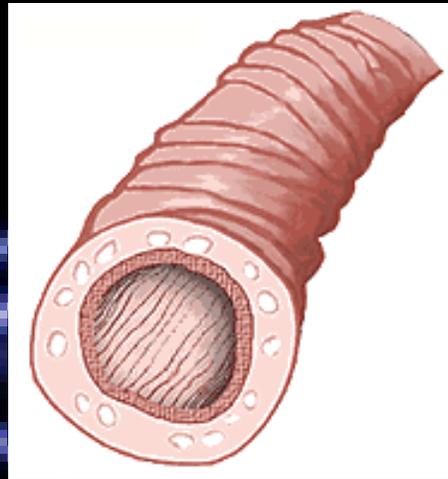


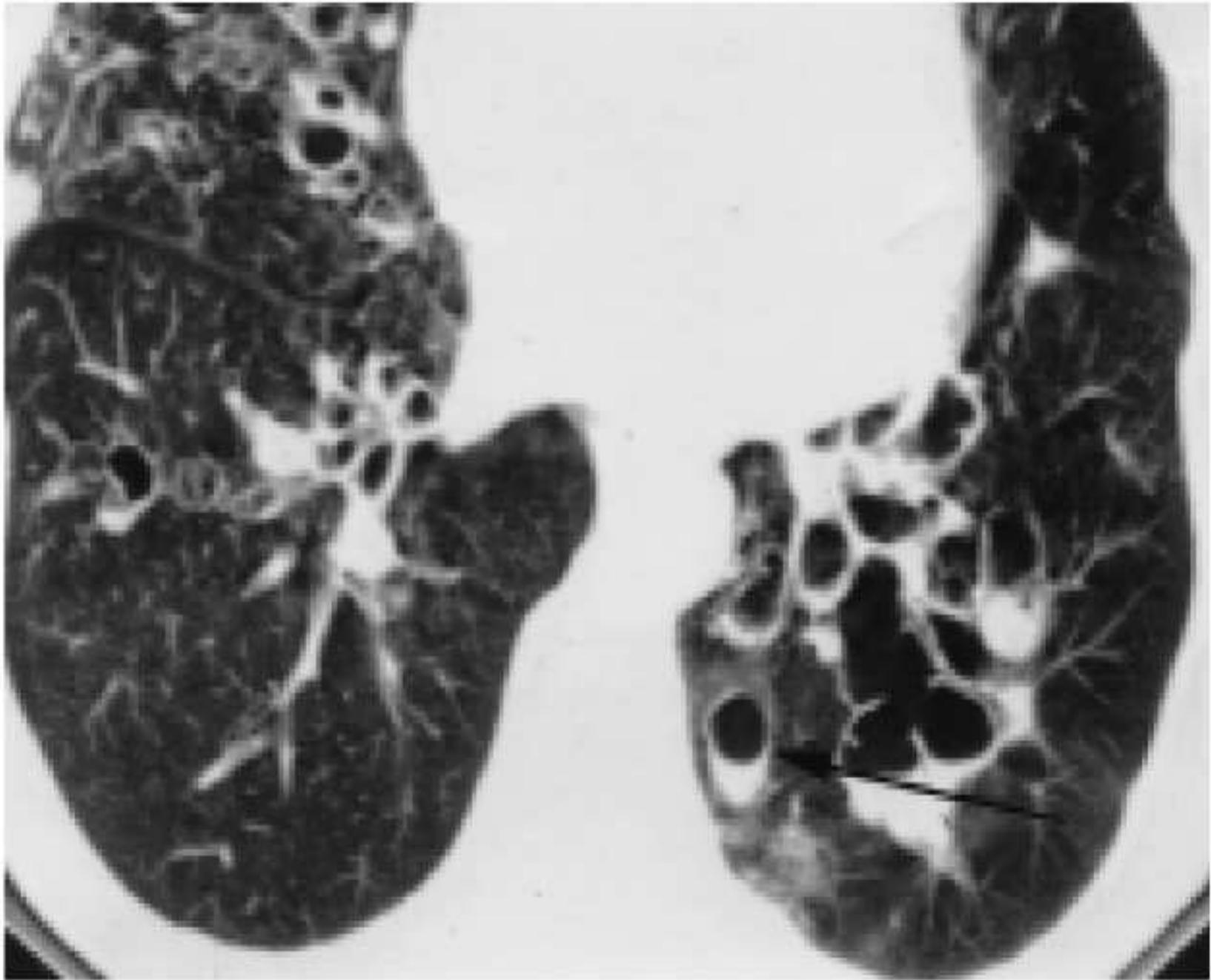
Obstructive Airway Disease



Dr. Khalid Al-Mobaireek
King Khalid University Hospital

Obstructive airway Disease:

- Reversible = Asthma
- Irreversible: Bronchiectasis
 - Localized:
 - Anatomical
 - Airway: Internal, External,
 - Parynchymal
 - Diffuse:
 - Aspiration
 - Mucociliary clearance: PCD, CF
 - Immune deficiency
 - Congenital
 - Post-infectious: Pertusis, TB, adenovirus..





Definition of Asthma

- A chronic **inflammatory** disorder of the airways
- Many cells and cellular elements play a role
- Chronic inflammation is associated with airway hyperresponsiveness that leads to recurrent episodes of wheezing, breathlessness, chest tightness, and coughing
- Widespread, variable, and often reversible airflow limitation

