

Evaluation of the patient with lung disease

History

Physical examination

Physiologic evaluation

Anatomic evaluation

Pathologic evaluation

History taking in patients with lung disease

Onset, duration, triggers, and severity of symptoms

dyspnea (rest, exercise)

cough (dry, productive)

chest pain (pleuritic, constant)

fever

Occupational/environmental exposures

Smoking history

Family history

Underlying illnesses (e.g. collagen vascular disease)

Environmental/occupational causes of lung disease: models

Exposure

isocyanates

asbestos

chlorine gas

high altitude

rapeseed oil

uranium

pigeons

homeless shelter

Disease

occupational asthma

pulmonary fibrosis

ARDS

pulmonary edema

pulmonary hypertension

bronchogenic carcinoma

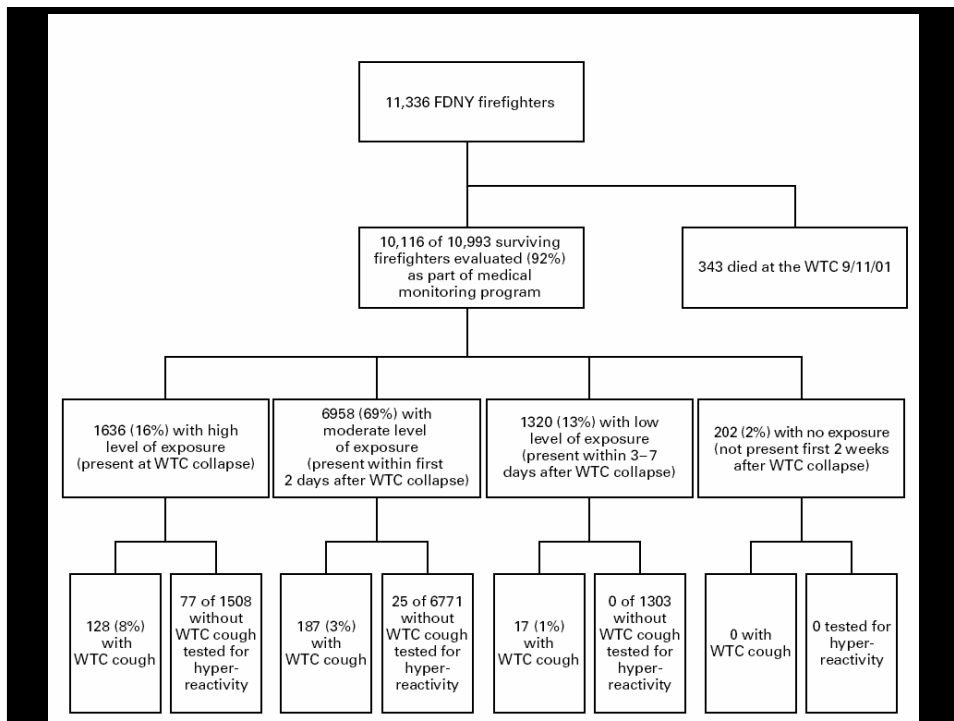
hypersensitivity pneumonitis

tuberculosis

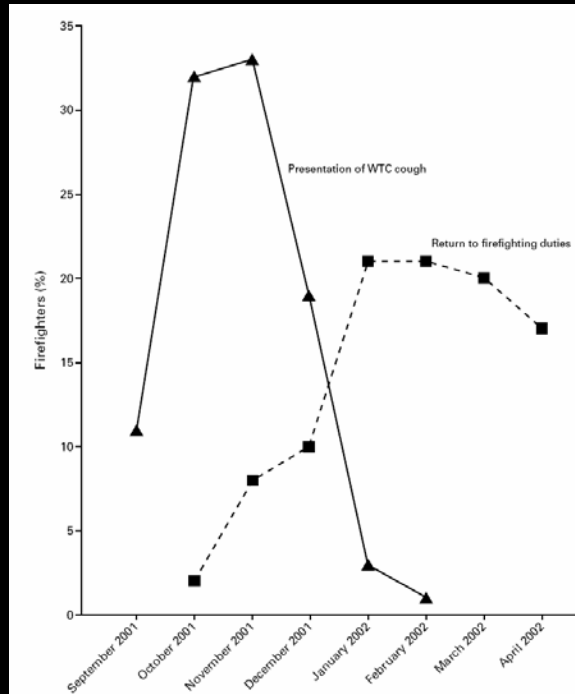
COUGH AND BRONCHIAL RESPONSIVENESS IN FIREFIGHTERS
AT THE WORLD TRADE CENTER SITE

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- **Short intense exposure to inorganic dust, products of combustion, other material among those present at site of World Trade Center after attack on September 11, 2001**
- **Respiratory complaints common in firefighters who had been at World Trade Center site**



Clinical course of WTC cough syndrome



Physical examination in patients with lung disease

Physical examination

- respiratory rate and pattern
- shape of thoracic cage
- quality of breath sounds and percussion note (normal, dull/absent, hyperresonant)
 - normal breath sounds
 - wheezes
 - crackle
- clubbing
- cyanosis
- peripheral edema

