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Mediterranean diet and mood

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Introduction: Relative to a regular "Western" diet, a Mediterranean diet is characterized by a higher intake of vegetables, fruits, and nuts, and a lower intake of meat and dairy products (except long-preservable cheeses) [1] Whereas an increasing body of scientific literature is devoted to the effects of having a Mediterranean diet on general health and physical functioning, less research has been conducted to examine the association with mood and mental health.

Aim: The aim of the current single-blind, parallel group study was to examine the effects of a 10-day Mediterranean dietary intervention on mood.

Methods: 53 young female adults within the age of 18 to 38 (M=22.25, SD=3.62) were randomly assigned to either the control group or the dietary intervention group. Those in the diet treatment group had to adhere to the Mediterranean diet, which is typically dense in nutrients. On their baseline visit, participants completed a demographic questionnaire, had physical measurements taken, completed the food frequency questionnaire, and completed Bond-Lader visual analogue scales assessing alertness, calmness, and being content. Mood was further assessed by completion of the Profiles of Mood States (POMS) questionnaire, including subscales on tension/anxiety, anger/hostility, fatigue/inertia, vigour/activity, and confusion/bewilderment. Also, a total mood disturbances score was computed. Food intake was recorded daily over the 10-day period (using a food diary). Assessments were made on Day 1, Day 5, and Day10. Using SPSS (Version 24), GLM for repeated measures was used to compare mood outcome measures of the two groups over time. Post-hoc tests compared pre- and post-treatment data within the Mediterranean diet group and within the control group. Effects were significant if $p<0.05$.

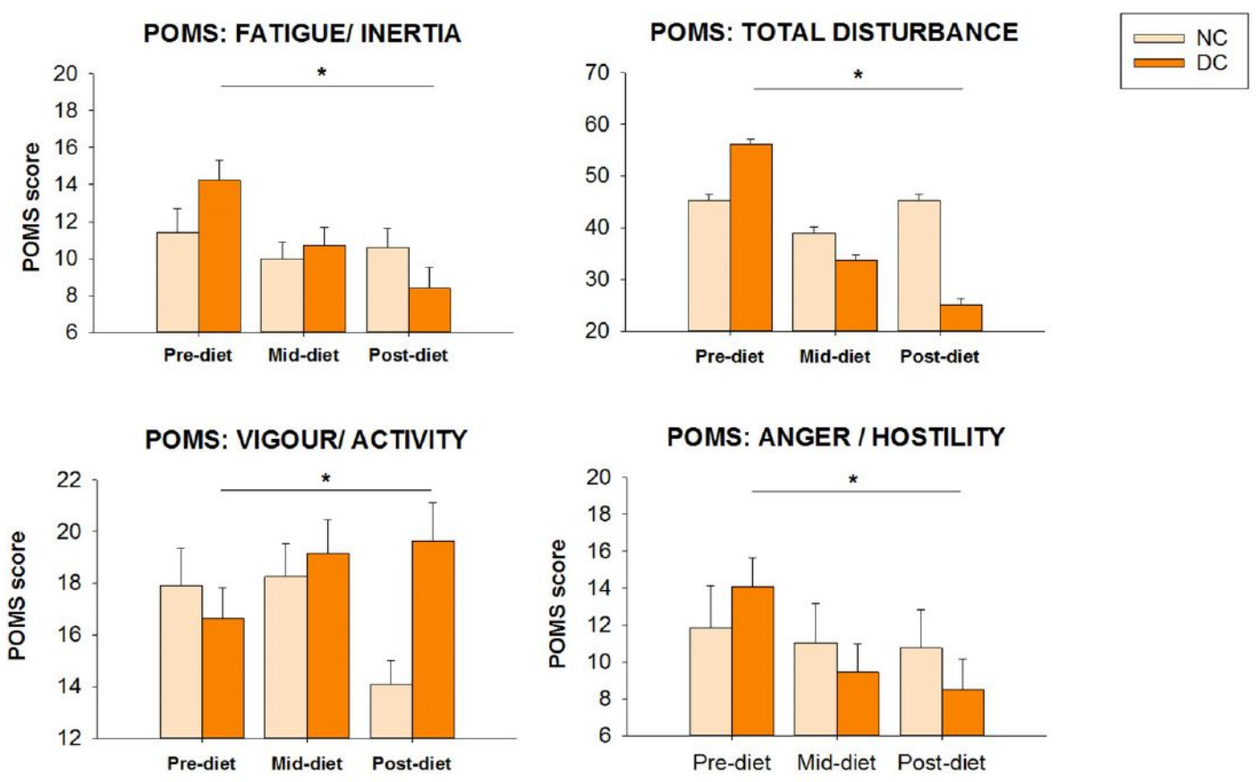

Figure 1. Changes in Profile of Mood States (POMS) score before and after a 10-day Mediterranean diet. Significant Treatment x Time interaction caused by the significant ($p<0.05$) decrease in post-diet scores to pre-diet scores for DC for fatique/inertia, anger/hostility, and total mood disturbances and the increase in post-diet scores to pre-diet scores for DC for the POMS subscale vigour/activity.
Abbreviations: NC= No diet change, DC= Diet change

Results: A significant Treatment x Time interaction was found for POMS subscale scores of tension/anxiety ($p=0.001$), anger/hostility (0.014), fatigue/inertia ($p=0.003$), confusion/bewilderment ($p=0.015$), vigour/activity ($p<0.001$), and the total mood disturbances score. No significant Treatment x Time interaction was found on the POMS subscale depression/rejection ($p=0.126$).
Relative to Day 1, in the Mediterranean diet group on Day 10 scores on the POMS subscales tension/anxiety, anger/hostility, fatigue/inertia, confusion/bewilderment and the total mood disturbances score were significantly lower ($p<0.05$), whereas vigour/activity scores were significantly higher ($p<0.05$). No significant pre- and post-treatment differences were seen in the control group.
A significant Treatment x Time interaction was also seen for Bond Lader scores on alertness ($p=0.003$) and being content ($p=0.001$). Relative to Day 1, these scores were significantly higher on Day 10 in the Mediterranean diet group ($p<0.05$). This effect was not seen in the control group.

Conclusion: This study suggests that switching to a Mediterranean diet for just 10 days is associated with significant positive mood effects, including significantly increased levels of alertness being content, and increased vigour/activity, and reduced feelings of anxiety, anger, fatigue, and confusion. Further research is warranted to examine the long-term effect of Mediterranean diet and its specific components on health and mood.

Reference

[1] Trichopoulou A, Costacou T, Bamia C, Trichopoulos D (2003) Adherence to a Mediterranean diet and survival in a Greek population. N Engl J Med, 348: 2599-2608.

Disclosure of interests

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