

Chapter 24: Disease of the respiratory tract

Lecture

Upper respiratory tract
Lower respiratory tract

Lab

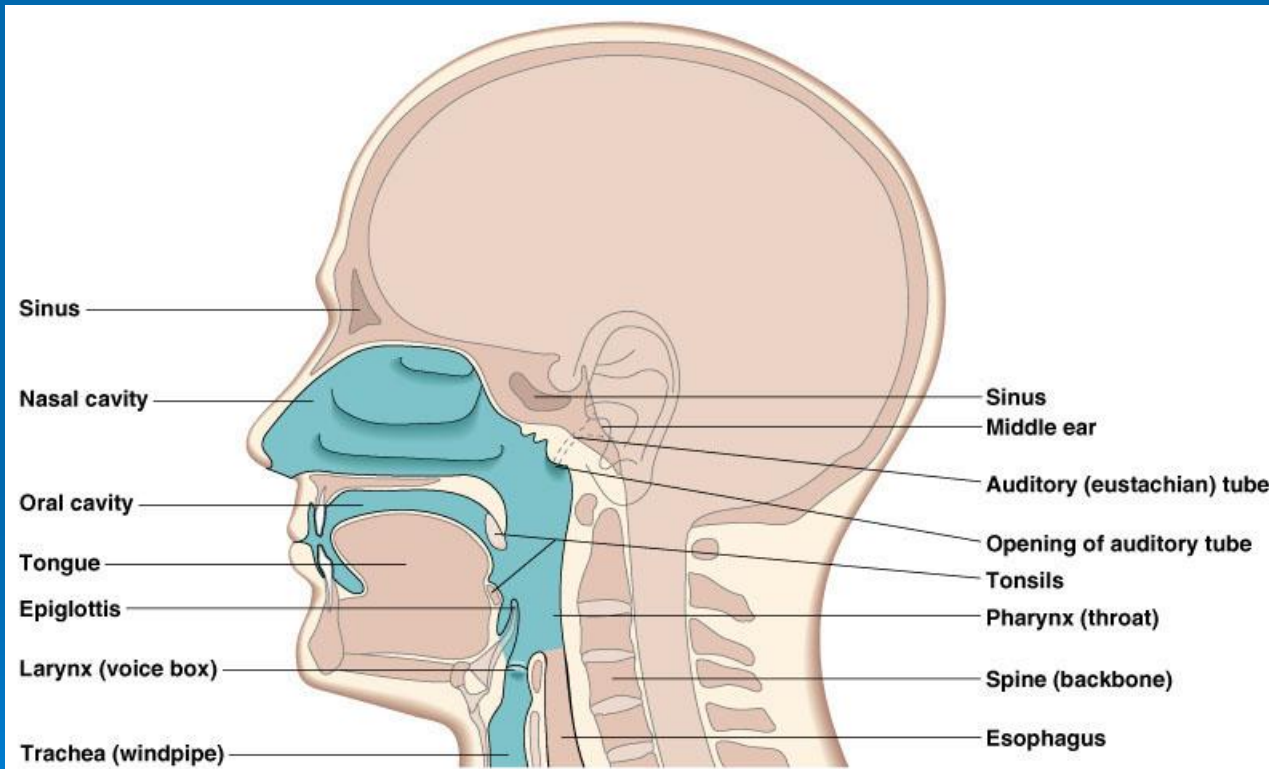
Water Microbiology

Dental Microbiology

All remaining unknown
inoculations



Upper respiratory system



Diseases

Pharyngitis

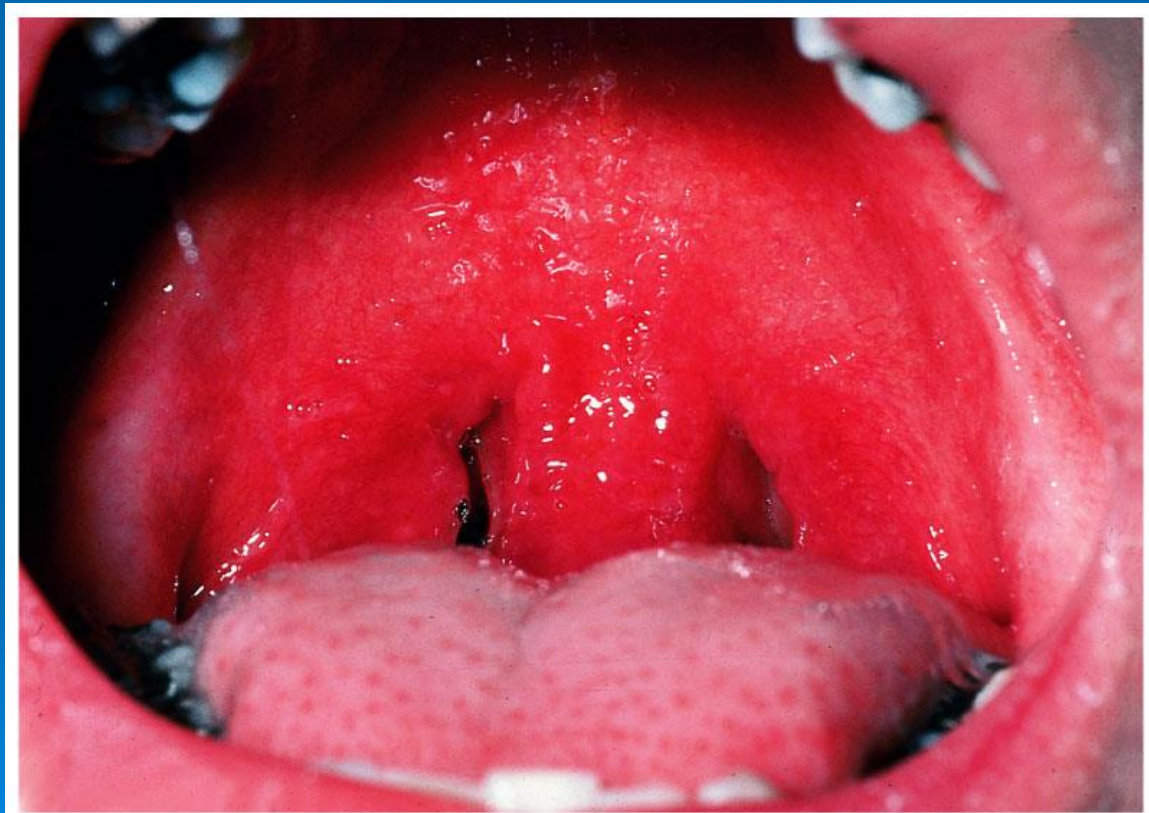
Laryngitis

Sinusitis

Tonsilitis

Epiglottitis

Streptococcus pyogenes- Streptococcal pharyngitis
(strep throat)



