



2007 National Australian

# Children's Nutrition and Physical Activity Survey:

Summary

South Australian Findings



Government  
of South Australia

SA Health

# Overview

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The 2007 Australian Children's Nutrition and Physical Activity Survey (Children's Survey) was commissioned by the Commonwealth Department of Health and Ageing (DoHA), the Department of Agriculture, Fisheries and Forestry, and the Australian Food and Grocery Council.

The objective of the Children's Survey was to assess: food and nutrient intakes, use of time and to measure the weight, height and waist circumference in a sample of children aged 2-16 years randomly selected from across Australia.

Data was collected on two occasions involving 4,487 participants from February to August 2007. A computer assisted personal interview (CAPI) was conducted in the child's home. This was then followed up 7-21 days later by a computer assisted telephone interview (CATI).

SA Health commissioned a booster sample of 400 children to increase the number of South Australian children surveyed to 877. This report relates to all South Australian children sampled either in the main study or in the South Australian booster sample. The corresponding national results are also presented [in parenthesis] for comparison where applicable

## Main Findings

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### Foods

In the South Australian sample on the day prior to the interview:

- > Children in general consumed a wide variety of foods including cereals, fruits and vegetables, dairy or dairy substitutes, meat or meat substitutes, non-alcoholic beverages, snack and confectionery foods.
- > Older children (14-16 years) generally consumed the least amount (g) of fruit compared to children in any other age group.
- > Older children reported eating almost twice the amount (g) of vegetables compared to the younger children (2-3 years).
- > The intake of milk products was highest amongst the girls 2-3 years compared to girls of other age groups.

Comparison with Dietary Guidelines for Children and Adolescents in Australia:

- > Most South Australian children (90%) [National: 90%] had been breastfed at least some time during their infancy
- > Achieving guidelines relating to saturated fat, sugar, vegetables and cereals was problematic for South Australian children.

### Nutrients

In the SA sample on the day prior to the interview:

- > Children generally consumed foods and drinks that provided sufficient energy and were adequate for most nutrients, without the need to take additional supplements.
- > Few children (7%) [National: 8%] consumed dietary supplements, the most common being multivitamin and or mineral supplements.
- > Across all age groups, about half (47-50%) [National: 48-50%] of the total energy intake (EI) was supplied by carbohydrate, 29-33% [National: 31%] by total dietary fat and 15-18% [National: 16-18%] by protein.

Comparison with Dietary Guidelines for Children and Adolescents in Australia:

The estimated average requirement (EAR) is the daily nutrient intake level estimated to meet the needs of half of the children in their particular life stage and gender group. The percentages of children whose usual nutrient intakes are less than the EAR provide an estimate of the prevalence of potential intake inadequacy in each age and gender group. If there are large percentages of children with usual intakes below the EAR for a particular nutrient, it is indicative that a number of children may not be consuming sufficient amounts of that nutrient to meet their requirements, however as noted above it is not definitive.

- > The majority of children in all age groups met the estimated average requirements (EAR) for protein and some vitamins including thiamin, riboflavin, niacin, and vitamin C, suggesting that these nutrients are not at risk of inadequacy across the population.
- > The possible exception was for vitamin A expressed as retinol equivalents where 19% [National: 21%] of 14-16 year old boys and 9% [National: 14%] of girls aged between 14-16 years did not meet the EAR.

