

ALLERGIC RHINITIS IN CHILDREN

As I write this article, the last of the big snowstorm of 2010 is finally melting. By press time, it will be spring, and with spring comes pollen, and it may leave hay fever sufferers wishing for snow and winter again!

Seasonal allergic rhinitis, the medical term for hay fever (which may or may not be related to hay, and has nothing to do with fever!), is extremely common and often inherited. If one parent experiences allergies, their child has a 50% chance of developing allergies; if both parents are allergic, chances increase to 75%. The vast majority (80%) of allergy sufferers will develop symptoms before the age of 20. Each spring, summer, and fall, those who suffer from seasonal allergic rhinitis experience runny nose, stuffy nose, sneezing, and itchy red eyes. In the spring, the primary culprit (the allergen) is tree pollen; in summer, grass pollen, and in the fall, weeds and molds.

Allergies that tend to occur year round are called perennial allergic rhinitis and are caused by allergens present in the environment year round such as dust and dust mites.

How are allergies diagnosed? A trip to the allergist is not necessarily needed; your pediatrician or family doctor can perform a detailed history and physical examination that can help make the diagnosis. Besides the symptoms listed above, your child might have “allergic shiners”, the dark circles under the eyes due to chronic congestion, or have the “allergic salute”, an upward swiping of the nose that can produce a fine horizontal wrinkle across the bridge of the nose.

An understanding of how an allergic reaction is created in the body will help you understand how allergies are treated. First and foremost, recognize that an allergic reaction involves the immune system. The trigger (an allergen such as pollen) causes an allergic person to produce an antibody called immunoglobulin E (or IgE) and become “sensitized” to that allergen. These immunoglobulins attach themselves to mast cells, a type of blood cell that is commonly found in nasal membranes. Enter the allergen (pollen, for example), into the nose. The pollen attaches itself to the immunoglobulin, which “recognizes” the pollen. This binding of pollen and immunoglobulin then triggers the mast cell to release an assortment of chemicals. Histamine is one of the main chemicals released that causes the immediate symptoms of an allergic reaction. Thus, an ANTI-histamine can block the release of histamine and thus prevent the immediate (or early phase) symptoms of sneezing, runny nose, and watery eyes.

Mast cells also produce other chemical mediators including leukotrienes and prostaglandins, which are also targets of other types of allergy treatments.

In time, these mediators then trigger on-going inflammation. The result, called the late-phase response, includes less sneezing and itching, but more congestion and mucus production. These symptoms may persist for hours or days and again, treatments are aimed at quelling this inflammatory response.

The treatment for seasonal allergic rhinitis starts with simple measures to reduce exposure such as keeping windows closed and using air conditioning and changing clothing and taking a shower after outdoor exposure. For mild cases, over-the-counter (OTC) antihistamines are the mainstay of treating allergic rhinitis. These products can be taken as needed for intermittent symptoms.

Some examples of OTC antihistamines are:

- Diphenhydramine (trade name Benadryl): this product has been in use for many years and is available in liquid, chewable, and tablet form. It is a very effective antihistamine, but often causes drowsiness and in some children, agitation.
- Loratadine (brand name Claritin): this product is longer acting than diphenhydramine and its main advantage is that it causes less drowsiness and thus can be useful for children in school. Loratadine comes in both liquid and tablets and a convenient rapidly dissolving form which can be taken without the need for water. Loratadine is approved for use in children age 2 yrs and older.
- Cetirizine (Zyrtec): now OTC, cetirizine is also long-acting (taken once/day) and is non-sedating for most patients, but can cause drowsiness in up to 10% of patients. Cetirizine is approved for use in children age 6 months and older; of course, check with your physician before giving to infants or young children.

There are several other antihistamines available by prescription only which do not appear to offer any significant benefit over those available OTC.

