combined. There was considerable heterogeneity in terms of trial duration (mean 12.8 weeks; range 3-48 weeks), *n*3PUFA dosage and placebo used. The main primary outcome measure reported was HOMA-IR. Studies in combined males/females did not show a significant relationship between *n*3PUFA intervention and measures of IR. In females, trials >12 weeks showed a significant improvement in HOMA-IR ($p < 0.05$). None of the intervention trials conducted in males provided positive outcomes.
Conclusions: This review supports a sex-dependent relationship between *n*3PUFA and IR. Future intervention trials of at least 12 weeks duration should be designed to further elucidate sex-dependent differences.
Funding source(s): N/A.

SELF-NUDGING IS NOT EFFECTIVE FOR MAINTAINING WEIGHT LOSS ACHIEVED THROUGH PROFESSIONAL SUPPORT IN TYPE 2 DIABETES

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Background/Aims: Weight loss can improve health outcomes in type 2 diabetes (T2D), but most people who lose weight are unable to maintain weight loss. We investigated whether a behavioural change approach ("self-nudging") could assist people with T2D to maintain weight loss.
Methods: 41 patients with T2D who successfully lost weight (~10 kg) after participating in a 6-24 month professionally supported weight loss program were randomised to intervention or control. Controls received printed copies of the Australian diet and physical activity guidelines and monthly reminders to maintain the behaviours that had helped them lose weight. Intervention participants received the same information and instructions as controls, but also received self-nudging items once per month that were designed to prompt them to maintain the behaviours that had helped them lose weight. Weight, body composition (DXA), diet (FFQ) and physical activity (log book) were assessed at baseline, 3 and 6 months.
Results: Thirty-three participants completed the study. Controls regained 27% and intervention regained 37% of initial weight lost during the study period, with no difference between treatments ($p = 0.45$ treatment × time). Similar increases in body fat were also observed ($p = 0.73$ treatment × time). This was despite self-reported dietary energy intake and physical activity levels not differing from the end of the initial weight loss period ($p > 0.30$).
Conclusions: In overweight and obese patients with T2D, following substantial weight loss achieved with professional support, self-nudging was not effective in attenuating the rate of weight regain.
Funding source(s): N/A.

RESVERATROL CONSUMPTION IMPROVES CEREBROVASCULAR FUNCTION IN TYPE 2 DIABETES MELLITUS (T2DM)

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Background/Aims: Progressive microvascular dysfunction in T2DM may impair the ability of cerebral vessels to supply blood to brain regions during local metabolic demand, thereby predisposing one to greater risk of dementia. Having previously demonstrated that resveratrol can enhance vasodilator function in the systemic circulation, we hypothesised that resveratrol would also benefit cerebral circulation. We aimed to determine the most efficacious dose of resveratrol to improve cerebral vasodilator responsiveness (CVR) in T2DM.
Method: In a double-blind, placebo-controlled crossover intervention trial, 36 well-controlled T2DM adults aged 40-80 years were randomised to consume a single dose of synthetic trans-resveratrol (0, 75, 150, 300 mg) at weekly intervals. Transcranial Doppler ultrasound was used to assess CVR to a hypercapnic stimulus, viz. breathing Carbogen gas (95% O_2; 5% CO_2) for 3 min, both before and 45 mins after resveratrol or placebo consumption. CVR was measured in both left and right middle cerebral arteries (MCA) and expressed as the percentage change in mean blood flow velocity from baseline to the peak velocity attained during the stimulus.
Results: Using repeated measures ANOVA, consumption of each resveratrol dose resulted in significant within-individual increases in CVR compared with placebo (75 mg: 13.8 ± 3.5%, $p = 0.001$; 150 mg: 8.9 ± 3.5%, $p = 0.016$; 300 mg: 13.7 ± 3.3%, $p < 0.001$).
Conclusions: Our results provide the first ever clinical evidence of an acute improvement of vasodilator responsiveness in cerebral vessels which was maximal following the lowest dose of resveratrol (75 mg) in a population who are known to have endothelial dysfunction and sub-clinical cognitive impairment.
Funding source(s): Dementia Collaborative Research Centre (NHMRC); DSM Nutritional Products.

