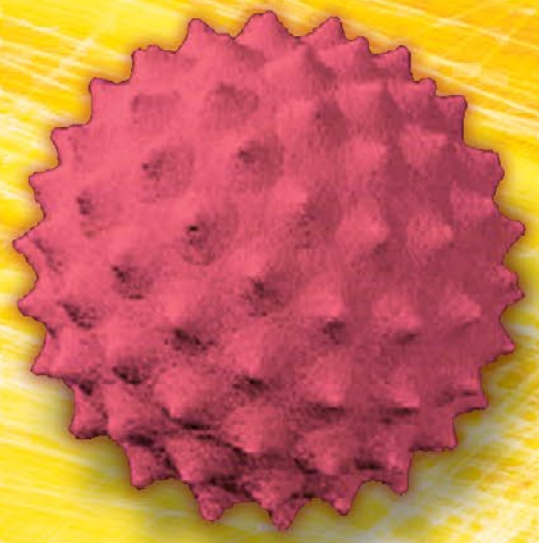
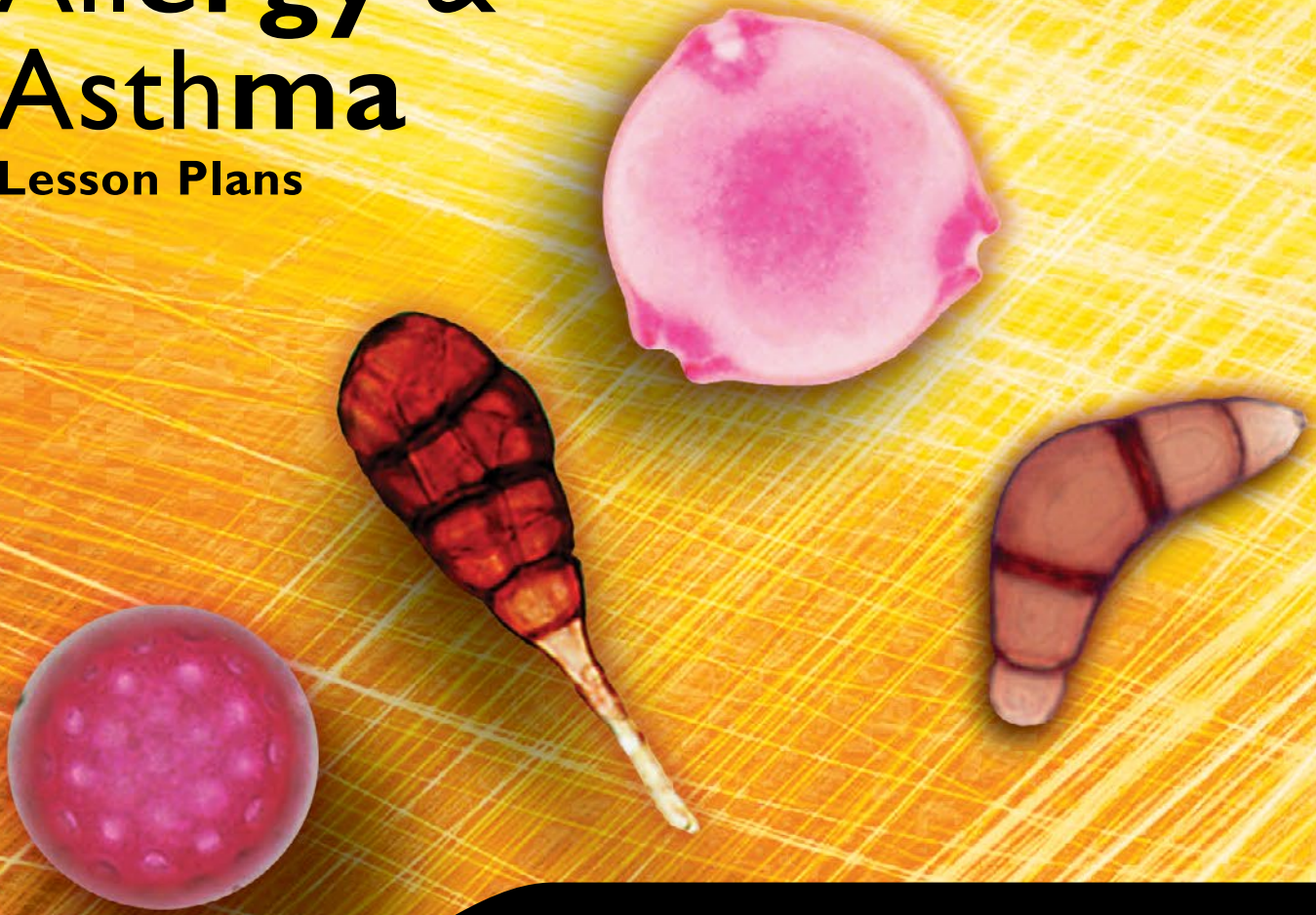
Steve
Kagen MD
Allergy and Asthma Specialist



Classroom Ready
Allergy & Asthma
Lesson Plans



The Allergy Family® Guide

Welcome

Welcome to the world of allergy.

I wrote The Allergy Family Guide just for you. This educational program will assist you and your family in understanding more about allergy and asthma symptoms and their control. Allergy and asthma are the most frequent causes of absenteeism from school, and after studying these lesson plans, I trust you will be breathing better.

Have fun learning more about the world around you.

Steve Kagen M.D.

Winner 2005 Environmental Protection Agency's

Children's Environmental Health Award

For their commitment to protecting children from environmental risks

Winner 2004 Community Outreach Award

American Academy of Allergy, Asthma and Immunology

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• **KZ indicates a Kids Zone**

About Dr. Kagen

Dr. Steve Kagen is a graduate of Appleton High School. He received an Honors degree in Molecular Biology from the University of Wisconsin, where he was also awarded his M.D. in 1976. Dr. Kagen has trained at both Northwestern University and the Medical College of Wisconsin, and is Board Certified in both Internal Medicine and Allergy and Immunology. He is also Board Certified in Diagnostic Laboratory Immunology, being the first Wisconsin allergy specialist to be awarded this certificate of accomplishment. Dr. Kagen is an Assistant Clinical Professor of Allergy, Asthma and Immunology at the Medical College of Wisconsin.

Dr. Kagen has published articles in his specialty, and has lectured locally, regionally and internationally regarding his allergy and asthma research. Dr. Kagen and his research colleague, R. Muthiah, Ph.D., discovered the major worldwide allergenic protein present in a dust mite (L. destructor) for which both of them received a United States patent.

Dr. Kagen is also Director of the National Pollen Network, which is a network of certified allergy specialists across the USA who work together to better educate the public about the importance of pollens and molds as causes of hay fever, sinus and asthma. The Kagen Allergy Clinic and NPN provided daily maps of the United States to national cable channels that displayed levels of regional pollens and molds on CNN and other TV broadcasts. Dr. Kagen also served in the House of Representatives, where he ended discrimination against patients with pre-existing medical conditions with President Obama.

Dr. Kagen's efforts to improve the health of his patients who suffer with allergy and asthma symptoms are considerable. Steve directed a national reference allergy/immunology laboratory and along with Dr. Muthiah has developed a number of allergy blood tests, which were available only at the Kagen Allergy Clinic. Working closely with Dr. Kagen is Allergy Specialist Dr. Joe Zondlo. Dr. Kagen has also created a web site with valuable information on allergy and asthma at: www.kagenallergy.com. Steve combines the art and practice of medicine with the most modern technology available to diagnose and treat allergic and asthma disorders.

Dr. Kagen also created a new iPhone and iPad and Android app to help people discover how their environment affects their health, available on iTunes App Store and www.KagenAir.com. The KagenAir™ app is a valuable source of real-time information about allergy and asthma. Steve combines the art and practice of medicine with the most modern technology available to diagnose and treat allergic and asthma disorders.

In March 2005, The Allergy Family Guide® received a U.S. Department of Environmental Protection Agency's Children's Environmental Health Recognition Award, for its contribution to the education of children about the increasingly important topics of allergy and asthma. Written by Dr Steve Kagen, The Allergy Family Guide is the nation's most complete and successful resource for classroom-ready allergy and asthma lesson plans. It is presented in a colorful textbook and multi-media CD, created especially for 5th grade students, their parents, and their communities.

The Allergy Family Guide is a dynamic resource of educational materials. It contains all the information necessary to control allergy and asthma symptoms, both in and out of the classroom, as it helps to guarantee that asthma will not prevent children from performing at their greatest potential.

The lesson plans were designed to fulfill and exceed the Wisconsin Department of Public Instruction's Model Academic Standards for Health Education. Most importantly, as an advanced health and science program, it enables children to remain healthy and in school, as they acquire greater knowledge about their personal health.

SPECIFIC EDUCATIONAL PERFORMANCE STANDARDS

Upon implementing The Allergy Family Guide, the following 8 Wisconsin DPI Performance Standards are attained:

A.4.2 Describe how family, school, and community environments influence personal health;
A.4.3 Identify ways to be healthy during childhood;
A.4.4 Explain how childhood diseases and injuries can be prevented or treated;
A.4.5 Describe the basic structure and functions of the human body systems (respiratory);
A.8.2 Analyze how environments and personal health are interrelated;
A.8.3 Describe ways to enhance health and reduce risks during adolescence;
A.8.4 Describe how lifestyle, family history, and other risk factors are related to the cause or prevention of disease and other health problems; and
A.8.5 Explain how health is influenced by the interaction of body systems.

The Allergy Family Guide enables educators, parents, children, and entire communities to attain a higher standard of knowledge about personal health. The primary goal of this community oriented project, however, is to eliminate the detrimental effects of childhood allergy and asthma symptoms, across all economic families and across all regions of the United States.

The more you know, the better you can breathe.

Why study allergy and asthma? Consider the following Top 10 Essential Facts about these increasingly common diseases:

1. Asthma is the leading cause of school absenteeism due to chronic illness, and it accounts for at least 14 million missed school days per year.

2. Uncontrolled asthma causes disturbed sleep, with subsequent limitations of daily activities, and frequent disruptions of both family and school life and routines.

3. Kids with uncontrolled asthma are unstable, in that they require a great deal more personal attention at school and at home. If you cannot breathe easily, your academic development and learning potential are diminished.

4. Students with uncontrolled, under-treated allergies are easily distracted and experience greater episodes of attention deficits due to their nasal congestion, sleep deprivation, sinus headaches and diminished lung capacity.

5. Asthma is the most common chronic illness in U.S. children. About one in 13 school-aged children suffer from asthma.

6. Asthma is now occurring in epidemic proportions across the U.S. and the industrialized world.

7. Asthma is the leading cause of hospitalization of American children.

8. Asthma is treatable and can be controlled by forming a Breathing Team, which includes educated parents, teachers, physicians, and asthma patients. Smart patients get better!

9. Asthma triggers are avoidable, such as airborne irritants (ozone, cold air, and noxious odors), aeroallergens (pollen, mold spores, animal dander, and dust mites), and allergenic foods.

10. We all can do more to prepare for the allergic child in our schools.
The Allergy Family Guide was designed for all concerned parents, patients, and educators, and it can help to make your school setting a safer and healthier place for kids to look, listen, learn, and play.

References:

National Institutes of Health National Heart Lung Blood Institute; *Guidelines for the Diagnosis and Management of Asthma.*

American Thoracic Society Update: *Future directions for research on diseases of the lung.* American Journal of Respiratory and Critical Care Medicine (1998) 158:320-334.

National Center for Health Statistics, National Health Information Survey, 1999.

United States. Centers for Disease Control; *Forecasted State-Specific estimates of Self-Reported Asthma Prevalence-1998*. Morbidity and Mortality (Dec 4, 1998) 47:1022-1025.47:1022-1025.

Centers for Disease Control and Prevention; Vital and Health Statistics. National Hospital Discharge Survey: Annual Summary, 1993. (Aug. 1995) DHHS Publication No. PHS 95-1782.

MONDAY *(50 minutes)*	Review Contents of The Allergy Family Guide Review Resource Posters: Scrapbook, Pollen People, Storyboard. Take Allergy Quiz I Look, Listen and Learn – Project the All About Allergy Slideshow ***HOME WORK :*** *Read All About Allergy* *Read Allergy & Asthma Facts*
TUESDAY *(20 minutes)*	Review questions about Allergy & Asthma Facts Discuss pollen & mold counts (newspaper cut-out or TV website) ***HOME WORK :*** *Read Dr Nose's Allergy Dictionary*
WEDNESDAY *(15 minutes)*	Do the Dr Nose Allergy Crossword Puzzle ***HOME WORK :*** *Read the Allergy Cousins Club*
THURSDAY *(15 minutes)*	Cut up and put together the Pollen Puzzles Discuss daily pollen and mold spore counts ***HOME WORK :*** *Write best ending Pollen People Puppet Play*
FRIDAY	*HAND OUT :* The Pollen People T-shirts Discuss pollen and mold spore levels Perform the Pollen People Puppet Plays in front of class
WEEKEND	***HOME WORK :*** *Allergy Detective: Fill in The Allergy Family Tree*
MONDAY *(15 - 20 minutes)*	Discuss and compare student Allergy Family Trees ***HOME WORK :*** *Look in newspapers for Allergy News*
TUESDAY *(15 minutes)*	Allergy News student reports
WEDNESDAY *(20 minutes)*	Discuss pollen and mold spore levels Design the Perfect Aeroallergen Contest – artwork. Take Allergy QUIZ II + compare with results of Allergy Quiz I.

Total Class Time: 180 – 190 minutes.

Allergy Quiz I

Before you begin to learn about the world of allergy, take the true or false allergy quiz. Then, at the end of your journey through this allergy guide book, take the quiz again to see how much you have learned. Good luck.

