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A systematic review of dietary modifications to Mediterranean-style diets

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The global pandemic of overweight and obesity is linked to non-communicable disease (NCD) risk, incidence, and outcomes⁽¹⁾. Moderate weight-loss (5–10%) has considerable benefits, yet high quality diets can offer protective nutritional factors for NCD while encouraging nutritious, sustainable, and empowering dietary/lifestyle change. Evidence supports Mediterranean-style diet (MD) efficacy, yet adherence and adoption are becoming low even in countries of the Mediterranean basin⁽²⁾. Obesogenic environments, ultra-processed foods, and social factors are implicated in low adoption. An adapted MD could improve adherence and adoption for UK populations⁽³⁾. This systematic review aims to investigate substitutions and adaptations to MD.

The following databases were searched for articles published between inception and December 2023: the Cochrane Library, EMBASE, CINAHL, Scopus, and MEDLINE. Risk of bias was assessed using the Revised Cochrane v2 tool for randomized trials. Articles were included if they met the following criteria: (1) study type was experimental or quasi-experimental; (2) mean participant age between 18 and 65 years (3) healthy or pre-clinical population (4) modification, adaptation, or tailoring of MD to specific populations.

The databases identified 4,478 results. Forward citation searching returned two eligible results. A total of seventeen articles were included in the analysis. Fourteen were RCTs, one each of crossover and uncontrolled trials, and one protocol. Six studies were reported as part of the PREDIMED multicentre trials, while the protocol represented the RESMENA-S trials (hypocaloric, low glycaemic index diets). Ten were independent. PREDIMED studies supplemented MD with either extra virgin olive oil or nuts, with control group following a low-fat American Heart Association diet. Remaining interventions demonstrated heterogeneity of MD design; a ketogenic MD with phytoextract supplementation; three studies required aerobic exercise (i) daily (walk ≥ 30 minutes), (ii) weekly (150 minutes), or (iii) trainer-led resistance programme, with MD [(i) MD with EVOO and pistachios, (ii) low-carbohydrate MD with walnuts (iii) hypocaloric macronutrient percentage-adjusted MD]. A further three studies (two hypocaloric and one ketogenic) required no change to habitual physical activity levels. Five studies (PREDIMED) recorded leisure-time physical activity. Three studies [(i) PREDIMED (ii) personalised hypocaloric MD (iii) isocaloric MD] had no activity information. Only one study [personalised low-calorie MD] applied a psychological behaviour change model. No studies specifically reported hydration levels or conviviality intervention; uncertain whether this information was included in professional-led education.

The present systematic review finds paucity of evidence in RCTs of MD customisation for specific countries in healthy or pre-clinical individuals. Interventions have largely focused on augmenting MD with extra consumption of specific foods. Other components of the MD and lifestyle such as conviviality, hydration, adequate rest, seasonal and traditional ingredients, and lack of sedentarism were not reported.

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References

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