



**Regional Childhood Health Behaviours
and Anthropometry Report (2019):**

**Ovens Murray & Goulburn
Regional Report**



**INSTITUTE FOR HEALTH
TRANSFORMATION**



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Executive Summary

Introduction

Overweight and obesity are at epidemic proportions in Australia with one in four school children currently living with overweight or obesity (1). It is estimated that obesity costs the economy around \$21 billion annually in direct health and indirect cost among adults (2). Childhood and adolescence are a critical window for obesity prevention, as childhood obesity persists into adulthood (3), as do health behaviours established during early life including diet and physical activity (4).

In Australia and internationally, it is imperative to monitor overweight and obesity to examine current trends in the population, identify areas of high risk or emerging disparity, support interventions, and inform policy. Australia currently lacks a systematic, routine monitoring system at the local, state and national level (5). This is in contrast to several other countries and states, including England, 25 US states, Singapore, Sweden, and The Netherlands (6). The Australian Institute of Health and Welfare has acknowledged that regular and extensive monitoring of overweight and obesity, including behavioural, genetic and environmental risk factors is required locally (7).

To help support the establishment of routine monitoring in Victorian primary schools, the Ovens Murray and Goulburn Health Behaviours Monitoring study was established as part of the RESPOND Partnership Project (NHMRC Reference: APP1151572). This study aims to understand the current state of children's health, providing real-time data to support and inform the work of the RESPOND communities across the Ovens Murray & Goulburn regions of Victoria.

Methods

The data presented in this report were collected between April and June 2019, and represent the first of three scheduled rounds of data collection. All 163 primary schools (Government, Independent and Catholic) across the 12 Victorian Local Government Areas (LGAs) that make up the Ovens Murray and Goulburn areas were invited to participate. Within participating schools, students in grade 2 (aged approx. 7-8 years), grade 4 (aged approx. 9-10 years) and grade 6 (aged approx. 11-12 years) were invited to participate. A total of 91 schools participated for a school-level participation rate of 55.8%. Out of 4,736 eligible grade 2, 4, and 6 students at participating schools, 3,889 participated using an opt-out (passive) recruitment approach resulting in a student-level participation rate of 82.1%. Participating students were invited to have their height and weight measured by data collectors trained in standardised safety and privacy practices, and grade 4 and grade 6 students were invited to complete a questionnaire examining food and drink consumption, physical activity and screen time, sleep, and wellbeing.

Prevalence of overweight/obesity was calculated using the World Health Organization's age and sex-specific body mass index growth reference (8). The Australian Dietary Guidelines were used for fruit consumption (≥ 2 serves/day) and vegetable consumption (≥ 5 serves/day for 9-13 year olds, ≥ 5.5 serves/day for boys aged 12+) (9). Australian Department of Health guidelines were assessed for physical activity (≥ 60 mins of moderate-to-vigorous physical activity per day for the previous 7-days) and screen-time (≤ 2 hrs/day for the previous 7-days) outside of school (10).

This report presents these and other statistics at the "whole-of-region" Ovens Murray and Goulburn region level, and at the Primary Care Partnership catchment level. Statistics at the LGA level are provided in tables in the appendices.

Results

The prevalence of measured overweight and obesity among grade 2, grade 4 and grade 6 students across the 12 participating LGAs was 35.2% (95%CI: 33.8 - 36.6), with no evidence of a gender difference (boys 34.9% (95%CI: 32.8 - 37.0), girls 35.3% (95%CI: 33.2 - 37.9)).

There was evidence of gender differences in fruit and vegetable consumption. More grade 6 girls than boys reported meeting the recommended servings of vegetables per day (15.3% (95%CI: 12.3 - 18.4) vs 11.8% (95%CI: 9.1 - 14.5)). Girls were also more likely to report meeting the fruit consumption recommendations in grade 4 (76.7% (95%CI: 73.6 - 79.8) vs 68.1% (95%CI: 64.7 - 71.4)) and grade 6 (78.5% (95%CI: 75.3 - 81.8) vs 68.3% (95%CI: 64.7 - 72.0)).

There was also strong evidence for gender differences for self-reported adherence to the physical activity guidelines. Boys were more likely than girls to report meeting the recommended levels of physical activity in grade 4 (24.8% (95%CI: 21.5 - 28.2) vs 15.4% (95%CI: 12.5 - 18.3)) and grade 6 (32.4% (95%CI: 28.6 - 36.3) vs 21.0% (95%CI: 17.6 - 24.4)).

Conclusions

These data demonstrate opportunities for improvement in the health of children across the Ovens Murray and Goulburn region. While some statistics in this report may be of concern, they are consistent with comparable data from communities in south-west Victoria. This re-emphasises the widespread nature of the issues facing regional and rural communities such as those in the Ovens Murray & Goulburn regions, and reinforces the need for collaborative, whole-of-community efforts to improve children's health across the region.

Seven communities are actively using this data in concert with local knowledge and lived experiences to collaborate with community members, and co-design locally-led, sustainable efforts to improve child health and wellbeing. A further wave of five communities will be joining the RESPOND prevention initiative in 2021.

1. Introduction

The Study

The RESPOND Ovens Murray and Goulburn Primary School Health Behaviours Monitoring study is a large population study aiming to understand the current state of childhood healthy weight, and behaviours associated with healthy weight in the Ovens Murray and Goulburn regions of Victoria.

This report outlines findings from data collection that occurred in early 2019. Future rounds of data collection are scheduled to be conducted in 2021 and 2023. While this round of data collection is largely descriptive, future rounds will allow for analyses that will tell us how children’s healthy weight and health behaviours are changing across Ovens Murray and Goulburn.

The data presented in this document may be classified into four domains; Food and Drinks, Activity and Screen Time, Sleep & Wellbeing, and Healthy Weight. Findings from each domain are presented first at the “whole region” level in section 2, and then broken down by Primary Care Partnership catchment in section 3.

Figure 1: Core domains of the RESPOND Health Behaviours Monitoring Study



The delivery of this study was enabled by strong support from various community partners across the RESPOND region. We sincerely thank all of the partners for their contributions, as well as the schools and students across the RESPOND region who participated in data collection.

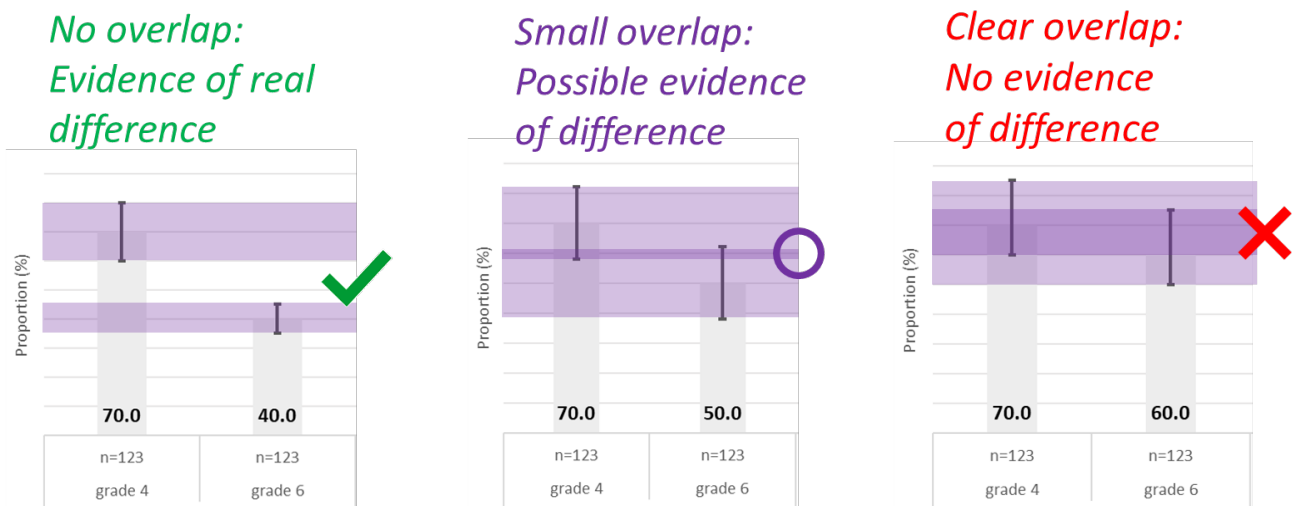
Reading and Comparing Figures in This Report

This report contains data that have been processed to allow fair comparisons between groups and across regions. Factors such as socioeconomic advantage, rurality, and school type (i.e. Government, Catholic or Independent school) can change from region to region, meaning that we may not be comparing like with like when it comes to the unprocessed data.

The RESPOND Monitoring Team have conducted small, but important adjustments to the data to make sure differences in these data are meaningful, using statistical analyses that are standard in large population-level studies like this one. The adjustments may have changed the figures presented in this report by between 0.01 to 2.5 percentage points.

The figures in this report show differences between statistics using Confidence Intervals. The Confidence Intervals (shown as the black bars that extend a little above and below the tops of each column in the graphs) are an indicator of how confident we are in a particular statistic. The distance between two confidence intervals gives us an idea of how likely it is that two groups are truly different, given the size of the sample and the frequency of the outcome. If two confidence intervals have a large gap between them we can be confident that we are seeing a real difference between the groups, whereas if there is a clear overlap, we have not seen a difference between groups.

Figure 2: Visual interpretation of differences between statistics using confidence intervals



2. Our Study Participants

Prior to data collection, every school across the Ovens Murray and Goulburn region was invited to participate in the study. In total 91 out of 163 primary schools accepted this invitation, representing a school-level participation rate of 55.8%. At participating schools, we invited every grade 2, 4, and 6 student to participate. Of 4,736 enrolled students invited, 3,889 participated, giving us a student-level participation rate 82.1%.

We chose to invite students in grades 2, 4, and 6 only to maximise the number of schools we were able to visit, giving us greater geographical coverage across the region. With data collection occurring every second year, it also enables us to compare groups of students in future rounds of data collection (i.e. participating grade 2 students in 2019 may be visited again in grade 4 in 2021, and grade 6 in 2023).

The table below gives some basic characteristics of this year's study sample.

Table 1: Basic characteristics of the RESPOND 2019 Ovens Murray and Goulburn Primary School Health Behaviours Monitoring study sample

		Number	Percentage	
Gender	Male	1959	50.5%	
	Female	1917	49.4%	
	Prefer not to say	1	<0.1%	
Indigenous/TSI Status	No/unsure	2354	91.7%	
	Yes	212	8.3%	
Language spoken at home	English	2364	92.0%	
	Other	205	8.0%	
Country of birth	Australia	2485	96.0%	
	Other	95	4.0%	
Participating school type	Government	84	92.3%	
	Catholic	4	4.4%	
	Independent	3	3.3%	
Participant numbers by grade & catchment				
		Grade 2	Grade 4	Grade 6
	GVPCP	406	406	351
	LHPCP	211	234	197
	CHPCP	340	373	378
	UHPCP	331	363	299
	Total	1288	1376	1225

Notes: TSI = Torres Strait Islander; GVPCP = Goulburn Valley Primary Care Partnership; LHPCP = Lower Hume Primary Care Partnership; CHPCP = Central Hume Primary Care Partnership; UHPCP = Upper Hume Primary Care Partnership

3. Findings - The RESPOND Region

This section of the report presents the results of the 2019 Ovens Murray and Goulburn Primary School Health Behaviours Monitoring study, at the “whole-of-region” level.

Data are presented by gender and grade, and have been adjusted to allow for comparison between the different groups of students.

The following outcomes are presented in this section:

Table 2: Overview of monitoring outcomes presented at the RESPOND region level

Food & Drinks	Vegetable Guideline Attainment Fruit Guideline Attainment Takeaway Meal Consumption Unhealthy Snack Consumption Water Consumption Sugary Drink Consumption
Activity & Screen Time	Physical Activity Guideline Attainment Screen Time Guideline Attainment Active Transport Use
Sleep & Wellbeing	Sleep Guideline Attainment Physical Wellbeing Psychosocial Wellbeing
Healthy Weight	Combined Overweight & Obesity

Figure 3: Overview of the Ovens Murray and Goulburn RESPOND region within Victoria

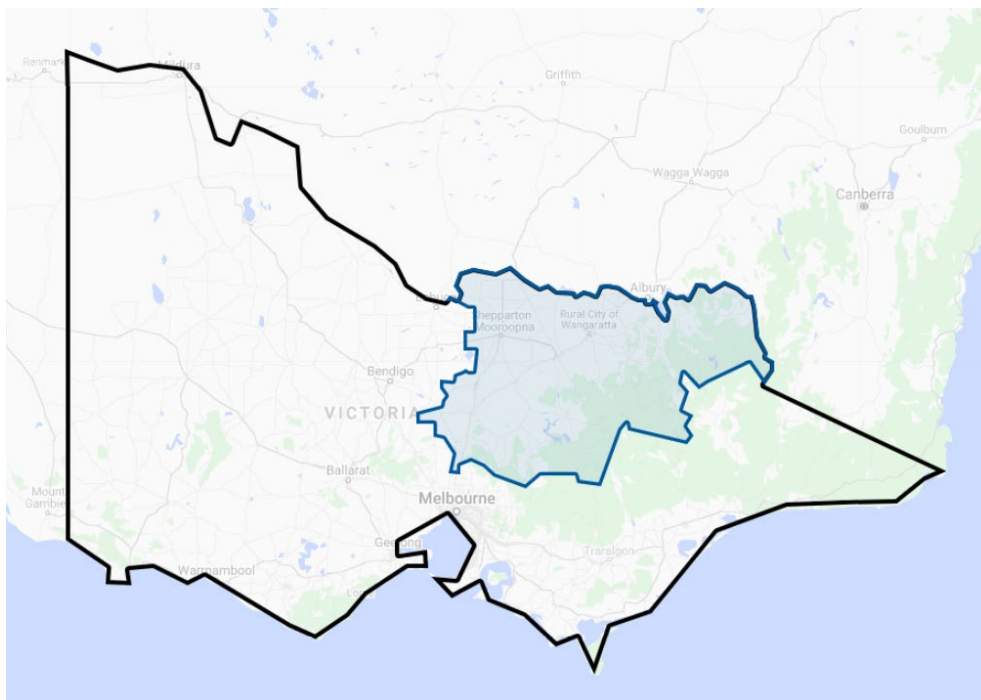


Figure 4 and 5 show the proportion of students consuming the recommended number of serves of vegetables (≥ 5 serves per day, ≥ 5.5 per day for boys 12+) and fruit (≥ 2 serves per day). There is some indication that girls in grade 6 are more likely than boys to consume the recommended amount of vegetables ($p < 0.05$), and strong evidence that girls were also more likely to consume the recommended amount of fruit in both grade 4 ($p < 0.01$) and grade 6 ($p < 0.001$).

Figure 4: Proportion of participating grade 4 & 6 students meeting the vegetable consumption guidelines every day

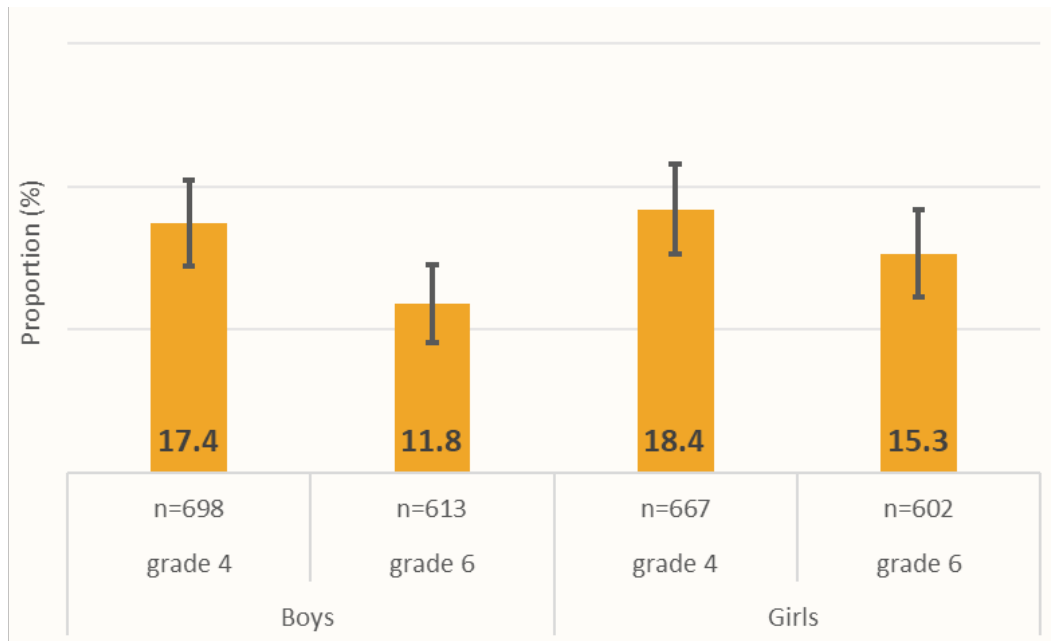


Figure 5: Proportion of participating grade 4 & 6 students meeting the fruit consumption guidelines every day

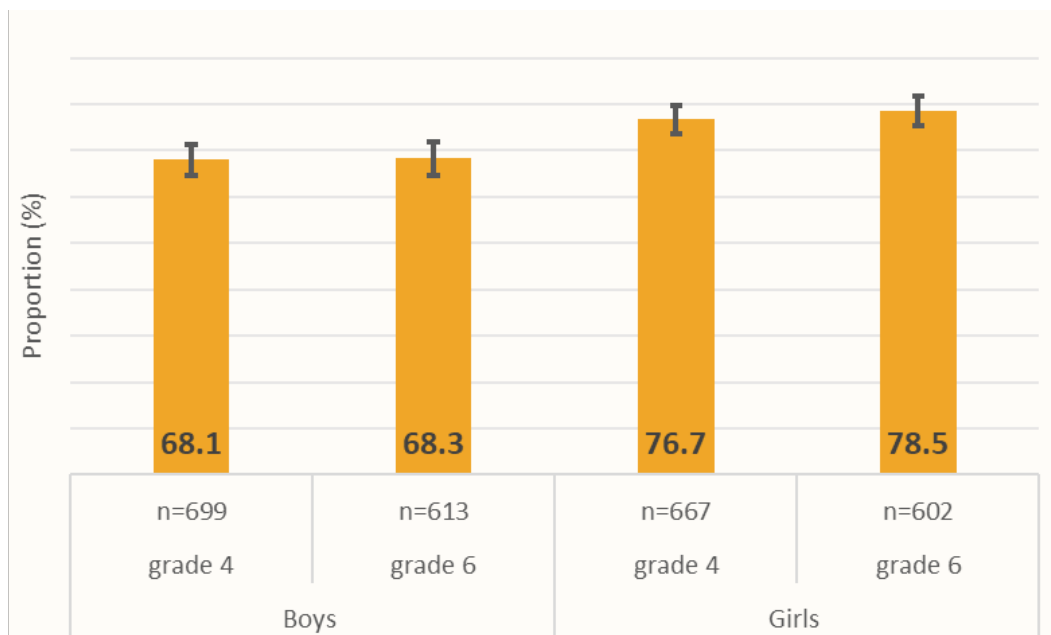


Figure 6 and 7 show the proportion of students eating takeaway as a meal infrequently (once a fortnight or less) and eating unhealthy snacks (e.g. packet potato chips, chocolate, lollies and cakes/sweet pastries) less than once per day. Girls in grade 4 and 6 appeared to be more likely than boys to be eating takeaway infrequently ($p < 0.05$). There was no evidence that boys and girls differed in their consumption of unhealthy snacks.

