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Does chronic treatment with a thiazolidinedione increase brown fat thermogenesis in humans?



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Increasing energy expenditure via brown adipose tissue (BAT) thermogenesis is a possible therapeutic strategy to treat obesity and its associated co-morbidities. The thiazolidinedione class of anti-hyperglycemic drugs increase BAT differentiation in pre-clinical experimental models and therefore potentially increase BAT thermogenic capacity. Thus, the aim of the study was to determine if pioglitazone treatment for 4 weeks increases BAT activity in response to acute cold exposure in humans. In a double-blinded, placebo-controlled, parallel design trial, 14 lean (BMI <25 kg/m²), un-medicated male participants who exercise <2 h per week and were free of overt cardiovascular and metabolic disease were randomised to receive placebo (lactose) or pioglitazone (45 mg/day) for 28 days. After unblinding in September 2016, this presentation will report the primary outcome

measure of the change in BAT activity in response to acute cold exposure, assessed before and after the interventions by measuring glucose uptake with ¹⁸F-fluorodeoxyglucose Positron Emission Tomography-Computerised Tomography (PET-CT). BAT activity will be measured in regions of supraclavicular adipose tissue with radiodensity corresponding to BAT and reported as maximum and mean standardised glucose uptake value (SUVmax and SUVmean). Energy expenditure, cardiovascular responses (blood pressure and heart rate), core temperature, blood glucose, plasma non-esterified fatty acids and plasma noradrenaline will also be reported basally and in response to acute cold exposure along with body composition before and after the intervention. Outcomes from the study will expand our understanding of human BAT physiology and inform the development of therapeutic approaches that target energy expenditure via BAT.

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Do Early Years' Educators foster positive body image in very young children?



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Over 1 000 000 Australian children <12 years spend on average 28 h/week in care. Early Years' Educators (EYE) are positioned to influence many aspects of children's wellbeing including nutrition, obesity and body image (BI) development. Evidence suggests BI concerns emerge in children as young as 3 years and maybe unintentionally transmitted through parents/caregivers, or by EYE.

This study explored the knowledge, attitudes and behaviours of EYE in relation to BI development of young children (2–3y). An online survey was developed and included adapted standardised measures of body appreciation, knowledge of BI development and feeding practices. This was completed by 187 EYE nationally.

EYE understood the concept of BI, and reported positive Body Appreciation Scores. They recognised their role in fostering positive BI of the young children they taught (83%) and reported confidence in their ability to access support in dealing with BI issues (67.4%), and 60% felt they had the capacity to understand BI concerns in young children. Knowledge scores were high (78% ± 8%), however, 32% of EYE believed they should judge when a child was

full, 68% felt that dieting was a healthy behaviour and 20% agreed that 'special foods' (discretionary foods) should be given to a child when they were upset, demonstrating problematic attitudes and behaviours related to the food environment by some EYE.

Despite the lengthy time that children spend with EYE, their role in developing BI has not previously been explored. Current knowledge, attitudes and behaviours of EYE vacillate and have the potential to greatly influence the development of BI in young children. Provision of resources and professional development to ensure quality teaching and learning experiences need to be developed to ensure EYE play a role in positive BI development.

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Effect of rice cooking methods on postprandial glycaemic response, satiety and palatability, and chewed particle size distribution



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Aim: Diets, which produce a low glycaemic response, are relevant to prevention and management of obesity and diabetes. The aim was to investigate the effect of rice products and cooking-storing methods on postprandial blood glucose and the changes in satiety and palatability.

Methods: The randomised, cross-over experimental trial investigated the glycaemic responses, satiety and palatability (Visualised Analogue Scale (VAS)) scores of 28 healthy participants after consumed three rice samples (140g ± 0.3g), freshly cooked medium-grain-white, freshly cooked parboiled, and reheated parboiled (24-h storage at 4°C and reheated to 65°C), in each study visit. Postprandial blood glucose was recorded at 0, 15, 30, 45, 60, 90 and 120 min after rice consumption. Satiety (VAS score) was reported at 0, 30, 60, 90, and 120 min. Palatability (VAS score) was reported immediately after consumption. Glycaemic responses, satiety, and palatability among three rice samples were compared using repeated-measure-analysis of variance (ANOVA).

Results: The overnight cold-stored and reheated parboiled rice resulted in a significantly lower blood glucose concentration trajectory (42%, $P=0.01$) than freshly cooked medium-grain white rice and 12% lower ($P=0.01$) than freshly cooked parboiled rice. Longer chewing time (6.34s/10g) was observed in reheated parboiled rice compared with freshly cooked medium-grain white ($P=0.026$) and higher palatability (visual appeal 2-fold higher ($P=0.001$), smell 1-fold higher ($P=0.047$), taste 1.5-fold higher ($P=0.018$), and overall palatability 2-fold higher ($P=0.002$)). No significant differences in satiety were observed ($P>0.05$).

Conclusion: The effect of reheating on the glycaemic response, chewing time and palatability shown in the present study may be considered a positive effect with regard to glycaemic regulation. Reheated parboiled rice replacing freshly cooked medium-grain white or parboiled rice in the habitual diet may reduce glycaemic overload in the daily diet.

There is no conflict of interest in this study.

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The prevalence of weight cycling and associations with weight change and health outcomes (over 12 years)



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Introduction: Weight cycling is thought to be harmful for health, although evidence is conflicting. Here we have examined the prevalence of weight cycling in a representative population sample of women and evaluated the association