

# Response to Injury is Limited

- But can vary somewhat depending on
  - Causative agent
  - Route of exposure
  - Severity of exposure
  - Host defense

# Diagnostic Aids

- Type of inflammatory response
- Presence of causative agent
- Presence of a specific agent-induced change e.g inclusion bodies
- Special stains
- Immunohistochemistry (IHC)
- Electron microscopy

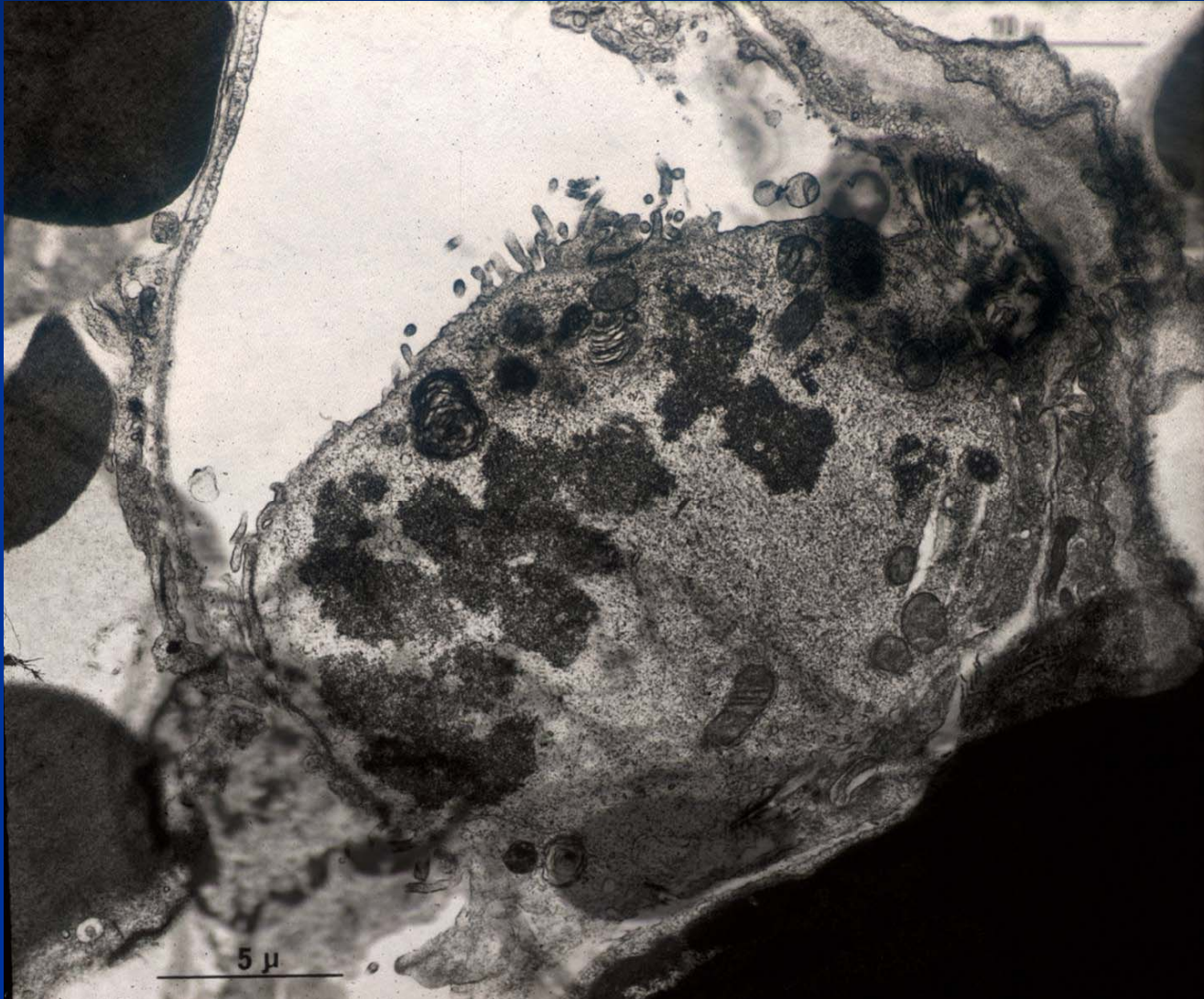
# Response to Injury

- Edema
- Necrosis
- Inflammation
- Cell proliferation
- Fibrosis
- Granuloma formation

