

mins, participants repeated the gut-challenge trial (GC2). Data were analysed by repeated measures ANOVA with post hoc and non-parametric equivalents (Friedman) where appropriate.

Results: Overall GIS were lower in GC2 compared to GC1 (accumulated rating: 86 cm vs. 508 cm; $p < 0.05$). Commonly reported GIS in GC1 included: belching, bloating, urge to vomit, stomach and intestinal pain, flatulence, urge to defecate and nausea; all subsiding in GC2. Taste fatigue and tolerance to food-fluid improved in GC2 compared to GC1 ($p < 0.05$). Breath hydrogen was lower in GC2 compared to GC1 (AUC: 1500 ± 589 ppm/300 min vs. 2580 ± 704 ppm/300 min; $p < 0.01$), with no significant change in breath methane observed.

Conclusions: Findings suggest that 10-days' of gut-challenge improves GIS, food-fluid intake ability and absorption during exertional stress. Ultimately, this may have substantial impact on exercise performance.

Funding source(s): N/A.

DIETARY SUPPLEMENTATION WITH FRUCTOSE OR GLUCOSE DOES NOT INFLUENCE BLOOD LIPIDS AND C-REACTIVE PROTEIN IN HEALTHY SUBJECTS

F. Jameel^{1,2}, L.G. Wood², M.L. Garg^{1,2}. ¹Nutraceuticals Research Group University of Newcastle, NSW, Australia; ²School of Biomedical Sciences & Pharmacy, University of Newcastle, NSW, Australia
E-mail: Faizan.Jameel@newcastle.edu.au (F. Jameel)

Background/Aims: The mechanisms by which consumption of fructose rich diets may be linked with elevated risk of developing obesity and related chronic diseases remain debatable. Fructose-induced hyperlipidaemia and inflammation have been thought to mediate the adverse health effects of fructose. This study aimed to investigate the effects of dietary supplementation with fructose or glucose on blood lipids and low grade inflammation in healthy subjects.

Methods: This was a two-arm, parallel-design, randomised dietary intervention trial. Participants ($n = 24$) were asked to supplement their usual diets with 50 g of either fructose or glucose per day for a period of 4 weeks. Blood samples were collected at baseline and post intervention for the analysis of blood lipids, glucose, insulin and high sensitivity C-reactive protein (hs-CRP). An independent-sample *t*-test was conducted to compare the effects of fructose and glucose supplementation.

Results: Following dietary supplementation with fructose or glucose there was no significant difference in fasting blood insulin, glucose, total cholesterol, triglyceride, LDL-cholesterol, HDL-cholesterol, total/HDL cholesterol ratio and hs-CRP levels (all $p > 0.05$). The change in blood glucose, insulin, hs-CRP and lipid levels from baseline to post-intervention with fructose versus glucose were also similar.

Conclusions: Type of sugar (fructose or glucose) consumed does not influence blood lipid profile, glycaemic indices and low grade inflammation in healthy individuals.

Funding source(s): Hunter Medical Research Institute.

EFFECT OF NUTRITIONAL SUPPLEMENT THERAPIES IN THE PREVENTION OF ALZHEIMER'S DISEASE IN A TRANSGENIC MOUSE MODEL

M.J. Sharman¹, D. Ong², G. Verdile³, G. Munch⁴, M. Wenk⁵, B. Halliwell⁵, R.N. Martins². ¹School of Health Sciences, University of Tasmania, Australia; ²School of Medical Sciences, Edith Cowan University, Australia; ³School of Biomedical Sciences, Curtin University, Australia; ⁴School of Medicine, University of Western Sydney, Australia; ⁵National University of Singapore, Singapore
E-mail: matt.sharman@utas.edu.au (M.J. Sharman)

Background/Aims: The aim of this study was to examine the efficacy of diets containing (-)-epigallocatechin-3-gallate (EGCG), curcumin (Curc), DHA and α -lipoic acid (ALA) on reducing cognitive deficits and brain beta-amyloid (A β) levels in a transgenic Alzheimer's disease (AD) mouse model.

Methods: Sixty mice (age six months) were randomly assigned to one of six nutritional supplement groups (Control, Curc, Curc+EGCG+ALA, Curc+DHA+ALA, EGCG+DHA+ALA, Curc+EGCG+DHA+ALA) for 12 months. At 18 months of age, the cognitive effects of the nutritional supplements were evaluated behaviourally using the cued and contextual fear

avoidance test. A commercially available assay was used for the detection and measurement of A β levels in the brain. Difference between groups was tested using one-way ANOVA.

