

# LEGEND

past papers+ kenhub

**SECOND WEEK  
RESPIRATORY SYSTEM - MID**

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# TRACHEA

At which vertebral level does the trachea bifurcate?

**A** Bodies of vertebrae T1-T3

**B** Vertebra T4

**C** Vertebra T6

**D** Bodies of vertebrae C5-C7

**E** Vertebra T2

Which of the following structures is a ridge at the bifurcation point of the right and left main bronchi?

**A** Anterior atlantoaxial membrane

**B** Carina of trachea

**C** Anular ligaments of trachea

**D** Arytenoid cartilage

At which level is the carina of the trachea (carina tracheae) usually found?

**A** Vertebra T1

**B** Vertebra T3

**C** Vertebra C7

**D** Vertebra T5

**E** Vertebra T10

Which of the following structures extend between the cartilaginous rings of the trachea and provide it with the optimal mixture of rigidity and flexibility??

**A** Anular ligaments of trachea

**B** Carina of trachea

**C** Membranous wall of trachea

**D** Cricotracheal ligament

**E** Arytenoid cartilage

# LUNG

Which structure is situated at the lowest part of the lung hilum (hilum pulmonis)?

**A** Right main bronchus

**B** Right pulmonary artery

**C** Bronchial artery

**D** Left pulmonary artery

**E** Pulmonary veins

Which arteries are responsible for providing the lungs with deoxygenated blood?

**A** Left pulmonary artery

**B** Bronchial artery

**C** Posterior intercostal artery

**D** Right pulmonary artery

**A ,E , (A&D)**

Which structure divides the upper and inferior lobes of the left lung?

- A** Hilum of left lung
- B** Apex of left lung
- C** Lingula of left lung
- D** Left pulmonary ligament
- E** Oblique fissure of left lung

Which of the following structures covers the surface of the lung and its fissures?

- A** Costal part of parietal pleura
- B** Diaphragmatic part of parietal pleura
- C** Mediastinal part of parietal pleura
- D** Cervical part of parietal pleura
- E** Visceral pleura of lung

Which of the following structures is a narrow fold that extends inferiorly from the lung root (hilum pulmonis)?

- A** Pulmonary trunk
- B** Apex of lung
- C** Lingula of left lung
- D** Pulmonary valve
- E** Pulmonary ligament

2-3 cm above which structures does the pulmonary apex (apex pulmonis) protrude cranially?

**A** 2nd rib

**B** Clavicle

**C** Vertebra C6

**D** Vertebra C7

**E** 1st rib

Until the level of which structure does the oblique fissure of the left lung extend inferiorly?

**A** Costal cartilage of 6th rib

**B** Vertebra T2

**C** Vertebra T6

**D** Vertebra T4

**E** Costal cartilage of 2nd rib

# Pleura

The Best Site for drainage the pleural effusion is one of the following:

- A) Fifth intercostal space med axillary line
- B) Seventh intercostal space med axillary line
- C) Ninth intercostal space med axillary line
- D) Fifth intercostal space med clavicular
- E) Tenth intercostal space posteriorly

The nerve supply of the mediastinal pleura is one of the following:

- A) Cervical spinal nerve
- B) Intercostal nerve
- C) Phrenic nerve
- D) Vagus narve
- E) Axillary nerve

The Best Site for drainage the pleural effusion is one of the following:

- A) med axillary line , inferior aspect of the rib
- B) med clavicular , inferior aspect of the rib
- C) med axillary line , superior aspect of the rib
- D) med clavicular , superior aspect of the rib
- E) Tenth intercostal space posteriorly , superior aspect of the rib

Which of the following conditions involves the accumulation of air in the pleural cavity?

- a. Pneumothorax
- b. Pleural effusion
- c. Empyema
- d. Hemothorax

**Which part of the pleura covers the mediastinal surface of the lung?**

- a. Mediastinal pleura**
- b. Cervical pleura**
- c. Diaphragmatic pleura**
- d. Costal pleura**

**In emergency situations, caution is needed to avoid pleural puncture when inserting a cannula into which vein?**

- a. Jugular vein**
- b. Subclavian vein**
- c. Femoral vein**
- d. Brachial vein**

**What is the anterior border of the pleura?**

- a. Apex → sternoclavicular joint → angle of Louis → 8th costal cartilage**
- b. Apex → sternoclavicular joint → angle of Louis → 6th costal cartilage**
- c. Apex → sternoclavicular joint → angle of Louis → 7th costal cartilage**
- d. Apex → sternoclavicular joint → angle of Louis → 5th costal cartilage**

