



SPANS 2010

NSW

Schools Physical Activity
and Nutrition Survey

Executive Summary



THE UNIVERSITY OF
SYDNEY

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EXECUTIVE SUMMARY

Background

Since 1985 the proportion of Australian children who are overweight has doubled and the prevalence of obesity trebled. The economic, social and health implications associated with unhealthy weight gain are substantial and of concern to all Australians. Excess weight gain increases the likelihood of developing chronic diseases including type-2 diabetes, cardiovascular disease, and fatty liver disease. More importantly, childhood overweight and obesity tracks into adulthood.

The causes of this rapid increase in the prevalence of overweight and obesity among children and adolescents (and adults) are complex and are associated with significant changes in the environment. The term 'obesogenic environment' has been coined to describe how the current environment promotes positive energy balance. That is, our current environment makes it more likely for people to eat more and exercise less and, consequently gain excess weight.

Key behaviours such as physical activity, sedentary activities, transport options, dietary habits, and patterns that contribute to unhealthy weight gain are modifiable. Thus, it is important to monitor a range of factors associated with child and adolescent weight status including modifiable behaviours. Survey information can be used to guide policies and interventions which promote healthy weight and lifestyles among young people, and monitor the overall impact of recent interventions and policies.

Survey aims and rationale

The NSW Schools Physical Activity and Nutrition Survey (SPANS) 2010 is the fourth in a series of school-based surveys of NSW school students which provides valuable trend information on the weight status and associated behaviours of a representative sample of children and adolescents.

This survey has been designed to update information provided by previous NSW surveys of school children conducted in 1997 and 2004, and report on the trajectory of the prevalence of childhood overweight and obesity and on key modifiable weight related behaviours. A major addition to the 2010 SPANS was asking the parents of students in Years K, 2 and 4 to complete a questionnaire on their child's weight related behaviours. As such there are no trend data available for this age cohort's weight related behaviours.

Further, the primary aim of SPANS 2010 is to monitor progress towards NSW State Plan and State Health Plan priorities and targets. The NSW State Plan identifies the prevention of overweight and obesity as a major State priority and sets the following target, that the NSW government should aim to:

*Reduce the percentage of children who are overweight and obese to 25% by 2010,
and to 22% by 2016*

Survey methods

SPANS 2010 was a representative population survey of 8,100 NSW school students in Years K, 2, 4, 6, 8 and 10, conducted in Term 1, 2010. Students from 101 schools in each educational sector (Government, Catholic, and Independent) in urban and rural areas were invited to participate. All students were measured for height, weight, and waist circumference. Fundamental movement skills proficiency was assessed among Year 2 and older students, and cardio-respiratory fitness was assessed among Year 4 and older students. Information on weight related behaviours was collected by questionnaire where parents of children in Years K, 2 and 4 completed the questionnaire on behalf of their child and students in Years 6, 8 and 10 self-reported.

For the analysis post-stratification population weights were applied. The weights were adjusted for differences in demographic characteristics (i.e., sex, Year group, educational sector, and rurality) and calculated from the original sampling frame provided by the Australian Council for Educational Research (ACER).

For each variable of interest comparisons were conducted across sociodemographic and body mass index (BMI) categories.

Where available trend data are presented for each variable of interest, however because data from 1985 and 1997 were unable to be post weighted information relating to trends are based on unweighted data.

A School Physical Activity Environment Questionnaire was included in the mail out of survey information sheets, consent forms and questionnaires to each participating school. The Principal (or Liaison Teacher) at each participating school was asked to complete a questionnaire which sought information on the facilities and the number of staff available for physical activities and sport at the school.

SUMMARY OF FINDINGS

The following summary provides the prevalence for 2010, trend information where available, and where applicable consistent sociodemographic differences associated with key behaviours.

RESPONSE RATE

The school response rate was 73% and the overall student response rate was 57%. Although the 2010 student response rates were slightly lower than the 1997 (87%) and 2004 (65%) SPANS, these values are

acceptable by national and international standards for school based surveys of children. The SPANS 2010 sample was demographically similar to the NSW population, indicating that the findings of the survey are generalisable to all school children in NSW.

WEIGHT STATUS

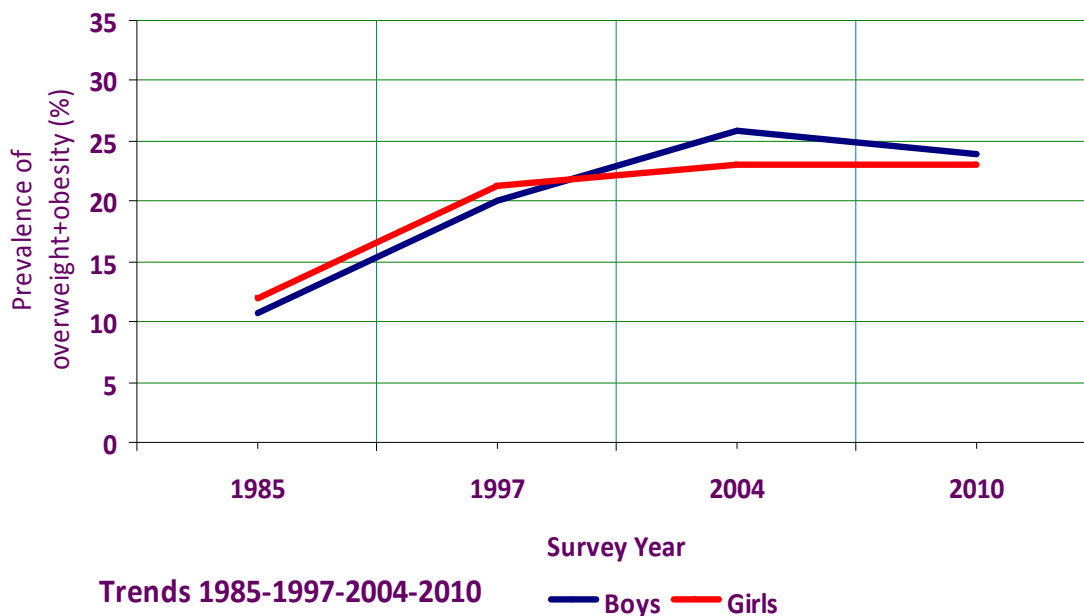
In 2010, approximately 70% of all students' BMI was in the healthy range and 7.9% of students were classified underweight. The overall prevalence of overweight, obesity and combined overweight and obesity among all students was 17.1%, 5.8%, and 22.8%, respectively.

