

# Abstract

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## Effect of vitamin K supplementation on insulin resistance in older men and women.

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**OBJECTIVE:** Vitamin K has a potentially beneficial role in insulin resistance, but evidence is limited in humans. We tested the hypothesis that vitamin K supplementation for 36 months will improve insulin resistance in older men and women.

**RESEARCH DESIGN AND METHODS:** This was an ancillary study of a 36-month, randomized, double-blind, controlled trial designed to assess the impact of supplementation with 500 microg/day phylloquinone on bone loss. Study participants were older nondiabetic men and women (n = 355; aged 60-80 years; 60% women). The primary outcome of this study was insulin resistance as measured by homeostasis model assessment (HOMA-IR) at 36 months. Fasting plasma insulin and glucose were examined as the secondary outcomes.

**RESULTS:** The effect of 36-month vitamin K supplementation on HOMA-IR differed by sex (sex x treatment interaction  $P = 0.02$ ). HOMA-IR was statistically significantly lower at the 36-month visit among men in the supplement group versus the men in the control group ( $P = 0.01$ ) after adjustment for baseline HOMA-IR, BMI, and body weight change. There were no statistically significant differences in outcome measures between intervention groups in women.

**CONCLUSIONS:** Vitamin K supplementation for 36 months at doses attainable in the diet may reduce progression of insulin resistance in older men.

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