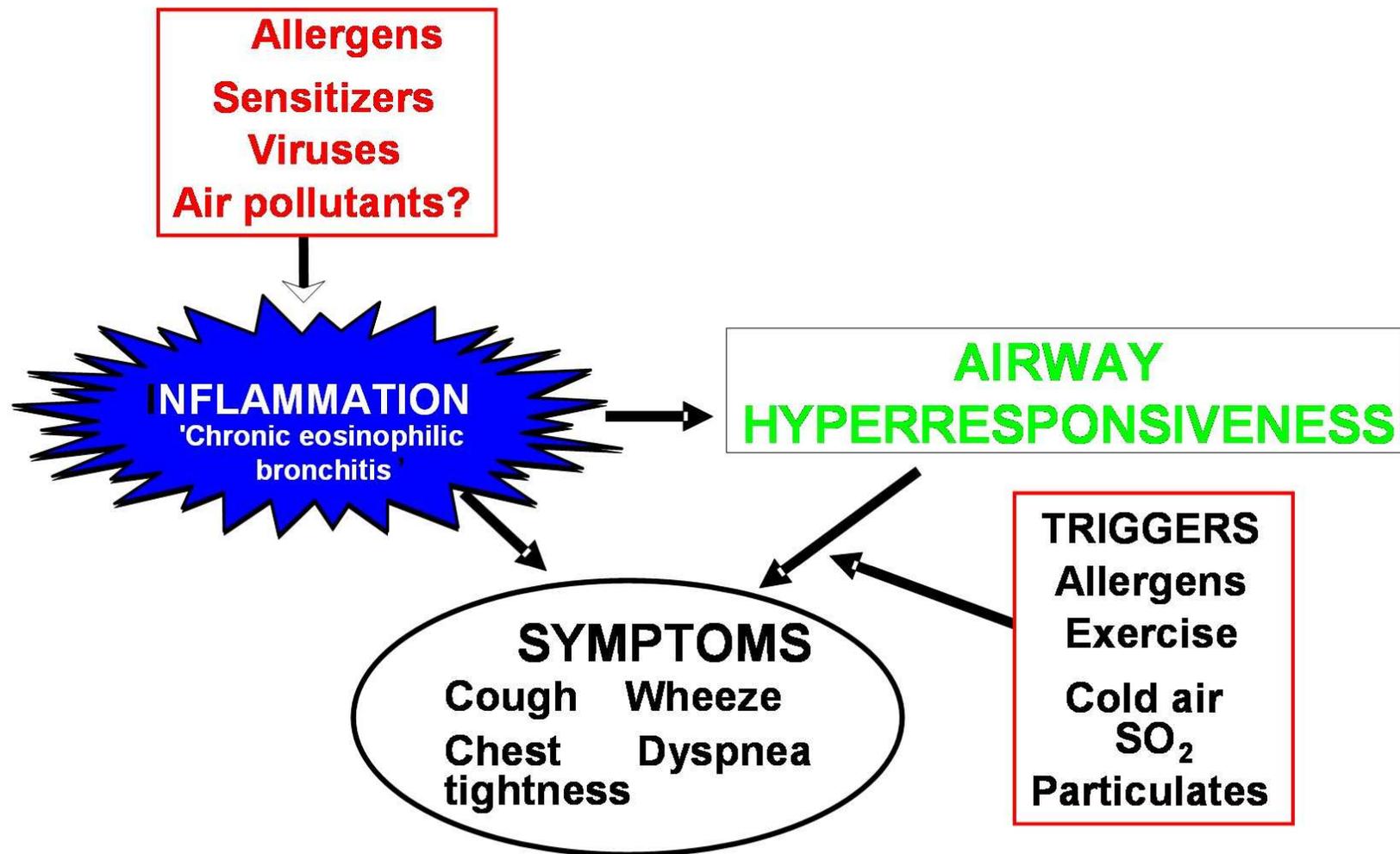


Bronchospasm
Edema, Mucus

Hyperresponsiveness

INFLAMMATION

Asthma Inflammation: Cells and Mediators



Asthma Inflammation: Cells and Mediators

Inflammatory cells

Mast cells
Eosinophils
Th2 cells
Basophils
Neutrophils
