for linear trend = 0.04], knee strength (OR: 1.94; 95% CI: 1.18, 3.19; $P = 0.009$, P for linear trend = 0.01), and grip strength (OR: 1.94; 95% CI: 1.19, 3.16; $P = 0.008$, P for linear trend = 0.08).

CONCLUSIONS: Low plasma selenium is independently associated with poor skeletal muscle strength in community-dwelling older adults in Tuscany.

PMID: 17684204