



Xylitol

Xylitol Bulk (1 lb.) - Stock #5435-3
Xylitol Gum - Cinnamon (100) - Stock #5400-8
Xylitol Gum - Green Tea (100) - Stock #5403-3
Xylitol Gum - Peppermint (100) - Stock #5408-4
Xylitol Gum - Spearmint (100) - Stock #5405-0
Xylitol Mints - Berry (240) - Stock #5412-2
Xylitol Mints - Lemon (240) - Stock #5415-1
Xylitol Mints - Peppermint (240) - Stock #5410-7

Xylitol is an all-natural substance that looks and tastes like regular table sugar (or sucrose), but has 40% fewer calories and 75% fewer carbohydrates. Plus, unlike regular sugar, xylitol produces only a minimal insulin response, making it an ideal sweetener for diabetics, hypoglycemics and individuals on low-calorie or low-carbohydrate diets. Xylitol also behaves like sugar in most recipes, with the exception that it does not caramelize like sugar. Furthermore, both the FDA and the World Health Organization have deemed xylitol safe for use as a food

supplement.¹⁻⁶

In technical terms, xylitol is a polyol (or sugar alcohol) derived from the plant fiber, hemicellulose. Xylitol is found in many foods, including berries (especially raspberries), plums, cauliflower, lettuce and mushrooms, as well as corncoobs and hardwoods such as birch. Xylitol is also produced by the body as part of normal glucose metabolism. Xylitol has a low glycemic index of 7. The glycemic index is a rating of foods on a scale of 1 to 100, based on their direct effect on blood glucose levels. Foods with the lowest glycemic index are considered the healthiest, especially given that diets based on high glycemic index carbohydrate foods have been shown to increase the risk of coronary heart disease.^{1-3,6-8}

Numerous studies conducted over the past 20 years have found that xylitol provides several health benefits. Xylitol has been shown to prevent tooth decay and cavities, reduce dental plaque formation and gingivitis (inflammation of the gums), and promote the remineralization (or rebuilding) of tooth enamel. Xylitol also stimulates saliva production and may help reduce abnormal dryness of the mouth, also known as xerostomia. Eating xylitol-sweetened food or chewing xylitol-sweetened gum or mints inhibits the growth of bacteria responsible for dental caries (tooth decay), which can lead to cavities. Evidence suggests that small daily quantities of xylitol added to the diet of children and young adults results in significant reductions in dental caries. In fact, long-term clinical trials have demonstrated reductions ranging from 30% to more than 85% in dental caries, simply by using a few pieces of xylitol chewing gum daily over a period of 1 to 3 years. Furthermore, it may be surprising to learn that dental caries is actually a transmissible infectious disease. Researchers studied the effects of chewing xylitol-sweetened gum in mothers of infants and young children. Results confirmed that the transfer of mutans streptococci (the main bacteria associated with dental caries) from mother to child was blocked, resulting in fewer dental caries in children whose mothers chewed xylitol gum.^{1-4,9-23}

In addition, by improving oral health, xylitol may help reduce the risk of heart disease. Several studies have reported an association between poor oral health and heart disease, including atherosclerosis, myocardial infarction (heart attack) and vascular disease (conditions that affect the blood vessels). In fact, one study found that poor oral health was a greater predictor of heart disease than other indicators, such as high triglycerides or low HDL cholesterol levels.²⁴⁻²⁸

Another health benefit of xylitol is the reduction in episodes of acute otitis media (short-term inflammation and/or infection of the middle ear). Xylitol has been shown to effectively prevent acute otitis media by inhibiting the growth of *Streptococcus pneumoniae*. Research indicates that regular use of xylitol reduces the occurrence of acute otitis media in children by 30% to 40%. Xylitol's ability to inhibit the growth of disease-causing bacteria may also prove to have clinical significance in the prevention of other infections that originate in the mouth, including sinus and lung infections.^{1-3,29-36}

Furthermore, xylitol may help prevent osteoporosis. Animal studies have shown that xylitol enhances calcium absorption and increases bone density. In fact, scientists involved with one study concluded that xylitol helped protect against aging-related osteoporotic changes (or loss of bone) in aged rats. Additional animal studies found that the combination of xylitol and calcium carbonate was more effective in increasing bone density than calcium carbonate alone.^{2,37-41}

Some first-time users of xylitol may experience an initial mild laxative effect that will subside with continued use, as the body's digestive enzymes adjust to regular xylitol intake.^{1,2}

Note: Xylitol is not recommended for pets, particularly dogs. Although completely safe for human consumption, in dogs, xylitol acts as a strong stimulator of insulin release, which can cause severe hypoglycemia accompanied by ataxia (loss of coordination), collapse, seizures, and even fatal liver failure. The effects of xylitol on cats and ferrets is unknown. If a pet is suspected of ingesting xylitol or xylitol-containing foods, contact a veterinarian or the Animal Poison Control Center (ASPCA) immediately.⁴³⁻⁴⁵

Nature's Sweet Life Xylitol Bulk sweetener is made from non-genetically modified (non-GMO) corn. This product is gluten-free and does not contain any corn residue.⁴²

Nature's Sweet Life Xylitol Gum contains xylitol, gum base, natural flavor (cinnamon oil, green tea, peppermint oil or spearmint oil), vegetable glycerin, gum arabic, soy lecithin, and beeswax.