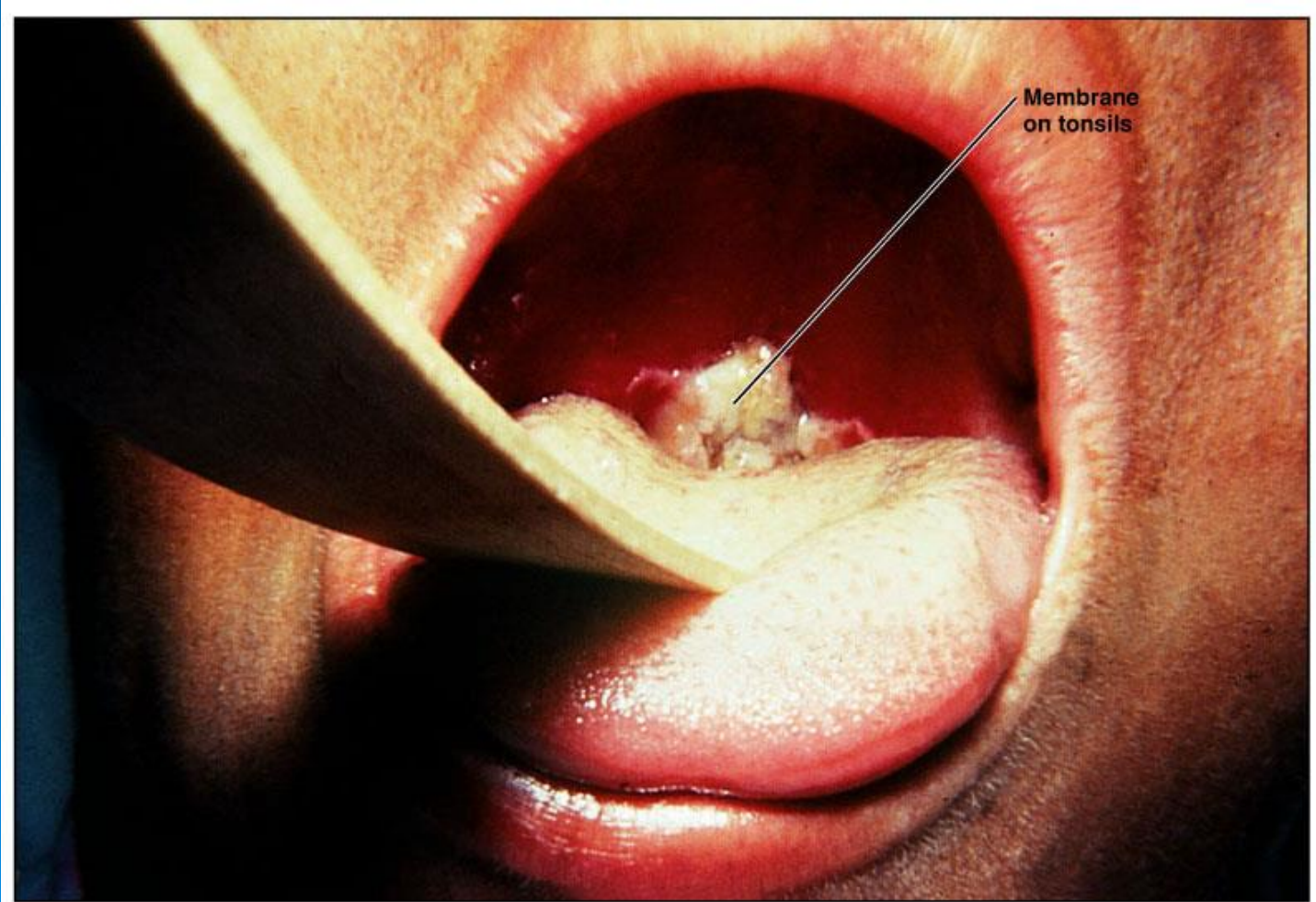
S. pyogenes- scarlet fever



Features

-Erythrogenic toxin due to lysogenic event

Corynebacterium diphtheriae- diphtheria



Otitis media

