

Your Sinuses: What They Do and How They Work

by Dr. Marta T. Becker

When you are talking to your friend or family member about your stuffy nose, runny nose, or chronic post-nasal drip, you may find yourself telling them that you have a “sinus problem.”



When non-doctors speak about these common problems, they often use the term “sinus” when they are really talking about their nose. Talking about sinuses seems to be more polite somehow than talking about noses.

Around my office, when we have to get down to the nitty-gritty, we like to be a little more precise. Your sinuses are actually air-filled pockets that connect with your nose. When we breathe, air does not flow through our sinuses, it flows through our nose; the sinuses are like cul-de-sacs, dead-end streets that branch off to the side.

Healthy sinus cavities are empty and sterile. They keep themselves this way by cleaning up constantly. The lining of a healthy sinus secretes a thin, clear mucous, which is transported by tiny hairs, or *cilia*, on the cell surfaces that sweep the mucous, like tiny brooms, toward the door of the sinus and finally out into the nose. This amazing self-cleaning mechanism is called *mucociliary clearance*. If only my house could clean itself like this!

When all is well, the thin mucous makes it out the tiny doors of the sinuses just fine; the sinuses stay spotlessly clean. Any bacteria that may accidentally find their way into what seems like an inviting sinus are instantly swept back out before they can cause infection. Your nose and sinuses are not just holes in your head. They are working hard all the time to keep themselves clean and healthy.

How problems arise

Problems arise when the cleaning system breaks down. Anything that causes irritation in your nose can start the ball rolling in the wrong direction. The most common inciting incident is the common cold. The cold virus causes an immune response and damages the lining of your nose and sinuses so that the

mucous becomes thick, the walls and doors become swollen, and the cilia fail to beat the mucous properly. The thick mucous backs up in the sinuses, and bacteria can finally find a nice place to live and breed. The subsequent infection causes more swelling and damage to cilia, and a vicious cycle gets started. Allergy and smoking also cause these changes in the structure and function of the nose and sinuses.

Promoting sinus health

For starters, it helps to have a healthy nose. The sinuses depend on the nose, since they drain into it. All bacteria and allergens that get to the sinuses have to go through the nose. Your nose can take care of itself better if you keep it free from allergic reaction by aggressively treating allergy disease – year-round if necessary – and keeping the nose cleared of irritants and bacteria (nasal irrigation helps this). It is good to keep your nose moisturized in the winter; you can use saline spray, humidifier, nasal gel or ointment, if necessary. It is also good to keep the nose free of crusting

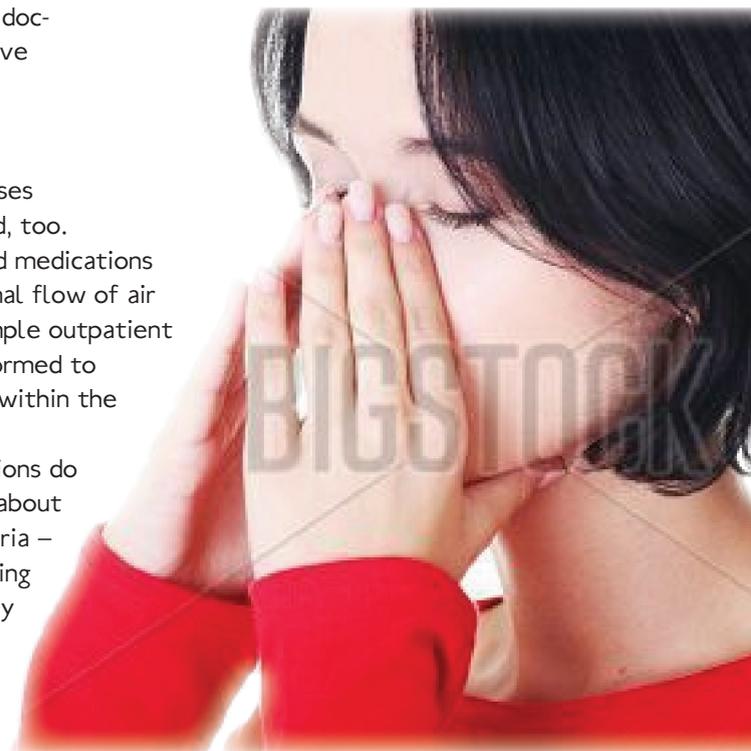
and sores (talk to your doctor or an ENT if you have this). In our practice, we work to promote normal airflow, which not only helps the sinuses to drain, but feels good, too. When good hygiene and medications fail to establish a normal flow of air through the nose, a simple outpatient procedure can be performed to create space and flow within the nose.

When sinus infections do arise, treating them is about more than killing bacteria – it is also about promoting drainage and mucociliary function. This is why, even in people who are prone to sinus infections, a well-managed cold or allergy season may not always “go into a sinus infection” and require antibiotics. It is why long-term antibiotics are sometimes required to clear a sinus infection that has become chronic: the bacteria have to be suppressed long enough for the drainage pathways to become normal again.

Promoting drainage is why we may use strong decongestants along with antibiotics when we are treating a sinus infection. It is also the basis for functional endoscopic surgery, which ENT doctors perform to promote healthy drainage when it cannot be accomplished with medication alone.

If you have trouble with your nose or sinuses, talking with your doctor, an allergist, or an ENT doctor can go a long way toward promoting your quality of life.

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