Platelets

Structural cells

Epithelial cells
Sm muscle cells
Endothelial cells
Fibroblast
Nerves



Mediators

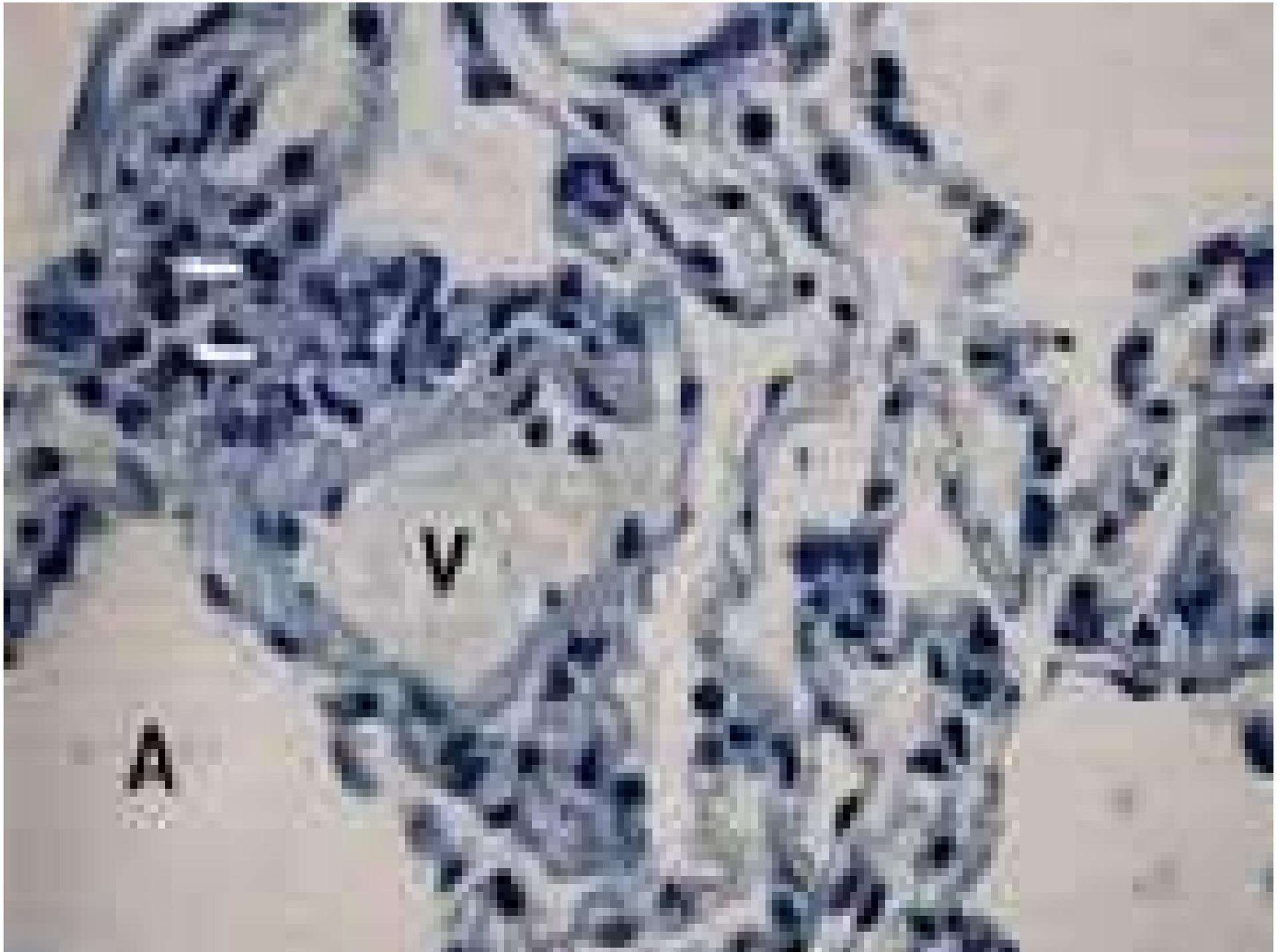
Histamine
Leukotrienes
Prostanoids
PAF
Kinins
Adenosine
Endothelins
Nitric oxide
Cytokines
Chemokines
Growth factors



