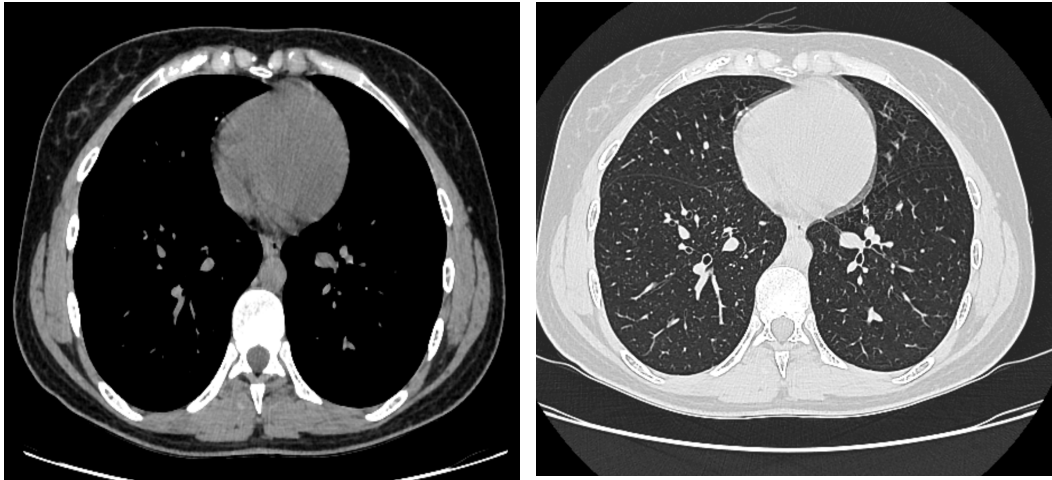


CT window settings

- You can change the greyscale to make it easier for the human eye to see into tissues



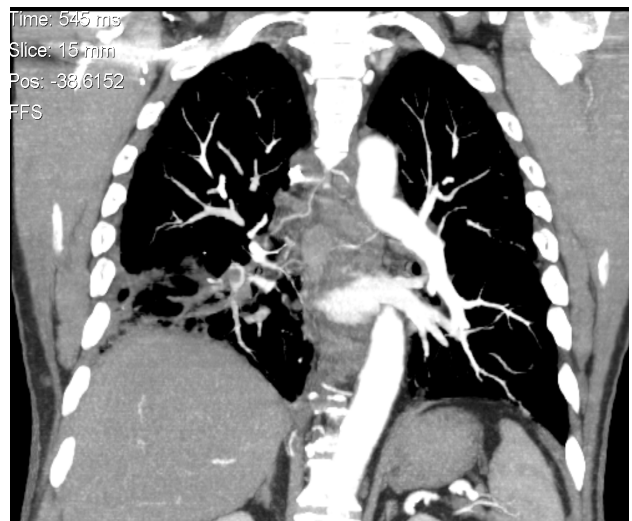
Adult with acute SOB

- Chest xray - no obvious consolidations
- Pulmonary Embolism (RLL)
- Saddle thrombus causing filling defects
- White = I.V contrast (Iodine - dense so appears on x-rays)

Preview from Notesale.co.uk
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Coronal reconstruction of CT -->



Tuberculosis

- Tuberculosis (TB) is primarily an infectious lung disease caused by the bacterium, *Mycobacteria tuberculosis*.
- Not all *Mycobacteria* cause TB
- Transmission - in most cases TB is spread from person to person through the air via droplet nuclei.

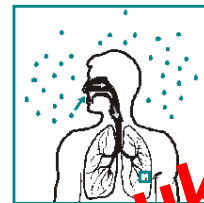
ORGANISM	HOST
<i>M. tuberculosis</i>	humans
<i>M. africanum</i>	humans (tropical Africa)
<i>M. microti</i>	voles & rodents
<i>M. bovis</i>	wide range of mammals especially cattle

M. bovis can infect humans, probably through drinking untreated milk.

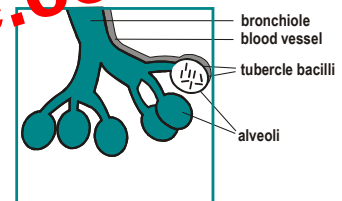
TB transmission

- Most of the larger droplet nuclei become lodged in the upper respiratory tract, where infection is unlikely to develop
- However, droplet nuclei may reach the small air sacs of the lung (the alveoli), where infection begins
- Immune Response - Cell Mediated Immunity
 - Macrophages digest mycobacterial antigens & insert into own membrane (antigen presenting cell, APC)
 - CD4+ T cells - helper cells; secrete cytokines & chemokines
 - CD8+ T cells - killer cells; destroy mycobacteria-infected cells
 - Macrophages engulf bacteria but are not destroyed by phagocytosis and bacteria multiply within macrophages

1



2



Latent TB infection

- Within 2 to 8 weeks tubercle forms (infected macrophages surrounded by layers of macrophages, neutrophils and lymphocytes)
- These cells form a barrier shell that keeps the bacilli contained and under control (LTBI)
- People with LTBI are not infectious
- The bacteria are contained and form granulomatous caseating lesions, some superinfected by fungal mycetoma

4

