

# XYLIMED®



FOR  
EXPERTS ONLY

## Emergency Relief for the Nose!



100%  
NATURAL



## WHAT IS YOUR NOSE LIKE?



RUNNY NOSE?



DRY NOSE?



ITCHING NOSE?



BURNING NOSE?



BLOCKED NOSE?

CHILDREN

## NASAL IRRIGATIONS ARE NOT NEW



Ancient yoga gurus practiced nasal irrigation (“jala neti”) 5,000 years ago as a way to optimally prepare the body for breathing exercises. Free nasal breathing is not only important for our ability to smell and our well-being. It is the nose that carries out the conditioning of inhaled air and that is responsible for the immune defense of the nasal mucosa. Inhaled air is prepared for the transport into the lungs, gets cleaned from large particles, warmed up and humidified. In the 1970s, the Himalayan Institute brought the neti pot to the mass market. Its popularity with patients grew when medical professionals confirmed the effectiveness of nasal irrigation.

## OUR RELIANCE ON MEDICATIONS

In the symptomatic treatment of acute or chronic rhinitis, commercially available nasal irrigation with mineral salts for cleaning the nose have proven successful. These have a cleaning effect, but do not cause the nasal mucosa to swell. If nasal breathing is severely impaired, decongestant nasal sprays are often the method of choice as they grant quick and effective help. The use of decongestant sprays can dry out the nasal mucosa after just one week, and can cause dependency and long-term use. Inflammation, the most common cause of upper airway and nose obstruction, cannot be treated with decongestant nasal sprays.



**1/7** patients

*with sinus or nasal congestion have **abused** (prescribed) **nasal sprays**.*

Source: Dr. Neil Bhattacharyya, associate professor of otology and laryngology at Harvard and Brigham and Women's Hospital.

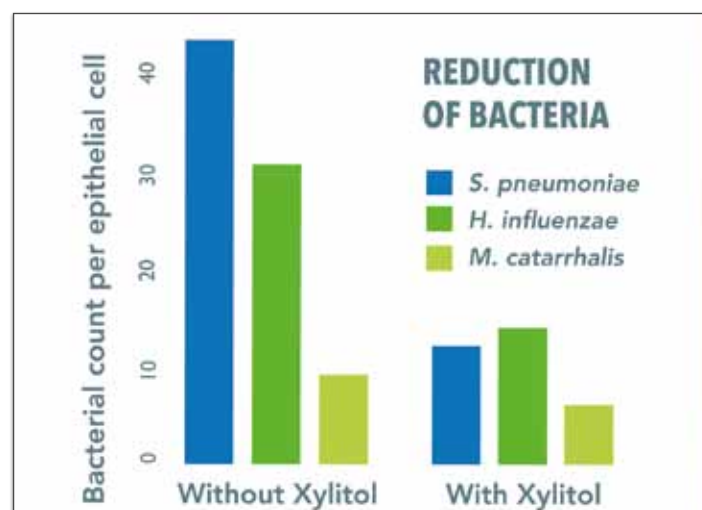


## XYLIMED – THE EFFECTIVE WAY TO FILL THE GAP

XYLIMED nasal spray is an effective alternative. Its active ingredients are sodium chloride and the sugar substitute xylitol (plus grapefruit seed extract as a preservative). During an acute rhinitis, the nasal mucosa swells, and the nose produces excessive secretion. With XYLIMED nasal spray, it is possible to gently extract moisture from the nasal mucous membrane and to restore the balance of the respiratory epithelium without drying out the nasal mucosa. The active ingredient xylitol acts on the inflamed mucosal surface by osmotically removing extra moisture out of sinus tissues. This thickens its viscous mucus film, reduces its viscosity and facilitates ciliary action and transport of the mucus (anti-adhesion effect). The easier removal of inflammatory mucus has an anti-inflammatory effect, shortens the duration of the infection and prevents chronic rhinosinusitis.

## THE EFFECT OF XYLITOL ON BACTERIAL BIOFILMS

Xylitol is a 5-carbon polyol naturally found in many fruits, vegetables, and even in the human body. The anti-bacterial effect of xylitol in the oral mucosa was already proven in the 1960s. For example, chewing gum containing xylitol for caries prevention has been on the market for years. Clinical studies show that xylitol inhibits the formation of bacterial biofilms.<sup>1</sup> Bacterial colonies coexisting within the biofilm successfully replicate, exchange drug resistance information and withstand external attacks. The anti adhesion effect of xylitol makes the biofilm vulnerable and impairs the bacterial communication.<sup>2</sup> In addition, due to its 5-carbon structure, unlike normal sugar, xylitol cannot be metabolized by bacteria. This means that bacteria cannot gain energy reserves from xylitol, which ultimately causes them to die. The immune system is thus "free" to fight against bacterial overgrowth in a natural way. Studies have also shown that bacteria adapt to a more benign strain when exposed to xylitol.<sup>3</sup>



