

# Fluoride Varnish and Community Water Fluoridation



This Q&A format one-pager shares how fluoride varnish and community water fluoridation are strategies to prevent tooth decay. Learn how topical and systemic fluorides work together as public health strategies.

## How do our bodies use fluoride?

- Fluoride, like calcium and phosphate, is a mineral present in saliva and stored in dental plaque.
- To (re)build, or (re)mineralize, tooth surfaces, fluoride must be constantly present in low concentrations in saliva.
- Regular exposure to low doses of fluoride helps maintain fluoride concentrations in saliva.

## What is the difference between fluoride varnish and fluoridated drinking water?

- **Topical fluoride**, such as fluoride varnish, is a higher-dose concentration of fluoride that strengthens the root surface of the teeth, making them more decay resistant.
- **Systemic fluoride**, such as community water fluoridation, is ingested and becomes incorporated into developing tooth structures while also providing topical protection from decay through saliva.

## With fluoride varnish available, is water fluoridation still helpful?

- Different fluoride sources work together to protect teeth – like driving a car with air bags and wearing a seatbelt.
- Fluoride is available today in drinking water, dental products and topical varnish. With these sources, the difference between decay rates in fluoridated versus non-fluoridated areas is less than it was several decades ago, but still statistically significant!
  - Studies show that community water fluoridation still prevents about 25% of tooth decay in children and adults throughout the lifespan when used in conjunction with other fluoridated products like fluoride varnish.
- A 2022 systematic review found that children in fluoridated communities had about 46% lower odds of experiencing tooth decay.
- In Calgary, tooth decay increased when water fluoridation was removed even though toothbrushing rates stayed the same.

## What can someone do if they live in an area without water fluoridation?

- Prescription fluoride supplements are recommended by the ADA and the U.S. Preventive Services Task Force for children at high risk for developing tooth decay who live in areas where fluoride concentrations in drinking water are deficient.
- Like most vitamin and mineral supplements, guidance for prescription fluoride supplementation is based on age and fluoride concentrations in local drinking water,
- While these supplements can be an effective means of caries prevention, they must be used daily to have an effect similar to optimally fluoridated drinking water.

Read [CDA's Key Facts Sheet](#) to learn more about optimal fluoride exposure.