Results: All nutritional supplement groups had lower frontal cortex A β 42 levels compared to Controls ($p < 0.05$). Only the DHA+EGCG+ALA group had reduced frontal cortex A β 40 levels compared to Controls ($p < 0.05$). No differences were observed in cerebellum A β 42 levels, although the Curc+EGCG+ALA and DHA+EGCG+ALA groups did have lower cerebellum A β 40 levels compared to Controls ($p < 0.05$). All nutritional supplement combination groups had significant increases in time spent freezing in the context, altered context and auditory cue conditions in the cued and contextual fear avoidance testing compared to Controls ($p < 0.05$).

Conclusions: The combination nutritional supplements in this study were effective at lowering brain A β 42 levels and improving cognition. However there does not appear to be additional benefits from combinations of these nutritional components over a single nutritional supplement of Curc.

Funding source(s): NHMRC.

OMEGA-3 INDEX AND LIVER FAT: AN UNEXPECTED RELATIONSHIP

H.M. Parker¹, H.T. O'Connor¹, S.E. Keating¹, J.S. Cohn², M.L. Garg³, I.D. Caterson⁴, J. George⁵, N.A. Johnson¹. ¹Discipline of Exercise & Sport Science, University of Sydney, Australia; ²Heart Research Institute, NSW, Australia; ³School of Biomedical Sciences & Pharmacy, University of Newcastle, NSW, Australia; ⁴Boden Institute, University of Sydney, Australia; ⁵Storr Liver Unit, Westmead Millennium Institute, NSW, Australia
E-mail: h.parker@sydney.edu.au (H.M. Parker)

Background/Aims: Non-alcoholic fatty liver disease (NAFLD) is an independent predictor of CVD. *n*-3 PUFA supplementation has been shown to improve NAFLD. This study aimed to examine the relationship of the Omega-3 Index (O3I; a biomarker of *n*-3 status) with liver fat (intrahepatic lipid concentration; IHL%).

Methods: Eighty overweight/obese, healthy, non-smoker adults (56 males) undertook MRI and proton magnetic resonance spectroscopy (¹H-MRS) to measure abdominal adiposity and IHL% within seven days of undergoing anthropometric measurements and providing a blood sample for biochemical and erythrocyte lipid analysis. Correlations with liver fat were examined and linear regression for the prediction of IHL% was performed. Mean \pm SEM are reported.

Results: O3I was high in participants with ($9.0 \pm 0.3\%$) and without ($8.4 \pm 0.3\%$) NAFLD, and was positively correlated with IHL% ($r = 0.255$, $p = 0.029$), although further analysis revealed this was stronger and statistically significant for males ($r = 0.425$, $p = 0.001$) and not females ($r = 0.020$, $p = 0.925$). Linear regression showed that O3I and erythrocyte *n*-6:*n*-3 ratio together significantly explained 28% of the variance in IHL% ($p = 0.046$). The addition of BMI, waist and age raised the predictive power to 58% ($p < 0.001$). Further addition of biochemical markers (TAG, HDL, high-sensitive C-reactive protein) increased the total variance explained by the model to 66%.

Conclusions: In overweight/obese adults, O3I was unexpectedly positively associated with IHL%, however gender differences apparent in this cohort warrant further research. In overweight obese adults, simple anthropometric and demographic measures may be of equal or greater utility than erythrocyte PUFA analysis in identifying those at increased risk of NAFLD.

Funding source(s): Blackmores; Diabetes Australia.

EVALUATING AN INNOVATIVE FOODSERVICE APPROACH TO MALNUTRITION IN HEALTHCARE

J. Collins¹, C. Huggins¹, J. Porter^{1,2}, H. Truby¹. ¹Nutrition and Dietetics Department, Monash University, Australia; ²Dietetics Department, Eastern Health, VIC, Australia
E-mail: lorja.collins@monash.edu (J. Collins)

Background/Aims: Malnutrition in healthcare facilities remains an ongoing challenge. Opportunities exist to develop the foodservice system and engage this workforce to improve patient outcomes. The aim was to determine the effect of changing the foodservice system on anthropometry and patients' satisfaction with the foodservice.

Methods: The intervention consisted of a high-energy hospital menu and greater foodservice staff-patient interaction. Patients in subacute care