

## Feasibility of a complex intervention to improve diet in Maltese children

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The high prevalence of childhood obesity in Malta is a challenging health problem. Schools can potentially be ideal for implementing successful dietary interventions when well designed. The main aim of this study was to assess the feasibility of a complex intervention to reduce sugar intake and increase water consumption in Maltese school children aged 9–11 years.

3 schools were recruited during the school year 2011–2012. This feasibility study used the Intervention Mapping Protocol<sup>2</sup> design and based the strategy on the recommendations laid out by the Medical Research Council guidelines for designing complex interventions<sup>3</sup>. The dietary outcomes were measured at school using the novel web-based 24-hour recall dietary assessment tool, REALITYMALTA™, developed at the Rowett Institute of Nutrition and Health, and further developed and validated for use in Maltese school children<sup>4</sup>. The study included an educational component by supplying a printed leaflet on reduction of sugars, particularly non-milk extrinsic sugars (NMES) and through interactive sessions for both parents and children<sup>5</sup>. It also included an environmental component through the free supply of water in the intervention classrooms for a period of twelve weeks. 48 children (30 boys, 18 girls) completed both the pre-intervention and post-intervention assessments. Food counts and nutrients results were then compared using Wilcoxon signed-rank tests and paired sample t-tests respectively. No significant differences were found for food counts, except for increased fruit consumption ( $p = 0.03$ ). A statistically significant reduction was reported for energy intakes (kJ/day) ( $p = 0.03$ ), and small (but non-significant) reductions ( $p > 0.05$ ) were reported for fats (g/day), and NMES (g/day). Water consumption rates remained similar pre- and post-intervention ( $p = 0.49$ ).

Nutrient	Pre-Intervention Mean	S.D.	Post-Intervention Mean	S.D.	P Difference
Energy (kJ/day)	7733	2046	6809	2224	0.03*
Fats (g/day)	73.5	28.5	62.3	26.7	0.06
NMES (g/day)	84.4	38.4	75.2	45.7	0.34
Water (ml/day)	1554	442.1	1495	366.5	0.49

\* Significant at  $p < 0.05$  (Paired t-test)

In conclusion, the reductions in energy, NMES and fats intakes reported in this feasibility study are encouraging, although only small changes were noted. These results could inform the design of a larger study of longer duration involving both intervention and control schools, whilst modifying the intervention design to ensure a positive effect for water consumption.

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