Trends

Between 2004 and 2010, the prevalence of combined overweight and obesity among boys decreased for most Year groups (except Years K and 2), with an overall non-significant annual decrease in prevalence of 0.32%. For girls, the prevalence of combined overweight and obesity increased non-significantly between 2004 and 2010 at 0.02% per annum, suggesting that the prevalence has stabilised.

These trends between 2004 and 2010 are in contrast to earlier trends that had showed consistent increases in combined overweight and obesity since 1985. The pattern of trends is shown in the Figure 1 below.

Figure 1 Prevalence of combined overweight and obesity among boys and girls for the 1985, 1997, 2004 and 2010 NSW data sets (%) (Unweighted data)



Sociodemographic associations

There was a clear association between Year group and the prevalence of combined overweight and obesity. The prevalence increased from 18.7% among Year K students to 27.4% among Year 4 students then declined to 22.0% among Year 10 students. The prevalence of combined overweight and obesity were higher among girls than boys for Years K, 2 and 4, but this pattern reversed for Years 6, 8 and 10.

Among boys, the overall prevalence of overweight, obesity and combined overweight and obesity was 17.6%, 6.4%, and 24%, respectively. The prevalence of combined overweight and obesity increased from 16% among Year K boys to 30% among Year 6 boys then declined to 23-24% among Year 8 and 10 boys. The prevalence of overweight peaked among Year 6 boys (23%) and the prevalence of obesity peaked among Year 2 boys (8%).

Among girls, the overall prevalence of overweight, obesity, and combined overweight and obesity was 16.5%, 5%, and 21.5%, respectively. The prevalence of combined overweight and obesity increased from 21.1% among Year K girls to 29.1% among Year 4 girls then declined to 19-20% among high school girls.

Although only statistically significant in some cases, there were strong associations between combined overweight and obesity and students' socioeconomic status (SES), cultural background, and their rurality. Overall the prevalence of combined overweight and obesity was significantly higher among students in the lowest SES tertile compared with students in the highest SES tertile. Similarly, the overall prevalence of combined overweight and obesity was significantly higher among male students from a Middle-Eastern background compared with students from an English-speaking background. The prevalence of combined overweight and obesity was consistently significantly lower among rural primary school boys compared with their urban peers.

PHYSICAL ACTIVITY – YEARS K, 2 AND 4

Less than half of Year K, 2 and 4 students meet the Australian physical activity guideline for young people. Only 44% of Year K students meet the guideline with the prevalence increasing to 49% among Year 4 students.

Sociodemographic associations

Year K, 2 and 4 students from Asian and Middle-Eastern cultural backgrounds were significantly less likely to meet the guideline compared with English-speaking peers. Furthermore, the prevalence of not meeting the physical activity guideline was lower among urban students, significantly so for girls, compared with their rural counterparts. Only 20% of Year K, 2 and 4 parents knew what volume of activity the physical activity guideline recommends for children.

Active After School Community

Overall, less than one-fifth of primary school students participated in the national Active After School Community (AASC) program. A significantly higher proportion of boys participated compared with girls. The prevalence of meeting the physical activity guideline was not significantly higher among students who participated in AASC programs compared with their peers who did not participate in AASC programs.

PHYSICAL ACTIVITY – YEARS 6, 8 AND 10

Less than two thirds (63%) of students in Years 6, 8 and 10 met the Australian physical activity guideline during summer school terms, and only half (51%) met the guideline during winter school terms. While the prevalence of meeting the physical activity guideline among NSW school students was higher than those reported in other recent Australian studies, the finding indicates that a substantial proportion of students are less active than recommended.

Trends

Between 1997 and 2004, there were significant gains each year in the proportion of Year 6, 8, and 10 students' meeting the physical activity guideline during summer (about 5% per annum) and winter (approximately 1% per annum) school terms. However, between 2004 and 2010 there was a significant decline in students' physical activity, with the exception of Year 10 girls, during both summer and winter school terms. Since 2004, the prevalence of meeting the guideline decreased at an annual rate of approximately 2.2% for boys and 1.2% for girls. The pattern of trends is shown in Figures 2 and 3 below.

Figure 2 Prevalence of 60 minutes per day of MVPA during summer (left panel) and winter (right panel) school terms among boys and girls in Year 6 in 2004 and 2010 (%) [unweighted data]

