

Xylitol and Oral Care

Approved for use in more than 40 countries, xylitol is considered one of nature's most powerful weapons against dental caries. More than a mere sugar substitute, xylitol appears to be a valuable strategy for promoting good oral health and general well being. Clinical and field tests have demonstrated dramatic reductions in new tooth decay, along with arrest and even some reversal of existing dental cavities. This effect from xylitol is long lasting and possibly permanent.

ABOUT XYLITOL

- Xylitol is a naturally occurring sugar alcohol used frequently as a sweetener.
- Pure xylitol – a white crystalline substance that looks and tastes like sugar – is derived primarily from forest and agricultural materials.
- While present in many berries, fruit and vegetables, xylitol also occurs naturally in the body – an average-size adult manufactures up to 15 grams daily during normal metabolism.
- The sweetener is widely available in a variety of forms such as candy, toothpaste, mouthwash, floss, chewing gum, mints and as a bulk sweetener.
- It differs from other sugar substitutes such as saccharin and aspartame, which are chemically produced.

BENEFITS OF XYLITOL

- Studies have shown xylitol to be effective for increasing bone density, promoting weight loss, contributing to the stabilization of blood sugar and the reduction of insulin levels, and for improving oral health.
- Dental benefits of xylitol were recognized in Finland in 1970. The first chewing gum developed for the purpose of reducing dental caries and improving oral health was released in Finland in 1975 and in North America shortly after.

QUALITIES OF XYLITOL

- 100 per cent natural
- Good tasting
- 40 per cent fewer calories than sugar
- Safe for all ages



- No negative side effects with normal use
- Xylitol effects on teeth can be long-lasting and, in some cases, permanent

THE IMPACT ON ORAL HEALTH

- Xylitol does not break down like regular sugar, e.g., sucrose, glucose and fructose.
- Bacteria are known to increase acid in the mouth. For instance, the oral bacteria *Streptococcus mutans* is a major contributor in the development of cavities.
- Consumption of xylitol has been shown to reduce tooth decay and the incidence of gum disease.
- Xylitol's molecular structure slows the growth of *S. mutans* on the tooth surfaces, stops the production of tooth decay-causing acid and neutralizes the pH level in saliva and plaque.
- A neutral pH prevents further enamel destruction.
- The number of acid-producing bacteria may decrease as much as 90 per cent.
- Since xylitol slows destruction and enables some rebuilding of the enamel, it helps prevent new cavities from forming and over time can reverse tooth decay that already occurred.
- Xylitol may also prevent *S. mutans* from transferring to other members of the family.

RISK FACTORS

- Daily use of xylitol in oral care has shown remarkable effectiveness with no major side effects.
- Several dental associations as well as Health Canada and the U.S. Food and Drug Administration recognize the benefits of xylitol and approve its use for oral care.
- In 1983, a joint expert committee of the World Health Organization and the Food and Agricultural Organization of the United Nations confirmed that xylitol is a safe sweetener for food.
- Excessive consumption of the sweetener may lead to abdominal distress and possibly diarrhea.
- There is no harm if xylitol gum is swallowed accidentally.

Toxic for dogs – While xylitol offers many benefits to humans, it can be dangerous for dogs, even life-threatening. It should not be fed to any pets. Within 30 minutes of consumption, depending on bodyweight and amount consumed, a dog could experience a rapid release of insulin, causing a sudden decrease in blood sugar, followed by possible vomiting, depression, loss of co-ordination, seizure or coma. Exposure to higher doses of xylitol may result in fatal liver failure in some dogs.



TREATMENT/HOME CARE

To be effective, four to 10 grams of xylitol per day are required. Check packages for xylitol content. Remember that one gram equals 1,000 mg.

- Use the xylitol three to seven times daily between meals, after snacks and soft drinks. Consume candies or chew gum for three to seven minutes each time.
- Frequency is more important than quantity. If used occasionally or even once a day, xylitol may not be effective.
- On food labels, xylitol is classified broadly as a carbohydrate and more narrowly as a polyol or sugar alcohol.
- Visit www.xylitol.org for information about products containing xylitol.

THE ROLE OF DENTAL HYGIENISTS

Dental hygienists can provide information to clients about the benefits of xylitol on teeth and gums, recommend products containing 100 per cent xylitol and how to replace current products with the natural sweetener. They provide advice on nutrition, including healthy snacks and beverages that are low in sugar and high in nutrition. Dental hygienists also advise on the importance of a home care program for removing daily plaque with proper brushing and flossing.

As professional health-care providers, dental hygienists are primarily concerned with promoting good oral health. Dental hygiene is among the largest of the regulated healthcare professions in the province. In Ontario all dental hygienists are registered with the College of Dental Hygienists of Ontario, which regulates the profession to ensure the public receives safe and ongoing comprehensive oral care.

VFS14.1
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