

About Nasal Polyps

Nasal polyps are small growths on the lining of the nasal cavity and/or sinuses resulting from chronic inflammation, and frequently accompany chronic rhinosinusitis (CRS). Nasal polyps typically start forming near the ethmoid sinuses (located near the bridge of your nose) and can grow into the open areas. Larger polyps may cause nasal obstruction/congestion and potentially a reduced sense of smell.¹

The prevalence of nasal polyps among the general population ranges from one percent to four percent, with approximately 200,000 new symptomatic cases of nasal polyps reported every year in the United States.^{2,3} An estimated 25 to 30 percent of the 20 to 32 million U.S. patients with CRS have symptomatic nasal polyps.^{4,5,6}

The incidence rate of nasal polyps increases from the age of 30 and is more common among men than women.³ Each year, 500,000 people in the United States undergo sinus surgery, with many of these surgeries performed on patients with nasal polyps.^{4,7}

Causes

It is not clear why some people develop the chronic inflammation that tends to lead to nasal polyps, or why this chronic inflammation causes polyps in some people and not in others. People with chronic sinus infections, allergic rhinitis, asthma, and cystic fibrosis are more likely to also have nasal polyps.¹

Symptoms

Common signs and symptoms of nasal polyps include nasal obstruction, a runny nose, nasal congestion, reduced or total loss of smell, pain, headache, snoring and difficulty breathing through the nose due to nasal obstruction.¹

Treatment Options and Unmet Need

Living with the persistent symptoms of nasal polyps can have a serious impact on a person's quality of life. Current medical options including nasal steroid sprays, such as fluticasone, and oral corticosteroids help relieve symptoms such as a runny nose and nasal blockage, but their efficacy is limited and their side effects can be very serious in nature.¹

Larger polyps can be removed with surgery, which may make it easier to breathe through the nose. However, even after treatment, nasal polyps often grow back and patients may need to undergo repeat surgeries.¹

About OptiNose Breath Powered™ Delivery Technology for Fluticasone

OptiNose is exploring the efficacy and safety of delivering fluticasone into the nasal cavity using the company's unique Breath Powered delivery technology. This delivery system is unique in that it uses the natural function of a user's breath to propel medications beyond the nasal valve into the deep, targeted areas of the nasal cavity more effectively, efficiently and consistently than current treatments. A user exhales into the device, automatically closing the soft palate and sealing off the nasal cavity completely. The exhaled breath carries medication from the device into one side of the nose through a sealing nosepiece. Narrow nasal passages are gently expanded and medication is transported well beyond the nasal valve to targeted sites. After delivering medication to the targeted sites, air painlessly flows around to the opposite side of the nasal cavity and exits through the other side of the nose rather than into the throat or lungs.

References

- 1) MedlinePlus, National Institutes of Health Website (2013). *Nasal polyps*. Retrieved September 17, 2013 from <http://www.nlm.nih.gov/medlineplus/ency/article/001641.htm>.
- 2) A.N. Pearlman et al (2010). Epidemiology of Nasal Polyps. *Nasal Polyposis*. DOI: 10.1007/978-3-642-11412-0_2, © Springer-Verlag Berlin Heidelberg
- 3) Larsen K, and Tos M. The estimated incidence of symptomatic nasal polyps. *Acta Otolaryngol* 122:179–182, 2002.
- 4) Fokkens WJ, Lund VJ, Mullol J, et al. European Position Paper on rhinosinusitis and nasal polyps. *Rhinology* 45(suppl 20):1–139, 2007.
- 5) Bhattacharyya N. Influence of polyps on outcomes after endoscopic sinus surgery. *Laryngoscope* 117:1834–1838, 2007.
- 6) Pearlman AN, Chandra RK, Chang D, et al. Relationships between severity of chronic rhinosinusitis and nasal polyposis, asthma, and atopy. *Am J Rhinol Allergy* 23:145–148, 2009.
- 7) Rosenfeld et al. Clinical practice guideline: Adult sinusitis. *Otolaryngology–Head and Neck Surgery*. 137, S1-S31, 2007.