

that the average female BMI will become surpass that of males starting from the year 2045, rather than 2021 as predicted before. Due to the increase in sample size, the uncertainty around the point estimates has been reduced by approximately 30%.

Validation results indicate that previous predictions are fairly accurate when compared to the observed values in the latest surveys. There is evidence for a slowing trend for both genders. Further research is required to explicitly model the slowing down of BMI increase.

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### Can weight gain be prevented in women with breast cancer? A systematic review of intervention studies



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Weight gain is a common among women treated for breast cancer, particularly among women who are pre-menopausal at diagnosis and those undergoing chemotherapy. Obesity and weight gain have been associated with poor disease-specific and health-related outcomes. This review aimed to evaluate the effectiveness of weight gain prevention interventions for women diagnosed with breast cancer. Studies were identified through a systematic search of Pubmed, Embase, CINAHL and Scopus from inception to April 2016. A search of clinical trials registers was also conducted. Completed and ongoing trials evaluating a behaviourally based dietary intervention with or without physical activity and with a focus on weight gain prevention in women with breast cancer were reviewed. Weight change and body composition data were extracted. Within-group weight change of  $\pm 1$  kg and between-group weight differences of  $\geq 2$  kg was defined as successful weight gain prevention. Five completed trials and six ongoing trials were identified. All completed trials were conducted in women undergoing chemotherapy treatment and recruited exclusively premenopausal or both pre- and postmenopausal women. Studies were primarily underpowered pilot trials, and all considered to have a moderate or high risk of bias. Within-group weight gain prevention was achieved in two studies, with intervention groups in two studies losing  $>1$  kg. Between-group (intervention vs control) weight change of  $\geq 2$  kg was achieved by two studies. No trials assessed outcomes following the end-of-intervention or

cost-effectiveness. Ongoing trials will further contribute to the evidence base by addressing some of the limitations in the existing evidence. This small but growing number of studies reviewed provides preliminary and promising evidence that weight gain can be prevented in women with breast cancer undergoing chemotherapy treatment. Future studies should assess outcomes following the end-of-intervention, promote resistance training, assess bone density and assess cost-effectiveness.

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### Can we change diet and physical activity in time-poor populations?



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**Background:** Adopting and maintaining healthy diet and physical activity (PA) behaviours can be difficult in populations like nurses, who have a stressful job, with long working hours and shift work. Irregular meal patterns, frequent snacking on energy-dense nutrient poor foods (EDNP), and inactivity is common in this group, with 62% of Australian and New Zealand nurses being overweight or obese. The aim of this study was to deliver a 3-month workplace intervention study to improve diet and PA behaviours in nurses, given the paucity of such studies in the literature.

**Methods:** The intervention was developed with input from the target population, and included pedometers, a smartphone app, and a dedicated Facebook group as intervention materials. Primary outcomes included diet (food frequency questionnaire) and PA (accelerometer). Secondary outcomes included weight, BMI, waist circumference, and blood pressure. All measurements were taken at baseline, end of the intervention (3-months) and follow-up (6-months).

**Results:** 47 nurses,  $41.4 \pm 12.1$  years old and 87% female working at two hospitals in Brisbane (Australia) participated in the study. At 3-months, total energy intake coming from fruit and vegetables increased by 3.8%, while it decreased for EDNP foods (-0.8%). There was a -0.5% decrease on time

spent in moderate-to-vigorous PA, and a decreased in average daily steps (- 500 steps/day). At 6-months, dietary outcomes were maintained, while daily steps and sedentary time slightly decreased from 3-months. There were small changes on weight and BMI at 3- and 6-months.

**Conclusions:** This intervention showed improvements on diet, potentially at the cost of PA behaviour. Participants indicated that changing both behaviours was too hard, suggesting that in time-poor and stressed populations changing one behaviour at the time could be more feasible and effective. Recruitment and retention barriers exist in this hard-to-reach group, which should be considered in future studies.

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### Sedentary behaviours and adiposity in 10–13 year olds: How long, how much and what?



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**Background and significance:** The role of a healthy diet and physical activity in obesity prevention is well-established, but the importance of different constructs of sedentary behaviours is uncertain. This study sought to investigate relationships between volume, patterns and types of sedentary behaviour and adiposity in children.

**Methods:** An observational case-control study of obese and healthy-weight 10–13 year olds (130 male, 104 female) recruited via media advertisements was conducted. Adiposity was quantified using percent body fat measured using dual-energy X-ray absorptiometry and waist-to-height ratio (WHtR). Use-of-time was assessed using accelerometry and the Multimedia Activity Recall for Children and Adolescents (MARCA). Time (volume), type

(television, videogame, computer, eating, passive transport) and bout length (patterns) of sedentary behaviours were measured. Moderate-to-vigorous physical activity, total daily energy expenditure, sleep, age, average annual household income and Tanner stage were included as covariates in partial least squares analyses, stratified by gender.

**Major findings:** Television time ranked as the most important type of sedentary behaviour, demonstrating positive associations with adiposity in both genders. Prolonged bouts of sedentary behaviour and time playing computer/video games were positively correlated with adiposity, but only in boys. In girls, non-screen sedentary behaviour was inversely associated with adiposity. Total sedentary time was only inconsistently linked with fatness after appropriate adjustments.

**Concluding statement:** These data confirm that limiting television time is an important target for childhood obesity interventions. Furthermore, other characteristics of sedentary behaviour beyond total volume also show sex-specific associations with adiposity. Therefore, further research is needed to inform current volume-based sedentary behaviour guidelines.

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### Raising healthy kids – The New Zealand Health Target for childhood obesity



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In New Zealand as in many other countries obesity rates have increased in all ages, genders and ethnic groups over the last 30 years. Obesity is particularly concerning in children as it is associated with a wide range of future health conditions, and can also affect a child's immediate health, educational attainment and quality of life. This presentation describes development and implementation of the Childhood Obesity plan and the associated health target.

On the 30th June 2016 the New Zealand government launched a new health target called 'Raising Healthy Kids'. This health target is one of two targeted interventions in the Childhood Obesity Plan that focuses directly on obese preschoolers and their families. The plan consists of a package of