Figure 6: Proportion of participating grade 4 and 6 students eating takeaway as a meal once a fortnight or less

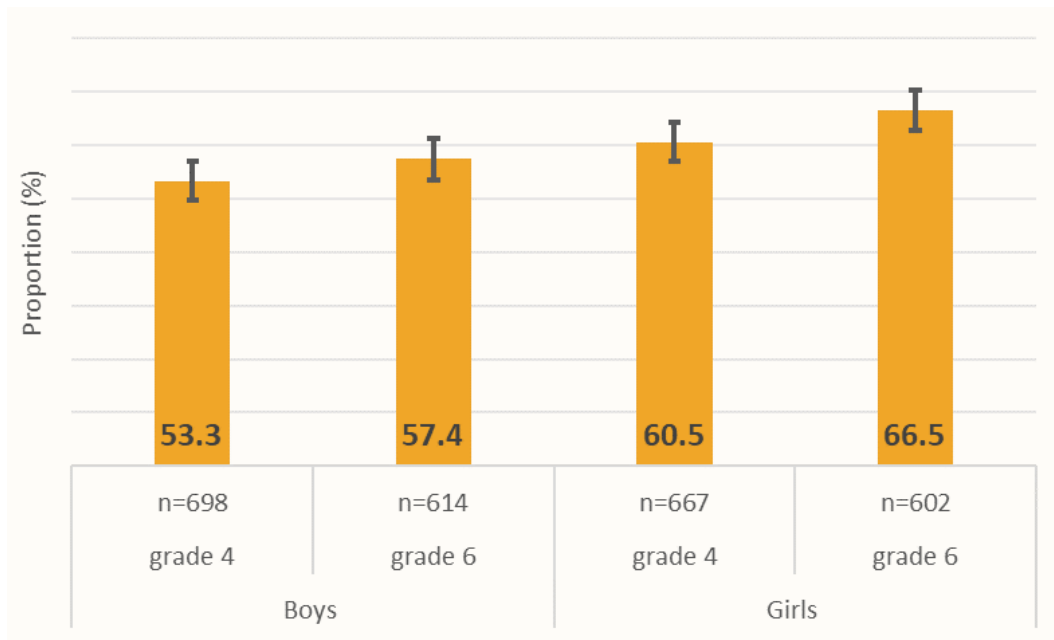


Figure 7: Proportion of participating grade 4 and 6 students eating unhealthy snack foods (including savoury snacks, lollies, cakes and biscuits) less than once per day

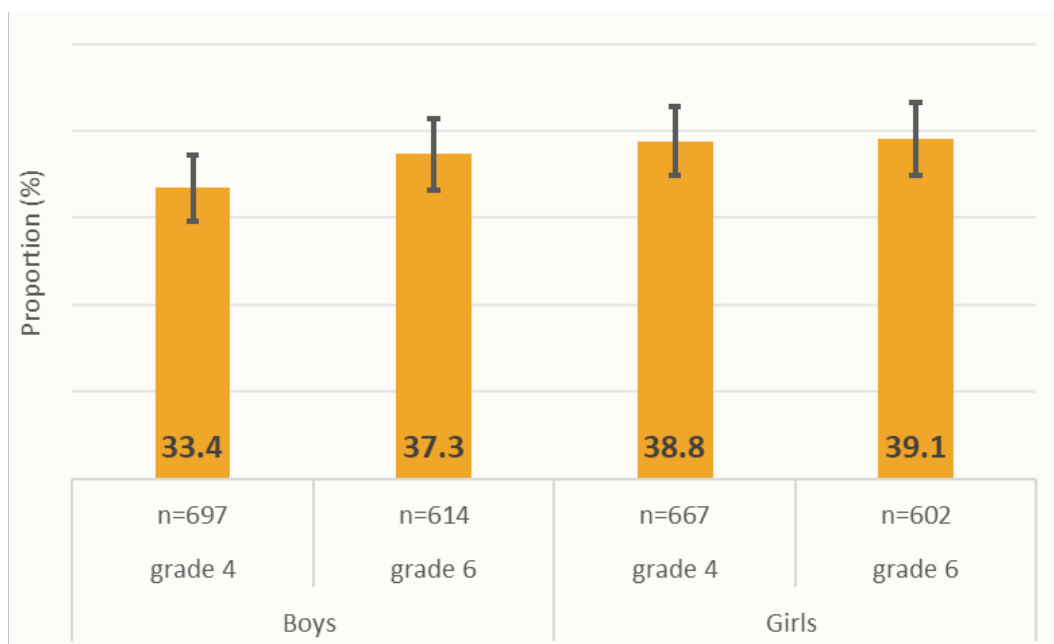


Figure 8 and 9 show the proportion of students drinking at-least five cups (250ml) of water every day, and consuming less than one sugar-sweetened drinks per day. Boys in grade 6 were more likely than girls to be drinking at least five cups of water each day ($p < 0.05$). Girls in grade 4 and 6 were more likely than boys to be drinking sugar-sweetened drinks less than once per day ($p < 0.01$).

Figure 8: Proportion of participating grade 4 and 6 students drinking at least five 250ml cups of water per day.

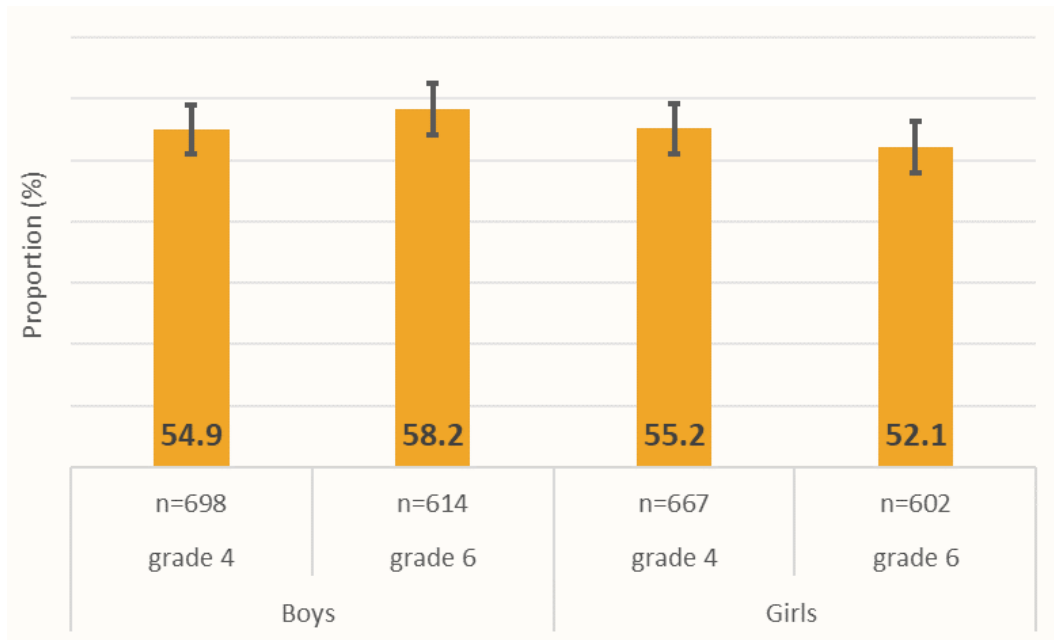


Figure 9: Proportion of participating grade 4 and 6 students drinking sweetened drinks (including soft drinks, sports drinks, juices and flavoured milks) less than once per day

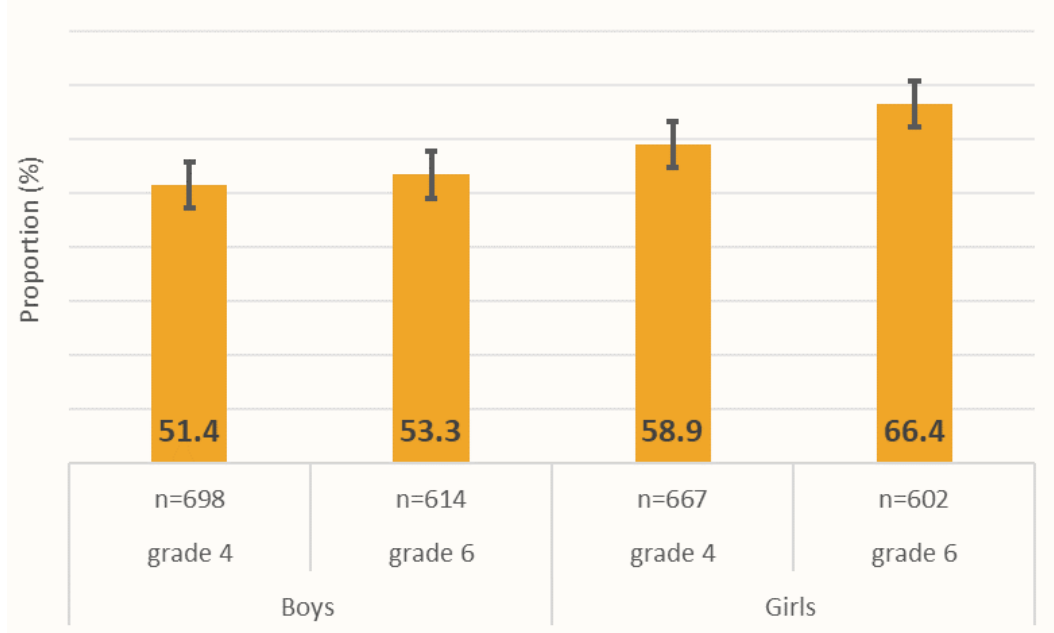


Figure 10 and 11 show the proportion of students who meet the recommended 60 minutes of moderate to vigorous physical activity every day (all 7-days), according to self-reported data, and the proportion of students who report staying below the recommended limit of two hours of screen time (outside of school) every day. There was strong evidence that boys in grade 4 and 6 reported that they met the physical activity guideline every day more often than girls ($p < 0.001$). Girls in grade 4 and 6 were more likely than boys to stay below the screen time guideline ($p < 0.05$).

Figure 10: Proportion of participating grade 4 and 6 students meeting the physical activity guidelines every day of the last week, according to self-reported physical activity time

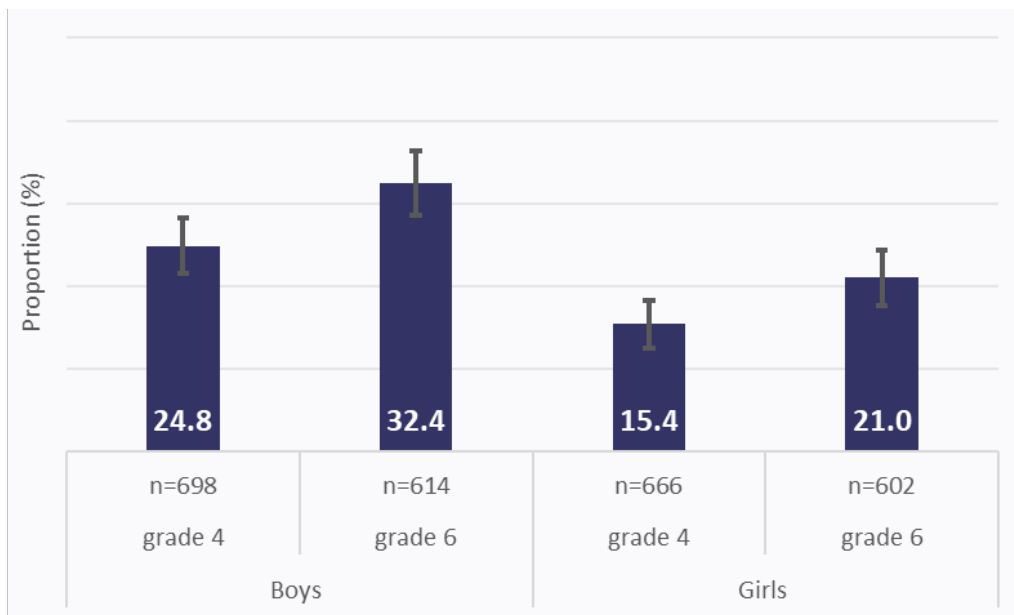


Figure 11: Proportion of participating grade 4 and 6 students meeting the screen-time guidelines (two hours per day or less, excluding screen time at school)

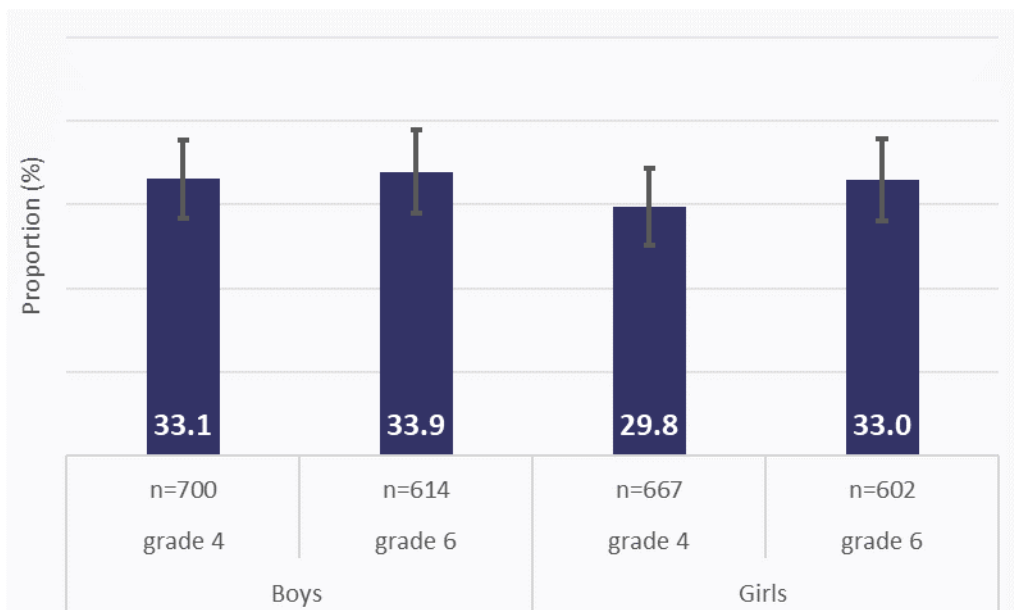


Figure 12 shows the proportion of students who usually use active transport to get to and/or home again from school. Boys in grade 4 were more likely than girls to use active transport to travel between home and school ($p < 0.05$).

Figure 12: Proportion of participating grade 4 and 6 students using active transport to get to and/or home from school

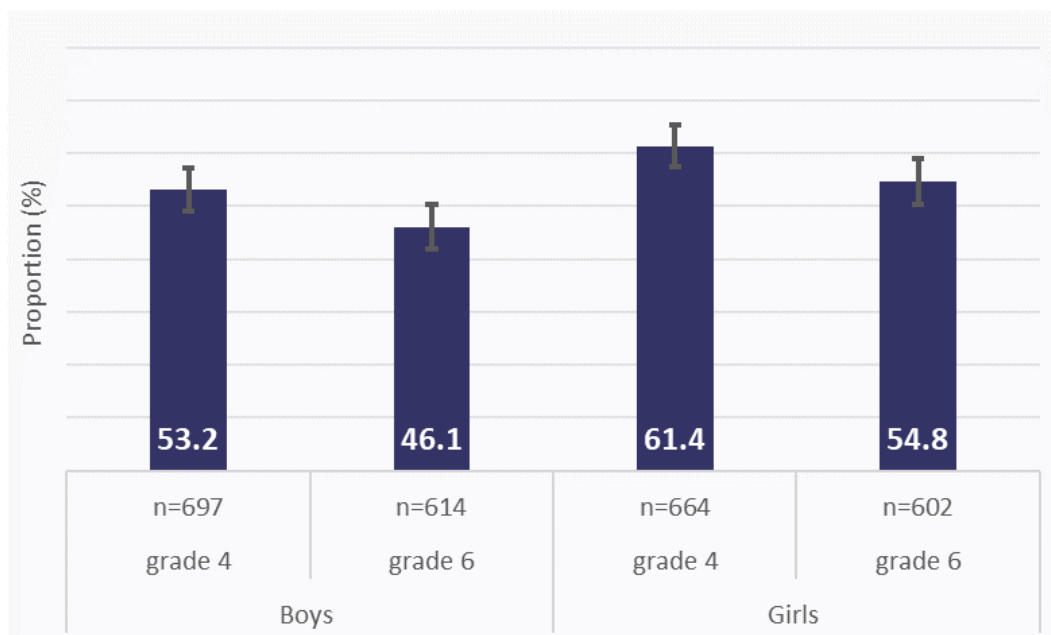


Figure 13 shows the proportion of students who met the sleep time recommendations (between 9-11hrs/night) using self-report estimates of a usual school night. There were no indications of gender differences in either grade 4, or grade 6.