	True	False
1. The word allergy means too much immunity or hypersensitivity.	_____	_____
2. An allergen is anything that causes an allergic reaction.	_____	_____
3. Allergy cells in the body release the allergy chemical histamine.	_____	_____
4. Allergy cells are called mast cells, or allergy bombs.	_____	_____
5. Histamine can make a person sneeze, itch and wheeze.	_____	_____
6. An allergy reaction in the nose and sinus is called hay fever.	_____	_____
7. Asthma is an allergic reaction inside of the lungs.	_____	_____
8. The most common cause of allergies are bad, nasty thoughts.	_____	_____
9. Asthma tends to run in families.	_____	_____
10. The best treatment for allergies is avoidance of what bothers you.	_____	_____
11. Banana allergens are related to birch pollen allergens.	_____	_____
12. Grass pollen allergens are related to apples and pears.	_____	_____
13. Birch pollen allergens are related to celery and carrots.	_____	_____
14. Asthma medicines help relax the brain.	_____	_____
15. All antihistamines make people sleepy.	_____	_____

Allergy Quiz Answers

	True	False
1. The word allergy means too much immunity or hypersensitivity.	X	
2. An allergen is anything that causes an allergic reaction.	X	
3. Allergy cells in the body release the allergy chemical histamine.	X	
4. Allergy cells are called mast cells, or allergy bombs.	X	
5. Histamine can make a person sneeze, itch and wheeze.	X	
6. An allergy reaction in the nose and sinus is called hay fever.	X	
7. Asthma is an allergic reaction inside of the lungs.	X	
8. The most common cause of allergies are bad, nasty thoughts.		X
9. Asthma tends to run in families.	X	
10. The best treatment for allergies is avoidance of what bothers you.	X	
11. Banana allergens are related to birch pollen allergens.		X
12. Grass pollen allergens are related to apples and pears.		X
13. Birch pollen allergens are related to celery and carrots.	X	
14. Asthma medicines help relax the brain.		X
15. All antihistamines make people sleepy.		X

All About Allergy

Each year, millions of Americans suffer from hay fever and sinus symptons caused by outdoor pollen and molds spores. About 23% - 30% of the US population has the genetic ability to make allergic immune reactions to airborne pollen or mold allergens. Normal people, who do not have this genetic predisposition will not experience any allergy symptoms when inhaling airborne pollen and mold materials. Before learning about pollen and mold counting, you really need to better understand what allergy is all about.

Allergy is the opposite of AIDS. Allergy symptoms are the result of too much immunity. Your immune system produces antibodies to fight infections. If you have AIDS, you have too little immunity to defend yourself against getting sick. AIDS is too little immunity, and allergy is too much. Too much production of an antibody called IgE, the fifth antibody to be discovered.

The allergy antibody (IgE) made by your immune system is produced in response to your exposure to substances we refer to as allergens. Allergens are usually environmentally stable foreign substances like pollen proteins that may induce unfortunate allergy immune reactions in predisposed individuals by lighting the fuse on the allergy cells.

Allergy antibodies act like fuses on the outside of allergy bombs. The allergy bombs (cells known as mast cells or basophils), contain histamine and other chemicals capable of causing your allergy symptoms. When histamine is released into your nose, you will sneeze and have a runny nose. Histamine in the lungs will cause spasm of the airways or wheezing. If histamine is released from exploding allergy cells into the skin, you may experience itching. If histamine and other allergy cell chemicals are released all over the body, then a severe life-threatening reaction may take place.

Allergy has different names. When allergy explosions occur in the nose and sinuses, we call if hay fever, or medically speaking, allergic rhinitis. When allergy happens in the lungs, we call it asthma. If allergic reactions occur in the skin, we give it the name of hives or angioedema. In the gut, we allergists call it food allergy. If an allergic reaction occurs all over the body, such as with a severe life-threatening bee sting reaction, it is called anaphylaxis. So, allergy really has different names depending upon what part of your body is being affected by the allergy cells and their contents.

So, now you know the three most valuable and basic facts about allergy:

(1) Allergy is too much immunity;

(2) Allergy antibodies act like fuses on the outside of allergy bombs;

(3) Allergy has different names depending upon where in your body it occurs.

Many people are unaware of the fact that the allergy season really never ends. Allergy specialists look at the calendar year in terms of either the indoor or the outdoor allergy seasons. The indoor allergy season occurs all-year-round. The indoor allergens which are most likely to cause allergy symptoms during this season are the house dust mites and indoor pets such as cats, dogs and 'pet' cockroaches. The outdoor allergy season occurs when plant life attempts to reproduce itself by releasing billions and billions of male 'plant sperm' in the form of pollen.

All pollens are not created equal. Some pack more of an allergy punch than others. The most potent allergenic pollens come from the grasses, ragweeds and the birch and oak trees.

Few people realize that people are not actually allergic to pollens. It is the allergenic proteins within the pollens that cause allergic reactions. There are proteins inside of the pollen grains which get released into the atmosphere when the pollen gets wet. These allergenic plant proteins may also be present in other plants that we humans eat. So, if you are allergic to a plant protein inside of the ragweed pollen, and that protein is also present in plant foods such as banana, watermelon and cantaloupe, then you may experience allergy symptoms when eating these foods. These symptoms might include itching of the roof of the mouth, swollen lips, wheezing and even a closing of the throat. Avoidance of these foods can be very important to those affected.

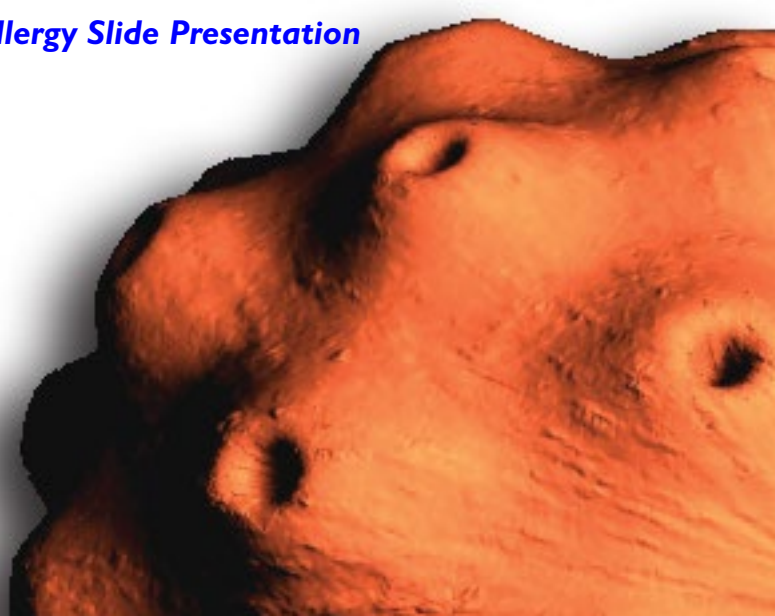
Pollen and mold biology is extremely important to allergy sufferers, since for many patients, pollen and mold spores are responsible for their symptoms. Allergy specialists and others in the field of palynology (the study of pollen and other aerobiological materials) have for years been gathering and sharing data about what is in the air. The practicing allergist uses pollen and mold count information in several ways. First, it is important to know what pollen producing plants are in an area in order to determine which pollens may be responsible for breathing difficulties. If an allergist does not know what to test you for, you can not get an accurate diagnosis of your allergy problems.

Also, pollen and mold spore levels actually correlate with patients' symptoms. As the pollen levels increase so does the 'Kleenex count' of the allergy patient.

Pollen forecasting is today in its infancy, but allergy specialists are now studying how best to predict short term pollen and mold exposures in regional environments.

To learn more about the world of allergy, listen to the audio-slide presentation by Dr. Kagen.

Be sure to see the All About Allergy Slide Presentation on www.kagenallergy.com.



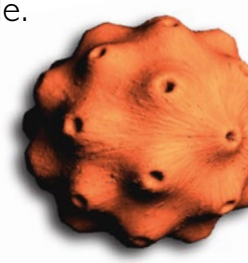
Pollen & Mold Counts

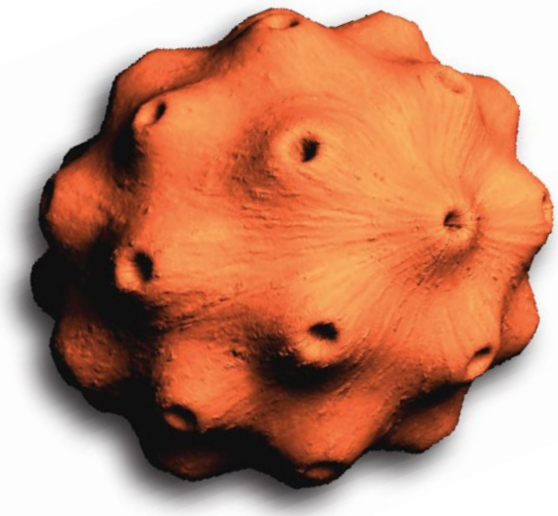
Pollen and mold counts are usually reported as being Low, Moderate, High, Very High or Extreme, and are average counts of specific pollens or molds per cubic liter of air sampled over the previous 24 hours. This means that you are learning about what the average load of atmospheric pollen or mold was for the previous day. Since it is an average, your actual exposures may even have been more intense due to the fact that some pollen sources, like grasses, pollinate in the morning from 6:00-10:00 AM.

Low, moderate, high or very high are terms that refer to the risk of experiencing allergy symptoms. Think of it in the same way you do for cholesterol levels. If you have a high reading for cholesterol, it does not mean that you will need heart by-pass surgery this evening. It means that your RISK is high for the development of coronary heart disease. Similarly, if you have allergy tendencies and if the pollen level is in the high range, you are more likely to have allergy symptoms such as hay fever, asthma or sinus headaches.

Pollen and mold count information is all about risks of experiencing allergy symptoms. If you have specific questions about pollen and mold counts, send your questions to us via e-mail at *drk@kagenallergy.com.*

KagenAllergy.com is an educational Internet site which offers a tremendous amount of up to date information about allergy and asthma. If you have a question about allergy or asthma, visit **KagenAllergy.com** and we will try to answer you as soon as possible.





Allergy & Asthma Facts

This Allergy & Asthma Fact Sheet was written for educators and parents by allergy and asthma specialist Steve Kagen M.D. It is designed to help teachers better understand the world of allergy. This Fact Sheet can be used as a teaching tool in helping students and their families to appreciate the importance of allergy in their current and future lives. The facts presented here are also reinforced elsewhere in the Educators' Guide. Have fun!

1. Allergy is too much immunity. Too much overproduction of the allergy antibody, IgE. The word ***allergy*** means "other work", altered reaction or hypersensitivity.

2. The allergy antibody (IgE) was the fifth type of antibody to be discovered.

3. An ***allergen*** is anything that is able to cause a person to make an allergy antibody. Allergens cause the immune system to produce allergy antibodies, but not in everyone.

4. Not all people are able to become 'allergic', but 23% to 30% of Americans are genetically capable of making allergy antibodies.

5. Allergy antibodies act as 'fuses' on the outside of allergy cells ('allergy bombs') which cells are termed ***mast cells***. Once a person makes an allergy antibody to a given allergen, the person is said to be "sensitized " to that specific substance.

6. Mast cells are found in the skin, the linings of the nose and the sinuses, the lungs and the intestines.

7. Inside of mast cells there are allergy chemicals containing ***histamine***. Histamine is released from the mast cell allergy bombs when these cells come into contact with the specific allergen that induced the allergy fuse (antibody) to be made in the first place. (*This is why a person can not have an allergic reaction to something the first time they are exposed to it. First, a person is exposed, then they make the allergy antibody, if they are genetically able to. Then, when re-exposed to the allergen, there may be an allergic reaction.*)

8. Histamine causes people to itch, sneeze, cough and wheeze. Histamine also can cause swelling in the nose, the skin and the lungs.

9. Antihistamines block the chemical histamine from causing the symptoms of allergy. Antihistamines do not stop the cause of the allergic reaction. They simply cover up the effects of the histamine released by the mast cells.

Allergy & Asthma Facts

10. The greater the amount of histamine being released by the mast cells during an allergic reaction, the greater are the symptoms, and the greater the need for medications to "clean up the mess".

11. Allergy has different names depending upon which part of the body the allergic explosion is occurring in.

12. An allergy reaction in the nose and sinuses is called ***allergic rhinitis***, or more commonly hay fever. (There is no fever during an attack of "hay fever" unless there is also an infection.)

13. An allergic reaction in the eyes is termed ***allergic conjunctivitis***.

14. Allergy in the lungs is called ***asthma***. Asthma patients have thick mucus and ticklish airways.

15. In the skin, allergy is called ***eczema***, ***hives*** or ***urticaria***.

16. Newer antihistamines do not enter the brain, and therefore, they do not make patients or students sleepy or mentally slow.

17. Allergic rhinitis is the most common chronic illness in America affecting approximately 20-25% of the American population.

18. In school children the manifestations of uncontrolled allergic rhinitis are dramatic, especially in the "silent sufferers" who are unaware of their illness. Poor concentration, irritability, disinterest in educational activities and apathy are common in untreated childhood rhinitis.

19. Fatigue and cognitive impairments are common in children with allergic rhinitis who are under treated.

20. Up to 30% of adolescents are estimated to have allergic rhinitis. The ability to produce the allergy antibody (IgE) peaks at 19 years of age.

21. When allergic rhinitis is poorly controlled, patients experience a greater number of bacterial and viral infections. The "wet head" gets sick, while the clear and dry noses and sinuses stay healthy.

22. Asthma is due to an allergic reaction within the lungs in almost all cases.

23. In 60% of asthma sufferers, allergic rhinitis is also present.

24. Otitis media (middle ear infection) is an inflammation within the middle ear. Half (50%) of children with chronic otitis media have allergic rhinitis either as a cause of the inflammation or as a confounding problem. For this reason, an allergy evaluation is recommended prior to the surgical placement of tubes (ear tubes) to drain the fluid out of the middle ear space.

