

Chapter 24: Disease of the respiratory tract

Lecture

Upper respiratory tract
Lower respiratory tract

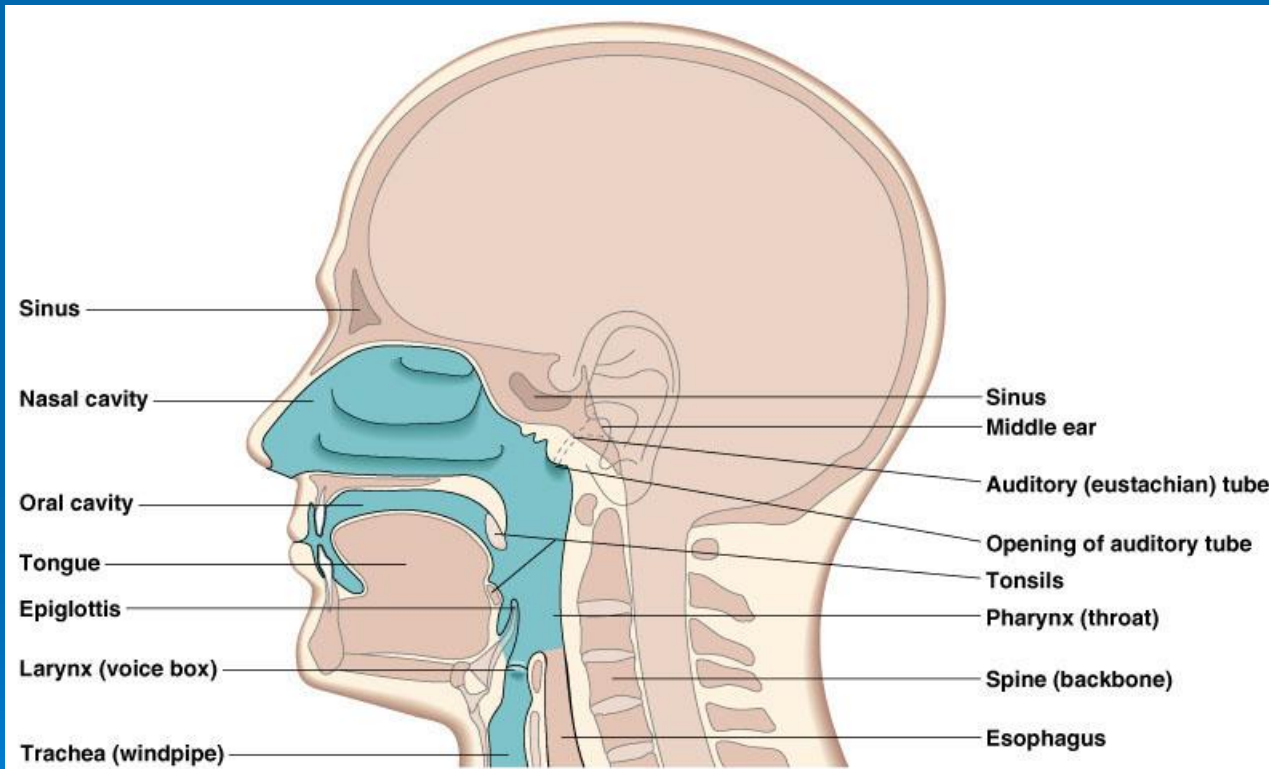
Lab

Dental Microbiology

All remaining unknown
inoculations



