

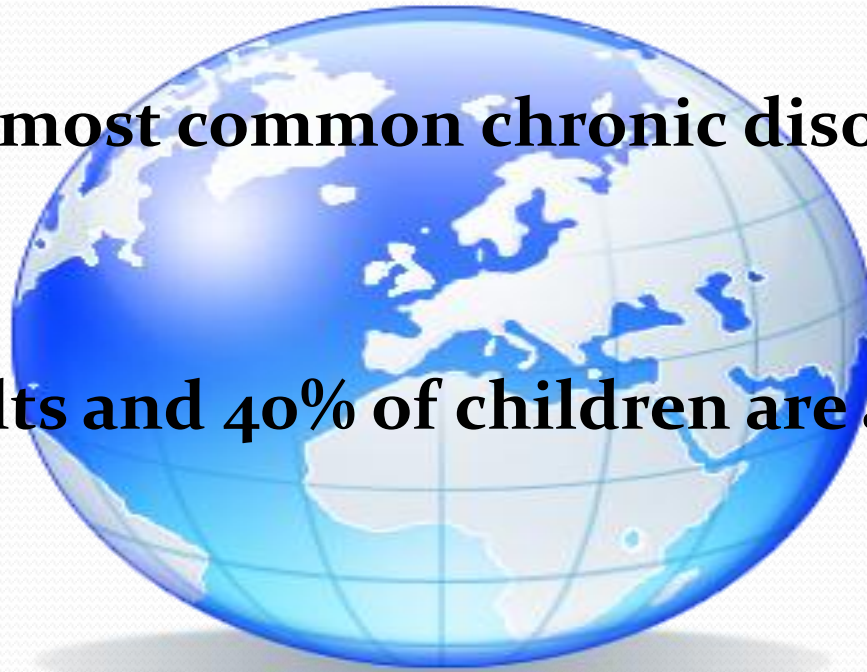
Allergies & Asthma

COMMUNITY PHARMACY SERVICES



Allergies

- **Over 50 million Americans suffer from allergies**
- **One of the most common chronic disorders in the U.S.**
- **30% of adults and 40% of children are affected in the U.S.**



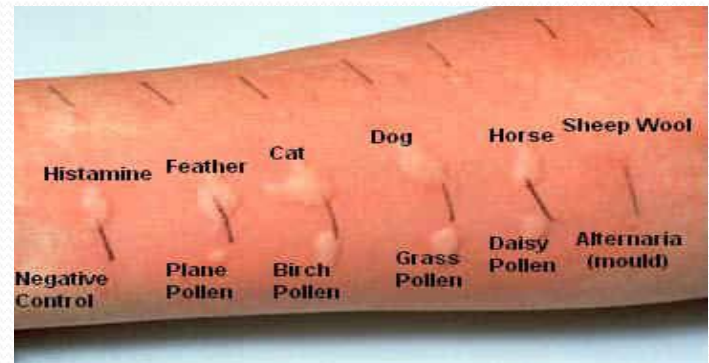
What Are Allergies?



- Hypersensitivity disorder of immune system
- There are four types of hypersensitivity: this correlates to type 1 hypersensitivity
- Resulting in an Inflammatory response which activates immunoglobulin E (IgE)
 - causes excessive amount of mast cells and white blood cells
- Mediated inflammatory condition of the nose and upper respiratory tract

Risk factors

- Family history of allergic disorder (asthma, allergic rhinitis (i.e.. runny nose), atopic dermatitis)
- Elevated serum IgE levels (especially before age 6)
- Exposure to allergens
- Birth during pollen season
- Higher socioeconomic class
- Positive skin tests
- Heavy exposure to second hand smoke
- Emigration into western industrialized environment





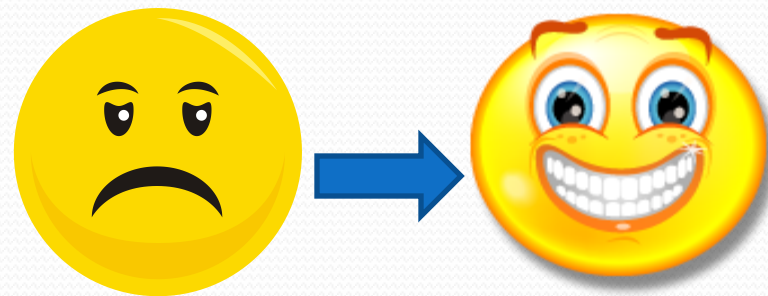
Signs & Symptoms



- Signs
 - Rubbing the nose, rubbing/scratching at the eyes, mouth breathing, and dark circles under the eyes
- Symptoms
 - Runny nose, sneezing, itching, snorting, sniffing, clearing throat, nasal congestion, & poor appetite
 - Sleep disturbances, headache, mild facial or ear pain or fullness, & fatigue
 - Eye manifestations (itch, redness, and tearing)
 - Quality of life impairment: absenteeism from work or school

Nonpharmacologic Treatment

- Reduce the incidence of symptoms
- Improve attendance in work/ school
- Improve quality of life
- Focus on realistic goals with minimal adverse effects
- General approach of fourfold treatment:
 - 1. avoidance of allergen triggers
 - 2. pharmacotherapy
 - 3. immunotherapy
 - 4. patient/ family education



Avoidance of Allergens

Outdoor Allergens:

-plant pollen and mold/fungi parts:

- Limit outdoor exposure during high pollen conditions
- Wear a face mask during activities
- Keep windows and doors closed
- Use air-conditioning (maintain clean equipment)



Avoidance of Allergens Cont...

