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**Project Energize: Continued improvement in time to run 550 m**

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**Aim:** The prevalence of childhood obesity is increasing in New Zealand. Since 2004, Sport Waikato has delivered Project Energize, a through-school nutrition and physical activity program, to primary schools in the Waikato. Energize is funded by the Waikato District Health Board. We have previously shown that obesity measures of body mass index, waist-to-height ratio and percentage body fat are negatively associated with the time taken to run 550 m, T<sub>550</sub>. The aim was to compare T<sub>550</sub> in 2015 with the 2011 T<sub>550</sub> reference derived from the T<sub>550</sub> from 5076 Waikato children in the 2011 evaluation of Energize.

**Method:** In 2015 in a representative sample of children by age, gender, socioeconomic status and ethnicity ( $n=5784$ ) T<sub>550</sub> was measured following the 2011 protocol. The Z-score for every child in the 2011 and 2015 evaluations were derived and differences in T<sub>550</sub> between 2011 and 2015 determined using ANOVA.

**Results:** In 2015 overall children ran 550 m faster than in 2011. In particular, run times in 2015 for boys were significantly faster than in 2011 (Z-score mean difference  $-0.12$ , 95% CI  $-0.166$ ,  $-0.077$ ) and for ages 7, 8 and 9 years.

**Conclusion:** In a climate of increasing childhood obesity in New Zealand, the decrease in time to run 550 m confirms that Project Energize continues to be effective. This information can be used to inform and evaluate future interventions to tackle obesity in school children.

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**Rapid altering light cycles promotes increased hepatic glucose uptake and de novo lipogenesis**

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**Aims:** Clock genes that are synchronised to the light-dark cycle can influence cellular processes in the liver. We aimed to determine the effect of rapid alterations in the light-dark cycle on energy balance and liver metabolism.

**Methods:** 8wk old male C57BL/6 mice were separated into 4 groups ( $N=40$ /group, 2 groups standard laboratory diet (SLD), 2 groups high-fat diet (HFD)). After 4wk of 12:12h light:dark, the light cycle was rotated twice a week for one group/diet for 8wk. 8 mice from each group were placed in metabolic monitoring cages. At 12wk mice were killed at 3h intervals ( $N=5$ /group/time point) starting at 1800h.

**Results:** SLD mice in a rotating light cycle (SLD-RL) gained more weight than SLD mice in a normal light cycle (SLD-NL). There was no difference in weight gain between HFD-NL and HFD-RL. Blood glucose levels were higher in RL compared to NL mice in both diet groups. RL mice accessed food more during the light phase (LP) compared to NL mice on both diets but not in the dark phase (DP). SLD-RL mice showed a greater meal size only during the LP compared to SLD-NL mice. HFD-RL mice did not show any difference in meal size compared to HFD-NL mice.

SLD-RL mice had decreased energy expenditure compared to SLD-NL mice during the DP. There was no difference in energy expenditure between HFD-NL and HFD-RL mice.

RL mice had increased hepatic triglycerides compared to NL mice on both diets. Hepatic mRNA expression of Glut2, insulin receptor- $\beta$ , glycogen synthase 2, and Acetyl-CoA carboxylase showed circadian variation in SLD-NL and HFD-NL mice, with upregulation and phase shifts in SLD-RL rhythms. Rhythms were ablated in HFD-RL mice.

**Conclusions:** Rapid light cycle rotation causes increased body mass in SLD-RL mice combined with

increased glucose uptake and increased fatty acid synthesis.

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**Health professionals' perspectives on assessing children's weight status: A case study of Rockhampton**



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**Introduction:** Childhood overweight and obesity is a major public health issue, and its treatment, and management starts with identification of the problem. Currently in Australia, there is a lack of clarity with regard to responsibility for routine assessment of children's weight status.

According to the National Health and Medical Research Council "Clinical Practice Guidelines for Management of Overweight and Obesity in Adults, Adolescents and Children in Australia" assessing weight status is recommended to be undertaken by health professionals during standard consultations with children. Research suggests this is not occurring in practice and little is known about health professionals' perspectives on this routine assessment.

This study explored health professionals' opinions about routine undertaking of primary school children's weight status.

**Methods:** Twenty-six semi-structured interviews with health professionals who interact with children as a part of their professional role were undertaken in the area of Rockhampton in June–July 2016.

**Findings:** Health professionals recognise a need for change in practice in assessing primary school children's weight status. A multi-level approach is necessary for addressing childhood overweight and obesity. There is a need for long-term commitment from the Governments to implement "ask and assess" and provide health services to address obesity, simple and consistent education across all primary health care and education settings as well as within communities.

**Conclusion:** Clarity is needed regarding responsibility for assessing primary school children's

weight status to effectively address childhood obesity.

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**Why do parents enrol in a childhood obesity management program?**



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**Introduction:** Despite the high prevalence of childhood overweight and obesity enrolment to weight management programs remains difficult, time consuming, costly and has limited effectiveness. Previous studies explored barrier to recruitment into children's weight management programs but only a few have explored the issue from the perspective of the parent or applied a theoretical framework to describing the decision to enrol in a weight management program. The aim of this paper was to understand what factors influence parental decision to enrol in the Parenting, Eating and Activity for Child Health Program, a program for childhood obesity management.

**Methods:** Semi-structured qualitative telephone interviews were undertaken with 21 enrollees in a childhood obesity management program. Questions were based on Theory of Planned Behaviour.

**Findings:** Parents tended to be aware of the child's weight issue prior to deciding to enrol in the program. Theory of Planned Behaviour was inadequate in explaining the decision to enrol because parents had attempted to address their child's weight issue themselves and had sought help from a number of people including health professionals. The participants' decision to enrol in the program was influenced by the evaluation of their previous attempts and their child's emotional state.

**Conclusions:** Health professionals should use opportunities during their contact with parents to raise child's weight issue and to provide support and encouragement so that parents seek help from programs before reaching point of despair.

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