

WHAT ARE ALLERGIES & HOW ARE THEY TREATED?



Presented by
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Allergy in lay terms often refers to a physical or psychological aversion to an object or condition, but physicians define it as a specific type of immunological reaction to a biological agent or allergen. The primary function of the immune system in our bodies is to identify and destroy potentially harmful invaders such as bacteria and viruses. However, some individuals mount an allergic type of immune response to relatively benign substances such as pollen or animal dander. Once allergic individuals are sensitized by allergens, some of their symptoms can be triggered by multiple irritants such as smoke, odors, cold air, chemicals, and detergent, which are typically not true allergens. Some other medical conditions can also make individuals very sensitive to these irritants. Some triggers for allergy-like reactions may not even be physical, but instead psychological such as stress, fear, or anger. An allergist is trained to distinguish between true allergies and other medical conditions that can mimic allergies.

Different types of allergic conditions

One of the most common forms of allergic conditions is hay fever which is characterized by sneezing with runny and itchy nose and eyes. Hay fever often has seasonal variation, and is caused by specific allergens such as pollens or mold. Some individuals with this condition have year-round symptoms because they are allergic to an indoor allergen such as pet

dander or dust mite. Chronic exposure to an allergen often leads to a different set of symptoms compared to those described above. These symptoms include stuffy nose with mouth breathing and snoring at night-time, mucous production, scratchy or itchy throat, and red irritated eyes. Chronic hay fever sufferers may also feel fatigued and drowsy during day-time.

Asthma is perhaps the most important allergic disease because of its impact on the quality of life for patients, and its increasing incidence in the population. In this condition, the airways are hyper-reactive or twitchy, and become narrow when exposed to different triggers. This leads to wheezing, shortness of breath, and sometimes coughing. The primary cause of asthma is airway inflammation from allergies, but in some individuals we cannot identify the responsible allergen. Asthma patients may be relatively symptom-free most of the time, but may have an asthma attack secondary to a trigger such as a virus infection, exercise, or exposure to cold air.

Hives and eczema represent skin manifestations of allergies. Hives represent red raised lesions which are very itchy, and may appear and disappear within hours. Eczema is red, dry, scaly, and also very itchy, and may persist for weeks. These skin conditions may be secondary to food or medication allergy, but sometimes no cause can be found. Occasionally hives, especially those that are recurrent or difficult to treat, are caused by some auto-immune condition.

Food allergies are very common among infants, but after two years of age they become less common. This condition may present as itchiness and/or swelling of lips and tongue, nausea and vomiting, diarrhea and cramping, or hives and eczema. In some individuals food allergies may be life threatening and result in closure of airways, fainting, and even death. Therefore severe food allergies should be taken very seriously, and should receive prompt medical attention. Allergies to medications and stinging insects may also be life threatening, and require extreme caution and strict avoidance. Most individuals who are at

risk of a life-threatening allergic reaction need to carry an injectable form of epinephrine (adrenaline) with them at all times. These allergic reactions can result in death within minutes without treatment. Epinephrine if injected immediately can delay progression of an allergic reaction by approximately twenty minutes allowing time for ambulance transfer to a hospital.

Who is likely to have allergies

Anyone can develop allergies to any allergen at any age; however certain trends have been recognized. Eczema during infancy is often the first sign of allergic propensity, and coincides with the development of food allergies. Most children grow out of their food allergies by two years of age and eczema by ten years. Individuals who continue to have these conditions beyond these ages are likely to have them long term. Infants frequently also have wheezing especially associated with viral infections, but this condition does not represent asthma. Asthma typically develops in children beyond infancy in association with the development of inhalant allergies. Allergy initially develops to indoor allergens such as dust mite and pet dander, and after around five years of age allergy to outdoor allergens such as pollens also develops. Hay fever symptoms typically develop in pre-teen years, and are most frequent in young adults.

Children often grow out of their asthma without any specific treatment, but if asthma persists into teenage years, or develops first during or after teenage, it is likely to continue long term. In approximately 5% of adult asthmatics, asthma causes rapid worsening of lung function which is much more than the expected

decline with age. In the remaining 95% of asthma sufferers, asthma stabilizes, but depending on the exposure of allergens and other triggers, they may or may not have frequent asthma attacks. Additionally, if an asthmatic smokes, there is a 40% (instead of the 5%) chance of accelerated decline in lung function. This is one of the reasons it is essential for all asthmatics to stop smoking.

There is clearly a genetic predisposition to inhalant allergies. If one parent has inhalant allergies, the child has a 50% chance of developing allergies. If both parents have inhalant allergies, then the child has a 75% chance of having allergies. For other types of allergies such as medication allergy, there does not appear to be a genetic predisposition.

> 24



< 15 ALLERGIES

The incidence of allergies and asthma is rising rapidly in the industrialized countries. Many ideas have been proposed to explain this phenomenon. One such proposal is called the hygiene hypothesis, which appears to have the strongest support from research. According to this hypothesis, people in our society are too hygienic, and do not get sufficient exposure to common infections, especially in early childhood. Thus the immune system is improperly primed resulting in the tendency for a deviant response or allergies. This hypothesis appears to be validated from experimental research as well as human studies. For example, infants who attend day-care in the first six

sensitization to allergens in the presence of diesel exhaust particles, lack of exposure to non-infectious organisms that exist in the soil and elsewhere in the environment, and reduced number of infants being breast-fed. The presence of pollutants in the air such as nitric oxide, ozone, and smoke certainly trigger more symptoms in allergic and asthmatic individuals.