Effects

Bronchospasm
Plasma exudation
Mucus secretion
AHR
Structural changes

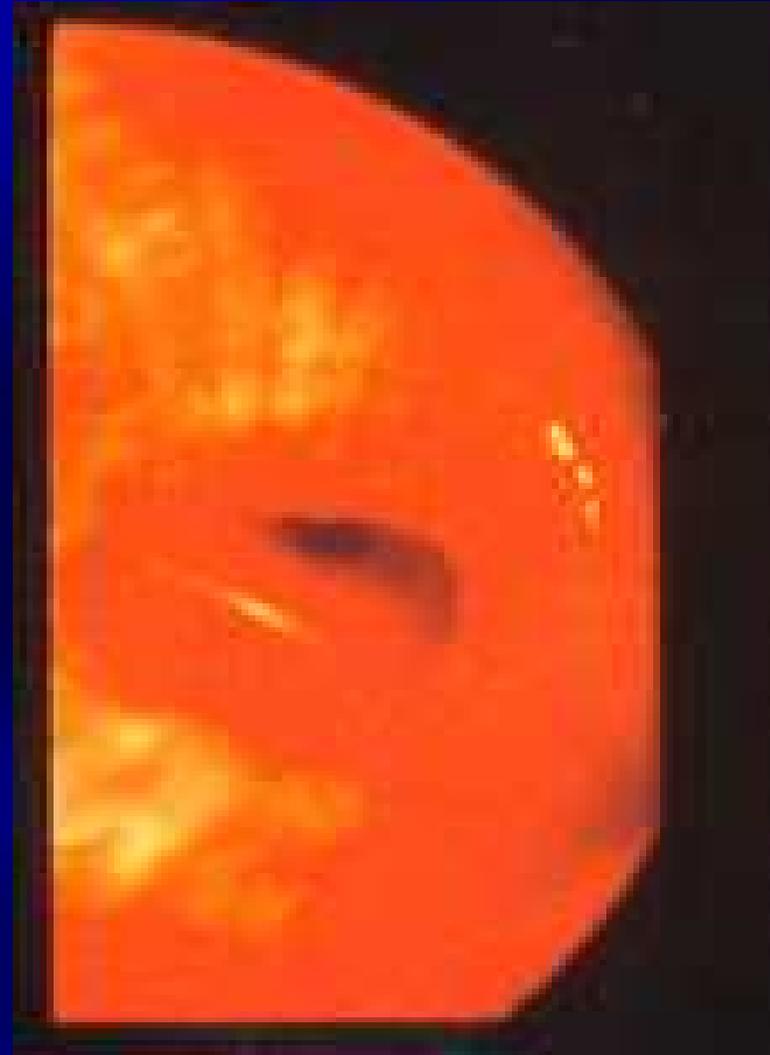
Source: Peter J. Barnes, MD



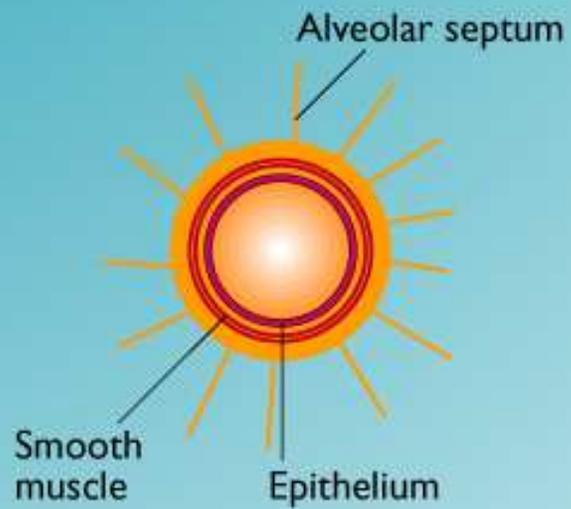