Tools for the diagnosis of lung disease

Physiologic

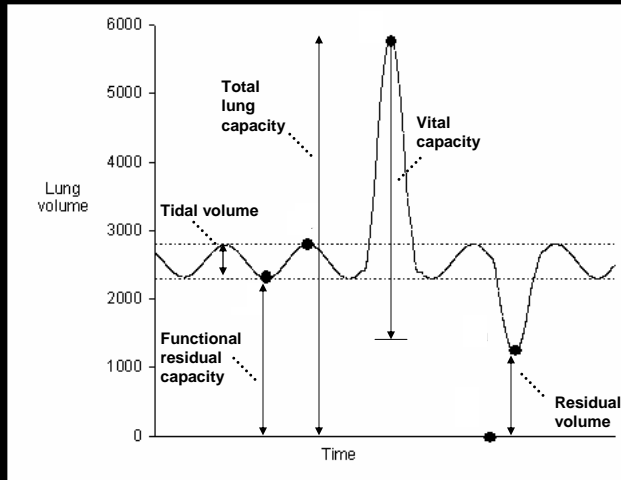
ABG
PFTs
V/Q scan
Exercise testing

Anatomic

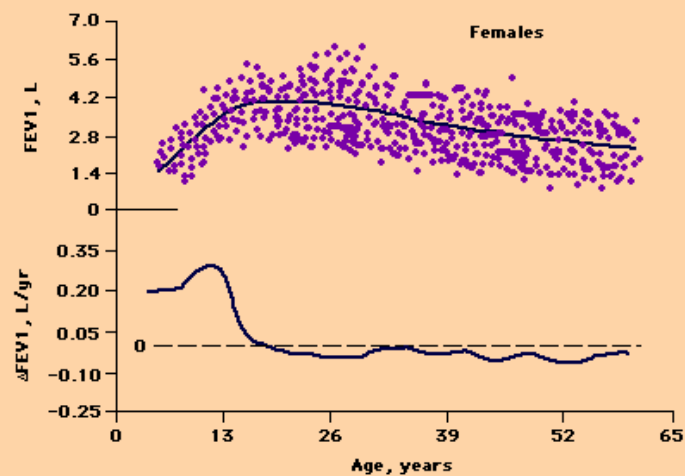
Chest radiograph
CT scan
Bronchoscopy

Pathologic

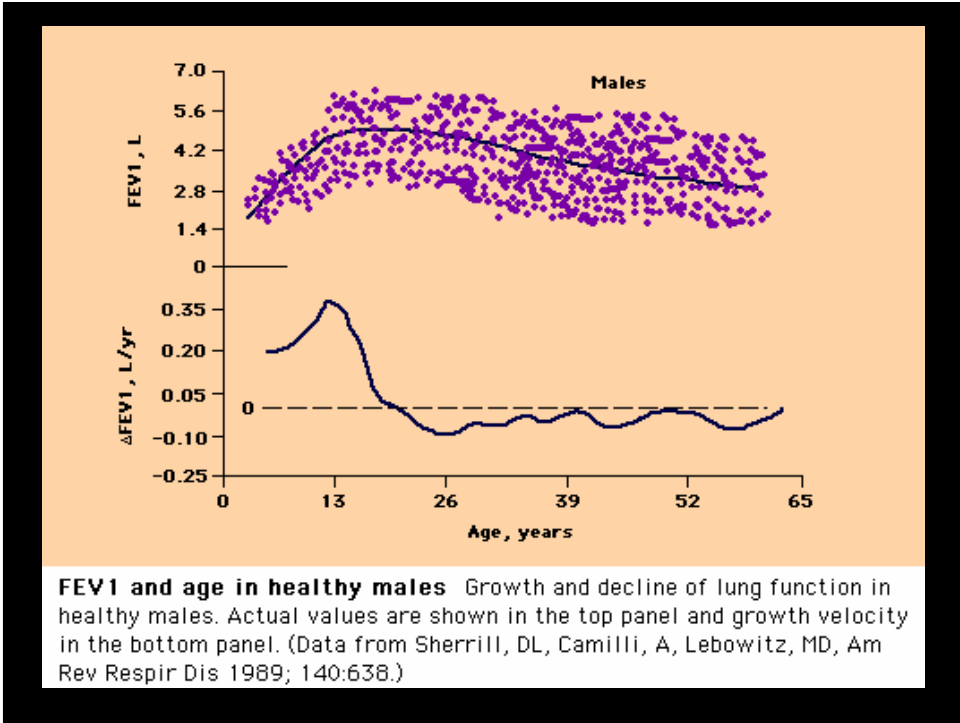
Transbronchial lung biopsy
Thoracentesis
Pleural biopsy
Open lung biopsy



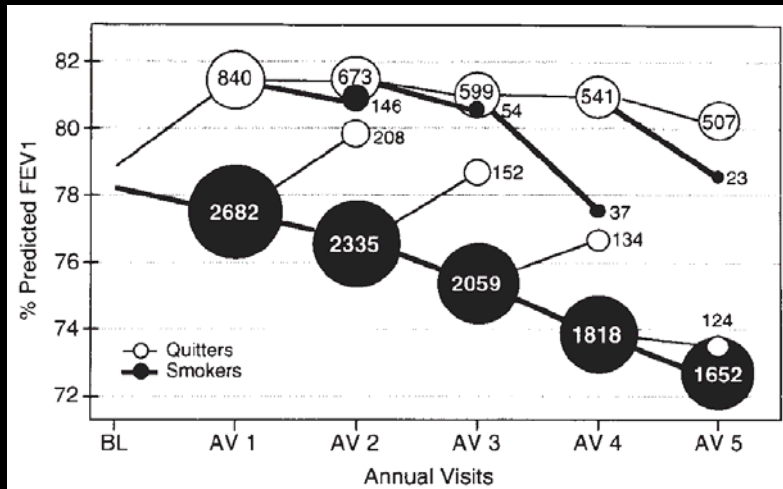
Spirogram



FEV1 and age in healthy females Growth and decline of lung function in healthy females. Actual values are shown in the top panel and growth velocity in the bottom panel. (Redrawn from Sherrill, DL, Camilli, A, Lebowitz, MD, Am Rev Respir Dis 1989; 140:638.)



