Allergies are Nothing to Sneeze at

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• Humans strive for survival
• The immune system
• Simple one cell organisms
• Allergy or hypersensitivity
• A healthy house
• Immunoglobulin E or IgE
• Mild progressing to deadly allergy
• Allergic airway diseases
• Allergy has doubled in the last 40 years
One Airway, One Disease

Sinusitis \rightarrow \text{Asthma}

\text{Allergic}
Allergic Rhinitis

**Allergen causes:**
- Dust mite
- Dog
- Cat
- Other furry pets
- Cockroaches
- Mold spores
- Tree pollen
- Grass pollen
- Weed pollen

**Predisposition:**
- Genetics/family Hx
- Atopic tendency/High IgE
- Environmental
- Exposures-Aeroallergens, pollution, tobacco smoke
- Living in Western society
- Tobacco exposure in early childhood
- Duration of breast feeding
- Antibiotic use in childhood
- Diet
Allergic Rhinitis

**Symptoms:**
- Itchy eyes
- Tearing
- Redness of eyes
- Swelling
- Itchy nose or palate
- Sneezing
- Drainage-anteriorly, post nasal drainage
- Swelling-plugging
- Fatigue

**Signs:**
- Swollen conjunctiva, tearing
- Pale bluish color of nasal mucosa
- Clear drainage
- Sneezing
- Nasal obstruction
Allergic Rhinitis

**Tests:**
- Prick skin tests
- Intradermal skin tests
- Total immunoglobulin E (IgE)
- IgE RAST tests to specific allergens (dog, cat, mite, mold, pollen)
- Complete blood count/Eosinophil count
- Stain nasal secretions for eosinophils

**Therapy:**
- Avoidance
- Remove indoor pets that cause allergy
- Decrease dust mite exposure
  - Decrease humidity
  - Encase pillows/mattress/box springs
- Acoricides (kill mites)
- Avoid indoor mold
- Air filtration
Allergic Rhinitis

• **Medications**
  1. Oral antihistamines
  2. Topical antihistamine sprays
  3. Topical corticosteroids
  4. Leukotriene inhibitors
  5. Oral decongestants
  6. Topical cromolyn sodium

• **Allergy Immunotherapy**
Sinusitis

• Acute or chronic inflammation
• Rhino-Sino-Bronchial Reflex
• Chronic Sinusitis
• Treatment
Asthma

Definition: Global Initiative on Asthma
“A chronic inflammatory disorder of the airways in which many cells and cellular elements play a role. The chronic inflammation is associated with airway hyperresponsiveness that leads to recurrent episodes of wheezing, breathlessness, chest tightness and coughing, particularly at night or early in the morning. These episodes are usually associated with widespread, but variable, airflow obstruction of the lung that is often reversible either spontaneously or with treatment.”

Factors predisposing to asthma:
1. Genetic predisposition/family history
2. Atopy/high IgE/atopic dermatitis
3. Viral respiratory illness in early childhood
   Respiratory Syncytial virus (RSV)
4. Environmental exposures (aeroallergens, pollution, tobacco smoke, occupational agents)
5. Living in an urban area
6. Exposure to secondary smoking in childhood
7. Low birth weight
8. Duration of breast feeding
9. Antibiotic use in childhood
10. Western lifestyle
11. Obesity
12. Diet
13. Vitamin D deficiency
Asthma

• Therapy of Asthma

• Education

• Avoidance
Asthma

Medications

Anti-inflammatory medications are most commonly needed.

1. Inhaled corticosteroids (ICS)
   - Asmanex
   - Advair
   - Symbicort
   - Flovent
   - Azmacort
   - Pulmicort
   - QVAR

2. Leukotriene receptor antagonists
   - Montelukast (Singulair)
   - Zatirlukast (Accolate)

3. Leukotriene synthetase inhibitors
   - Zileutin (Zyflo)

4. Short acting B-agonists (SABA)
   - Albuterol HFA
   - Pirbuterol (Maxair)

5. Long acting B-agonists (LABA)
   - Salmeterol (Serevent)
   - Fomoterol (Foradil)

6. Combination ICS/LABA

7. Theophylline

8. Oral corticosteroids

9. Anti-IgE antibody
   - Omalizumab (Xolair)

10. Occasionally other immune inhibitors
    - Methotrexate
    - Cyclosporin

11. Intravenous or subcutaneous immunoglobulin
Asthma

• Regular Monitoring
  1. Home peak flow meter
  2. Pulmonary function testing in office
  3. Chest x-ray when needed
  4. Physician visits every 6 months or less if needed
  5. Bone density testing

• Allergy Immunotherapy

• Future Research Efforts
QUESTIONS?