NSW GOVERNMENT Health

Go4Fun® Portfolio Report

Cumulative

Term 3 2011 - Term 2 2015

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1. Executive summary

Go4Fun® is a healthy lifestyle program for children aged 7-13 years above a healthy weight and their families and is part of an approved program of work under the NSW Healthy Children Initiative and NSW Government's *Healthy Eating and Active Living Strategy: Preventing overweight and obesity in NSW 2013-2018*.

Since Term 3 2011, a total of 652 programs have been delivered over a period of 4 years. The total number of participants in these programs was 6260 (52% female) and the average age was 9.9 years. Average program attendance and drop-out rate were 75% and 14% respectively.

Children who have participated in Go4Fun® have demonstrated significant clinical results with Body Mass Index (BMI) decreasing from 25.6 kg/m^2 pre program to 25.0 kg/m^2 post program, leading to a mean 0.6 BMI unit reduction. Also, waist circumference, an indicator of abdominal fat, was decreased by 1.5 cm post program for the portfolio.

Average fruit and vegetable consumption increased by the end of the program. Before the program, participants were eating 1.7 serves of fruit and 1.3 serves of vegetables. Post program, this increased to 1.9 and 2.0 serves respectively. Sweet drink consumption decreased from 0.5 to 0.3 serves per day pre and post program. Finally, the average total nutrition score improved from 13.4 to 19.2, demonstrating improved eating habits.

By the end of the program, 72% of children were meeting the daily National Physical Activity Guidelines, compared to 51% pre program. On average, children were doing moderate to vigorous activity for 3.6 additional hours per week, whilst a 2.8 hour decrease in sedentary activities per week was also observed post program, as television viewing and computer usage were reduced from 20.5 to 17.6 hours per week.

Go4Fun® has not only demonstrated "clinical attributes" that participants became healthier, participants were also "fitter" by the end of the program, as indicated by the 5.2 beats per minute decrease in recovery heart rate following the 3-minute step test.

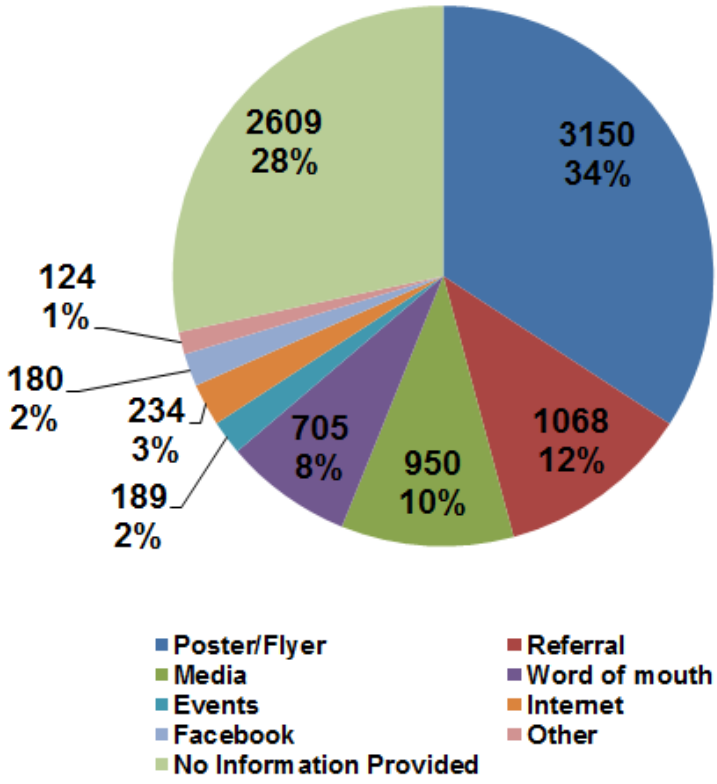
Finally, Go4Fun® has had a positive impact on the psychological wellbeing of the participants. Children's self-esteem improved (19.8 and 22.2 points pre and post respectively) over the course of the program.

The results of this report indicate that Go4Fun® is positively impacting on the health outcomes of children and participating families.

2. Delivery sites

- Number of programs: **652**
- Number of once per week programs: **267**
- Programs' time period: **06/2011 – 06/2015**
- Total children recruited: **7299**
- Total children confirmed: **7051**
- Total children eligible (within age and BMI range): **6254**
    - Outside age range = **86**
    - Outside BMI range = **263**
    - Missing BMI data = **701**
- Total children enrolled (attended one or more sessions): **6178**
- Total children completed (attended ≥6 sessions if twice per week, ≥3 if once per week): **5301**
- Total children (completers) with pre and post BMI data: **3854**

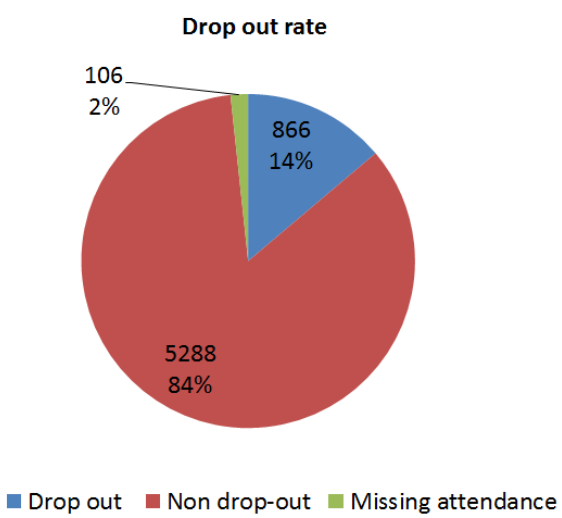
3. Sources of Recruitment

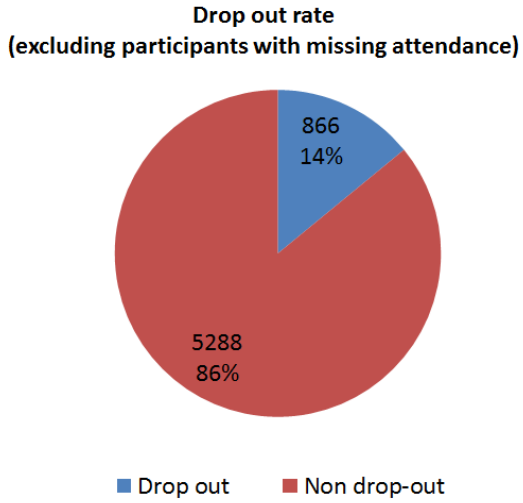


4. Attendance and drop out rates

Participants included in attendance and drop out analysis if eligible and if program attendance has been entered for ≥15 sessions if twice per week or ≥7 sessions if once per week