Effect of smoking on decline of lung function



Scanlon et al. Am J Respir Crit Care Med 2000; 161: 381-390

Flow-volume patterns of lung disease

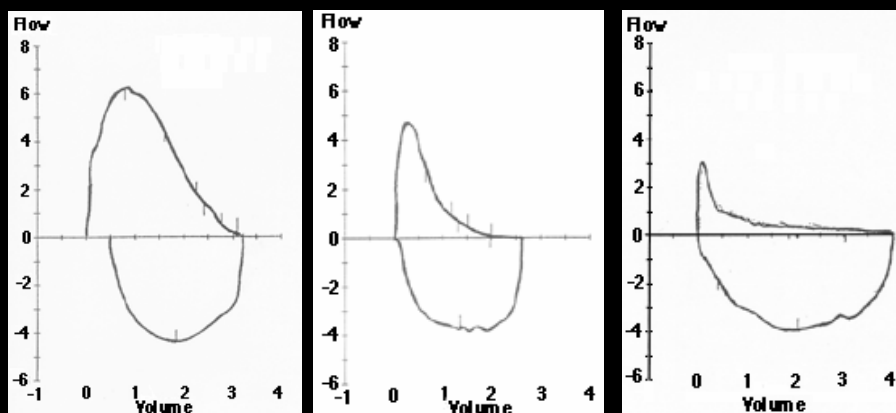


Restrictive
lung disease

Normal

Obstructive
Lung disease