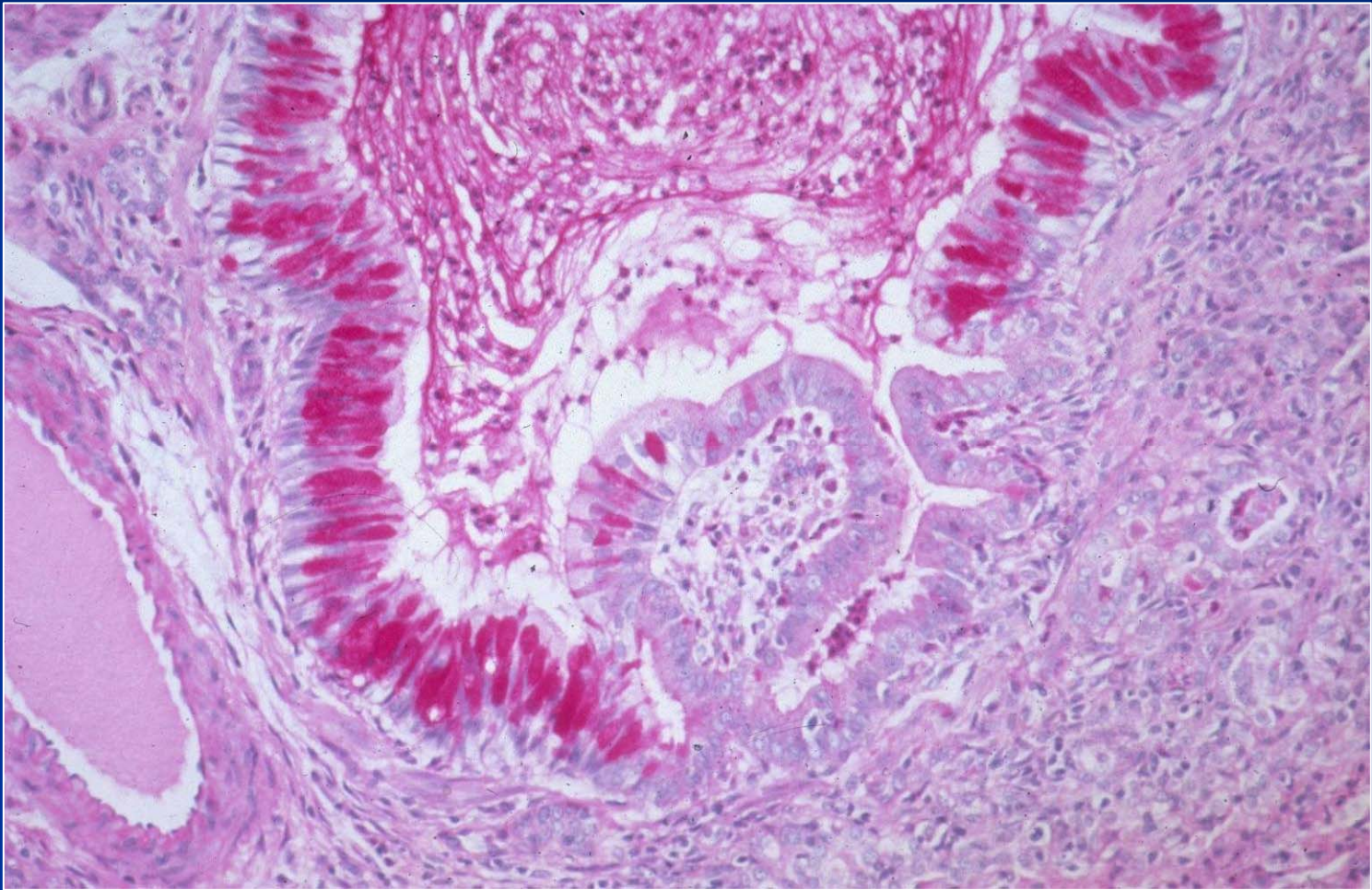
# Consequences of Airway Injury

- Early Morphologic Changes
  - Inflammation
  - Epithelial hyperplasia – regenerative or due to irritant effects e.g. mucous cells
  - Epithelium metaplasia – effect on mucociliary escalator e.g.
    - Mucous
    - Squamous