Figure 13: Proportion of participating grade 4 and 6 students meeting the sleep duration guidelines (between 9 and 11 hours of sleep per night)

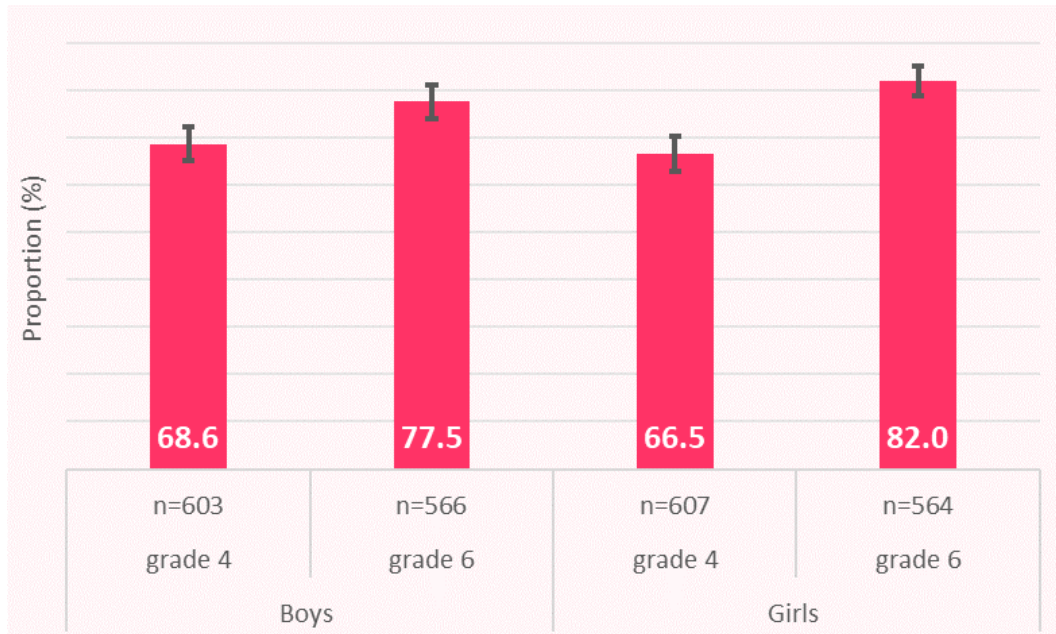


Figure 14 and 15 show students’ average health-related quality of life scores on the dimensions of physical wellbeing, and psychosocial wellbeing. These dimensions are scored so that a higher score represents better quality of life, with a maximum possible score of 100. Across both the physical and psychosocial health-related quality of life scores, there were no indications of a difference between boys and girls in either grade 4 or grade 6.

Figure 14: Average physical health-related quality of life score for participating grade 4 and 6 students

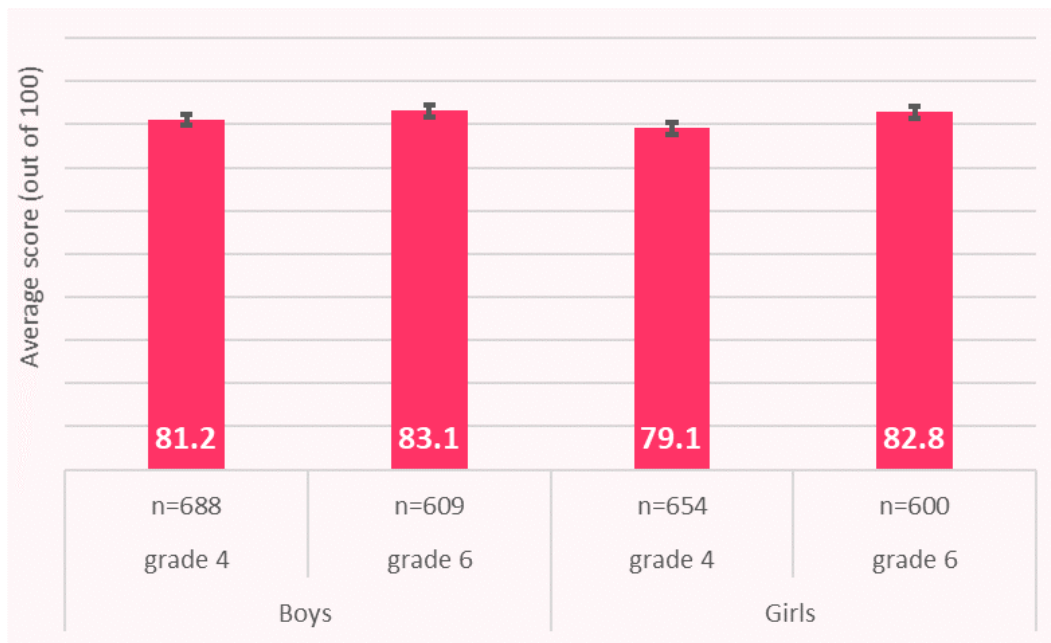


Figure 15: Average psychosocial health-related quality of life score for participating grade 4 and 6 students

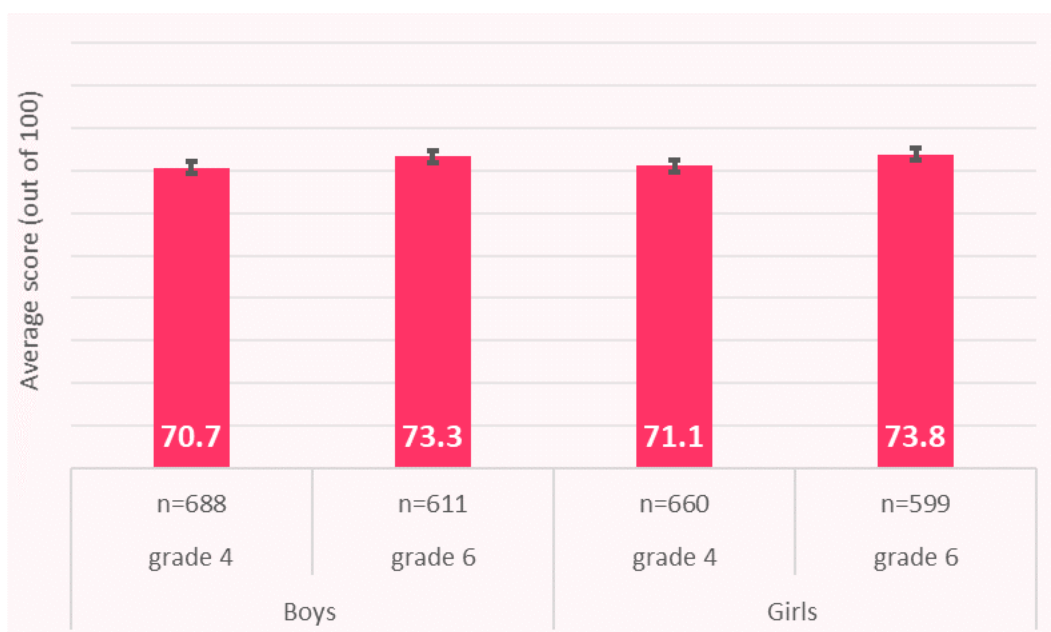
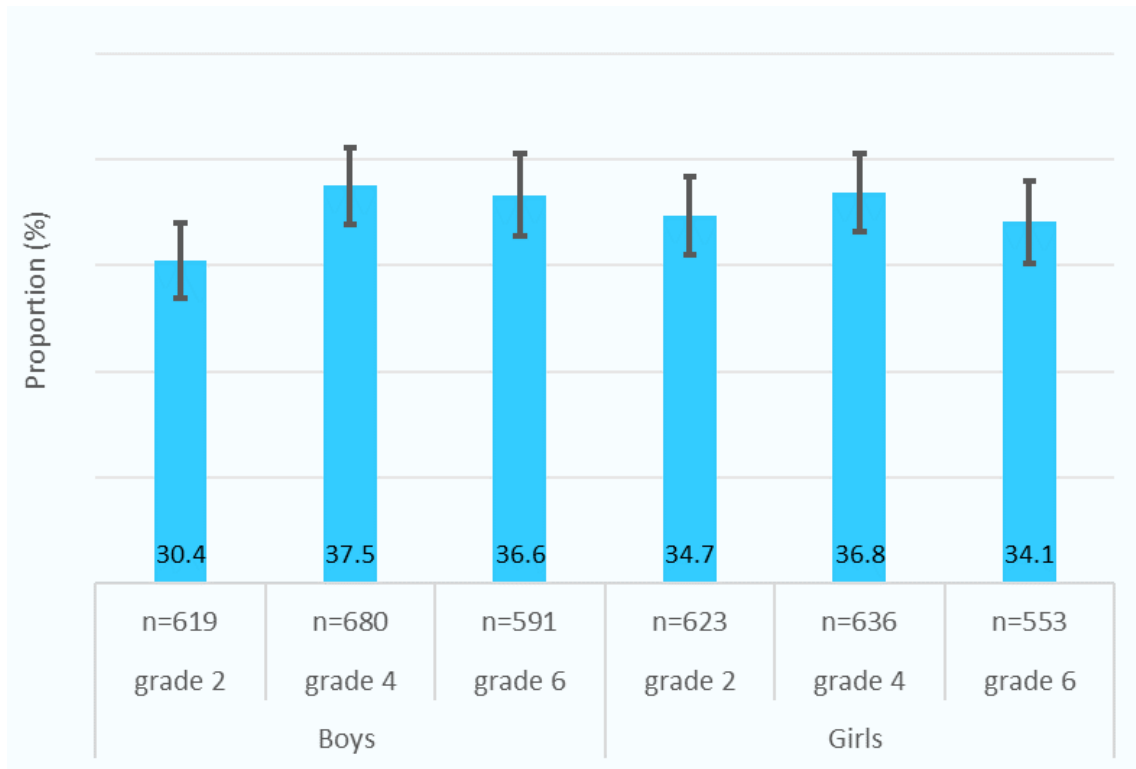


Figure 16 shows the proportion of students who were classified with either overweight or obese according to World Health Organisation criteria that are adjusted to account for students’ age and biological sex. There was no evidence of a difference between boys and girls in any of grades 2, 4, or 6.

Figure 16: Proportion of participating grade 2, 4, and 6 students with overweight or obesity – using World Health Organisation weight classifications



4. Findings - The Region by Primary Care Partnership Catchment

This section of the report presents the results of the 2019 Ovens Murray and Goulburn Primary School Health Behaviours Monitoring study, by Primary Care Partnership (PCP) catchment.

Data are presented by gender and grade, for each of the catchments, and have been adjusted to allow for comparison between the different groups of students in each of the four areas.

The following outcomes are presented in this section:

Table 3: Overview of monitoring outcomes presented by PCP catchment area

Food & Drinks	Vegetable Guideline Attainment Fruit Guideline Attainment Takeaway Meal Consumption Unhealthy Snack Consumption Water Consumption Sugary Drink Consumption
Activity & Screen Time	Physical Activity Guideline Attainment Screen Time Guideline Attainment Active Transport Use
Sleep & Wellbeing	Sleep Guideline Attainment Physical Wellbeing Psychosocial Wellbeing
Healthy Weight	Combined Overweight & Obesity

Figure 17: Zoomed view of the RESPOND region by PCP catchment

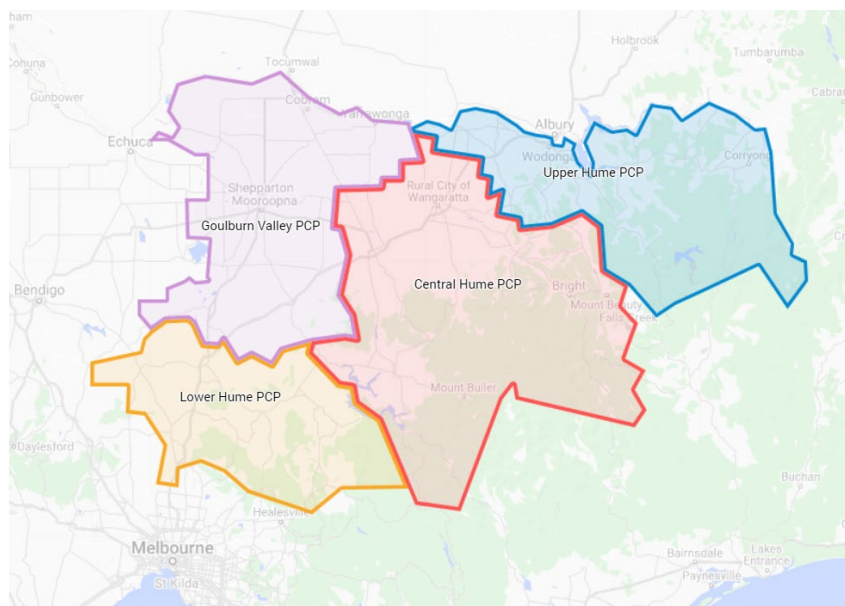


Figure 18 and 19 show the proportion, by PCP catchment, of students consuming the recommended number of serves of vegetables (≥ 5 serves per day, ≥ 5.5 per day for boys 12+) and fruit (≥ 2 serves per day) every day.

Figure 18: Proportion of participating grade 4 & 6 students meeting the vegetable consumption guidelines every day

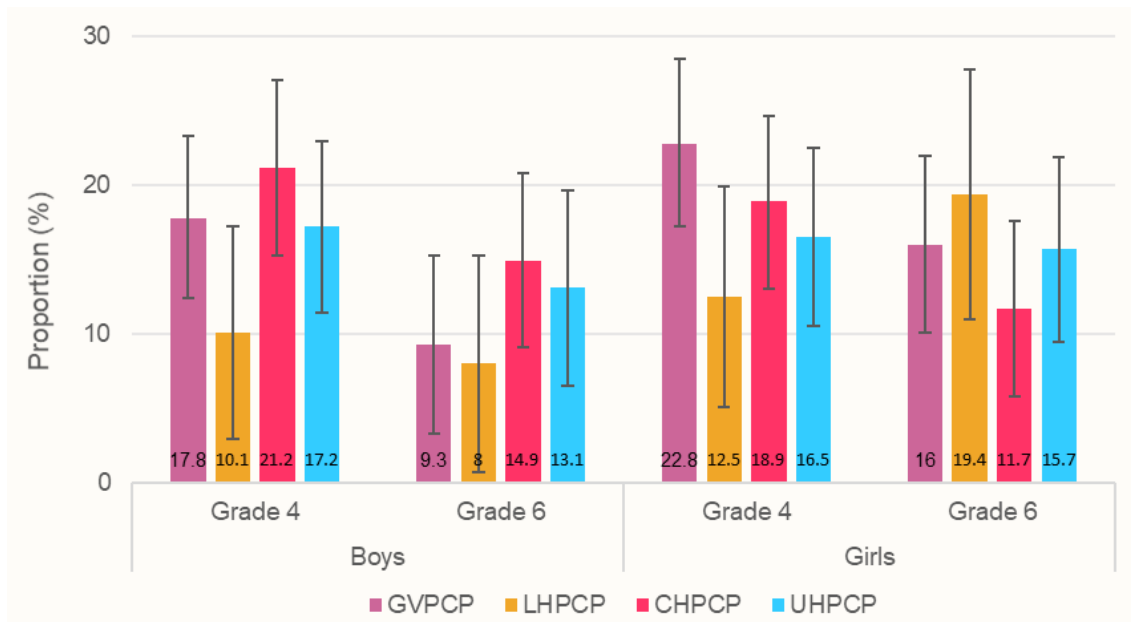


Figure 19: Proportion of participating grade 4 & 6 students meeting the fruit consumption guidelines every day

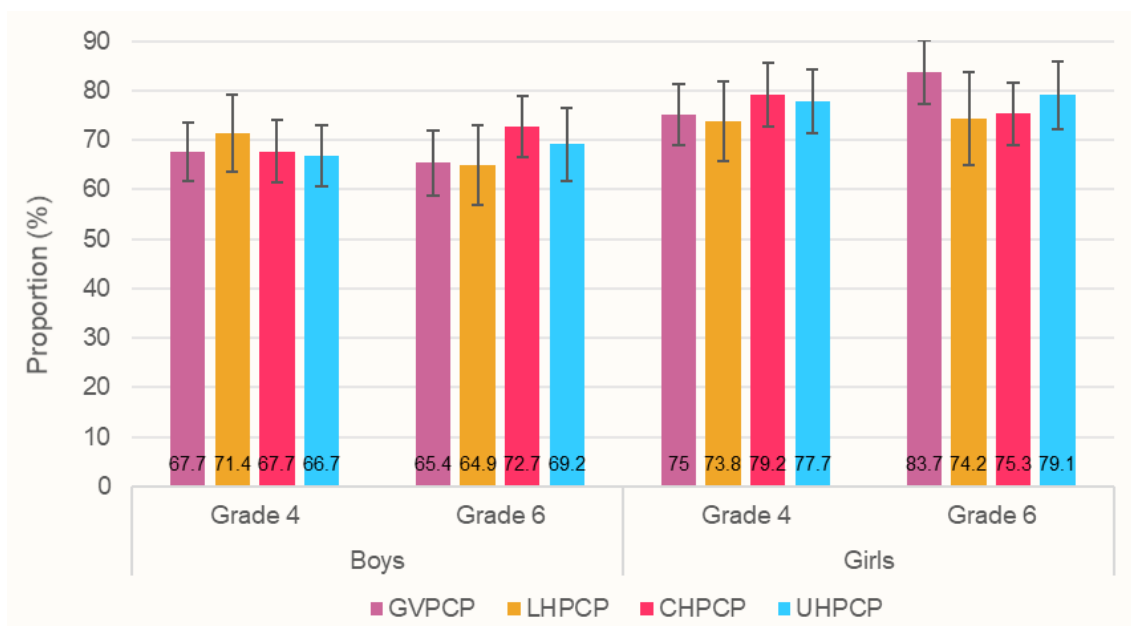


Figure 20 and 21 show the proportion, by PCP catchment, of students eating takeaway as a meal infrequently (once a fortnight or less) and eating unhealthy snacks less than once per day.

