(ADA2010 criteria) to normoglycaemia by week 160 (OR 3.6 [3.0;4.4], $p < 0.0001$). Individuals on liraglutide 3.0 mg lost more weight than on placebo (6.1% vs 1.9%; estimated treatment difference [ETD] −4.3% [95%CI −4.9;−3.7]), accompanied by greater mean reductions in waist circumference (ETD −3.5 [−4.2;−2.8] cm), SBP (ETD −2.8 [−3.8;−1.8] mmHg), triglycerides (ETD −6%[−9;−3]) and high-sensitivity C-reactive protein (ETD 29% [−34;−23]) (all $p < 0.001$). Mean pulse increased with liraglutide 3.0 mg vs placebo (ETD 2.0 [1.2;2.7] beats/min, $p < 0.0001$). AE incidence was 94.7% with liraglutide 3.0 mg vs 89.4% with placebo, SAEs 15.1% vs 12.9%. Adjudicated major adverse cardiovascular events (non-fatal myocardial infarction, stroke, cardiovascular death) were low overall (0.19 vs 0.20 events/100 patient-years-of-observation for liraglutide 3.0 mg vs placebo).

Conclusion: Liraglutide 3.0 mg, as adjunct to diet + exercise, delayed the onset and reduced the risk of T2D over 3 years in adults with prediabetes, reduced body weight and improved cardiometabolic risk factors.

https://doi.org/10.1016/j.orcp.2016.10.079

79

Effects of exercise on appetite and gut hormones: Implications for weight management

Shelley E. Keating[2,1,*], Ahmad Alzahrani[3,4], Jenna Kirchner[2], Ian D. Caterson[3], Neil A. King[5], Nathan A. Johnson[1,3], Radhika V. Seimon[3], Amanda Sainsbury[3]

[1] *Faculty of Health Sciences, The University of Sydney, Sydney, NSW, Australia*
[2] *School of Human Movement and Nutrition Sciences, The University of Queensland, St Lucia, QLD, Australia*
[3] *Boden Institute of Obesity, Nutrition, Exercise & Eating Disorders, Sydney Medical School, Charles Perkins Centre, The University of Sydney, Sydney, NSW, Australia*
[4] *Faculty of Medicine, The University of Jeddah, Jeddah, Saudi Arabia*
[5] *Faculty of Health, Queensland University of Technology, Brisbane, QLD, Australia*

Background: Regular exercise is essential for long-term weight maintenance; however, the role of exercise in weight loss is sometimes questioned due to the potential compensatory increases in hunger and food intake, associated with changes in appetite hormones. We examined the effects of exercise training on appetite and gut hormones, in addition to energy intake, subcutaneous adipose tissue (SAT) and visceral adipose tissue (VAT) in adults with overweight/obesity.

Methods: Twenty-three inactive adults with overweight/obesity (BMI $33.3 \pm 5.5\,kg/m^2$) aged 47 ± 9 years were randomised to 8-weeks of aerobic ($n = 17$, 30—60 min per session at 50—70% of VO_{2peak}, 3—4 days/week) or resistance exercise training ($n = 5$, 8—10 exercises per session, 8—12 repetitions, 2—3 sets per exercise at 80—85% of 1-repetition maximum, 3 days/week). Intervention group data (aerobic and resistance exercise training) were combined for data analyses. Participants were instructed not to alter their diet. Before and after the intervention, fasting subjective appetite sensations (using visual analogue scale) and plasma for gut hormone assays were collected after an overnight fast. Energy intake was recorded using 3-day food diaries, and VAT and SAT were measured via magnetic resonance imaging. Changes from baseline were analysed using paired *t*-tests.

Results: Eight-weeks of both exercise training interventions induced significant reductions in VAT ($-159 \pm 195\,cm^3$, $p < 0.001$) and SAT ($-331 \pm 756\,cm^3$, $p = 0.003$), with no significant changes in weight ($-0.9 \pm 2.2\,kg$, $p = 0.07$), subjective appetite sensations, plasma ghrelin, PYY or energy intake ($p > 0.05$ for all).

