

Dietary intake of fat and fat-soluble nutrient in relation to long-term risk of dementia



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KEY TAKEAWAY

Vegetable fat intake was associated with a lower risk of dementia among individuals with higher overall fat-soluble nutrient intake, highlighting the importance of dietary patterns that combine healthy fats with a variety of fat-soluble nutrients.

BACKGROUND

Evidence regarding the association between dietary fat intake and dementia risk remains inconsistent. Dietary fats and fat-soluble nutrients share common pathways of digestion, absorption, and transport. However, whether fat-soluble nutrient status modifies the association between dietary fat intake and dementia risk remains unclear.

METHODS

- **Design and participants:** Prospective analysis of 5,944 dementia-free adults from the Health and Retirement Study, followed for a median of 6.0 years.
- **Exposure:** Total, animal, and vegetable fat intake and five fat-soluble nutrients were assessed using a 168-item food frequency questionnaire. A composite Fat-Soluble Nutrient (FSN) score was calculated.
- **Outcome:** Incident dementia was identified using the Langa–Weir classification.
- **Analysis:** Cox models assessed associations and multiplicative interactions; additive interaction was evaluated using RERI.

RESULTS

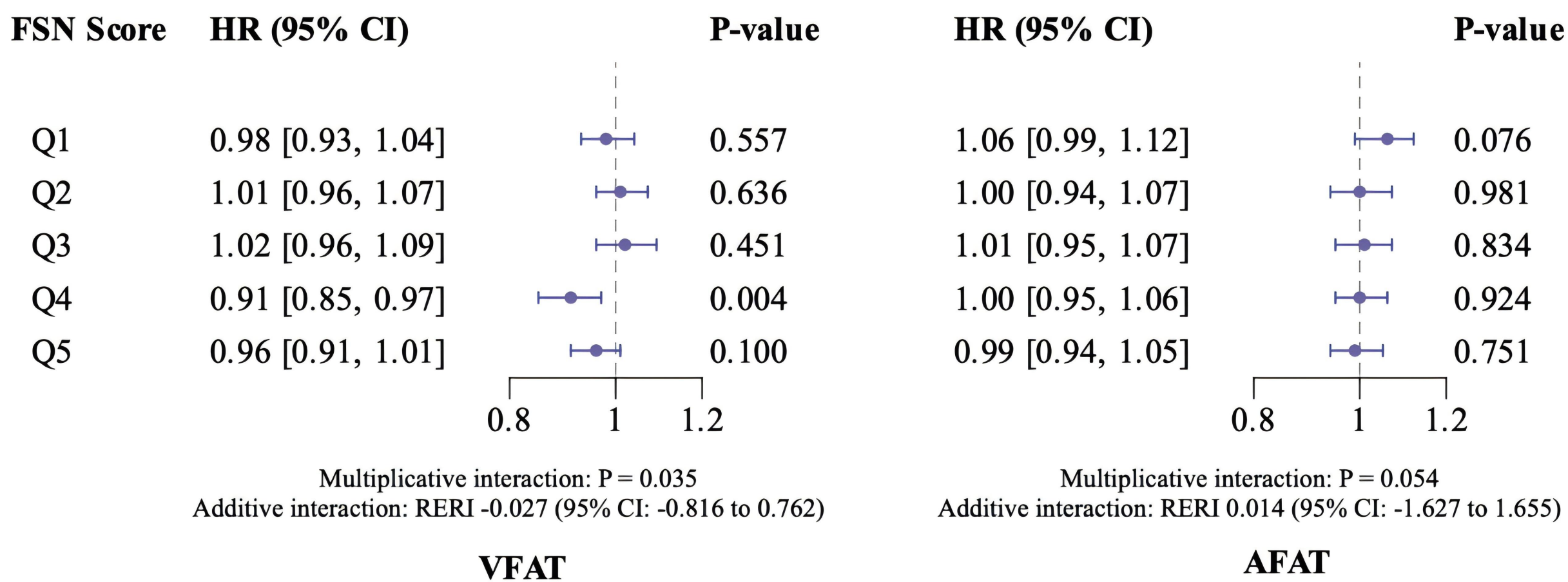


Figure 1. Multivariable-adjusted hazard ratios (HRs) and 95% confidence intervals (CIs) for dementia associated with dietary fat intake, stratified by FSN score quintiles.

- A significant multiplicative interaction was observed between vegetable fat intake and the FSN score in relation to dementia risk (**P for interaction = 0.035**).
- In stratified analyses, higher vegetable fat intake was associated with a lower dementia risk in the fourth FSN score quintile (**HR = 0.91, 95% CI: 0.85–0.97**).
- No significant additive interaction was observed (RERI = -0.027, 95% CI: -0.816 to 0.762). No significant interaction was found between animal fat intake and the FSN score.

CONCLUSIONS

- The association between vegetable fat intake and dementia risk differed according to overall fat-soluble nutrient status.
- The inverse association between vegetable fat intake and dementia risk was most evident among participants with higher combined intake of fat-soluble nutrients.
- These findings suggest that the association between vegetable fat intake and dementia risk may be influenced by the broader fat-soluble nutrient context.

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