Figure 20: Proportion of participating grade 4 and 6 students eating takeaway as a meal once a fortnight or less

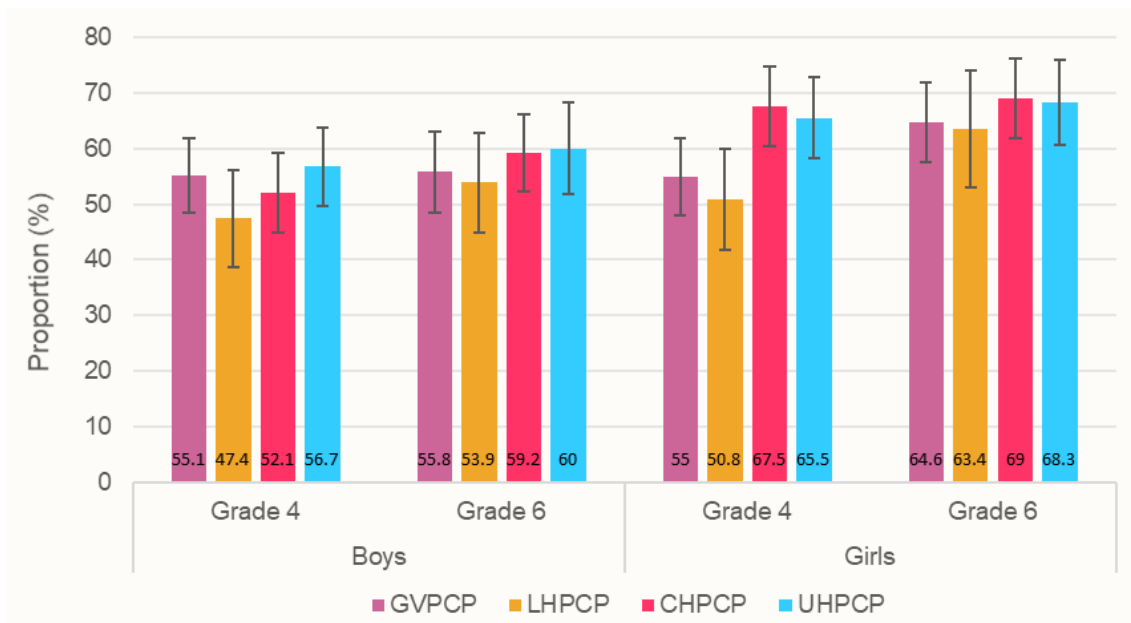


Figure 21: Proportion of participating grade 4 and 6 students eating unhealthy snack foods (including savoury snacks, lollies, cakes and biscuits) less than once per day

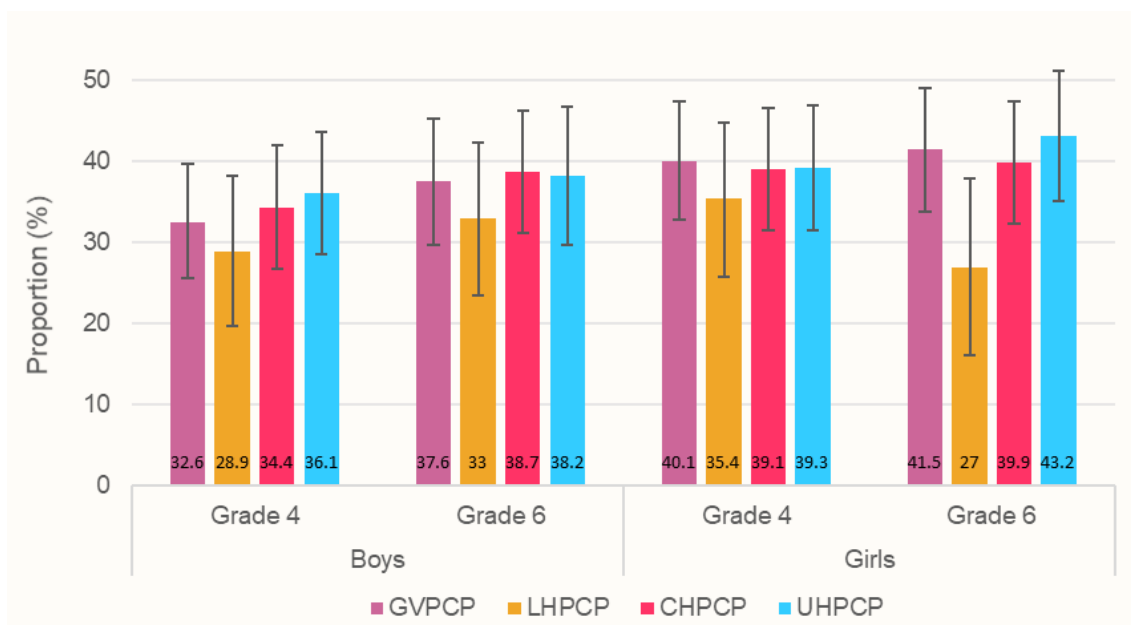


Figure 22 and 23 show the proportion, by PCP catchment, of students drinking ≥ 5 glasses (250 ml) of water every day, and drinking sugar-sweetened drinks less than once per day.

Figure 22: Proportion of participating grade 4 and 6 students drinking at least five 250ml cups of water per day

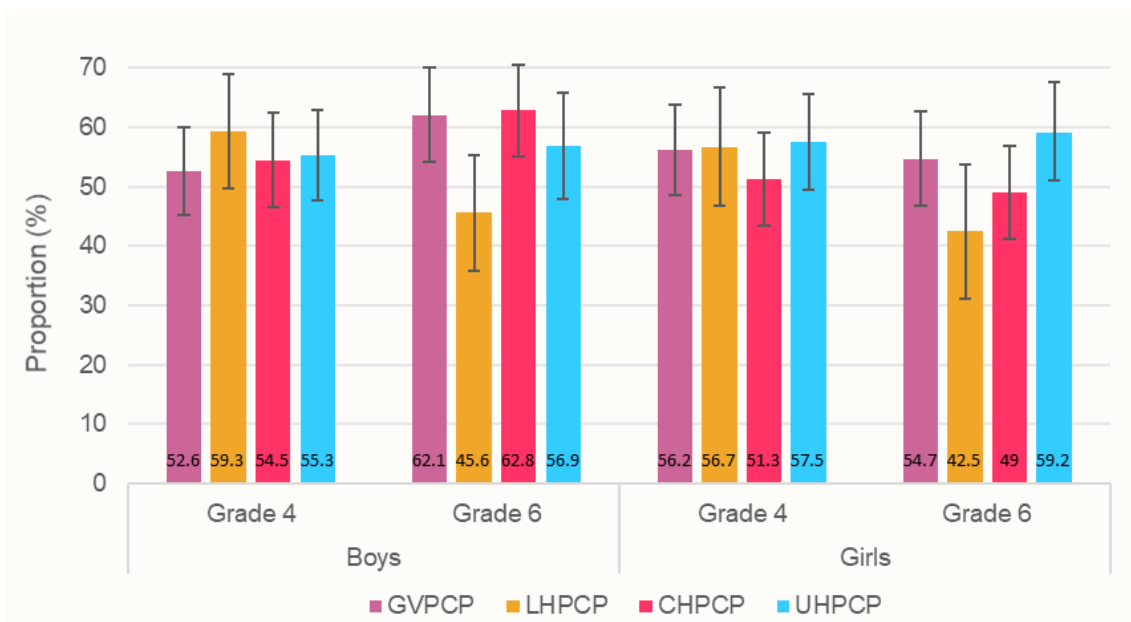


Figure 23: Proportion of participating grade 4 and 6 students drinking sweetened drinks (including soft drinks, sports drinks, juices and flavoured milks) less than once per day

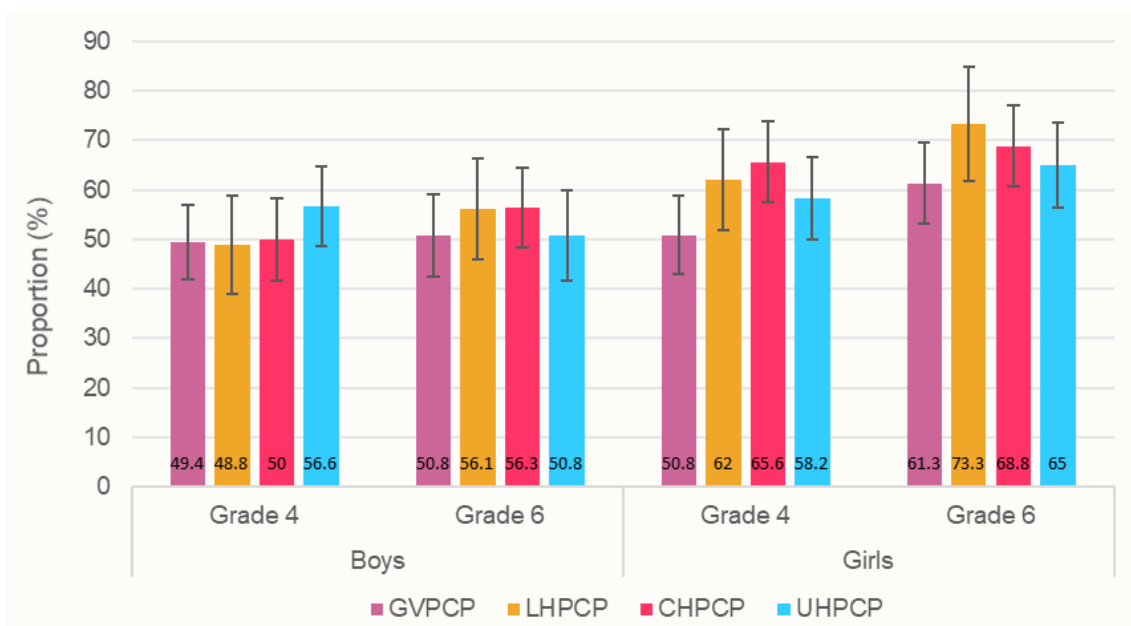


Figure 24 and 25 show the proportion, by PCP catchment, of students who met the recommended 60 minutes of moderate to vigorous physical activity every day on the previous 7-days, according to self-reported data, and the proportion of students who stay below the recommended limit of two hours of screen time (outside of school) every day on the previous 7-days.

Figure 24: Proportion of participating grade 4 and 6 students meeting the physical activity guidelines every day of the last week, according to self-reported physical activity time

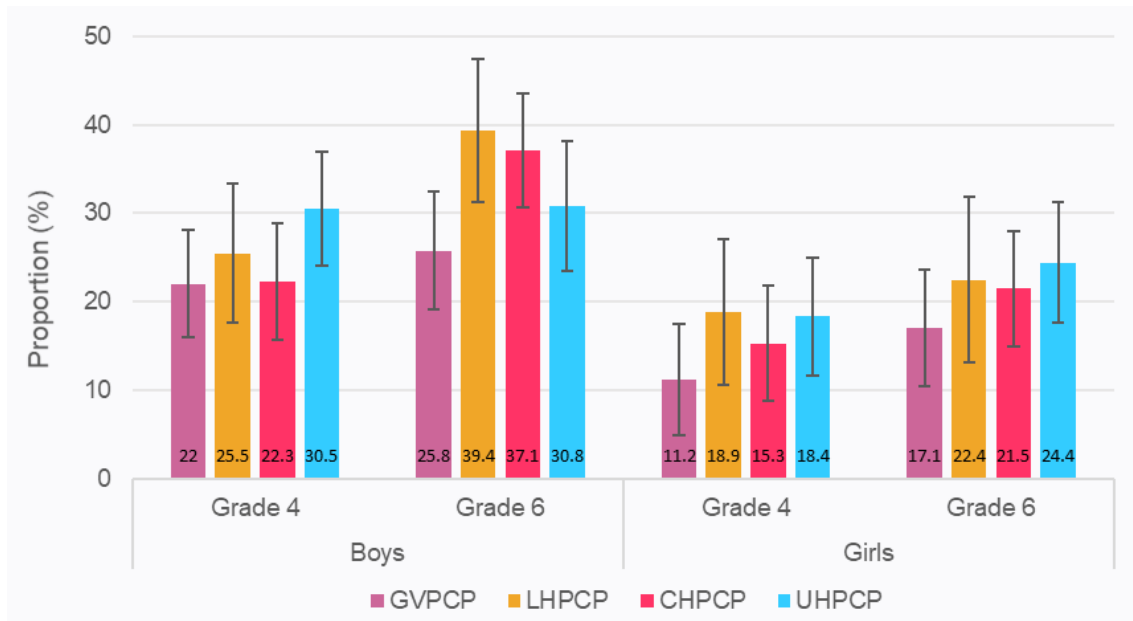


Figure 25: Proportion of participating grade 4 and 6 students meeting the screen-time guidelines (two hours per day or less, excluding school activities)

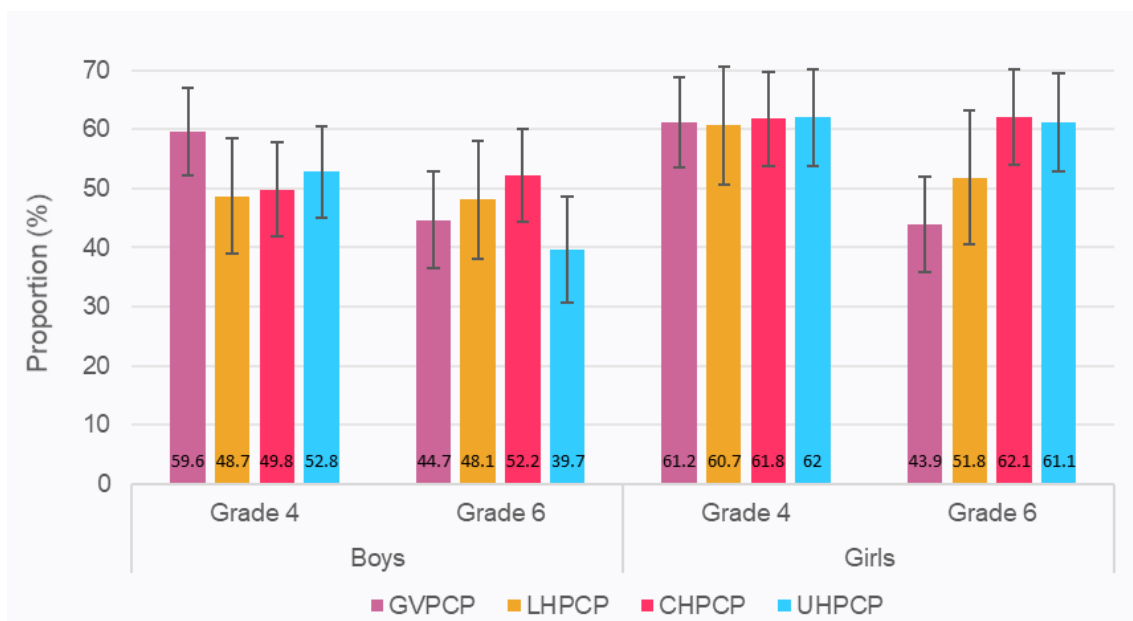


Figure 26 shows, the proportion of students, by PCP catchment, who usually use active transport to get to, and/or home again from school.