Spirometry in obstructive lung disease

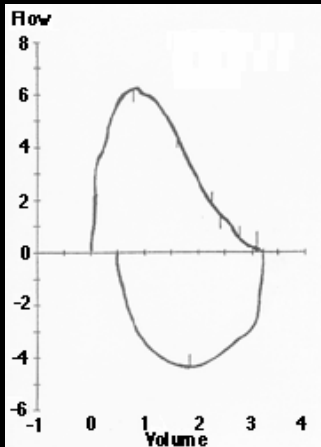


normal

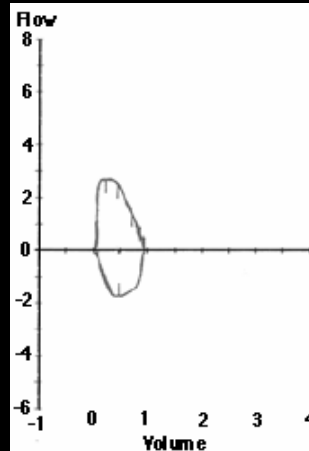
mild obstruction

severe obstruction

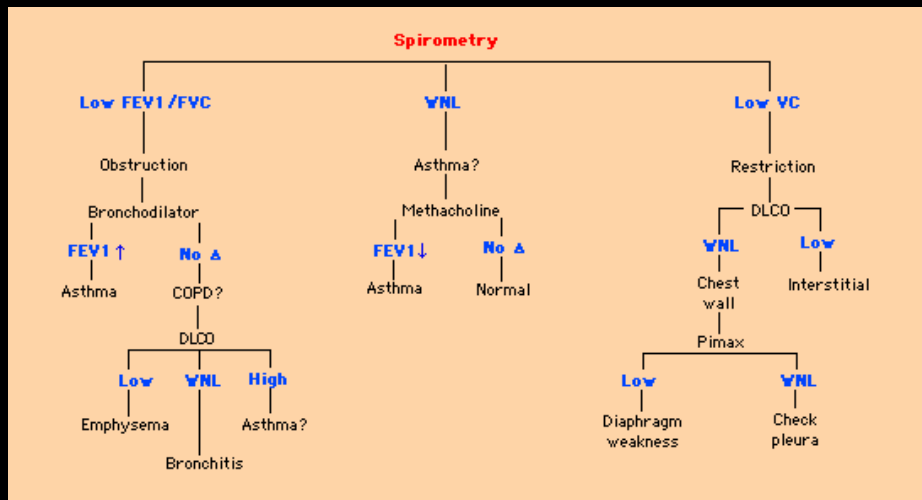
Spirometry in restrictive lung disease