Treatment options for allergies and asthma

Allergies are often self-treated using over-the-counter medications, herbal supplements, or other alternative remedies. If these approaches are ineffective, the patients may go to their primary

care physicians who perform initial evaluation and prescribe medications. If these medications alone provide inadequate relief, the patient is often referred to a specialist. Depending on the health insurance coverage, some patients self-refer to a specialist directly. If the symptoms primarily involve the upper airways, the patient may be referred to an otolaryngologist who is a surgeon specializing in the ear, nose, and throat. If the symptoms involve lower airways, the patient may be referred to a pulmonologist or a lung physician. If the symptoms primarily involve the

skin, the referral may be to a dermatologist or a skin doctor. Among the specialists, board-certified allergists are likely to have the most detailed understanding of the mechanism of allergic diseases, and are likely to be most familiar with the published literature on allergies and asthma. Allergists typically go through

a three-year residency training in either adult or pediatric medicine following medical school, and then receive two to three years of focused training in allergy and immunology. Some allergists qualify for board certification after undergoing comprehensive testing by the American Board of Allergy and Immunology.

There are a number of over-the-counter (non-prescription) medications available for the treatment of allergy symptoms. Antihistamines such as diphenhydramine (benadryl and others) are quite effective in relieving itching, runny nose and watery eyes associated with acute hay-fever symptoms. Itching resulting from hives can also be relieved by antihistamines. The most common side effects of the older antihistamines such as benadryl are drowsiness and dryness. One is advised to not drive or operate heavy machinery while taking older antihistamines. Some of the newer antihistamines do not cause significant drowsiness or dryness, but they are much more expensive and most of them require a prescription. One of the newer antihistamines, loratadine is now available without a prescription.

As stated above, most individuals with chronic hay-fever have nasal congestion as their primary complaint. For this condition, antihistamines have very limited utility. Decongestants such as pseudoephedrine are effective for temporary relief, but should not be used long-term because of serious adverse effects. Prolonged use of decongestants can result in high blood pressure and irregular heart rhythms. Decongestant nasal sprays such as Afrin should not be used for more than three days at a time because otherwise they will make the congestion even worse. Many of the prescription nasal sprays, especially steroid nasal sprays are quite effective in the treatment of chronic hay-fever, and carry few side effects even with prolonged use.

Even though some of the medications can control the symptoms of allergy, the most effective way of treating allergies is to recognize the allergens that the individual is sensitive to, and reduce exposure to those allergens. An allergist can identify the allergens that are responsible for the patient's symptoms, and provide strategies for reducing exposure to those



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months of life get many more infections during that period, but then are less likely to develop allergies later in life. Similarly, the first born in a family is more likely to develop allergies than his/her siblings, presumably because the first born is less likely to get exposed to infections early in life. Other explanations for the increased incidence of allergies include increased

allergens. However, often it is not practical to eliminate exposure to certain allergens, and the patient's symptoms are inadequately controlled. In such cases, the only option available is immunotherapy or "shots" for the treatment of allergies. Shots require a significant commitment of time from the patient, but the results can be highly rewarding. Greater than 80% of patients who undergo shots benefit from them, and approximately one third achieve "cure", meaning they no longer require medications for their allergies. Shots are also overall cost effective since they are less expensive than prescription allergy medications, and are usually covered by medical insurance. One instance in which shots are absolutely indicated is for the treatment of stinging insect allergy. In individuals allergic to stinging insects, without shots there is a 60-70% chance of a potentially life-threatening reaction to another sting. After shots, this incidence goes down to approximately 3%. Shots should always be administered in a physician's office because there is a chance of a severe allergic reaction to the shot.

Treatment of asthma depends very much on its severity. All asthma patients should be evaluated by an allergist to determine if avoidance of certain allergens can reduce their severity, and to explore the potential role of shots in controlling their asthma. Asthma patients should also have their lung function evaluated on a regular interval to ensure that their treatment is adequate, and their disease is stable. Anyone especially with moderate to severe asthma should have a detailed asthma action plan to respond to an asthma attack. Individuals with even mild asthma at baseline can have severe asthma attacks requiring hospitalization. There are two types of medications for asthma; controller and rescue. Rescue medications immediately open airways and lead to quick relief of symptoms. However, anyone with persistent asthma needs to be on a controller medication long term in order to stabilize the disease, and prevent asthma attacks. Controller medications reduce airway inflammation, but often do not provide immediate relief of asthma symptoms. For this reason, unfortunately some asthma patients do not take their controller medications regularly resulting in frequent asthma attacks and excessive use of rescue medications.

In summary, allergy is a common condition and its incidence is rising rapidly. Allergy can present in many different forms and involve multiple parts of the body. Allergies can be treated by medications, avoidance of allergens, and shots. Most individuals who suffer from allergies can live normal and productive lives. Allergy sufferers are well served by obtaining evaluation and treatment by a board certified allergist.

Sanjeev Jain, MD, PhD is opening a new clinic in Camas, called Columbia Asthma and Allergy clinic. The clinic is located on SE 196th Ave and 34th St intersection near QFC on SE 192nd Ave. Dr. Jain is dedicated to providing world class care for allergy and asthma sufferers in a warm and comfortable environment. He recently moved from Seattle, WA, where he was a professor at the University of Washington, and treated some of the most difficult allergy and asthma cases. He has won numerous awards for clinical and research accomplishments, and has been ranked as one of America's Top Physicians.

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