Nature's Sweet Life Xylitol Mints contain xylitol, calcium lactate, magnesium stearate, gum arabic, natural flavor (berry flavor, lemon oil or peppermint oil), and glazing agent (beeswax).

References:

- ¹Klotter, J. "Xylitol." *Townsend Letter for Doctors and Patients*; July 1, 2003. <<http://www.highbeam.com>>. Accessed December 2006.
- ²Gare ND, F. *The Sweet Miracle of Xylitol*. Laguna Beach, CA: Basic Health Publications, 2003.
- ³Anderson, R. "School children at increased aspartame risk." *Townsend Letter for Doctors and Patients*; February 1, 2005. <<http://www.highbeam.com>>. Accessed December 2006.
- ⁴Richter P, Chaffin J. "Army's "look for xylitol first" program." *Dental Assistant*; 2004, 73(2):38-40.
- ⁵"A sweetener sourced from corn." *Emerging Food R&D Report*; August 1, 2000. <<http://www.highbeam.com>>. Accessed December 2006.
- ⁶Natah, S.S., et. al. "Metabolic response to lactitol and xylitol in healthy men." *American Journal of Clinical Nutrition*; 1997, 65(4):947-950.
- ⁷Barker, J. & Meletis, C. "Natural medicines and oral health: a look at the literature." *Townsend Letter for Doctors and Patients*; June 2005. <http://findarticles.com/p/articles/mi_m0ISW/is_263/ai_n13784459>. Accessed December 2006.
- ⁸Brand-Miller, J.C. "Glycemic index in relation to coronary disease." *Asia Pacific Journal of Clinical Nutrition*; 2004, 13(Suppl):S3.
- ⁹Burt, B.A. "The use of sorbitol- and xylitol-sweetened chewing gum in caries control." *Journal of the American Dental Association*; 2006, 137(2):190-196.
- ¹⁰Peldyak, J. & Makinen, K.K. "Xylitol for caries prevention." *Journal of Dental Hygiene*; 2002, 76(4):276-285.
- ¹¹Soderling, E., et. al. "Effects of xylitol, xylitol-sorbitol, and placebo chewing gums on the plaque of habitual xylitol consumers." *European Journal of Oral Sciences*; 1997, 105(2):170-177.
- ¹²Toors, F.A. [Chewing gum and dental health. Literature review]. *Revue Belge de Medecine Dentaire*; 1992, 47(3):67-92.
- ¹³Shyama, M., et. al. "Effect of xylitol candies on plaque and gingival indices in physically disabled school pupils." *The Journal of Clinical Dentistry*; 2006, 17(1):17-21.
- ¹⁴Miake, Y., et. al. "Remineralization effects of xylitol on demineralized enamel." *Journal of Electron Microscopy (Tokyo)*; 2003, 52(5):471-476.
- ¹⁵Edgar, W.M. "Sugar substitutes, chewing gum and dental caries—a review." *British Dental Journal*; 1998, 184(1):29-32.
- ¹⁶Suda, R., et. al. "The effect of adding calcium lactate to xylitol chewing gum on remineralization of enamel lesions." *Caries Research*; 2006, 40(1):43-46.
- ¹⁷Forrester, D.A., et. al. „Help your patient manage dry mouth." *Nursing*; April 2004. <http://findarticles.com/p/articles/mi_qa3689/is_200404/ai_n9402145>. Accessed December 2006.
- ¹⁸Simons, D., et. al. "The effect of medicated chewing gums on oral health in frail older people: a 1-year clinical trial." *Journal of the American Geriatrics Society*; 2002, 50(8):1348-1353.
- ¹⁹Makinen, K.K. "A dietary procedure for preventing dental caries in young adults." *Journal of American College Health*; 1993, 41(4):172-180.
- ²⁰Caufield, P.W., et. al. "Dental caries: an infectious and transmissible disease." *Compendium of Continuing Education in Dentistry*; 2005, 26(5 Suppl 1):10-16.
- ²¹Shemesh, M., et. al. "Differential expression profiles of *Streptococcus mutans* *ff*, *gtf* and *vicR* genes in the presence of dietary carbohydrates at early and late exponential growth phases." *Carbohydrate Research*; 2006, 341(12):2090-2097.
- ²²Thorild, I., et. al. "Caries in 4-year-old children after maternal chewing of gums containing combinations of xylitol, sorbitol, chlorhexidine and fluoride." *European Archives of Paediatric Dentistry*; 2006, 7(4):241-245.
- ²³Isokangas, P., et. al. "Occurrence of dental decay in children after maternal consumption of xylitol chewing gum, a follow-up from 0 to 5 years of age." *Journal of Dental Research*; 2000, 79(11):1885-1889.
- ²⁴"Poor oral health associated with coronary heart disease." *American Heart Association*; February 17, 2004. <<http://www.americanheart.org/presenter.jhtml?identifier=3019173>>. Accessed December 2006.
- ²⁵Hung, H.C., et. al. "Oral health and peripheral arterial disease." *Circulation*; 2003, 107(8):1152-1157.
- ²⁶Montebugnoli, L., et. al. "Poor oral health is associated with coronary heart disease and elevated systemic inflammatory and haemostatic factors." *Journal of Clinical Periodontology*; 2004, 31(1):25-29.
- ²⁷Karhunen, V., et. al. "Radiographic assessment of dental health in middle-aged men following sudden cardiac death." *Journal of*