NORMAL



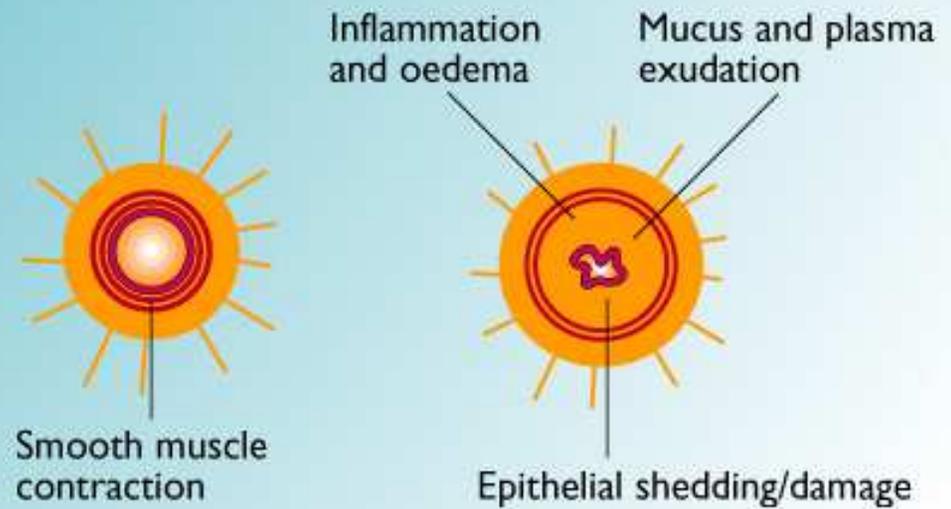
ASTHMA



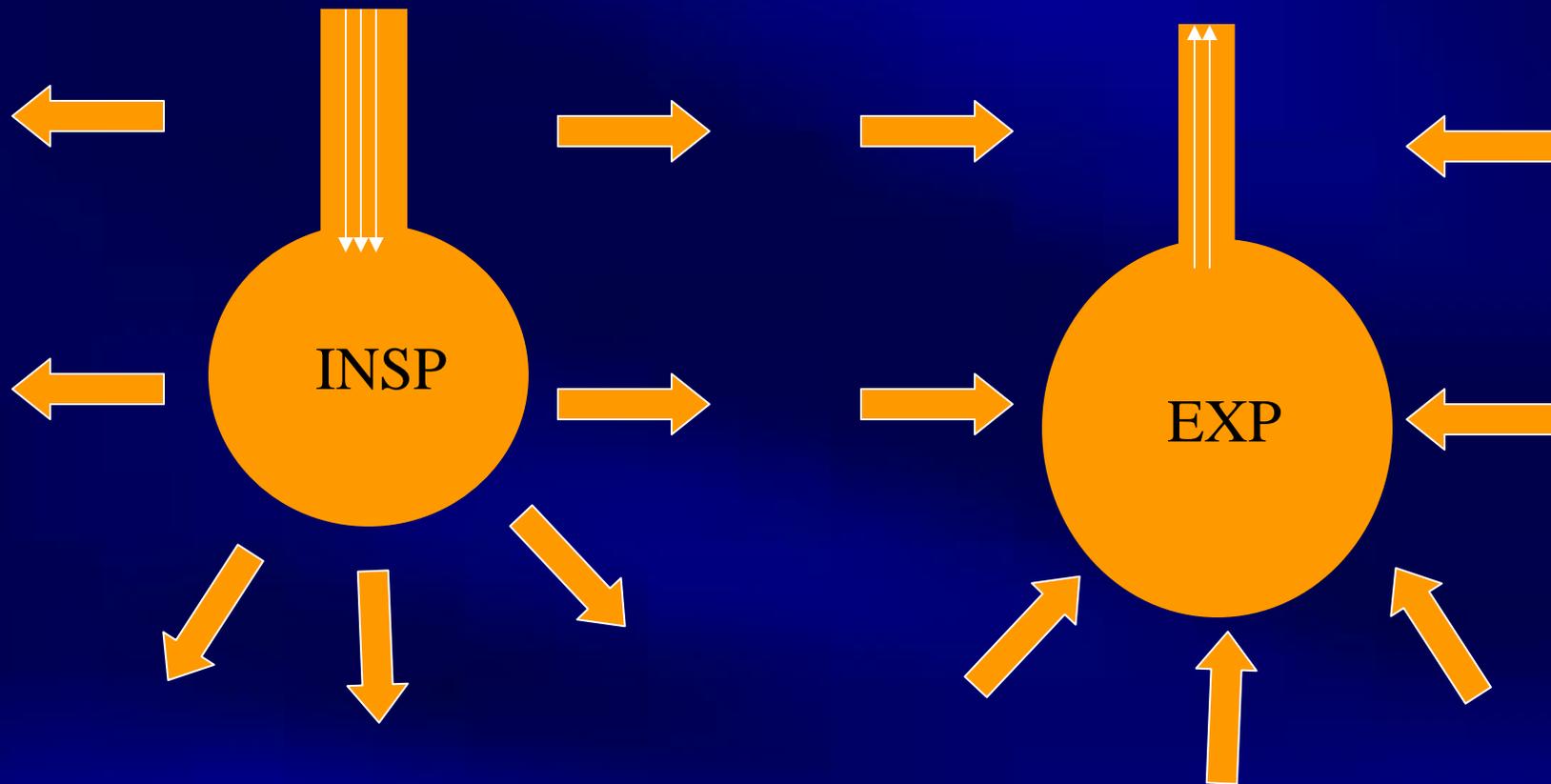
Healthy Airway



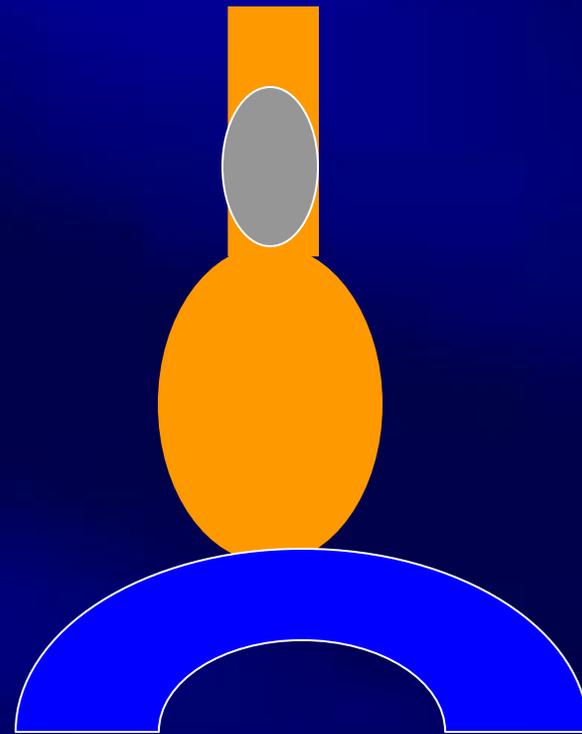
