

Good health and nutrition

Dairy and dental health

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Dairy is an integral part of a healthy, Australian diet. Milk, cheese and yoghurt are naturally nutrient-dense super foods, providing protein, calcium and other essential nutrients. Beyond dairy's nutritional value, there is an abundance of evidence that links dairy to optimal dental outcomes, including healthy teeth and gums.¹

KEY MESSAGES

Dairy is packed with essential nutrients and vitamins, including calcium, phosphorus and the protein casein which are beneficial for dental health.

Research studies demonstrate that milk, cheese and yoghurt are not linked to dental erosion.

Low dairy consumption is associated with a higher rate of dental caries, erosion and tooth loss.

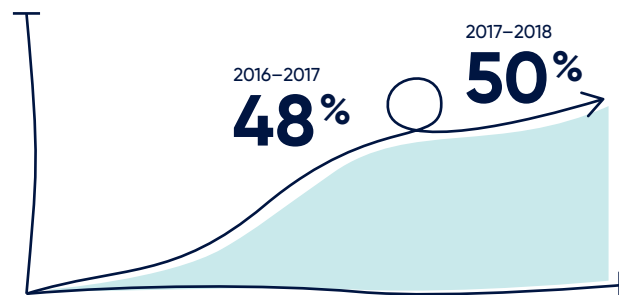
Consuming adequate serves of dairy in line with the Australian Dietary guidelines and following good dental hygiene practices supports optimal dental health.

Australian dental health statistics

In 2011, oral diseases accounted for 8.1% and 4.1% of the non-fatal burden of disease among Australian children aged 5–9 and 10–14, respectively. In contrast, in 2019 almost all (99%) of non-fatal dental related health burden was due to dental caries, making it the most prevalent oral disease in Australian children².

In 2017-18, the Australian Bureau of Statistics (ABS) reported that, one in two people (50%) or 9.8 million people aged 15 years and over saw a dental professional in the last 12 months. This increased from 48% in 2016-17.

% of Australians 15 years and over who saw a dental professional



What is tooth decay?

Plaque, a bacterial film that covers our teeth, releases acids following consumption of sugary food or drink. This acid weakens teeth over time and prolonged exposure results in dental cavities - this is known as tooth decay.² The proportion of tooth decay in Australia is shown in the table below.

Average number of decayed, missing or filled teeth, per age group in Australia³

Age (years)	No. of decayed, missing or filled teeth
5-10	1.5
15-34	4.1
35-54	10.3
75+	19.4

Why is saliva important?

Saliva is the body's natural defence against tooth decay. It helps to dilute and wash acids and sugars from the mouth and reduces the effects of the acids produced by plaque-forming bacteria. If acidic food or drink is consumed regularly, or an individual is often dehydrated, salivary protection is lost, allowing attrition, erosion and abrasion that can lead to damage and cavity formation in the tooth.^{4,5,6}

What is tooth erosion?

Enamel is the hardest material in the body. It covers the outside of our teeth in order to protect the more sensitive inner layers. Tooth erosion occurs when acidic foods and drinks progressively dissolve tooth enamel, leading to a loss of the tooth's protective structure. Foods and drinks with a pH below 5.5 are generally thought to trigger tooth erosion.^{7,8}

Drink	pH	
Saliva	7.0	→ Non-erosive
Milk	6.9	
Water	6.0–7.0	
pH 5.5		
Beer	4.0–5.0	→ Potentially erosive
Herbal teas	3.1–3.8	
Sports drinks	3.0	
Orange juice	2.8–4.0	
Soft/diet drinks	2.7	
Alcopops	2.5–2.8	
Wine	2.3–3.8	

Dairy foods and dental health

Studies show that milk, cheese and yoghurt are not linked to dental erosion.^{9,10}

Key findings suggest:

- Hard cheese may protect against tooth decay, as it helps to stimulate salivary flow which neutralises the acid pH of the mouth following exposure to sugar.¹¹
- Plain milk, plain yoghurt and yoghurt with no added sugar have either a neutral or beneficial effect on teeth.¹²
- Flavoured milk and yoghurt are thought to have a negligible or low impact on tooth decay if their added sugar content is 5% or less.^{9,13}
- Lactose, the naturally occurring sugar in milk and yoghurt, is not linked to tooth decay.¹⁴

Dairy's beneficial impact on dental health is due to milk, cheese and yoghurt containing calcium, phosphorus and the protein casein – nutrients which have been shown to protect tooth enamel.^{12,13}

Nutrient	Dental health benefits
Calcium	Aids in strengthening the enamel of the teeth, which acts as a defence mechanism against tooth erosion and cavities. Many people turn to dairy products such as milk, cheese and yoghurt to consume the optimal, recommended amount of calcium per day, being 1,000mg. ⁹
Phosphorus	Aids the body in absorbing and using calcium. Helps strengthen teeth by building enamel. ¹⁵
Casein	Casein aids in preventing tooth erosion from acidic foods and drinks by neutralising acid and building tooth enamel. It also works alongside calcium to prevent cavities from forming in the teeth. ¹⁶