Figure 26: Proportion of participating grade 4 and 6 students using active transport to get to and/or from school

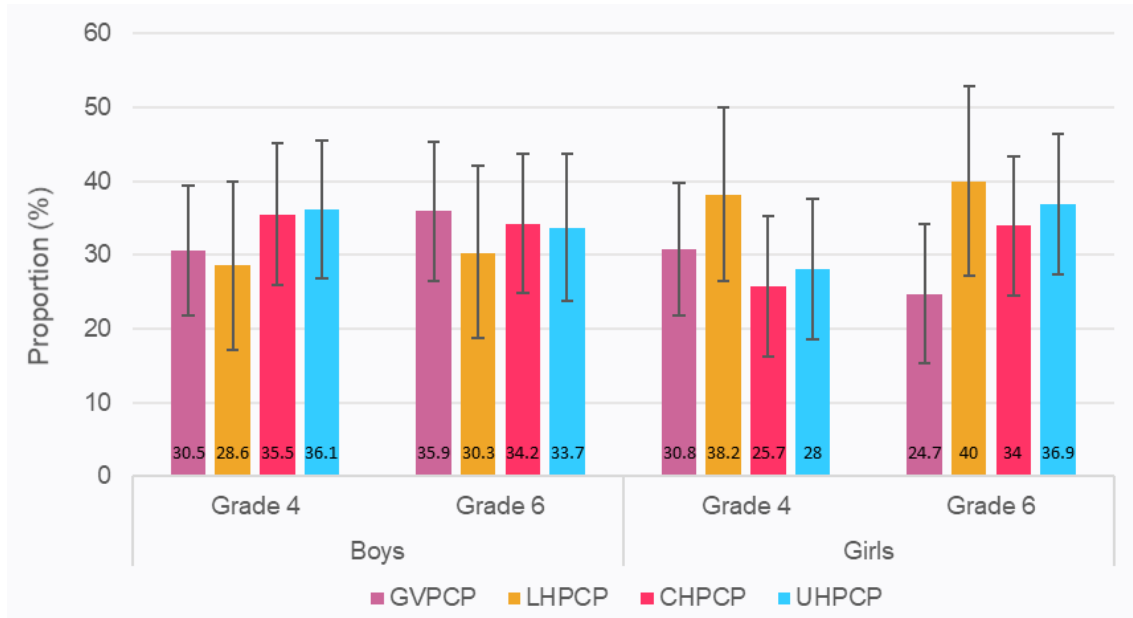


Figure 27 shows the proportion, by PCP catchment, of students who meet the sleep time recommendations on a usual school night (more than nine but less than 11 hours per night).

Figure 27: Proportion of participating grade 4 and 6 students meeting the sleep duration guidelines (between 9 and 11 hours of sleep per night)

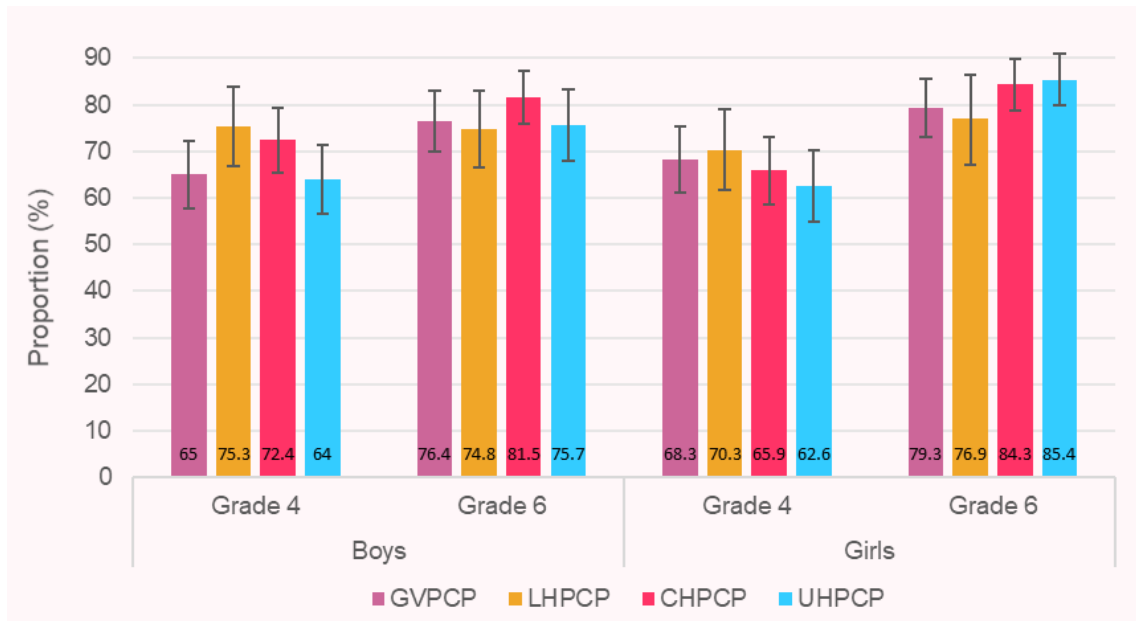


Figure 28 and 29 show, by PCP catchment, students’ average health-related quality of life scores on the dimensions of physical wellbeing, and psychosocial wellbeing. These dimensions are scored so that a higher score represents better quality of life, with a maximum possible score of 100.

Figure 28: Average physical health-related quality of life score for participating grade 4 and 6 students

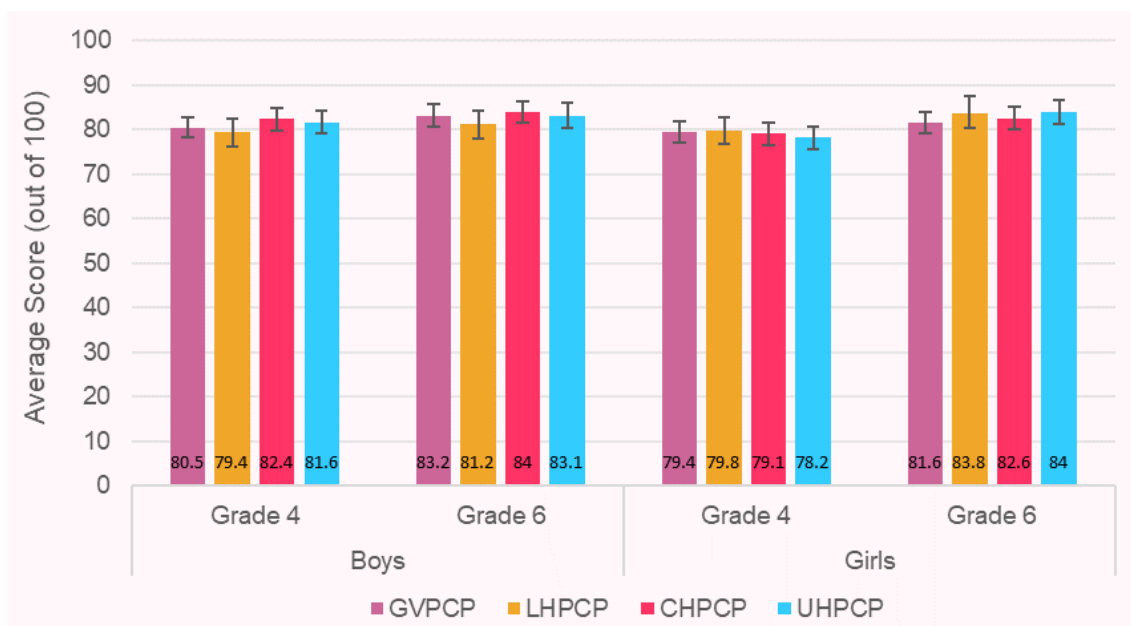


Figure 29: Average psychosocial health-related quality of life score for participating grade 4 and 6 students

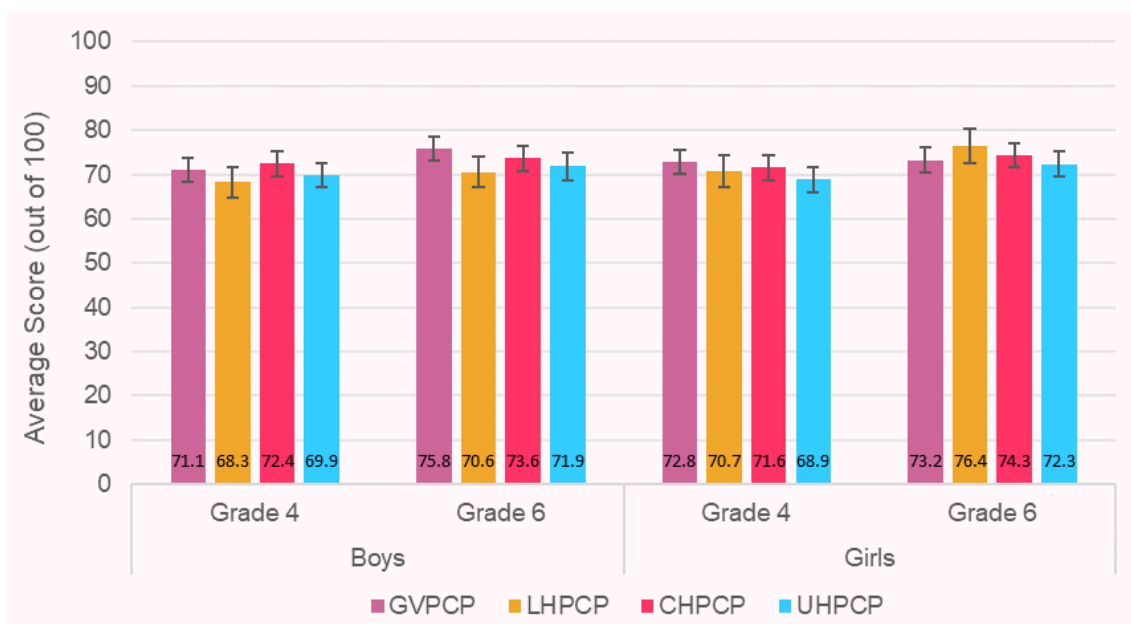


Figure 30 shows the proportion, by PCP catchment, of students who were classified with either overweight or obesity according to World Health Organisation criteria that are adjusted to account for students age and biological sex.

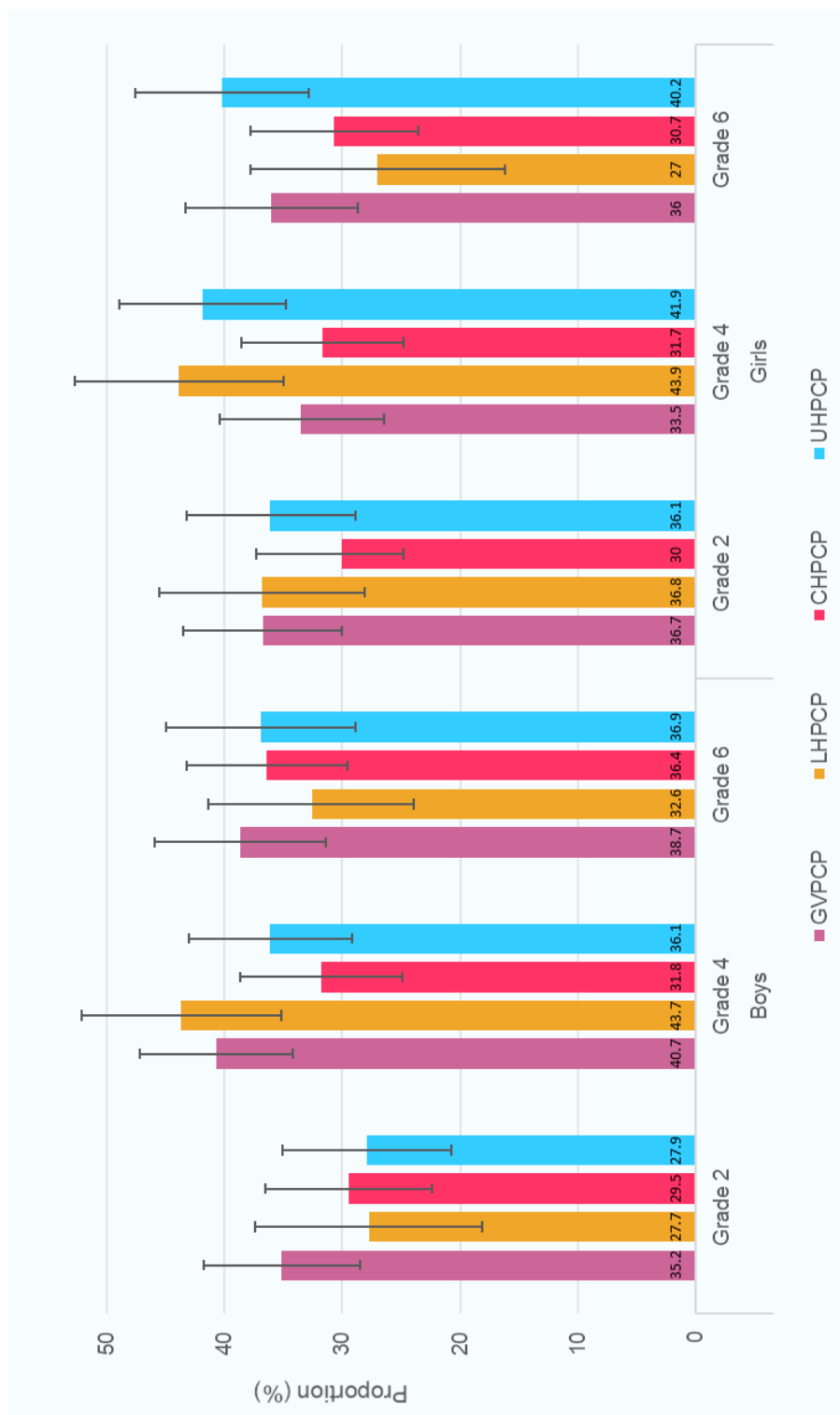


Figure 30: Proportion of participating grade 2, 4, and 6 students with overweight or obesity – using World Health Organisation weight classifications

5. Additional Data - Accelerometry

This section presents additional data about children's physical activity that was collected using accelerometry.

A subsample of around 50% of participating grade 4 and 6 students received an accelerometer to wear on their wrist for one week. The accelerometers used resemble a watch (ActiGraph wGT3X-BT), and digitally record students' physical movement whilst being worn. The accelerometers capture physical activity as well as, sedentary behaviour and sleep behaviours. Only the physical activity data are presented in this report. Importantly, the accelerometers used in this study have no GPS, location detection, or communication capabilities, and thus measure physical movement only. Accelerometers offer additional insight, which can complement self-reported data.

In total, 55% of grade 4 participants and 49% of grade 6 participants received an accelerometer, and wore it for sufficient time across the week for analysis. To use a given student's data, the accelerometer needed to be worn for at least 10 hours per day, on at least 3 days throughout the week they had the unit (about 85% of students who received an accelerometer met these criteria). Students were considered to have met the physical activity guidelines if they averaged more than 60 minutes of moderate to vigorous physical activity for each day they met the wear-time criteria.

Figures 31 and 32 show the proportion of students who averaged at least 60 minutes of moderate to vigorous physical activity per day they wore an accelerometer, across the whole Ovens Murray and Goulburn region, and broken down by Primary Care Partnership catchment.

Figure 31: Proportion of participating grade 4 and 6 students meeting the physical activity guidelines on average according to physical activity time measured using accelerometers

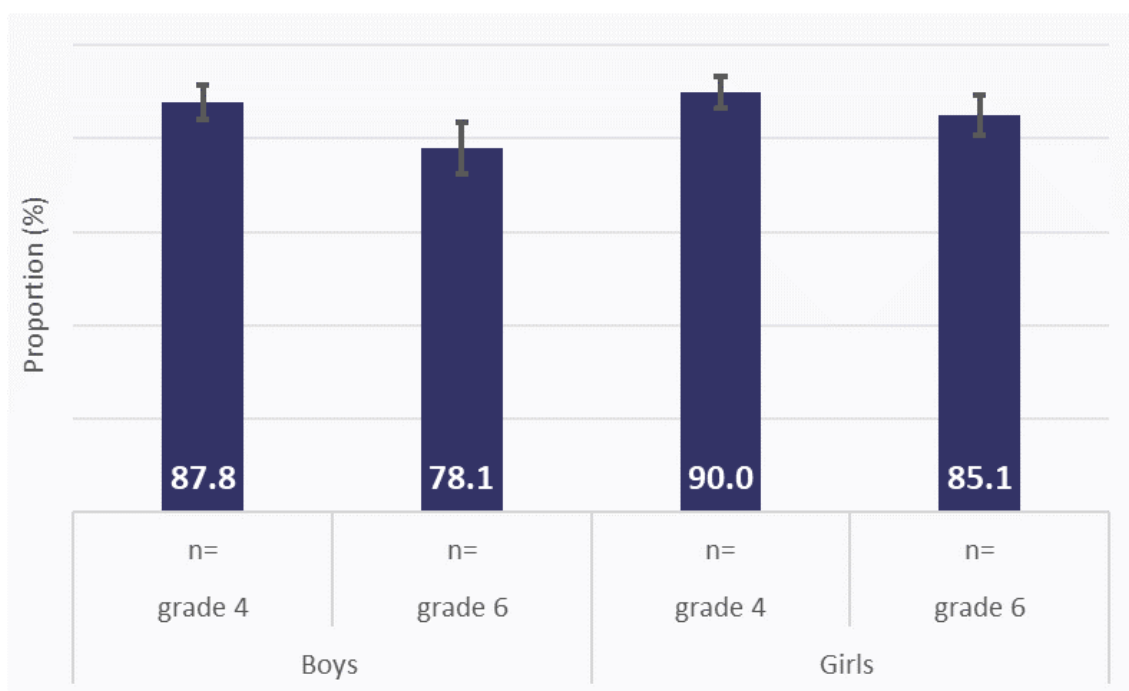
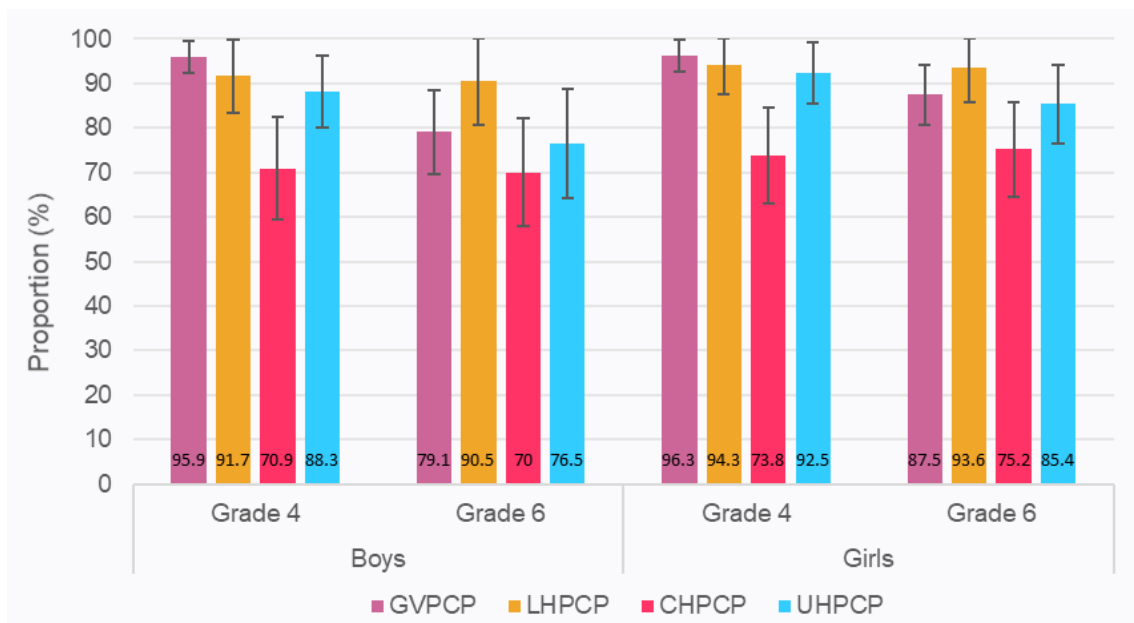


Figure 32: Proportion of participating grade 4 and 6 students meeting the physical activity guidelines on average, according to physical activity time measured using accelerometers



While accelerometry is superior to self-reported measurement, there are subtle differences between the measures. These results should not be interpreted as a demonstration that the self-report data should be discarded, and that up to 90% of students meet the physical activity guidelines every day. These accelerometry data indicate the proportion of students who spent enough time being active while wearing the accelerometer that they would have met the physical activity guidelines if we assume their active time is evenly distributed day-to-day, and that their behaviour while wearing the accelerometer reflects a typical day.

