

ALLERGIC DISEASE: MYTHS AND REALITIES

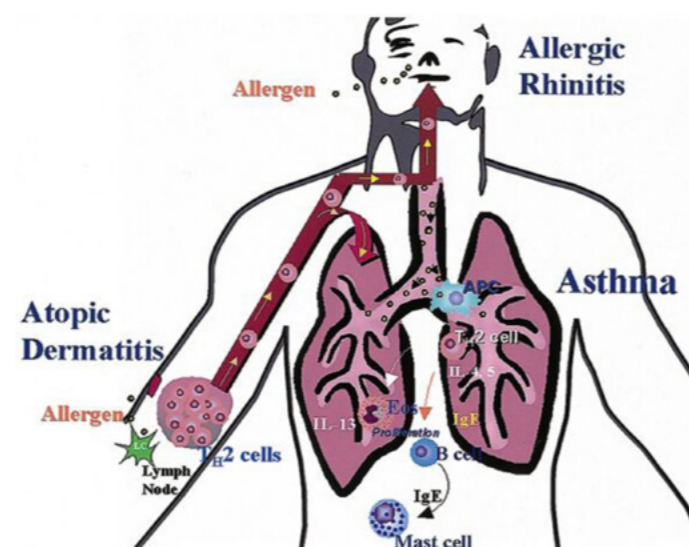


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WHAT IS AN ALLERGY?

Allergy is an inherited physical condition of unusual sensitivity that certain individuals may develop to substances that ordinarily do not cause problems. Thus allergy is an exaggerated immune response and not a lack of immunity as many people mistakenly believe. Unfortunately this heightened immune response leads to unwanted symptoms. The substances or allergens, to which the patient reacts, are either inhaled or ingested and sometimes injected or touched by the skin.

When the body is exposed to an allergen, cells on the lymph glands produce antibodies to attack the allergen. The unusual sensitivity (allergic reaction) may not appear immediately, but may develop after the person has been exposed more than once. This is why people, who develop allergies to foods and medications, actually had received those same foods and medications before. After these antibodies are developed, further contact with the allergen produces further antibodies-antigen (allergen) reactions, and the release of histamine causes irritation in the sensitive tissues of the nose, eyes, skin, bronchial tubes or digestive tract.



With the coming of Spring, tens if not thousands of Lebanese patients and millions around the world, remember Allergies and the bothersome symptoms they create. These classical allergy symptoms are caused by a condition called Seasonal Allergic Rhinitis or “Hay Fever” which affects the nose and eyes along with sometimes the lungs and is due to allergic sensitivities to pollen, the male reproductive agents of specific flowering plants, grasses and trees. The truth however is that the majority of allergy sufferers are affected by different types of allergic conditions, have allergies throughout the year or at different times of the year that range from daily or weekly “cold” like symptoms that affect the person’s quality of life and sense of well being, to serious symptoms and events that can bring the patient to emergency rooms, get them hospitalized or even threaten their lives.

Allergy is not a single disease, but a number of different conditions with more than one can be present in the same individual. Most allergic conditions however affect the respiratory tract, especially the upper airway which can directly or indirectly affect the lower airway or lungs. As such, those who suffer from Allergic Asthma tend to have Allergic Rhinitis but this latter condition is often neglected which actually lead to poor response in the overall management of Asthma. In the next few paragraphs, we will present a brief overview of the principles of allergies and the different types of allergic diseases and conditions that may affect up to 35% of the population.

Allergic reactions may involve any part of the body. The most frequently involved areas are:

1. Respiratory tract, with upper or lower airway symptoms
2. Skin, with eczema, hives and swelling
3. Eyes and ears

ALLERGY RESEARCH IN LEBANON

In the country of Lebanon, scientific research in Allergy/Immunology made modest but important strides in the last several years. The Lebanese National Aerobiology Project completed a three year air sampling study across the country that identified for the first time ever, the most common aerosolized pollen allergens in Lebanon. Several articles or abstracts have already been published in international allergy/immunology journals (1, 2, 3) and further analysis of a large body of data continues. At least two national epidemiological studies on the prevalence of Allergic Rhinitis, Eczema and Asthma were performed and published. One of those studies which used the ISAAC (International Study on Allergy and Asthma in Childhood) standardized tools and which was conducted among an adolescent and school age population, identified a significant prevalence of allergic respiratory disease in the country, closely comparable to regional and world-wide figures (4).

More recently the AIRGNE Study, a comprehensive survey of Lebanese adult asthmatics that investigated the patients’ real-life experience and perception of their disease, produced surprising findings and important insights (5). Moreover the CARMA Physician Survey which addressed the clinical awareness among non-specialists of the link between Allergic Rhinitis and Asthma revealed a large gap between the physicians’ knowledge and actual practice habits, further reinforcing the need for continued education and focus on this important clinical issue (6).

