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Efficacy of a PROtein enriched MEDiterranean diet with or without Exercise on Nutritional status and Diet Quality in Older Adults at Risk of Undernutrition with Subjective Memory Decline enrolled in the PROMED-EX Trial

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Undernutrition is common among older adults and, if untreated, can lead to weight loss, adverse cognitive and functional health outcomes and poorer quality of life. The Mediterranean diet (MedDiet) has been associated with reduced nutrient deficiency[1] and better cognitive health in older adults[2], while adequate protein intake combined with exercise is crucial for maintaining muscle health during ageing[3]. Early intervention with MedDiet to meet energy and increased protein (1.2g/kg/day)[4] and micronutrient needs of older adults in combination with exercise could help to prevent undernutrition during ageing but has not yet been tested.

The PROMED-EX trial is a 6-month randomised controlled trial evaluating a PROtein-enriched MED Diet, with and without Exercise on nutritional status and cognitive performance, in older adults at increased risk of undernutrition and cognitive decline.[5] The current objective is to evaluate the 3month change in nutritional status and diet quality measured using repeated Mini Nutritional Assessment (MNA), 4-day food diaries and PROMED diet score (0-14). Food diaries were analysed for energy and nutrients using Nutritics at each time-point. Data was analysed on the intention-totreat principle using multiple linear regression to compare outcomes at 3 months after adjusting for baseline values. Dunnett's procedure was used to control for multiple comparisons when comparing the two intervention groups with the control group.

One hundred and five eligible participants (69% female; mean age 67.7years [60-87 years]; BMI: 23.8 ± 3.4 kg/m2) were recruited and randomised into one of three groups: PROMED-EX (diet + exercise; n = 34), PROMED (diet only; n = 35) and Standard Care (control; n = 36).

After 3-months, the MNA score improved in both PROMED-EX and PROMED intervention groups compared with the control group by on average 2.6 points (95% CI 1.1, 4.1; P<0.01) and 2.2 points (95% CI 0.8, 3.7; P<0.01) respectively; after adjusting for baseline MNA. Similarly, the mean 3-month increase in diet quality score was +4.0 (95% CI 3.1, 5.0); +4.6 (95% CI 3.7, 5.4) points in PROMEDEX and PROMED respectively; P<0.001, versus Control.

No between group changes in energy intake were detected, however protein and selected micronutrient intakes improved in the intervention groups. Compared to the control group, the between-group difference in mean protein intake was +21.4g/day (95% CI 9.8, 32.9) in PROMED (P<0.001) and +9.0g/day (95% CI -3.1, 21.0) in PROMED-EX (P>0.05). There was significantly greater improvement in dietary fibre, selenium, iron and vitamin D intakes in both interventions relative to Control (all P<0.001).

This 3-month analysis demonstrates the positive effects of the PROMED-EX and PROMED interventions on nutritional status and diet quality, as well as improvement in selected nutrients in older adults vulnerable to both undernutrition and cognitive decline.

References

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