Upper respiratory system



Diseases

Pharyngitis

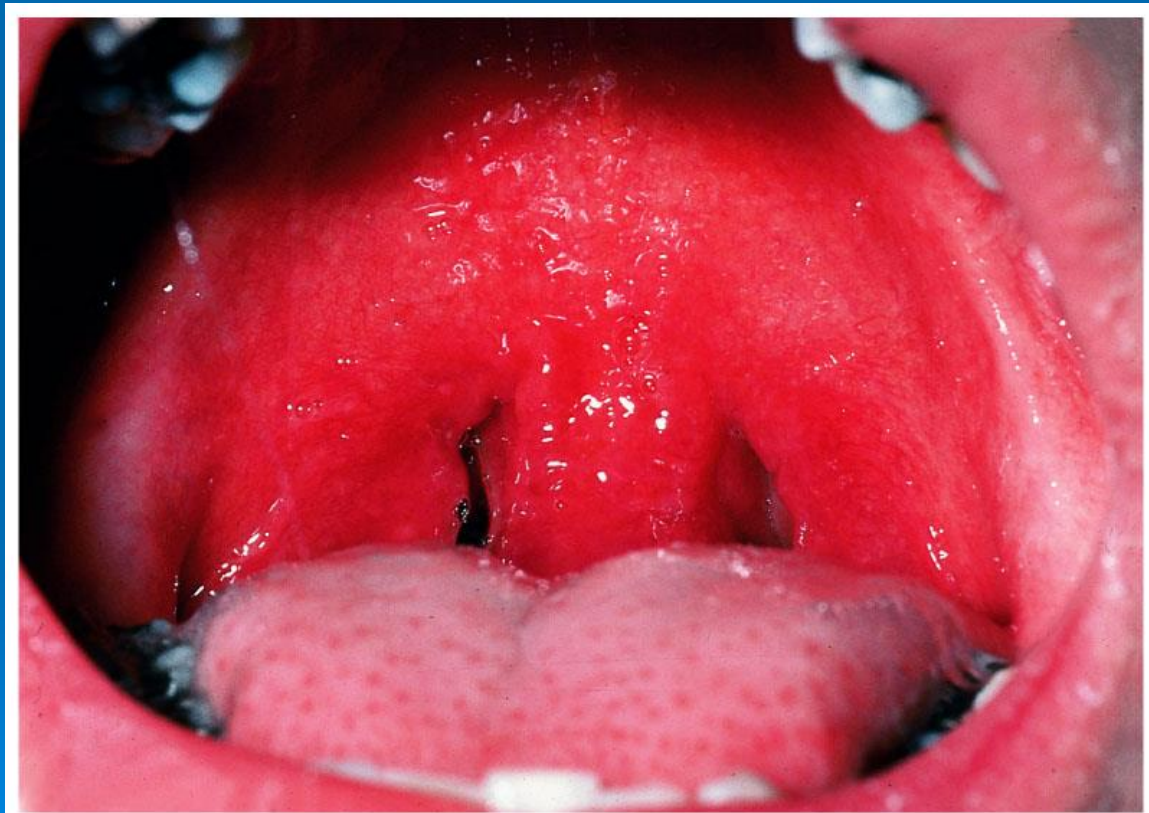
Laryngitis

Sinusitis

Tonsilitis

Epiglottitis

Streptococcus pyogenes- Streptococcal pharyngitis
(strep throat)