25. Shortened attention spans and difficulty learning are common in students who cannot hear well, especially if they also have congestion within the nose and sinuses due to allergy.

26. Hyperactivity in a student does not itself indicate allergy. There must also be other symptoms such as nasal, sinus and lung complaints.

27. Asthma medications can occasionally cause agitation and irritability.

28. Children with uncontrolled allergies often have extreme introversion, fatigue, poor adjustment to environmental changes, a decline in verbal learning and a reduced decision making speed. The brain does not tolerate difficulty breathing.

29. Allergy and asthma can be controlled by (a) ***environmental controls*** and avoidance measures, (b) preventive and therapeutic ***drug therapy*** and (c) ***allergen immunotherapy***, otherwise known as allergy injections.

30. Avoidance is the best and the most difficult therapy for allergic and asthmatic patients. The most difficult surgery to perform is a "cat-ectomy".

31. Allergen immunotherapy prevents the allergic reaction from happening. Allergen immunotherapy is the only treatment that actually changes the patient's ability to react to allergen exposures. All other forms of therapy are aimed at covering up the symptoms after the mast cell has released it contents.

32. Cromolyn sodium and nedocromil are forms of preventative therapy, since they help to prevent the mast cells from exploding. These medications are sold in prescription eye drops (Crolom), lung inhalers (Intal, Tilade) and as a non-prescription nasal spray (Nasalcrom).

KID ZONE

33. Mild doses of inhaled corticosteroids (cortisone) are safe and effective in treating allergic rhinitis and asthma.

34. Topical steroids in the nose and in the lungs of allergy and asthma patients help by reducing the allergic inflammation (putting out the fire) and making it easier to breathe normally.

35. Non-sedating antihistamines are safe and effective in the treatment of hay fever symptoms in both adults and children.

36. Reactions to stinging insects such as Yellow Jackets or Fire Ants can be severe and life-threatening. Children and adults who have had systemic reactions to insect stings should be evaluated by an allergy specialist since venom allergy injections can cure this condition. Self-administered adrenalin injections are also available (Epi-Pen), but may not be sufficient to prevent death in severe reactions.

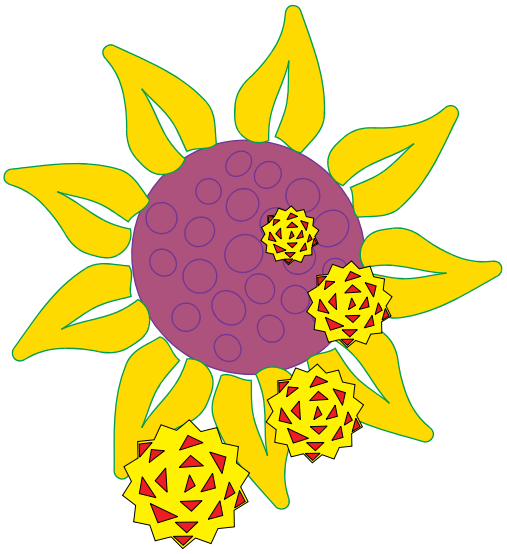
37. Ragweed pollen contains allergens which may also be present in banana, cantaloupe, watermelon and sunflower seeds. This is why some people who have ragweed-induced hay fever in the fall are unable to eat these foods due to itching of the roof of the mouth, abdominal pains and even asthma attacks. These relationships are referred to as " *cross-reactivity* ".

    Also, some patients who are allergic to ragweed proteins will experience allergy reactions when exposed to similar looking proteins found in latex.

38. Birch pollens contain allergens which are also present in pitted fruits such as apples, peaches, pears and cherries, as well as in celery and carrots. Some patients allergic to birch allergens will experience severe itching in the mouth or have asthma attacks or hives after eating these "birch cousins".

39. Allergy and asthma medications only work if patients take them. In this regard, "smart patients get better".

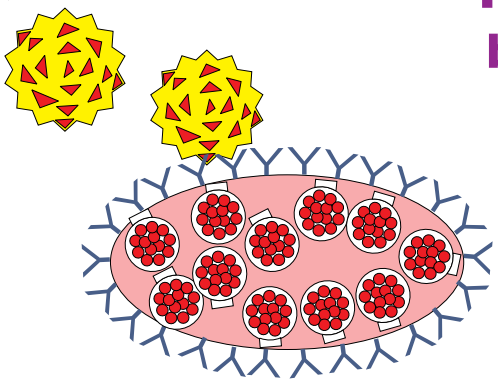
For more information about allergy and asthma, check out the Kagen Allergy Clinic on the web at: *www.kagenallergy.com*



Allergens can cause allergies

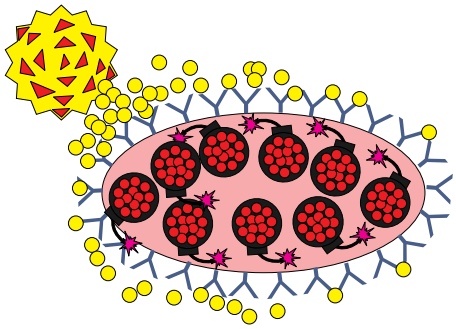
Pollens contain allergens

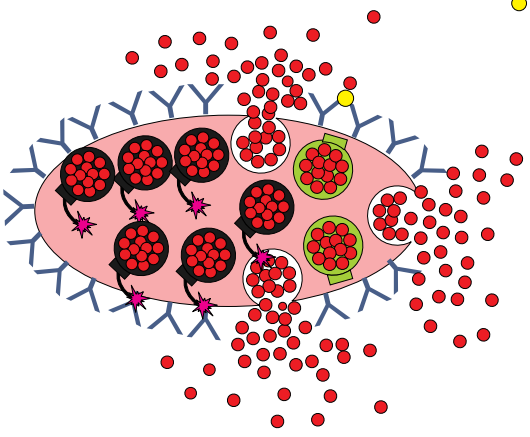
There are cells in your body called Mast cells



Mast cells can also be called "Allergy Bombs"

When an allergen enters the body it lights the fuse on the "Allergy Bomb"





The Mast cell explodes and gives off the chemical histamine

Histamine makes your body itch, sneeze, wheeze, cough and swell up

Allergy & Asthma Dictionary

Read the dictionary below, re-organize the words in alphabetical order, and then solve Dr. Nose's crossword puzzle on page 16.

Allergy (al´ ə r - jē) ***n.*** derives its meaning from the Greek words allos + ergon which when put together means "other work", or opposite and excessive reaction. If you have allergy, then you have an increased risk of reacting to things such as allergens. Another word for allergy is hypersensitivity.

Allergen (al´ ər - jēn) ***n.*** is anything that can produce an allergic reaction, such as weed pollens, mold spores, cat dander and house dust mites.

Allergic Rhinitis (al´ ər - jĭc • rīn-nī´tĭs) ***n.*** is an allergic reaction in the linings of the nose and sinuses. (When reading doctors' words, you should always read them backwards. "Itis" means inflammation or swelling. "Rhino" means nose, and "allergic" means hyper-reactivity. So, Allergic Rhinitis means inflammation and swelling in the nose and sinus due to allergy. Easy, huh? People often refer to allergic rhinitis as `hay fever' even though there isn't any fever when you have it.

Anaphylaxis (an´ə- f ĭl´ ak´sĭs) ***n.*** is a word that means a really big allergic reaction all over the body. In severe cases, such as reactions to bee stings or to medicines, anaphylaxis can be life threatening.

Asthma (az´mə) ***n.*** is an allergic reaction in the lungs. People who have asthma have lungs that are ticklish. The bronchial tubes (airways) are twitchy and sensitive to irritating things such as cold air, cigarette smoke and perfumes. Also, the lungs of asthmatics often have a lot of thick and sticky mucus in the airways. So, doctors will sometimes say that asthma patients have "bronchitis", which means inflammation in the bronchial tubes.

Hives (hīvz) ***pl.n.*** is an allergic reaction in the skin with a lot of itching and swellings. Hives can happen in any area of your skin from the head to the toes. Another name for hives is urticaria **(ur´t -kâr´ia)**.

Sinus (sī´nəs) ***n.*** an old Roman word that means "sewer". Humans have sinuses, or sewers, inside of their heads. If a sinus drain is plugged, you can get a sinus headache which feels like a lot of pressure pushing out from inside your forehead or your face.

Sinusitis (sīnə-sī´tĭs) ***n.*** means inflammation in the sinuses.

Food Allergy (fōōd • al´ ər - jē) ***n.*** is an allergic reaction to something that is eaten. The most common foods that cause allergic reactions are milk, egg, nuts, soybeans, peanuts (which are really beans), shellfish and pan fish (perch, cod). Any food can cause allergy.

Mast Cells (mast • sĕl) ***n.*** are cells inside the human body that line all of the surfaces of the skin, mouth, nose, sinuses, lungs and intestines. Mast cells have histamine inside of them. Another way to think of mast cells is that they are like "allergy bombs" just waiting to go off. The fuses on the outside of mast cell allergy bombs are called "allergy antibodies". Everyone has mast cells, but not everyone has the allergy fuses to make the bombs go off.

Histamine (hĭs´tə̆mēn´) ***n.*** is the allergy chemical that is released from mast cell "allergy bombs" during an allergic reaction. Histamine causes itching, sneezing, swelling and a flood of mucus in the nose, itching, burning and swelling in the skin, headaches and plugging up of the sinuses, spasms and wheezing in the lungs, and also, cramps and diarrhea in the stomach.

Antihistamine (antē-hĭs´tə̆mēn´) ***n.*** blocks the bad effects of histamine. Some antihistamines make people sleepy since they get into the brain and affect its functions. Newer antihistamines do not get into the brain, and therefore, do not have this side effect.

Immune System (ĭ-myoōn´ • sĭs´tə̆m) ***n.*** is the part of the human body that helps to fight infections. The immune system is composed of cells and fluid substances (called "molecules") that normally work together to kill invading viruses and bacteria.

Antibody (an´tĭ-bŏd´ē, an´tī) ***n.*** is the part of the human immune system that can attach itself to bacteria and viruses and cause them to die. Antibodies are normally found in the fluids of the body including the blood, tears, mucus and other fluid secretion.

Allergy Antibody (al´ ər - jē • an´tĭ-bŏd´ē, an´tī) ***n.*** is an antibody that 1 out of 3 people make that attaches itself to the outside of the mast cell "allergy bombs" and causes allergy reactions to occur. Each person has their own fingerprint, and will make different and unique immune reactions to foods, pollens and mold allergens that enter the body. Another name for the allergy antibody is IgE.

Wheeze (hwēz, wēz) ***v.*** is the term used by doctors and nurses to describe the sound that they hear in the lungs of patients who have an obstruction in the airways, especially when the wheezing patient is blowing air out of the lungs (exhaling). Many times asthmatics who are uncontrolled will be wheezing. Importantly, many asthmatics do not wheeze, even when they are having severe breathing problems due to the build up of mucus in their tightening bronchial tubes.

Allergy & Asthma Dictionary

Sneeze (snēz) ***v.*** is a violent reflex and contraction of the body which propels air out of the lungs and through the nasal passageways at over 400 miles an hour. Sneezing is the body's way of flushing and clearing out the breathing spaces in the head.

Mucus (myōōkə́s) ***n.*** is the wet and sticky substance produced in the glands lining the nose, sinuses, lungs, eyes, stomach, intestines and reproductive tract. When it dries, some children call it boogers, but it is really "snot".

Spore (spōr) ***n.*** is the reproductive part of a fungus or mold that can cause allergic reactions. A fungus is a simple life form that does not have chlorophyll, like green plants do. Molds and fungi (fungi is plural for fungus) depend upon other forms of life for food, and reproduce by giving off sometimes huge numbers of spores into the air, like plants do when they give off pollen.

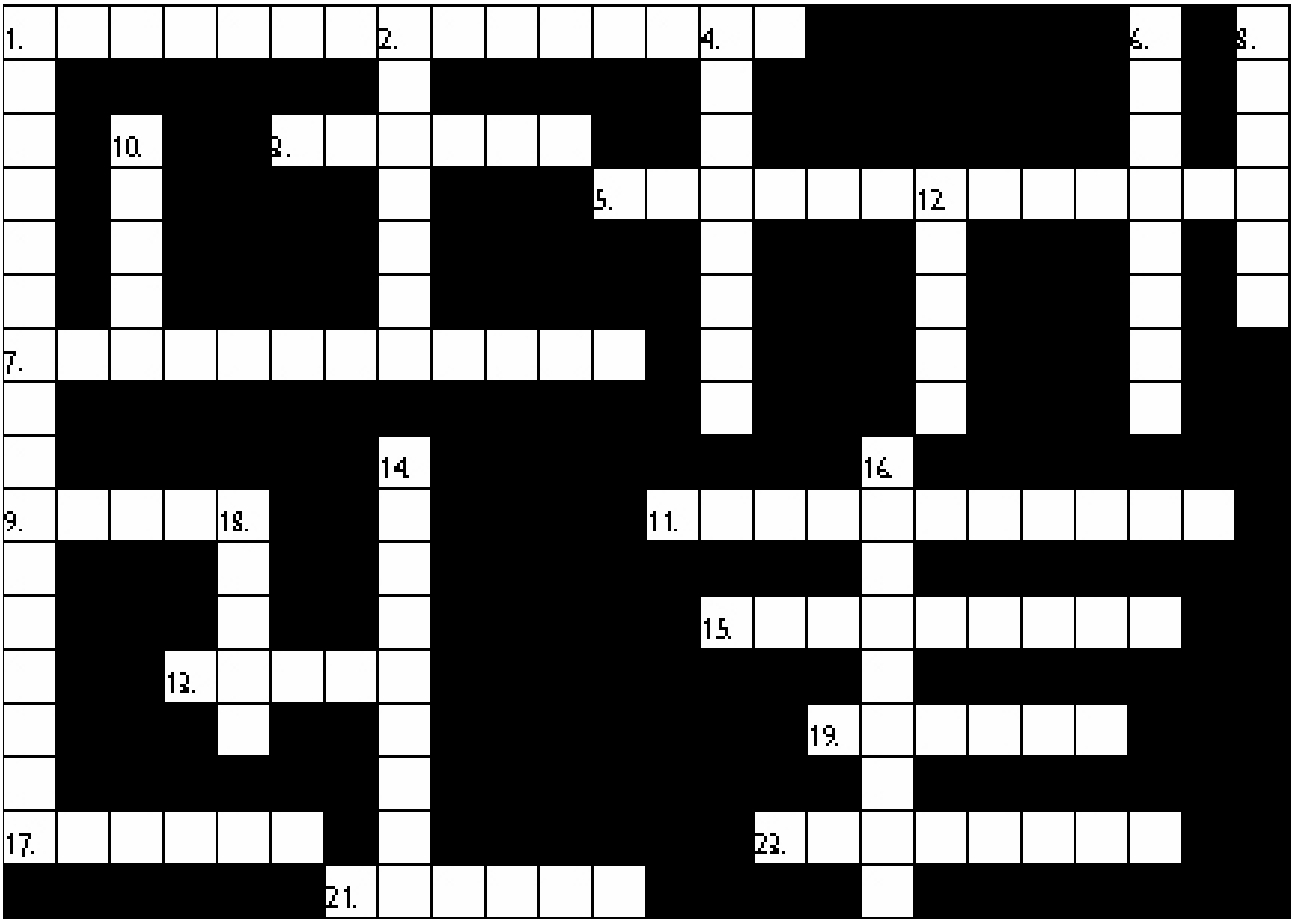
Pollen (pŏl´ən) ***n.*** is the word used to describe the male fertilizing elements given off into the air by flowering plants. Inside of the pollen grains there are proteins that can cause allergic reactions in genetically predisposed people. The pollens that are most often responsible for causing allergic rhinitis come from weeds, trees and grasses.

