

## **Abnormal Immune Responses in the Nose Linked to Chronic Sinusitis**

Although chronic rhinosinusitis affects almost 40 million Americans each year, its causes remain poorly understood. But ongoing research in the Johns Hopkins Sinus Center has revealed previously unrecognized abnormalities in the immune system function that protects the lining of the nose and sinuses in patients with hard-to-manage chronic sinusitis.

“The local immune system of the nose may be more important in the development of sinusitis than previously thought,” says study lead author Andrew Lane, associate professor and director of the Rhinology and Sinus Surgery Center. Hopkins rhinology scientists have demonstrated that nasal lining cells, or epithelial cells, can sense invading bacteria or fungi and secrete antibiotic-like chemicals to inhibit potential infections.

But in the chronic sinusitis associated with nasal polyps, the ability of epithelial cells to recognize and react to bacteria appears to be impaired, allowing the invad-

ing organisms to gain a foothold in the sinuses. Simultaneously, polyp epithelial cells produce high levels of other chemicals that are associated with immune response against parasites, even though no parasites are present. This misplaced immune response may worsen swelling and allow the infection to proceed unchecked.

Current Sinus Center research focuses on how epithelial cells may be redirected toward a more normal immune response that would clear the infection and reduce the polyp swelling, which could lead to new treatments for chronic sinusitis.

### **FULL ARTICLE**

**Ramanathan M, Lee W, Lane A.** Increased expression of acidic mammalian chitinase in chronic rhinosinusitis with nasal polyps. *American Journal of Rhinology.* 2006;20:330–335.