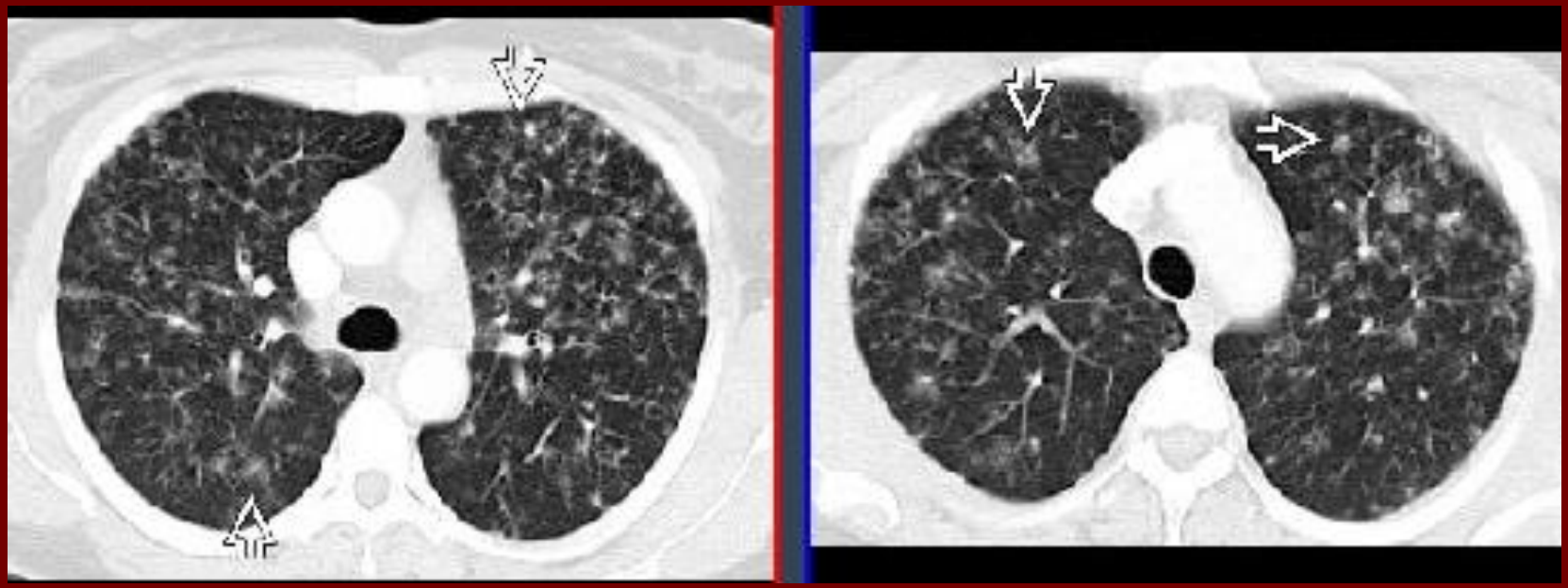
Respiratory bronchiolitis-interstitial lung disease (RB-ILD)