This distinction is minor – but to illustrate the point, a student who wore the accelerometer for four out of 7 days, and completed two sessions of 120 minutes of activity on two of those four days, with no additional activity for the rest of the 7-day week would be classified as “meeting the guidelines” according to the accelerometry analysis. This student would not be considered to have met the guidelines according to the self-report measure.

Despite this distinction, such high proportions of students meeting the physical activity guidelines in the accelerometry analysis strongly suggests that the self-reported data is an under-estimation of physical activity guideline attainment. Whether the true rate guideline attainment is as high as 90% is difficult to know with certainty. Using an average minutes per day method may slightly inflate the estimate given here. However, students are asked to remove accelerometers during contact sports (e.g. rugby, Australian rules football, netball etc.) to avoid injury risk, which will have slightly deflated the estimate.

In the broader context of RESPOND, both the accelerometry and self-reported data will be useful to examine changes within and between RESPOND communities and areas over time – with different sets of strengths and limitations for each approach.

6. Additional Data - 5-day vs 7-day Physical Activity and Screen Time Guideline Attainment

This section presents the proportion of students who attained the physical activity and screen time guidelines every day for the preceding week, along with the proportion of students who achieved these guidelines for at least 5 days in the preceding week.

This is intended as an additional indicator for organisations specifically targeting ≥ 5 -day guideline attainment, and for communities interested in the proportion of children who may not meet the guidelines daily but meet them most days of the week. Table 4 presents by PCP catchment and Table 4 by grade and gender for the entire region.

Table 4: 7-day vs ≥ 5 -day attainment of physical activity and screen time guidelines (by PCP catchment)

Catchment	Guideline	Criteria	Boys		Girls	
			Grade 4 (n=209)	Grade 6 (n=170)	Grade 4 (n=192)	Grade 6 (n=179)
Goulburn Valley PCP	Physical activity	7 days/week	22.0% (16.0 – 28.1)	25.8% (19.1 – 32.4)	11.2% (4.9 – 17.5)	17.1% (10.5 – 23.6)
		≥ 5 days/week	39.3% (31.2 – 47.4)	51.6% (42.9 – 60.3)	24.3% (15.9 – 32.6)	41.8% (33.1 – 50.5)
	Screen Time	7 days/week	59.6% (52.2 – 67.0)	44.7% (36.6 – 52.8)	61.2% (53.6 – 68.9)	43.9% (35.8 – 51.9)
		≥ 5 days/week	75.6% (68.9 – 82.3)	63.0% (55.7 – 70.3)	74.1% (67.2 – 81.1)	71.3% (64.0 – 78.5)
Lower Hume PCP	Physical activity	7 days/week	(n=120) 25.5% (17.6 – 33.4)	(n=113) 39.4% (31.3 – 47.4)	(n=113) 18.9% (10.7 – 27.1)	(n=83) 22.4% (13.1 – 31.8)
		≥ 5 days/week	44.2% (33.6 – 54.7)	57.8% (47.1 – 68.5)	35.4% (24.5 – 46.2)	34.5% (22.4 – 46.5)
	Screen Time	7 days/week	48.7% (39.0 – 58.4)	48.1% (38.2 – 58.0)	60.7% (50.7 – 70.7)	51.8% (40.5 – 63.2)
		≥ 5 days/week	67.9% (59.2 – 76.7)	60.3% (51.4 – 69.2)	75.1% (66.1 – 84.1)	65.2% (55.0 – 75.4)
Central Hume PCP	Physical activity	7 days/week	(n=184) 22.3% (15.7 – 28.8)	(n=195) 37.1% (30.7 – 43.5)	(n=186) 15.3% (8.8 – 21.9)	(n=181) 21.5% (15.0 – 28.0)
		≥ 5 days/week	44.0% (35.2 – 52.7)	58.9% (50.3 – 67.6)	29.3% (20.6 – 38.0)	38.8% (30.0 – 47.5)
	Screen Time	7 days/week	49.8% (41.8 – 57.9)	52.2% (44.3 – 60.1)	61.8% (53.8 – 69.8)	62.1% (54.1 – 70.1)
		≥ 5 days/week	68.5% (61.2 – 75.7)	68.6% (61.4 – 75.7)	81.7% (74.4 – 88.9)	83.7% (76.6 – 90.9)
Upper Hume PCP	Physical activity	7 days/week	(n=186) 30.5% (24.1 – 36.9)	(n=136) 30.8% (23.5 – 38.1)	(n=175) 18.4% (11.7 – 25.0)	(n=159) 24.4% (17.6 – 31.3)
		≥ 5 days/week	51.4% (42.9 – 59.9)	51.1% (41.7 – 60.6)	42.7% (33.9 – 51.6)	51.5% (42.5 – 60.4)
	Screen Time	7 days/week	52.8% (45.0 – 60.6)	39.7% (30.8 – 48.6)	62.0% (53.8 – 70.1)	61.1% (52.8 – 69.5)
		≥ 5 days/week	72.5% (65.5 – 79.6)	61.6% (53.6 – 69.6)	78.5% (71.2 – 85.8)	78.6% (71.1 – 86.1)

Table 5: 7-day vs 5-day attainment of physical activity and screen time guidelines (Ovens Murray and Goulburn Region)

Guideline	Criteria	Boys		Girls	
		Grade 4 (n=698)	Grade 6 (n=614)	Grade 4 (n=666)	Grade 6 (n=602)
<i>Physical activity</i>	<i>7 days/week</i>	24.8% (21.5 – 28.2)	32.4% (28.6 – 36.3)	15.4% (12.5 – 18.3)	21.0 (17.6 – 24.4)
	<i>≥5 days/week</i>	44.5% (40.1 – 48.9)	54.5% (49.8 – 59.1)	32.2% (28.0 – 36.4)	42.2% (37.6 – 46.8)
<i>Screen Time</i>	<i>7 days/week</i>	53.2% (49.2 – 57.2)	46.1% (41.9 – 50.3)	61.4% (57.4 – 65.5)	54.8% (50.5 – 59.0)
	<i>≥5 days/week</i>	71.5% (67.8 – 75.1)	63.7% (59.6 – 67.8)	77.5% (74.0 – 80.9)	75.6% (71.9 – 79.2)

7. Comparisons to other studies and data

This section briefly addresses comparisons between this report and other published data on the prevalence of health behaviours, overweight, and obesity in the Victorian population.

As mentioned in the executive summary – there is no existing monitoring system that provides data for Ovens Murray and Goulburn on the behaviours and outcomes presented in this report, at this level of participation and scale.

Some regular surveys such as the Australian Bureau of Statistics' National Health Survey (11) report overweight and obesity prevalence and select health behaviours for Victorian children - but do so by collecting small, targeted samples, and weighting the data to estimate the expected average for all children. In the 2017-18 National Health Survey, the ABS produced an estimated overweight and obesity prevalence for the approximately 1.4 million Victorians aged 0-17 based on data from 808 individuals, with a participation rate of about 56% for height and weight measures (12, 13).

This makes the National Health Survey data difficult to compare against the RESPOND monitoring data. National Health Survey data is heavily extrapolated, and is designed to produce an estimate for the average Victorian child, which will bias the data toward city-dwelling Victorian children, rather than regional and rural Victorian children who would be more comparable to children living in the Ovens Murray and Goulburn areas.

The most comparable data at time of publication comes from the Global Obesity Centre's previous Monitoring System studies, including the Great South Coast Monitoring system (2016 – ongoing) the HTV Children's Evaluation (2014 – 2018) and the Goulburn Valley Monitoring Study (2016). These studies have employed the same methods used in this study in six south-western Victorian LGAs, the City of Greater Shepparton, Moira Shire and Strathbogie Shire, and the 23 intervention and matched comparison Healthy Together Victoria Communities. Each of these monitoring studies have directly measured their outcomes with high participation rates, in largely non-metropolitan populations.

In 2014, monitoring in the HTV intervention and comparison communities (14) estimated the prevalence of overweight and obesity among grade 2, 4, and 6 students to be 37.3% using the same World Health Organization criteria used in this report.

In 2016, monitoring from the Goulburn Valley region of Victoria (15) estimated that 73.9% of children in Grade 4 and 6 met the fruit consumption guidelines, 14.6% met the vegetable consumption guidelines, and 54.5% of students reported drinking at least 5 glasses of water per day. Examining students who met the physical activity and screen time guidelines, 37% of students reported meeting the physical activity guidelines on at least 5 days in the last week, and 76.5% of students reported meeting the screen-time guidelines on at least 5 days in the last week (see section 6, above, for comparable RESPOND data). Physical quality of life scores averaged 84.1 out of 100, and while psychosocial quality of life was not specifically reported, the three components (school, emotional, and social wellbeing) that are combined to calculate psychosocial quality of life ranged from 71.2 – 78.4 out of 100.

Finally, monitoring from south-west Victoria, and the City of Greater Shepparton in 2016-17 (16) found that approximately 61% of grade 4 and 6 students met the sleep duration guidelines of between 9 and 11 hours sleep.

Overall – there are no large and unexpected differences between the findings presented in this report, and data from previous monitoring studies. Generally speaking – the lack of large differences suggests that the opportunities to improve child health in Ovens Murray and Goulburn are similar to those in other parts of non-metropolitan Victoria. Among the outcomes and behaviours measured by this study there is no immediate evidence of problems specific to this area. This highlights the widespread nature of challenges to child health across rural and regional Victoria as we currently understand them, and reinforces the need for collaborative, community-owned approaches to improve the health of children.

8. Conclusions

The sample of students who participated in this study were fairly evenly distributed by grade and gender, with the sample being very close to a 50/50 split by gender, and reasonably near to an even split between grade 2, grade 4, and grade 6 participants. Numbers were more varied when considering the four PCP catchment areas – with the Lower Hume area representing the smallest share of participant numbers (16.5%) and Goulburn Valley the greatest (29.9%), which was expected due to population size. A small proportion of the sample was either born overseas (4%) or spoke a language other than English at home (8%), and around 8% of participating students identified as Aboriginal or Torres Strait Islander.

The number of students consuming the recommended amount of vegetables was low (~12-18.5%). Fruit consumption was higher, and girls were more likely to consume the recommended number of serves (76.7-78.5%) than boys (68.1-68.3%)

Physical activity differed by gender at both grade 4 and grade 6 using self-report– with boys (24.8-32.4%) more likely than girls (15.4-21%) to meet the recommended 60 minutes of moderate to vigorous physical activity per day (7-day guideline).

Screen time similarly differed by gender, with girls more likely to remain within the recommended two hours per day outside of school (54.8-61.4%) than boys (46.1-53.2%).

Active transport was consistent across gender and age with approximately 30-34% of students using active travel either on their way to or home from school.

Wellbeing was also consistent across gender and age, and students typically had higher wellbeing in the physical domain than the psychosocial, which is consistent with expectations.

Combined rates of overweight and obesity were above 30% for boys and girls in each of grade 2, 4 and 6.

Overall – these data represent a strong foundational understanding of these aspects of the health and wellbeing of children in primary schools across the Ovens Murray and Goulburn regions. These data also provide a strong baseline against which the RESPOND project can be evaluated following the forthcoming data collection in 2021, and 2023.

9. Translating insights into action: RESPOND

The information included in this report supports large, whole-of-community initiatives to improve the health of children across the Ovens Murray & Goulburn regions of Victoria.

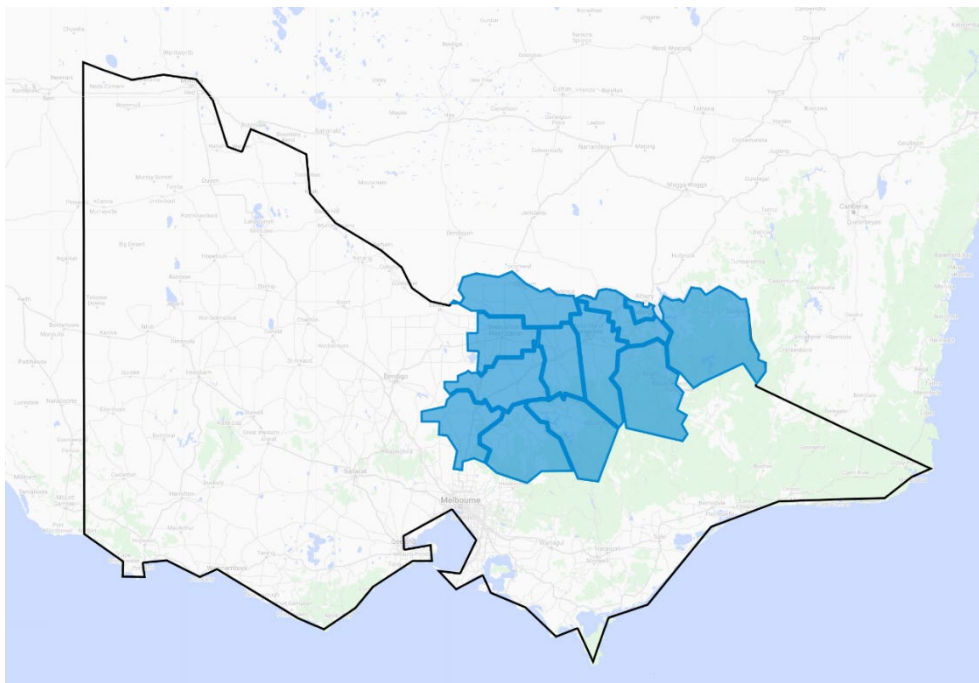
From 2018 to 2023, RESPOND will see twelve local government areas (shown below) undertake community consultation – supported by systems thinking methods and principles – leading into a long-term effort to build collaborative and sustainable action to improve the health of children in their communities.

At present, seven out of the twelve LGAs are actively undertaking this work, with the remaining five scheduled to commence in 2021.

To date, data from this study has supported initiatives in nine separate communities within the active LGAs, involving a workforce of over 70 local health workers, and consultation with over 350 grass-roots community members and local leaders.

Each of these initiatives is working to use these data in concert with local understanding and lived experience, to understand how best to form a locally-owned and community-driven response to child health and wellbeing.

Figure 33: Overview view of the RESPOND region by LGA boundary within Victoria



APPENDIX: About Our Measurements, Tools and Surveys

This appendix section presents further information about the survey tools and measures (and guidelines where applicable) used to collect and summarise the data presented above.

Food & Drinks Section:

Vegetable & Fruit Guideline Attainment:

Attainment of the fruit and vegetable guidelines was assessed using two items (one specifically for fruit, the other for vegetables) that asked students how many serves they usually consumed in a day. Students were given some general guidance on what constitutes “one serve of fruit” or “one serve of vegetables.” Students’ possible answers ranged from “none” to “7 or more serves per day” in half-serve increments for vegetables – and from “none” to “5 or more serves per day” in half-serve increments for fruit. Students’ responses were assessed against the relevant guidelines to establish attainment of the fruit and vegetable recommendations.

The Australian Dietary Guidelines recommend that children consume 5 serves of vegetables per day and 2 serves of fruit per day, while boys aged 12+ years should consume 5.5 serves of vegetables per day (17).