Asthmatic Airway



AIR TRAPPING



Ventilation Perfusion (V/Q) Mismatch





Burden of Asthma

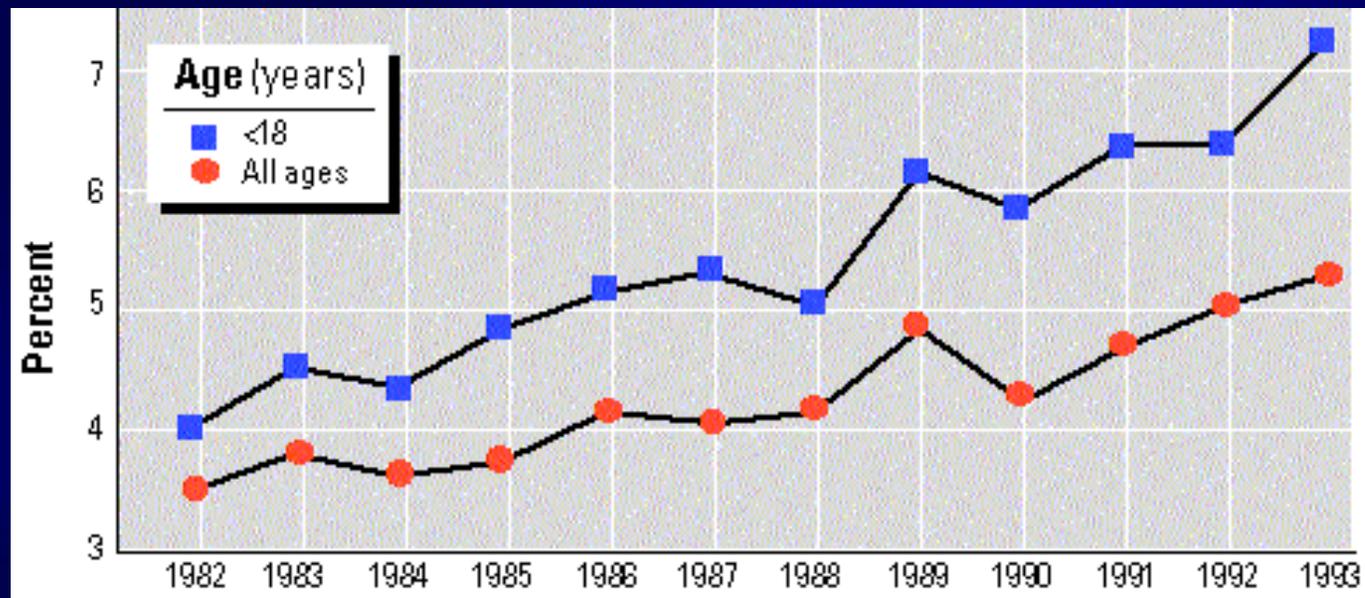
- Asthma is one of the most common chronic diseases worldwide with an estimated 300 million affected individuals
- Prevalence increasing in many countries, especially in children
- A major cause of school/work absence