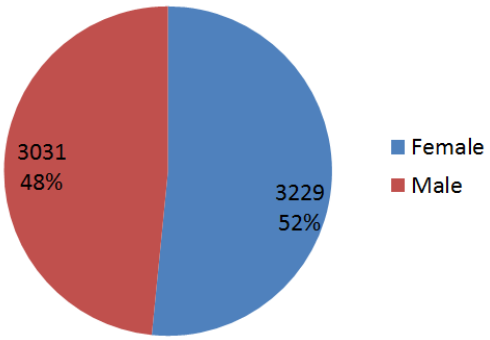
- Mean attendance rate: 75%



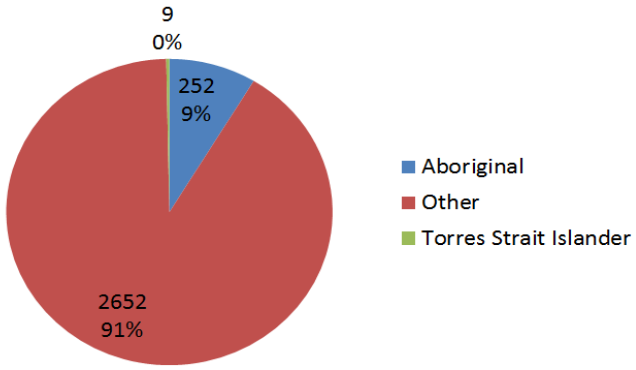


5. Participant demographics

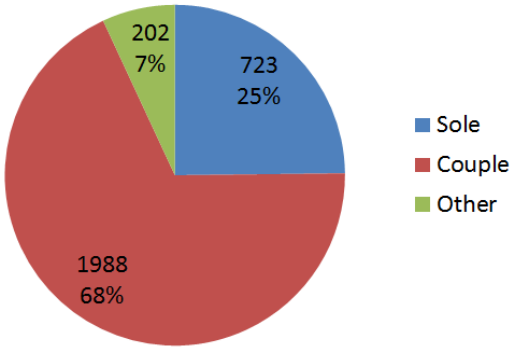
- Mean age for the group: 9.9 (±1.8)
- Sex



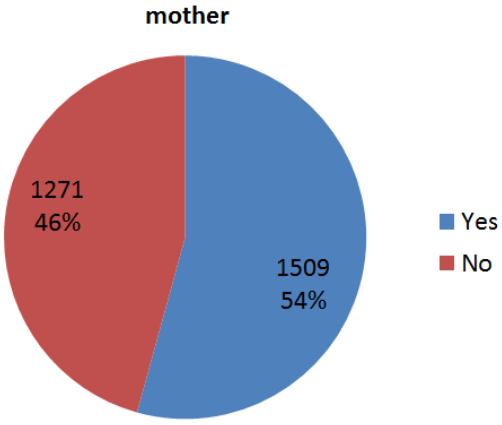
- Aboriginal or Torres Strait Islander origin