Dust Mite (dŭst • mīt) ***n.*** is a small eight-legged animal that lives with humans in their "nests" and homes. The dust mite is the most common cause of allergic rhinitis and asthma on this planet. They eat microscopic molds and skin dander, and then leave their droppings (feces) behind. The dust mite droppings are the source of the irritating and allergenic effects of the mite. There is actually an enzyme in the mite feces similar to a meat tenderizer that can itself irritate a person, or cause an allergic reaction. So, people allergic to dust are really allergic to a bunch of poop, or dust mite do-do.

Peanut (pē´nŭt´) ***n.*** is a bean that grows in the ground. It is not a nut that comes from trees, like hickory nuts. Peanuts are the most frequent cause of food anaphylaxis in children. Avoidance is the best treatment for people with anaphylaxis to foods.

Venom (vĕn´em) ***n.*** is the toxic liquid inside the venom sacs of honey bees, wasps, yellow jackets, fire ants and snakes. Venom contains substances that can cause severe allergic reactions, such as anaphylaxis.

Allergy Crossword Puzzle



Across

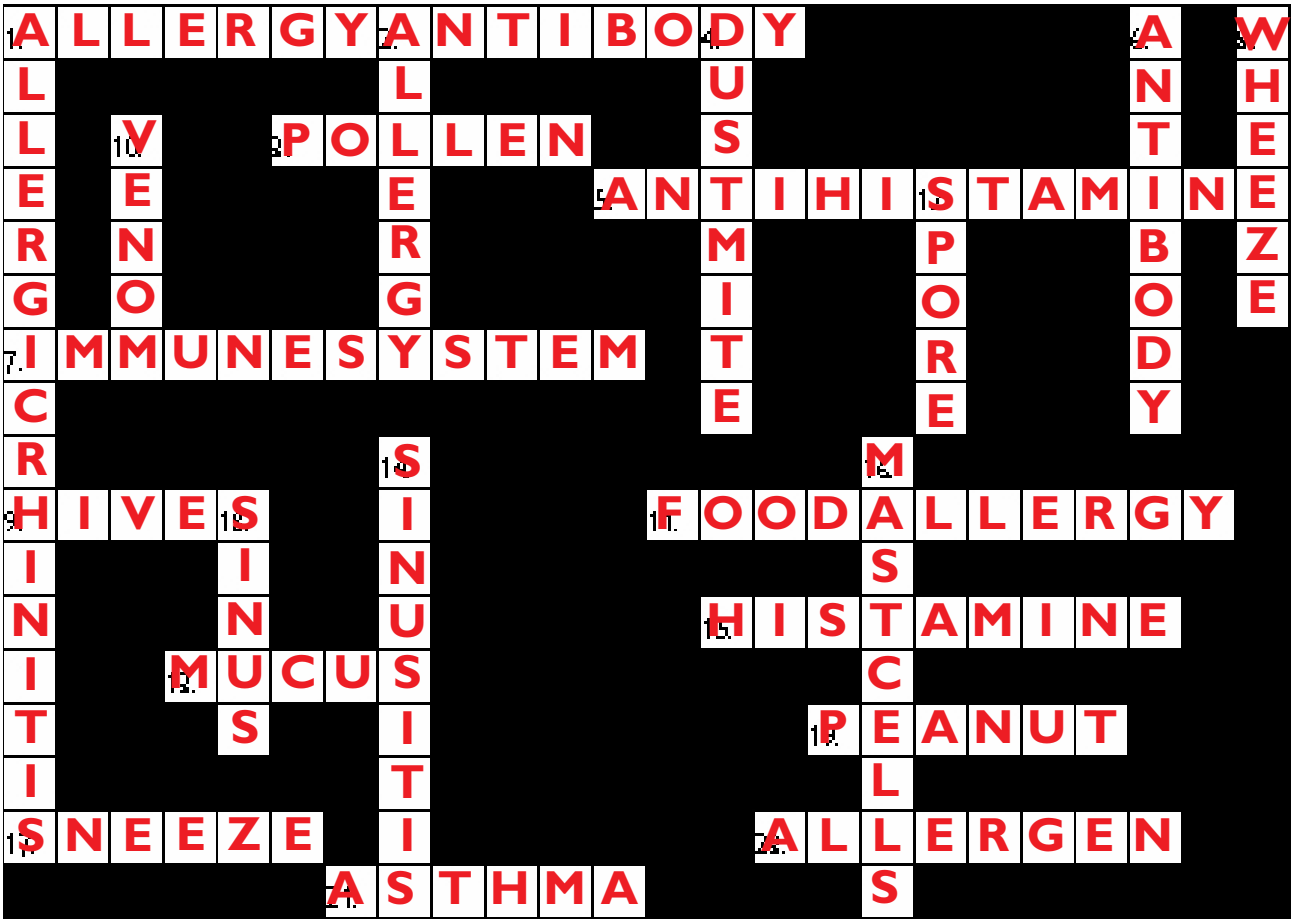
1. Attaches itself to the outside of the mast cell and causes allergic reactions. **3**. Given off into the air by flowering plants. **5**. Blocks the effects of histamine. **7**. Fights infections. **9**. Allergic reaction in the skin. **11**. Reactions to milk, eggs or nuts. **13**. Produced in the lining of the nose. **15**. Released from the allergy bombs. **17**. Reflex which forces air out of the body at speeds over 400 miles per hours. **19**. A common food allergen. **21**. Allergic reaction in the lungs. **23**. Anything that can produce an allergic reaction.

Down

1. Allergic reaction in the linings of the nose and sinuses. **2**. Hypersensitivity. **4**. Small living eight-legged animal found in the house. **6**. Attaches itself to bacteria and viruses and helps them to die. **8**. Sound heard when there is obstruction in the airways. **10**. Toxic liquid. **12**. Molds and fungi give off this stuff into the air to reproduce. **14**. Inflammation of the sinus. **16**. Allergy bombs. **18**. Means sewer.

Dr. Nose® Wants You To Have Fun

Allergy Crossword Puzzle



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Allergen Cousins Club

What are Pollen and Food Cousins?

Since pollens originate from plants, it should not surprise us to learn that many pollens share some similarities with certain foods of plant origin. This may be very important to some allergy patients. Some foods can look just like some pollens to the immune system, and this can produce interesting and unwanted results.

What are some common symptoms?

Symptoms which may occur when eating foods related to pollen allergens include itching of the roof of the mouth or lips, wheezing, coughing, clearing of mucus in the throat or even systemic reactions such as hives, swelling of the lips or face and anaphylaxis if one exercises too soon after eating.

Why is it important to be aware of these relationships?

It is important to know that these food - pollen relationships exist. While the effects of allergen cross-reactivity may not affect everyone who has allergy reactions to airborne pollens, knowing more about "allergy cousins" can make your life more comfortable and safe.

Pollen - Food Cousins or Cross Reactivities

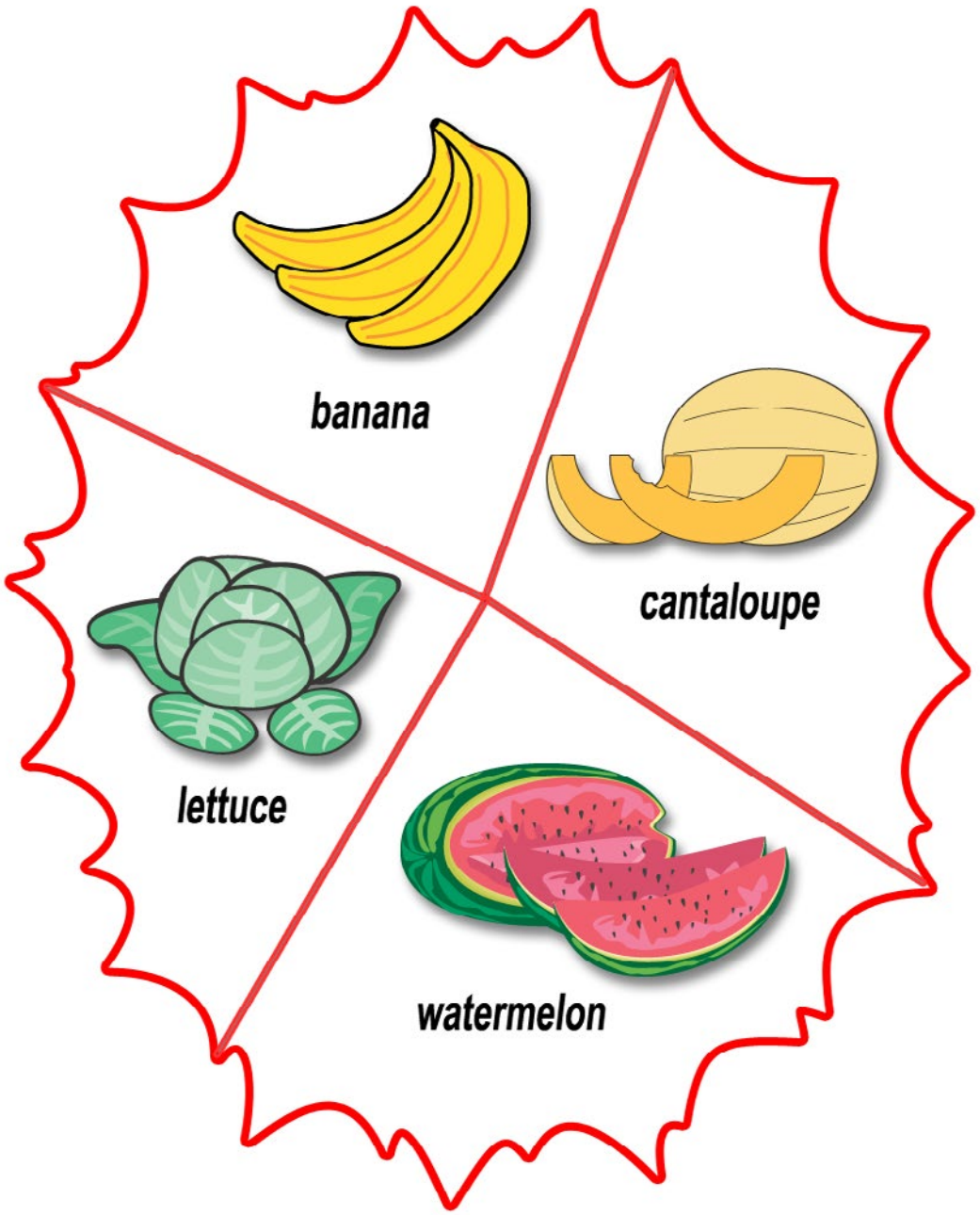
Ragweed Pollen:	**Watermelon, Cantaloupe, Pumpkin, Pumpkin seeds, Squash, Sunflower Seeds, Banana, Lettuce, and sometimes Latex or Rubber Products**
Grass Pollen:	**Tomatoes, Carrot, Celery (Caraway, Parsley, Anise), Beer - which is liquid grass (Beer may also cause nasal and sinus congestion in grass allergic patients.), Corn, Oats, Wheat, Barley, Chives and other grass-like foods, and Potato Skins**
Birch Pollen:	**Celery, Carrots, and ALL Stony, Pitted Fruits such as Apples, Peaches, Pears, Cherries, etc.**
Cat Allergens:	**Pork**
Dust Mite:	**Snail and possibly Shellfish.**