CONCURRENT SESSION 4: PUBLIC HEALTH.
LIVING WELL BEYOND 70 NOW AND IN THE FUTURE REQUIRES OLDER AGE-SPECIFIC NUTRITION GUIDELINES – CURRENT ADVICE FALLS SHORT

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Background/Aims: Research nutrition needs of people increasingly living beyond their 8th decade assessing the adequacy of current public health advice to maximise health and independence in this group.
Methods: Review published nutrition and health guidelines for adults and assess their likely adequacy to reduce morbidity and mortality in individuals living beyond 70 years of age in the past, present and future.
Results: When life expectancy was approximately 70 yrs, nutritional requirements of older and younger adults were similar. However, with present life expectancy mostly beyond 80 and advancing in the future, nutritional requirements in the last decades of life differ significantly from those of younger adults: unique physiological changes of ageing beyond 70 years contribute to reduced appetite and food intake. This combines with the impact of medical conditions and medication use spanning many more years than previously increasing the need for some nutrients and such differences are not adequately acknowledged in most advice. Nutrition Guidelines for older adults exist in New Zealand and in limited capacity in Australia but may be inappropriate for many now 80+ and may increasingly be so in the future.
Conclusions: Most current public health nutrition advice to older adults does not adequately account for the unique demands imposed by ageing significantly beyond 80. Malnutrition currently impacts physical and mental health in community dwelling older adults as well as those in care and as life expectancy advances further, is likely to increase in impact unless realistic, older age appropriate guidelines are implemented.
Funding source(s): N/A.

CONSIDERATION OF NUTRITIONAL VALUE AND FOOD LABELS ARE ASSOCIATED WITH FOOD INTAKE IN ADULTS WITH DEPRESSION

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Background/Aims: Individuals with depression are more likely to consume poor diets and as a result are at increased risk of poor cardiometabolic health. Healthy diet may reduce depressive symptoms, however better understanding is needed of factors that support healthy eating in this population. There is limited evidence about how much consideration of the nutritional value of foods may be associated with food choices. The aim of this study was to investigate associations between food intake and consideration of nutritional value of foods in adults with depression.

Methods: Adults ($n = 161$) with depression completed a semi-quantitative food frequency questionnaire and shopping and budgeting questionnaire. Associations between consideration of nutritional value and nutrition label use with vegetable, wholegrain, legume, snack food and soft drink intake were evaluated using linear regression, adjusting for age, gender and education.
Results: In adjusted models, more consideration of the nutrition value of foods was positively associated with vegetable intake ($\beta = 0.188$; $p = 0.025$), wholegrain intake ($\beta = 0.213$; $p = 0.015$) and negatively associated with snack food intake ($\beta = -0.236$, $p = 0.006$). More frequent reading of nutrition labels was positively associated with legume intake ($\beta = 0.185$; $p = 0.036$). Better understanding of nutrition labels was positively associated with vegetable intake ($\beta = 0.780$; $p = 0.035$), wholegrain intake ($\beta = 0.233$; $p = 0.008$), and legume intake ($\beta = 0.254$; $p = 0.004$). There were no associations between soft drink intake and nutrition value consideration or nutrition label use.
Conclusions: These findings suggest that increasing consideration of the nutrition value of foods and nutrition label use may support healthy eating in adults with depression.
Funding source(s): NHMRC.

CONCURRENT SESSION 5: FOOD COMPONENTS.

CD63 UPREGULATION ON BASOPHILS IS NOT A PREDICTOR OF SALICYLATE SENSITIVITY

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Background/Aims: About 2.5% of the general population show pseudoallergic reactions to salicylates (including aspirin). Patients with aspirin-exacerbated respiratory disease (AERD) show symptomatic improvement on low salicylate diet. Aspirin sensitivity is detected through oral provocation test - contraindicated in anaphylactoid reaction. Food salicylate sensitivity is detected through highly restrictive and lengthy 'elimination and rechallenge diet' raising compliance issues. More recently, an *in vitro* assay, the basophil activation test (BAT), is reported to detect pseudoallergic reactions with high sensitivity and specificity. However, the results remain controversial. The aim of this study was to examine the ability of BAT to differentiate known salicylate sensitivity from healthy controls (HC).
Methods: Peripheral blood of 10 AERD patients (2 males, 8 females), 10 HC (3 males, 7 females) was stimulated *in vitro* with aspirin (5, 2.5, 1.25, 0.6, 0.3, 0.15, 0.07 mg/ml). Flow cytometry was used to detect activated basophils (IgE+/CD63+). Stimulation index (SI) and percentage activation (% act) were used to determine basophil activation. Receiver-operator characteristics (ROC) were determined.
Results: Mean SI in AERD was similar to HC for all concentrations [p-values ranged from 0.178 (0.6 mg/mL) to 0.800 (0.07 mg/mL), independent sample t-tests)]. Likewise, % act did not differ between the groups [p-values ranged from 0.869 (2.5 mg/mL) to 0.498 (5 mg/mL)]. No cut-off values were able to discriminate the two subject groups (area-under-the-curve for ROC analyses < 0.5 for all).
Conclusions: BAT using CD63 is unable to predict salicylate sensitivity. It may not be a useful diagnostic test for non-IgE mediated pseudoallergic reactions.
Funding source(s): Gastroenterology Department.

