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All children need good nutrition and adequate physical activity to grow to their full cognitive and physical potential, achieve a healthy weight, and to be protected against chronic disease in later life. Poor nutrition and physical inactivity in childhood are associated with increased risk factors for chronic disease, including obesity and raised blood pressure, cholesterol and blood sugar.

National surveys of childhood nutrition and body measurements were undertaken in 1985 and 1995. Comparison of these studies showed that the prevalence of overweight doubled and the prevalence of obesity in children tripled during that period. The rapid increase in the prevalence of overweight and obesity worldwide since the 1970s has been described as a global epidemic. Overweight including obesity now contributes 8.6% of the burden of disability and premature death in Queensland - that’s more than cigarette smoking. As the current generation of overweight children become adults, greatly increased rates of heart disease, type 2 diabetes, certain cancers, gall bladder disease, osteoarthritis, asthma, endocrine disorders and other weight-related conditions will occur in young adult populations, affecting quality of life and health treatment needs for the rest of their lives.

The Queensland Government is committed to working with the whole community to help promote healthy weight in children and young people through improved nutrition and increased physical activity. At the Queensland Obesity Summit, held by the Premier in May 2006, more than 90 industry, business, community and government representatives explored ways to help more Queenslanders achieve and maintain a healthy weight. Following the Summit, the Premier announced a $21 million commitment over three years for partnerships, grants, facilities and other resources to help to promote healthier eating patterns and increased physical activity. The Premier also established the Queensland Eat Well Be Active Taskforce.

These initiatives build on the work within my Department. Since 2002, Queensland Health has employed 119 new nutritionists and health educators to strengthen services that prevent illness by promoting improved nutrition and physical activity throughout the State. By 2009, this will have increased to 148 new positions, with incremental investment to over $16 Million per annum. These frontline staff provide important services including support for parents and carers through resources such as the Personal Health Record; Child Information: Your guide to the first 12 months; which is distributed to all new parents in Queensland, and the Growing Strong, Feeding You and Your Baby resources for Aboriginal and Torres Strait Islander families. The Fun not Fuss with Food workshops were developed by Queensland Health to assist parents of children with behavioural eating problems, and have been shown to effectively improve children’s eating behaviour. Over 7000 Fun not Fuss with Food parent resources have been distributed across Queensland in the last two years. Implementation of Optimal Infant Nutrition: evidence-based guidelines, and the Queensland Health Work and Breastfeeding Policy also support parents to breastfeed, which has been shown to reduce the risk of overweight in childhood.

The Smart Choices: Healthy Food and Drink Supply Strategy for Queensland Schools was developed in partnership with Education Queensland to ensure that children have access at school to foods and drinks which comply with the national Dietary Guidelines for children. It has been estimated that this initiative is responsible for removing 8000 litres of soft drink from schools each week.

The Go for 2 & 5™ social marketing campaign conducted by my Department aims to increase the fruit and vegetable consumption of all Queenslanders by one serve a day. Research indicates that since the campaign began in September 2005, consumption has already increased by 0.7 of a serve per day, which represents estimated savings of around $35 Million per year in health treatment services for chronic disease. Independent research by Horticulture Australia support these results, confirming that sales of fresh fruit and vegetables in Queensland increased by over $9 Million in the first month of the campaign.

Queensland Health has developed the Physical Activity and Nutrition out of School Hours (PANOSH) resources to assist Outside School Hours Care services to provide healthy food choices, and to keep children active during afternoon and vacation care. Evaluation indicates that the proportion of Queensland centres with nutrition and physical activity policies, provision
of healthy foods and average time allocated to physical activity increased significantly.

The 10,000 Steps program was a two-year research project funded by Queensland Health to successfully increase physical activity participation in the Rockhampton community. Over 600 registered providers are now implementing the 10,000 steps program in a wide range of communities, workplaces and other settings to promote physical activity.

The Queensland Government is also currently implementing the Eat Well, Be Active—Healthy Kids for Life Action Plan 2005-2008, which aims to achieve healthier weight in Queensland children and young people through the collective work of six government agencies in progressing over 100 initiatives addressing physical activity and nutrition. The Healthy Kids Queensland survey is a key part of this initiative.