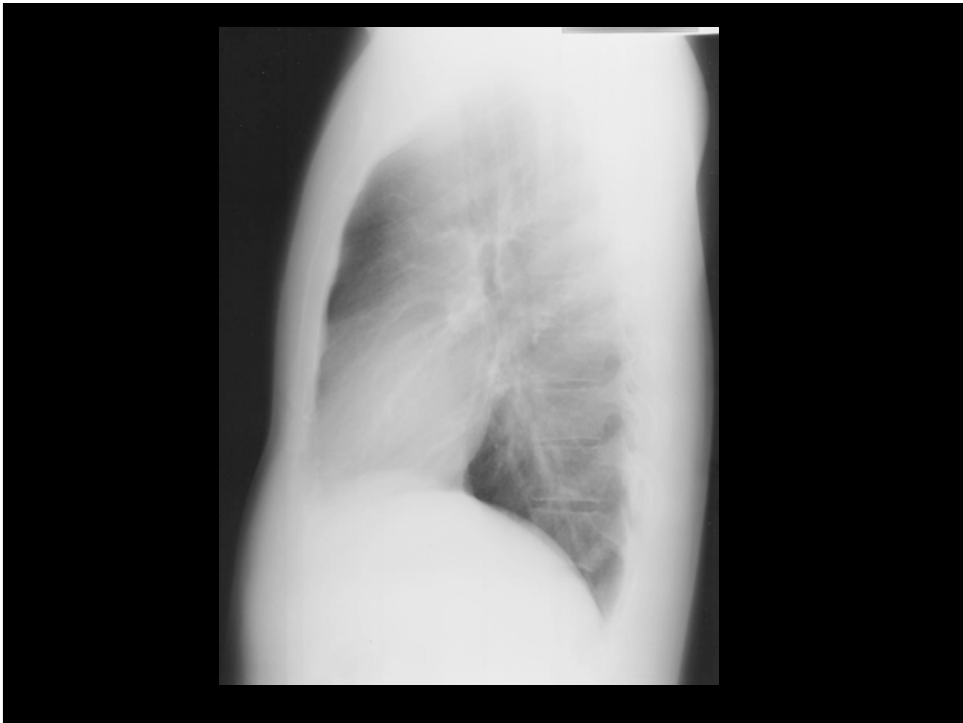
normal

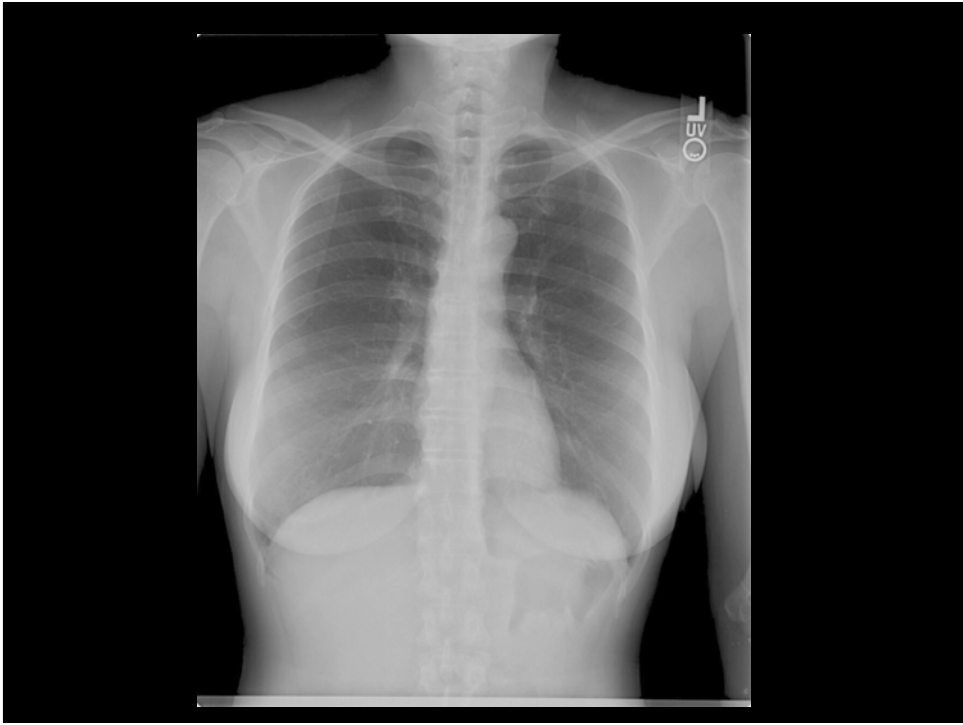


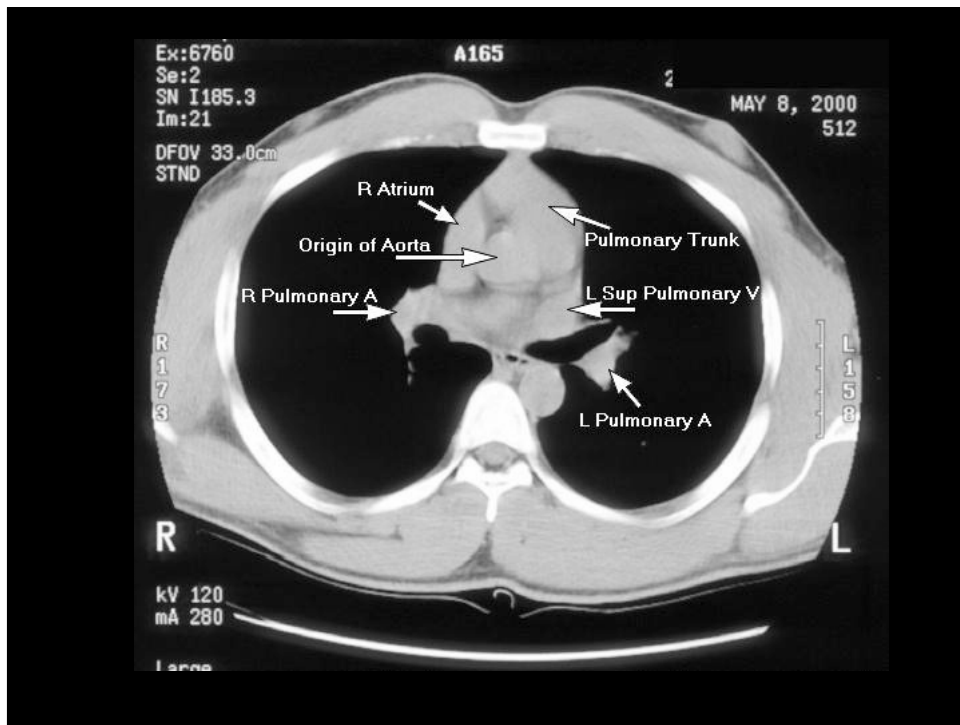
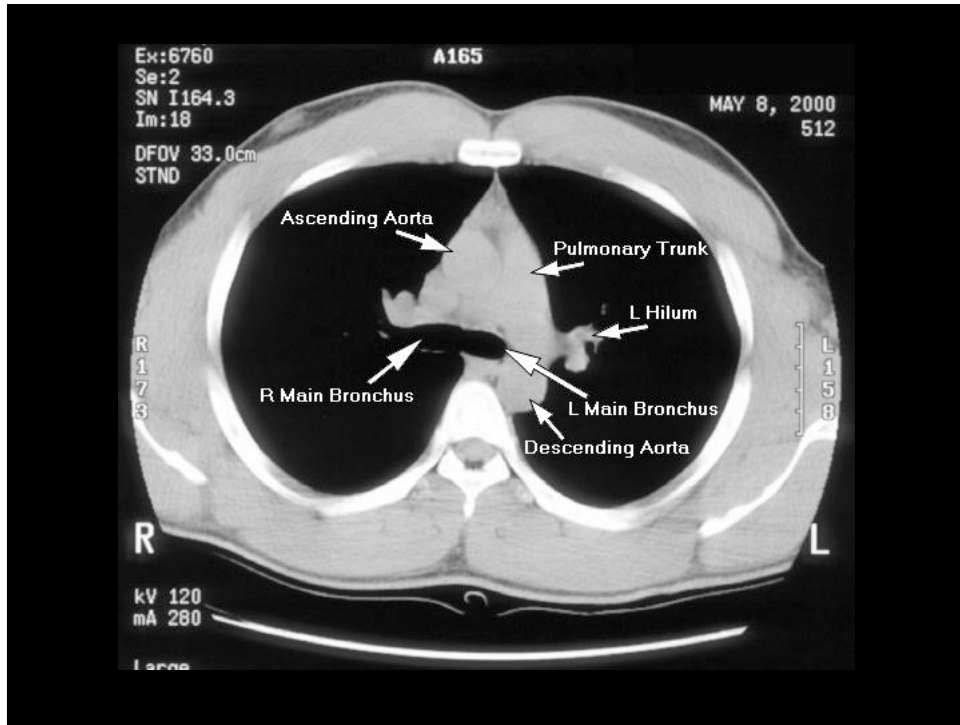
Severe restriction

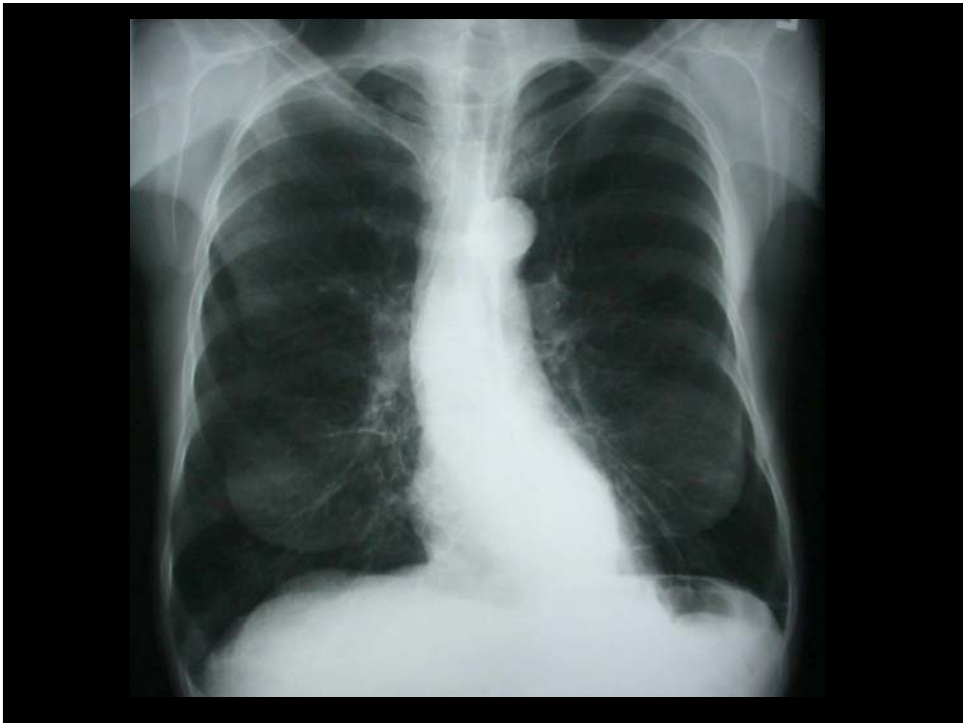
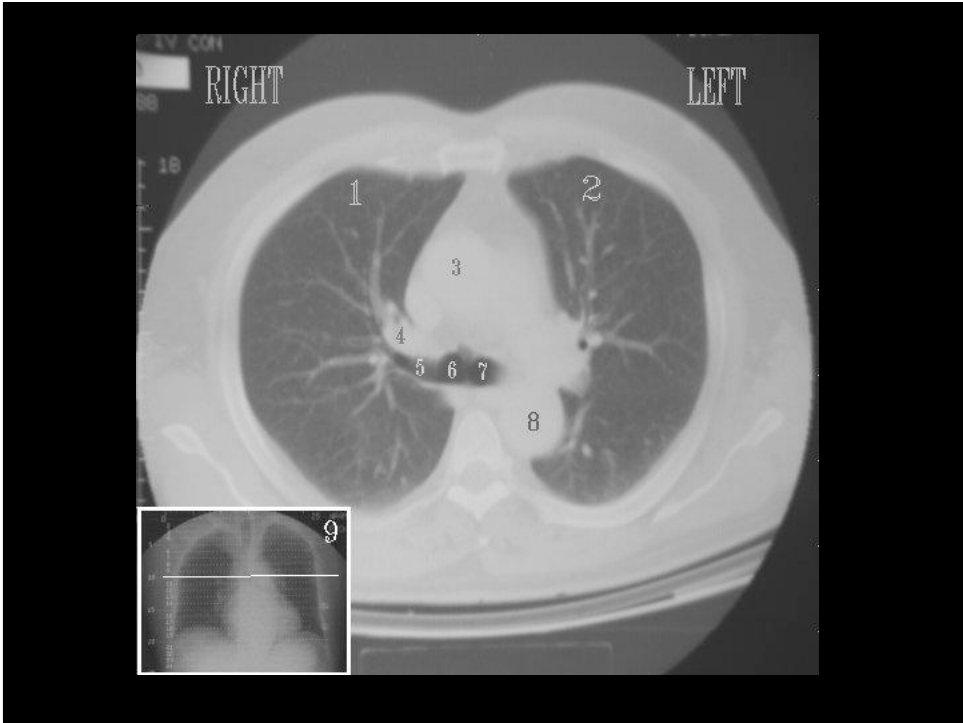