Takeaway Meal Consumption:

Students were asked how often they usually consumed takeaway foods as a main meal. Students were instructed that this specifically meant eating takeaway as breakfast, lunch, or dinner, as opposed to having a takeaway item as a snack (i.e. one dim-sim, or one potato cake outside of a main meal). Students chose from 8 possible responses, including “every meal,” “almost every day,” “once a week” and “rarely or never.” This report shows the proportion of students who reported only having takeaway “once a fortnight” or “rarely or never”.

Unhealthy Snack & Sugary Drink Consumption:

Consumption of unhealthy snacks and sugary drinks were calculated using a set of six questions that asked students how frequently they consumed different types of sugary drinks and unhealthy snacks. Of the six items, three were focused on sugary drinks, and three on unhealthy snacks. Each item asked the student how often they usually ate or drank the category of food or drink, with 8 possible responses, including “every meal,” “almost every day,” “once a week” and “rarely or never.”

The unhealthy snack items asked about students consumption of “packet potato chips and savoury snacks,” “snacks such as chocolates or lollies,” and “snacks such as cakes, sweet biscuits, pastries and donuts.” The sweet drink items asked about “soft drinks, sports drinks and energy drinks,” “fruit juice, fruit drink, and cordial,” and “flavoured milk”.

For both the snack foods, and sugary drink items, the three sub-questions were analysed together to establish how often students consumed either a snack food, or a sugary drink within any of the categories. The sugary drink consumption statistic presented in this report can be interpreted as the proportion of students who do not usually consume either a soft drink, sports drink, energy drink, fruit juice or drink, cordial or flavoured milk every day. The unhealthy snack consumption statistic can be interpreted as the proportion of students who do not usually consume either packet potato chips, or savoury snacks, chocolates, lollies, cakes, sweet biscuits, pastries or donuts every day.

Water Consumption:

Water consumption was assessed using a question that asked students how many glasses of water they usually drink each day. Researchers explained that one glass was equal to 250ml, or just under half a standard bottle of water. Students could respond that they consumed no water, or choose from “1-2 glasses” “3-4 glasses” “5-6 glasses” “7-8 glasses” or “more than 8 glasses” per day. The proportion of students consuming at least five 250ml glasses of water per day (~1250ml water consumed per day) were presented in this report.

Activity & Screen Time Section:

Physical Activity & Screen Time Guideline Attainment:

Attainment of the physical activity and screen time guidelines were assessed using two questions that separately measured students time spent in each type of activity. The physical activity question asked students to recall how much time they spent in moderate to vigorous exercise that made them “sweat, breathe harder or be out of breath” for each of the last seven days, choosing from six possible answers including “none,” “1 to 14 minutes,” “1 to 2 hours” and “more than 2 hours.” Similarly, the screen time item asked how long students had spent “sitting or lying down looking at a screen” outside of the school context for each of the last 7 days. For each day, students chose from five options including “none,” “less than 1 hour,” “more than 2 but less than 5 hours” and “5 or more hours.” Student’s responses for the last 7 days were analysed to determine how many students reported meeting the relevant guideline on each of the last 7 days.

The Australian Movement Guidelines for Children (5-17 years) recommends at least one hour of moderate-to-vigorous physical activity every day (18). The Australian Movement Guidelines for Children (5-17 years) recommends no more than two hours of screen time every day (18).

Active Transport Use:

Two questions about students' active transport asked for students' usual method of travel to school, and home after school separately. Students were instructed that if they use two methods (i.e. drive part way, walk part way) to choose the type of travel that makes up most of the trip. Students could choose from car, school bus, public bus train or tram, walking, cycling, other (active), or other (inactive). The active transport statistics presented in this report show the proportion of students who usually use an active transport method (walking, cycling, or other active method) to get either to or from school.

Sleep & Wellbeing Section:

Sleep Guideline Attainment:

Two questions asked students to identify what time they usually went to bed, and usually got up in the morning on a school night. This was used to calculate the number of hours sleep students get on a normal school night, which was compared against the relevant sleep guidelines. The Sleep Guidelines for Children (5-12 years) recommend no less than nine, and no more than 11 hours of sleep every night (19, 20).

Physical & Psychosocial Wellbeing:

Physical and psycho-social Wellbeing were measured using a child-specific, health-related quality of life index, called the Paediatric Quality of Life Index (PedsQL). The PedsQL asks students to respond to a series of statements about different dimensions of wellbeing – indicating how often the statement has been a problem for them. Statements cover physical, emotional, social, and school-related well-being, and include things like “It is difficult for me to walk more than 100m” “I worry about what will happen to me” and “I have trouble keeping up with my school work”.

PedsQL is regularly used to measure wellbeing in child health studies (21, 22) and can be summarised into two top-level outcomes describing physical wellbeing and psycho-social wellbeing. Higher scores on this measure indicate better wellbeing, with a maximum of 100 for both scales.

Healthy Weight Section:

Combined Overweight & Obesity:

Overweight and obesity were assessed using an age- and sex-adjusted BMI score, calculated using students height and weight. Height and weight were measured by trained data collectors, using an ethical and respectful process that takes between 2 and 3 minutes per student. Students were measured without shoes, or bulky jumpers (so long as students were comfortable removing them). Both height and weight were measured at least twice, and occasionally a third time to ensure consistency.

Students BMI was adjusted according to their age and sex, as BMI in children requires adjustment to account for the way children's bodies change as they grow.

While BMI is a limited tool for assessing overweight and obesity among individuals, BMI is an accurate tool for measuring the proportion of people with overweight or obesity in large samples.

Summary of specific surveys used:

In the measurements described above, some specific tools from the research literature were used. The table below summarises the items used in the RESPOND Monitoring Study, and corresponding surveys from the literature that they were drawn from. In most cases, the full measurement instruments contain many questions – and key items of interest were selected for use in this study.

Table 6: Summary of measurement instruments used in the RESPOND Monitoring Study

Section:	Items:	Instrument/s:
<i>Food & Drinks</i>	<ul style="list-style-type: none"> • Typical/usual serves of fruit and vegetable daily • Typical/usual consumption of takeaway food • Typical/usual serves and size of several non-core foods • Typical/usual serves and size of sugar-sweetened beverages • Typical/usual consumption of water 	<ul style="list-style-type: none"> • Child Nutrition Questionnaire (23) • Food, Health, and Choices Questionnaire (24)
<i>Activity & Screen Time</i>	<ul style="list-style-type: none"> • Minutes per day spent in moderate-to-vigorous physical activity • Minutes per day spent in sedentary time 	<ul style="list-style-type: none"> • Core Indicators and Measures of Youth Health Survey (25) and • SHAPES Survey (26) • Accelerometry (subsample)
<i>Sleep & Wellbeing</i>	<ul style="list-style-type: none"> • Typical/usual bed time and wake time • Psychosocial wellbeing summary score • Physical wellbeing summary score 	<ul style="list-style-type: none"> • None applicable for sleep item • Paediatric Quality of Life Inventory (PedsQL) (27)
<i>Healthy Weight</i>	<ul style="list-style-type: none"> • Overweight and obesity prevalence • BMI-for-age z-score 	<ul style="list-style-type: none"> • Direct-measure height and weight (standardised procedures)

APPENDIX: Further Results by Local Government Area

This section of the report presents the results of the 2019 Health Behaviours and Anthropometry study, by Local Government Area.

These data are at a much lower level of granularity than the whole-of-region, or PCP level reporting given above, and are therefore presented either by gender only, or by gender and grade depending on the amount of data available within each LGA.

These data are raw, unadjusted figures, and it is therefore not intended that direct LGA-to-LGA comparisons be drawn from these tables.

Figure 34: Zoomed view of the RESPOND region by LGA boundary

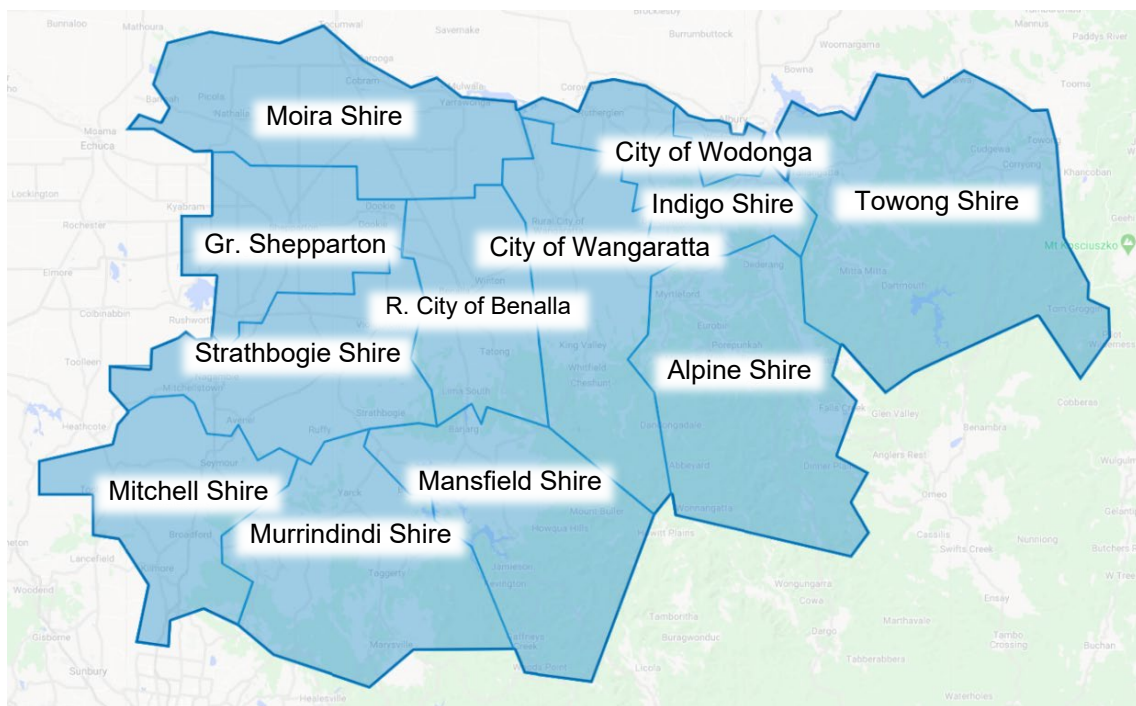


Table 7: Alpine Shire Summary Table

		Boys	Girls
<i>Health Behaviours</i>	Met Fruit Consumption Guidelines	81.8% (n=55)	90.2% (n=51)
	Met Vegetable Consumption Guidelines	32.7% (n=55)	21.6% (n=51)
	Met Water Consumption Guidelines	56.4% (n=55)	56.9% (n=51)
	Sugar-Sweetened Drink consumption (<once/day)	81.8% (n=55)	88.2% (n=51)
	Takeaway Consumption (once/fortnight or less)	65.5% (n=55)	76.5% (n=51)
	Unhealthy snack consumption (<once/day)	63.6% (n=55)	64.7% (n=51)
	Met PA Guidelines (self-report, 7/7 days)	40.0% (n=55)	31.4% (n=51)
	Met PA Guidelines (self-report, 5/7 days)	63.6% (n=55)	47.1% (n=51)
	Met PA Guidelines (accelerometry)	91.1% (n=45)	91.3% (n=46)
	Met Screen Time Guidelines (7 days)	60.0% (n=55)	68.6% (n=51)
	Use Active Transport to or from school	65.5% (n=55)	49.0% (n=51)
	Met Sleep Duration Guidelines	74.5% (n=51)	72.3% (n=47)
	<i>Outcomes</i>	Physical wellbeing	83.5 (n=55)
Psychosocial wellbeing		73.9 (n=55)	75.8 (n=51)
Overweight/ Obesity		21.3% (n=75)	20.3% (n=69)
BMI z-score		0.14 (1.07) (n=75)	0.11 (1.01) (n=69)

Table 8: Rural City of Benalla Summary Table

		Boys	Girls
<i>Health Behaviours</i>	Met Fruit Consumption Guidelines	63.9% (n=61)	64.8% (n=71)
	Met Vegetable Consumption Guidelines	16.1% (n=62)	12.7% (n=71)
	Met Water Consumption Guidelines	64.5% (n=62)	52.1% (n=71)
	Sugar-Sweetened Drink consumption (<once/day)	43.5% (n=62)	59.2% (n=71)
	Takeaway Consumption (once/fortnight or less)	51.6% (n=62)	67.6% (n=71)
	Unhealthy snack consumption (<once/day)	29.0% (n=62)	35.2% (n=71)
	Met PA Guidelines (self-report, 7/7 days)	35.5% (n=62)	11.3% (n=71)
	Met PA Guidelines (self-report, 5/7 days)	59.7% (n=62)	29.6% (n=71)
	Met PA Guidelines (accelerometry)	22.2% (n=18)	19.4% (n=31)
	Met Screen Time Guidelines (7 days)	41.9% (n=62)	50% (n=70)
	Use Active Transport to or from school	46.8% (n=62)	42.3% (n=71)
	Met Sleep Duration Guidelines	73.6% (n=53)	76.9% (n=65)
	<i>Outcomes</i>	Physical wellbeing	84.9 (n=62)
Psychosocial wellbeing		74.5 (n=62)	72.7 (n=71)
Overweight/ Obesity		43.2% (n=88)	31.5% (n=92)
BMI z-score		0.78 (1.27) (n=88)	0.56 (1.13) (n=92)

Table 9: Indigo Shire Summary Table

		Boys			Girls		
		Grade 2	Grade 4	Grade 6	Grade 2	Grade 4	Grade 6
<i>Health Behaviours</i>	Met Fruit Consumption Guidelines		66.7% (n=54)	70.4% (n=54)		81.0% (n=58)	82.8% (n=58)
	Met Vegetable Consumption Guidelines		14.8% (n=54)	16.7% (n=54)		12.1% (n=58)	10.3% (n=58)
	Met Water Consumption Guidelines		55.6% (n=54)	51.9% (n=54)		60.3% (n=58)	62.1% (n=58)
	Sugar-Sweetened Drink consumption (<once/day)		59.3% (n=54)	53.7% (n=54)		63.8% (n=58)	67.2% (n=58)
	Takeaway Consumption (once/fortnight or less)		64.8% (n=54)	59.3% (n=54)		69.0% (n=58)	74.1% (n=68)
	Unhealthy snack consumption (<once/day)		38.9% (n=54)	33.3% (n=54)		48.3% (n=58)	44.8% (n=58)
	Met PA Guidelines (self-report, 7/7 days)		31.5% (n=54)	27.8% (n=54)		19.0% (n=58)	22.4% (n=58)
	Met PA Guidelines (self-report, 5/7 days)		61.1% (n=54)	53.7% (n=54)		32.8% (n=58)	55.2% (n=58)
	Met PA Guidelines (accelerometry)		93.3% (n=30)	92.0% (n=25)		95.0% (n=40)	88.6% (n=44)
	Met Screen Time Guidelines (7 days)		66.7% (n=54)	37.0% (n=54)		72.4% (n=58)	63.8% (n=58)
	Use Active Transport to or from school		50.0% (n=54)	42.6% (n=54)		36.2% (n=58)	43.1% (n=58)
	Met Sleep Duration Guidelines		58.0% (n=50)	75.6% (n=45)		66.0% (n=53)	87.9% (n=58)
	<i>Outcomes</i>	Physical wellbeing		84.3 (n=54)	85.7 (n=53)		79.3 (n=57)
Psychosocial wellbeing			71.19 (n=54)	72.25 (n=54)		70.09 (n=58)	73.07 (n=57)
Overweight/ Obesity		25.9% (n=58)	26.9% (n=52)	32.1% (n=53)	38.1% (n=42)	42.9% (n=56)	36.2% (n=58)
BMI z-score		0.52 (1.31) (n=58)	0.28 (1.10) (n=52)	0.53 (1.0) (n=53)	0.59 (1.12) (n=42)	0.85 (1.02) (n=56)	0.71 (1.10) (n=58)

Table 10: Mansfield Shire Summary Table

		Boys	Girls
<i>Health Behaviours</i>	Met Fruit Consumption Guidelines	80.3% (n=71)	82.8% (n=58)
	Met Vegetable Consumption Guidelines	11.3% (n=71)	12.1% (n=58)
	Met Water Consumption Guidelines	50.7% (n=71)	34.5% (n=58)
	Sugar-Sweetened Drink consumption (<once/day)	53.5% (n=71)	62.1% (n=58)
	Takeaway Consumption (once/fortnight or less)	67.6% (n=71)	79.3% (n=58)
	Unhealthy snack consumption (<once/day)	49.3% (n=71)	36.2% (n=58)
	Met PA Guidelines (self-report, 7/7 days)	31.0% (n=71)	20.7% (n=58)
	Met PA Guidelines (self-report, 5/7 days)	56.3% (n=71)	29.3% (n=58)
	Met PA Guidelines (accelerometry)	90.3% (n=31)	90.5% (n=21)
	Met Screen Time Guidelines (7 days)	50.7% (n=71)	75.4% (n=57)
	Use Active Transport to or from school	23.9% (n=71)	25.9% (n=58)
	Met Sleep Duration Guidelines	78.1% (n=64)	66.7% (n=54)
	<i>Outcomes</i>	Physical wellbeing	83.3 (n=71)
Psychosocial wellbeing		71.2 (n=71)	75.2 (n=57)
Overweight/ Obesity		20.8% (n=101)	24.4% (n=90)
BMI z-score		0.32 (0.99) (n=101)	0.29 (1.11) (n=90)