The study shows that the prevalence of overweight and obesity amongst Queensland school-aged children in 2006 was about the same as it was nationally in 1995, and lower than in recent surveys in some other states. This is very good news and indicates that the Queensland Government’s investment in this area is on the right track. Positive evaluation of individual programs suggests that our initiatives over the last five years have contributed to this encouraging finding.

However, there is still much more to be achieved. Our children are still eating too little fruit, vegetables and milk products, and too much sugar and fat. Many children are not active enough, and boys particularly spent too much time on television and computer games.

The Queensland Government is committed to continued improvements to help make healthier choices easier choices for all Queenslanders. The results of this study will inform public health policy and practice throughout Queensland, and help to evaluate the impact of Queensland Government initiatives to promote healthy weight, nutrition and physical activity, to improve the future health of our children and young people.

Stephen Robertson MP
Minister for Health
Executive Summary

Introduction

The Healthy Kids Queensland Survey was commissioned by Queensland Health as part of the Queensland Government’s ongoing commitment to promoting healthy weight, nutrition and physical activity for Queensland’s children and young people. This survey provides important data to help plan, develop and implement effective policies and programs to improve young Queenslanders’ dietary and physical activity behaviour, and to achieve healthy weight. This summary report is complemented by a full report that provides more detailed methodological information and data sets.

Methods

Data were collected throughout Queensland from April to September 2006. A total of 3691 children aged 5-17 undertaking years 1, 5 or 10 at school participated in the survey. Government and non-government schools (n = 112) were selected to participate using a random cluster design and the data were weighted to ensure the equal probability of inclusion of all children in the target population. The following information was collected:

Anthropometric assessment to indicate the proportion of Queensland children who are underweight, of a healthy weight, overweight or obese:
- height, weight (to determine Body Mass Index)
- waist circumference

Dietary assessment to understand the eating patterns and nutrient intake of Queensland children:
- food-frequency
- 24-hour dietary record

Physical activity assessment to understand the physical activity behaviours and exercise patterns of Queensland children:
- physical activity questionnaire
- pedometer study

Outline of the Report

After outlining the background to the Survey and its demographics and survey tools, each section provides more detail of the assessment tools, significant results and key points. Individual sections address the anthropometric assessment, dietary assessment, and physical activity patterns measured in this sample of Queensland children and where appropriate, comparisons are made to other data sets.

Key Findings

Weight and waist circumference
- 77.5% of Queensland children aged 5–17 were of healthy weight.
- 1.4% of Queensland children aged 5-17 were underweight,
- 14.6% of boys and 17.7% of girls aged 5–17 were overweight, 4.8% of boys and 5.1% of girls were obese.
- Overall, 21.1% of Queensland children aged 5–17 were overweight or obese; 16.2% were overweight and 4.9% were obese.
- The prevalence of overweight and obesity generally increased with age, although the prevalence was highest in Year 5 girls.
- Overall, and within most age groups, the prevalence of overweight and obesity was slightly lower in Queensland children compared with children of similar ages in NSW and WA in recent surveys.
- Comparison with national data from 1985 and 1995 shows that the prevalence of overweight and obesity for Queensland 5-17-year olds has continued to increase; within most age groups the prevalence is twofold greater than national rates of 1985, but results suggest that the rate of increase has slowed in Queensland since 1995.
- Waist circumference has also increased from 1985 to 2006 in Queensland children aged 9-11 and 14-16 (No comparative data were available for children of Year 1 age in the 1985 data set). The largest increases have occurred at the upper end of the waist circumference distribution. The data suggests that over time there has been a relative increase in abdominal obesity at the upper end of the distribution.
In the older age groups the BMI distribution is stretched towards the upper end, i.e. as the age group increases, the proportion of children or young people who are obese or very obese increases.

No consistent differences in the prevalence of overweight or obesity were observed between children in urban centres and children in rural areas.