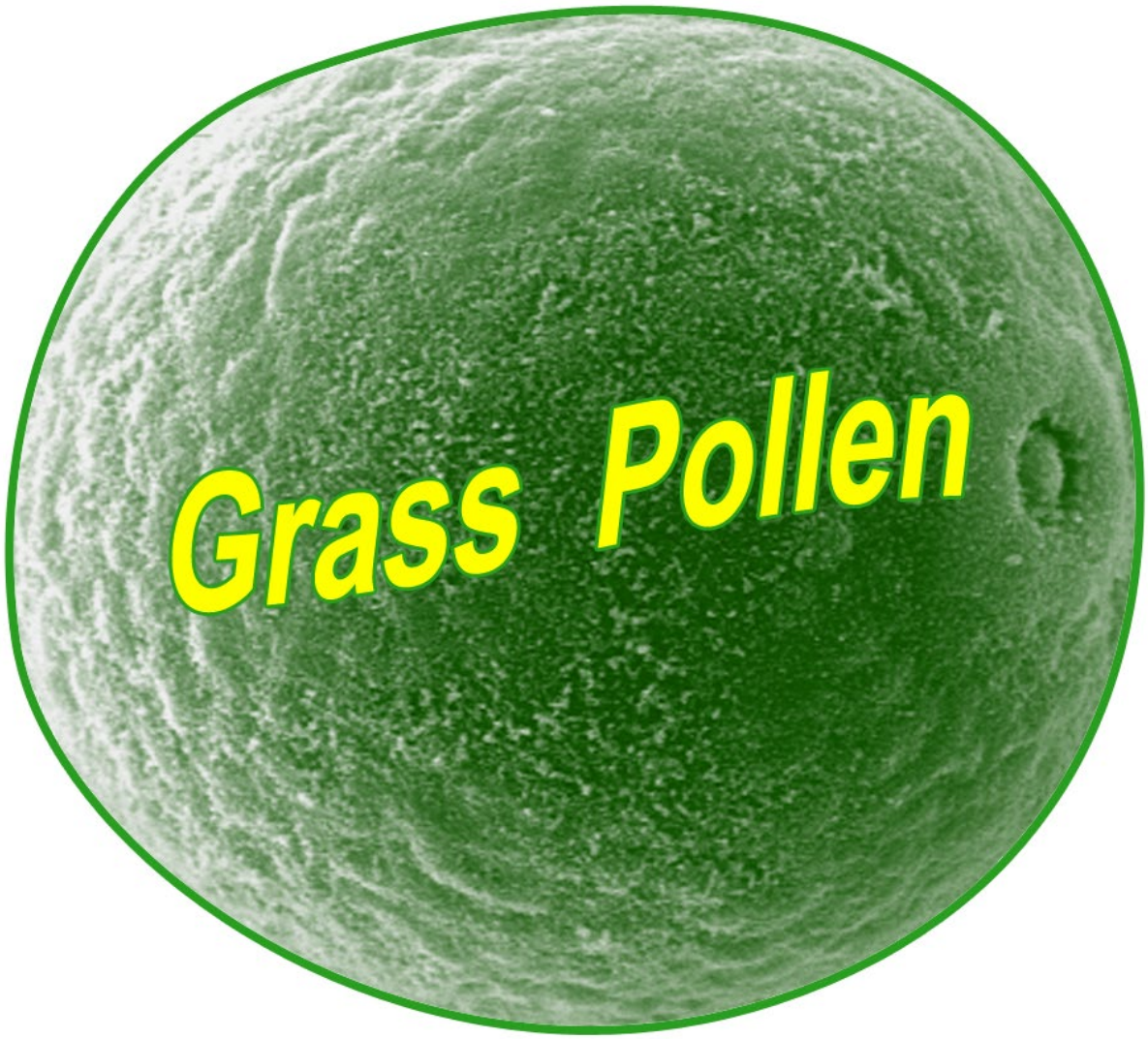
Things To Remember

DIRECTIONS:

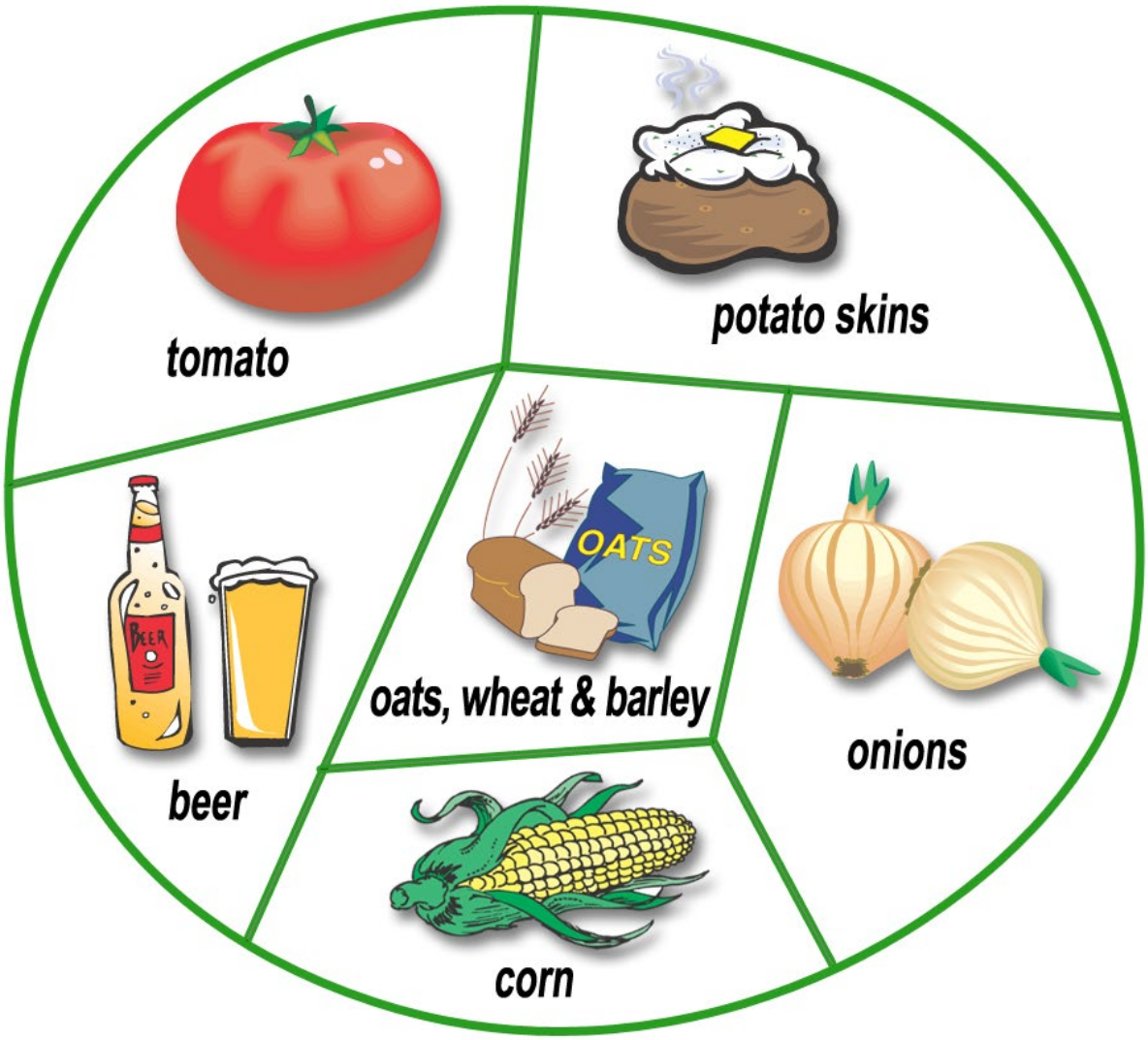
Study the pictures of the allergen cousins or pollen look-a-likes. Carefully cut out the Pollen Puzzles below. Mix all the pieces together and then put the three puzzles back together. (ragweed, grass, and birch pollens)

Pollen Puzzles



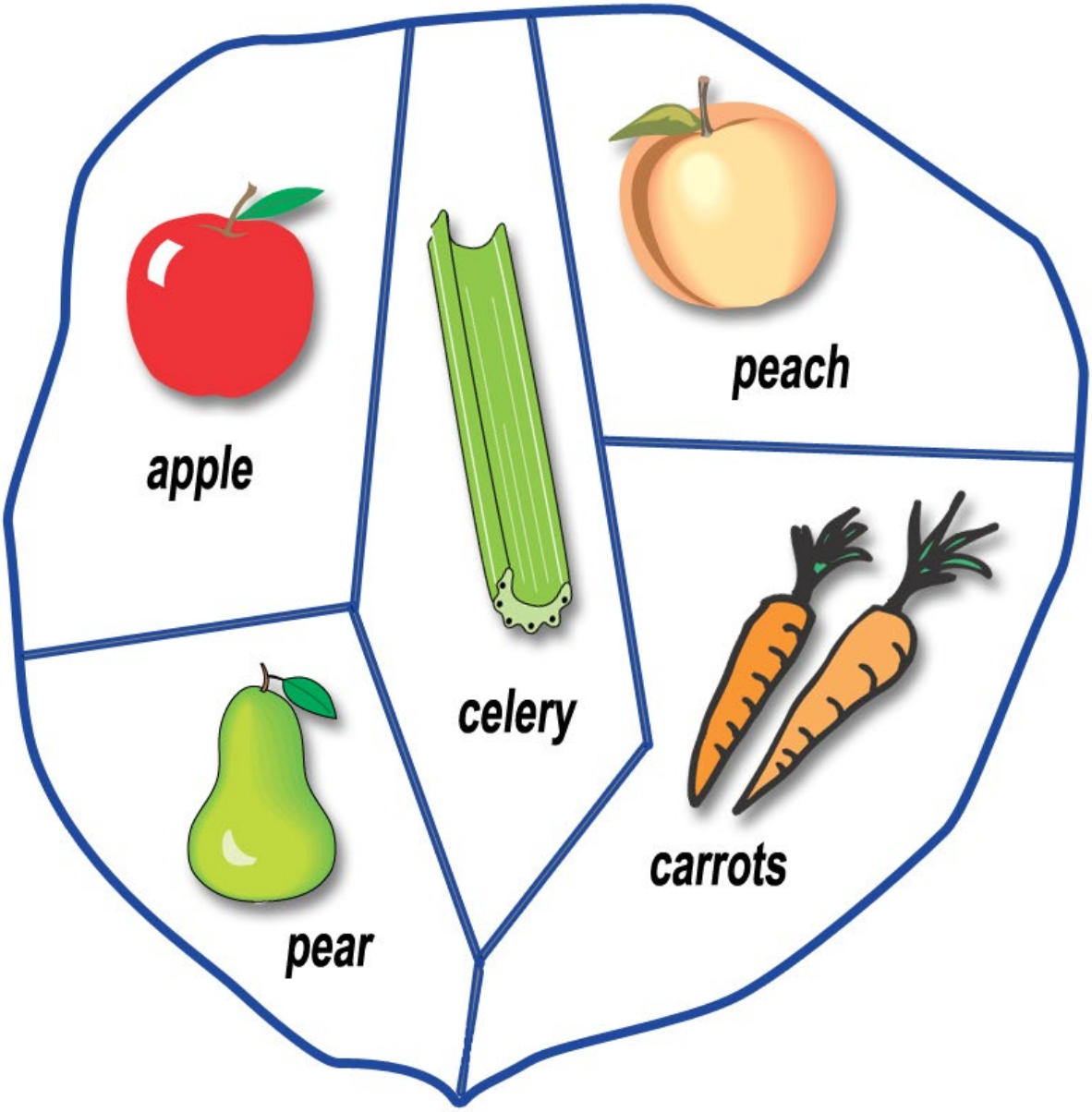

Grass Pollen

Pollen Puzzles




Birch Pollen

Pollen Puzzles



The Pollen People® Puppet Play

DIRECTIONS:

Place your favorite Pollen People® sticker on a popsicle stick, and practice the short play below in groups of five. Help Dr Nose® create the best ending for allergy sufferers.

SCENE 1

Betty Birch™: Good Morning Doc. You don't look so good. What's wrong?

Dr Nose®: Achoo! I have been sneezing all morning. My eyes are itchy and my nose is plugged up and running. I think my allergies are acting up again.

Betty Birch: What is allergy anyway?

Dr Nose: I'm glad you asked. Allergy is too much immunity. It's usually an immune reaction to an allergen that enters your body.

Betty Birch: But, what are allergens?

Dr Nose: Allergens are things that cause allergies. They are in pollens, mold spores, cat dander, dust mites and even in bee and ant venoms.

Betty Birch: Does everyone have allergies?

Dr Nose: No, but about 3 out of 10 people have allergy and asthma problems.

Betty Birch: What are you allergic to, Dr Nose?

Dr Nose: I'm not sure. I think I'm allergic to Pesty the Cat®. Or could it be the house dust mite Mighty Mite®, or Timothy Grass®, or Reggie Ragweed®, or Betty Birch®, or maybe even Major Yellow Jacket®. I know some people who can help us understand allergy. Let's ask my friends the Pollen People®.

Help Me Create The Best Ending . . .

Write your own best ending to my puppet play on the next page.

Dr. Nose ®

KID ZONE

Dr. Nose ®

Family Survey for Possible Allergy

Allergic diseases are known to be inherited. So, they tend to run in families. Genes that are still unknown transmit the ability to become allergic to allergens found in cats, dust mites, dogs, foods, pollens and even mold spores. There are common symptoms present in the nose, eyes, sinuses, ears and lungs of people who have allergy illnesses. The 15 questions below will help you to discover if anyone in your family has allergy.

Does anyone in your family have allergy symptoms? Ask them.

	SYMPTOMS	YES	NO
1.	Runny or itchy nose	___	___
2.	Plugged up nose or nasal congestion	___	___
3.	Sneezing too much	___	___
4.	Itchy, watery eyes	___	___
5.	Itching on the roof of the mouth	___	___
6.	Throat clearing and lots of mucus (gunk)	___	___
7.	Repeated ear infections	___	___
8.	Chest congestion and coughing	___	___
9.	Wheezing with exercise, hard to get air in	___	___
10.	Frequent colds (a high Kleenex count)	___	___
11.	Sinus headaches and infections	___	___
12.	Fatigue (sleepy or tired all the time)	___	___
13.	Irritable and poor concentration	___	___
14.	Missing a lot of school or work	___	___
15.	Frequent use of cold or allergy pills	___	___

TOTAL SCORE OF YES ANSWERS = ____

If anyone in your family answered yes to 8 or more of these questions, then allergy is probably the cause of their symptoms.