**How does the posterior border of the pleura differ from the lungs' border?**

- a. It ascends up by two spaces (T12)**
- b. It descends down by two spaces (T12)**
- c. It ascends up by one space (T11)**
- d. It descends down by one space (T11)**

**What happens to the visceral pleura in the lungs?**

- a. It extends into the fissures that divide the lungs into lobes.**
- b. It contracts and expands during respiratory movements.**
- c. It blends with the suprapleural membrane.**
- d. It protects the cervical pleura and lung.**

**What structure does the suprapleural membrane blend with medially?**

- a. Costal cartilage**
- b. Sibson's fascia**
- c. Transverse process of the 7th cervical vertebra**
- d. Pleural cavity**

**Which of the following statements is true about the costodiaphragmatic recess?**

- a. It is a reflection of the costal and diaphragmatic pleurae.**
- b. Inflation of the lungs leads to the expansion of the recess upwards.**
- c. It is the most important recess and cannot be filled with fluid.**
- d. It can be approximated by a line running between the 6th rib, the 8th rib, and the 10th thoracic vertebra.**

**The needle is inserted in the lower border of the space, or at the upper border of the rib to avoid injuring the intercostal nerve, veins, and arteries.**

- a. T**
- b. F**



**Which of the following is true about the visceral nerve supply of the pleura?**

- a. Sensitive to pain, temperature, and touch**
- b. Innervated by intercostal nerves**
- c. Motor to the diaphragm**
- d. Insensitive to pain, temperature, and touch**

**Which nerve innervates both the mediastinal pleura and the diaphragmatic pleura?**

- a. Phrenic nerve**
- b. Trigeminal nerve**
- c. Vagus nerve**
- d. Brachial plexus**

**Where does the venous drainage of the pleura ultimately drain into?**

- a. Superior vena cava**
- b. Pulmonary veins**
- c. Azygous vein**
- d. Inferior vena cava**

**Which of the following nodes is NOT part of the lymphatic drainage of the parietal pleura?**

- a. Tracheobronchial nodes**
- b. Mediastinal nodes**
- c. Intercostal nodes**
- d. Parasternal nodes**

**What is the arterial supply of the visceral pleura?**

- a. Intercostal arteries**
- b. Musculophrenic artery**
- c. Bronchial arteries**
- d. Descending thoracic aorta**

# diaphragm

Which blood vessels passes through the aortic hiatus of the diaphragm (diaphragma)?

**A** Ascending aorta

**B** Descending thoracic aorta

**C** Inferior vena cava

**D** Aortic arch

**E** Abdominal aorta

A 51-year-old man reports constant troubles with swallowing and heartburns. After performing a specialized X-ray (using barium swallow), the doctor diagnoses a hiatal hernia. Through which of the following structures does the stomach herniate into the posterior mediastinum in this condition?

**A** Caval foramen

**B** Esophageal hiatus

**C** Aortic hiatus

**D** Foramen magnum

Which vascular structure passes through the diaphragm at the caval hiatus at the T8 level?

**A** Inferior vena cava

**B** Hepatic portal vein

**C** Superior vena cava

**D** Azygos vein

**B , B , A**

# microbiology

## Lecture :1

-Which of the following statements concerning antigenic drift in influenza viruses is

**Correct?**

- a- It results in major antigenic change
- b- It is exhibited only by influenza A viruses
- c- It is caused by frameshift mutations in viral genes
- d- It results in new subtypes over time**
- e- It affects predominantly the matrix protein

-Highly pathogenic H5N1 avian influenza HPAI can infect humans with a high mortality rate,

but it has not yet resulted in pandemic. The following are characteristics of HPAI, except for

**one. Which one is not?**

- a- Efficient human-to-human transmission**
- b- Presence of avian influenza genes
- c- Efficient infection of domestic poultry
- d- Contains segmented RNA genome
- e- Both high pathogenicity and low pathogenicity avian influenza viruses can cause disease in human beings

- **Wrong about genetic assortment:**

- a- It is happened in Influenza A virus**
- b- Leads to Antigenic drift.

-**A patient with egg allergy and should not be given influenza vaccine, to protect them from**

**Influenza A and B you can use:**

**Answer: Oseltamivir or zanamivir**

**This of the following statements regarding the prevention and treatment of influenza is correct?**

a- Booster doses of vaccine are not recommended.

b- Drugs that inhibit neuraminidase are active only against influenza A.

c- As with some other live vaccines, the attenuated influenza vaccine should not be given to pregnant women.