S. pyogenes- scarlet fever



Features

-Erythrogenic toxin due to lysogenic event

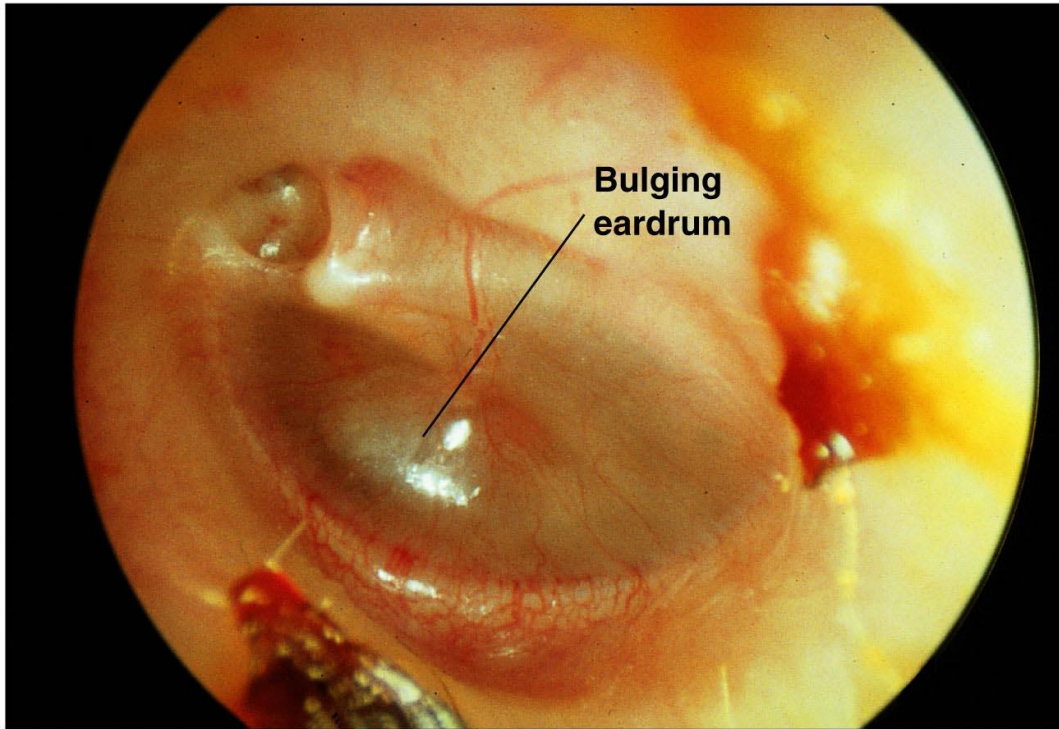
Corynebacterium diphtheriae- diphtheria



Otitis media

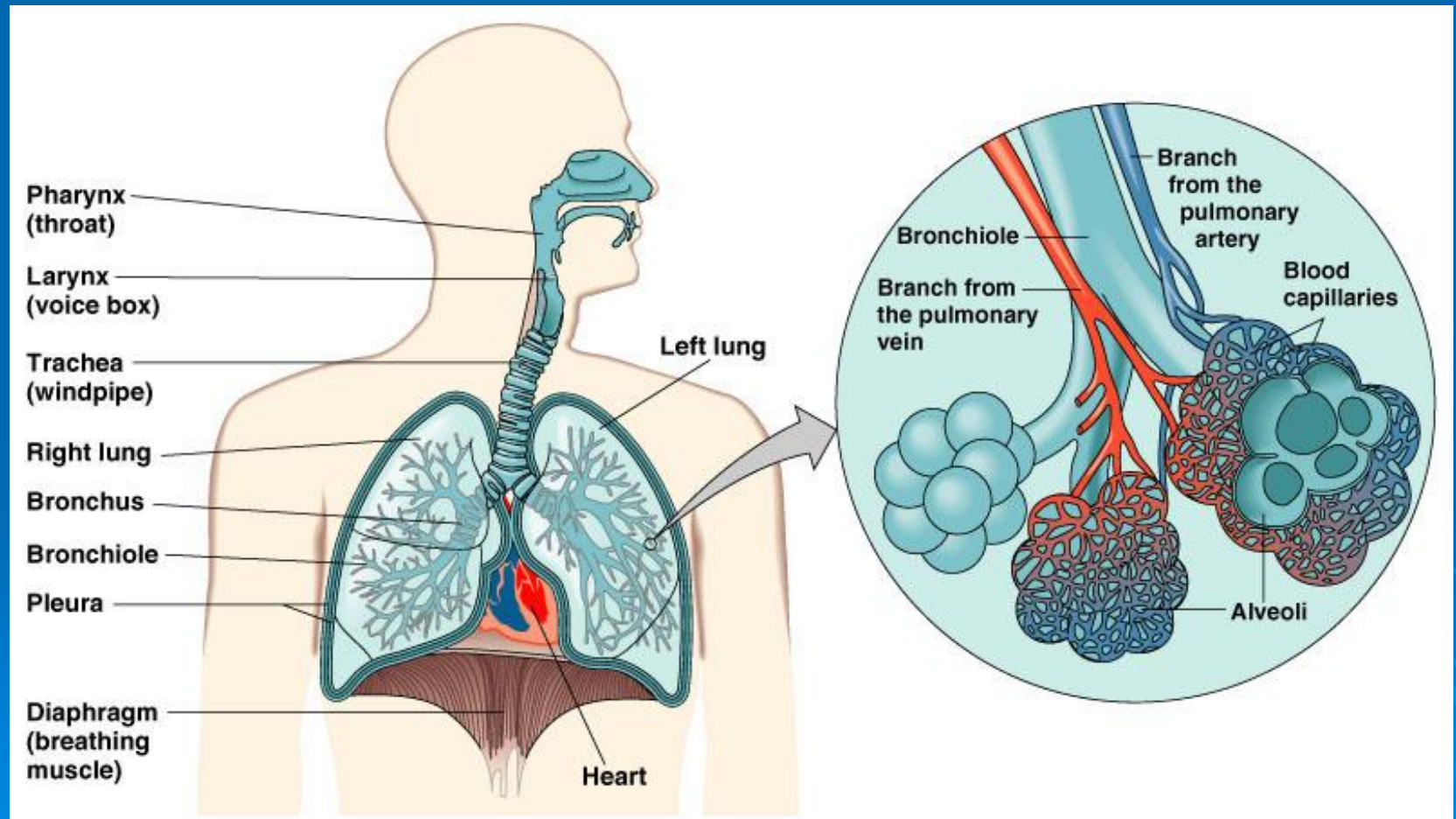
