Mitochondria were stained using MitoTracker Red CMXRos. One-way ANOVA followed by Tukey's test was used to determine the differences.
Results: PA upregulated the expression of both *IL-6* (2.1 ± 0.3; $p < 0.001$) and *TNFα* (1.7 ± 0.1; $p < 0.01$) relative to BSA. Additionally, *L*-THE decreased *TNFα* mRNA levels ($p < 0.05$), but did not downregulate *IL-6* expression compared to PA treated cells ($p > 0.05$). PA decreased mitochondria size and density compared to BSA and this effect was ameliorated when *L*-THE was added alongside PA. No improvement in mitochondria density or size were observed when EGCG was used in combination with PA.
Conclusions: *L*-THE inhibits PA-induced *TNFα* upregulation and can putatively ameliorate high-fat diet-induced hypothalamic inflammation and obesity.

Poster session 8: Dietary strategies

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CHANGING DIET AND PHYSICAL ACTIVITY IN TIME-POOR POPULATIONS

L. Torquati [1], T. Kolbe-Alexander [1], T. Pavey [2], M.D. Leveritt [1]. [1] *School of Human Movement and Nutrition Sciences, The University of Queensland, Brisbane, QLD, Australia;* [2] *School of Exercise and Nutrition Sciences, Queensland University of Technology, Brisbane, QLD, Australia*
E-mail address: l.torquati@uq.edu.au (L. Torquati).

Background/Aims: Nurses have long and rotational shift work, which lead to irregular meal patterns, frequent snacking on energy-dense nutrient poor foods (EDNP), inactivity, and thus a high prevalence of overweight and obesity (62%). The aim of this study was to deliver a 3-month workplace intervention study to improve diet and physical activity behaviours (PA) in nurses.
Methods: Intervention materials included pedometers, a smartphone app, and a dedicated Facebook group. Diet quality (food frequency questionnaire) and PA (accelerometer) were the primary outcomes. Secondary outcomes included weight, BMI, waist circumference, and blood pressure. All measurements were taken at baseline, end of the intervention (3-months) and follow-up (6-months). Changes pre and post were analysed with paired two-tailed *t*-test, and repeated measures were used to analyse changes across baseline, 3- and 6-months.
Results: Forty-seven nurses, aged 41.4 ± 12.1 years old and 87% female working at two hospitals in Brisbane (Australia) participated in the study. At 3-months, total energy intake coming from fruit and vegetables significantly increased by 3.8% ($p = 0.04$), while it decreased for EDNP foods (-0.8%, $p = 0.38$). There was a -0.5% decrease on time spent in moderate-to-vigorous PA, and a decreased in average daily steps by 500 steps/day (both $p < 0.02$). At 6-months, dietary outcomes were maintained, while daily steps and sedentary time slightly decreased from 3-months. There were small changes on weight and BMI at 3- and 6-months ($p > 0.30$).
Conclusions: Participants indicated that changing both behaviours was too hard, suggesting that in time-poor and stressed populations changing one behaviour at the time could be more feasible and effective. Social media and smartphone app could be effective at promoting diet behaviour but not PA.

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REVIEW OF BEHAVIOUR CHANGE INTERVENTIONS TO REDUCE POPULATION SALT INTAKE

K. Trieu [1], E. McMahon [2], J.A. Santos [1], J. Webster [1]. [1] *The George Institute for Global Health, The University of Sydney, NSW, Australia;* [2] *Menzies School of Health Research, NT, Australia*
E-mail address: ktrieu@georgeinstitute.org.au (K. Trieu).

Background/Aims: Majority of the population around the world consume excess salt intake causing raised blood pressure and cardiovascular disease - the leading cause of death worldwide. Although behaviour change interventions aiming to influence consumers' salt related behaviours are commonly implemented, their effectiveness is unclear. This systematic review investigates the effectiveness of behaviour change interventions that aim to reduce salt intake on a population level.
Methods: Studies of behaviour change interventions with a population or sub-population focus were identified from a peer-reviewed and grey literature search. Study and intervention characteristics were extracted for descriptive synthesis. The quality of studies were assessed against a modified Cochrane risk of bias tool.
Results: Twenty-two studies involving 41,448 participants were included. Behaviour change interventions were categorised as health education interventions (14), public awareness campaigns (4) and multi-component interventions (4). 19 of the 22 studies found behaviour change interventions significantly reduced salt intake (ranging from 0.9 g/d to 4.4 g/d) and/or improved salt-related behaviours. Based on the gold standard method of measuring salt intake (24-hour urine collection), two of six studies reported a significant reduction. All studies scored high risk of bias in one or more domains.
Conclusions: The majority of behaviour change interventions successfully improved salt-related behaviours or reduced salt intake, but the overall strength of the evidence is moderate to weak. More research is required in LMICs where behaviour change interventions potentially have greater impact as salt added by individuals remains a major contributor of salt intake.

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IMPROVING THE HEALTH OF SOUTH AUSTRALIAN TRUCK DRIVERS: A 6-WEEK LIFESTYLE INTERVENTION

A.M. Hill, L. Fairlie-Jones, A. Hatzinikolas. *School of Pharmacy & Medical Sciences, University of South Australia, SA, Australia*
E-mail address: alison.hill@unisa.edu.au (A.M. Hill).

Background/Aims: The occupational duties of truck driving enforce long periods of time sitting, and are often accompanied by unhealthy dietary behaviours. These factors increase risk for overweight/obesity and associated chronic diseases. The aim of this study was to implement a 6-week lifestyle intervention in municipal truck drivers.
Methods: Ten overweight adult truck drivers participated in a 6-week nutrition-focused intervention including individualised dietary counselling and education. Weight, waist circumference (WC) and blood pressure (BP) were assessed at Weeks 0 and 6. Three-day weighed food records (providing nutrient intake and food distribution according to the AGHE) and physical activity diaries were completed prior to commencing the study and at Week 6. Pre-post differences in weight, WC, BP, nutrient and food intake, and physical activity (min) were tested using the Wilcoxon signed-rank test.
Results: Six drivers completed the intervention (mean age 42.2 years; BMI: 32.9 kg/m^2). Energy intake (kJ), time spent in physical activity, weight, WC and BP remained unchanged. Consumption of discretionary foods decreased significantly from 8 serves/day at Week 0 to 2.5 serves/day at Week 6 ($p < 0.05$). Total fat and SFA intakes decreased significantly by Week 6 (-5.7% and -3.2%, respectively; $p < 0.05$).
Conclusions: Dietary education resulted in reduced intake of discretionary foods, total fat and SFA. This suggests that appropriately powered longer-term corporate-based interventions may lead to anthropometric improvements in this population.

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A SYSTEMATIC REVIEW OF BRIEF NUTRITION INTERVENTIONS IN ADULTS

M. Whatnall, A. Patterson, M. Hutchesson. *School of Health Sciences, Faculty of Health and Medicine, and Priority Research Centre in Physical Activity and Nutrition, University of Newcastle, NSW, Australia*
E-mail address: megan.whatnall@uon.edu.au (M. Whatnall).

Background/Aims: Brief interventions are effective in improving health behaviours including alcohol intake, however the utility of this approach for nutrition outcomes has not been determined. The objective of this review was to assess the effectiveness of brief interventions aiming to