Multiple etiologies

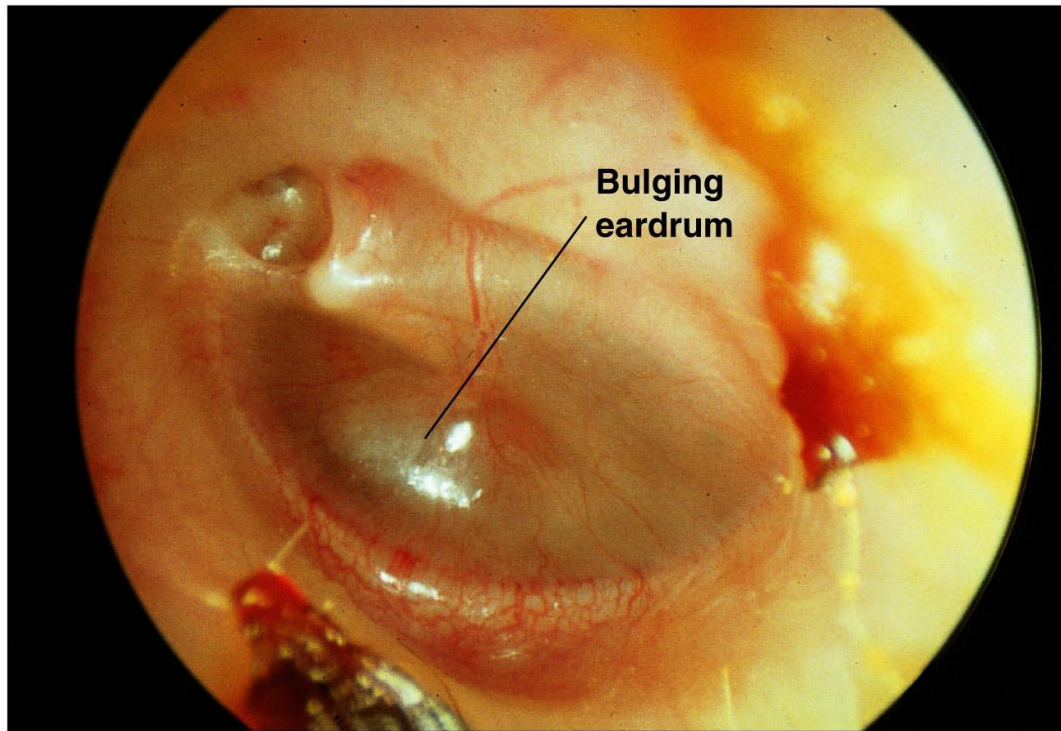
-*S. pneumoniae*

-*H. influenzae*

-*Moraxella catarrhalis*

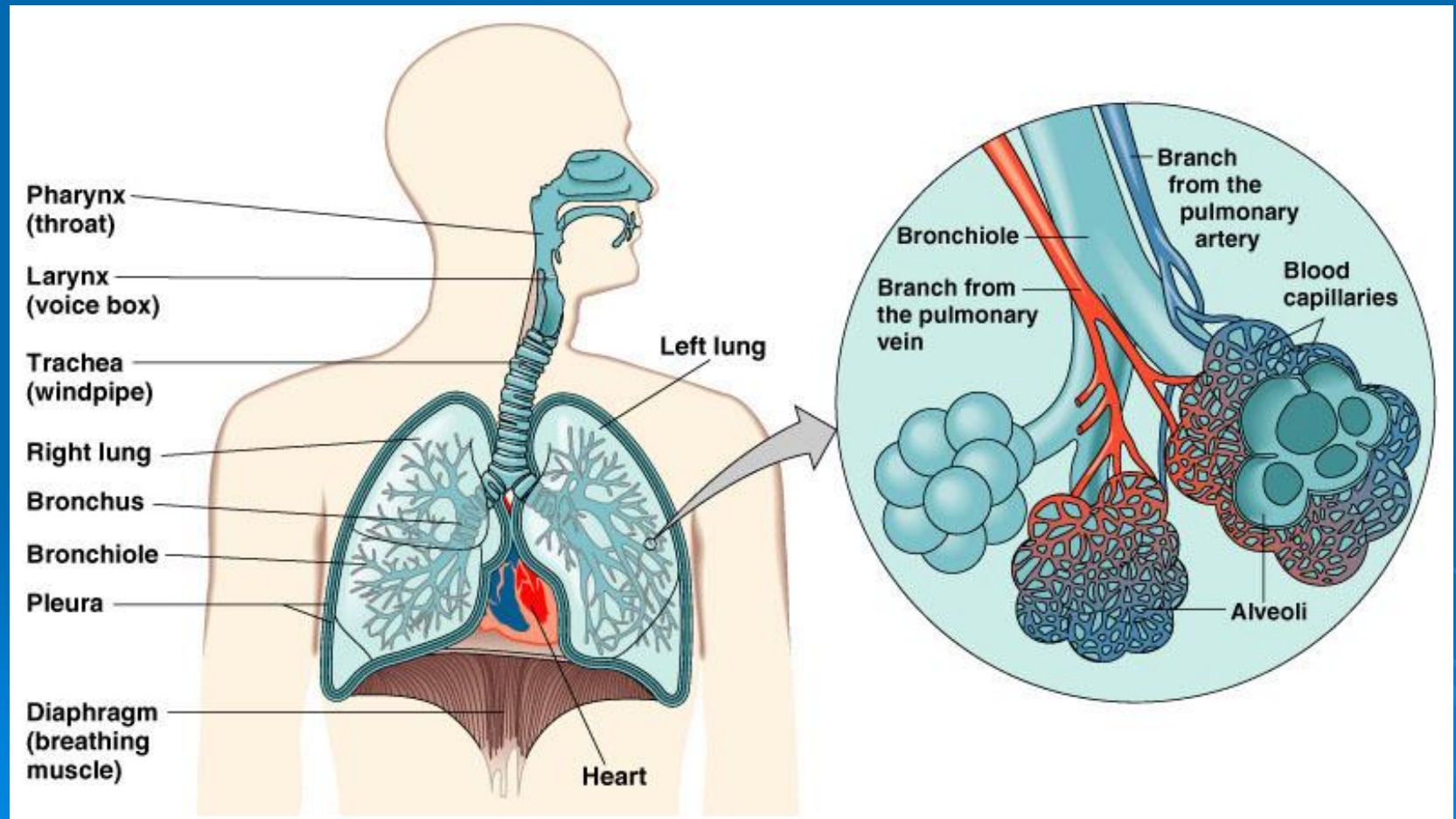
