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Background/Aims: The MedLey study investigated whether adhering to a Mediterranean Diet (MedDiet) for 6 months would improve cardiometabolic health and cognition.
Methods: A total of 152 Australians with a mean ± SD age of 71 ± 5 years were randomly allocated to a habitual control diet ($n = 72$) or a MedDiet ($n = 80$). Adherence was assessed using a 15-point score based on weighed food records. Outcomes measured at 0, 3 and 6 months included lipids, C-Reactive Protein, F_2-isoprosanes, glucose, insulin, blood pressure, endothelial function and cognition. Linear mixed models (intention to treat) were used to compare groups over time.
Results: The MedDiet adherence score significantly increased from low to high adherence at 6 months relative to the control which did not change ($p < 0.001$). Plasma triglycerides were significantly lower at 3 (-0.149 ± 0.04 mmol/L; $p < 0.001$) and 6 months (-0.094 ± 0.04 mmol/L; $p < 0.05$). F_2-isoprostane concentrations were significantly lower at 3 (-107.6 ± 21.5 pmol/L; $p < 0.001$) and 6 months (-70.1 ± 22.1 pmol/L; $p = 0.013$) compared to the control. Compared to control, MedDiet had a greater reduction in systolic blood pressure ($p = 0.02$, for diet*time interaction): -1.3 (95%CI: -2.2, -0.3) mmHg, $p = 0.008$ at 3 months, and -1.1 (95%CI: -2.0, -0.1) mmHg, $p = 0.03$ at 6 months. Endothelial function improved after 6 months (+1.27%) in the MedDiet relative to the control which did not change ($p = 0.03$). There was no difference between groups in cognitive performance.
Conclusions: We've shown older Australians can follow the MedDiet for 6 months resulting in improvements in cardiovascular health whilst maintaining cognitive function. This dietary pattern could be a feasible dietary approach for improving heart health of Australians.
Funding source(s): NHMRC

P113
THE MERGED REFLECT/COMPLETE HEALTH IMPROVEMENT PROGRAM (CHIP) IN THE SOUTH PACIFIC – A PILOT STUDY

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Background/Aims: Chronic diseases (CDs) have reached epidemic proportions in Pacific Island countries. Unhealthy lifestyle is one of the major risk factors and lifestyle interventions have been shown to be efficacious for primary, secondary and early tertiary prevention. However, there is a paucity of evidence regarding effective community-based lifestyle interventions in the South Pacific (SP). This study examined the effectiveness of a contextualised version of the evidence-based CHIP intervention, utilising the low-literacy REFLECT approach.
Methods: A 30-day cluster-RCT of 48 adults with elevated risk (waist circumference ≥ 92 cm for men and ≥ 80 cm for women), in two rural Fijian villages was conducted. Intervention participants ($n = 24$) met three times a week to receive the program. Control participants ($n = 24$) received only country-specific Ministry of Health literature. Outcome assessments at baseline and 30 days included BMI, WC, blood pressure, lipids and glucose. The extent of the change in each measures between intervention and control villages was assessed using mixed between-within ANOVA.
Results: In 30 days, significant reductions were recorded for intervention participant's BMI (2%), SBP (10%), DBP (8%), T-cholesterol (6%), LDL (12%), HDL (15%) and blood glucose (10%), while triglycerides increased 35%. Only DBP (7%) and T-cholesterol (8%) decreased in the control group.
Conclusions: This is the first lifestyle intervention using the REFLECT approach to target CDs in the SP. Significant reductions in selected CD risk factors were observed in 30 days, being comparable to cohorts in first world countries. Larger scale research is warranted to assess broader delivery of this lifestyle intervention across the SP.
Funding source(s): N/A

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THE EFFECT OF PLANT EXTRACTS ON S100B LEVELS IN ANIMAL PRE-CLINICAL TRIALS: A SYSTEMATIC REVIEW

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Background/Aims: The calcium binding protein S100B has been associated with significant health effects in humans. Elevated circulating levels in later life cause neuronal apoptosis and brain inflammation, and has been associated with severe and chronic pathology including Alzheimer's disease. The potential benefits of plant extracts on health have become more widely recognised and investigated. However, to date, their impact on S100B levels are not well defined. The aim of this systematic review was to identify candidate plant extracts and determine their effect on S100B levels in animal pre-clinical trials.
Methods: The search strategy followed PRISMA 2009 guidelines, with four electronic databases interrogated (PubMed, The Cochrane Library, Scopus and CINAHL). Search terms were limited to "*S100B*" AND "*Flavonoid*", "*Polyphenol*", "*Plant Extract*". Only animal pre-clinical trials published in English between 2000 and 2016 were included.
Results: In total, 12 journal articles were identified and 11 different plant extracts were investigated: Green tea (EGCG), Resveratrol, Curcumin, Bitter melon, Quercetin, Silymarin, Rutin, Saffron, Natto, Siberian Ginseng and Cat's claw. Several plant extracts indicated potential to reduce S100B levels in *in vivo* animal models showing positive effects in brain neuroinflammation, epilepsy and restoration of blood-brain barrier dysfunction.
Conclusions: Plant extracts high in secondary plant metabolites have shown significant beneficial effects in animal pre-clinical trials and as such pose a stepping stone for development of potential nutraceuticals for use in human trials.
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P115
HYDROXYTYROSOL ACETATE INCREASES OXIDATIVE STRESS AND PROINFLAMMATION IN YOUNG BUT NOT AGED MICE

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Background/Aims: The physiology of the organism, such as age, sex and disease status may influence biologic effects of an antioxidant. The effects of chronic consumption of a moderate dose of HT-AC on oxidative stress and inflammation in male healthy mice at different ages were investigated.
Methods: *C57BL/6* male mice (4 groups: young = 2 months age, old groups = 17 months age, $n = 13$ per group) were administered water solution orally with or without HT-AC for 19 weeks. The dose of HT-AC supplementation was 50 mg/kg body weight/d, given 5 times a week. Proinflammatory cytokines (IL-6, TNF-α and CRP) were assessed by ELISA. ROS was detected by fluorescence. Formation of hepatic inflammatory foci was examined. This study was approved by Experimental Animal Ethics Committee of Northwestern Polytechnical University. Data were analysed using 2 factor ANOVA.
Results: Young mice supplied with HT-AC had higher mean ± SD ROS (194.92 ± 36.83 *vs.* 137.64 ± 36.56; $p = 0.0013$), CRP (4.60 ± 0.91 *vs.* 3.09 ± 0.56; $p = 0.0005$), IL-6 (43.73 ±1 3.40 *vs.* 24.24 ± 5.55; $p = 0.0001$) and TNF-α (60.67 ± 18.68 *vs* 33.85 ± 11.95; $p = 0.0006$) in serum compared with HT-AC-fed old mice. No significant changes of ROS, CRP, IL-6 and TNF-α between old control and treatment groups were found, and the same between young and old control groups. There was significant interaction