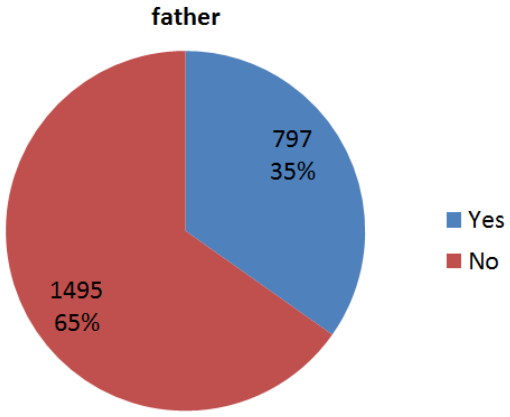


- Household characteristics



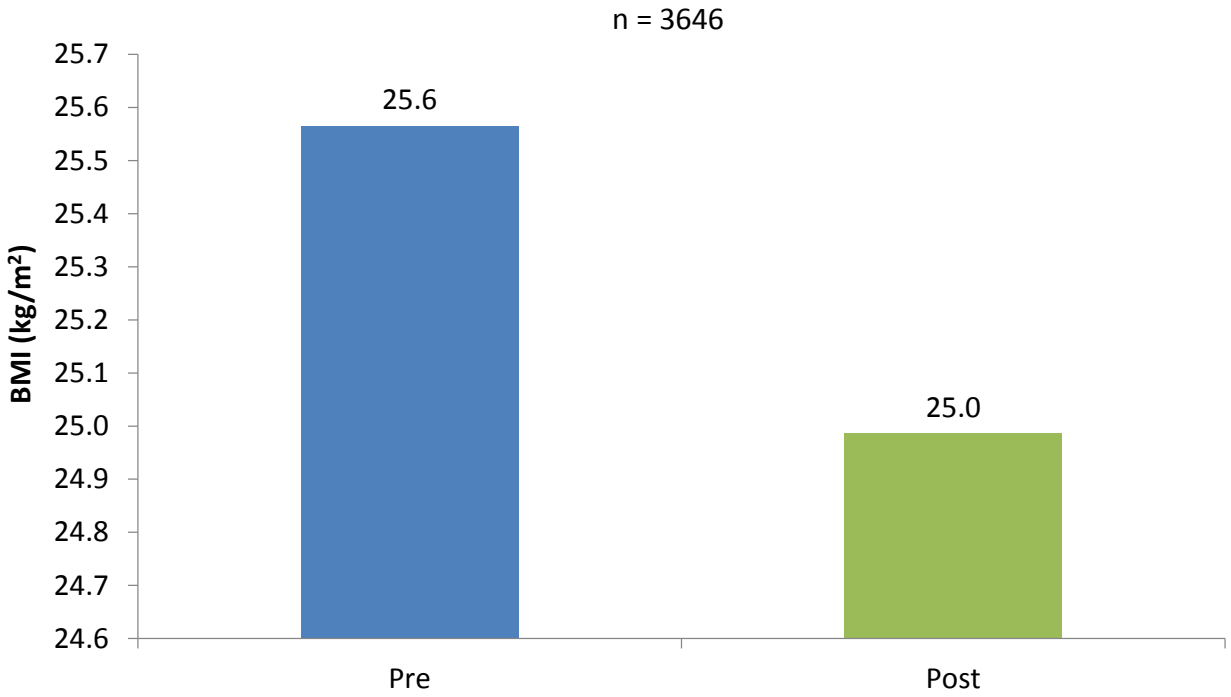
- Health Care Card





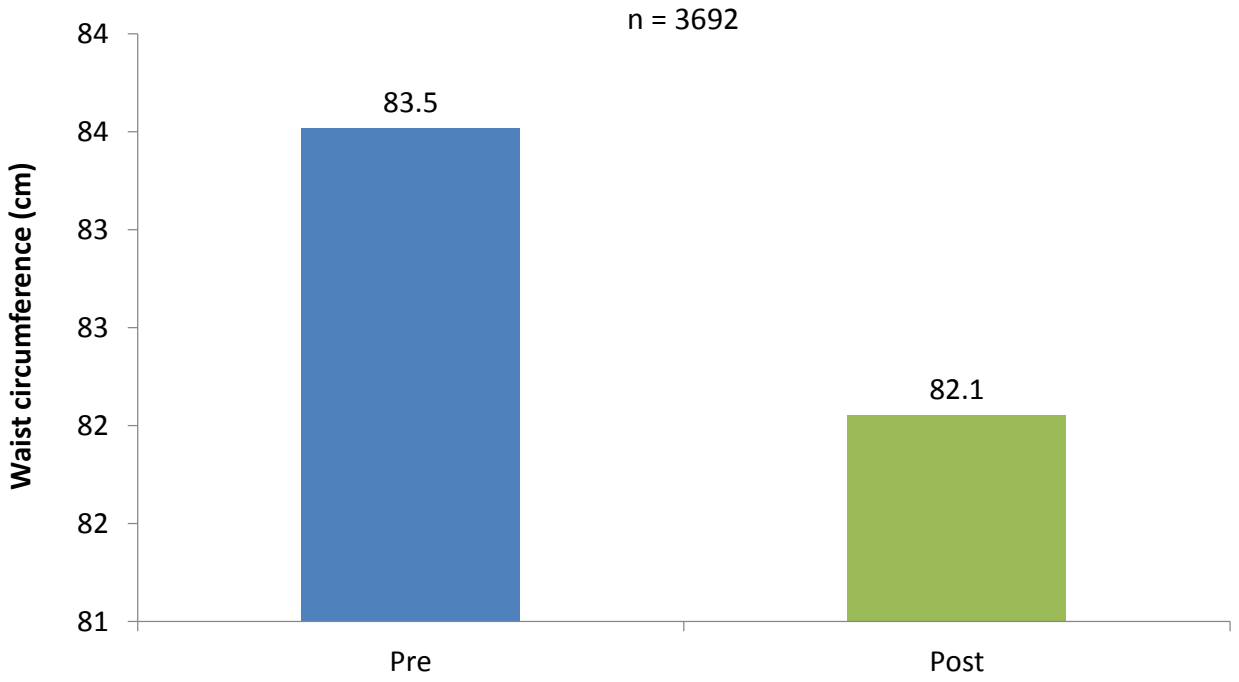
6. Quantitative Results

a. Anthropometry



Body Mass Index (BMI) decreased from 25.6 kg/m^2 before the program to 25.0 kg/m^2 after the program, leading to a 0.6 BMI unit reduction for the portfolio.

Body Mass Index (BMI) is calculated by dividing weight (in kg) by height (in meters) squared. It is used to categorise individuals as underweight, normal weight, overweight or obese. In clinical practice, the 85th and 95th BMI percentiles for age and gender are used as the cut-off point to define overweight and obesity respectively in children. BMI is a valuable tool for initial screening and follow-up as it is easily calculated; however, it does not take into consideration body composition, so it should be ideally complemented by other measures -e.g. waist circumference (see below)- to assess changes in degree of overweight.