Table 11: Mitchell Shire Summary Table

		Boys			Girls		
		Grade 2	Grade 4	Grade 6	Grade 2	Grade 4	Grade 6
<i>Health Behaviours</i>	Met Fruit Consumption Guidelines		60.6% (n=71)	68.3% (n=60)		70.6% (n=68)	65.9% (n=44)
	Met Vegetable Consumption Guidelines		7.1% (n=70)	10.0% (n=60)		14.7% (n=68)	13.6% (n=44)
	Met Water Consumption Guidelines		56.3% (n=71)	46.7% (n=60)		51.5% (n=68)	34.1% (n=44)
	Sugar-Sweetened Drink consumption (<once/day)		35.2% (n=71)	45.0% (n=60)		45.6% (n=68)	65.9% (n=44)
	Takeaway Consumption (once/fortnight or less)		40.8% (n=71)	51.7% (n=60)		50.0% (n=68)	47.7% (n=44)
	Unhealthy snack consumption (<once/day)		23.9% (n=71)	28.3% (n=60)		23.5% (n=68)	25.0% (n=44)
	Met PA Guidelines (self-report, 7/7 days)		21.4% (n=70)	38.3% (n=60)		17.6% (n=68)	11.4% (n=44)
	Met PA Guidelines (self-report, 5/7 days)		34.3% (n=70)	50.0% (n=50)		26.5% (n=68)	15.9% (n=44)
	Met PA Guidelines (accelerometry)		85.7% (n=28)	96.4% (n=28)		93.3% (n=15)	100% (n=20)
	Met Screen Time Guidelines (7 days)		40.8% (n=71)	48.3% (n=60)		58.8% (n=68)	50.0% (n=44)
	Use Active Transport to or from school		35.2% (n=71)	41.7% (n=60)		51.5% (n=68)	50.0% (n=44)
	Met Sleep Duration Guidelines		79.2% (n=53)	70.4% (n=54)		72.7% (n=66)	81.1 (n=37)
<i>Outcomes</i>	Physical wellbeing		77.6 (n=66)	80.6 (n=59)		78.8 (n=63)	80.7 (n=44)
	Psychosocial wellbeing		66.69 (n=68)	68.43 (n=59)		68.45 (n=66)	74.77 (n=44)
	Overweight/ Obesity	25.5% (n=55)	49.3% (n=69)	28.8% (n=59)	34.9% (n=83)	43.1% (n=65)	27.5% (n=40)
	BMI z-score	0.32 (1.18) (n=55)	1.02 (1.35) (n=69)	0.30 (1.43) (n=59)	0.70 (1.16) (n=83)	0.89 (1.12) (n=65)	0.28 (1.25) (n=40)

Table 12: Moira Shire Summary Table

		Boys			Girls		
		Grade 2	Grade 4	Grade 6	Grade 2	Grade 4	Grade 6
<i>Health Behaviours</i>	Met Fruit Consumption Guidelines		68.9% (n=74)	56.7% (n=67)		74.6% (n=63)	73.3% (n=60)
	Met Vegetable Consumption Guidelines		19.2% (n=73)	6.0% (n=67)		28.6% (n=63)	11.7% (n=60)
	Met Water Consumption Guidelines		52.8% (n=72)	46.3% (n=67)		52.4% (n=63)	48.3% (n=60)
	Sugar-Sweetened Drink consumption (<once/day)		54.8% (n=73)	53.7% (n=67)		46.0% (n=63)	51.7% (n=60)
	Takeaway Consumption (once/fortnight or less)		60.3% (n=73)	53.7% (n=67)		50.8% (n=63)	65.0% (n=60)
	Unhealthy snack consumption (<once/day)		35.6% (n=73)	35.8% (n=67)		30.2% (n=63)	26.7% (n=60)
	Met PA Guidelines (self-report, 7/7 days)		20.3% (n=74)	19.4% (n=67)		14.3% (n=63)	10.0% (n=60)
	Met PA Guidelines (self-report, 5/7 days)		33.8% (n=74)	40.3% (n=67)		27.0% (n=63)	41.7% (n=60)
	Met PA Guidelines (accelerometry)		97.9% (n=48)	73.7% (n=38)		94.9% (n=39)	81.6% (n=38)
	Met Screen Time Guidelines (7 days)		60.8% (n=74)	34.3% (n=67)		65.1% (n=63)	45.0% (n=60)
	Use Active Transport to or from school		33.8% (n=74)	43.3% (n=67)		39.7% (n=63)	21.7% (n=60)
	Met Sleep Duration Guidelines		63.5% (n=63)	76.7% (n=60)		86.0% (n=57)	76.8% (n=56)
<i>Outcomes</i>	Physical wellbeing		79.4 (n=73)	82.4 (n=67)		78.7 (n=62)	81.1 (n=60)
	Psychosocial wellbeing		68.7 (n=72)	74.43 (n=67)		72.46 (n=62)	74.14 (n=60)
	Overweight/ Obesity	34.8% (n=69)	38.4% (n=73)	49.2% (n=63)	45.0% (n=60)	38.6% (n=57)	35.8% (n=53)
	BMI z-score	0.67 (1.17) (n=69)	0.77 (1.28) (n=73)	0.89 (1.37) (n=63)	0.85 (1.0) (n=60)	0.69 (1.04) (n=57)	0.55 (1.05) (n=53)

Table 13: Murrindindi Shire Summary Table

		Boys	Girls
<i>Health Behaviours</i>	Met Fruit Consumption Guidelines	68.6% (n=102)	75.0% (n=84)
	Met Vegetable Consumption Guidelines	9.8% (n=102)	16.7% (n=84)
	Met Water Consumption Guidelines	52.0% (n=102)	56.0% (n=84)
	Sugar-Sweetened Drink consumption (<once/day)	60.8% (n=102)	73.8% (n=84)
	Takeaway Consumption (once/fortnight or less)	52.9% (n=102)	61.9% (n=84)
	Unhealthy snack consumption (<once/day)	30.4% (n=102)	34.5% (n=84)
	Met PA Guidelines (self-report, 7/7 days)	31.4% (n=102)	21.4% (n=84)
	Met PA Guidelines (self-report, 5/7 days)	52.0% (n=102)	39.3% (n=84)
	Met PA Guidelines (accelerometry)	93.0% (n=57)	90.4% (n=52)
	Met Screen Time Guidelines (7 days)	49.0% (n=102)	54.2% (n=84)
	Use Active Transport to or from school	29.4% (n=102)	36.9% (n=84)
	Met Sleep Duration Guidelines	75.8% (n=95)	69.6% (n=79)
	<i>Outcomes</i>	Physical wellbeing	80.4 (n=102)
Psychosocial wellbeing		70.2 (n=102)	73.8 (n=84)
Overweight/ Obesity		37.7% (n=138)	42.1% (n=107)
BMI z-score		0.76 (1.22) (n=138)	0.68 (1.18) (n=107)

Table 14: City of Greater Shepparton Summary Table

		Boys			Girls		
		Grade 2	Grade 4	Grade 6	Grade 2	Grade 4	Grade 6
<i>Health Behaviours</i>	Met Fruit Consumption Guidelines		59.6% (n=109)	70.4% (n=81)		73.1% (n=108)	86.5% (n=104)
	Met Vegetable Consumption Guidelines		16.5% (n=109)	7.5% (n=80)		18.5% (n=108)	15.4% (n=104)
	Met Water Consumption Guidelines		51.4% (n=109)	74.1% (n=81)		58.3% (n=108)	56.7% (n=104)
	Sugar-Sweetened Drink consumption (<once/day)		40.4% (n=109)	43.2% (n=81)		50% (n=108)	60.6% (n=104)
	Takeaway Consumption (once/fortnight or less)		46.3% (n=108)	53.1% (n=81)		56.5% (n=108)	59.6% (n=104)
	Unhealthy snack consumption (<once/day)		26.6% (n=109)	32.1% (n=81)		42.6% (n=108)	43.3% (n=104)
	Met PA Guidelines (self-report, 7/7 days)		19.4% (n=108)	22.2% (n=81)		6.5% (n=108)	17.3% (n=104)
	Met PA Guidelines (self-report, 5/7 days)		33.3% (n=108)	46.9% (n=81)		14.8% (n=108)	32.7% (n=104)
	Met PA Guidelines (accelerometry)		92.9% (n=56)	69.2% (n=26)		95.5% (n=66)	82.6% (n=46)
	Met Screen Time Guidelines (7 days)		56.9% (n=109)	45.7% (n=81)		51.9% (n=108)	36.5% (n=104)
	Use Active Transport to or from school		31.2% (n=109)	32.1% (n=81)		25.9% (n=108)	26.0% (n=104)
	Met Sleep Duration Guidelines		69.3% (n=88)	75.3% (n=77)		64.4% (n=90)	79.4% (n=97)
<i>Outcomes</i>	Physical wellbeing		81.40 (n=107)	82.73 (n=80)		79.39 (n=103)	81.29 (n=104)
	Psychosocial wellbeing		72.18 (n=106)	74.99 (n=80)		73.54 (n=105)	72.26 (n=104)
	Overweight/ Obesity	42.6% (n=94)	44.1% (n=102)	35.9% (n=78)	36.9% (n=103)	36.4% (n=99)	37.8% (n=90)
	BMI z-score	0.95 (1.28) (n=94)	0.81 (1.35) (n=102)	0.64 (1.31) (n=78)	0.77 (1.25) (n=103)	0.62 (1.17) (n=99)	0.63 (1.13) (n=90)

Table 15: Strathbogie Shire Summary Table

		Boys	Girls
<i>Health Behaviours</i>	Met Fruit Consumption Guidelines	70.8% (n=48)	75.7% (n=37)
	Met Vegetable Consumption Guidelines	18.4% (n=49)	24.3% (n=37)
	Met Water Consumption Guidelines	63.3% (n=49)	62.2% (n=37)
	Sugar-Sweetened Drink consumption (<once/day)	49.0% (n=49)	59.5% (n=37)
	Takeaway Consumption (once/fortnight or less)	57.1% (n=49)	54.1% (n=37)
	Unhealthy snack consumption (<once/day)	34.7% (n=49)	45.9% (n=37)
	Met PA Guidelines (self-report, 7/7 days)	28.6% (n=49)	8.3% (n=36)
	Met PA Guidelines (self-report, 5/7 days)	53.1% (n=49)	30.6% (n=36)
	Met PA Guidelines (accelerometry)	86.5% (n=37)	90.9% (n=33)
	Met Screen Time Guidelines (7 days)	44.7% (n=47)	62.2% (n=37)
	Use Active Transport to or from school	38.8% (n=49)	32.4% (n=37)
	Met Sleep Duration Guidelines	66.7% (n=42)	61.1% (n=36)
	<i>Outcomes</i>	Physical wellbeing	80.1 (n=47)
Psychosocial wellbeing		74.0 (n=47)	69.3 (n=37)
Overweight/ Obesity		34.2% (n=76)	31.7% (n=60)
BMI z-score		0.77 (1.15) (n=76)	0.36 (1.27) (n=60)

Table 16: Towong Shire Summary Table

		Boys	Girls
<i>Health Behaviours</i>	Met Fruit Consumption Guidelines	80.0% (n=45)	90.6% (n=32)
	Met Vegetable Consumption Guidelines	4.4% (n=45)	28.1% (n=32)
	Met Water Consumption Guidelines	75.6% (n=45)	53.1% (n=32)
	Sugar-Sweetened Drink consumption (<once/day)	60.0% (n=45)	65.6% (n=32)
	Takeaway Consumption (once/fortnight or less)	77.8% (n=45)	71.9% (n=32)
	Unhealthy snack consumption (<once/day)	44.4% (n=45)	50.0% (n=32)
	Met PA Guidelines (self-report, 7/7 days)	60.0% (n=45)	50.0% (n=32)
	Met PA Guidelines (self-report, 5/7 days)	80.0% (n=45)	78.1% (n=32)
	Met PA Guidelines (accelerometry)	88.9% (n=27)	80.7% (n=31)
	Met Screen Time Guidelines (7 days)	73.3% (n=45)	68.8% (n=32)
	Use Active Transport to or from school	31.1% (n=45)	25.0% (n=32)
	Met Sleep Duration Guidelines	65.9% (n=45)	74.2% (n=31)
	<i>Outcomes</i>	Physical wellbeing	89.2 (n=43)
Psychosocial wellbeing		81.5 (n=43)	73.4 (n=32)
Overweight/ Obesity		34.4% (n=61)	40.0% (n=50)
BMI z-score		0.73 (1.20) (n=61)	0.81 (1.03) (n=50)

Table 17: City of Wangaratta Summary Table

		Boys			Girls		
		Grade 2	Grade 4	Grade 6	Grade 2	Grade 4	Grade 6
<i>Health Behaviours</i>	Met Fruit Consumption Guidelines		64.0% (n=89)	76.5% (n=102)		82.4% (n=91)	79.2% (n=96)
	Met Vegetable Consumption Guidelines		20.2% (n=89)	16.7% (n=102)		18.7% (n=91)	14.6% (n=96)
	Met Water Consumption Guidelines		53.9% (n=89)	65.7% (n=102)		53.8% (n=91)	51.0% (n=96)
	Sugar-Sweetened Drink consumption (<once/day)		47.7% (n=88)	55.9% (n=102)		70.3% (n=91)	66.7% (n=96)
	Takeaway Consumption (once/fortnight or less)		50.6% (n=89)	60.8% (n=102)		68.1% (n=91)	66.7% (n=96)
	Unhealthy snack consumption (<once/day)		29.5% (n=88)	35.3% (n=102)		40.7% (n=91)	38.5% (n=96)
	Met PA Guidelines (self-report, 7/7 days)		22.5% (n=89)	38.2% (n=102)		19.8% (n=91)	22.9% (n=96)
	Met PA Guidelines (self-report, 5/7 days)		41.6% (n=89)	55.9% (n=102)		36.3% (n=91)	37.5% (n=96)
	Met PA Guidelines (accelerometry)		66.7% (n=45)	68.4% (n=38)		75.5% (n=49)	84.1% (n=44)
	Met Screen Time Guidelines (7 days)		50.0% (n=88)	64.7% (n=102)		64.8% (n=91)	64.6% (n=96)
	Use Active Transport to or from school		33.7% (n=89)	32.4% (n=102)		24.2% (n=91)	32.3% (n=96)
	Met Sleep Duration Guidelines		67.5% (n=83)	85.6% (n=97)		66.3% (n=86)	86.0% (n=86)
<i>Outcomes</i>	Physical wellbeing		82.8 (n=88)	84.5 (n=102)		79.2 (n=91)	81.9 (n=95)
	Psychosocial wellbeing		72.26 (n=88)	74.89 (n=102)		70.09 (n=91)	73.64 (n=94)
	Overweight/ Obesity	32.3% (n=93)	33.0% (n=88)	37.5% (n=96)	28.4% (n=88)	35.6% (n=87)	36.9 (n=84)
	BMI z-score	0.69 (1.27) (n=93)	0.54 (1.17) (n=88)	0.64 (1.23) (n=96)	0.50 (1.11) (n=88)	0.66 (1.17) (n=87)	0.60 (1.19) (n=84)

Table 18: City of Wodonga Summary Table

		Boys			Girls		
		Grade 2	Grade 4	Grade 6	Grade 2	Grade 4	Grade 6
<i>Health Behaviours</i>	Met Fruit Consumption Guidelines		66.4% (n=107)	66.1% (n=62)		75.2% (n=101)	75.3% (n=85)
	Met Vegetable Consumption Guidelines		23.4% (n=107)	17.7% (n=62)		20.8% (n=101)	20.0% (n=85)
	Met Water Consumption Guidelines		47.7% (n=107)	58.1% (n=62)		55.4% (n=101)	56.5% (n=85)
	Sugar-Sweetened Drink consumption (<once/day)		50.5% (n=107)	45.2% (n=62)		52.5% (n=101)	58.8% (n=85)
	Takeaway Consumption (once/fortnight or less)		49.5% (n=107)	54.8% (n=62)		63.4% (n=101)	63.5% (n=85)
	Unhealthy snack consumption (<once/day)		33.0% (n=107)	37.1% (n=62)		33.7% (n=101)	35.3% (n=85)
	Met PA Guidelines (self-report, 7/7 days)		20.6% (n=107)	27.4% (n=62)		12.9% (n=101)	16.5% (n=85)
	Met PA Guidelines (self-report, 5/7 days)		33.6% (n=107)	38.7% (n=62)		33.7% (n=101)	36.5% (n=85)
	Met PA Guidelines (accelerometry)		84.6% (n=52)	76.7% (n=30)		95.9% (n=49)	92.3% (n=39)
	Met Screen Time Guidelines (7 days)		36.4% (n=107)	32.3% (n=62)		51.5% (n=101)	54.1% (n=85)
	Use Active Transport to or from school		30.8% (n=107)	22.6% (n=62)		22.8% (n=101)	30.6% (n=85)
	Met Sleep Duration Guidelines		67.7% (n=96)	78.9% (n=57)		62.0% (n=92)	84.0% (n=81)
<i>Outcomes</i>	Physical wellbeing		78.5 (n=107)	80.0 (n=61)		77.8 (n=101)	81.0 (n=85)
	Psychosocial wellbeing		65.84 (n=107)	69.84 (n=62)		68.32 (n=101)	69.31 (n=85)
	Overweight/ Obesity	27.0% (n=89)	37.3% (n=102)	39.7% (n=58)	33.3% (n=105)	39.6% (n=96)	39.7% (n=78)
	BMI z-score	0.49 (1.32) (n=89)	0.80 (1.18) (n=102)	0.50 (1.46) (n=58)	0.64 (1.14) (n=105)	0.64 (1.11) (n=96)	0.66 (1.30) (n=78)

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RESPOND is a shared community approach to healthy children.

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