



## Health effects of olive oil and the mediterranean diet

# BLOOD PRESSURE

### EFFECT SIZE



High phenolic olive oils lead to a small reduction in systolic but not diastolic blood pressure and oxidized LDL compared to low phenolic olive oils, and there was no difference in cholesterol, triglycerides and malondialdehyde.

Hohmann, C.D., et al., Effects of high phenolic olive oil on cardiovascular risk factors: A systematic review and meta-analysis. *Phytomedicine*, 2015. 22(6): p. 631-40.

### What is the effect?

Reduction in systolic blood pressure

Reduction in oxLDL-level

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### WHAT IS THE QUALITY OF THE EVIDENCE?

#### Adults

Studies included both healthy subjects and subjects with heart disease or its risk factors



8

randomised controlled trials



All studies were from Europe

Systematic literature and meta-analysis

### KEY RESULTS



High phenolic olive oil vs. low phenolic olive oil resulted in:

#### REDUCTION IN SYSTOLIC BLOOD PRESSURE:

(mean difference = -0.52; CI -0.77, -0.27; p < 0.01) (2 studies)

#### REDUCTION IN OXLDL-LEVEL

(mean difference = -0.25; CI -0.50, 0.00; p = 0.05) (4 studies)

#### NO EFFECT FOR DIASTOLIC BLOOD PRESSURE

(2 studies), malondialdehyde (2 studies), total cholesterol (6 studies), HDL-c (6 studies), LDL-c (6 studies), and TG (6 studies)

### WHAT TO KEEP IN MIND?

#### Limitations

- 6 of the 8 included studies were conducted in Mediterranean countries, which already use olive oil as the primary source of fat in the diet, and thus these results are only partly applicable to people who have other traditional diets.
- Small number of included studies- only two studies included for some outcomes.
- Due to the small numbers of studies, some outcomes had considerable heterogeneity.

### WHAT'S THE BOTTOM LINE?

**Some evidence for the positive effects of high phenolic olive oil on reducing systolic blood pressure, but the available data are too limited to draw a solid conclusion.**

Future research should specifically focus on the efficacy of high phenolic olive oil in blood pressure reduction, including dose-response trials.

### OTHER REVIEWS

Schwingshackl, L., et al., Comparative effects of different dietary approaches on blood pressure in hypertensive and pre-hypertensive patients: A systematic review and network meta-analysis. *Crit Rev Food Sci Nutr*, 2018: p. 1-14.

Gay, H.C., et al., Effects of Different Dietary Interventions on Blood Pressure: Systematic Review and Meta-Analysis of Randomized Controlled Trials. *Hypertension*, 2016. 67(4): p. 733-9.

Ndanuko, R.N., et al., Dietary Patterns and Blood Pressure in Adults: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. *Adv Nutr*, 2016. 7(1): p. 76-89.

Nissensohn, M., et al., The Effect of the Mediterranean Diet on Hypertension: A Systematic Review and Meta-Analysis. *J Nutr Educ Behav*, 2016. 48(1): p. 42-53 e1.

Nordmann, A.J., et al., Meta-analysis comparing Mediterranean to low-fat diets for modification of cardiovascular risk factors. *Am J Med*, 2011. 124(9): p. 841-51 e2.