Indoor allergens

- House dust mites, mold fungi, cockroaches, and pets
- Maintain humidity below 50% if possible
- Clean frequently and thoroughly prevent mold growth
 - Remove dust mites
- Consider use of HEPA (high efficiency particulate air) filter
- Minimize carpeting, cover bedding (with allergen proof zippered cases)
- Keep pets out of bedroom




General Treatment

- Nasal corticosteroids
- Antihistamines
- Nasal decongestant sprays
- Oral decongestants
- Mast Cell Stabilizer/ Cromolyn
- Antimuscarinic Agent
- Leukotriene receptor antagonist
- Saline
- Allergen immunotherapy



ASTHMA

- **Approximately 22.9 million people in U.S. are diagnosed with asthma every year**
 - **Highest prevalence is in children 5 to 17 years of age**
 - **10.1 million workdays & 12.8 million school days are missed every year**
 - **In 2005, there were 1.77 million emergency room visits**
 - **In 2007, cost relating to asthma was about \$19.7 billion**
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What is Asthma

- Characterized by inflammation and airway obstruction
- Asthma is the most ubiquitous chronic disease of childhood
- Associated with morbidity and mortality in both children and adults
- Asthma can be either acute or chronic



Risk Factors

- Genetic and environmental factors
- Asthma occurs early in life for most patients
- Atopy is a strong prognostic factor
- Specific allergens
- Exposure to second hand smoke after birth increases risk of childhood asthma
- Adult onset: atopy, nasal polyps, aspirin sensitivity, occupational exposure, or a recurrence of childhood asthma

Signs and Symptoms



- Signs

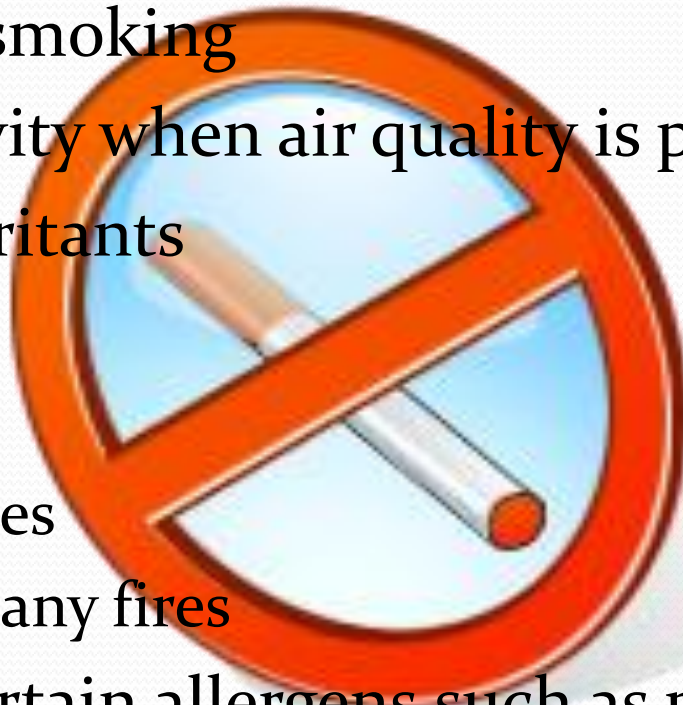
- Patients may experience wheezing and a dry cough
- Excessive rapid heart beat & rapid respiration

- Symptoms

- Difficulty breathing, cough, wheezing, chest tightness
- Can occur more with exercising, in the morning, and/or in the evening

What to Avoid

- Smoking
- Second hand smoking
- Outdoor activity when air quality is poor
- Exposure to irritants
 - Hairspray
 - Paint
 - Exhaust fumes
 - Smoke from any fires
- Sensitive to certain allergens such as pets & dust mites



Pharmacologic Therapy

- Beta 2- Adrenergic Therapy:
 - Short- Acting Inhaled B₂- Agonists
 - Long- Acting Inhaled B₂- Agonists
- Corticosteroids
 - Inhaled Corticosteroids
 - Systemic Corticosteroids
- Anticholinergics
- Leukotriene Modifiers





Self- Management

- Gives patients the freedom to adjust therapy based on personal assessment, which helps reduce morbidity
- Have a written action plan which includes daily management and how to recognize and handle worsening asthma
- Asthma control is assessed by evaluating signs and symptoms- by monitoring PEF
- PEF- measurement of airflow obstruction by a peak expiratory flow

References

- Chisholm-Burns, M., *et.al.*, eds. Pharmacotherapy Principles and Practice. 2nd ed. New York: McGraw-Hill: 2010.





Special Thanks

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Questions