Be certain to ask your doctor if allergy may be the cause of your symptoms. Normal people do not feel sick very often. Show your family member's answers to your doctor, and ask for a referral to an Allergy Specialist.

The Allergy Family® Tree

KID ZONE

DIRECTIONS:

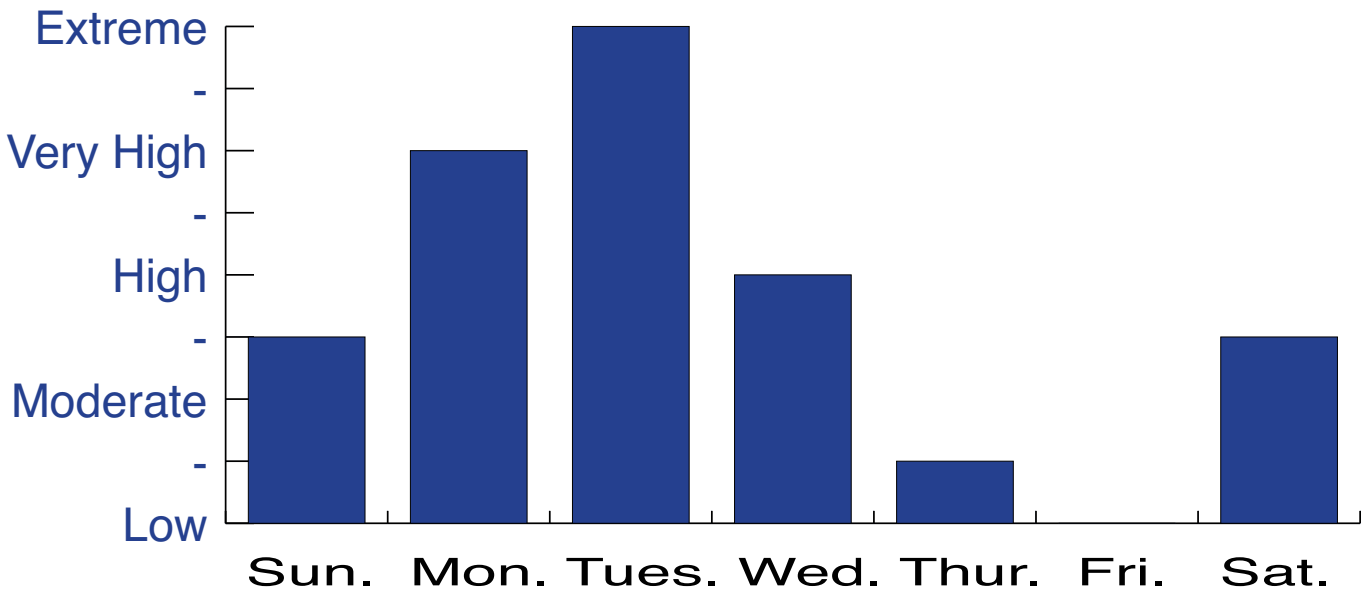
Using the information that you have collected from the Family Survey for Allergy, write the names of the allergy sufferers in your family on the correct branches of The Allergy Family® Tree. Notice how different people have different allergy problems. Compare your Allergy Family Tree with your friends.

The Allergy Family® Tree

DIRECTIONS:

Allergy and asthma specialists throughout the United States study outdoor pollen and mold levels in order to determine the causes of hay fever, sinus headaches and asthma symptoms. On a separate piece of graph paper, monitor the outdoor aeroallergen levels in your community. Watch for pollen and mold counts on television or in your local newspaper.

Plot the levels of outdoor allergens each week. Then try to detect and determine which if any of these pollens and molds might be affecting you or members of your family. Good luck!



Daily Pollen Levels

THE KAGEN ALLERGY APP®

Download the Kagen Allergy App® and discover how your weather affects your health. It's Free and it's 2 Apps in 1 - a weather App and an Allergy App.
Click to download at http://www.kagenallergy.com/kagenallergyapp

KID ZONE

DIRECTIONS:

Search for a news article about allergy or asthma, and then answer the following questions.

1. What is the name of the newspaper or magazine?

2. What is the date of the article?

3. Does the article focus on allergy or asthma?

4. How does this article relate to what you have learned?

5. What is the main focus of the article?

6. What is something new that you learned from reading the article?

7. How does this article affect you?

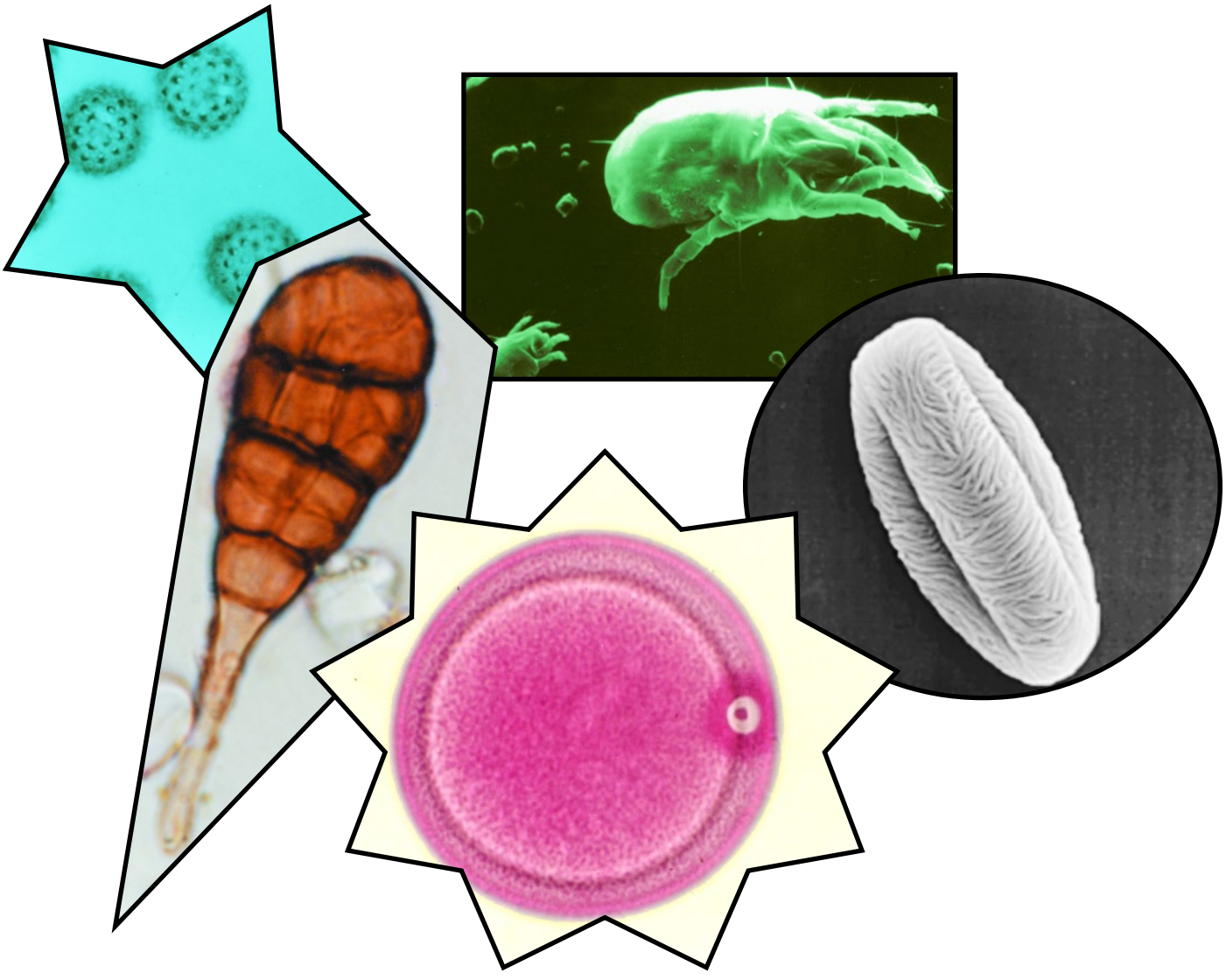
Build Your Own!

Design The Perfect Aeroallergen

Now that you know more about the world of allergy, try to design the best possible aeroallergen. Aeroallergens are found in the air, like tree and grass pollens or mold spores. Some examples of aeroallergens can be seen in the Allergen Scrapbook on page 37.
Aeroallergens usually have the following traits:

1. **Small size;**
2. **Aerodynamic and slippery in the wind;**
3. **Structure and shape usually symmetric (look this word up in the dictionary);**
4. **Light weight and able to hang in the air for a long time;**
5. **Interesting appearance under the microscope (a very strong magnifying glass).**

When you have finished designing your Best Aeroallergen, send your drawing (crayon, ink or painting) to Steve Kagen, M.D., 100 West Lawrence Avenue, Appleton, WI 54911. I would be pleased to review your new designs.



Allergy Quiz II

Now that you have learned about the world of allergy, take the allergy quiz again. See how much you have learned. Good luck.

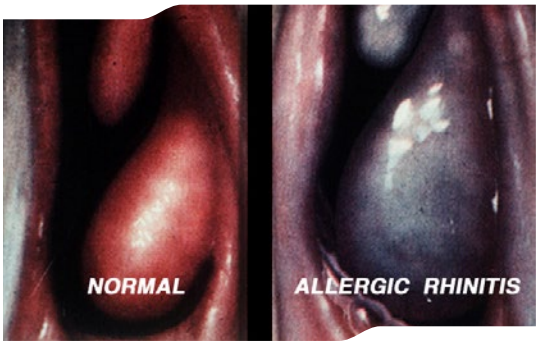
	True	False
1. The word allergy means too much immunity or hypersensitivity.	_____	_____
2. An allergen is anything that causes an allergic reaction.	_____	_____
3. Allergy cells in the body release the allergy chemical histamine.	_____	_____
4. Allergy cells are called mast cells, or allergy bombs.	_____	_____
5. Histamine can make a person sneeze, itch and wheeze.	_____	_____
6. An allergy reaction in the nose and sinus is called hay fever.	_____	_____
7. Asthma is an allergic reaction inside of the lungs.	_____	_____
8. The most common cause of allergies are bad, nasty thoughts.	_____	_____
9. Asthma tends to run in families.	_____	_____
10. The best treatment for allergies is avoidance of what bothers you.	_____	_____
11. Banana allergens are related to birch pollen allergens.	_____	_____
12. Grass pollen allergens are related to apples and pears.	_____	_____
13. Birch pollen allergens are related to celery and carrots.	_____	_____
14. Asthma medicines help relax the brain.	_____	_____
15. All antihistamines make people sleepy.	_____	_____

Allergy Salute

Here's our classic Allergy Saute. This young lady is showing you where the problem is. It's her nose. She's itching. She's got a lot of mucus. She might even call it a snotty nose.

Allergy Salute Side View

This is our same allergy child showing you the allergy salute from the side. She is pushing her nose up, and indeed, if she continues to do this she may even look like Porky the Pig later on. The teaching point in this slide is not so much the nose or the swollen eyes - what we call allergy shiners - these allergic shiners, this is not the important point. In this slide, what you are looking at is a child breathing with their mouth open. Any child who sleeps at night with their mouth open has teeth that come in crooked. She will need tinsel teeth and braces later on. You do not want your children snoring at night and having nasal congestion.



Allergy Reactions In The Nose

Inside of the nose on the right side of the slide you see someone with allergic rhinitis, or what we might call hay fever. This nostril has a lot of mucus in it. It's red, it's swollen, it's very difficult to get air inside of that nostril. On the other side is a normal nasal passageway. There is no mucus, and its not pale, its not boggy, and this is the way you want your nose to be.

Angiodema Right Eye

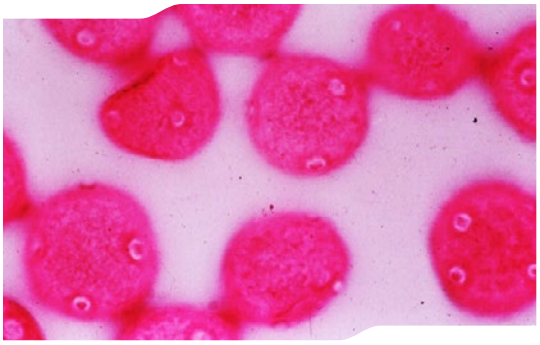
This woman can't tell you what caused her eye to swell. That is the allergy detective's role. What an allergist is suppose to do is to exam the patient, take a medical history in detail, and then do selective skin testing or allergy blood testing in order to detect and determine the cause of this very severe reaction. When allergy happens in the nose, we are going to call it hay fever or sinus. When it's happening in the eye, we are going to call it angioedema or allergic conjunctivitis. We give allergy different names depending upon where in the body it is.

Giant Ragweed Plant

Allergy detectives look at the air. Here is a giant ragweed plant. We give it this name because it is tall.

Ash Pollen

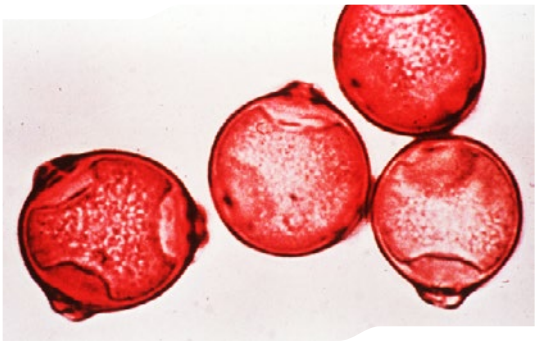
Aeroallergens are things that are in the air that can induce allergic reactions. Here is a tree pollen. This is a microscopic view of an ash pollen.