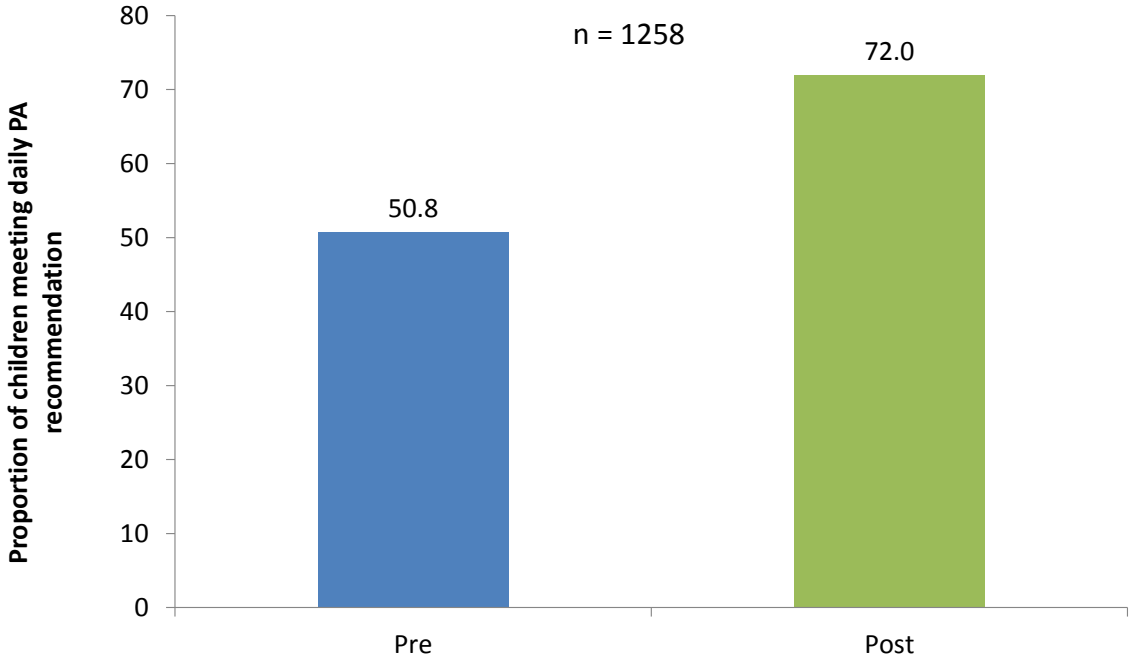


Waist circumference, an indicator of abdominal fat, was decreased by 1.5 cm post-program for the portfolio.

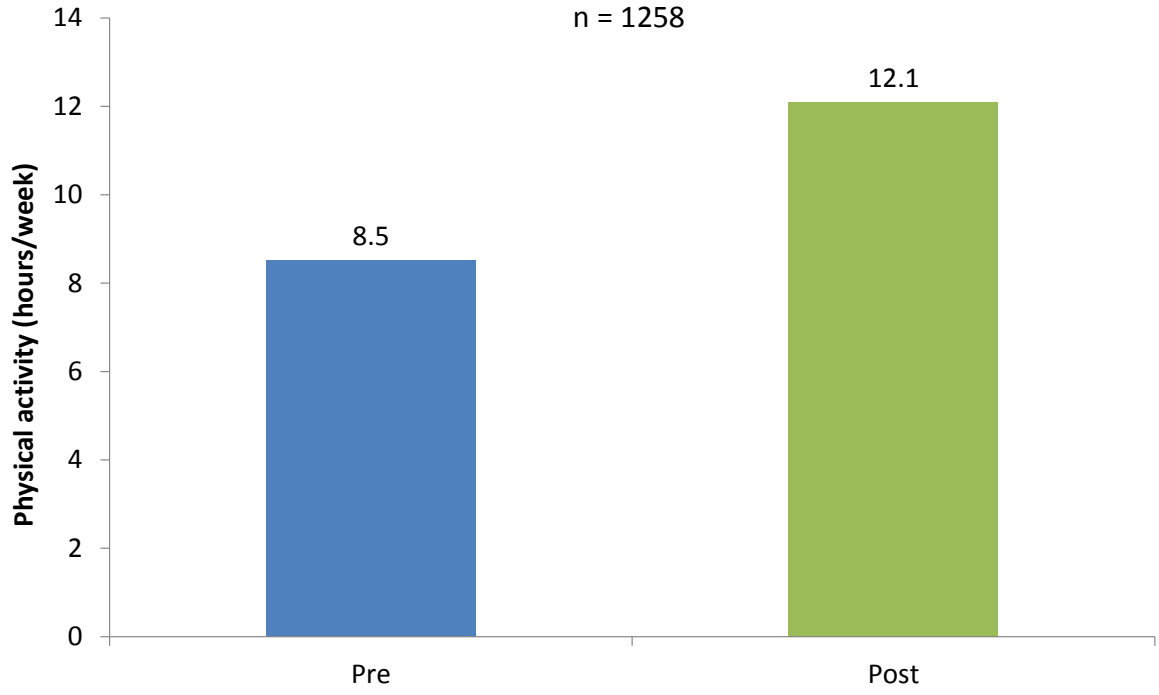
Waist circumference is a measure of abdominal fat, which has been associated with several obesity-related co-morbidities e.g. heart disease and diabetes. Changes in waist circumference are always due to changes in body fat, specifically abdominal fat which is associated with health risk. Waist circumference is a very important measurement as, unlike BMI, it is specifically related to changes in abdominal fat which is reliably related to the health risks of increased weight. Obesity management Programs aim to change the composition of the child's body over the course of development so that muscle mass increases along with a reduction in the level of adipose (fat) tissue. Such changes in the proportions of muscle and adipose over the course of an intervention may mean that BMI is unchanged in children attending weight management programs. This is why waist circumference is a useful additional measure to examine outcome since it is generally considered more sensitive to changes in body composition. Reductions in waist circumference in the absence of a reduction in BMI will indicate that abdominal fat has been reduced and that health outcomes have been improved.