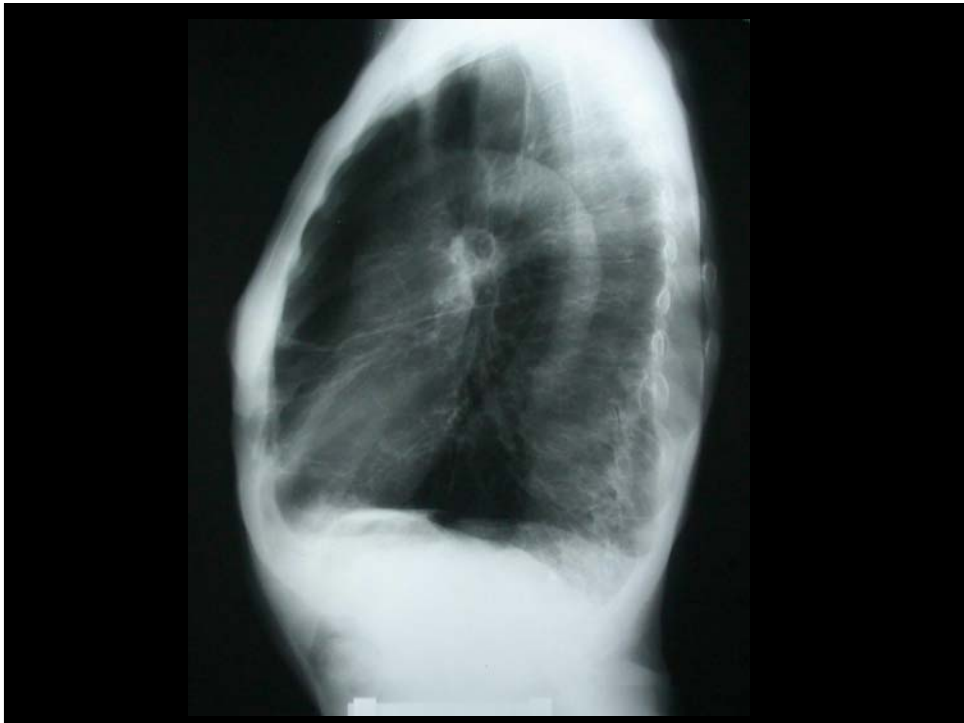
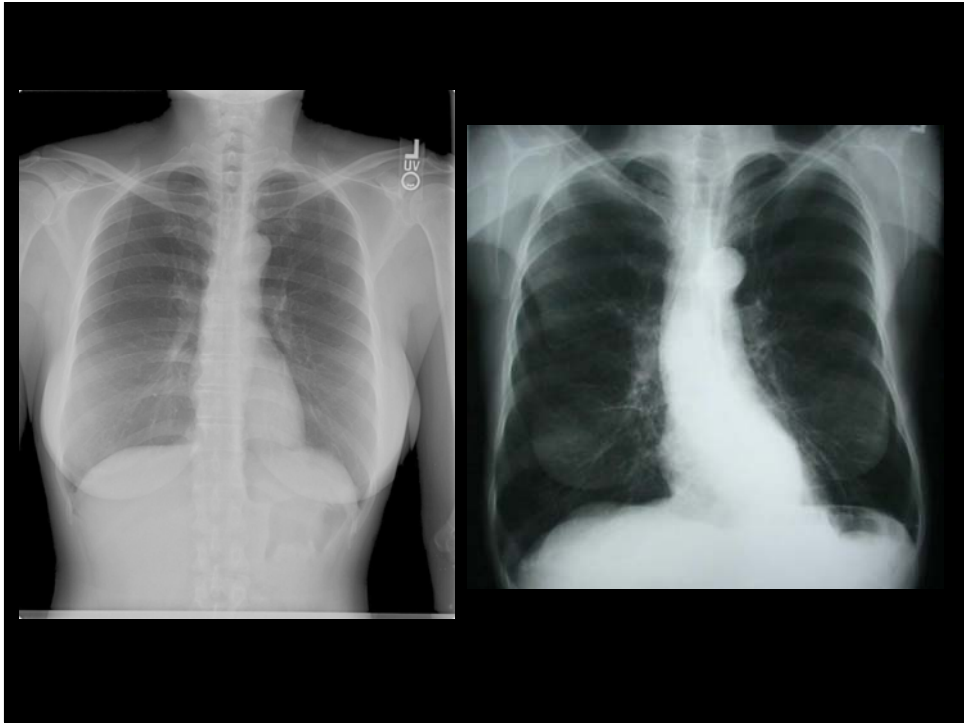
Approach to the patient with dyspnea An efficient stepwise method of determining the cause of chronic dyspnea using pulmonary function tests. WNL = within normal limits; VC = vital capacity; TLC = total lung capacity; DLCO = diffusing capacity.