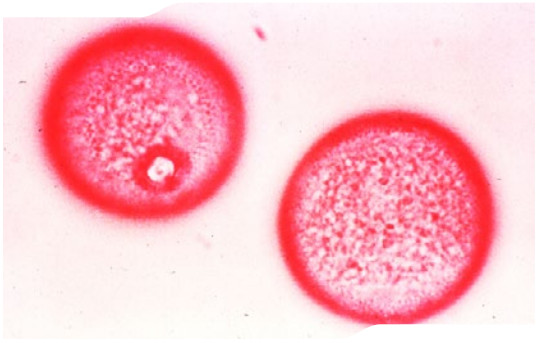
English Plantain

In the spring, there is a weed that pollinates throughout much of the United States. Its called English plantain, and here is what it looks like under the microscope.

Birch Pollen



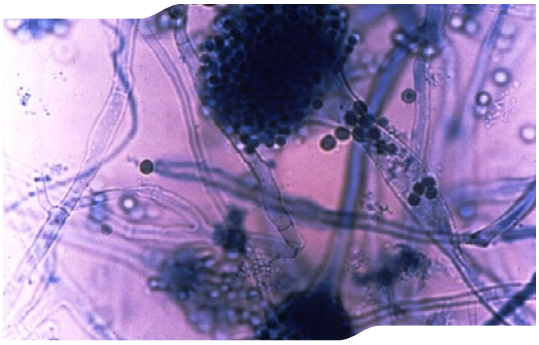
This is birch pollen. This is a very important cause of springtime hay fever, which most often induces allergy symptoms in the eyes, itchy nose, sneezing, sinus, headaches and even asthma. Birch trees pollinate in the spring in April and May. Birch pollen possesses things that cause allergy. Anything that causes allergy is given a name called "allergen" If you have allergy to birch pollen, you may also have a reaction to the proteins and allergens that are present not in only birch, but the cousins of birch as well including apples, peaches, pears, cherries; anything with a stony pit and also celery and carrots. Sometimes people who have birch-induced hay fever in the spring get itching on the roof of the mouth when they eat these foods. They will have swelling of their throat, or even an asthma attack after eating something that's a "cousin" of birch.



Grass Pollen

Here you see a microscopic view of grass pollen. It looks quite different than the trees. It has a single pore out of which about 750 different starch granules can come out. These starch granules possess allergy-inducing proteins. People who are allergic to grass, if they eat grass, they get sick. Now what looks like grass to your immune system would be lettuce, carrots, celery, corn, wheat, and even beer.

Aspergillus Fumigatus



This is a microscopic view of a very important cause of allergy and asthma. This is the mold spore Aspergillus fumigatus. We found this mold in every sample of marijuana that we cultured. Moldy pot has the name moldy not because it's looking like a mold; it actually has mold inside of it, and people who smoke marijuana are inhaling this mold. Unfortunately, this mold can also live inside the lung. It can cause an allergic reaction. Imagine if you were allergic to this mold, and it was actually living inside of your lung. There is no way you can avoid this allergen. Therefore, you constantly have asthma, and you can't get out of your own lungs. The trick is don't inhale.

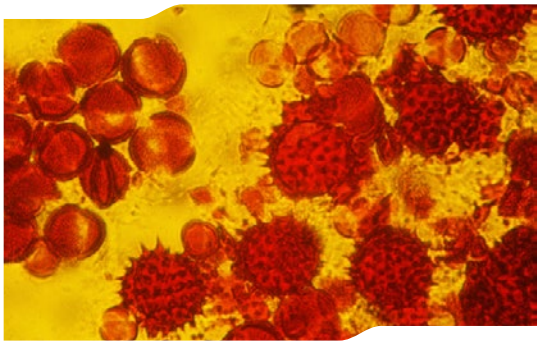
Alternaria Mold Spores

Here is a microscopic view of Alternaria mold spores. This is perhaps the most common indoor and outdoor mold spore that can cause asthma and allergic reactions. These molds that I have mentioned, not just Alternaria, but Aspergillus in the previous slide, they are very commonly responsible for sinus infections. When you get an immune reaction that is excessive to these mold spores, your immune system is trying to rid the body. We don't want mold growing in our face; we don't want it growing in the nose, in the sinus, and therefore, your immune system reacts. If it over-reacts, you get an allergic reaction.

Dust Mite

Here is the house dust mite. No doubt you may have seen this already in school or in magazines. This is the #1 cause of allergy and asthma on the planet Earth. This tiny little dust mite can be found in your rugs, in your carpeting, on your couches, in your bedding. It is living with us in our nest. In the right section of this slide you can see, just in front of its head and legs, the small little round substances. This is the dust mite dropping. Some would call it doo doo. Some would call it poop. It's a bunch of crap. This excrement of the dust mite is what carries the allergenic proteins. So, if you are allergic to dust you are really allergic to a bunch of crap.

Bee Pollen Pill

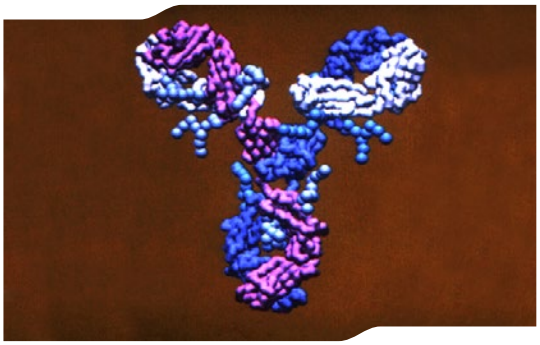


Here's a microscopic view of a bee pollen pill. Many people will go to an apothecary and purchase something that they think is going to make them better. It's a bee pollen pill and indeed it has a lot of pollen in it. That's what bees do. They go out into the world, and they collect pollen, but it really is not designed for human consumption. Some people who are well intentioned are mistaken in thinking that if they swallow enough of these pills, their hay fever and allergy and asthma will disappear. If you are allergic to something, the number one treatment is avoidance.

Wasp and Caterpillar

Not everything that causes allergy is inhalable. You have seen pollens and mold spores. Here we see a wasp. This wasp is able to inject into people a venom and this venom in some people can cause a severe allergic reaction that may be life threatening. We call this big time allergic reaction anaphylaxis, or altered reactivity. When someone is stung, if they have allergy antibodies which is sort of like the fuse on an allergy bomb, these allergy antibodies are able to activate the whole body releasing histamine - which causes severe and life threatening reactions in the lung and the blood pressure drops. People sometimes die from bee stings, and this is something that is totally avoidable. People die from bee stings primarily because they are unaware that they have this potentially life threatening reaction. Treatments are immediately available that can desensitize people, so you don't have to die when you are stung.

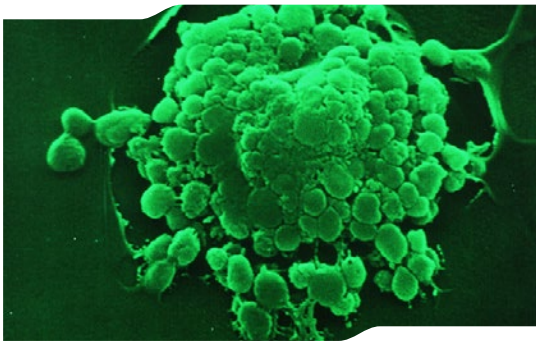
KID ZONE



IgE Antibody Molecule

Here you see the IgE antibody molecule as generated on a computer. This is really what the antibody looks like. Remember, antibodies are part of your immune system. They help you to fight infection. Unfortunately the allergy antibody - called IgE simply because it was the A, B, C, D, E the 5th antibody to be discovered - this antibody acts like the fuse on an allergy bomb. Twenty-three per cent to 30% of the population has the genetic ability to make this allergy antibody in excess. If you don't make this antibody, we won't call it an allergic immune reaction.

Mast Cell

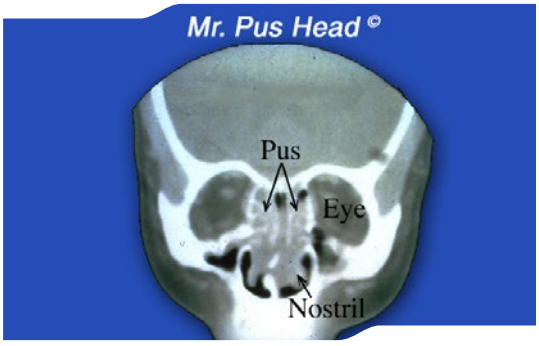


Here is an electron microscope view of an allergy bomb. Well, in the medical world we call it a mast cell. A mast cell contains preformed granules of histamine. Histamine, when it is in your skin, makes you itch. Then we would call it hives. Histamine when it is being released into your head, your nose and sinus, we call it sinus or hay fever. In the lungs, this allergic reaction, this allergic explosion releases histamine that then produces asthma and wheezing and coughing. So, allergy has different names. When this allergy bomb releases the chemicals inside of the lungs, it is asthma; in the skin hives or eczema; and in the head hay fever or sinus.

Allergy Skin Tests

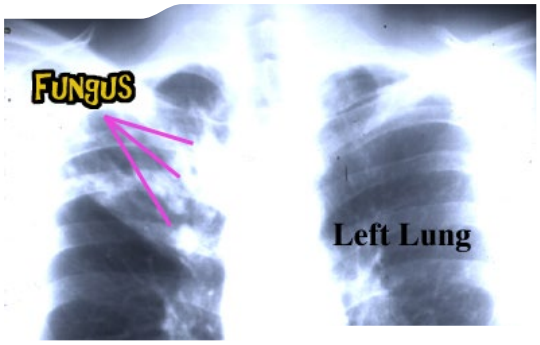
Here's what I call the real thing and this ain't Coca Cola. Here is a patient who under went diagnostic allergen skin testing. His chief complaint to me was, "Doc, my wife doesn't believe me any more." Well, I didn't know quite what to make from that, but we did some testing and indeed, he lives on a lake where there are a number of insects and lake flies. The only thing this gentleman is reacting to was insect proteins. Had I not been looking for insect allergy, we would have thought that he did not have allergy at all, but rather had marital problems. When he would go into the lake in the spring, he would break out in hives. When the Lake Flies would hatch out, his face would swell up and he would get asthma flares. He would have to stay in a motel for several weeks. This caused his wife some concern. We were able to help him, because we made an exact diagnosis and the reaction you are looking at, the red spots in the middle lower section of his back, that sort of mosquito bite; that is the same reaction that occurs inside of his nose. The reaction we are looking at is exactly the same thing that can happen in his lungs.

Extensive Ethmoid Disease



In this slide you see a CT scan of an extensive sinus infection in what we call the ethmoid sinus region. This gentleman had this sinus infection for several years. The ethmoid area of the sinuses is very difficult to sterilize with antibiotics. Oftentimes, the patients I see require three weeks of antibiotics in order to feel better. If we can't make them feel better with antibiotics, then patients who have chronic sinus disease may require surgery.

Allergic Aspergillus



This is a chest X-ray that shows you something most terrible. This Psychiatrist had asthma and on his chest X-ray, the right upper lobe was totally plugged up. There was something there, and when we collected his sputum, or the mucus that comes out of his lungs, we found a lot of mold. A very particular mold called Aspergillus fumigatus, and when talking with him it seemed that it was unusual that he would have this mold inside of him, to which he was allergic. We got the history that in order to relate better to his patients, he would oftentimes smoke and inhale marijuana. Unfortunately he is allergic to something that is stuck inside of his lungs, and he is, therefore, stuck on Prednisone.

He has to have Prednisone every day to counter act the allergic inflammatory reaction inside of his lungs. This disease has a name. It is called Allergic Bronchopulmonary Aspergillosis. It is totally preventable. Unfortunately today, in my view, out in California and San Francisco some researchers have just been granted a million dollars to study the medicinal effects of marijuana on AIDS patients. I want you to think about this. The very group of people that do not have an immune system is being asked to inhale a mold, which is able to kill them. And we are paying for it.

Spacers + Inhalers

Asthma is an extremely important disease. We use a topical inhaler, like inhaled cousins of adrenalin, to open up the lungs, and inhaled steroids to counteract the inflammation. If you have a mosquito bite, there is inflammation on the skin. Put a little cortisone cream on that rash, it goes away. That same type of reaction is inside of your lungs. So, if you inhale a tiny amount of cortisone it can quiet down the inflammation or put out the fire so to speak. But these inhalers only work if you can get the medicine out of the can, into your mouth, past your mouth into your lung and inhale it and these inhaling assistants, these inhaler assistants the spacers, help to deliver more medicine into the lung.

Summary Slide

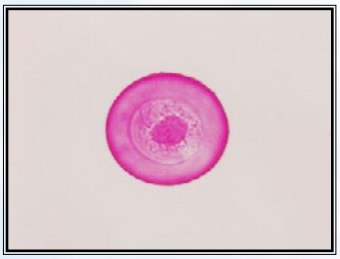
Allergy can occur at any age. Allergy does not discriminate on the basis of age or sex. You can be two months old, 20 years or 80. At any time in your life, you can develop an allergic immune reaction. Many doctors who are well intentioned misunderstand the world of allergy. Some will say, well he's only two; he's only four; she's only six. Wait until she is older. If a child has an allergic disease, the child should be diagnosed and treated.

If you have, for example, a broken leg, your doctor would not say, "Well you are only two; you're only four. Let's wait." No, let's make a diagnosis. Do not discriminate against a child if you are a physician. Do not discriminate against your own children. If they have allergy like symptoms, ask your doctor. Find out what the cause can be. The best diagnosis can be made with diagnostic allergen skin testing, and when that is not possible, there are diagnostic allergy blood tests available.

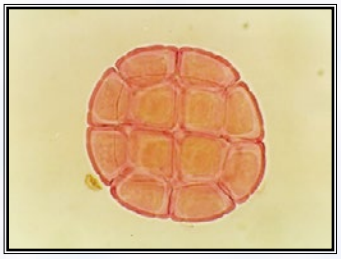
I hope that you have enjoyed this slide presentation about the world of allergy and asthma. To find out more about allergy, you can visit our web site at www.kagenallergy.com.

