



Figure 2: (a) Fluoride mouth rinse use (b) Fluoride varnish application (c) Fluoride gel application

Safety of fluoride

Studies have confirmed that fluoride effectively prevents and reduces tooth decay without causing harmful effects on your health. White/opaque marks or spots on your teeth (known as dental fluorosis or tooth mottling) may develop if you ingest large amounts of fluoride when teeth are still forming under the gums, usually from birth to six or eight years of age (Figure 3). However, with the currently recommended fluoride level in water, dental fluorosis in Australia is mild and does not affect the health or function of your teeth, and may make the teeth more resistant to decay.



Figure 3: Mild dental fluorosis

You can protect your teeth from decay by consuming a healthy diet, practising good oral hygiene, having regular dental check-ups and using fluoride products according to the current Australian guidelines and, as recommended by your dental practitioner. And remember...

- Fluoride in drinking water is safe
- Fluoride products are safe when used as recommended
- Always keep fluoride products out of reach of children
- There is no reliable evidence linking water fluoridation at Australian levels to any health problems
- Fluoride prevents and reduces tooth decay in children and adults

The use of fluorides in Australia

Information for Patients

Special Topic No. 25

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Tooth decay is very common. Nearly 4 in 10 children and 9 in 10 adults in Australia have tooth decay. Tooth decay occurs when dental plaque (a sticky, colourless film of bacteria that forms on your teeth) turns sugar in your food and drinks into acid, which gradually damages your tooth enamel, the outer covering of your teeth. Fluoride can prevent and reduce tooth decay by making your teeth tougher and more resistant to acid damage. Fluoride can also repair the damage caused by acid and slow down the growth of plaque bacteria in your mouth.

Community water fluoridation

Naturally occurring fluoride levels in water in Australia is not enough to prevent tooth decay. Community water fluoridation is the addition of fluoride to drinking water to reach a level that can help prevent and reduce tooth decay. This is the most effective way of providing fluoride to all Australians.

In Australia, the recommended concentration of fluoride in drinking water is 0.6–1.1 milligrams per litre (mg/L) of fluoride, depending on the average maximum daily temperature. Local authorities in each state/territory regularly monitor the fluoride level in the water. Community water fluoridation in Australia began in 1953, almost 70 years ago. Today, almost 90% of Australians have access to fluoridated drinking water with a coverage ranging from 76% in Queensland to 100% in ACT.

Based on current guidelines on fluoride use in Australia (see https://www.adelaide.edu.au/arcphd/dperu/fluoride/Guidelines_for_use_of_fluorides_in_Australia_update_2019.pdf):

- If you consume bottled water containing fluoride, ensure you purchase bottled water that contains approximately 1.0mg/L of fluoride
- If you use filtered water, ensure you purchase water filters that do not remove fluoride
- Ensure you purchase bottled water and water filters with labels that clearly indicate the fluoride concentration of the water consumed or resulting from the use of such products, which should be approximately 1.0mg/L of fluoride
 - If you live in a non-fluoridated area you should use bottled water containing approximately 1.0mg/L of fluoride to obtain the dental health benefits of fluoride in drinking water

Self-use fluoride products

Fluoridated toothpaste

Brushing your teeth twice a day with a fluoridated toothpaste is important to keep your teeth and gums healthy. The current Australian guidelines recommend:

- From the time your child's first tooth appears in the mouth (about six months of age) to the age of 17 months, their teeth should be cleaned by a responsible adult, but not with toothpaste.
- If your child is 18 months to five years old (inclusive), teeth should be brushed twice a day with a low fluoride toothpaste containing 0.5–0.55 milligrams of fluoride per gram (mg/g fluoride) (or 500–550 parts per million (ppm)) (Figure 1). Toothpaste should always be used under adult supervision. A small pea-sized amount should be applied to a child-sized soft toothbrush and your child should spit out, not swallow and not rinse. Your child should not be allowed to lick or eat toothpaste. Standard toothpaste (a toothpaste containing 1.0–1.5 mg/g fluoride (1000–1500 ppm)) is not used for children under 6 years of age unless recommended by your dental/health practitioner.



Figure 1: Low fluoride toothpaste

- If your child is aged 6 years or more, teeth should be brushed twice a day or more frequently with standard fluoride toothpaste containing 1.0–1.5 mg/g fluoride (1000–1500 ppm). After brushing, your child should spit out, not swallow, and not rinse.
- If you or your children do not consume fluoridated water or are at an increased risk of developing dental decay, your dental/health practitioner may recommend varying the guidelines regarding your toothpaste usage. This may include more frequent use of fluoridated toothpaste, commencement of toothpaste use at a younger age, or earlier commencement of the use of standard toothpaste.
- Toothpastes containing higher concentrations of fluoride (5mg/g or 5000 ppm) should only be used on the advice of your dental/health practitioner

Fluoride mouth rinses

In Australia, fluoride mouth rinse (Figure 2a) is popular, particularly among adolescents. The current Australian guidelines recommend:

- Fluoride mouth rinses should not be used if your child is below the age of 6 years
- Fluoride mouth rinses might be used if your child is aged 6 years or more and is more likely to have tooth decay
- Fluoride mouth rinse should be used at a time of day when toothpaste is not used
- Fluoride mouth rinses should not be a replacement for brushing with fluoridated toothpaste
- Mouth rinses should be spat out, not swallowed

Fluoride supplements

Current Australian guidelines do not recommend the use of fluoride supplements in the form of drops or tablets to be chewed and/or swallowed.

Professionally applied fluoride products

Your dental/health practitioner may apply the following products to your teeth if the need arises:

Fluoride varnishes

Fluoride varnishes can be applied up to 4 times/year. Your dental practitioner may recommend using fluoride varnish (Figure 2b) if anyone including children under the age of 10 years is at an increased risk of getting tooth decay.

Fluoride gel and foam

Your dental practitioner may recommend using fluoride gels (Figure 2c) if you are aged 10 years or more and have a high risk of developing tooth decay. Fluoride gels should not be used for children under 10 years, as there is a risk of them swallowing large amounts of fluoride. The use of fluoride foam in preventing decay is not supported by evidence and so is not recommended for use.

Silver diamine fluoride

Silver diamine fluoride (SDF) is applied directly to cavities to stop the process of decay. While SDF is effective, it can permanently stain cavities black so it is not used on front teeth.