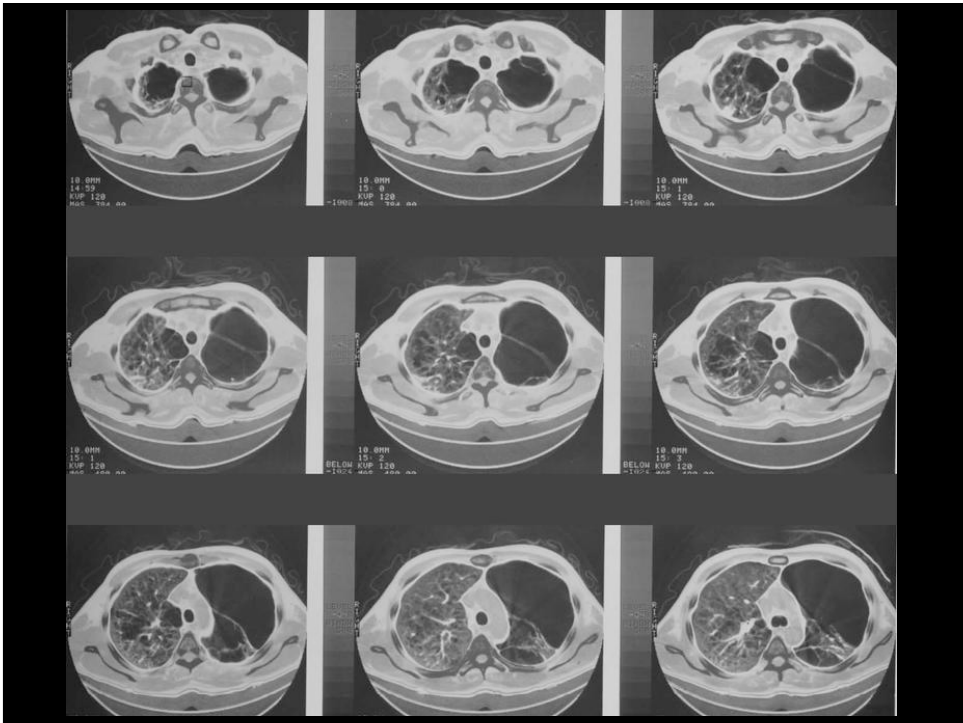


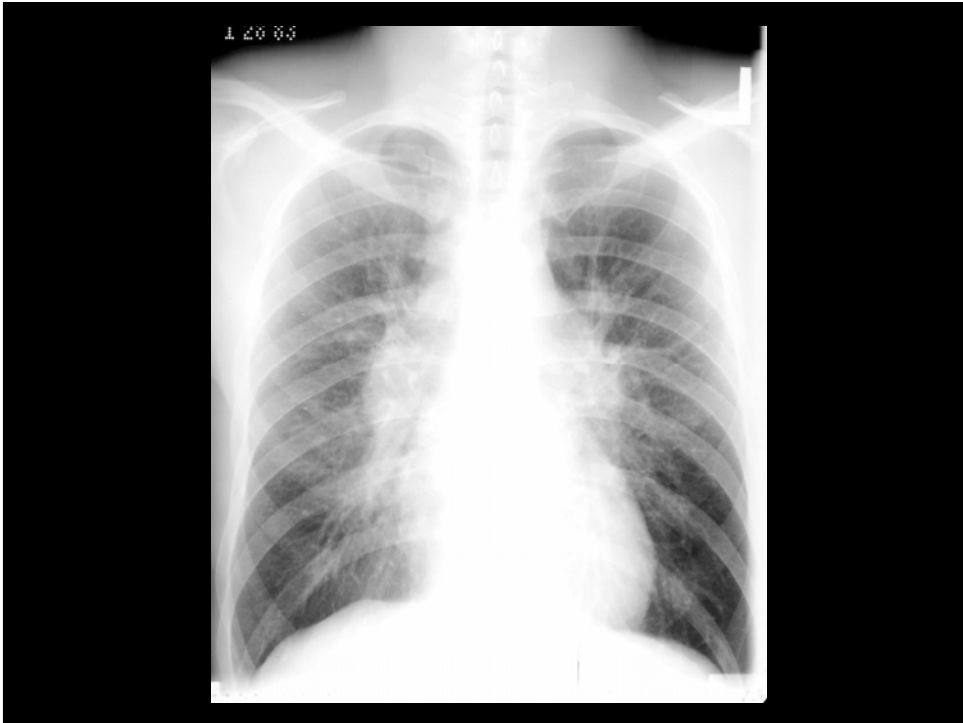


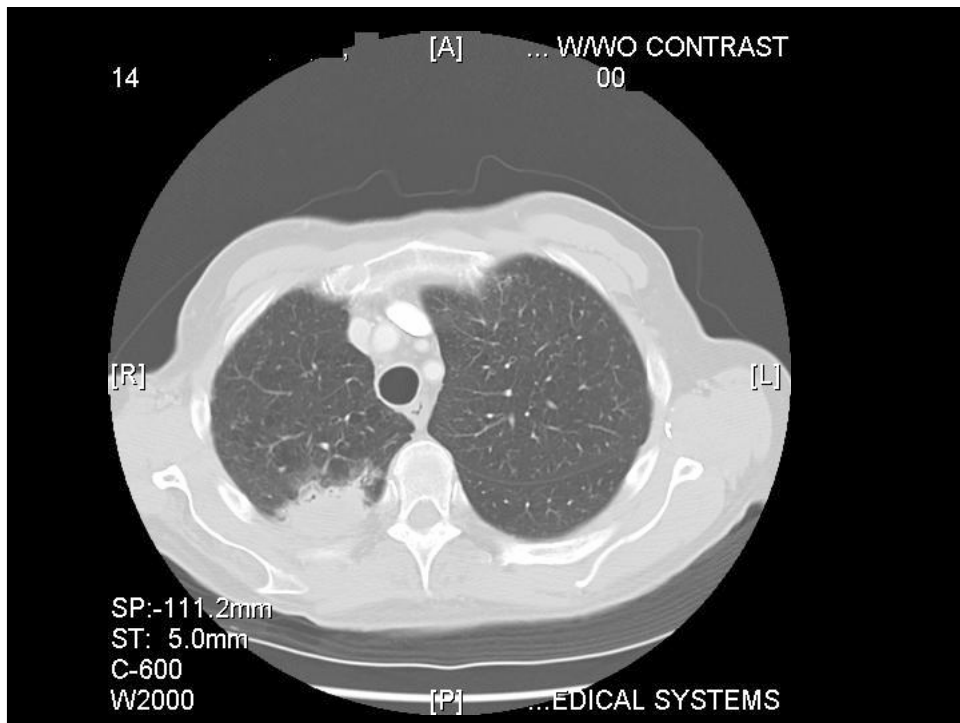
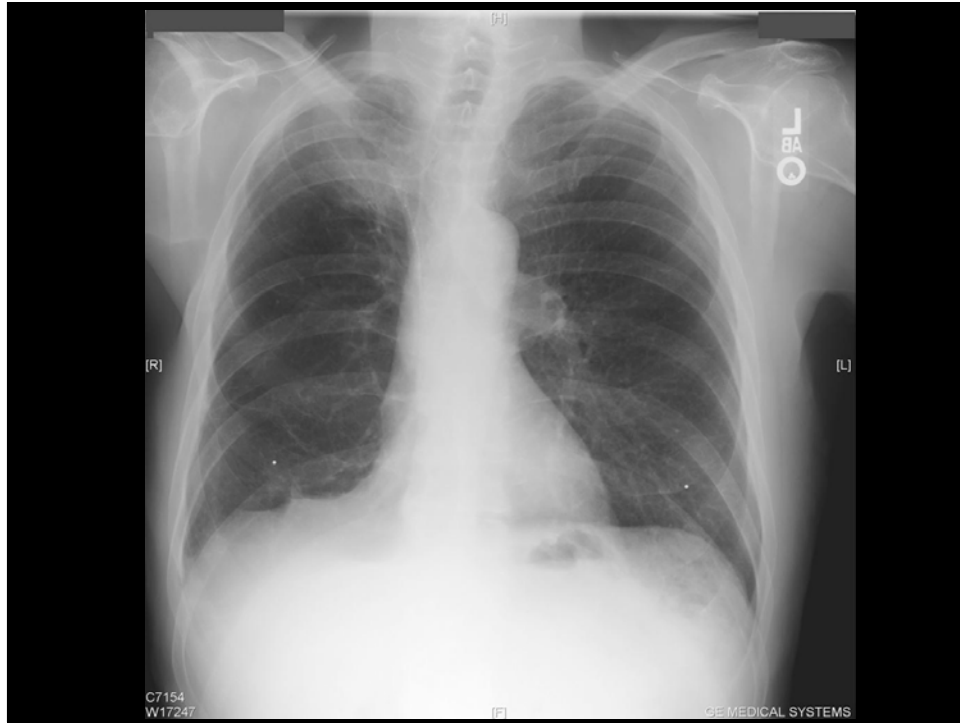












Anatomic, physiologic, and pathologic classification of lung disease

<u>Disease</u>	<u>Anatomy</u>	<u>Physiology</u>	<u>Pathology</u>
Emphysema	Hyperinflation	Obstruction	Loss of alveolar Tissue
Sarcoidosis	Enlarged LN, parenchymal infiltrates	Restriction	Granulomatous Inflammation
Asthma	Normal	Obstruction	Airways inflammation
Usual interstitial pneumonitis	Parenchymal infiltrates	Restriction	Interstitial infiltration, fibrosis