-*S. pyogenes*

-*S. aureus*



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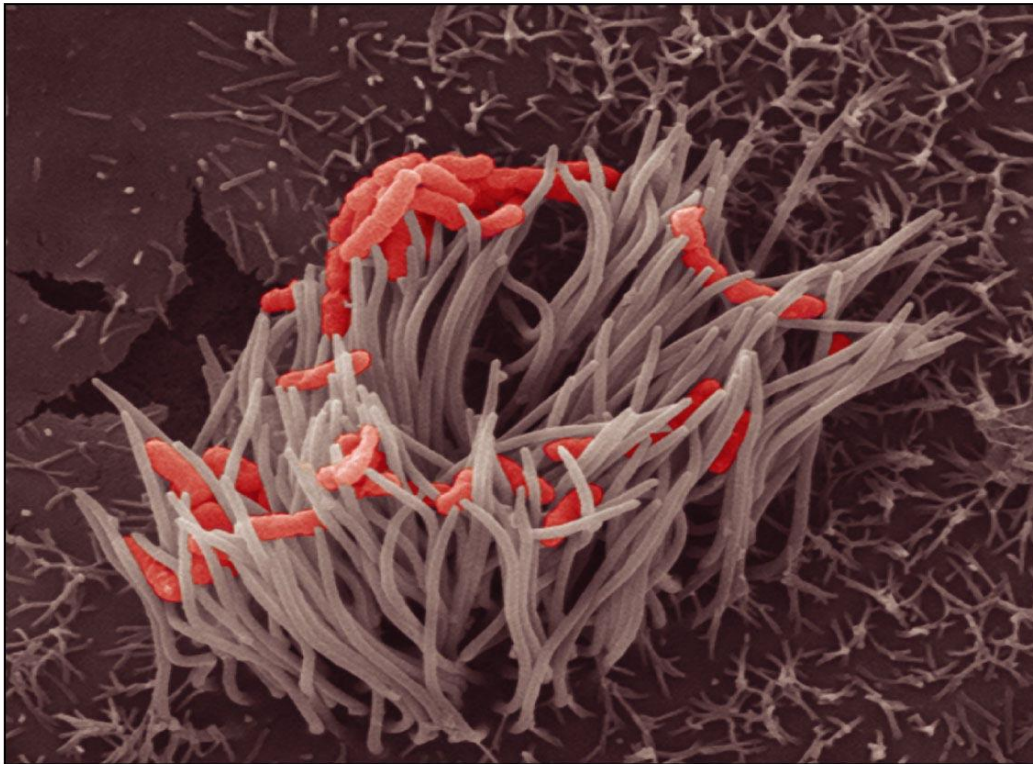
Lower respiratory system



Bordatella pertussis- whooping cough