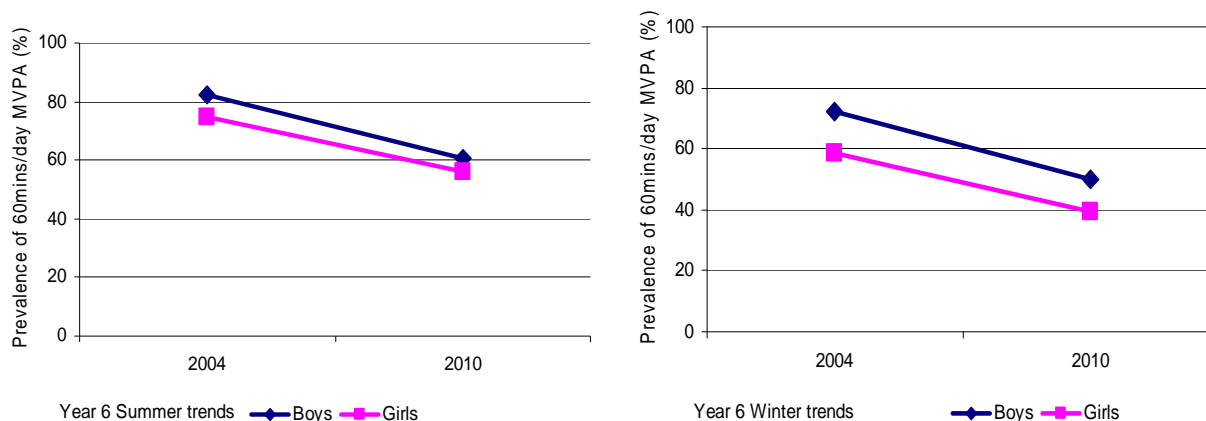
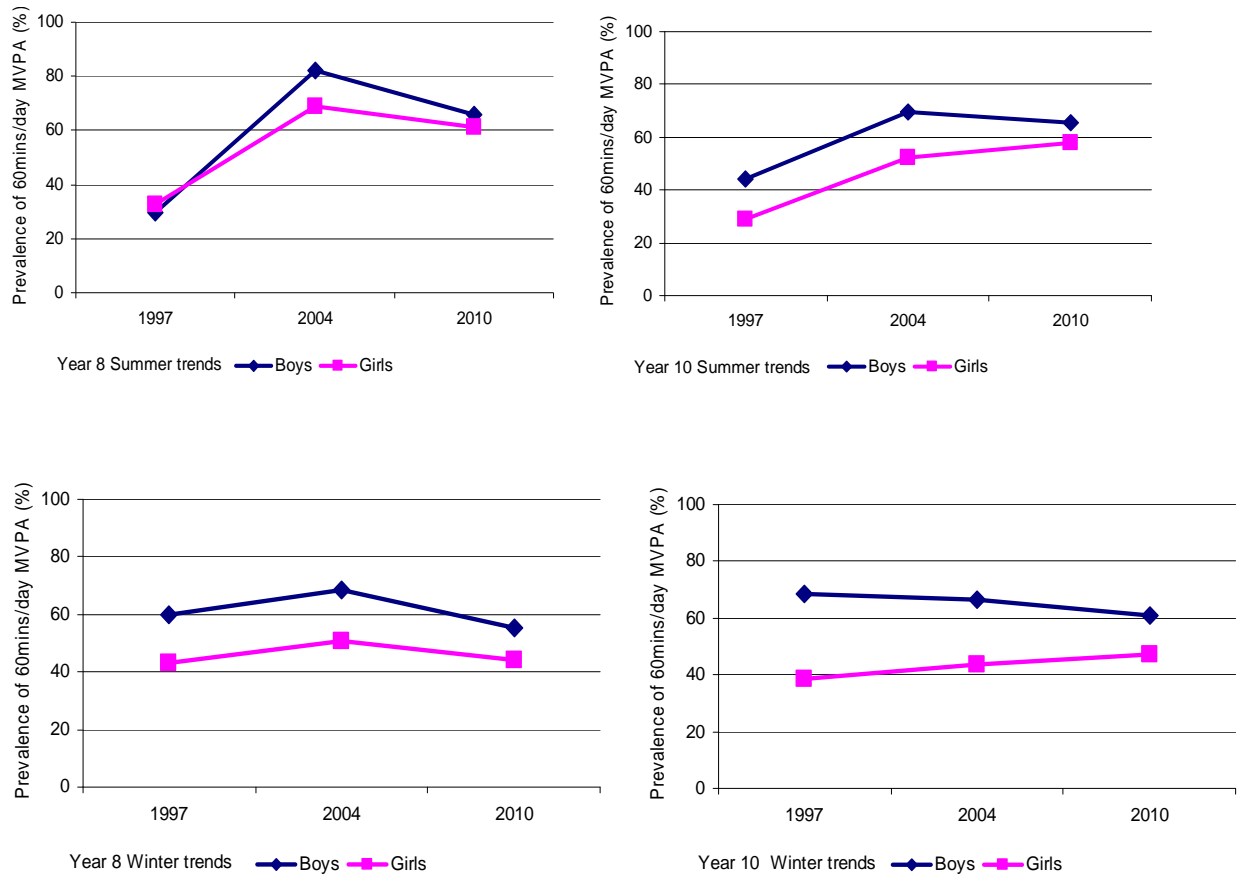


Figure 3 Prevalence of 60 minutes per day of MVPA during summer (left panels) and winter (right panels) school terms among boys and girls in Years 8 and 10 in 1997, 2004, and 2010 (%) [unweighted data]



Sociodemographic associations

Physical activity levels were significantly higher among boys, compared with girls. The prevalence of physical activity was consistently higher among students from high SES backgrounds, compared with students from middle and low SES groups, and this was statistically significant for secondary school students. Students from Asian cultural backgrounds and, girls from Middle-Eastern cultural backgrounds, were significantly less active, compared with students from English-speaking backgrounds.

FUNDAMENTAL MOVEMENT SKILLS (FMS)

Findings from 2010 SPANS indicated boys were generally more proficient at object-control skills and for the locomotor skills that are required for sport - the sprint run and vertical jump while girls more proficient at the leap and side gallop, locomotor skills which are more akin to dance and gymnastics. By Year 4, students should have mastery of FMS however the prevalence of advanced skills remained low for the sprint run, (40%) the vertical jump (33%), the side gallop (64%) the leap (13% for boys, 27% for girls), the kick (43% for

boys, 8% for girls) the over-arm throw (44% for boys, 11% for girls) and the catch (64% for boys, 43% for girls).

Trends

Between 1997 and 2004 there were statistically significant improvements in the prevalence of mastery of FMS among NSW school children, especially boys. Since 2004 however only some skills (sprint run, side gallop, and catch) showed small improvement in the prevalence of advanced skills while the proportion of students demonstrating advanced skills for the vertical jump, over-arm throw and leap declined between 2004 and 2010. The pattern of trends for the sprint run, and vertical jump are shown in the Figures 4 and 5 below.