b. Physical activity, sedentary behaviour and fitness

Proportion of children meeting the National Physical Activity Guidelines



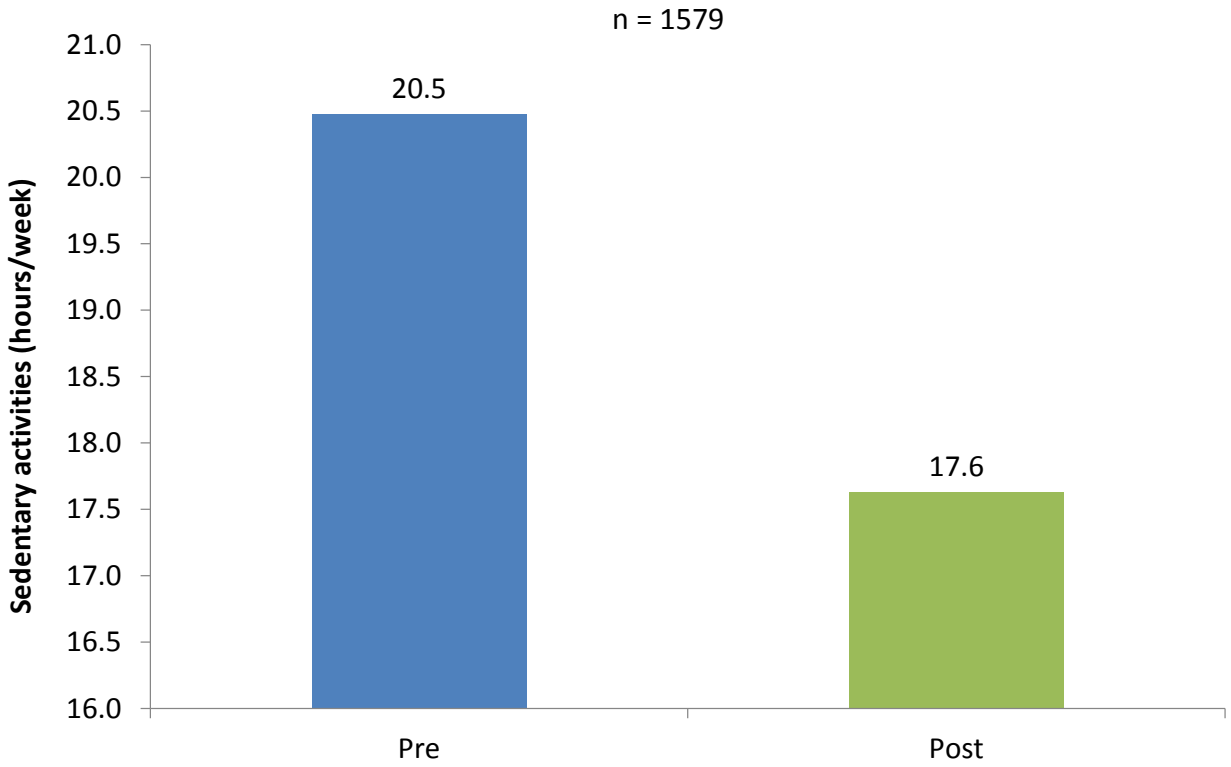
Total time spent in physical activity



At the end of the program, 72% of participants were meeting the national physical activity recommendation of at least 60 minutes of physical activity per day.

An average increase of 3.6 hours physical activity per week occurred amongst the total number of participants for the portfolio (8.5 hours/week pre program versus 12.1 hours/week post program).

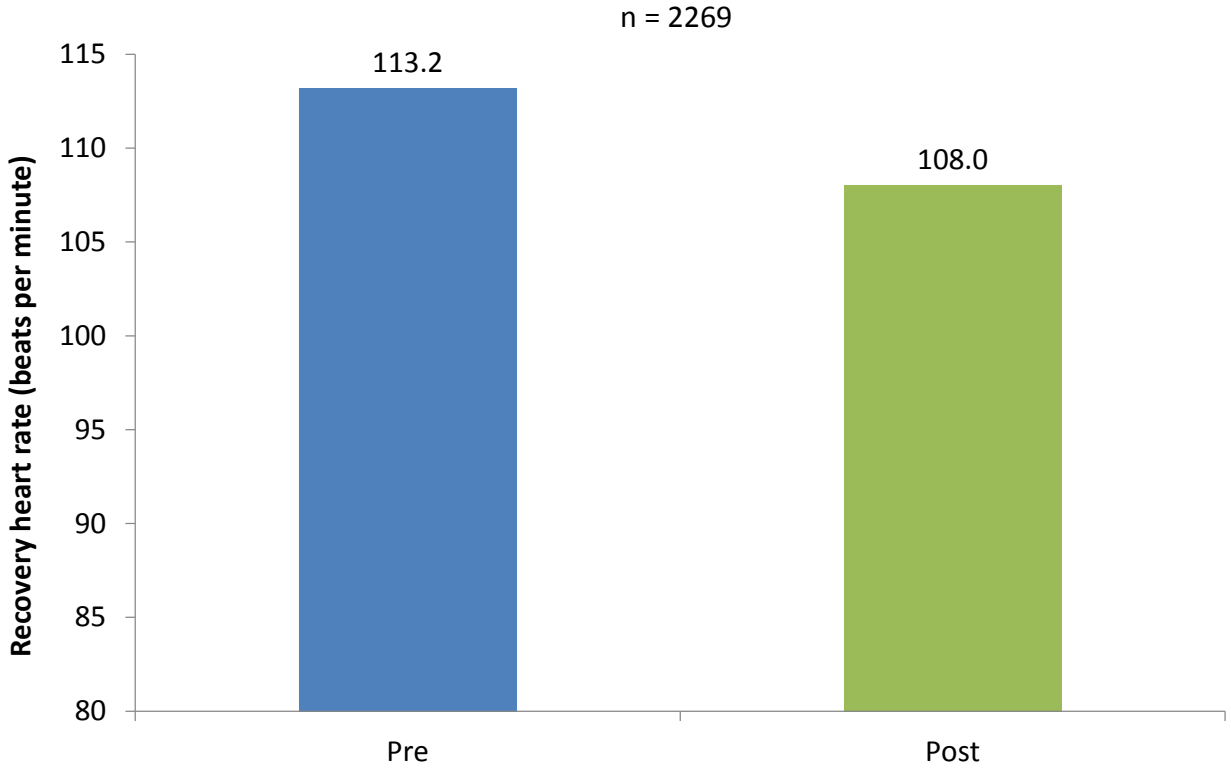
Time spent in sedentary behaviour



A 2.8 hour decrease in sedentary activities per week was also observed post program, as television viewing and computer usage were reduced from 20.5 to 17.6 hours per week.