Features

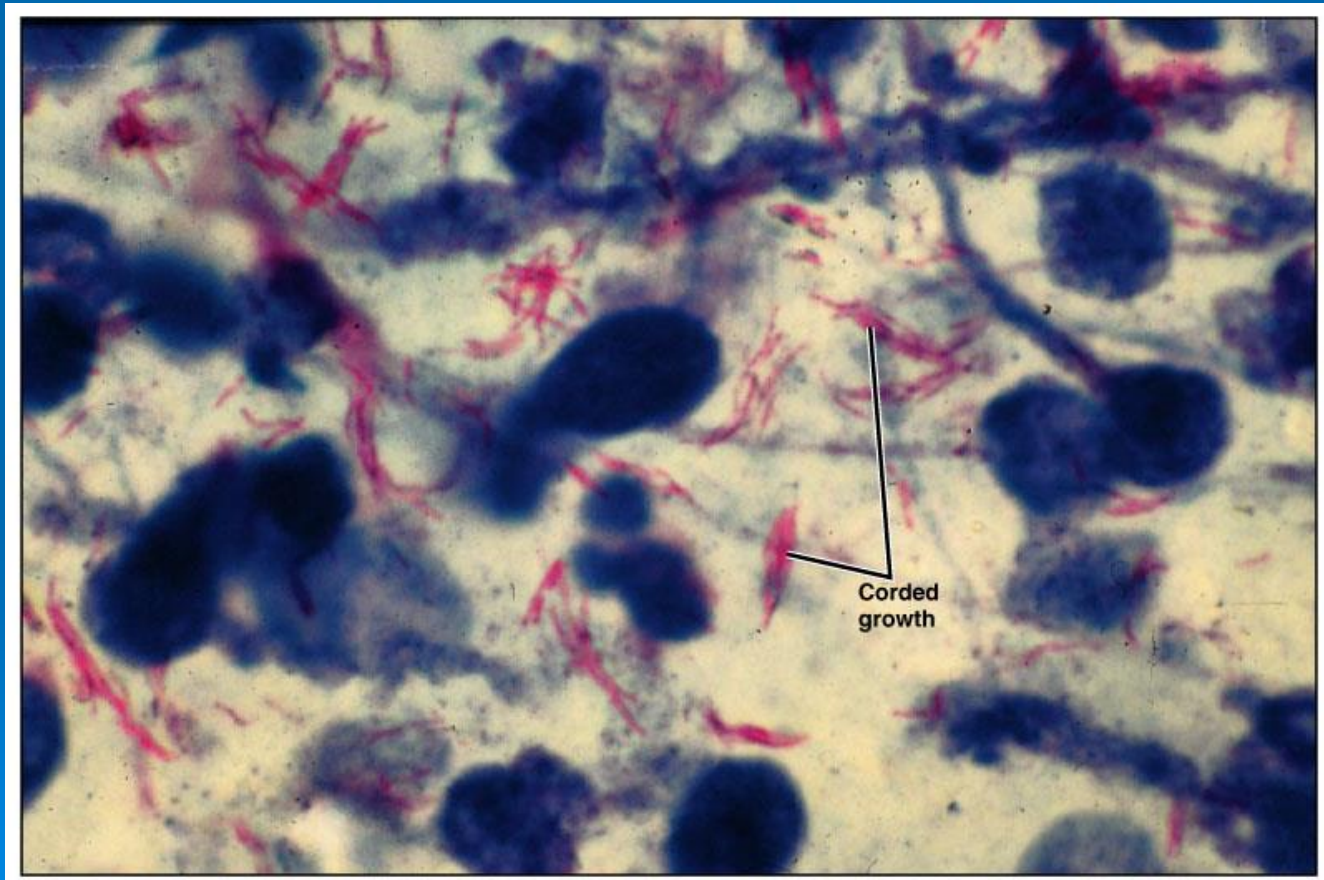
- Produces tracheal toxin and pertussis toxin
- Almost all current deaths in children too young to receive vaccine



