

# ANTIBIOTICS?

## THE QUESTION OR SOLUTION FOR UPPER RESPIRATORY INFECTIONS

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“Help, my kid just started having a green snotty nose and needs antibiotics!”

This is a common statement heard from parents because there is a misconception that children with common colds or an upper respiratory tract infection (URI) need antibiotics for these conditions. More than 90 percent of the time, this scenario is caused by a virus, for which no treatment is available, unlike an acute bacterial sinusitis which can be treated with antibiotics.

Normally mucus is clear and is an important part of our nasal defenses as it traps unwanted debris that we inhale. Mucus contains proteins, including antibodies, that help fight off unwanted bacteria and viruses that enter our nose and can go on to cause an illness. Mucus is pushed to the back of the nose which we then swallow by a microscopic conveyor belt made up of tiny hairs called cilia. These cilia line our nasal and sinus cavities. Mucus, its contents and these tiny hairs make up the mucociliary transport system that is essential for our nasal defenses.

Infection causes inflammation in our nasal cavity. This inflammation

causes the nasal lining to swell (hence the stuffy nose), releasing fluid into the nasal cavity and recruiting white blood cells (the infection fighting cells) to enter the battle. The extra fluid and mucus is our body's way to flush out our nasal passages. The white blood cells release substances that lead to discoloration of our mucus whether it is a viral or bacterial infection. One cannot tell from the color of the mucus the etiology of the infection! Viral infections weaken our nasal defenses more than bacterial ones as they paralyze the tiny hairs disrupting the mucociliary transport system so mucus is no longer pushed to the back of the nose and swallowed. Instead, the mucus pools inside and comes out our nostrils. Most of the time, our immune system wins the battle in about a week, but occasionally, opportunistic bacteria look at the mucus like candy and flourish, leading to an acute bacterial sinusitis in which antibiotics may be useful.

So when do we decide that a viral upper respiratory infection has turned into an infection in which antibiotics can be considered? According to the American Academy of Pediatrics' clinical guidelines, an acute bacterial sinusitis may be suspected when a child with an acute URI has persistent nasal drainage for more than 10 days without improvement, worsening symptoms after initial improvement or severe symptoms with high fever (>102.2) and purulent nasal discharge for at least 3 days.

For children with persistent symptoms for more than 10 days, options include starting antibiotics, or watching for an additional 3 days and then starting antibiotics if there is no improvement. Many times children with mild symptoms may improve on their own. With worsening or severe symptoms, antibiotics should be started. Antibiotics are recommended anytime complications from the infection occur such as spread to the eyes or if another infection such as pneumonia or an ear infection is present.

Unfortunately, we do not know definitively if other forms of therapy such as antihistamines, intranasal steroid sprays, saline irrigations, nasal decongestants (oral or sprays) or mucolytics have any benefit in treating these conditions.

We need to make sure antibiotics are needed. They may have adverse consequences such as GI upset, allergic reactions that may exclude that type of antibiotic from future use, yeast infections and the development of resistant bacteria.

“So, does my snotty nose kid need antibiotics?” Only in the right circumstances. ✿

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Physicians with Pediatric ENT Specialists  
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