Multiple etiologies

- S. pneumoniae*
- H. influenzae*
- Moraxella catarrhalis*
- S. pyogenes*
- S. aureus*



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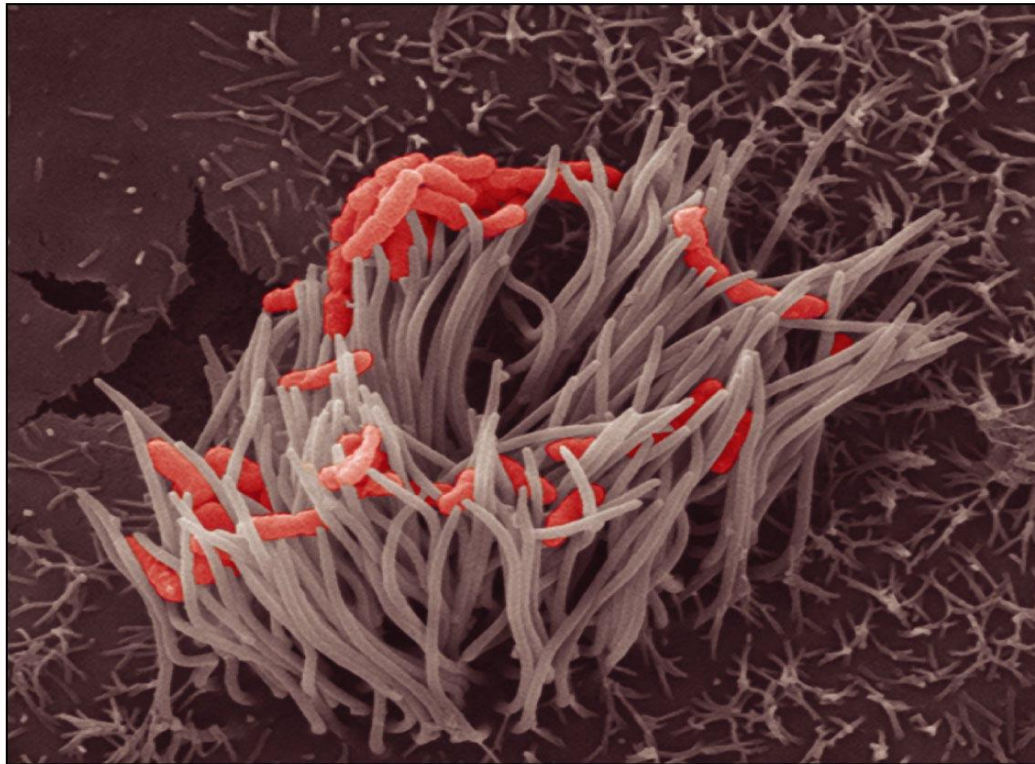
Lower respiratory system