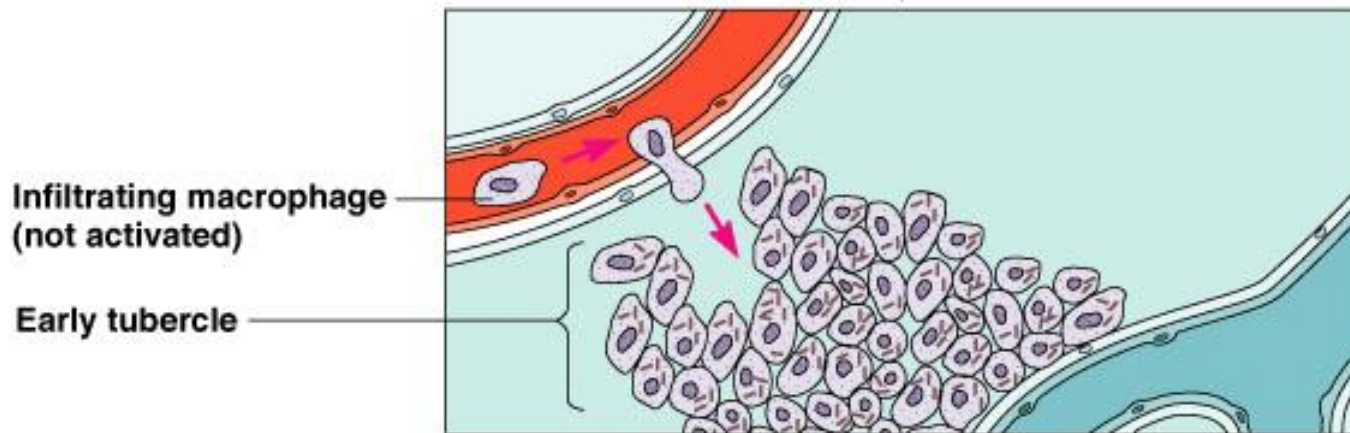
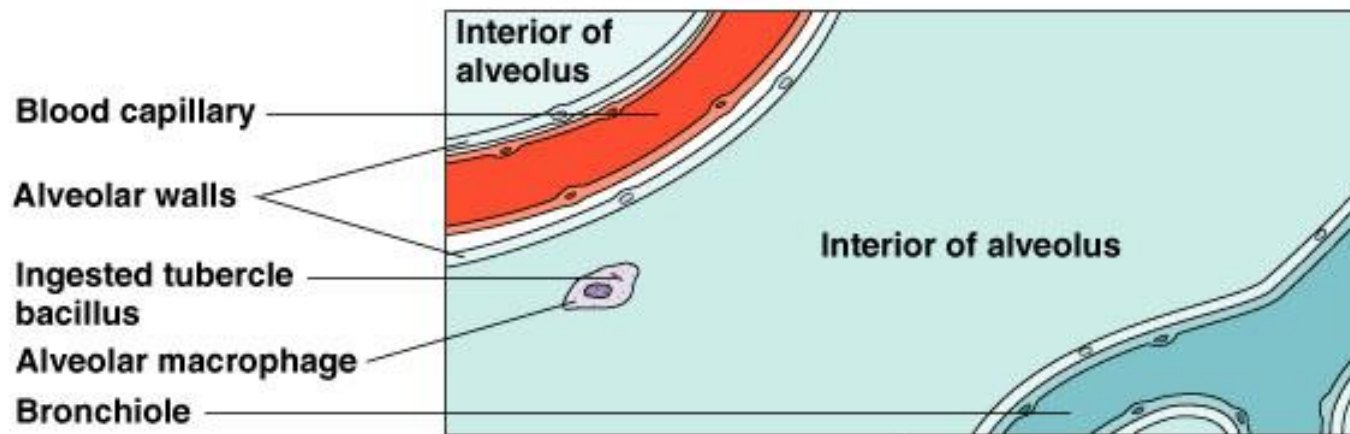
SEM

