

# Bronchiolitis

## Wheezing in Infants – Asthma or Bronchiolitis?

It happens a lot – an infant or toddler gets a cold and then starts to wheeze. Wheezing is a hallmark of asthma, a condition that can last years or even a lifetime. On the other hand, a small child with a cold doesn't have to have asthma to wheeze – it can be a one-time or two-time thing – a condition called “bronchiolitis” which is caused by a virus, and common in infants. So, when a small child wheezes, we wonder: is it asthma? Or just bronchiolitis?

The short answer is this – we can't really tell! Only time will tell. In general, 1/3 of the time it is asthma, and 2/3 of the time it is just a one-time or two-time thing.

But there is also a longer answer, and here it is.

## What is wheezing?

Wheezing is a musical, whistling sound that you can hear best with a stethoscope, or if it is loud enough, you can even hear just with your unaided ears. Wheezing happens mostly when a child *exhales*, usually not when he or she inhales. Sometimes, you can see that it is hard for them to get the air out; it's like they have to push hard.

In addition to making the wheezing sound, you sometimes see the chest sucking in instead of bulging out with inhalation, and sometimes you can see the muscles between the ribs working hard to help the breathing. This is called “retractions” and indicates that the wheezing is more serious.

## **What causes wheezing?**

Think of this: you have a wide-bore hose and you blow through it. Since it is so wide, the air makes no sound at all. Now think of blowing through a hose that is very small-bore. With this narrow opening you will get a sound as the air moves through, and even a vibration. Now think about the airways that carry air to the lungs. If the small airways keep their original shape, there will be no sound as the air goes through them. But if the small airways constrict and become narrower, just as if they were hoses, you get a sound that we call wheezing.

There are three things which cause the small airways to become narrower:

- The little muscles around the airways can contract and make the airways smaller-bore passages
- The lining of the airways can become inflamed and swollen
- Mucus can develop inside the airways

All three of these things which cause airway narrowing can be caused by asthma, in response to many different stimuli such as a cold, allergy, cold air, exercise – just to name a few. But also, even in a child who does NOT have asthma, certain viruses can cause these things which cause airway narrowing. “Bronchiolitis” in infants is what we call this viral-induced wheezing. It is sometimes caused by a virus called “RSV” (respiratory syncytial virus), but also other cold viruses can cause bronchiolitis in infants.

## **Treatment**

Many studies have shown that there is really no medication that will help most cases of bronchiolitis. Antibiotics don't treat viral

illnesses. We may try using albuterol, an airway dilator that works on relaxing the small muscles surrounding the airways. However, albuterol often isn't effective as most of the wheezing in bronchiolitis is due to inflammation and mucus inside the airways. Hypertonic saline (a concentrated salt solution) given by nebulizer has been shown to be helpful, but the saline can be difficult to find. Often, just a simple humidifier and stints in a steamy bathroom will help by keeping secretions thin and easy to clear from the airways. Elevating the head of your infant's crib (NOT with pillows), or allowing your child to sleep buckled in their carseat can also help. Since bronchiolitis is often accompanied by a heavy runny or congested nose, nasal saline solution (drops or spray) can help keep those secretions thin and draining. We do not recommend any cough or cold medications, as these have not been found to be safe or effective in young children.

### **Summary**

So that's it in a nutshell. If a child's family has allergies or asthma, or if the child has eczema, there is more of a chance that asthma will develop. But with a young child or infant who has had only one or two episodes of wheezing with a cold, only time will tell whether it was viral bronchiolitis or if asthma will develop. Meanwhile, we watch the child carefully, treat the wheezing carefully, and we ask you to bring him or her into the office whenever there is wheezing so we can make sure we make the right diagnosis and give the right treatments.

\*adapted in part from the Bayside Pediatric Website: <http://baysidemedical.com/>