Bordatella pertussis- whooping cough

Features

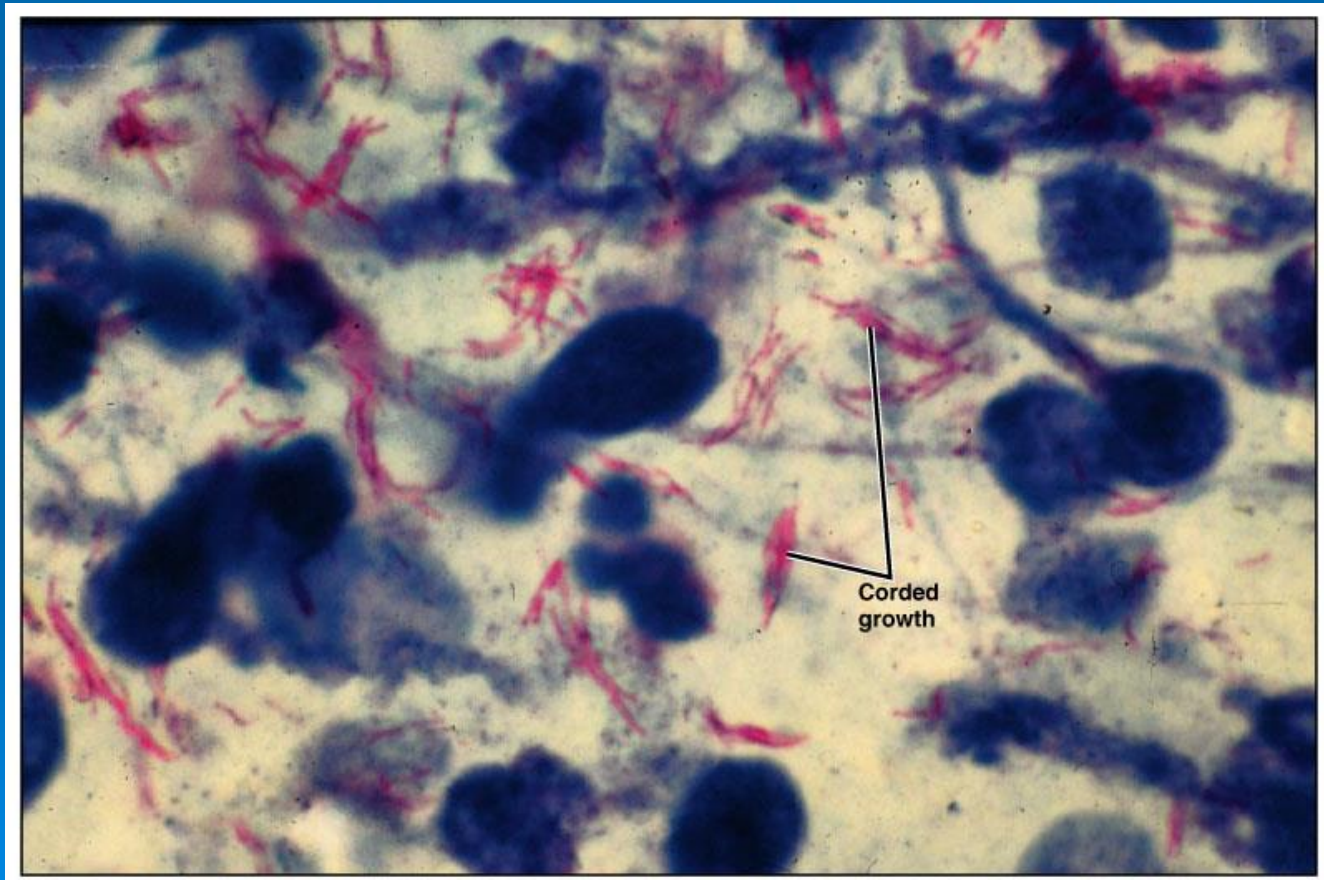
- Produces tracheal toxin and pertussis toxin
- Almost all current deaths in children too young to receive vaccine