1 μ m

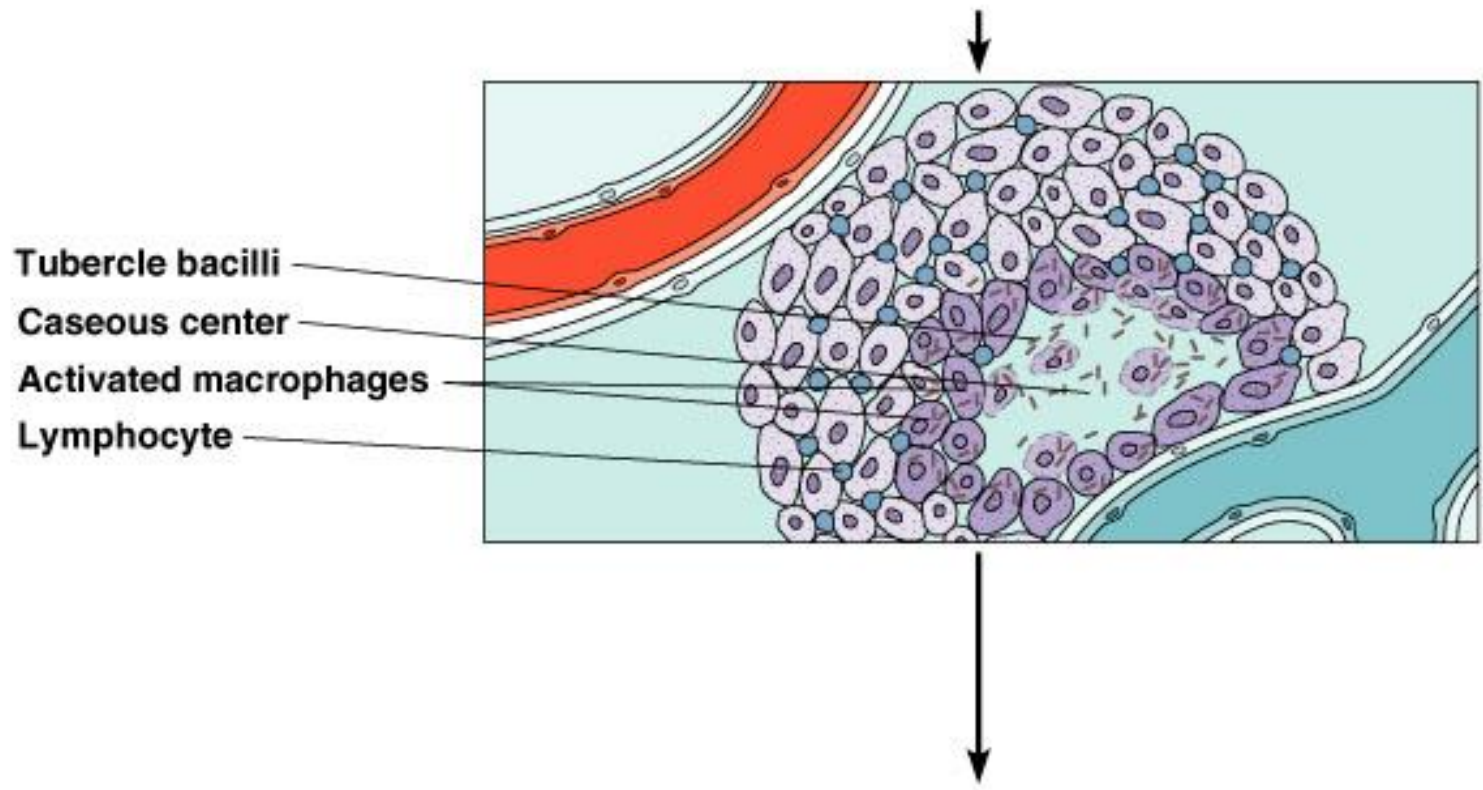
Mycobacterium tuberculosis-
Tuberculosis



