

Short-term effects of a Mediterranean-style dietary pattern on cognition and mental wellbeing: A systematic review of clinical trials

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The long-term benefits of a Mediterranean-style dietary pattern (MDP) on cognitive⁽¹⁾ and other mental health outcomes⁽²⁾ has been consistently reported. However, the short-term efficacy of a MDP on cognition and mental wellbeing is less researched and remains mostly unknown. Therefore, this systematic review aimed to scrutinise the data from randomised controlled trials (RCT) to investigate whether a MDP can improve mental health in the short-term. This process also aimed to identify research gaps and provide insights into the design of future acute RCTs in the area.

Systematic searches were conducted in Ovid Embase, Ovid Medline and Web of Science Core Collection from inception up to December 2020, with the keywords “Mediterranean diet”, “olive oil”, “cognition”, “dementia”, “mood”, “mood disorders”, “anxiety”, “anxiety disorders”, “depression”, “depressive disorders” and “wellbeing”. RCTs conducted in adults (both males and females, over 18 years), up to and including 10 days intervention were included. No additional exclusion criteria were applied. A quality assessment was done using RoB2, a revised tool for risk of bias by Cochrane. A narrative approach was used to synthesise the data. A predefined protocol was registered with PROSPERO (CRD42021221085).

In total, 3002 studies were retrieved through initial database searches. Following the elimination of duplicates and screening stages, 4 studies met the inclusion criteria, all of which conducted in non-Mediterranean countries. Three studies included only young females (18 to 38 years) and one included both genders aged 60 to 80 years. Participants had no previous cognitive and mental health complaints. Despite the limited evidence available and the heterogeneity among the methods, the findings indicate that a MDP improves cognition and mood in the short-term. In particular, increases after MDPs compared to the controls in attention (1.1-1.4 fold), alertness ($p = 0.003$; $F = 14.11$, $p < 0.01$; $F = 22.23$, $p < 0.001$) and contentment ($p = 0.001$; $F = 6.49$, $p < 0.02$; $F = 16.634$, $p < 0.001$) were consistently reported.

As a novel contribution to the literature, the short-term effects of a MDP on cognition and mood were reviewed systematically for the first time. A MDP was identified as a promising nutritional strategy to improve cognitive and other mental health outcomes in the short-term. This is valuable to promote the quality of life, for not only those with existing cognitive and mental health deficits but also healthy individuals. A recognised significant limitation of this study is the small amount of evidence available to review, however, this severe limitation has provided a systematic identification of research gaps, with further studies are needed to confirm these initial findings, and to provide granularity as to which domains are most responsive and in which population subgroups.

References

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2. Altun A, Brown H, Szoek C *et al.* (2019) *Neurol Psychiatry and Brain Res* **33**, 1–10