

# Abstract

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## Low serum selenium is associated with anemia among older adults in the United States.

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**OBJECTIVE:** We hypothesized that low serum selenium was associated with anemia in humans.

**SUBJECTS:** A total of 2092 adults aged 65 and older, in the third National Nutrition Examination Survey, Phase 2 (1991-1994) (NHANES III).

**METHODS:** Examination of the relationship between serum selenium and hematological indices in NHANES III.

**RESULTS:** Anemia, defined by World Health Organization criteria, was present in 12.9%. Mean serum selenium among non-anemic and anemic adults was 1.60 and 1.51  $\mu\text{mol l}^{-1}$  ( $P=0.0003$ ). The prevalence of anemia among adults in the lowest to highest quartiles of serum selenium was 18.3, 9.5, 9.7 and 6.9%, respectively ( $P=0.0005$ ). The proportion of adults in the lowest quartile of selenium among those who were non-anemic or who had anemia due to nutritional causes, chronic inflammation, renal disease or unexplained anemia was 9.9, 27.5, 17.5, 24.0 and 15.4%, respectively. An increase in  $\log(e)$  selenium was associated with a reduced risk of anemia (odds ratio per one standard deviation increase 0.75, 95% confidence interval 0.58-0.97,  $P=0.03$ ), adjusting for age, race, education, body mass index and chronic diseases.

**CONCLUSION:** Low serum selenium is independently associated with anemia among older men and women in the United States.

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