



## Health effects of olive oil and the mediterranean diet

## DEPRESSION &amp; MENTAL HEALTH

## EFFECT SIZE



Any high diet quality, including a Mediterranean diet specifically, was associated with a reduction in the incidence of depressive symptoms, but a causal relationship is not yet established.

Molendijk, M., et al., Diet quality and depression risk: A systematic review and dose-response meta-analysis of prospective studies. *J Affect Disord*, 2018. 226: p. 346-354.

## What is the effect?

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## WHAT IS THE QUALITY OF THE EVIDENCE?

24 different prospective cohorts



Any dietary pattern or food group

29 studies



Systematic literature and meta-analysis

## KEY RESULTS



The highest category of adherence to any high quality diet was associated with a lower depression incidence:

HEALTHY/  
PRUDENT DIET

was associated with a 23% reduced depression incidence (OR = 0.77; 95% CI 0.69, 0.84; P < 0.001) (12 studies)

## MEDITERRANEAN DIET

was associated with a 25% reduced depression incidence (OR = 0.75; 95% CI 0.67, 0.84; P < 0.001) (5 studies)

## PRO-VEGETARIAN DIET

was associated with a 22% reduced depression incidence (OR = 0.78; 95% CI 0.64, 0.93; P < 0.001) (1 study)

## TUSCAN DIET

was associated with a 36% reduced depression incidence (OR = 0.64; 95% CI 0.51, 0.77; P < 0.05) (1 study)

## WHAT TO KEEP IN MIND?

## Limitations

- There was considerable heterogeneity found.
- The evidence was from observational studies only, precluding causal relationships.
- Potential confounders were not always taken into account.
- Most studies measured dietary habits in a single assessment, while multiple assessments are more accurate over the long-term.
- Studies used different outcome definitions for depression (e.g. a structured interview vs. antidepressant use).
- An association between diet and depression was no longer found when the analyses controlled for baseline subclinical depressive symptoms. This may indicate the association is due to reverse causation (i.e. persons with less depression are more likely to follow a healthy diet) but, on the other hand, correcting for baseline depressive symptoms could also be an overcorrection, since it may result in cancelling out the effects that the persons diet had in the years before the study started.

## WHAT'S THE BOTTOM LINE?

**Adherence to high quality diets – regardless whether it was a healthy/prudent, Mediterranean, pro-vegetarian, or Tuscan diet – was associated with a lower incidence of depressive symptoms in a linear, dose-response fashion.**

Adherence to a diet with a low inflammatory index was associated with a lower incidence of depression, suggesting that this may be an important mechanism of action. Adherence to low quality diets and food groups was not associated with higher depression incidence. Further research is needed to establish if these relationships are causal.

## OTHER REVIEWS

Rahe, C., M. Unrath, and K. Berger, Dietary patterns and the risk of depression in adults: a systematic review of observational studies. *Eur J Nutr*, 2014. 53(4): p. 997-1013.

Psaltopoulou, T., et al., Mediterranean diet, stroke, cognitive impairment, and depression: A meta-analysis. *Ann Neurol*, 2013. 74(4): p. 580-91.

Sanhueza, C., L. Ryan, and D.R. Foxcroft, Diet and the risk of unipolar depression in adults: systematic review of cohort studies. *J Hum Nutr Diet*, 2013. 26(1): p. 56-70.

Quirk, S.E., et al., The association between diet quality, dietary patterns and depression in adults: a systematic review. *BMC Psychiatry*, 2013. 13: p. 175.

Roman, B., et al., Effectiveness of the Mediterranean diet in the elderly. *Clin Interv Aging*, 2008. 3(1): p. 97-109.

