

# Management of Asthma

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IT'S HOW MEDICINE

SHOULD BE

- Outline
  - What is Asthma?
  - Who has Asthma?
  - What are the symptoms of Asthma?
  - What causes Asthma?
  - How is asthma diagnosed?
  - Treatment
    - Non-Pharmacologic
    - Pharmacologic Treatment

# What is Asthma?

- Inflammation of Airways
  - Obstruction of Airflow
  - Episodic or Chronic



# Who has Asthma?

- Common Disease
- Affecting 5% of population
- Men and Women Equally Affected
- Apx 470,000 hospital admissions
- Apx 5,000 deaths per year
- Prevalence is increasing over the last 20 years.
- Genetic Predisposition

# Symptoms of Asthma?

- Episodic and Reversible
- Wheezing
- Difficulty Breathing
- Chest Tightness
- Cough
  - Dry or Productive

# Symptoms

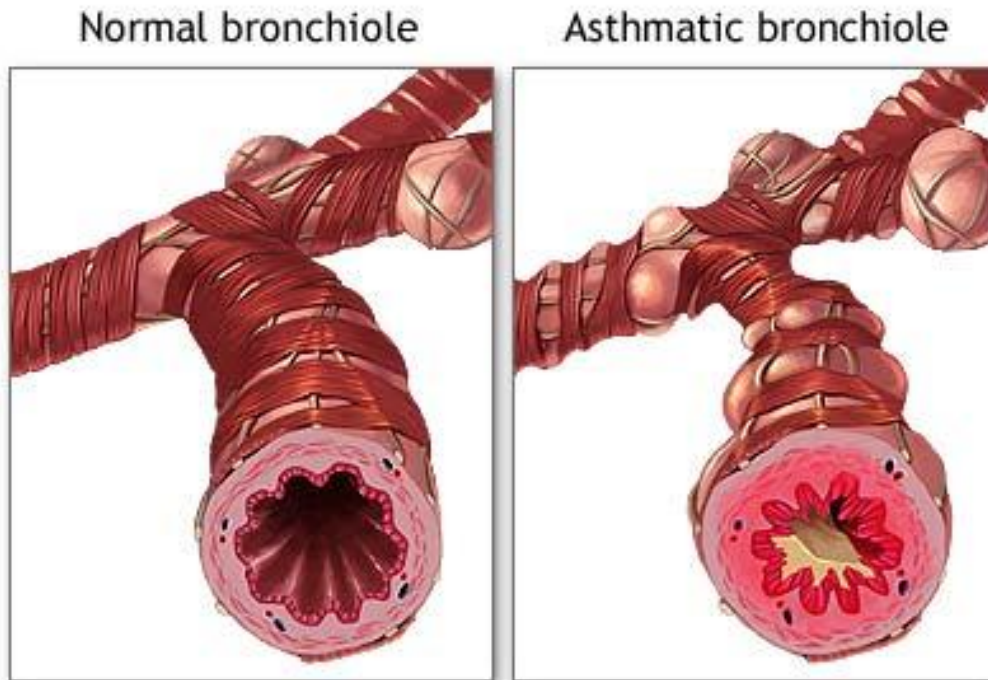
- Severity of Disease is Highly Variable
  - Infrequent Brief Attacks
  - Continuous Symptoms
- Symptoms frequently worse at night

# Physical Findings

- Increased nasal secretions
- Rashes (increase likelihood of asthma)
- Use of Accessory Respiratory Muscles
- Wheezing on Lung Auscultation

# What causes Asthma?

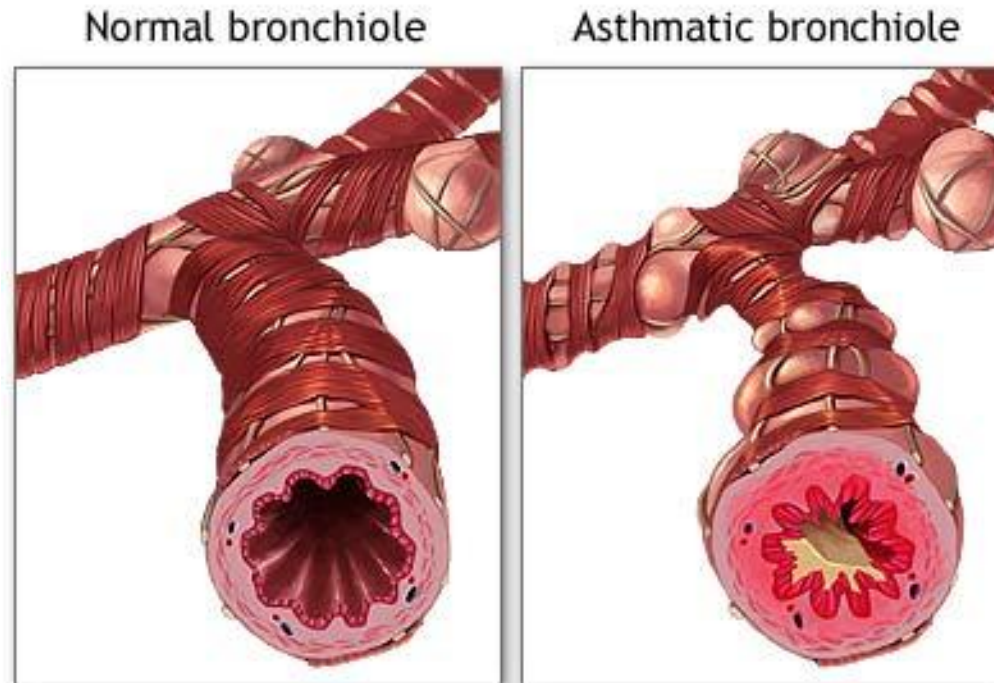
- Inflammation and Constriction and Mucus