# Response to Injury - Proliferation



# Mucous Hyperplasia



# Consequences of Airway Injury

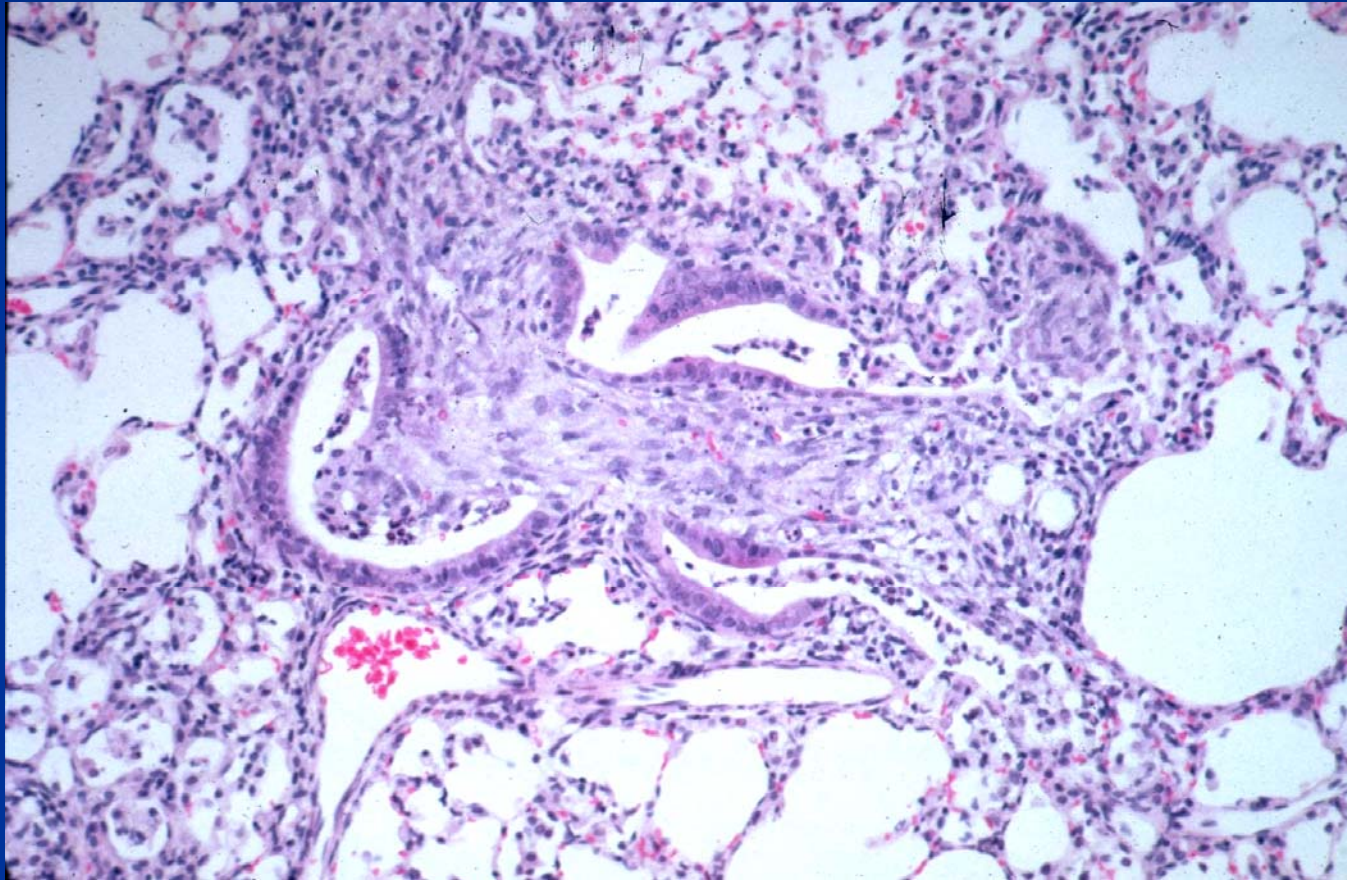
- Adverse Effects
  - Airway hyper-reactivity and bronchoconstriction
  - Modified mucus production
  - Decreased mucociliary clearance
  - Inflammation
  - Epithelial proliferation
  - Obstruction – complete or incomplete
  - Predisposition to infection
  - Fibrosis

# Chronic Effects of Airway Injury

- Fibrosis
  - Mural - fibrosing bronchiolitis
  - Intraluminal – bronchiolitis obliterans
  - Can lead to atelectasis (complete obstruction) or emphysema
- Destruction of surrounding tissue
  - Bronchiectasis
  - Abscess formation/empyema if infected
- Extension of infection e.g. pneumonia
- Neoplasia



# Chronic Effects of Airway Injury



# Chronic Effects of Airway Injury