Disease progression



Disease progression

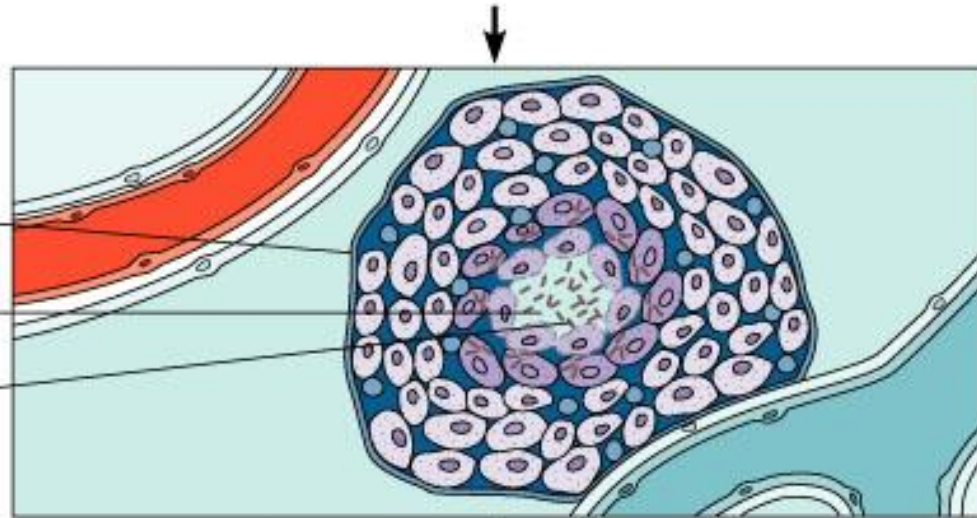


Disease progression

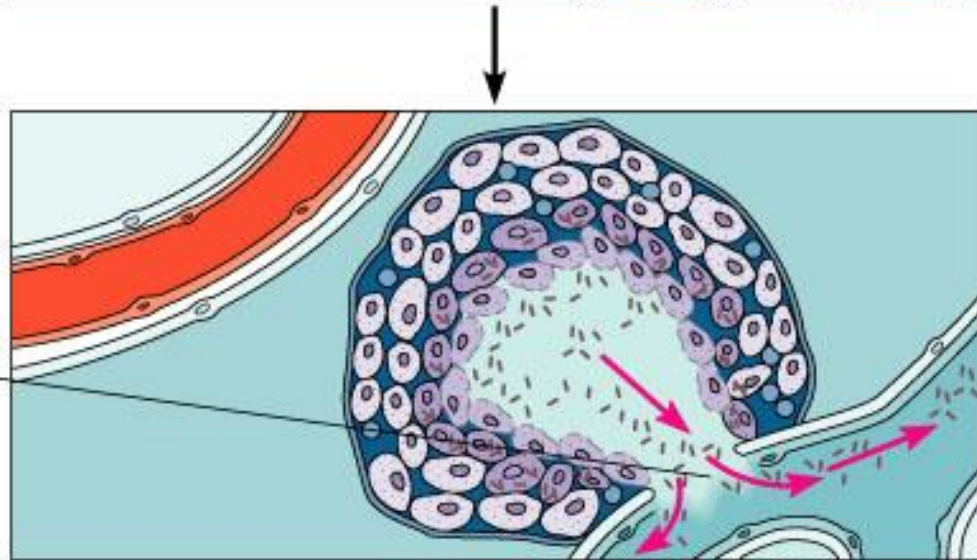
Outer layer of mature
tubercle

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