ADAM.

# Pathogenesis

- Constriction of bronchial smooth muscles
- Increased secretions



# Intermittent Airflow Obstruction

“Allergic Process”

- “Allergic Process”

- Inhaled Allergens

- Dust
- Animal Danders
- Molds
- Cockroaches
- Pollen

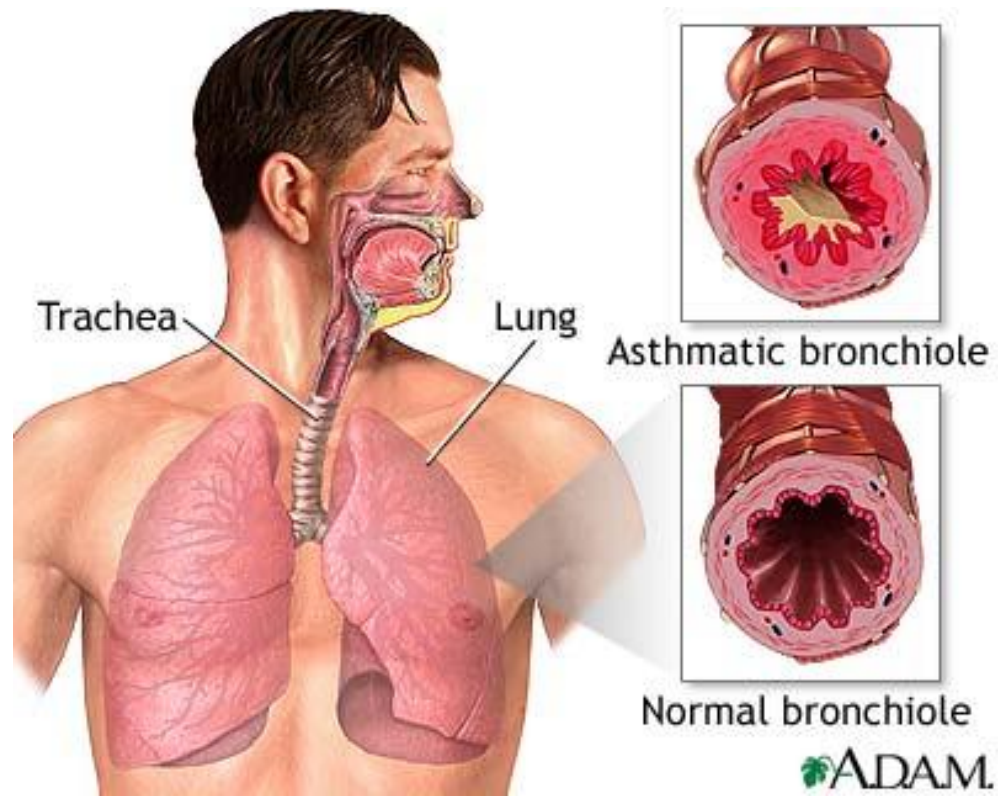
## Respiratory Irritants

- Tobacco Smoke
- Perfumes
- Cleaning Products
- Air Pollution

# Other Causes of Asthma

- Exercise
- Rhinitis, Sinusitis, Postnasal Drips
- GERD
- Stress
- Medications (Some Blood Pressure Meds)

Hyperresponsive Airways



# How is Asthma Diagnosed?

- Characteristics
  - Episodic, Reversible
  - Symptoms worse at night
  - Wheezing on Exam
  - Pulmonary Function Tests

# Pulmonary Function Testing

- How much air is in the lungs?
- How fast does it move in and out?
  - Forced Expiratory Volume
    - What percentage of air moves out in the first second of expiration? (< 75%)
- Does it improve with medication?