Figure 4 Prevalence of mastery of the sprint run in 1997, 2004 and 2010 by sex and Year group (%) [unweighted data]

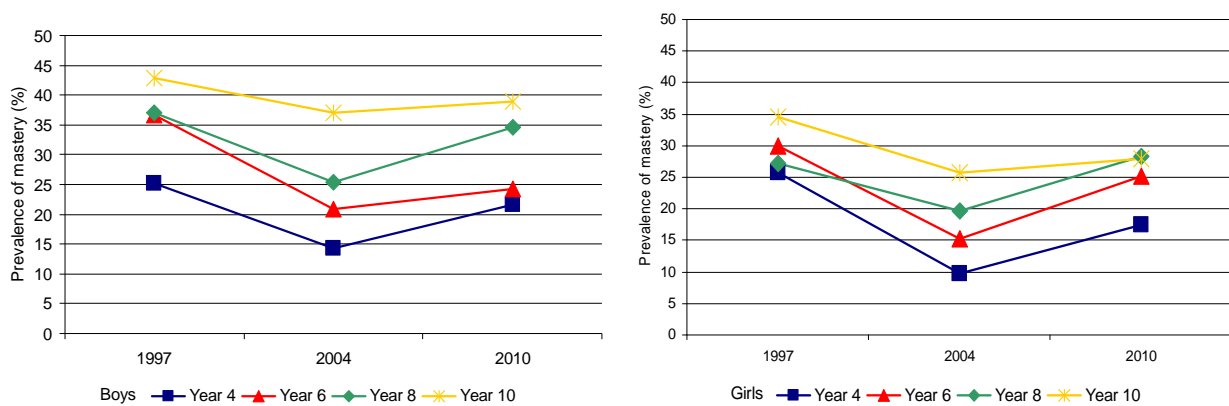
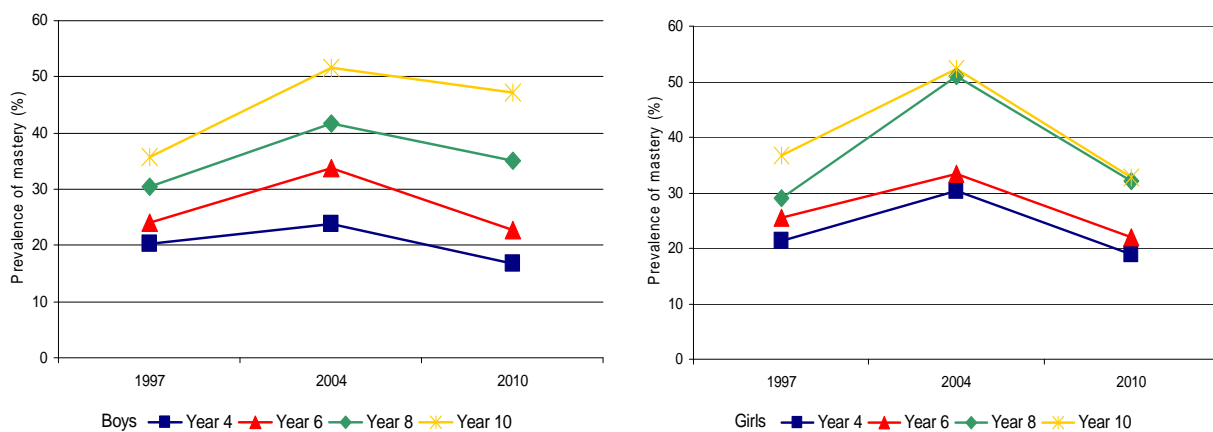


Figure 5 Prevalence of mastery of the vertical jump in 1997, 2004, and 2010 by sex and Year group (%)



Sociodemographic associations

Although not consistently significant, the prevalence of advanced skills for all seven FMS was lower among students from a lower socioeconomic background. Furthermore, the prevalence of advanced skills was lower among students from Middle-Eastern and Asian cultural backgrounds compared with students from English-speaking backgrounds. This survey also found that overweight and obese boys and girls displayed a significantly lower skill proficiency in the locomotor skills (sprint run, vertical jump, leap and side gallop) compared with their healthy weight peers.

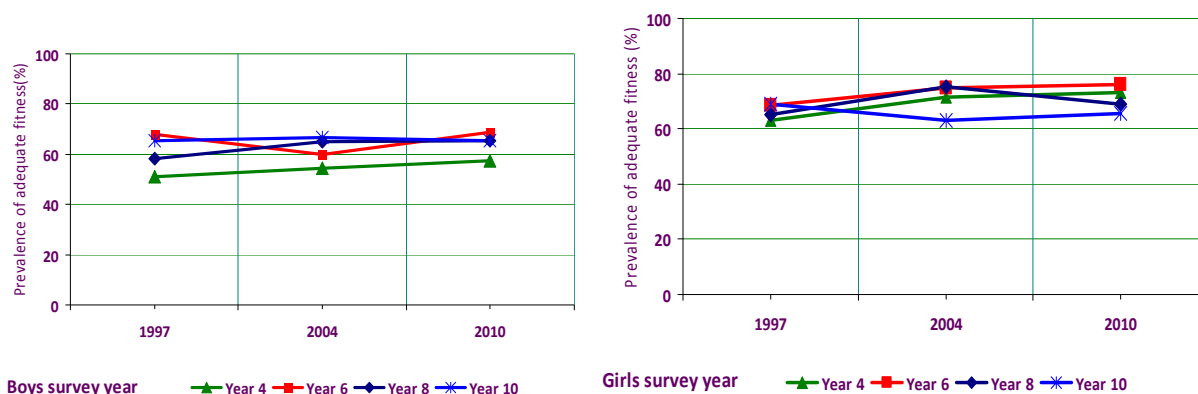
CARDIORESPIRATORY FITNESS

Two thirds of NSW schoolchildren in Years 4, 6, 8, and 10 were adequately fit based on the 20 meter sprint run test (20-MSRT, 'beep test'). Although two-thirds of NSW students' demonstrated adequate cardiorespiratory fitness, the remaining third are at increased risk of developing cardiovascular disease, and other chronic diseases as a result of low cardiorespiratory fitness levels.

Trends

There were no significant increases in the prevalence of adequate cardiorespiratory fitness between 1997 and 2004 among boys. However, between 2004 and 2010 the prevalence increased significantly at a rate of 0.7% per annum. Conversely, the proportion of girls who demonstrated adequate cardiorespiratory fitness increased at a rate of 0.7% per annum between 1997 and 2004, but between 2004 and 2010 there were signs that cardiorespiratory fitness among girls was declining. The pattern of trends is shown in the Figure 5 below.