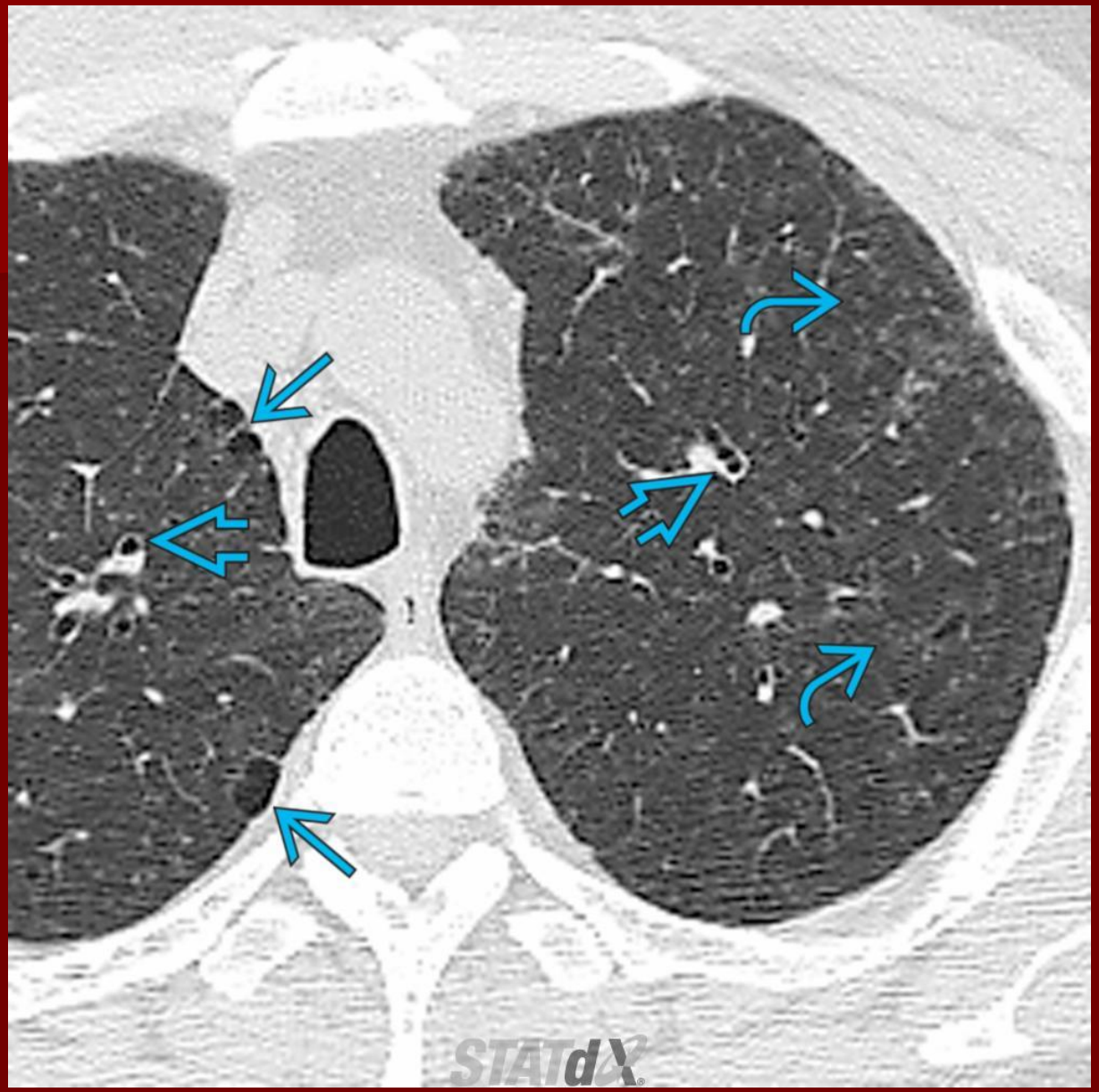
- RB histologic reaction to dusty environments, especially cigarette smoke
- RB-ILD and desquamative interstitial pneumonia (DIP) are regarded as a spectrum of smoking induced interstitial lung diseases
- Best diagnostic clue:
  - Centrilobular ground-glass opacities in the upper lobes
  - Location: Gradient: More predominant in upper lung zone diminishing to the lung bases