Thank you for your time and attention. Good luck and good health. This has been Dr. Steve Kagen.

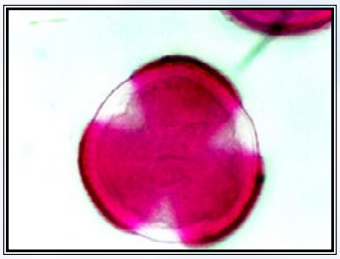
KID ZONE



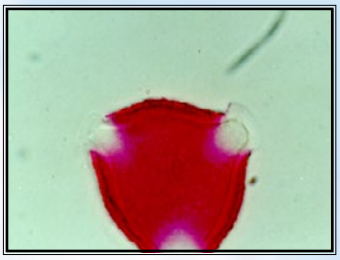
Mountain Cedar



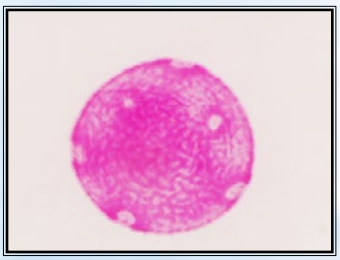
Acacia



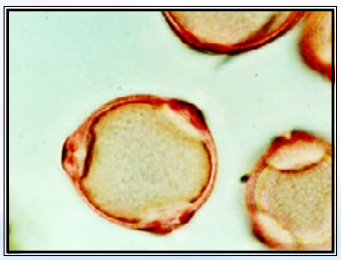
Red Maple



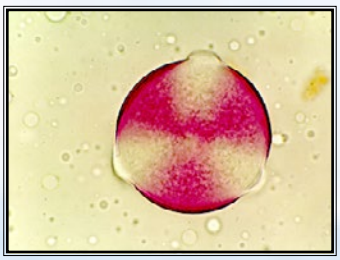
Live Oak



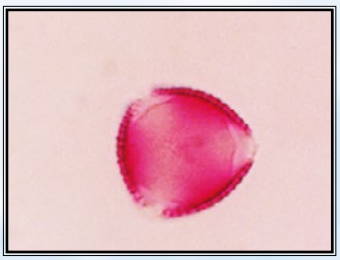
Elm



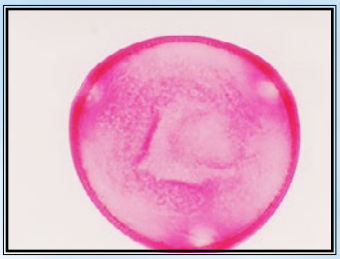
White Birch



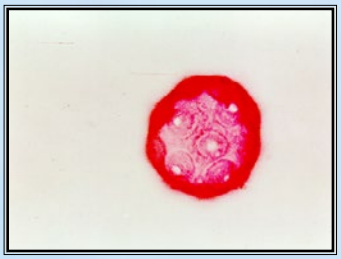
Mesquite



Olive



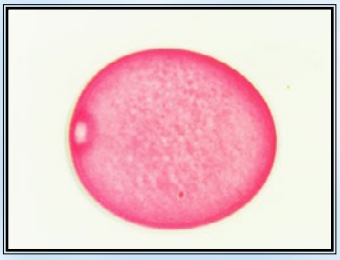
Pecan



Walnut

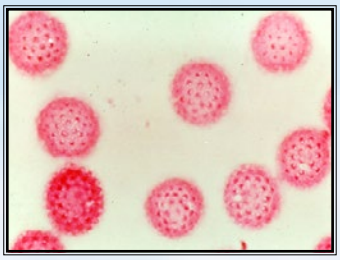
White Mulberry

Bermuda Grass

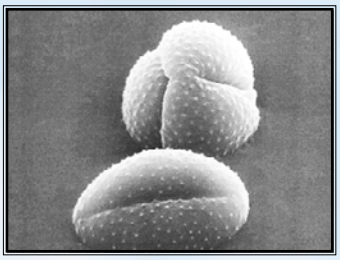


Meadow Fescue Grass

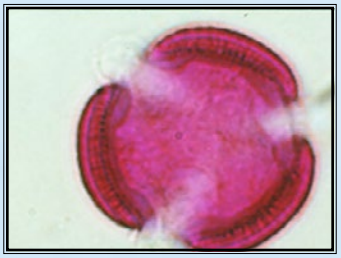
Orchard Grass



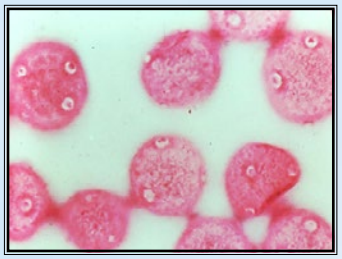
Short Ragweed



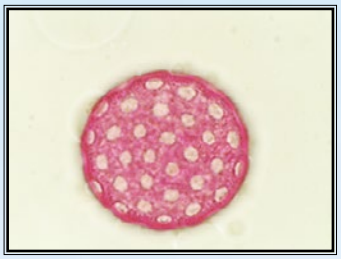
Sagebrush



Mugwort

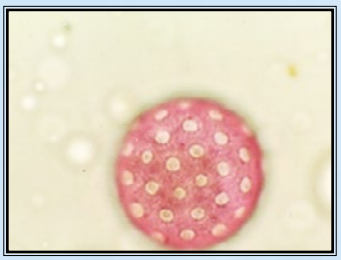


English Plantain

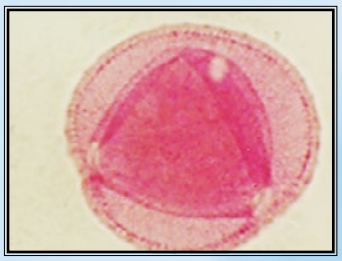


Firebush (Kochia)

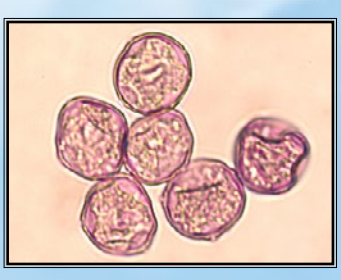
Pigweed



Allscale

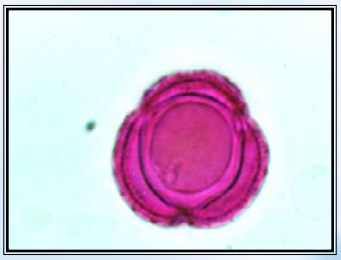


Cocklebur

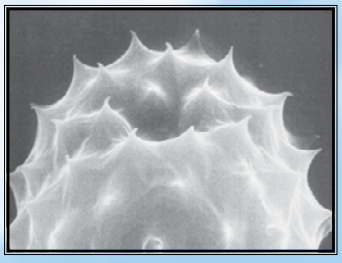


Stinging Nettle

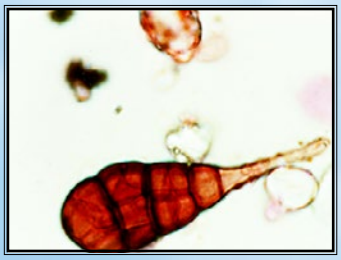
Lamb's Quarters



Rabbitbush

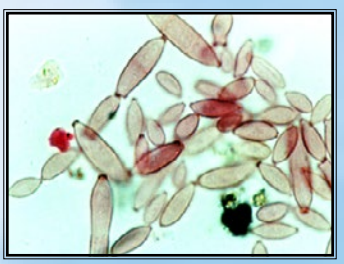


Giant Ragweed

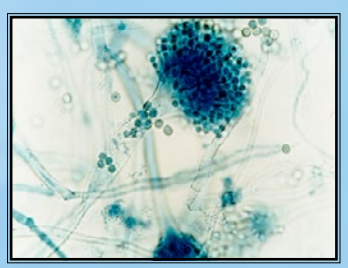


Alternaria

Drechslera



Cladosporium



Aspergillus fumigatus

Curvularia

Mother & Child Mites

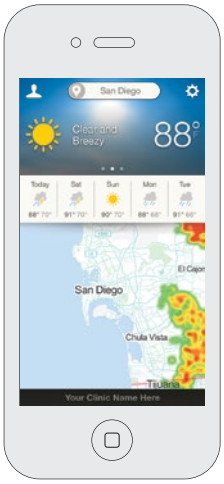
DISCOVER HOW YOUR ENVIRONMENT AFFECTS YOUR HEALTH.

We care about what's in the air and how the weather affects your family's health. We've been monitoring the air for a quarter century and developed an easy way for you to discover how your environment affects the way you feel. It's the KagenAir™ app.

We constantly monitor changes in the weather across North America. By comparing your daily symptoms with changes in your local weather, we can help you discover which factors affect you most—revealing your unique Aller-Rhythm™ display.

Your unique Aller-Rhythm™ display is created by comparing your symptoms with changes in your local weather. Discover how weather affects the way you and your children feel everyday.

Discover…	what makes you feel the way you do.
Receive…	the forecast about weather coming your way.
Learn…	how to help your family breathe better.
Connect…	with medical specialists close to home.
See…	Allergy Hot Spots™ each day.

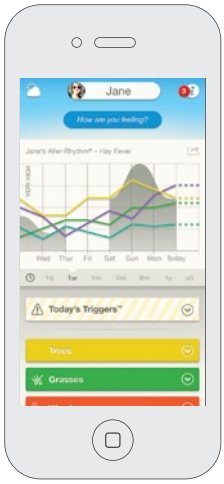


Monitor Weather

The KagenAir™ app monitors local environmental factors in your area everyday. By comparing how you feel with changes in your weather, we can help you discover which factors affect you most.

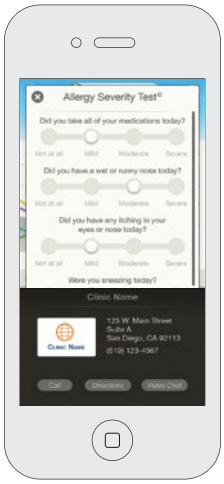
Forecast Symptom Severity

Our patent pending software and monitoring systems we created will help you identify weather factors in your area that may cause your symptoms to flare.



Discover Your Unique Aller-Rhythm™

Answer five questions and you can discover why you feel the way you do. Your unique Aller-Rhythm™ display reveals factors that may affect you.



Talk with a Specialist

The KagenAir™ app makes it easy to find help from doctors and pharmacists who are interested in helping you feel better.

Learn more about how the KagenAir™ app can help you.
www.KagenAir.com | info@KagenAir.com

Asthma Action Plan

Do you have asthma? Do you know how to use inhalers? Asthma medicines won't work unless you use them correctly! Also, have your doctor fill in this form, and then you can take it to your school nurse. ***You can control your asthma.***

Name: _____

Physician's Name: _____ DOB: _____

Physician's Phone #: _____ Completed by: _____ Date: _____

Controller Medicines (Use Everyday to Stay Healthy)	How Much to Take	How Often	Other Instructions (such as spacers/masks,nebulizers)
		_____ times per day	
		_____ times per day	
		_____ times per day	
		_____ times per day	

Quick-Relief Medicine	How Much to Take	How Often	Other Instructions
			Call physician if this medicine is needed more than ____ times per week.

GREEN ZONE

Child is well

and has no asthma symptoms, even during active play.

PREVENT asthma symptoms everyday:

- Give the above controller medicines everyday
- Avoid things that make the child's asthma worse:

☐ Avoid tobacco smoke; ask people to smoke outside:

☐ _____

☐ _____

YELLOW ZONE

Child is not well

Asthma symptoms may include:

- Coughing
- Wheezing
- Runny nose or other cold symptoms
- Breathing harder or faster
- Awakening due to coughing or difficulty breathing
- Playing less than usual
- _____
- _____

Other symptoms that could indicate that your child is having trouble breathing may include: difficulty feeding (grunting sounds, poor sucking), changes in sleep patterns, cranky and tired, decreased appetite.

CAUTION. Take action by continuing to give regular everyday asthma medicines AND:

☐ Give _____

_____ (include dose and frequency)

If the child is not in the ***Green Zone*** and still has symptoms after one hour then:

☐ Give more _____

_____ (include dose and frequency)

☐ _____

_____ (include dose and frequency)

☐ Call _____

RED ZONE

Child feels awful!

Warning signs may include:

- Child's wheeze, cough or difficulty breathing continues or worsens even after giving yellow zone medicines.
- Child's breathing is so hard that he/she is having trouble walking / talking / eating / playing.
- Child is drowsy or less alert than normal.

Danger! Get help immediately!

MEDICAL ALERT! Get help!

☐ Take the child to the hospital or call 911 immediately!

☐ Give more _____ (include dose and frequency) until you get help

☐ Give _____ (include dose and frequency)

Call 911 if:

- The child's skin is sucked in around neck and ribs; or
- Lips and / or fingernails are grey or blue; or
- Child doesn't respond to you.

in part from www. rampasthma.org

More Information & Internet Links

Wisconsin Asthma Coalition
http://www.chawisconsin.org/asthma.php?pg=55

Environmental Protection Agency: Indoor Air - Improving Health in Communities and Schools
http://www.epa.gov/asthma/improvehealth.html

Environmental Protection Agency: Office of Children's Health Protection:
http://www2.epa.gov/children

Regional Asthma Management & Prevention - San Francisco, CA:
http://www.rampasthma.org

American Academy of Allergy, Asthma and Immunology:
http://www.aaaai.org

American College of Allergy, Asthma and Immunology:
http://www.acaai.org

All About Allergy
The Allergy Quiz
Allergy & Asthma Facts
Allergen Storyboard
Allergy & Asthma Dictionary
Allergy Crossword Puzzle
Pollen Puzzles
The Allergen Cousins Club
The Pollen People® Puppet Play
The Pollen People® Stickers
Family Survey for Allergies
The Allergy Family® Tree
Pollen and Mold Counts
Allergy Detective
Asthma Action Plan
KagenAir™ App
Classroom Resources

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