Figure 5 Prevalence of adequate cardiorespiratory fitness among boys and girls in by Year group in 1997, 2004 and 2010(%) [unweighted data]



Sociodemographic associations

Greater proportions of students in the highest tertile of socioeconomic status were adequately fit compared with students in other SES tertiles. Students from Middle-Eastern cultural backgrounds had a lower prevalence of adequate cardiorespiratory fitness however this was only statistically significant for girls. The prevalence of cardiorespiratory fitness was significantly lower among overweight and obese students compared with students in the healthy weight category. These findings were consistent with those from 2004 SPANS.

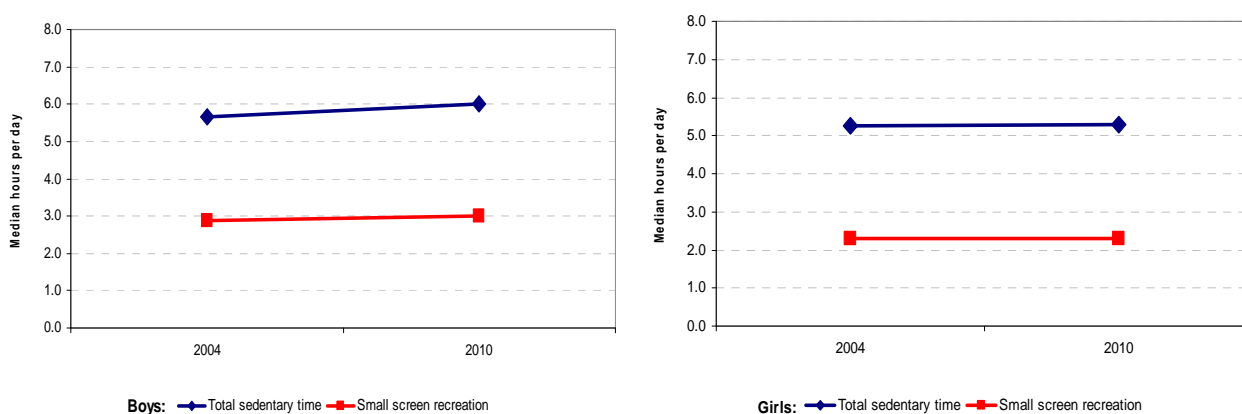
SEDENTARY BEHAVIOURS

Time spent in sedentary behaviour, outside of school hours, increased across Year groups and older boys tended to spend slightly more time in sedentary behaviour compared with their female peers. On a usual week day, students in Years K, 2 and 4 spend approximately 3 to 3.5 hours, and Years 6, 8 and 10 students spend 4 to 6 hours in sedentary behaviours. On a usual weekend day, students in Years K, 2 and 4 spend approximately 5.5 to 6.5 hours, and Years 6, 8 and 10 students spend 5.5 to 9 hours in sedentary behaviours.

Trends

In 2004 boys spent 5.7 and 2.9 hours per day in sedentary behaviours and screen time, respectively and in 2010 these times increased respectively to 6.0 hours and 3.0 hours per day. The average rate of increase between 2004 and 2010 among boys was 3.3 minutes and 1.2 minutes per year for sedentary behaviours and screen time, respectively. For girls, the median time spent in sedentary behaviours and screen time was 5.3 hours and 2.3 hours per day, respectively in 2004 and 2010.

Figure 6 Median hours per day spent in total sedentary behaviour and small screen recreation among boys and girls in Years 6, 8 and 10 in 2004 and 2010[unweighted data]



Sociodemographic associations

Urban students tended to spend more time in sedentary behaviours than their urban peers, particularly on weekend days. However, this was only significant in a few cases. Primary school girls from the low SES tertile were more sedentary than girls in the high SES tertile, but there were no clear differences between boys. Middle-eastern students, particular primary school boys and girls on week days spent more hours engaged in sedentary behaviours compared with English-speaking peers.

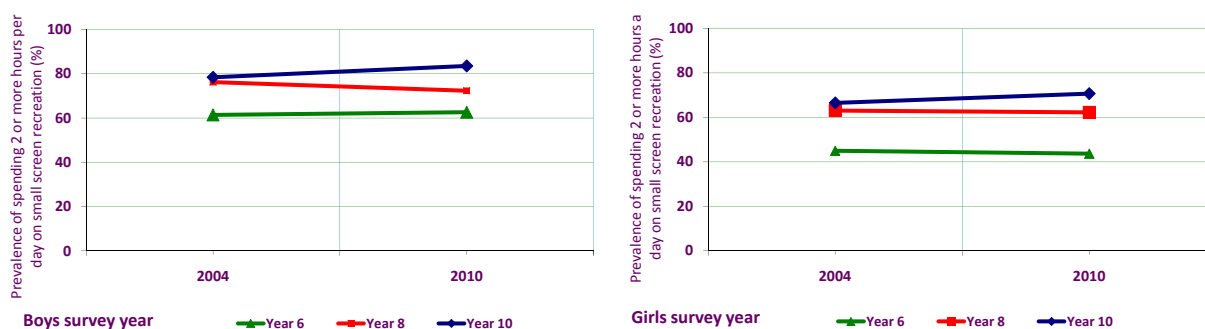
Screen time

Irrespective of weekday or weekend day, the most common sedentary activity among all students was small screen recreation (SSR), with the median time spent on SSR increasing significantly with age. The second most common sedentary behaviours were cultural activities among primary school students and educational activities among secondary school students.

On a usual weekday, a third of Year K and 44% of primary students spent more than two hours on SSR, while 61% of secondary school students do so. On weekend days 80% of primary and 85% of secondary school students, spend two or more hours on SSR. The prevalence of spending two or more hours on SSR was consistently higher among boys and also among students from low SES tertile compared with students from a high SES tertile.

There was a non-significant increase of 0.3% per annum in the overall prevalence of students' exceeding the screen time guideline of no more than two hours spent on SSR between 2004 and 2010. An increase in prevalence of spending two or more hours on SSR was only significant among Year 10 students with an annual rate of increase of 0.85% for boys and 0.75% for girls. The patterns of trends by Year group are shown in the Figure 7 below.