Conclusions: In the absence of explicit dietary restrictions in adults with overweight/obesity, neither type of exercise training, which effectively reduces body fat without weight loss, affects fasting subjective sensations of appetite, or fasting plasma levels of ghrelin or PYY. Exercise-induced changes in body composition appear not to be influenced by changes in gut hormones.

Supported by Diabetes Australia Research Trust.

https://doi.org/10.1016/j.orcp.2016.10.080

80

Tertiary level management of severe paediatric obesity — Interventions must focus on younger children and address attrition rates

Kerryn W. Chisholm*, Shirley M. Alexander, Jo Henderson, Elizabeth Barnes

Children's Hospital at Westmead, Westmead, NSW, Australia

The prevalence of severe obesity in Australian children continues to increase thus it is imperative we determine optimum weight management interventions. Data from tertiary level treatment programs helps inform patient and service characteristics most likely to yield successful outcomes.

As part of ongoing service improvement we evaluated data from our NSW tertiary paediatric multi-disciplinary weight management clinic, CHOOSe Health, to determine potential identifiable criteria predictive of greater weight loss results.

CHOOSe Health clinic has clearly defined referral criteria and clinical pathways with a mixture of parent workshops and individual tailored sessions with the team's health professionals over 6 months. Clinic visits measure weight, height and waist circumference (WC) and BMI, BMI z-score and waist-to-height ratios (WHtR) are calculated.

Data from 249 families (children aged 18 months to 14 years) attending from 2012—2015 were analysed. (56% male). Mean baseline BMI z-score and WHtR were 2.8 (range 1.2—6.4) and 0.68 (range 0.49—1.0) respectively. >93% had a WC >80 cm. Younger patients (≤6 yrs) had higher baseline BMI z-scores. Only 43% of families attended the initial (triage) appointment whereas 33% of families attended at least 5 appointments. There were no significant differences between those attending triage only compared with multiple attenders. For multiple attenders, there was a significant ($p < 0.0001$) mean change in BMI z-score from visit 2 to last visit being greatest in those ≤6 years of age. Regression analysis indicates significant ($p < 0.0001$) decreases in mean BMI z-score over visits 1—5.

Interventions in the real-life setting are effective for management of severe paediatric obesity and resources should focus on younger age groups where greatest changes in weight parameters are achieved. More research is needed into reducing attrition rates which remain high and distinguishing between attenders and non-attenders cannot be determined using baseline anthropometry alone.

https://doi.org/10.1016/j.orcp.2016.10.081

81

Metabolic and nutrition-related effects of a duodenal-jejunal bypass sleeve in patients with obesity and Type II diabetes: Preliminary results of a pilot study

Jessica McMaster[2,3,1,*], Graeme G. Rich[4,3,1], Linda Fletcher[4,1], Arjun Gandhi[4,1], Graeme Macdonald[4,1], Erin Shanahan[4,3], Natasha Koloski[4,1], Mark Morrison[4,3], Veronique Chachay[2,4,3], Gerald Holtmann[4,3,1]

[1] *Department of Gastroenterology and Hepatology, Princess Alexandra Hospital, Brisbane, Queensland, Australia*
[2] *School of Human Movement and Nutrition Sciences, The University of Queensland, Brisbane, Queensland, Australia*
[3] *Translational Research Institute, Brisbane, Queensland, Australia*
[4] *School of Medicine, The University of Queensland, Brisbane, Queensland, Australia*

Background: Effective and safe treatments for obesity and type 2 diabetes are urgently needed. The endoscopically placed duodenal-jejunal bypass sleeve (DJBS) (Endobarrier®) proposes to impair digestion and absorption of macronutrients, thus inducing weight loss. Absorption of micronutrients may therefore also be impaired.