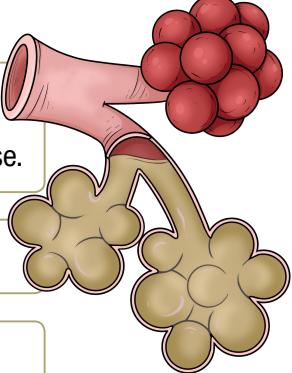
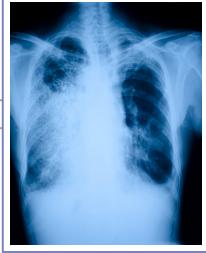


TOPIC: MICROBIAL INFECTIONS – RESPIRATORY SYSTEM

Introduction to Pneumonia

- ◆ Pneumonia: inflammation of lungs with _____ in the alveoli and bronchioles.

CAUSE	Bacteria, _____, fungi, protozoa. ► _____ are bacterial; pneumococcal pneumonia most common bacterial cause.	
SYMPTOMS	Shortness of breath, _____, fever, chest pain, fatigue.	
AT RISK	One of leading causes of _____ in the US.: esp. children, _____, immune compromised. ► Alveoli usually well protected: ciliary escalator; _____ macrophages. ► Pneumonia often follows _____ disease. - Weakened _____ system, inflamed lungs, etc.	
DIAGNOSIS	Can be diagnosed using a chest _____. ► Specific type requires _____ testing.	

PRACTICE

What do all pneumonias have in common?

- a) Presence of tubercles in the lungs.
- b) Blood in the sputum.
- c) Infection leading to inflammation and fluid in the alveoli.
- d) Presence of cord factor in the cell wall.

TOPIC: MICROBIAL INFECTIONS – RESPIRATORY SYSTEM

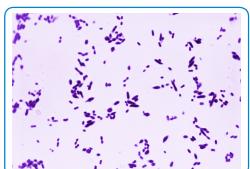
Pneumococcal Pneumonia



Pneumococcal Pneumonia

Bacterial

GRAM _____
SHAPE: Pairs of _____ (diplococci).

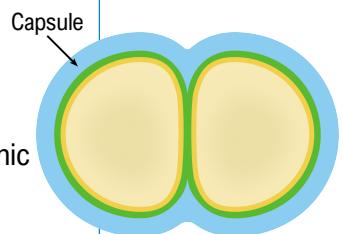


(Arnold Kaufman/ CDC)

CAUSE

Streptococcus pneumoniae (*S. pneumoniae*).

- ◆ Polysaccharide capsule → prevents phagocytosis & _____ virulence.
- ◆ Bacteria are relatively common in _____ carriers.
- ◆ Disease is most common in children, _____, & people with chronic disease.



SPREAD

Direct or indirect transmission → _____ droplets.

SYMPTOMS

_____ progression:

- ◆ **Consolidation:** fluid accumulation in the _____.
- ◆ Fever.
- ◆ Difficulty breathing.
- ◆ Chest pain.
- ◆ _____-colored sputum.

DIAGNOSIS

- ◆ Sputum _____ with staining plus culture, or urine _____ test.
- ◆ Chest _____ diagnoses pneumonia more generally.

TREATMENT

Penicillin or cephalosporins initially; _____ is now common.

- ◆ Beta-lactams, macrolides, & fluoroquinolone.

IMMUNITY

Pneumococcal vaccines recommended for _____ and elderly.

PRACTICE

A sputum smear can often correctly diagnose pneumococcal pneumonia on its own. What characteristic would a technician look for in the sputum to diagnose pneumococcal pneumonia?

- a) Blood in the sputum.
- b) Small tubercles with cheese-like interior.
- c) Chains of rod-shaped bacteria.
- d) Ovoid bacteria that often occur in chains of 2 cocci.

PRACTICE

Which feature of *S. pneumoniae* is required for the increased virulence of certain strains?

- a) Presence of cord factor.
- b) Polysaccharide capsule.
- c) Presence of hemagglutinin spikes.
- d) Lancefield group A carbohydrate.