Figure 7 Prevalence of spending 2 or more hours per day on small screen recreation among boys and girls, by Year group for 2004 and 2010 (%) [unweighted data]



Approximately half of parents of students in Years K, 2 and 4, and students in Year 6, 8 and 10, were not aware what the recommended guideline for children’s screen time, independent of students’ sociodemographic characteristics.

One fifth of students in Years K and 2 had televisions in their bedrooms, with the prevalence increasing across Year groups, and with over two fifths of Year 10 students reporting a television in their bedroom. Thirteen percent of primary and 37% of high school students indicated that their parents never set rules on their TV and electronic game use.

FOOD CONSUMPTION

While most primary school students met the recommended consumption of one serve of fruit per day, less than half of the adolescent boys and girls in Years 8 and 10 consumed the recommended three serves of fruit per day. When fruit juice was included as a serve of fruit, the proportion of secondary school students meeting the recommended intake increased from 42% to 54%. Only half of the students in Years K and 2, one-third of students in Years 4 and 6, and one-fifth of students in Years 8 and 10 met the recommended intake of vegetables.

Fruit juice was a popular beverage, especially among younger students (Years K to 4) with one-third drinking more than 1 cup per day. Soft drinks, cordials, and sports drinks were consumed on a daily basis by 10-20% of students, with approximately 5% reporting drinking 2 or more cups per day.

Milk consumption was generally low, with one-third of younger students (Years K to 4) and two-thirds of older students (Years 6 to 10) reporting that they consumed less than one cup per day. Girls tended to consume smaller amounts than boys. The most popular type of milk consumed was whole milk, followed by low/reduced fat or skim milk.

A variety of other energy-dense nutrient-poor foods or ‘extra’ foods were commonly consumed. Hot chips, one of the most popular ‘extra’ foods, were consumed at least once per week by two-thirds of students, with 15% consuming hot chips at least 3 times per week. The highest consumers were students in the low socioeconomic group, and students from Middle-Eastern cultural backgrounds. ‘Extra’ snack foods such as crisps and salty snacks, biscuits, cakes, donuts and muesli bars, confectionery and ice cream or ice blocks were consumed on an even more frequent basis. In brief, all of these ‘extra’ snack foods were reportedly consumed by approximately one-third of students as often as 3 to 6 times per week and by approximately 10% of students on a daily basis.

Processed meats such as sausages and ham were also commonly consumed with one-third to half of students reporting eating these meats 3 or more times per week. Although processed meats are also good sources of iron and zinc, they tend to be high in fat, saturated fat, and salt and should be consumed only occasionally.

FOOD BEHAVIOURS

Food behaviours that negatively influence dietary intake were prevalent among NSW school students. These included skipping breakfast, eating dinner in front of the television, eating foods from fast food outlets, purchasing soft drink from the school canteen and school vending machine, and the offering of sweets to younger children by their parents for good behaviour.

While the majority of children reported consuming breakfast daily, adolescents (Years 6 to 10) were the least likely to consume breakfast daily, especially girls. Approximately half of the students ate dinner in front of the television at least once per week, and this practice increased with age. Using food as a reward for good behaviour was prevalent among parents of young children, especially parents of Year K students, with two-thirds of their parents usually or sometimes offering sweets as a reward for good behaviour.

Approximately one-quarter of students reported consuming meals or snacks from a fast food outlet at least once per week. More than one-quarter of Year 6, 8 and 10 students reported that soft drink was usually available in the home environment, with the prevalence increasing with age. One in six adolescent students reported usually consuming soft drinks with meals at home, and a few reported usually consuming soft drinks with lunch at school.

SCHOOL TRAVEL

The morning and afternoon school commuting patterns of students in Years K and 2 were relatively consistent, with over half being driven by car to and from school, approximately one fifth used active travel (i.e., walk, cycle, scooter, or skateboard) or a mixed mode (i.e., mix of passive and active travel) and less than 10% used public transport to commute to and from school.

By Year 4, school commuting patterns showed change. Being driven was still the most prevalent travel mode to school and approximately 10% used public transport. However, for the home journey, there was a small decline in the prevalence of car trips and a small increase in the proportion of students using public transport on the home journey.

The highest prevalence of active travel was among Year 6 students, with slightly more boys reporting this mode than girls. Approximately 17% and 24% of girls and boys, respectively, used active travel to commute

to school with these proportions increasing to 22% and 29% for the commute home from school. The increase in active travel coincided with a slight decrease in the prevalences of being driven or using mixed modes between the morning and afternoon journeys.

The school travel patterns of high school students were quite different to those of primary school students. Mixed modes of travel were the dominate travel modes among Year 8 and 10 students (45-50%) and this was consistent for the commute to and from school. The most striking difference between the morning and afternoon school commute among high school students was a 50% reduction in car trips; approximately 20% were driven to school and 10% driven home from school. Coinciding with the reduced prevalence of been driven home from school were small increases (2-6%) in the proportion of students using active and public transport to commute home.

In general, the findings also indicated that there were no consistent significant associations between school commuting and sociodemographic characteristics and BMI category. Furthermore the distribution of travel modes by sociodemographic characteristics, and BMI category were not different between morning and afternoon trips to and from school.

SCHOOLS' PHYSICAL ACTIVITY ENVIRONMENT

Primary schools

Over 90% of primary schools reported that the classroom teacher was responsible for teaching physical education (PE). Close to 50% of primary schools used external providers to teach PE, and 25% used specialist PE teachers or parents; however, this proportion was much lower in urban schools. Around 20% of primary schools used 'release from face-to-face' (RFF) teachers to teach PE. Sport was mostly conducted by classroom teachers and around 20% of schools involved outside sport coaches. Similar to PE, a greater proportion of rural schools used parents to teach sport.

Around 12% of primary schools allocated less than 90 minutes per week for PE and sport to Years 4 and 6 students, and around 30% of schools allocated the same amount of time for Year 2. Less than 15% of schools allocated between 91 to 119 minutes per week for sport and PE. Approximately half of the schools allocated 120 to 150 minutes per week, and close to 20% allocated more than 150 minutes per week, for sport and PE.

Since 1997 there has been increase in the proportion of primary schools that used external providers for PE education and outside coaches to teach sport, especially among urban schools.

