



Homestead Market®

A Division of Hefty Creek International, LLC
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FAQ – Xylitol

What is xylitol?

Xylitol is a white crystalline powder that is odorless, with a pleasant, sweet taste just like sugar. Xylitol occurs naturally in many fruits and vegetables and is even produced by the human body during normal metabolism. Because it has been shown to reduce the development of dental caries (cavities), it has gained increasing acceptance as a natural alternative to sugar.(1)

What is the source of the xylitol used in foods?

Xylitol comes from plants rich in hemicellulose and is commercially produced primarily from corn cobs and stalks and from birchwood/hardwood trees.

Where is xylitol made?

Xylitol is primarily manufactured in China, Finland and the USA.

How many calories are in xylitol?

Xylitol contains 2.4 calories per gram. This is 40% fewer calories and 75% fewer carbohydrates than sugar.(2)

How does xylitol compare in sweetness to white sugar?

Xylitol is equal in sweetness to white table sugar (sucrose).

Are any ingredients added to xylitol?

Xylitol is the sole ingredient; nothing else is added to it.

How is xylitol classified as a food?

Xylitol is a carbohydrate; more specifically, it is a polyol (sugar alcohol). It is a 5-carbon sugar, unlike the 6-carbon sugars used to sweeten most of our foods and drinks, which can do serious damage to teeth.

In what form can xylitol be purchased?

Xylitol is available in crystal form, just like table sugar. It is also used as an alternative sweetener and for dental protection in candies, gums, mints, and beverages. Because it helps prevent tooth decay, xylitol comes in baby dental wipes and tooth gels, toothpastes, dental floss and mouthwash. It is also found in nasal sprays as a drug-free option for cleaning nasal passages.

What are the dental benefits of xylitol?

Consumption of xylitol does not promote tooth decay. It can, in fact, reduce the risk of dental caries and plaque, along with proper dental hygiene. Xylitol-sweetened products, such as

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chewing gums and mints, increase salivary flow, preventing dry mouth and aiding in repair of damaged tooth enamel.(3) (See below for more detail on how xylitol works in preventing tooth decay and plaque.)

How does xylitol work to keep teeth healthy?

Tooth decay is an infectious disease process. It is caused by acid-producing bacteria that live in the mouth. When we eat sugar, a fermentable carbohydrate, these bacteria convert it into more acid. Overtime, consumption of sugars can dissolve tooth enamel, a process known as demineralization of the teeth. Bacteria can then invade and eat away the tooth's inner dentin layer, leading eventually to cavities.

On the other hand, teeth are remineralized as saliva neutralizes the acidity and redeposits salivary minerals into the enamel surface. This demineralization-remineralization process occurs throughout the day. The more acidic the mouth, the more prone the teeth are to tooth decay.

Unlike sugar, xylitol is non-acidogenic and non-cariogenic, meaning it does not promote acid or dental caries. It will not ferment in the mouth, so oral bacteria cannot convert it to acids as they can sugar. Ingestion of xylitol after meals and in snacks stimulates saliva and enhances its protective factors. It stabilizes calcium and phosphate solutions in the teeth and encourages remineralization. It raises plaque pH (alkalinizes), and lessens the amount of time that teeth are exposed to sugars and demineralizing acids. Xylitol inhibits bacteria and reduces plaque.(4)

How can xylitol help mothers from transmitting cavity-producing bacteria to their children?

Xylitol inhibits the growth of mutans streptococci bacteria (MS) in the mouth, helping to reduce one's susceptibility to dental caries. Mothers with high levels of MS may transfer this micro-organism to their children through everyday contact such as kissing and tasting food. The risk for cavity development is greater the earlier that these bacteria colonize the children's teeth and the higher the number in their mouths.

A clinical study published in the Journal of Dental Research showed an association between mothers who habitually consumed xylitol with a significant reduction in the transmission of MS from mother to child assessed at two years of age (5), with the benefit extending beyond the end of the study period. Women can begin protecting their children from high MS levels and potential tooth decay with regular use of xylitol from pregnancy onwards.(6) Infants can be further protected once their first teeth erupt by applying xylitol gels, syrups or swabs onto their teeth.(7)

How much xylitol is needed to prevent tooth decay?

Recommended dosage ranges from 4 to 12 grams of xylitol daily (1-3 teaspoons). Frequency of use also appears to play a key role, with an ideal of 3-5 times daily in the form of xylitol gums, candies, toothpastes and mouth rinses. Consult your dentist for dosing suggestions. For the greatest benefits, choose items sweetened only with xylitol.

Xylitol-containing products -- such as gums, mints, hard and chewy candies -- that can be chewed or sucked keep the xylitol in longer contact with teeth and thus offer the best benefits.(8)

When should I be using xylitol to get the best dental benefits?

Use xylitol after meals and snacks, between meals and at bedtime. Those more prone to dental caries are encouraged to use xylitol more frequently.(9)

Does xylitol offer benefits to people with diabetes and/or hypoglycemia?