- Goals of Treatment
  - Reduce Impairment (School, Work & Play)
  - Reduce Risk (Hospitalization and Death)

- Non-Pharmacologic
  - No medications
- Pharmacologic
  - Medications

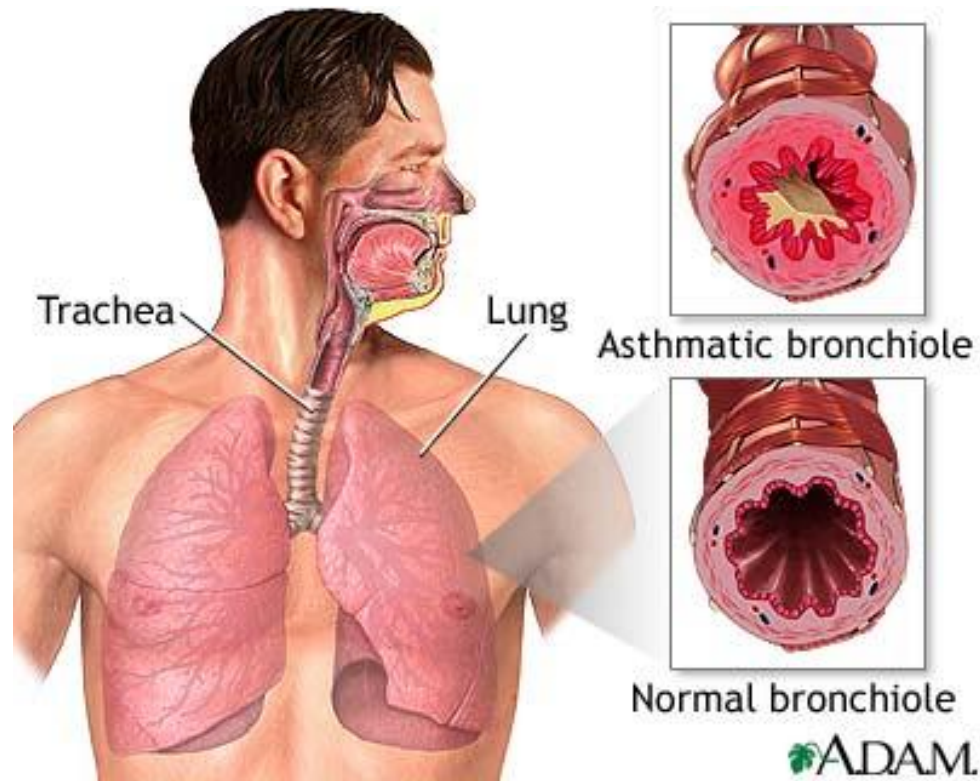
- Patient Education
  - Pt must ask themselves questions about when and where they have symptoms
  - Identify the triggers
- Avoidance

- Two Categories
  - Quick Relief of Symptoms
  - Promote Long-Term Symptom Control
- Stepwise Approach
  - As asthma worsens, more medications are added

# Optimize Treatment

- Must Classify Asthma
  - Intermittent
  - Persistent (Mild, Moderate and Severe)
- Ask about number asthma attacks during day, during night, number per week.
- How often do they use their rescue inhaler?

- Bronchoconstriction and Inflammation



# The Rescue Inhaler

- Albuterol
  - Take only when you have symptoms
  - Decreases smooth muscle constriction
  - Opens airways
  - Provides immediate relief from shortness of breath and wheezing
  - Can make you feel “jittery”
  - Should not have to use more than 2 times per week.

- But I use my rescue inhaler more than 2 times per week!!
  - Now classified as persistent
- Management is Stepwise
  - Add another medication

- Inhaled Steroids
- Long Acting Forms of Albuterol
- Leukotriene Receptor Blockers
- Oral Steroids

- First-Line Medication in those with persistent asthma
  - Anti-inflammatory
  - Use every day regardless of symptoms.
  - Very few side effects
  - Still must use rescue inhaler for attacks

# Long Acting Forms of Albuterol

- Decrease bronchial muscle constriction for up to 12 hours
- Don't work as fast as rescue inhaler but work longer
- Use everyday regardless of symptoms
- Still need to use rescue inhaler for attacks

# Leukotriene Blockers

- Blocks allergic response which causes the muscle contraction and secretion of mucus.
- Taken daily
- Don't provide immediate relief.
- Used after patient is already on inhaled steroids

- But I'm already on all of those medications and still am having attacks
- Should be seeing a specialist (allergist or pulmonologist)
- It's time for oral steroids

# Oral Steroids

- Very powerful anti-inflammatory properties
- Don't work immediately
- Used when you are not controlled with other meds or for severe attacks
- Lots of side effects

- Theophylline
  - Older agent
  - Decreases muscle constriction
  - Need to monitor blood levels of drug
- Desensitization to Allergens (Triggers)
  - Allergy Shots

# Summary

- Common Disease (about 5% of population)
- “Allergic Response”
- Bronchial Muscle Contraction and Increased Secretion
- Treatment is first avoidance
- Second are medications both short acting for rescue and long acting

Thank You !!