It is important to note that good oral health plays a key role in maintaining optimal nutrition. There is a bi-directional relationship between the two, with poor dentition affecting an individual's ability to consume a healthy balanced diet, and on the other hand, unhealthy dietary habits can lead to poor dentition.¹³

Dairy and the Australian Dietary Guidelines

The Australian Dietary Guidelines recommend everyone to "enjoy milk, yoghurt, cheese and/or alternatives, mostly reduced fat"¹⁷. This is because milk, cheese and yoghurt are an excellent source of calcium; very few other foods in the Australian diet contain as much of this important nutrient. Dairy foods are also a good source of other key nutrients including protein, iodine, riboflavin and vitamin B12.¹³ Research has shown that milk, cheese and yoghurt can help reduce the risk of heart disease, stroke, high blood pressure, type 2 diabetes and some cancers.^{18,19}

What do the Australian Dietary Guidelines say about dairy and dental health?

Only one study on the relationship between dairy and dental health is reported in the evidence supporting the 2013 Australian Dietary Guidelines; this cohort study of newborn infants in the USA found that children with dental caries had lower median intakes of milk at 2 and 3 years of age²⁰. Overall, milk had a neutral association with dental caries.

DAIRY IN THE AUSTRALIAN DIETARY GUIDELINES - REGULAR VS REDUCED FAT?

While the Australian Dietary Guidelines recommend consuming 'mostly' reduced fat dairy products, the Heart Foundation have changed their recommendations regarding regular fat dairy; after reviewing research from systematic reviews and meta-analyses, they found that regular fat dairy¹³ products did not increase nor decrease the risk of cardiovascular disease in the general population^{18,21,22}. The Australian Dietary Guidelines recognise that we consume foods, and not nutrients, and thus foods should be considered as a whole, not based on the individual nutrients they contain; this concept is known as the dairy matrix^{23,24}. Dairy foods are unique due to their natural composition of macro and micronutrients and other health-positive compounds. These nutrients interact together in a unique way, enabling dairy foods to contribute many health benefits.

Dairy consumption in Australia

In 2011-12, The ABS reported that only 10% of Australians consumed an adequate amount of dairy products, in line with the Australian Dietary Guidelines²⁵.

Poor dairy consumption is cause for many health concerns, particularly in relation to dental health. Low dairy consumption is correlated with a higher incidence of dental caries, dental erosion and tooth loss²⁶. With studies showing that adequate consumption of milk, cheese and yoghurt decreases incidence and prevalence of dental caries, especially in children, adolescents, and the elderly population^{27,28,29,30}.

Recommended dairy intake

With most Australians not consuming enough dairy each day, they are missing out on key nutrients and the numerous associated health benefits¹⁹.

No matter your age, milk, cheese and yoghurt have an important role in a healthy diet, particularly to promote good dental health.


Minimum recommended number of serves from the dairy food group⁸.

	Age (years)	Number of serves
Boys	2-3	1.5
	4-8	2
	9-11	2.5
	12-18	3.5
Men	19-70	2.5
	70+	3.5
Girls	2-8	1.5
	9-11	3
	12-13	3.5
	14-18	3.5
Women	19-50	2.5
	51-70	4
	70+	4
	Pregnant/breastfeeding (19-50)	2.5


Adapted from: 2013 Australian Dietary Guidelines. The dairy food group includes milk, cheese, yoghurt and/or alternatives⁸.

What does a serve look like?


One serve of dairy
is equivalent to:




Milk
1 cup
(250ml)



Cheese
2 slices
(40g)



Yoghurt
¾ cup
(200g)



Ricotta
½ cup
(120g)

Why is dairy so important for children?

Dairy foods provide a unique package of more than 10 essential nutrients, including protein and calcium which are important for supporting a child's nervous and immune system, maintaining healthy eyesight, skin, muscle and nerve function, as well as providing energy to support optimal growth. This makes choosing dairy foods, such as milk, cheese and yoghurt, an important healthy and nutritious choice.

Additionally, studies show that children who consumed 200mL of milk per day reported reduced consumption of sugar-sweetened beverages³¹. This is beneficial as sugar-sweetened beverages are associated with an increased risk of dental caries, reduced bone strength and excess weight gain in children^{32,33,34,35,36}.

Foods to avoid for optimum dental health

Regular consumption of discretionary food and drinks, including acidic sweets and snacks such as lollies and fruit juices, is the number one cause of tooth decay³⁷. In contrast, higher intakes of milk, cheese and yoghurt have been shown to reduce the risk of tooth erosion³⁸.

SUMMARY

In addition to maintaining optimal oral hygiene, it is important to consider how the food we eat impacts our dental health. Milk, cheese and yoghurt have been shown to be beneficial for dental health due to their naturally high content of calcium, phosphorus and casein. These nutrients help strengthen teeth, as well as providing a protective factor against harmful bacteria that can cause tooth erosion and decay. By meeting their recommended daily serves of milk, cheese and yoghurt, Australians can promote and maintain good dental health!

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