Diet

On the day of survey:

- The mean daily energy intake was within the recommended levels for boys and girls in Years 1 and 5, and boys in Year 10. Year 10 girls’ intake was about 15% lower than expected, which may reflect greater under-reporting in this age group.
- On average, Queensland children aged 5-17 consumed diets in which 50% of the energy intake was derived from carbohydrate. Nearly half of this (22-25% of energy) was derived from sugars.
- On average, Queensland children aged 5-17, consumed diets in which 32.5% of the energy intake was derived from fat, and 14.5% was derived from saturated fat. This compares to current NHMRC dietary guidelines recommending approximately 30% of energy intake as fat and no more than 10% coming from saturated fat.
- One in ten Year 10 girls had diets inadequate in iron.
- One in twenty Year 1 boys and girls, half of all children in Years 5 and half of Year 10 boys and six in seven Year 10 girls had diets inadequate in calcium. Diets low in calcium, were more common in girls than in boys at all ages. This is matched by lower intakes of milk and other dairy foods amongst girls.
- In contrast to the recommendation that children aged over 2 years should choose low fat milk, most children drank whole milk. Only one in five of Year 1 children reported drinking low fat milk, and this increased to one in three amongst Year 10 girls.
- Approximately two-thirds of Year 1 and just over half of Year 5 boys and girls met recommendations for fruit consumption, but Year 10 children fell significantly short.
- The average Year 1, Year 5 and Year 10 child failed to meet recommendations for serves of vegetables and legumes: with half of the sample consuming less than one serve on the day of the survey.
- Approximately 1 in 5 of Queensland 5-17-year-olds had take-away food on the day of the survey.
- Soft drink consumption (diet and non-diet) increased with age. On the day of the survey, a third of Year 10 boys and a quarter of Year 10 girls consumed soft drink.

Over the past year:

- On average, three in five Year 1 and Year 5 children reported consuming two pieces of fruit or more per day, exceeding their minimum daily recommendations for fruit consumption, but only one in six Year 10 children met the recommendations for daily fruit intake.
- On average one-half of Year 1 children, one-third of Year 5 children and just over one-fifth of Year 10 children reported consuming the recommended amount of vegetables, for their age, per day.
- Over 90% of children in years 1 and 5 ate breakfast every day, however this dropped to three quarters of Year 10 boys and just over half of Year 10 girls.
- Three in ten Year 1 children reported drinking soft drink once a week or more and this rose to seven in ten of Year 10 boys and just under half of Year 10 girls.
- No consistent differences in dietary intakes or behaviours were observed between children in urban areas and children in rural areas.
Physical activity behaviours

The proportion of children who were meeting national physical recommendations varied according to the measure used:

- Using suggested international targets for daily steps, three in ten Year 1 boys and four in ten Year 1 girls met physical activity targets. This increased to four in ten of Year 5 boys and just over half of Year 5 girls.
- For self-reported time spent in sports and physical activities, just under two thirds of Year 10 boys were reaching daily physical activity targets of 60 minutes per day, compared to two fifths of Year 10 girls.
- On direct questioning of whether national activity recommendations were being met, only one in six Year 1 boys self reported being moderately active for 60 minutes seven days per week and this dropped to one in eight by Year 10. Only one in 15 Year 1 girls self reported meeting the physical activity recommendations and this decreased to one in 20 by Year 10.

Furthermore:

- Boys on average took more steps than girls at all ages, and this difference was greatest (by more than 2,000 steps) in Year 10.
- Year 1 children were more active on weekends than during the week; this pattern was reversed in Years 5 and 10.
- Time spent on screen-based electronic media for entertainment increased with age; more than two in five Year 10 boys and one in four Year 10 girls exceeded the current daily recommendations.
- School-based sports and physical education were consistently ranked in the top two of reported forms of physical activities.
- Participation in active transport increased with age; more than one-third of Year 10 children participated in active transport at least once a week and one in ten either cycled or walked to and from school daily.
- Use of public transport to get to school increased with age with more than one in three Year 10 children using some form of public transport on the route to or from school.
- No consistent differences in physical activity behaviours were observed between children in urban areas and children in rural areas.
### Policy implications and recommendations

**Recommendation 1:**
The rate of increase in the prevalence of overweight and obesity amongst children appears to have slowed in Queensland since the last national nutrition survey in 1995. The prevalence of unhealthy weight amongst Queensland children appears to be lower than that of other Australian States where data are available. These results suggest that the significant investment by the Queensland Government and the broader community over recent years to address the epidemic of childhood obesity and prevent chronic disease though improved nutrition and increased physical activity is beginning to have an impact in Queensland.

The Queensland Government’s investment in promotion of nutrition, physical activity and healthy weight must be sustained in order to capitalise on this improvement and to make further gains to achieve better health for our children and young people throughout their lives.