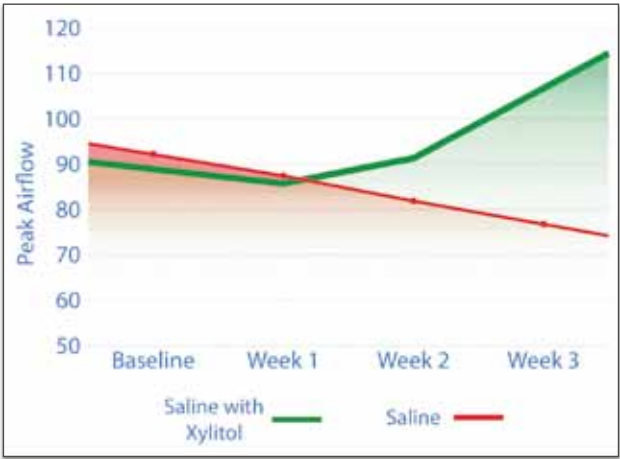
Source: *S. pneumo*, *H. influenzae* und *M. catarrhalis* sind nur eingeschränkt in der Lage, sich auf den nasalen Epithelzellen anzusiedeln  
(Tero Kontiokari - Univ. Oulu, Finland (J. of Anti. Chemo, '98 #41))

# STRONG AGAINST ACUTE AND CHRONIC RHINOSINUSITIS

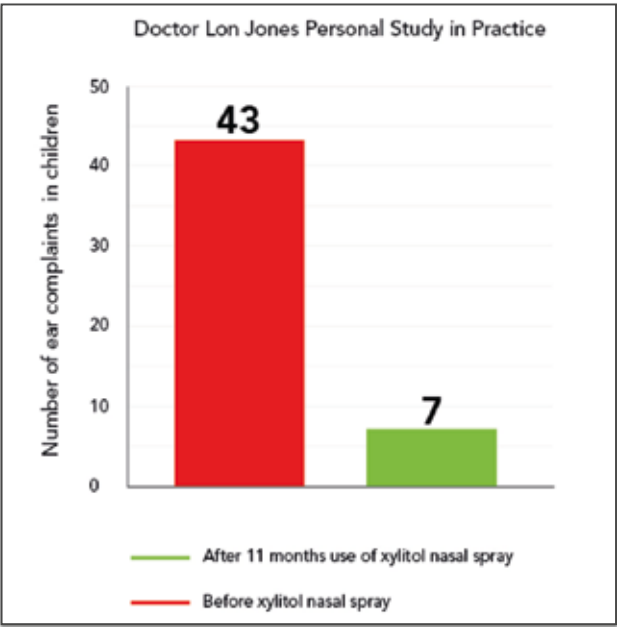
Dr. Lon Jones (Utah, USA) was one of the first to recognize the positive effects of xylitol on the respiratory system and to add it to a nasal spray. Studies at Georgetown University showed that patients using a xylitol-containing mineral salt solution achieved a 35 % higher peak flow in rhinomanometric measurements compared to study participants using mineral salt solutions only.

In a study published in 2011, 75 % of participants using a mineral salt solution containing xylitol demonstrate a significant improvement of quality of life in term of breathing.<sup>4</sup> A study published in 2016 proved that the use of xylitol nasal spray increases the concentration of nitric oxide in the nose and paranasal sinuses. Nitric oxide improves the immune system and reduces the risk of viral and bacterial infections. Both the improved ventilation situation of the nose and sinuses, as well as

the indirect positive effect on the immune system, reduces acute and chronic infections of the upper respiratory tract. This means that “Xylitol may be of use in preventing the onset or delaying the progress of rhinosinusitis.”<sup>5</sup>



# EFFECT ON EAR INFECTIONS

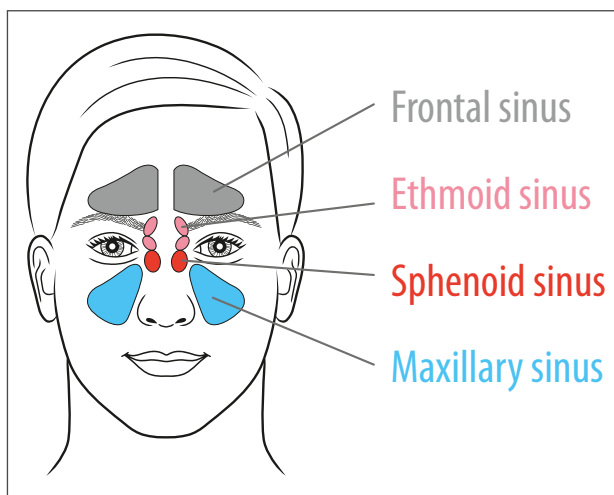


Introducing xylitol directly into the Eustachian tubes via a nasal spray has a great impact on the middle ear function. It reduces the occurrence of middle ear infections and tympanic effusions in childhood. A clinical study published in the British Medical Journal in 1996 showed that chewing xylitol gum reduces the occurrence of otitis media by 40% in children.<sup>6</sup> A different case report showed a 93 % reduction in middle ear complaints in children regularly using a xylitol nasal spray.<sup>7</sup>



# ALLERGIES AND ASTHMA

There is no reason not to use XYLIMED nasal spray as part of an allergy and asthma treatment plan. The solution extracts excess fluid from the cells, thereby thinning the mucous layer which helps the cilia to dispose of the allergen-laden mucus.<sup>8</sup> Not only can XYLIMED reduce asthma attacks, it can also prevent the allergic march and resulting bronchial asthma.



