



## Results from the Western Australian Child and Adolescent Physical Activity and Nutrition Survey (CAPANS) 2003

# Physical Activity



In 2003, the Premier's Physical Activity Taskforce, Healthway and the Department of Health commissioned the University of Notre Dame Australia to undertake a Statewide survey to collect baseline data on child and adolescent physical activity behaviours, eating patterns and physiques.

This fact sheet describes the procedures specific to the physical activity component of the study, including description of survey tools, survey process and treatment of data. For information on general CAPANS methodology, refer to the fact sheet 'CAPANS Methodology – General Procedures'. For specific technical information relating to the physical activity components, please refer to the supplementary CAPANS Physical Activity Technical Report.<sup>1</sup>

### SURVEY SAMPLE

Data were collected from 2,275 students across nineteen primary schools (58.9%) and seventeen secondary schools (41.1%). Of the sample 49.8% were males and 50.2% were females. Primary school students ranged from 7–12 years of age (school years 3,5,7) and secondary school students from 12–16 years of age (school years 8,10,11).

### PHYSICAL ACTIVITY QUESTIONNAIRE

- The questionnaire was developed by the Evaluation and Monitoring Working Group of the Physical Activity Taskforce and comprised items derived from several sources:<sup>2</sup>
  - Children's Leisure Activities Study Survey;<sup>3</sup>
  - Physical Activity Questionnaire for Adolescents;<sup>4</sup>
  - Physical Activity Questionnaire for Older Children;<sup>4</sup>
  - NSW Schools Fitness and Physical Activity Survey 1997;<sup>5</sup> and
  - Australian Health and Fitness Survey 1985.<sup>6</sup>
- The items asked about physical activities undertaken in a typical week, activity level when at school (PE, recess, lunch), after school and on the weekend; whether the survey week was typical; and transport to and from school.
- Additionally, details on sedentary behaviours; motivations and barriers to physical activity; and some general demographic information were obtained.
- The survey instrument was modified appropriately for each age group to create three versions, specifically for year 3, years 5 and 7, and years 8, 10 and 11. There were 13 items for the year 3 version and 19 items for the other two versions.

### TREATMENT OF DATA<sup>2</sup>

The responses to the Physical Activity Questionnaire were entered by hand into Microsoft Access™ in accordance with the codes created for the study. Ten percent of records for the Physical Activity Questionnaire were re-entered for quality assurance. No significant differences were reported between the two databases.

In general, the mean plus two standard deviations was used as the **cut-off point** for exclusion of **outliers**, and provided a sufficient spread of data. Implausible responses were also excluded.

### PEDOMETERS

A Yamax Digiwalker SW-700 **pedometer** was used to record step counts.

- The pedometer was worn at all times except for occasions when the participant was swimming, bathing or showering, or sleeping.
- Each day (except for the first day) the step count was recorded and the pedometer reset and resealed with a small adhesive sticker.<sup>7</sup>

In primary schools, the pedometers were read, reset and resealed at school first thing each morning by the teacher or a trained parent helper. Results were recorded on a specially designed sheet. On Monday mornings, therefore, the step count was an accumulated count for Friday, Saturday and Sunday.

In secondary schools, the students read, reset and resealed the pedometer each night, including weekends.

### TREATMENT OF DATA

The data for participants were included in the analyses only if the counts for at least 4 days were available. This decision was based on earlier research that found four to seven days of activity monitoring was required to achieve reliable ( $r = 0.7$  to  $0.8$ ) measurement.<sup>8</sup>

When **cleaning the data** the following rules were followed.

- If a daily step count was above 40,000 or below 1000, the record was deleted.
- For primary school data where an accumulated count of Friday, Saturday and Sunday was recorded, Friday was calculated as the average of all ('clean') weekday step count values.
- The weekend (Saturday and Sunday accumulated) step count values were calculated as the difference between the combined (Fri/Sat/Sun) and the Friday (average weekday) values.
- An average weekday count was derived based on the counts for Monday to Friday. An average weekend day step count was derived based on the counts for Saturday and Sunday.
- An average daily step count was derived by averaging the data for weekdays and the weekend, providing at least four days were recorded.



## PEDOMETER DIARY

All students completed a daily activity diary over the eight days of the pedometer survey. Physical activities undertaken during the school day (i.e. before school, during school, recess, lunch, after school) and weekends (morning and afternoon) were recorded.

The diary prompted participants to note whether the pedometer was placed on in the morning and removed at night as well as occasions it was removed during the day.

The terminology used in the diaries differed between primary and secondary school students to accommodate comprehension and compliance differences.

Primary students completed the diary during school, generally on arrival, after recess and after lunch. Secondary students completed the diary at the end of the day when recording their step count.

## TREATMENT OF DATA<sup>2</sup>

- Activities reported in the diaries were assigned energy expenditure codes as follows: 1 (light activity < 3 METs), 2 (moderate intensity activity 3–5.9 METs) or 3 (vigorous intensity activity > 6.0 METs).<sup>9</sup>
- Each day the students reported the amount of time they did not wear the pedometer and why. In many cases, the student was involved in an activity where the wearing of a pedometer was not possible or inadvisable. In these cases, the responses were converted into steps and added into the daily step count based on the following rules:
  - all conversions were based on ‘activity duration’ (min) x 120 steps;<sup>10</sup>
  - sedentary activities, for example reading, were not included;
  - for surfing or beach activities a maximum of three hours (or 21,600 steps) was allowed; and
  - for activities where the pedometer was off for a majority of the day (5+ hours) a maximum of four hours (or 28,800) steps was recorded. In these cases, the described activity was probably not constant the whole day, for example, beach carnivals, or swimming competitions.

The Pedometer Diary data and matching pedometer counts were hand entered into Microsoft Access™ in accordance with the codes created for the study.



## AUSTRALIAN PHYSICAL ACTIVITY RECOMMENDATIONS FOR CHILDREN (5-12 YEARS) AND YOUTH (12-18 YEARS)

1. Children and youth should participate in at least 60 minutes (and up to several hours) of **moderate to vigorous intensity** physical activity every day.
2. Children and youth should not spend more than 2 hours per day using electronic media such as TV, computer games and the internet for entertainment, particularly during daylight hours.

## ACKNOWLEDGEMENTS

Recommendations for increasing the levels of physical activity in children as well as other key findings can be found in the CAPANS report<sup>11</sup> at [www.patf.dpc.wa.gov.au](http://www.patf.dpc.wa.gov.au) or by contacting the Physical Activity Taskforce Secretariat on 9382 5980.

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- 1 Hands, B., Parker, H., Glasson, C., Brinkman, S. & Read, H. (2004). *Results of Western Australian Child and Adolescent Physical Activity and Nutrition Survey 2003 (CAPANS): Physical Activity Technical Report*. Perth, Western Australia: Western Australian Government.
- 2 For further details on this item please refer to the CAPANS Physical Activity Technical Report<sup>1</sup>.
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