

**Active and inactive  
leisure among children:**

**Results from the  
2001 NSW Child Health Survey**

**Yvette Miller**

**NSW Centre for Physical Activity and Health**

December 2003

Report No.: CPAH 03-0009



© NSW Centre for Physical Activity and Health 2003

This work is copyright. Apart from any use permitted under the Copyright Act 1968, no part may be reproduced without prior written permission from CPAH. Requests and enquiries concerning the reproduction and rights should be directed to the Director, NSW Centre for Physical Activity and Health (CPAH), Level 2, Medical Foundation Building 94 Parramatta Road, Camperdown NSW 2050, Sydney AUSTRALIA

Suggested Citation:

Miller Y. Active and inactive leisure among children: Results from the 2001 NSW Child Health Survey. December 2003. Report No.: CPAH 03-0008

# Executive Summary

This report describes the results of secondary data analysis from items related to physical activity and sedentary behaviour that were asked in the 2001 NSW Child Health Survey. Although there is no measure of overall engagement in physical activity, the survey does allow analysis of patterns of participation in sports (ie. after-school organized and non-organised sports, recreational places visited after school hours) and sedentary behaviours (ie. watching TV, playing video games and engaging in other non-physical leisure activities). The analysis presented here attempts to summarise the characteristics of children who are active and inactive during leisure time based on data from these items, including potential parental influences on participation such as perceptions of safety of a range of sports.

The sample included in this analysis consisted of 5887 children that were aged between 5 and 12 years.

## Sedentary Activities

Boys spent significantly more mean total estimated time per week watching TV and playing video/computer (16.7hrs/wk) games than girls (14.3hrs/wk;  $t(5750) = 10.1, p < 0.01$ ). Older children (aged 9-12 years) spent about 2.5 mean hours in 'small-screen' sedentary activity per week more than younger children between the ages of 5 and 8 ( $t(5750) = 10.6, p < 0.01$ ). Children in the lowest quintile of socioeconomic disadvantage spent fewer mean total hours in sedentary activity (14.1) than others, and those in the most disadvantaged quintile had the highest mean hours per week (16.4). The positive relationship between socioeconomic disadvantage and total sedentary hours was significant ( $F(4, 5729) = 7.7, p < 0.01$ ). Sedentary time was negatively significantly related to highest level of educational attainment of both the mother ( $F(2, 5564) = 29.1, p < 0.01$ ) and father of the child ( $F(2, 4807) = 28.9, p < 0.01$ ), with an increase of approximately one mean hour per week with each level of decreasing educational attainment (tertiary educated; secondary school completion; did not complete secondary school) based on both parent's measures.

The likelihood of having high levels of sedentary time increased with socioeconomic disadvantage, and those in the two highest quintiles of socioeconomic disadvantage were at least 1.5 times as likely as those in the least disadvantaged quintile to have high levels of sedentary behaviour after adjusting for other sociodemographic characteristics.

## Participation in sport

Almost all children played some type of sport or outdoor physical activity, including non-team sports (93%). Among those who ever played sports or engaged in outdoor physical activities, the types of activities engaged in during the last 12 months included bike riding (65.8%), swimming (42.1%), soccer (36.4%), rollerblading (26.7%), netball (15.5%), tennis (15.4%), and cricket (14.3%). Although most sports were reported as frequently among boys as girls (bike riding, rollerblading, swimming, basketball, tennis), clear gender differences in participation emerged for certain types of activities.

A significantly higher proportion of parents had prevented their child from playing sport because of safety concerns among boys (35.0%) compared with girls (16.7%;  $\chi^2(1) = 3.4$ ,

p<0.001) and among 9-12 year olds (28.9%) compared with those aged 5-8 years (22.3%;  $\chi^2$  (1) = 30.8, p<0.001). A significantly higher proportion of those whose mothers had a tertiary degree had been prevented from playing (30%) compared to those with lower levels of educational attainment (completed secondary school: 26.8%; did not complete secondary school: 22.8%;  $\chi^2$  (2) = 23.0, p<0.001). Similarly, those whose fathers had higher levels of education were significantly more likely to have been prevented from engaging in activities because of safety concerns (tertiary degree: 27.9%; completed high school: 26.2%; did not complete high school: 23.2%;  $\chi^2$  (2) = 8.5, p<0.05).

### **Other characteristics of children's leisure**

About a quarter of children (26.7%) participated in music or other non-sport related activities at least once a week in the last 12 months, and 24.1% had taken part in clubs or community programs.