Xylitol is between 7 and 13 on the glycemic index. This is much lower than sucrose at 65 and glucose at 100.(10) Xylitol is slowly absorbed and would be considered a "slow" sugar compared to a low-glycemic sugar like fructose, which is a "fast" sugar because it is absorbed and enters liver metabolism very quickly.(11) Always check with your health care provider if you are diabetic.

Is xylitol good for sugar- and carbohydrate-controlled diets?

Yes, xylitol makes a good substitute for sugar in such diets. Unlike sugar, xylitol does not feed yeast and is nonfermentable.(12) It contains only 2.4 calories per gram, while sugar contains 4.0 calories per gram. Xylitol has 75% fewer carbohydrates than sugar.

What other health benefits can xylitol offer?

Ongoing research suggests that nasal washes containing xylitol help prevent bacteria from adhering to nasal passages and helps the body's natural cleansing processes to clear away harmful bacteria, reducing the risk of infection. Research also indicates that regular xylitol gum users have significantly fewer sore throats, respiratory infections and ear infections. In addition, persons with dry mouth (Xerostomia) can help stimulate saliva and protect teeth with the use of xylitol chewing gum and candy.(14)

What about the safety of consuming xylitol?

Xylitol is safe for human consumption. In 1986 the U.S. Food and Drug Administration (FDA) commissioned the Federation of American Societies of Experimental Biology (FASEB) to review all relevant data concerning xylitol and other polyols. FASEB's scientific conclusions indicate that use of xylitol in humans is safe. It also affirmed xylitol's acceptability as an approved food additive for use in foods for special dietary uses.(15) However, it is not safe for your pets to ingest xylitol (see below).

Can I substitute xylitol for sugar in cooking and baking?

Yes, xylitol can be used as a sugar substitute in cooking and baking and leaves no unpleasant aftertaste. It is a sugar replacement in such items as coffee, tea, cereals, cinnamon toast, yogurt, etc. Because yeasts grow rapidly on simple sugars but do not utilize xylitol well, it is not a satisfactory replacement for sugar in breads and other yeast-containing products. Also, xylitol does not crystallize as well as table sugar in making hard candies, like peanut brittle, and it does not brown like table sugar.

Does the ingestion of xylitol produce any unpleasant side effects?

Ingesting xylitol may cause temporary gastrointestinal discomfort and laxation (diarrhea) in sensitive individuals. This is a limited condition as dosage is adjusted and tolerance

increases. The small amounts needed for dental protection will not generally cause laxation.(16)

Will xylitol harm my pets?

Although xylitol has many benefits for people, it can cause serious health risks for dogs. Call your veterinarian immediately if you suspect your dog has consumed any amount of xylitol.

What xylitol products does Homestead Market offer?

Homestead Market offers an array of products that contain xylitol: candies, gums, mints, crystals, nasal wash, toothpastes and tooth gels, dental floss and mouthwash, along with several moisturizing products to address dry mouth..

RESOURCES:

1. "Xylitol," The Calorie Control Council, <http://www.caloriecontrol.org/sweeteners-and-lite/polyols/xylitol>.
2. John Peldyak, DMD, Xylitol: Sweeten Your Smile, (Mt. Pleasant, MI, Advanced Developments, Inc., 1996), page 3.
3. "Xylitol FAQ's," <http://www.xylitol.org/faqs.asp>.
4. Peldyak, 6-8.
5. "Influence of Maternal Xylitol Consumption on Acquisition of Mutans Streptococci by Infants," E. Soderling, P. Isokangas, K Pienihakkinen and J. Tenovuo, Journal of Dental Research, 79(3): 882-887 (2000).
6. "Occurrence of Dental Decay in Children after Maternal Consumption of Xylitol Chewing Gum,a Followup from 0 to 5 Years of Age", P. Isokangas, E. Soderling, K. Pienihakkinen, and P. Alanen, Journal of Dental Research 79(11): 1885-1889 (2000).
7. Peldyak, 15.
8. Homestead Market sells several products for infants: Spry Tooth Gel, Spiffies Dental Wipes, and I Can Brush Toothbrushing Solution.
9. "Xylitol: The New Approach to Tooth Decay," Donald Bailey, Epic Dental, Epic Industries, Inc., 2004, p 11. Also, Peldyak, 5, 21.
10. Geoffrey Livesey (2003). Health Potential of Polyols as Sugar Replacers, with Emphasis on Low Glycaemic Properties. Nutrition Research Reviews, 16, pp 163-191 doi:10.1079/NRR200371.
11. Peldyak, 18-19.
12. Peldyak, 8.
13. Sherill Sellman, "Xylitol: Our Sweet Salvation?" The SPECTRUM, Vol. 4, No. 8, February 2003, p 23 – www.thespectrumnews.org.
14. "Xylitol FAQs, <http://www.xylitol.org/faqs.asp>. Peldyak, 16, 49. Sellman, "Xylitol: Our Sweet Salvation?"
15. Peldyak, 38.
16. Peldyak, 26.

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