Television viewing has been associated with childhood obesity both directly by promoting sedentary behaviour and indirectly by encouraging the passive over consumption of high-calorie foods and drinks during these activities. The program focuses on increasing physical activity as well as reducing sedentary behaviour as these independently influences a child's weight status. Both physical activity and sedentary behaviour need to be targeted in any multi-component obesity intervention.

Recovery heart rate

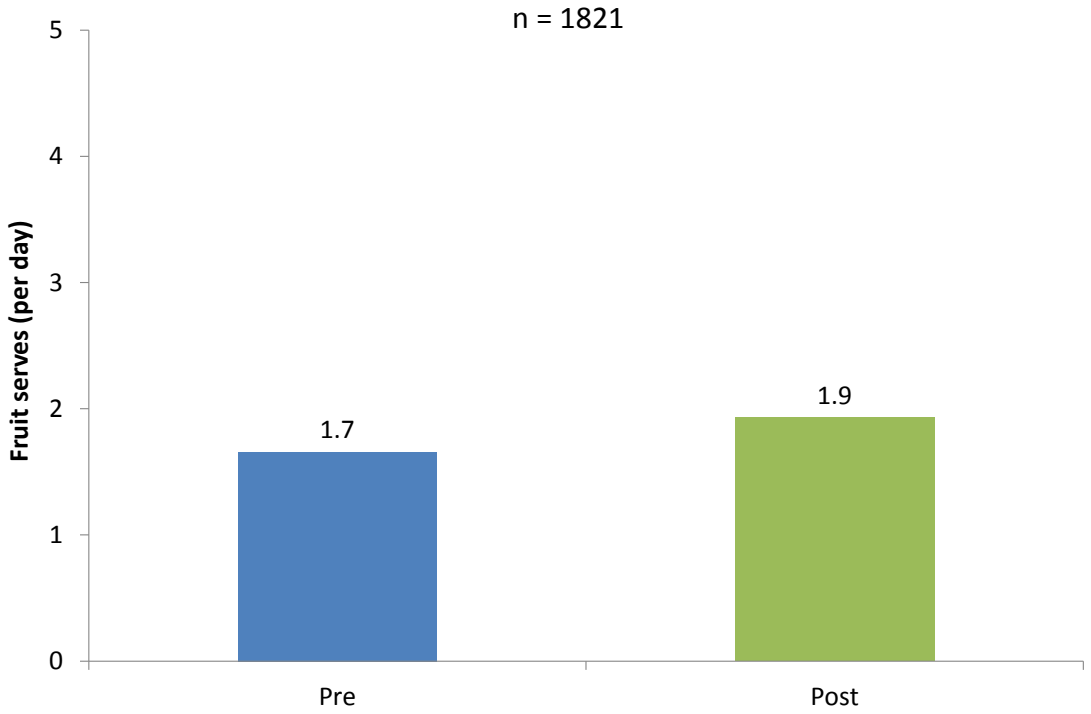


There was a 5.2 beats per minute decrease in recovery heart rate following the 3-minute step test for this group of participants.

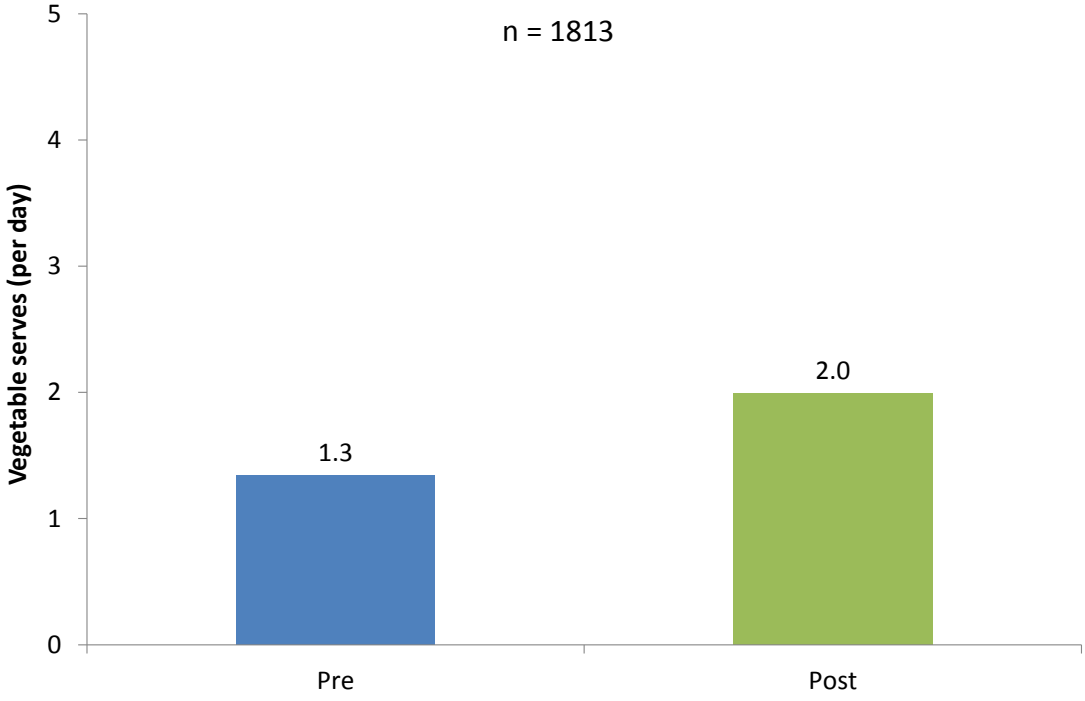
The 3-minute YMCA step test is a validated test used to assess fitness levels in children. This is achieved by measuring the recovery heart rate (beats during the minute after the step test). The quicker the heart rate returns to normal levels (resting heart rate) the fitter the child is. Fitness is considered a very important component of children's health. Low fitness is associated with increased risk factors for health problems and it is much easier for a fit overweight child to grow into their weight than an overweight child who is unfit.

