

Rationale for the introduction of the School Confectionery Guidelines

Developing good nutrition habits in children

Food preferences are established early in life and are learned via experiences with food and eating.^{6,7} Schools are an important setting for influencing the food habits of children as approximately 37 per cent of a child's total energy intake is consumed at school. Preferences for sweet, energy-dense foods are well developed by the time children attend school, and children will tend to choose these high sugar snack foods, if made available, in preference to more nutritious options.⁸

Key factors in the development of a child's food preferences and eating behaviours are food availability and accessibility.⁹ Therefore, creating a health promoting environment through a school nutrition policy, for example, is an important strategy in supporting children to make positive food choices.¹⁰

Confectionery is classified as an 'extra' food in the Australian Guide to Healthy Eating¹¹ and the Australian Dietary Guidelines for Children and Adolescents¹², as it is not necessary to consume it to obtain the essential

nutrients that the body needs. It can contribute large amounts of excess energy and sugar, which may have potential negative impacts on a child's health, including excess weight gain, decreased appetite, tooth decay, diarrhoea, malabsorption and impeded growth.^{9,13}

The most recent data from the 2007 National Children's Nutrition and Physical Activity Survey¹⁴ has shown that the weight and nutritional status of Australian children has not improved since the 1995 National Nutrition Survey. This data shows that 23 per cent of 2–16 year olds are in the overweight or obese category. The greatest area of non-compliance is for dietary guidelines relating to saturated fat, sugar, vegetables and dairy. Further, 71 per cent of 4–8 year olds and 67 per cent of 9–13 year olds are consuming over the recommendations for a healthy, moderate sugar intake (according to the Dietary Guidelines for Children and Adolescents¹²). That is, they are consuming more than 20 per cent of their total energy from sugars.¹⁴

Other studies have reported that 65 per cent of children were consuming

energy-dense packaged snacks at least once per week, and close to 20 per cent of children usually had these snacks once a day or more.^{9,15} Furthermore, the majority (close to 60 per cent) of energy consumed from packaged snacks by Australian children occurs while they are at school.¹⁵ Hence, the school environment is a crucial setting for implementing policy that promotes healthy eating.

Role of the canteen in children's diet

A study of Victorian schools by Bell and Swinburn from Deakin University⁸ found that children who used the canteen regularly were more likely to have high energy intakes from fast foods, packaged snacks, soft drinks and confectionary than non-canteen users. The report concluded that the Australian school environment can contribute to behaviours that promote overweight and obesity and it recommended that school canteens should cut down on sales of packaged snacks, chocolate, confectionary and fast foods and increase sales of more nutritious options.

Evidence from Australia and overseas

Both internationally and locally, school-based nutrition programs that include policy, provision of supportive environments and education are recognised as an important strategy in contributing to increased educational and health outcomes.^{16,17} The UK and Australian governments include schools as a key setting in their public health policies and strategies.^{18,19,20}

The American Dietetic Association has the following position statement:

*Comprehensive nutrition services must be provided to all of the nation's preschool through to Grade 12 students. These nutrition services shall be integrated with a coordinated comprehensive school health program and implemented through a school nutrition policy.*¹⁶

Some states of Australia have implemented a confectionery restriction policy. Evaluation data from these implementations have shown both a strong compliance by schools with the restriction of 'extra' foods, and positive nutritional outcomes through the implementation of these restrictions.^{6,21} The effectiveness of these strategies provides support for

implementing the school confectionery guidelines in Victorian government schools.

Effect of nutrition on educational outcomes

A key justification for nutrition policy and programs in schools is the impact of nutrition on students' cognitive functioning and educational performance. Research has established that there is an association between good nutrition and improved cognition and academic performance.^{16,22,23,24} This is particularly significant, as academic performance influences educational attainment. Higher educational attainment is associated with higher income, which can influence health status and quality of life.

Health implications of the consumption of confectionery

Dental health – increased caries

It is well documented that sugars, and more particularly sucrose, are the principal dietary cause of dental caries.^{25,26,27} Bacteria in the mouth rely on sugars and starches for energy. When these bacteria metabolise

sugars, they create acids in the mouth that lower the pH and result in tooth enamel demineralisation; this can cause cavities.²⁵

Furthermore, it is established that sugar consumed in high levels, in a sticky form and at high frequency throughout the day, especially between meals, increases caries activity significantly.^{8,28} Therefore, it is important when trying to prevent the development of caries to target sugar consumption, in particular foods that are high in sugar and that are consumed as a snack and that increase eating frequency.^{25,29}

Numerous trials have concluded that children who consume confectionery have a higher prevalence of caries^{26,27,30,31}; and that children who have easy access to confectionery are more likely to consume these products.³¹

Obesity

There is strong evidence of a link between diets high in added sugar and an increased frequency of obesity in children.^{6,7,9,10,13,15,28,32,33} Lollies, chocolate and jelly are three of the top ten foods contributing to a high refined-sugar intake.³² Overweight and obese children have a high risk

of becoming overweight or obese adults and of increasing their risk of the associated health problems such as heart disease, type 2 diabetes, learning difficulties, social isolation, poor self-esteem and depression.³³

In addition to being high in sugar, confectionery such as chocolate, carob and yoghurt-based compounds are high in total and saturated fats and are energy dense foods. Consumption of foods high in saturated fat is a contributing factor to cardiovascular disease.³⁴ In addition, total fat intake and consumption of foods that are high in total fat and are energy dense have been linked to obesity in children.^{35,36}

Inadequate micronutrient intake

Micronutrients include vitamins and minerals and are found in small amounts in food. They play a vital role in body functioning and digestive processes.³⁷ Micronutrient intake can be adversely affected when the diet is high in added sugar. It has been found that consuming energy-dense foods such as confectionery, instead of the more nutrient-dense foods in the overall diet, may lead to inadequate micronutrient intake.²⁸

Why artificial sweeteners are included in the confectionery ban

Findings have shown that artificially sweetened soft drinks and confectionery products are of no nutritional benefit as they provide no essential nutrients.²⁸ Whilst there is no evidence to demonstrate that they lead to weight gain or loss²⁸, there are negative implications for children from consuming artificially sweetened products for example, creating a habit for eating sweets. They may also have similar metabolic effects to regular sweet products.³⁸ Another negative effect may come from consuming these products in the place of more nutritionally beneficial foods.

There have been studies on the potential benefit of artificially sweetened chewing gum in reducing dental caries. A review of this research, however, reports that there is no conclusive evidence for a caries-therapeutic effect of artificial sweeteners. The majority of research indicates that the preventative effect is not related to the artificial sweetener itself, but more to the mechanical action of chewing, causing an increased production of saliva, which is protective against dental caries.³⁹

Conclusion

Confectionery, produced from both sugar and artificial sweeteners, is not beneficial to a child's diet and can have detrimental health effects, both short and long term. Furthermore there is an established link between good nutrition and positive educational outcomes. The current consumption of confectionery is far above the recommended guidelines for Australian children. The school setting has been shown to have a crucial role in providing an environment that is supportive of healthy food choices. The *School Canteens and other Food Services Policy*, including a ban on supplying confectionery through school canteens and other school food services, will assist in addressing these issues.

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