## Main Findings

- > Dietary folate intake was also below the EAR in 8% [National: 14%] of boys and 18% [National: 29%] of girls aged 14-16 years.
- > Younger children met the EAR for most minerals. The percentage of children with intakes below the EAR for older children was notable for calcium, magnesium, phosphorus and iodine.
- > Girls (12-16 years) appeared to be most at risk of not meeting their dietary requirements for calcium (only 9-27% met and 73-91% did not meet the EAR) [National: 11-18% met and 82-89% did not meet the EAR].
- > Other nutrients that also appeared to be potentially at risk included - phosphorus (15% [National: 19%] of 9-13 year olds and 8% [National: 14%] of 14-16 year olds did not meet the EAR), iodine (29% [National: 26%] of 14-16 year olds did not meet the EAR) and magnesium (46% [National: 56%] of 14-16 year olds did not meet the EAR).
- > Boys (14-16 years) were more likely to not reach their EAR for calcium (47% [National: 44%] did not meet EAR) and magnesium (25% [National: 34%] did not meet the EAR).
- > The estimated usual intakes of vitamin E and D were almost always less than the adequate intake (AI) for both nutrients. Whilst these findings may suggest that a significant number of children may not be consuming sufficient amounts of vitamin E and D, a definitive conclusion cannot be reached.
  - The AI for vitamin D was set at 5.0 µg/day, based on estimates of vitamin D needed to prevent deficiency in children with limited sunlight exposure. Estimated usual intakes ranged from 2.5 to 4.7 µg/day. A requirement of 2.5 µg/day may be sufficient (NHMRC 2006). Food composition data may also be limited.
  - The accuracy of estimates of vitamin E intake are dependent on comprehensive and high quality food composition data and this may be a potentially limiting factor for the Children's Survey to estimate vitamin E intakes from Australian foods. The AI was based on median intakes of New Zealand children (MOH 2003) and so limits its use in recommending dietary targets.
- > For all age and gender groups the mean usual intake for total fluid, dietary fibre, sodium and potassium were generally at or above the adequate intake (AI) for each nutrient, suggesting that it is unlikely that there will be a high prevalence of children not consuming enough of these nutrients. In fact, the consumption of sodium in all age groups exceeded the recommended upper level of intake.

## Eating Pattern

- > For all age groups there was a clear pattern of eating at traditional meal and snack times with very little energy consumed between the hours of 22:00 and 06:00.
- > The majority of children consumed breakfast on a school day. The proportion of girls consuming breakfast on a school day was lower than boys. As age increased the proportion of children consuming breakfast on a school day decreased.
- > In general, the number of serves of non-core foods consumed increased with increasing age.

## Physical Activity

- > The majority of children aged 9-16 years met the Physical Activity Recommendations for 5-12 year olds and 12-18 year olds, for moderate to vigorous physical activity. On any given day, there was a 67% [National: 69%] chance that any given child would get at least 60 minutes of moderate to vigorous physical activity.
- > Children aged 5-16 years took approximately 11,500 steps [National: 11,800 steps] per day.
- > Few children aged 9-16 years met the guidelines for electronic media use. On any given day, there was only a 26% [National: 33%] chance that any given child would get no more than 120 minutes of screen time.
- > Adolescent girls achieved much lower levels of physical activity than adolescent boys.

## Height and Weight

- > The majority of children (71%) [National: 72%] were of healthy weight for their height. Of the remaining, 4-5% [National: 5%] were underweight, 17% [National: 17%] overweight and 7% [National: 6%] obese.

### Linking Nutrition, Activity and Body Size:

- > Obese children tended to have a lower physical activity level (PAL) than children of normal weight.
- > Overweight and obese children tended to report lower energy intakes than children of normal weight.
- > There was no clear association between reported energy intake and level of physical activity.

## Main Findings

### South Australian Data Versus National Data:

- > Overall, the prevalence of overweight and obesity was similar in South Australian children (24.2%) and in Australian children in general (22.9%). Levels of physical activity were also similar
- > There were, however, significant differences in screen time, with the average South Australian child accumulating 28 minutes more screen time than Australian children in general.

### Socio-Economic Status

- > The prevalence of overweight and obesity increased as socio-economic status (SES) decreased. There were significantly more children classified as overweight or obese in the 3rd (26.5%) and 4th (31.5%) SES quartiles compared to the 1st and 2nd quartiles (20-22%).
- > There were few differences across SES bands in the amount of physical activity adolescents experienced, however, adolescents from higher SES households were involved in more sport.
- > There were significant differences in screen time across the SES bands. Children in the lowest SES quartile accumulate 30-50 minutes more screen time each day than children in the other quartiles.
- > Across all age groups, children from families of high SES consumed more fruit products and dishes (g) than children from families of lower SES.