COMMON ALLERGIC CONDITIONS:

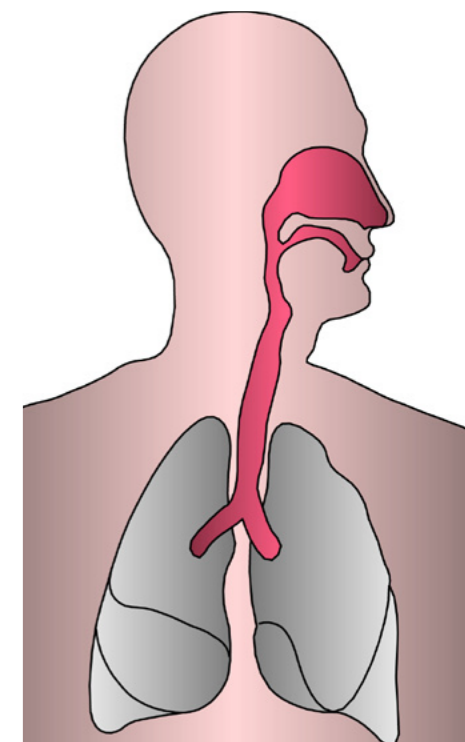
ALLERGIC RHINITIS/RHINO SINUSITIS/ RHINOCONJUNCTIVITIS:

Allergic Rhinitis or “inflammation of the nasal mem-

branes” and is the most common respiratory illness after the common cold, affecting nearly one third of the population. Allergic Rhinitis leads to nasal and eye symptoms such as itching, sneezing, rhinorrhea, congestion, tearing, along with possible asthma exacerbations. Spring allergies are triggered mainly by pollen and in some areas mold as well. Pollen grains are male reproductive structures of seed-bearing plants (trees, weeds and grasses), which carry the male gametes to the female part of the plant. The average pollen particle is invisible and thinner than a human hair, ranging in size from 10-45 um. Contrary to popular belief, most bright flowers do not cause allergies!!! Those flowers are pollinated by flying insects (entomophilous), and their pollen particles tend to be too large and waxy to be blown around by the wind. Most pollens of allergic importance are wind-borne (anemophilous).

During the spring and early summer seasons, the most common allergy-causing pollens in Lebanon come from trees such *Cypress, Olive, Poplar, Pine and Eucalyptus*. Grasses such as *Bermuda, Timothy* and *Perennial Rye* also pollinate during this time of year. *Parietaria (Pellitory)* is a very prevalent weed plant in Lebanon and the Mediterranean region in general, and produces large amounts of very potent allergy-causing pollen in the spring. Other Weed Pollen such as *Pigweed* and *Russian Thistle* pollinate late in the Summer and early Fall. Molds –microscopic fungi- can also trigger allergies. Some types of molds are present all year round while others peak in the summer or early fall. Common outdoor molds are *Alternaria, Aspergillus* and *Cladosporium*.

Most cases of Allergic Rhinitis however are Perennial or year-round and are caused by indoor allergens, the most common of which in Lebanon and worldwide is Dust Mite (Acarien). “House dust” contains a variety of elements



including animal dander, indoor molds, fibers and insect parts. “House Dust Mite” is a special type of mite (thousand of mite species exist) that lives in house dust but is actually not an insect. A person’s bed is said to be the dust mite’s palace. Since dust mites need three things to survive: body’s heat, moisture and shed skin cells, it is not surprising then that mattresses, pillows, bed sheets and blankets contain hundreds of thousands of these tiny mites along with millions of their allergy-causing particles. Reducing exposure to dust mites is vital to long term control of allergies. It is now possible to use special protective barriers that can cover mattresses and pillows and sealing the dust mites inside. These protective barriers are made of special fabric with specific fabrication requirements that insure an effective protective feature and yet provide a comfortable touch and feel.

ALLERGIC ASTHMA

A common misconception about Asthma is that it is easily recognized and treated. While very effective medications exist for Asthma, this condition is often found along with several others such as Allergic Rhinitis, Sinusitis, Adenoid Hypertrophy, Gastroesophageal Reflux, Post nasal drainage, all which can complicate management of Asthma or make the diagnosis and treatment more challenging. This may actually lead to overtreatment and overdiagnosis or the opposite, underdiagnosis and undertreatment. Classic symptoms of Asthma include difficulty in breathing, with coughing caused by obstruction of the small bron-

chial tubes, either by swelling of the membrane lining, the tubes, or by contraction of the musculature around the tubes, and by plugging of the tubes with mucus. As a result, breathing becomes difficult, the chest swells, there are wheezing noises, the neck muscles strain, and the asthmatic patient cannot lie down in comfort.