**Recommendation 2:**
The prevalence of unhealthy weight in this survey was highest amongst girls aged around 10 years, but one in five girls and one in six boys are already overweight in their first year at school.

Interventions to promote nutrition, physical activity and healthy weight must begin early in life to assist parents and carers to raise healthy children and young people.

**Recommendation 3:**
Comparison of Queensland children in 2006 with national data from 1985 shows waist circumference has increased across all waist circumference centile levels, but the greatest increase has occurred in the heavier categories. In the older age groups the BMI distribution is stretched towards the upper end, i.e. as the age group increases, the proportion of children or young people who are obese or very obese increases. Not only are there more children today who are overweight, the overweight children have more central obesity, and there are more severely obese children and young people today than 20 years ago.

More services are required to treat obesity and its health consequences in children and young people, and greater efforts need to be made to prevent overweight children gaining more weight.

**Recommendation 4:**
Just under half of Year 1 and 5 children met physical activity guidelines based on international step targets. Based on self-reported time spent in sports and physical activities, two thirds of Year 10 boys and two fifths of Year 10 girls reported accumulating the recommended 60 minutes per day of physical activity. When directly questioned, fewer than one in six boys, and one in 15 girls reported meeting the physical activity guidelines of at least one hour of moderate activity every day in the week before the survey, and the proportion decreased with age.

Just over half the children achieved an hour or more of activity on three days a week, although the proportion was higher in Year 10 boys and lower in Year 1 girls. School-based sports and physical education contributed significantly to children’s and young people’s physical activity. The majority of children had not participated in active transport to school in the week before the survey. Children in Year 1 were more active on weekend days, while those in Years 5 and 10 were less active on weekends than on weekdays.

Efforts to increase children’s physical activity should continue to be a high priority. Increasing participation in active transport to school, active recreation and sports provide potential opportunities to increase children’s physical activity, particularly at weekends for older children.

**Recommendation 5:**
Use of electronic media for entertainment (e.g. computer games, television and Internet) was more prevalent amongst boys and increased with age. More than one third of boys and one quarter of girls in Year 10 exceeded the guidelines of less than two hours of screen-based activity during daylight hours in the day before the survey.
Interventions to decrease use of electronic media for entertainment should be encouraged, especially for boys and young people, to reduce sedentary behaviour.

Recommendation 6: The survey results indicate that few children met the dietary guidelines recommended by the National Health and Medical Research Council (NHMRC). Dietary quality decreased with age. Over half the younger children, but less than two in five of the adolescents reported consuming the recommended minimum serves of fruit per day. Less than half the younger children and just over a fifth of the adolescents reported achieving the recommended serves of vegetables per day. On the day of the survey, approximately half of all children consumed less than one serve of vegetables.

One in ten Year 10 girls had inadequate iron intake and half the children in Year 5, half the Year 10 boys and four out of five Year 10 girls had inadequate calcium intakes. This is reflected in inadequate intakes of milk products, particularly for girls, and excessive intakes of nutrient-poor “extra” foods such as soft drinks and takeaways. Less than one in five children usually drank low-fat milk, which is recommended by the NHMRC for all children aged over two years. Intakes of saturated fat were about 45% higher than that recommended in all age and sex groups.

Initiatives to promote improved nutrition, including provision of accurate, consistent nutrition information and environmental interventions promoting availability of and access to healthy foods for all children must be a high priority for the Queensland Government and all organisations involved with children. Current efforts to promote fruit and vegetable consumption should be continued. Greater efforts should be made to promote the consumption of iron-rich foods, and low fat milk products for children aged over two years.

Recommendation 7: All available evidence suggests that poor nutrition and physical inactivity contribute significantly to the poorer health outcomes experienced by Aboriginal and Torres Strait Islander people compared to the general Queensland population. Insufficient resources were available to allow for the development of valid instruments and over sampling to achieve reliable separate data representative of Aboriginal and Torres Strait Islander children in this survey.

The Queensland Government should invest in a targeted survey to assess nutrition, physical activity and body measurement in Aboriginal and Torres Strait Islander children. If feasible, consideration should be given to including other children of culturally and linguistically diverse backgrounds.

Recommendation 8: The results of the survey are a valuable tool to inform policy and practice.

The Healthy Kids Queensland survey should be repeated in 2009-2010 to help assess the impact of Queensland Government initiatives to promote nutrition, physical activity and healthy weight.