- Dental Research*; 2006, 85(1):89-93.
- ²⁸Demmer, R.T. & Desvarieux, M. "Periodontal infections and cardiovascular disease: The heart of the matter." *Journal of the American Dental Association*; 2006, 137 Suppl:14S-20S.
- ²⁹Tapiainen, T., et. al. "Ultrastructure of Streptococcus pneumoniae after exposure to xylitol." *The Journal of Antimicrobial Chemotherapy*; 2004, 54(1):225-228.
- ³⁰Vernacchio, L., et. al. "Tolerability of oral xylitol solution in young children: Implications for otitis media prophylaxis." *International Journal of Pediatric Otorhinolaryngology*; 2006, Nov 8; [Epub ahead of print].
- ³¹Blazek-O'Neill, B. "Complementary and alternative medicine in allergy, otitis media, and asthma." *Current Allergy and Asthma Reports*; 2005, 5(4):313-318.
- ³²Tapiainen, T., et. al. "Effect of xylitol on growth of Streptococcus pneumoniae in the presence of fructose and sorbitol." *Antimicrobial Agents and Chemotherapy*; 2001, 45(1):166-169.
- ³³Uhari, M., et. al. "Xylitol in preventing acute otitis media." *Vaccine*; 2000, 19 Suppl 1:S144-147.
- ³⁴—. "A novel use of xylitol sugar in preventing acute otitis media." *Pediatrics*; 1998, 102(4 Pt 1):879-884.
- ³⁵Kontiohari, T., et. al. "Effect of xylitol on growth of nasopharyngeal bacteria in vitro." *Antimicrobial Agents and Chemotherapy*; 1995, 39(8):1820-1823.
- ³⁶Sajjan, U., et. al. "A novel model to study bacterial adherence to the transplanted airway: inhibition of Burkholderia cepacia adherence to human airway by dextran and xylitol." *The Journal of Heart and Lung Transplantation*; 2004, 23(12):1382-1391.
- ³⁷Mattila, P., et. al. "Diminished bone resorption in rats after oral xylitol administration: a dose-response study." *Calcified Tissue International*; 1995, 56(3):232-235.
- ³⁸Hamalainen, M.M., et. al. "Comparison of the effect of gluconate, lactose, and xylitol on bone recalcification in calcium-deficient rats." *Bone*; 1990, 11(6):429-438.
- ³⁹—. "Bone repair in calcium-deficient rats: comparison of xylitol+calcium carbonate with calcium carbonate, calcium lactate and calcium citrate on the repletion of calcium." *The Journal of Nutrition*; 1994, 124(6):874-881.
- ⁴⁰Mattila, P.T., et. al. "The effect of a simultaneous dietary administration of xylitol and ethanol on bone resorption." *Metabolism*; 2005, 54(4):548-551.
- ⁴¹—. "Increased bone volume and bone mineral content in xylitol-fed aged rats." *Gerontology*; 2001, 47(6):300-305.
- ⁴²Jaynes, N. "Get Ready for Something Sweet!" *Sunshine Horizons*; 2006, 31(4):6-7.
- ⁴³Dunayer, E.K. "Hypoglycemia following canine ingestion of xylitol-containing gum." *Veterinary and Human Toxicology*; 2004, 46(2):87-88.
- ⁴⁴Dunayer, E.K. & Gwaltney-Brant, S.M. "Acute hepatic failure and coagulopathy associated with xylitol ingestion in eight dogs." *Journal of the American Veterinary Medical Association*; 2006, 229(7):1113-1117.
- ⁴⁵Flaim, D. „Sugar substitute can poison dogs." *Newsday.com*; October 23, 2006.
<<http://www.newsday.com/entertainment/ny-c4944941oct23,0,2172884.column>>. Accessed December 2006.