BITTER TASTE PHENOTYPE AND *TAS2R38* A49P GENOTYPE INFLUENCE ALCOHOL CONSUMPTION IN MALES BUT NOT FEMALES

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Background/Aims: *TAS2R38* polymorphisms influence bitter taste phenotype. Both have been linked to alcohol consumption; however this has not been demonstrated in all cohorts tested. To date, this interaction has been studied in small cohorts (< 100 participants) with males and females combined, with not consideration of a potential gender dimorphism. Therefore we used a larger cohort to assess the gender specificity of this relationship.
Methods: Blood was collected from patients undergoing routine colonoscopy ($n = 262$). *TAS2R38* genotype (A49P) was assessed using RFLP-PCR. Bitter taste phenotype (non-tasters vs. tasters) was determined using 6-n-propylthiouracil. Alcohol consumption was assessed using food frequency questionnaires. Frequencies of genotypes and phenotypes were compared by chi-squared tests. Pairwise comparisons were made using least squares means (adjusted for age and smoking status) and t-tests.
Results: Distribution of genotype and phenotype did not vary between genders ($\chi^2 = 6.52$, $p = 0.16$ and $\chi^2 = 4.67$, $p = 0.13$, respectively). Males were significantly older (60.4 ± 1.0 *vs.* 64.4 ± 1.2, $p = 0.009$) and drank significantly more alcohol (5.0 ± 0.8 *vs.* 21.1 ± 2.6, $p = 0.0001$). In males genotype and phenotype predicted alcohol intake, with carriers of the "P" variant and "tasters" drinking less (18.1 ± 3.1 g/day *vs.* 31.7 ± 4.6 g/day, $p = 0.01$ and 19.1 ± 2.9 *vs.* 34.2 ± 5.6, $p = 0.02$, respectively). No relationships were found in females. A significant interaction was found between gender and genotype ($p = 0.004$) and phenotype ($p = 0.005$).
Conclusions: A gender dimorphism exists in the relationships between *TAS2R38* genotype, bitter phenotype and alcohol consumption. A significant interaction exists between gender and both genotype and phenotype when predicting alcohol intake.
Funding source(s): CSIRO.

DOES DAILY CONSUMPTION OF PECTIN LOWER CHOLESTEROL CONCENTRATION? A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background/Aims: Soluble fibres are thought to lower blood cholesterol concentrations. A systematic review of the effect of pectin, a soluble fibre, on cholesterol concentrations was undertaken.
Methods: EMBASE, PubMed and Cochrane CENTRAL were searched in December 2013. Randomised controlled trials lasting at least two weeks investigating increased consumption of pectin added to foods or as a supplement compared to a suitable control group and reporting at least total cholesterol concentrations in non-acutely ill subjects were included. Studies testing mixtures of fibres or whole foods were excluded because their effects could not be attributed to pectin. Study quality was assessed using the Risk of Bias criteria; high quality studies were double-blind and placebo-controlled. Meta-analysis was conducted using the generic inverse variance method.
Results: Of the 115 articles retrieved, only seven met all inclusion criteria. These tested intakes of pectin between 9 and 36 g/day. The number of participants ranged from six to 66 and most studies were conducted in hypercholesterolaemic people. There was a mean reduction in blood total cholesterol concentration of 0.36 mmol/L (95% CI: -0.52 to -0.19 mmol/L, $p < 0.001$) and moderate heterogeneity ($I^2 = 45\%$) across all studies. Similar magnitudes of effect were seen in the four high quality studies and in the one, low quality, study conducted with normocholesterolaemic subjects.
Conclusions: Daily consumption of at least 9 g pectin/day (a large amount compared to current average total fibre intakes) may reduce blood total cholesterol concentrations. Further studies are needed to confirm this effect, especially in normocholesterolaemic populations.
Funding source(s): None.

RELATIONSHIP BETWEEN CAFFEINE CONSUMPTION AND SLEEP IN AUSTRALIAN CHILDREN

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Background/Aims: Currently Australia does not have caffeine intake