

# Leyla Weighs In: Do Vegetarian/Vegan diets impact bone fracture risk?

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A recent study looked to examine the impacts of vegetarian and vegan diets vs. meat-eaters on bone fracture risk. Previous epidemiological studies have shown vegetarians to have lower bone mineral density (BMD) than meat-eaters, but associations of those diets with fracture risks remain unclear.

The EPIC-Oxford is a prospective cohort study which recruited 65,000 women and men in the UK between 1993 and 2001, following up with them in 2010 with questionnaires asking about diet, lifestyle, and medical history. The study's aim was to examine the risks of both site-specific (i.e., hip) and total fractures in this population (i.e., arm, wrist, leg, ankle, other). The age range for fracture events was between 51 and 78 years old.

Based on questionnaire responses, 54,898 subjects were categorized into four groups:

## **Meat eaters**

**Fish eaters** (*did not eat meat but ate fish*)

**Vegetarians** (*did not eat meat or fish but ate one or both of dairy and eggs*)

**Vegans** (*did not eat meat, fish, dairy or eggs*)

Adjustments were made to consider dietary calcium and protein intake. Other confounders were adjusted for in the analysis including age, physical activity level, menopausal status, and body mass index (BMI).

Overall, vegans were found to have higher risks of total and some site-specific fractures—mainly hip, leg, and vertebra—than meat-eaters. Interestingly, the strongest associations were observed for hip fractures, for which fish eaters, vegetarians, and vegans *all had higher risks*. The researchers note that this may be partially explained by lower BMIs in these groups and lower intakes of protein and calcium. When these confounders were adjusted for, however, the differences remained between meat-eaters and non-meat-eaters—especially in vegans.

This finding is consistent with previously published research that asserts that higher protein is required—especially in older people—for successful

health outcomes including lowering the risk of sarcopenia which has direct impacts on bone fracture risk.

To your health!

Leyla Muedin, MS, RD, CDN

Tom TYN, Appleby PM, Armstrong MEG, et al. Vegetarian and vegan diets and risks of total and site-specific fractures: results from the prospective EPIC-Oxford study. *BMC Medicine*. 2020;18:353.