## SUMMARY OF THE XYLITOL EFFECT

XYLIMED is an excellent alternative to conventional sea salt sprays because it complements the cleaning effects of the mineral salt sprays with its antibacterial and decongestant effects. Xylitol works by osmotically pulling excess fluid from deeper layers of the mucosa, which has the following effects:

- the thick mucous secretion of an inflamed nasal mucous membrane is rendered less viscous, the mucociliary transport (this is the natural flow of movement of the mucous layer) is facilitated, bacteria are more easily rinsed out and the attachment of harmful bacteria/viruses is reduced.

- Xylitol cannot be metabolized by bacteria. Consequently, bacteria does not gain energy reserves from xylitol and, therefore, cannot survive. The bacterial biofilm becomes vulnerable and the inter-bacterial communication is disturbed, the therapeutic effect of antibiotics improves.
- Xylitol nasal spray increases the concentration of nitric oxide in the nose and sinuses. Nitric oxide has numerous effects on the immune defense against viral and bacterial infections.

## FURTHER ADVANTAGES AT A GLANCE

- Non-addictive – may be used every day as part of enhanced personal hygiene (such as brushing your teeth)
- Suitable for children, pregnant women and nursing mothers
- Vegan and sugar-free
- Available as nasal spray and nasal drops

<sup>1</sup> Hoffman, Ronald. "The Role of Biofilms in Chronic Infections: Bacteria in Contact with Living Tissues Form Layers That Resist Penetration by the Immune System or Antibiotics, but Promising Treatments Abound." *Clinical Advisor* 1 Nov. 2016: n. pag. Web.

<sup>2</sup> Ferreira, Aline S., Annelisa F. Silva-Paes-Leme, Nadia R.B. Raposo, and Silvio S. Da Silva. "Bypassing Microbial Resistance: Xylitol Controls Microorganisms Growth by Means of Its Anti-Adherence Property." *Current Pharmaceutical Biotechnology* 16.1 (2015): 35-42. Web.

<sup>3</sup> Lee, Young-Eun, Youn-Hee Choi, Seong-Hwa Jeong, Hee-Sook Kim, Sung-Hee Lee, and Keun-Bae Song. "Morphological Changes in Streptococcus Mutans After Chewing Gum Containing Xylitol for Twelve Months." *Current Microbiology* 58 (2009): 332-37. Web.

<sup>4</sup> Weissman, Joshua D., MD, Francisca Fernandez, MD, and Peter H. Hwang, MD. "Xylitol Nasal Irrigation in the Management of Chronic Rhinosinusitis: A Pilot Study." *The Laryngoscope* 121 (2011): 2468-472. Web.

<sup>5</sup> Brown, Christopher L., FRACS, Scott M. Graham, MD, Benjamin B. Cable, MD, Egon A. Ozer, BS, Peter J. Taft, BA, and Joseph Zabner, MD. "Xylitol Enhances Bacterial Killing in the Rabbit Maxillary Sinus." *The Laryngoscope* 114 (2004): 2021-024. Web.

<sup>6</sup> Uhari, M., T. Kontiokari, M. Koskela, and M. Niemela. "Xylitol Chewing Gum Prevention in Acute Otitis Media: Double Blind Randomised Trial." *BMJ* 313.7066 (1996): 1180-184. Pubmed.org. Web. 28 Apr. 2015.

<sup>7</sup> Jones, Lon. "Chapter 1, Cases 3-12." *No More Allergies, Asthma or Sinus Infections*. Topanga, CA: Freedom, 2010. 17. Print.

<sup>8</sup> Zabner, Joseph, Michael P. Seiler, Janice L. Launspach, Philip H. Karp, William R. Kearney, Dwight C. Look, Jeffrey J. Smith, and Michael J. Welsh. "The Osmolyte Xylitol Reduces the Salt Concentration of Airway Surface Liquid and May Enhance Bacterial Killing." *Proceedings of the National Academy of Sciences* 97.21 (2000): 11614-1619. Web.

## XYLIMED® advantages at a glance



# XYLIMED®

## Natural NASAL SPRAY

- ▶ Moisturizes and nourishes the nose
- ▶ Has a decongestant effect without causing dependency
- ▶ Has an antibacterial and anti-inflammatory effect
- ▶ Shortens the duration of the infection
- ▶ Reduces the frequency of sinusitis and otitis media



**XYLIMED nasal spray,  
bottle 45 ml**

REF 630 184



**XYLIMED nasal drops  
für CHILDREN, bottle 22 ml**

REF 630 185



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