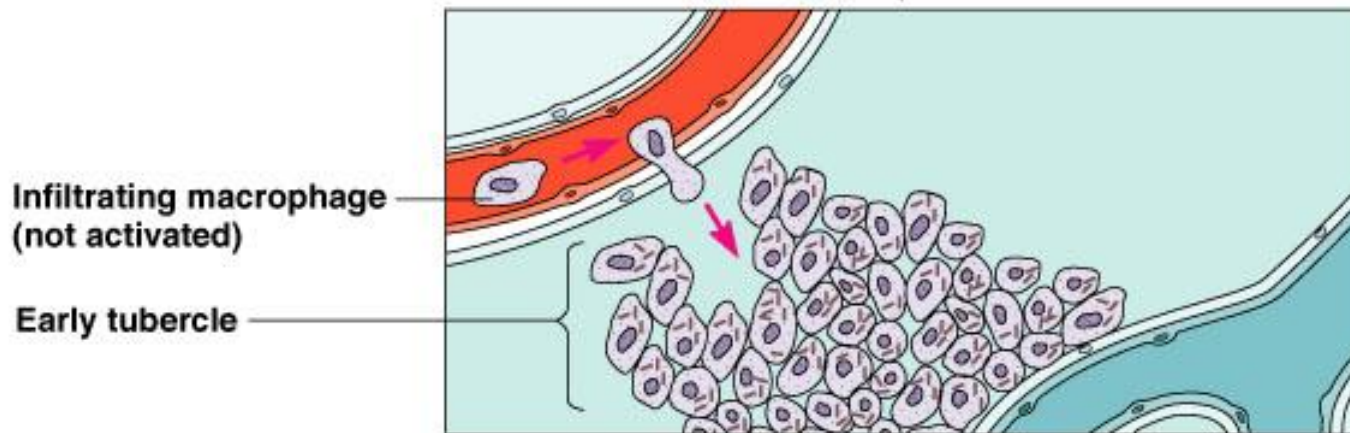
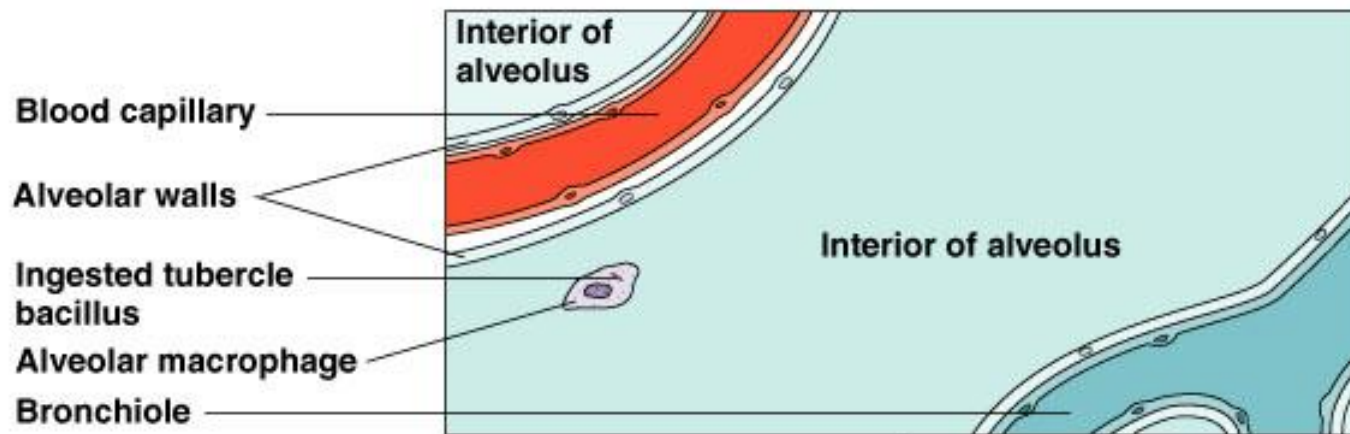
SEM