c. Dietary habits

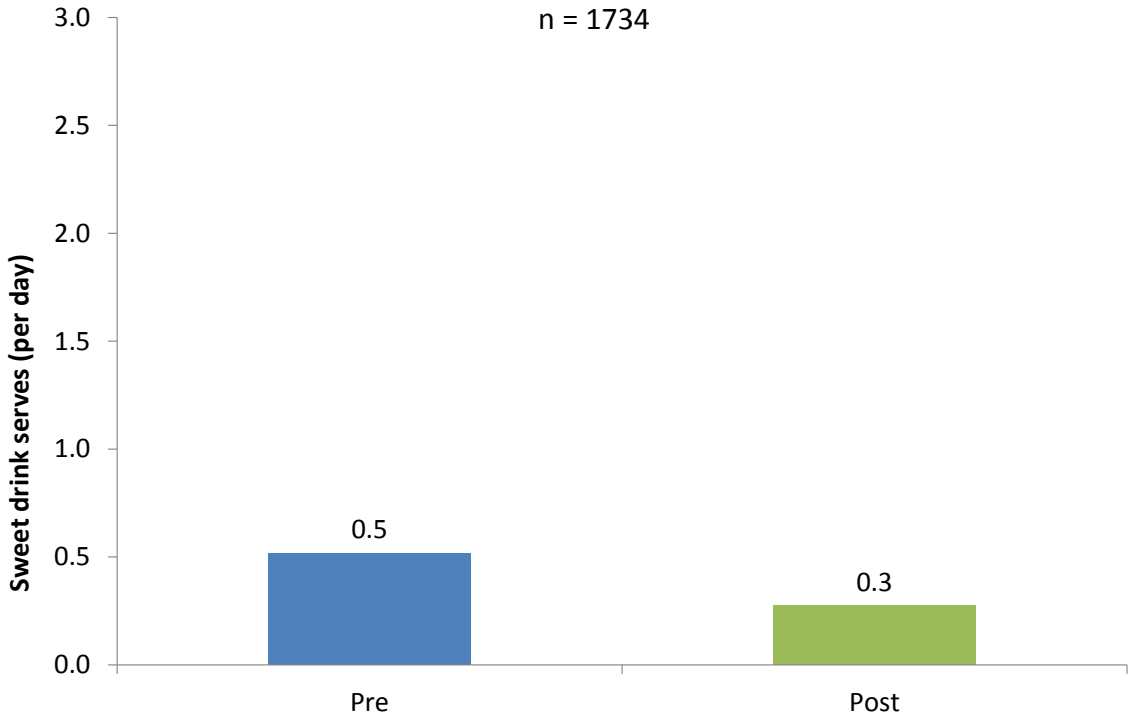
Fruit serves per day



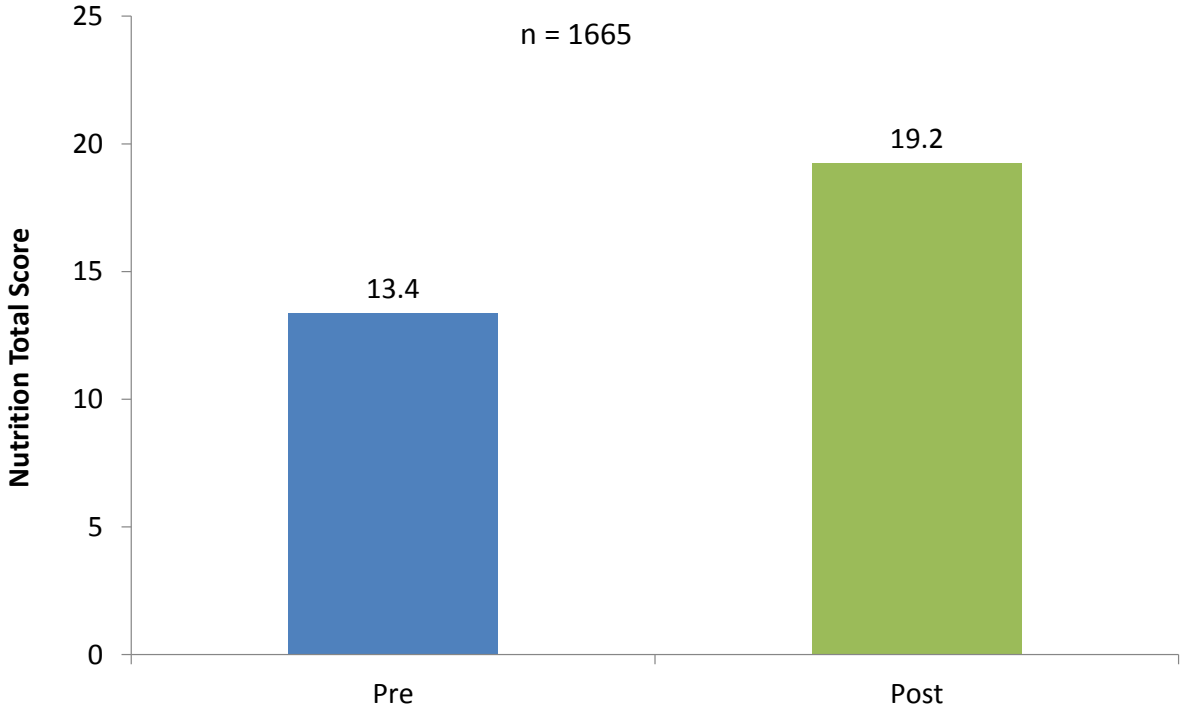
Vegetable serves per day



Soft drinks per day



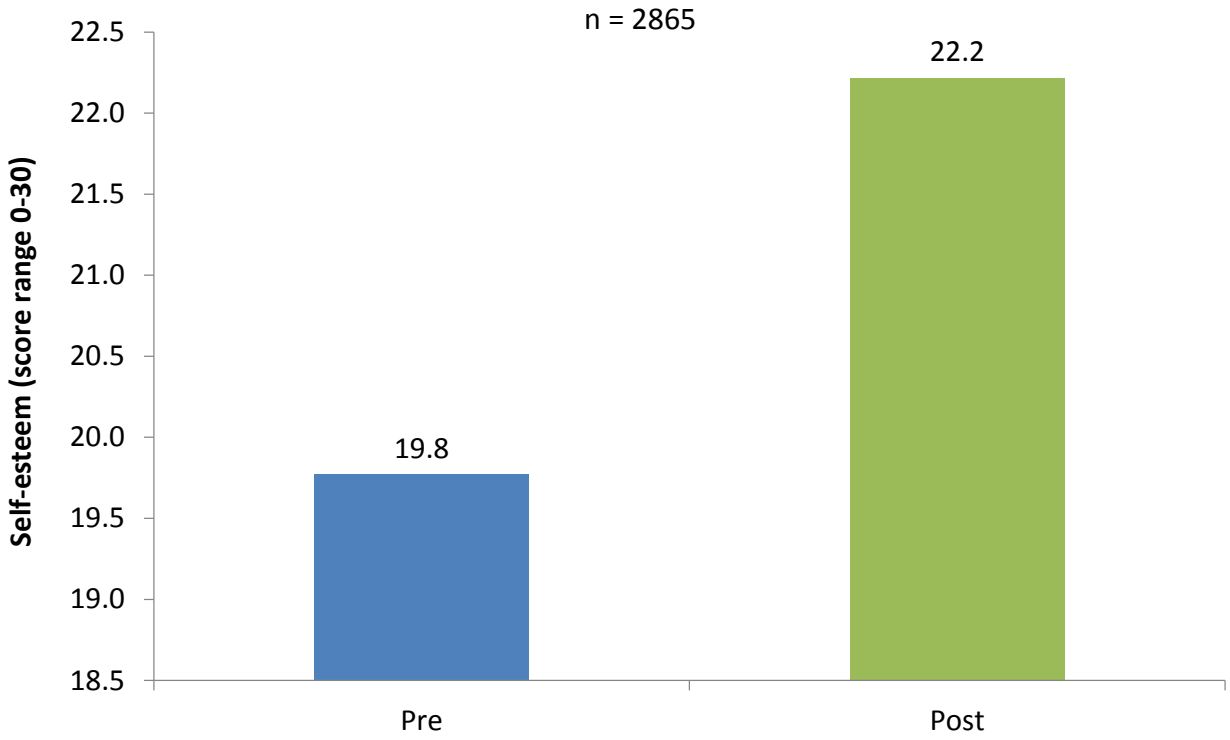
Nutrition total score



Before the program, children were eating, on average, 1.7 serves of fruit and 1.3 serves of vegetables. This increased by the end of the program, with children consuming 1.9 serves of fruit and 2.0 serves of vegetables. Sweet drink consumption also improved, as demonstrated by a decrease in daily serves (0.5 serves pre program versus 0.3 serves post program). Finally, by the end of the program, children had a higher nutrition score compared to their pre-program score (13.4 vs. 19.2), indicating more healthy eating habits.

d. Psychological indices (child)

Child self-esteem



Children's self-esteem scores increased over the course of the program (19.8 points pre-program and 22.2 points post-program).

Self-esteem is measured using an adapted child-report version of the Rosenberg Self-Esteem Scale. A higher score on this measure indicates higher self-esteem, with a maximum total score of 30.