When not in school or childcare, most children played in their backyard or frontyard (5-8 yr olds: 72.0%; 9-12 yr olds: 65.0%). The next most frequently reported areas for play were in a park, sportsground or bushland (5-8 yr olds: 27.8%; 9-12 yr olds: 27.4%) or at a neighbour's house (5-8 yr olds: 23.2%; 9-12 yr olds: 23.4%). Reportedly, 8.5% of children aged 5-8 years and 11.4% of 9-12 year olds played in the street.

Overall, the most popular favourite activity was organized sports such as cricket, tennis, netball or football. Playing video or computer games was the next most reported favourite activity, although both of these were higher among older children than younger children. Bike riding was a favourite activity among 10.3% and 7.5% of children aged 5-8 and 9-12 years respectively. Parents of children aged between 5 and 8 years more frequently reported playing with toys at home (10.7%), drawing or colouring in (9.2%) and playing outside (8.1%) as their child's favourite activity compared with parents of older children.

Organised sports were the most frequently reported favourite activity among 5-8 year old boys and 9-12 year old boys and girls, although only the sixth most frequently reported favourite activity among 5-8 year old girls. Bike riding was a frequently reported favourite activity of boys and girls in both age groups, although more frequently reported as a favourite activity among boys compared with girls of the same age. Watching TV and playing video or computer games was frequently reported among boys aged 5-8 years, but not among girls of the same age. However, among 9-12 year olds, watching TV was more frequently reported among girls compared with boys. Reading was frequently reported as a favourite activity for girls in both age groups but not among boys, suggesting gender differences in a preference for reading that are maintained with age. There was some evidence of an ageing effect in activity preferences. Drawing or colouring in was the most frequently reported favourite activity among 5-8 year old girls, but much less frequently reported among those aged 9-12 years.

## **Discussion**

Total time spent in 'small screen' sedentary behaviours increased with the reported number of days in which children participated in TV watching or playing computer/video games.

This would suggest that the number of total days per week in which these behaviours occur is directly related to the total time per week being sedentary.

It was interesting to note that boys spent significantly more time in the sedentary behaviours measured here compared with girls. This is likely to be due to limitations in the measurement of sedentary behaviour in the 2001 NSW Child Health Survey, which only accounts for TV watching and playing video/computer games. Girls may be more likely to engage in other types of sedentary behaviour that are not measured, such as reading, visiting with friends, or talking on the telephone (among older girls). The frequency of reporting particular favourite activities among boys and girls suggests that watching TV and playing video or computer games are the most frequently reported sedentary activities among boys, while other sedentary activities not accounted for in the questions to measure time in sedentary behaviour, such as reading and drawing or colouring in, are frequently reported among girls. Further items that attempt to measure the frequency of engaging in other sedentary behaviours could be included in future surveys of child health to better estimate sedentary time and attempt to reduce this gender bias.

The types of sport or physical activities engaged in most frequently included both formal and informal activities. However, it is likely that activities that are typically structured and organised (soccer, netball, etc) offer opportunities for more regular engagement in physical activity. There appears to be particularly less preference for participation in organised sports among younger girls (aged between 5 and 8 years), which may suggest lower levels of regular physical activity participation in this group.

Unfortunately, items regarding discouragement of participation in sport or physical activity because of concerns about safety or injury were only asked of those who reported that their child had ever engaged in sport or physical activity. This prevents any analysis of the relationship between parental concerns for safety and ever engaging in sport and physical activity, and we are unable to investigate the possible role of parental discouragement in never taking up physical activities. It may be worthwhile to ask questions about discouragement of participation in sport of all parents in future surveys of child health.

The 2001 NSW Child Health Survey was completed by parental proxy self-report. The validity of this method has not been demonstrated for many of the questions relevant to the analysis reported here. Although parents are likely to be able to account for their child's participation in organised sports, time spent in sedentary behaviour may be less adequately monitored and perceptions of 'favourite activities' may not be accurate. Further work to demonstrate the validity of parental reporting of participation in sports and other physical activities and time spent in sedentary behaviours is warranted. Furthermore, the survey does not include measures of overall participation in physical activity. This may be due to the limitations of parental proxy reporting methods for adequately capturing engagement in all physical activities among children. However, first-person self-report measures of children's physical activity that can be completed via telephone have not been developed, and may have particularly limited validity for younger children.

Nevertheless, questions about sedentary behaviour that were asked may provide proxy indicators of physical activity participation. The findings presented here reveal high levels of participation in sedentary behaviours among all children of primary-school age. The

increasing popularity of these types of behaviours among children is likely to accompany a reduction in time spent being physically active which may at least partly account for increasing levels of overweight and obesity in children. Development of a physical activity strategy for children that includes a focus on the reduction of sedentary behaviours is essential to support efforts for the prevention of childhood obesity.

DRAFT