1 μ m

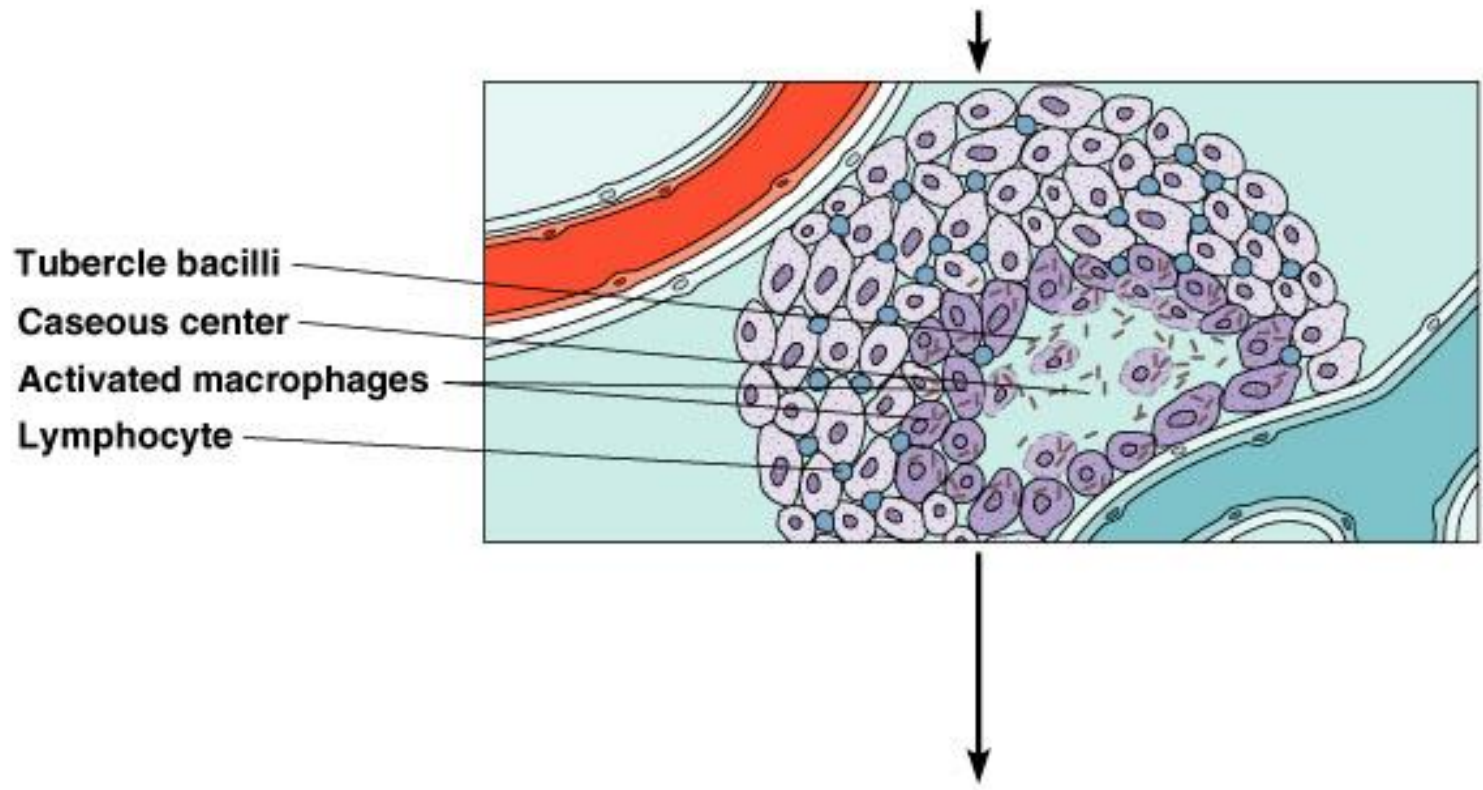
Mycobacterium tuberculosis-
Tuberculosis