Terminolgy

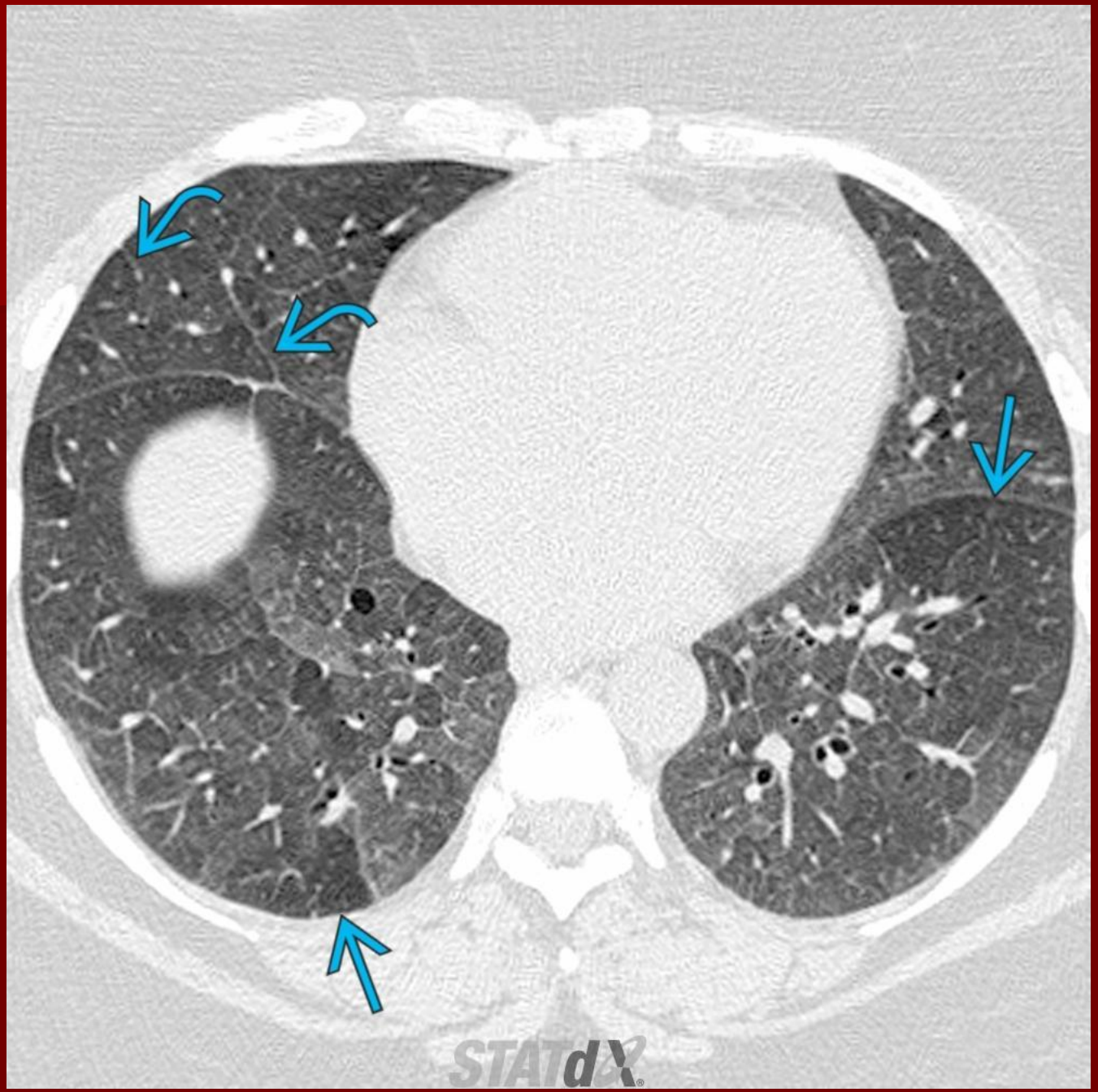
- Respiratory bronchiolitis (RB): Cellular bronchiolitis present in virtually all smokers, characterized by accumulation of pigmented macrophages in airways and alveoli
- RB-interstitial lung disease (ILD): Smoking-related ILD closely related to RB but with more severe histologic, imaging, and clinical features; RB causing symptoms and pulmonary function deficits
- Spectrum of smoking-related ILD: RB, RB-ILD, and desquamative interstitial pneumonia (DIP)

RB-ILD





Axial HRCT of a symptomatic patient with respiratory bronchiolitis-interstitial lung disease shows ill-defined ground-glass centrilobular micronodules (cyan curved arrow), mild bronchial wall thickening (cyan open arrow), and right upper lobe paraseptal emphysema (cyan solid arrow).



Axial HRCT of a patient with respiratory bronchiolitis-interstitial lung disease shows mosaic attenuation characterized by ground-glass opacities admixed with areas of decreased attenuation (cyan solid arrow) likely reflecting air-trapping. Note associated interlobular septal thickening (cyan

Top Differential Diagnoses

- Desquamative Interstitial Pneumonia (DIP)
  - Lower lung zone-predominant subpleural ground-glass opacities &/or consolidations; clustered thin-walled cysts
- Hypersensitivity Pneumonitis
  - May be identical to RB-ILD: Centrilobular ground-glass micronodules, mosaic attenuation, air-trapping
  - More diffuse and conspicuous findings
  - Smokers have decreased risk for developing hypersensitivity pneumonitis
- Respiratory bronchiolitis
  - Identical histology/imaging abnormalities but no clinical symptoms