Most cases of Asthma especially in older children and young adults are caused by underlying allergies, and almost 80% of Asthma is accompanied by Allergic Rhinitis. However the triggers for asthma exacerbations may be due to other factors, such as viral infections (most commonly),

pollution, weather changes, exercise or others. Even though the triggers vary, the underlying allergic sensitivity (especially to year-round allergens such as house dust mite and pet allergens and some pollen) is what keeps the inflammation in the lungs on-going and along with it the readiness to have an asthma attack.

Contrary to popular belief, there are several forms of Asthma and “baby asthma” is much different from Asthma that persists or develops after 3 years of age. It is important to realize that not all cases of Asthma will spontaneously disappear in adolescence and even if it does, allergies do not remit which makes the person susceptible to having asthma symptoms return in adulthood, especially if the person smokes or is exposed to pollutants or further allergen exposure. Therefore it is imperative that once Allergic Asthma is recognized early in childhood, that definite steps are taken towards not only pharmacological therapy but also towards environmental control measures and strong consideration should be given towards a specialized immunological treatment named “Allergen Immunotherapy” which is the only treatment that can result in permanent reduction or even total elimination of the underlying allergies.

SKIN ALLERGY: ATOPIC DERMATITIS (ECZEMA), URTICARIA/ANGIOEDEMA

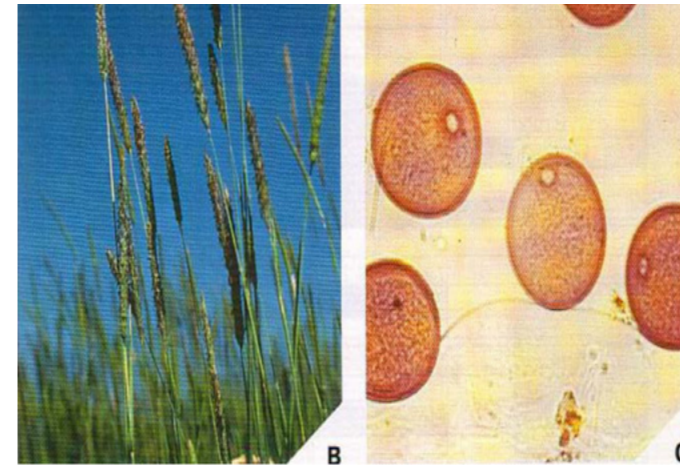
Atopic Dermatitis or Eczema can affect up to 20% of Children. While dry skin is a common factor in this condition and even though most conditions of eczema improves before school age, allergies can still play a significant role. Both food and environmental allergies can exacerbate Atopic Dermatitis. It is important to realize that even though Atopic Dermatitis may remit, it is often a sign that the child is Atopic (Predisposed to Allergic Disease) and as such the child should be considered at risk for developing allergies in the future. While parents are rightfully concerned



with the skin of their babies and children, it should be pointed out to them that their child needs to be monitored for development of any respiratory allergies in the future.

Urticaria or Hives is a common condition in childhood and fortunately is often mild and transient. Most often infections are the responsible cause, however allergies may present as hives as well. Fortunately, most cases of hives do not result in a life-threatening condition although parents and doctors are always concerned that if left untreated this could happen. It is important that the treating physician realizes as quickly as possible if the hives are part of something bigger or a mild transient event.

Chronic hives or Chronic Urticaria on the other hand is a very frustrating condition and many causes can be responsible for this condition. A detailed workup is needed for this condition and unfortunately sometimes a cause cannot be found. Ruling out underlying systemic disease is the most important part in the evaluation of this condition. Treatment exists and is often successful, although patients are often frustrated that their treatment seems endless.



DRUG ALLERGIES

Drug allergy occurs when a sensitive individual is injected with, or ingests a drug that causes lymph cells in the lymph glands to produce antibodies. Once antibodies have been developed, further contacts with the drug cause more antibodies to be formed and subsequent release of histamine. Histamine causes reactions such as fever, hives-like skin eruptions, joint pains, weakness, and swelling in various parts of the body.

Sulfa drugs, penicillin and aspirin are three of the most

common causes of drug allergies. Physicians must be especially careful not to administer a drug to which a patient is allergic.

Drug allergies may result in liver damage, bronchial asthma, inflammation of the heart muscle, and even death. In treating drug reactions, discontinuation of a suspected drug will usually result in improvement within 48 hours. If the symptoms are extremely severe, other drugs may be used to control the allergic symptoms, such as epinephrine, ephedrine, antihistamines or cortisone.