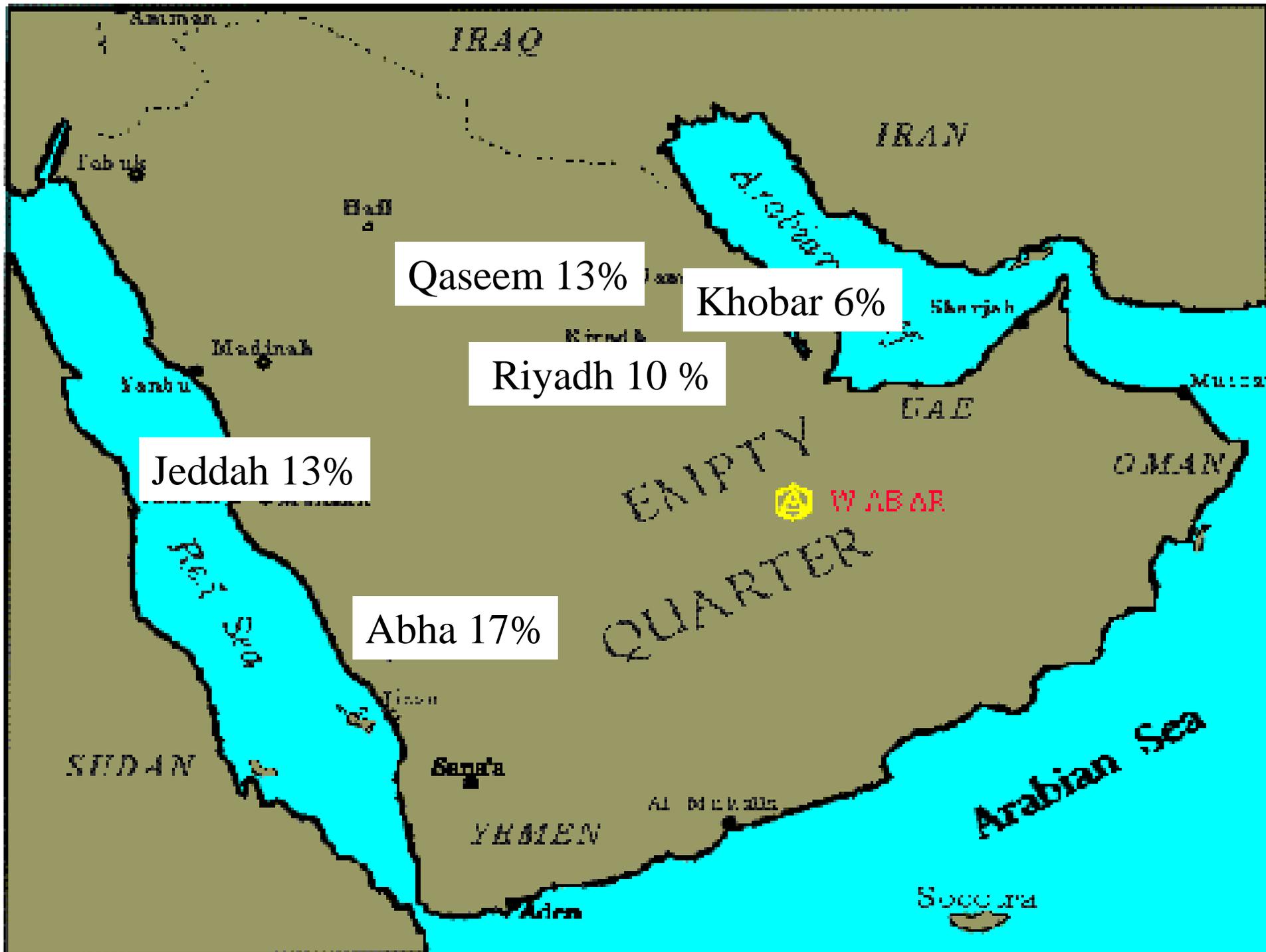
Asthma Prevalence



10 - 15%

Asthma Prevalence







Factors that Influence Asthma Development and Expression

Host Factors

- Genetic
 - Atopy
 - Airway hyperresponsiveness
- Gender
- Obesity

Environmental Factors

- Indoor allergens
- Outdoor allergens
- Occupational sensitizers
- Tobacco smoke
- Air Pollution
- Respiratory Infections
- Diet

Environmental Allergens and Childhood Asthma

- Dust mites
- Furry pets
- Molds
- Cockroaches
- **Cigarette Smoking**



POLLENS