### Family Structure

- > Weight status was relatively unrelated to family structure (number and age of caregivers, number and age of siblings, marriage status).
- > Physical activity was greater in households where there were more children, where there were siblings close in age and of the same sex, and where there were more adults.
- > Screen time was also lower in households where there were more children, particularly of the same sex.
- > The marriage status (married/de-facto/single) of the caregivers did not impact on any of the outcomes.

### Type of Day

- > Screen time was much higher on weekends and holidays than on school days, and overall energy expenditure was lower
- > Approximately one third of the total energy intake was consumed during school hours for all children on a school day
- > The energy intake was similar between weekdays and weekend days for all age groups
- > Total fat (including saturated fat) was consistently higher on weekend days compared to weekdays for all age groups
- > On weekend days, the consumption of energy, fat (including saturated fat) and sodium increased with increasing SES.

# Conclusion and Recommendations

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## Weight Status

The proportion of children and adolescents classified as overweight or obese remains unacceptably high. Combining the results from this survey with those from other surveys since 1985, there has been no increase in the prevalence of childhood overweight and obesity over the last ten years. The highest prevalence rates were found in teenage girls, and in children from the lowest SES quartile.

### Recommendations

- > Continue to monitor children's weight status, given the surprising plateau in overweight and obesity.
- > Interventions specifically targeting teenage girls, low SES groups, and one-parent families with one or two children.

## Diet

Many South Australian children, especially those in the older age group, are not meeting estimated requirements for micronutrients known to be important for bone health. Likewise, fruit and vegetable consumption is well below recommendations, particularly when energy dense juices and potato (mostly prepared using high fat methods) are removed from the analyses. Intakes of saturated fat, sugars and sodium tended to be higher than recommendations in this sample of South Australian children.

### Recommendations

- > Continue to support public health interventions for improvement of children's diet.
- > Some key areas of focus are justified by the findings of this report, including families of lower SES; older children, especially girls 14-16 years; consumption and increase in intakes of fruit and vegetable and dietary sources of calcium.

## Physical Activity

Overall, most children met the Commonwealth's physical activity recommendation of at least 60 minutes' moderate to vigorous physical activity (MVPA) each day. The group with the lowest levels of (MVPA) were girls aged 14-16. These girls also had the lowest daily energy expenditure of any group. The main difference between boys and girls was in the amount of sport each group took part in.

### Recommendations

- > Continue to monitor children's participation in physical activity.
- > Interventions specifically targeting teenage girls' involvement in sport should be encouraged.
- > Consideration should be given to increasing the 60 minute threshold for MVPA in children.

## Screen Time

Very few children met the Commonwealth screen time recommendation of no more than 120 minutes' exposure for entertainment purposes each day. The group with the highest levels of screen time were 12-14 year old boys. Children from low SES households and obese children had much higher levels of screen time, and screen time was much higher on holidays as opposed to weekends and school days. Levels of screen time in South Australian children were slightly higher than the national average. The high level of screen time in this survey was one of the most striking findings.

### Recommendations

- > Reduction in screen time, replacement of screen time with physical activity, and perhaps modifying screen time to make it more active should be research and policy priorities.
- > Tips on how to replace screen time with activity, especially on holidays, should be developed.

## Sleep

There was strong evidence of inadequate sleep in older adolescents. By the age of 16, the gap between school day and non-school day had increased to more than two hours per night. This suggests that young people are under-sleeping on school days and catching up on non-school days. Low sleep duration was associated with a greater risk of overweight and obesity.

### Recommendations

- > Develop age-specific sleep guidelines, and
- > Encourage programmes to foster good sleep habits.



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