FOOD ALLERGIES

The same immunologic principles that cause Drug Allergy can also lead to Food Allergy. Symptoms of Food allergy include rash, swelling, nausea, vomiting, cramps, diarrhea, hives, nasal congestion and headache.

Food allergies are very common, especially in early childhood (3-4%), but no age however is exempt. The most common food that causes allergy in children is Cow’s milk followed by Egg. Most cases of these food allergies resolve by age 3, however children with food allergy may often develop respiratory allergy as they get older even if their food allergy has resolved. The most dangerous type of food allergy which rarely if ever spontaneously remit is food allergy caused by peanut, tree nuts, fish and shellfish. Food preparation in households where children with these types of food allergy should be monitored closely as even mild contamination of other foods can lead to a severe allergic reaction. Unfortunately definitive treatment for food allergy other than avoidance does not yet exist. Strict avoidance measures should be taken and preparation for immediate emergency treatment of any reactions should be established in both households and schools.

In adults, food allergy is often blamed for many conditions and unfortunately there are many commercial testing tools and clinicians that probably unknowingly propagate this myth. People who mistakenly believe to suffer from certain food allergies may suffer from depression, anxiety and even malnutrition because they are told to avoid these foods. Proper diagnosis and confirmation or refutation of their food allergies is a high priority for these patients.

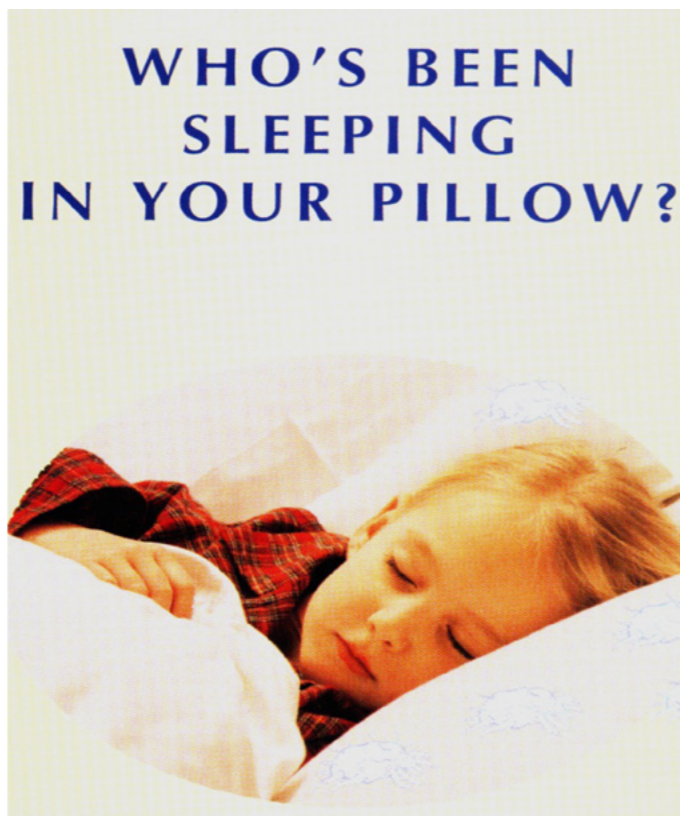
ANAPHYLAXIS

Anaphylaxis or Anaphylactic shock is a severe, acute, sys-





public health level is needed in order to effectively reverse this trend and establish concrete steps towards improving health care of Allergic Disease.



temic hypersensitivity reaction, most commonly but not always mediated by allergic sensitivities, leading to the release of potent mediators from tissue cells known as mast cells and peripheral blood basophils. This condition which is life threatening and can lead to death, is often caused by severe allergies to certain foods (most cases of fatal food reactions are caused by tree nuts) and drugs. Patients who have suffered from a life threatening anaphylactic reaction should undergo an extensive evaluation by an Allergy/Immunology specialist who is an expert in discerning the different causes of this condition. All patients regardless of the cause of their condition should carry with them an emergency medication called "Adrenaline or Epinephrine" which should be promptly administered in the thigh muscle at the start of a reaction. Ready to use Epinephrine injections are available worldwide but unfortunately are not available in Lebanon. Alternative forms of Adrenaline however do exist and should be obtained through the treating physician.

TESTING AND TREATMENT

While major advances have been made globally in the diagnosis and treatment of allergic diseases, and important research about these conditions has been and continues to be initiated in Lebanon, there is still a major need for proper evaluation and management. Several factors for this deficiency exist, including the lack of enough Board Certified Allergy/Immunology specialists to serve the whole population, the lack of proper referral to those specialists, the abundance of commercialized but poor quality diagnostic allergy tests, and biased ineffective medical education of physicians. The accumulation of these factors among others leads to false beliefs about allergies and their complications, both among the general public and the medical community as well. A major reevaluation and overhaul on a

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