

ALLERGY, ASTHMA AND THE AIR IN ROCHESTER

Allergy is a medical condition where one is hypersensitive to one's own environment. As a result, various target organs (eyes, nose and lungs) become irritated or inflamed, resulting in the typical symptoms of itchy tearing eyes, itching, sneezing and congestion of the nose and cough, wheeze or chest tightness of asthmatic lung airways.

The culprit behind this mischief is a protein to which the body has become sensitized. This allergen is airborne and when it comes in contact with target organs, it stimulates allergy cells to release preformed chemicals (histamine) and generates additional ones that inflame the tissues in an attempt to get rid of the foreign invader. In primitive times, this surveillance system worked well to control and eliminate parasites to enable humans to survive.

Unfortunately with survival comes side-effects in the form of allergic rhinitis (rhino = nose, itis = inflamed) and asthma (inflamed lung lining). This affects one out of five individuals who display the typical features of allergy, either throughout the year (perennial) or at certain times of the year (season). In the spring, trees release pollen usually between March and April. This year our cold winter and spring delayed the liberation of pollen until May and it is still intense and copious into June. The tree pollen peak this year was high and overlapped grass pollen.

Memorial Day usually marks the peak of grass pollen. Grass will probably extend through mid-July.

As regular as clockwork, August 15th seems to trigger the ragweed pollen release due to decreasing daylight. Unlike tree and grass pollen which can be moved earlier or later, ragweed is photoperiod sensitive and year-to-year we see an onset at the same time of the year.

The intensity of pollen liberation is very complex but depends upon meteorological conditions. Warm, dry, windy conditions maximize pollination by forcing plants to seek reproduction for next year's survival. Wet, cool conditions promote vegetative growth and diminish pollination. Molds come in both wet and dry varieties and are most evident during hot, humid stretches in July and August.

A key to understanding allergy is to realize it is a condition that has a tendency to recur at the same time of the year or be a year-round relapsing condition (if tissues get inflamed or primed enough). The upper airway mimics a "chronic cold that doesn't go away," resulting in a lack of response to cold pills or antibiotics, or a history of recurrent sinus or ear infections. The resultant nasal congestion can thwart good sleep and patients end up with marked fatigue.

The lower respiratory airway becomes irritated and inflamed, forming mucus in response that clogs the airways. To prevent pneumonia, the body tries to get rid of this mucus by coughing. The mucus rattles, causing a "wheezing" and obstructs air flow, resulting in chest tightness and shortness of breath or asthma. This condition is often seasonal but after multiple insults the airway is continuously inflamed throughout the year.

In the winter recurrent bronchitis non-responsive to antibiotics is often the first sign of asthma. At other times laugh-induced coughing or post-exertional cough indicates the momentum of chronically inflamed bronchial airway. Asthma is a chronic, incurable inflammation but is treatable, controllable and reversible.

By skin tests we find out if allergy "allergic proteins" are the culprit aggravating the airways. If so, by immunizing the body with increasing doses of this protein, we can build one's resistance or immunity, resulting in a substantial reduction of symptoms from the eye, nasal or lung. This results in a marked improvement of the quality of life so one can function without loss of sleep, itchy eyes, nighttime cough or breathlessness. Immunotherapy (allergy shots) for the allergy sufferer is a cost-effective way to decreasing the need for medication, emergency room and doctor visits.

AAIR is the Rochester reporting station for the National Allergy Bureau (one of only 80 certified pollen stations across the United States). Dr. Pulver and Lisa Bebout at AAIR, each certified in pollen identification, report pollen and mold levels not only to the local TV and newspaper but also to the National Allergy Bureau (www.aaaai.org) which sends these reports to doctors nationwide. Pollen and mold counts give a qualitative view of exposure and an early warning system for doctors. A doctor can then help patients preventatively, with inhalers (for the lung and nose) and pills, rather than waiting until symptoms appear. The future holds that we will be exchanging pollen information with the rest of the world for travelers and athletes. After we have obtained data for several years the hope is that we will be able to make "pollen projections" based on computer accumulated pollen and weather data. We are also studying the interaction of multiple variables such as viral outbreaks, pollution, and allergy and trying to explain the increasing airway problems, both sinus and lung, that seem to be evident in our society. We will be reporting at the end of this month the correlation of ragweed pollen peak with hospitalizations and emergency room visits for asthma at Strong and other hospitals in the county for last year. No correlation was seen to viral or pollution levels.

The hope is that pollen and mold knowledge in the hands of medical advisors such as doctors, nurses and pharmacists can help them in their counseling of patients and benefit patients in reducing their symptoms and living a more comfortable life. We now have the best pollen and mold collection device in the world called a Burkard trap. It will enable us to explore the area of mold allergy undetectable previously. We hope to obtain additional grant support to allow us to provide additional important information to medical practitioners and the public in Monroe County.