7. Table of Go4Fun® Term 3 2011 – Term 2 2015 Portfolio results

Go4Fun® Term 3 2011 – Term 2 2015 Portfolio results									
		Pre		Post		Difference			
	N	Mean	SD	Mean	SD	Mean	Lower CI	Upper CI	p-value
BMI (kg/m²)	3646	25.6	4.3	25.0	4.3	-0.6	-0.6	-0.6	<0.0001
Waist circumference (cm)	3692	83.5	11.6	82.1	11.5	-1.5	-1.6	-1.4	<0.0001
Recovery heart rate (beats per min)	2269	113.2	19.3	108.0	17.1	-5.2	-5.9	-4.5	<0.0001
PA (hours/week)	1258	8.5	6.9	12.1	7.2	3.6	3.2	4.0	<0.0001
SA (hours/week)	1579	20.5	11.4	17.6	9.9	-2.8	-3.4	-2.3	<0.0001
Fruit serves (per day)	1821	1.7	1.0	1.9	0.9	0.3	0.2	0.3	<0.0001
Veg serves (per day)	1813	1.3	1.1	2.0	1.4	0.6	0.6	0.7	<0.0001
Sweet drinks (per day)	1734	0.5	0.9	0.3	0.6	-0.2	-0.3	-0.2	<0.0001
Nutrition TS	1665	13.4	25.6	19.2	9.8	5.9	4.6	7.1	<0.0001
Self-esteem scale (0-30)	2865	19.8	6.2	22.2	6.1	2.4	2.3	2.6	<0.0001
Attendance (%)[1]	75								
Drop-outs (%)[2]	14								

BMI: Body Mass Index
CI: Confidence Interval
SD: Standard Deviation
p < 0.05 means that the difference is statistically significant
N: number of children

[1] Excluding drop-outs, non-starters or children with missing attendance
[2] Excluding non-starters or children with missing attendance