High schools

Just over two-thirds of urban high schools reported that PE sessions were conducted by a Personal Development, Health and Physical Education (PDHPE) teacher only, one-third by PDHPE teachers plus teachers from other key learning areas (KLAs,) and close to 10% by external providers. Among rural high schools, a slightly larger proportion of PDHPE teachers plus teachers from other KLAs were responsible for teaching PE, followed by PDHPE teachers only. No external providers were used. For sport, most high schools used classroom teachers. A smaller proportion involved specialist PE teachers and outside sport coaches, particularly urban high schools.

Less than 10% of secondary schools allocated less than two hours per week for sport and PE. Around 20% of schools allocated between 120 to 150 minutes per week for sport and PE, and just over 70% of secondary schools allocated more than 150 minutes per week for sport and PE.

KEY FINDINGS

The Table below summarises the key findings of SPANS 2010 by indicator variable in terms of the prevalences, 2004-2010 trend data (when available) and sociodemographic and BMI category differentials when they were consistently statistically significant across Year groups. The reference categories for sociodemographic comparisons were; urban, high SES tertile; English-speaking background and; health BMI category.

Indicator variable	Prevalence (%) (<i>weighted data</i>)	Sociodemographic differentials (where consistent statistically significant across Year groups)	Trend 2004-10 Average annual change (%) (<i>unweighted data</i>)
BMI categories			
Overweight	All: 17.1% Boys: 17.6% Girls: 16.5%	Combined overweight and obesity higher among low SES	Not significant Boys: -0.18 Girls: 0.08
Obesity	All: 5.8% Boys: 6.4% Girls: 5.0%		Not significant Boys: -0.13 Girls: -0.05
Combined overweight and	All: 22.8% Boys: 24.0%		Not significant Boys: -0.32

Indicator variable	Prevalence (%) (<i>weighted data</i>)	Sociodemographic differentials (where consistent statistically significant across Year groups)	Trend 2004-10 Average annual change (%) (<i>unweighted data</i>)
obesity	Girls: 21.5%	tertile students	Girls: 0.02
Food consumption and behaviours			
Meet fruit guideline	Primary school: 95.9% High school:42.1%	Nil	<i>Not available</i>
Meet vegetable guideline	Primary school: 43.6% High school 20.1%	Nil	<i>Not available</i>
Drink low fat/skim milk	Primary school: 25.0% High school 29.8%	Lower among girls from low SES tertile	<i>Not available</i>
Drink more than 1 cup of soft drink per day	Primary school: 13.2% High school 13.8%	Nil	<i>Not available</i>
Eating hot chips 1 or more times/week	Primary school: 64.7% High school 66.2%	Higher among girls from low SES tertile Higher among Year K 2 4 students from Middle-Eastern cultural backgrounds	<i>Not available</i>
Eat breakfast daily	Primary school: 84.6% High school boys: 73.2% High school girls: 57.6%	Lower among high school girls, compared with boys. Lower among boys in the low SES tertile Lower among girls from Middle-Eastern cultural backgrounds	<i>Not available</i>
Eat dinner in front of the TV 5 or more day/week	Primary school: 19.3% High school: 23.3%	Higher among girls from Asian cultural backgrounds	<i>Not available</i>
Parent usually offers child water to drink with meals or snacks	Years K,2 ,4: 83.8%	Not tested	<i>Not available</i>

Indicator variable	Prevalence (%) (<i>weighted data</i>)	Sociodemographic differentials (where consistent statistically significant across Year groups)	Trend 2004-10 Average annual change (%) (<i>unweighted data</i>)
Child sometimes/usually rewarded with sweets for good behaviour	Primary school: 59.7% High school: 40.1%	Not tested	<i>Not available</i>
Eating takeaway meals or snacks from a fast food outlet one or more times per week	Primary school: 24.3% High school: 28.8%	Higher among boys from Asian cultural backgrounds	<i>Not available</i>
Usually have soft drinks available in the home	Years 6, 8, 10: 29.3%	Not tested	<i>Not available</i>
Physical activity			
Year K, 2, 4 students who spend 60 minutes everyday in physical activity	Years K,2 ,4: 46.4%	Lower among Year 2 and 4 girls Lower among rural girls Lower among students from Asian and Middle-Eastern cultural backgrounds	<i>Not available</i>
Parents of Year K, 2, 4 students who do not know the physical activity guideline	Years K,2 4: 37.2%	Nil	<i>Not available</i>
Year K , 2, 4, 6 students who attended an Active After School Community	Years K,2 ,4 ,6: 19.1%	Lower among girls Higher among boys from middle SES tertile Lower among boys from Asian and Middle-Eastern cultural	<i>Not available</i>

Indicator variable	Prevalence (%) (<i>weighted data</i>)	Sociodemographic differentials (where consistent statistically significant across Year groups)	Trend 2004-10 Average annual change (%) (<i>unweighted data</i>)
program in the last 12 months		backgrounds Higher among overweight boys	
Years 6, 8, 10 meeting the guideline in summer school terms	Years 6, 8, 10: 62.7%	Lower among girls Lower among students in the low SES tertile Lower among boys from Asian cultural backgrounds Lower among girls from Asian and Middle-Eastern cultural backgrounds	Significant Boys: -2.23 Girls: -1.15
Years 6, 8, 10 meeting the guideline in winter school terms	Years 6, 8, 10: 51.3%	Lower among girls Lower among boys in the low SES tertile Lower among boys from Asian cultural backgrounds Lower among girls from Asian and Middle-Eastern cultural backgrounds Lower among obese boys	Significant Boys: -2.2 Girls: -1.23
Years 6, 8, 10 students who do not know the physical activity guideline	Years 6, 8, 10: 34.5%	Nil	<i>Not available</i>
School travel			
Car only to school	Years K, 2, 4: 47.8% Year 6: 33.8% High school: 17.4%	Nil	<i>Not available</i>
Active travel only to school	Years K, 2, 4: 17.1% Year 6: 19.8% High school: 13.9%	Nil	<i>Not available</i>