Disease progression



Disease progression

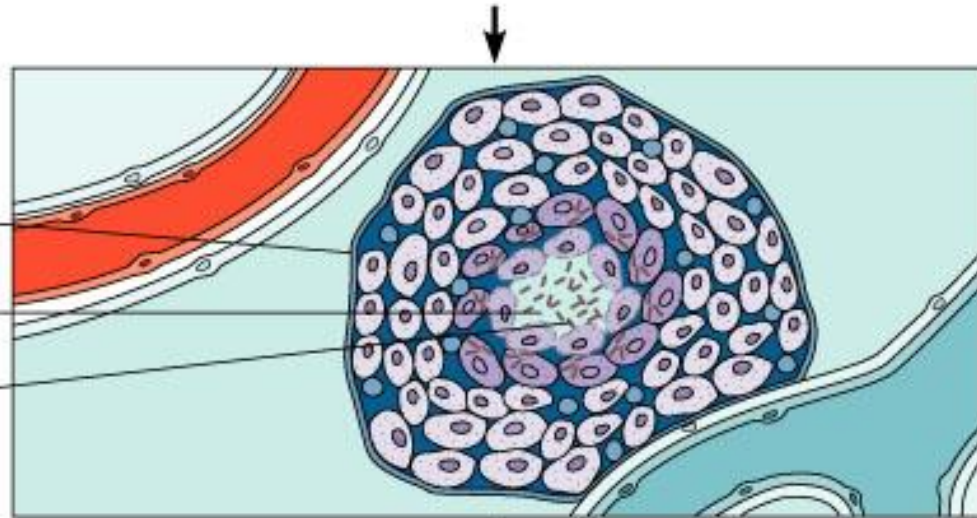


Disease progression

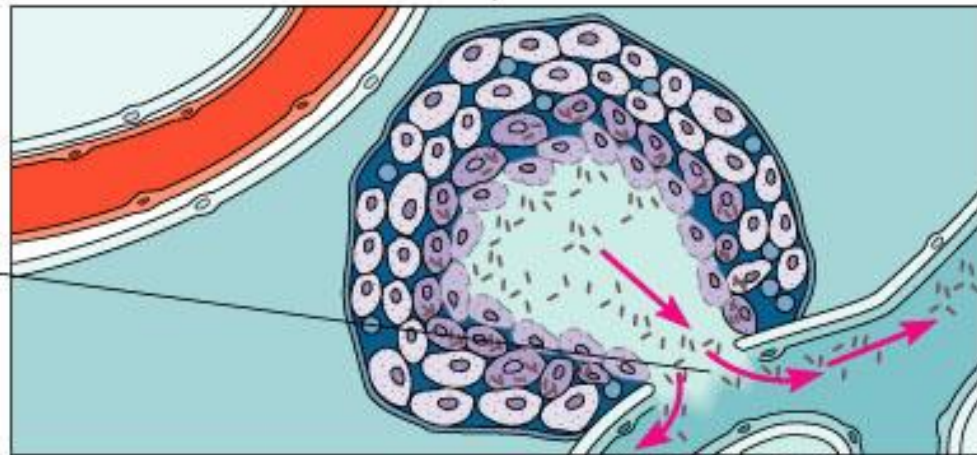
Outer layer of mature
tubercle

Tuberculous cavity

Tubercle bacilli



Rupture of
bronchiole wall



Bacterial pneumonias

DISEASES IN FOCUS: Common Bacterial Pneumonia

	Pathogen	Symptoms	Reservoir	Treatment
Pneumococcal pneumonia	<i>Streptococcus pneumoniae</i>	Infected alveoli of lung fill with fluids; interferes with oxygen uptake	Humans	Penicillin, fluoroquinolones Prevention: pneumococcal vaccine
<i>Haemophilus influenzae</i> pneumonia	<i>Haemophilus influenzae</i>	Symptoms resemble pneumococcal pneumonia	Humans	Cephalosporins
Mycoplasma pneumonia pneumonia	<i>Mycoplasma pneumoniae</i>	Mild but persistent respiratory symptoms; low fever, cough, headache	Humans	Tetracyclines

Bacterial pneumonias

DISEASES IN FOCUS: Common Bacterial Pneumonia

	Pathogen	Symptoms	Reservoir	Treatment
Legionellosis	<i>Legionella pneumophila</i>	Potentially fatal pneumonia that tends to affect older males who drink or smoke heavily	Water	Erythromycin
Psittacosis (ornithosis)	<i>Chlamydophila psittaci</i>	Symptoms, if any, are fever, headache, chills	Birds	Tetracyclines

Bacterial pneumonias

DISEASES IN FOCUS: Common Bacterial Pneumonia

	Pathogen	Symptoms	Reservoir	Treatment
Chlamydial pneumonia	<i>Chlamydophila pneumoniae</i>	Mild respiratory illness common in young people; resembles mycoplasmal pneumonia	Humans	Tetracyclines
Q fever	<i>Coxiella burnetii</i>	Mild respiratory disease lasting 1–2 weeks; occasional complications such as endocarditis occur	Large mammals; tick vector; can be transmitted via unpasteurized milk	Doxycycline and chloroquine

Influenza virus- orthomyxovirus