Decongestants are aimed at decreasing nasal congestion by causing vasoconstriction. The most effective OTC decongestant is pseudoephedrine (Sudafed), available in liquid and tablet form. Decongestants are best used short term, and are associated with side effects such as agitation and insomnia. Pseudoephedrine is only available by asking the pharmacist; it is kept behind the pharmacy counter due to its potential misuse in the production of illegal drugs.

Some of the common antihistamines also come in combination with a decongestant, examples are loratadine and pseudoephedrine (Claritin D) and cetirizine and pseudoephedrine (Zyrtec D). In my opinion, these combination drugs should be used cautiously to avoid accidental overdose of the decongestant component. Also keep in mind that taking a long acting decongestant that is often the case with these products may result in sleeplessness. A better strategy would be to take the once daily antihistamine alone and add a short acting decongestant during daytime hours to relieve congestion. By bedtime, the decongestant will have worn off and you will avoid any possible loss of sleep.

Another class of allergy treatment is aimed at another mediator of the allergic response, leukotrienes. Montelukast (Singulair) requires a prescription and comes in granules, chewable tablets, and tablets that are taken once daily in children (age 2 yrs and up) and adults. This agent prevents the release of leukotrienes by the mast cells and when used alone can be as effective as a once daily antihistamine. This drug received some recent publicity when it was determined to be associated with some neuropsychiatric side effects such as agitation, aggression, suicidal thinking and behavior, so should be used cautiously especially in patients that may already exhibit such tendencies.

The next major class of medicines used to treat allergy symptoms are the nasal steroid sprays which have an anti-inflammatory action. All require a prescription. Since the medication is applied directly to the nasal membranes, there is little systemic (total body) effect and some have been approved for use in children as young as 2 yrs of age. Nasal steroid sprays do not affect eye symptoms, so an oral antihistamine or appropriate allergy eye drop may also be required. Another drawback of these nasal sprays is they work best if taken on a daily basis. Occasionally, they may cause nasal irritation or nosebleeds, and some children are resistant to having anything sprayed up their noses!

Some examples of commonly prescribed nasal steroid sprays are mometasone (Nasonex), budesonide (Rhinocort), and fluticasone (Flonase). Mometasone and fluticasone furoate (Veramyst) can be used in

children as young as 2 yrs.

Other treatment options include intranasal antihistamines, such as azelastine (Astelin), a prescription nasal spray that can be used on an as needed basis in patients over age 5 yrs. However, they can sometimes cause drowsiness but may be a good option for patients who do not tolerate nasal steroid sprays.

Another nasal spray option is intranasal cromolyn sodium (Nasal crom), which is available OTC. Cromolyns act as mast cell stabilizers and can prevent the release of the chemicals that produce allergic symptoms. Started 1-2 weeks before the allergy season, they have been found to be safe in children age 2 yrs and older and pregnant women. However, they must be used every 4-6 hrs throughout the allergy season to be effective.

When is it time to see the allergist? Consult with your pediatrician to decide if a trip to a specialist is needed. Reasons for a consultation include severe disease, especially if it is not responding to traditional treatment methods, if the current treatments are not well-tolerated, or if there is any question of the diagnosis. The allergist may perform skin tests and/or blood tests to identify what your child might be allergic to. One major reason to consider an allergist is for immunotherapy (allergy shots) to desensitize your child. Small amounts of specific allergens are injected under the skin to reduce that person's reaction to the allergen. This can be 80-90% effective in significant reduction of allergy symptoms. However, it is a huge commitment of time and energy, and carries some risk of triggering significant reactions to the shots, and patients must be closely monitored following any injection. It may take 6-12 months to show an improvement, and are typically recommended for 3-5 yrs to achieve optimal results. Also consider the maturity level of your child and whether weekly injections would be acceptable to them!

Allergic rhinitis is an unfortunate fact of life for as many as 20% of all children, even higher in adolescents, but there are many treatment options available that can allow your child to live a normal, active life even during allergy season. Visit your pediatrician to get advice and treatment options.