Indicator variable	Prevalence (%) (<i>weighted data</i>)	Sociodemographic differentials (where consistent statistically significant across Year groups)	Trend 2004-10 Average annual change (%) (<i>unweighted data</i>)
Public transport only <u>to</u> school	Years K, 2, 4: 7.5% Year 6: 9.9% High school: 19.8%	Nil	<i>Not available</i>
Mixed mode travel <u>to</u> school	Years K, 2, 4: 20.9% Year 6: 33.0% High school: 46.8%	Nil	<i>Not available</i>
Car only home <u>from</u> school	Years K, 2, 4: 45.6% Year 6: 28.7% High school: 8.5%	Nil	<i>Not available</i>
Active travel only home <u>from</u> school	Years K, 2, 4: 17.0% Year 6: 23.9% High school: 16.5%	Nil	<i>Not available</i>
Public transport only home <u>from</u> school	Years K, 2, 4: 0% Year 6: 23.9% High school: 22.8%	Nil	<i>Not available</i>
Mixed mode travel home <u>from</u> school	Years K, 2, 4: 20.8% Year 6: 11.5% High school: 47.6%	Nil	<i>Not available</i>
Fundamental movement skills			
Mastery of sprint run	Boys: 30.5% Girls: 24.6%	Lower proficiency among overweight and obese students	Significant Boys: 1.05 Girls: 1.27
Mastery of vertical jump	Boys: 31.2% Girls: 26.4%	Lower proficiency among girls from low SES tertile Lower proficiency among overweight and obese students	Significant Boys: -1.05 Girls: -2.60
Mastery of side gallop	Boys: 44.5% Girls: 49.9%	Higher proficiency among girls	<i>Not available</i>
Mastery of leap	Boys: 31.2% Girls: 26.4%	Higher proficiency among girls	<i>Not available</i>

Indicator variable	Prevalence (%) (<i>weighted data</i>)	Sociodemographic differentials (where consistent statistically significant across Year groups)	Trend 2004-10 Average annual change (%) (<i>unweighted data</i>)
Mastery of kick	Boys: 42.3% Girls: 9.4%	Higher proficiency among boys	Not Significant Boys: -0.03 Significant Girls: 0.72
Mastery of over-arm throw	Boys: 36.6% Girls: 8.6%	Higher proficiency among boys	Significant Boys: -1.18 Not Significant Girls: -0.18
Mastery of catch	Boys: 62.9% Girls: 42.3%	Higher proficiency among boys	Significant Boys: 1.40 Girls: 1.23
Cardio-respiratory fitness			
Classified as 'adequately fit'.	Primary school: 72.1% High school: 66.5%	Lower among students from low and middle SES tertiles Lower among girls from Middle-Eastern cultural backgrounds Lower among overweight students Lower among obese students	Significant Boys: 0.73 Not Significant Girls: -0.17
Sedentary behaviours (screen time)			
Not meeting daily screen time guideline	Primary school Boys: 58.9% Girls: 48.0% High school Boys: 80.3% Girls: 68.1%		<i>Not available</i>
<u>Only</u> Years 6, 8, 10 not meeting daily	Years 6, 8, 10 Boys: 58.9%	Higher among boys Higher among urban primary	Not Significant Boys: 0.2

Indicator variable	Prevalence (%) (<i>weighted data</i>)	Sociodemographic differentials (where consistent statistically significant across Year groups)	Trend 2004-10 Average annual change (%) (<i>unweighted data</i>)
screen time guideline	Years 6 ,8, 10 Girls: 48.0%	school boys Higher among urban high school boys and girls Higher among boys and girls from the low SES tertile	Not Significant Girls: 0.3
Not meeting screen time guideline on week days	Primary school Boys: 47.2% Girls: 35.4% High school Boys:66.5% Girls: 55.0%	Higher among boys Higher among boys and girls from the low SES tertile	<i>Not available</i>
Not meeting screen time guideline on weekend days	Primary school Boys: 82.3% Girls: 77.6% High school Boys:88.9% Girls: 80.4%	Higher among boys	<i>Not available</i>
Parents and students who do not know the screen time guideline	Parents (Years K 2 4): 49.5% Students (Years 6 8 10): 48.0%	Nil	<i>Not available</i>
Family never sets rules on child's TV or electronic game use	Primary school: 12.9% High school: 36.9%	Nil	<i>Not available</i>
Child has a TV in their bedroom.	Primary school: 27.4% High school: 35.5%	Higher among boys and girls from low SES tertile	<i>Not available</i>

POTENTIAL ACTION STRATEGIES

The SPANS 2010 survey provides a comprehensive snapshot of the weight status and modifiable weight related behaviours of school students across NSW. Further, SPANS provides valuable information for guiding policies and programs to reduce childhood obesity and promote children's health. The information can be used directly to identify issues of concern and priorities for action.

Although levels of overweight and obesity among NSW school children remain high, the prevalence of overweight and obesity has not followed the anticipated upward trajectory observed in previous survey years. The findings indicate that while the portfolio of interventions and awareness raising initiatives that have been implemented in NSW since 2004, through a range of organizations have had an effect, further ongoing action is required. One in five NSW children are overweight or obese and the evidence from other public health problems (e.g., tobacco, drink driving) highlight the substantial latency period to affect behavioural change. Efforts to decrease the incidence of unhealthy weight gain in children will require long term action (i.e., potentially 5-10 years).

Comprehensive approaches to obesity prevention

For any strategies to reduce the incidence and prevalence of overweight and obesity among children, and ensure that changes occur across a range of social and cultural groups, it will be essential to strengthen, adapt, and/or enhance the current portfolio of interventions. Importantly, within the school setting there is scope to explore barriers to implementing healthy eating and physical activity programs.

Further action to reduce childhood obesity will require commitment from a range of community, government, private and non-government organisation stakeholders. As indicated by the range of strategies below, all these stakeholder groups have a shared responsibility to act in ways which actively reduce the risks of children becoming overweight and obese. In particular, further actions are required to address more disadvantaged families and families and communities from Middle Eastern backgrounds.

The full report describes potential action strategies that are evidence-based and provides an indication of the scope and direction for interventions to prevent obesity in light of the SPANS findings across settings and population groups including early childhood services, schools, communicating with parents, social marketing and multi-strategic policy initiatives.