Abstract

Child Nutritional Status—Alternative Metrics to Body Mass Index [†]

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Background: For children, body mass index, adjusted for age and gender is the globally accepted measure of relative growth and risk of over and under-nutrition. This index is a measure of volume but gives no functional or developmental information. Alternative measures for the effectiveness of interventions to improve nutrition, function and health must be considered in the context of deprivation, gender and ethnicity.

Methods: Energize, collectively Project Energize (PE) and Under 5 Energize (U5E), is a nutrition and physical activity programme/“way of doing” that has been delivered in Waikato primary schools since 2004 and early childhood centres since 2013 and now reaches over 60,000 children in New Zealand. Two innovative measures of the impact of Energize are the time taken for primary-school-children to run 550 m and reduction in visible dental decay in 4-year-old children. The first is an audit of a quality control measure undertaken within schools and the second uses the national before-school-check (B4SC) dataset.

Results: Overall PE children in 2015 ran faster than children in 2011. In particular in 2015, boys and Māori boys were faster as were 7, 8 and 9 year old children. Children attending decile 1, 2, 4 and 6 schools were also faster in 2015. No groups of children in 2015 were slower than in 2011. Between 2013 and 2017 Waikato B4SC data analysis showed that between 2015 and 2017 visible dental decay was more likely in children who were Māori (3.17×), living in high deprivation (1.66×) and male (1.10×) but less likely if attending an U5E-ECC (0.79×).

Conclusions: The alternative measures of impact, i.e., decreases or maintenance in time to run and visible dental decay provide construct validity for the effectiveness of Energize and investment in the programme. In addition the national health survey reports that childhood overweight has decreased in the Waikato region.

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