**d- The influenza vaccine contains several serotypes of virus.**

e- The virus strains in the influenza vaccine do not vary from year to year.

**- Which of the following symptoms is not typical of influenza?**

a- Fever

b- Muscular aches

c- Malaise

d- Dry cough

**e- Rash**

**-Which of the following infectious agents is most likely to cause a pandemic?**

**a- Influenza A virus**

b- Streptococcus pyogenes

c- Influenza B virus

d- Respiratory syncytial virus

e- Influenza C virus

**-the live attenuated vaccine of influenza virus is administered:**

a- Orally

B-Deep Intramuscular

C-Intravenous

**D-Intranasal (Ans)**

E-Subcutaneous

**-which of the following about influenza is incorrect**

a-The antigenic variations occur only in type A due to its wide host range.

B-Worldwide epidemics are caused by type A influenza.

**C-Antigenic drift is caused from a mutation in ribonucleoprotein.**

D-Antigenic shift, a major change that result from reassortment of viral genome.

E-Antigenic drift happens in both hemagglutinin and neuraminidase

**Outbreak of pneumonia takes place in nursing home, and can be treated with zanamivir and adamantine effectively, the most likely pathogen is?**

- A. Influenza A**
- B. Influenza B
- c. Legionella pneumophelia
- D. Metapneumo

## **Lecture: 2**

**-All the following are true about S. pyogenes except:**

- a- Can't be diagnosed by smear**
- b- Available vaccine against its capsule**
- c- Treated by penicillin with no resistance**
- d- The capsule is an important virulence factor**

**Answer: B**

**- Which of the following sentences is wrong:**

- a- Antibiotics prevent glomerulonephritis and rheumatic fever .**
- b- Strep. pyogenes is Bacitracin sensitive.**
- c- Untreated pharyngitis may results in otitis media.**
- d- People who are infected by GAS and develop later on AGN , will not develop this again if they're reinjected again by GAS .**

**Answer: A**

**-All of the following are associated with Group A streptococci EXCEPT:**

- a- Necrotizing fasciitis.**
- b- Impetigo**
- c- Neonatal sepsis.**
- d- Erysipelas**
- e- Cellulitis.**

**Answer: C**

**-A boy present to the ER with strawberry tongue, rash on the chest and fever, his mother noticed whitish exudate on his tonsils 3 days ago, the causative microorganism ?**

- a- Strep. Agalactiae**
- b- Strep. pyogenes**
- c- Strep. Bovis**

**Answer: B**

**-primary mechanism responsible for the pathogenesis of AGN?**

**a- A net increase in intracellular cyclic adenosine monophosphate**

**b- Action of M protein**

**c- Action of IgA1 protease**

**d- Action of enterotoxin A**

**e- Inactivation of elongation factor 2**

**Answer: B**

**-male patient presents with skin rash and red tongue, which describes the causative**

**agent?**

**a- Gram +,  $\alpha$  hemolytic, catalase -**

**b- Gram +,  $\beta$  hemolytic, catalase -**

**c- Gram -,  $\beta$  hemolytic, catalase +**

**d- Gram-,  $\alpha$  hemolytic, catalase +**

**e- Gram +,  $\gamma$  hemolytic, catalase +**

**Answer: B**

**-An 8-year-old boy develops a severe sore throat. On examination, a grayishwhite exudate is seen on the tonsils and pharynx.**

**The differential diagnosis includes group A streptococcal infection, Epstein-Barr virus infection, severe adenovirus infection, and diphtheria. (Neisseria gonorrhoeae pharyngitis would also be included, but the patient has not been sexually abused.) The cause of the boy's pharyngitis is most likely**

**(A) A catalase-negative Gram-positive coccus that grows in chains**

**(B) A single-stranded positive-sense RNA virus**

**(C) A catalase-positive Gram-positive coccus that grows in clusters**

**(D) A catalase-negative Gram-positive bacillus**

**(E) A double-stranded RNA virus**

**Answer : A**

### Lecture: 3

**-An 18-month-old boy has been playing with a child who develops Hemophilus influenza meningitis. The boy's parents consult his pediatrician, who says she is comfortable that the child will be fine because he has been fully immunized with the polyribitol ribose phosphate (PRP)-protein conjugate vaccine. For what reason is it necessary to immunize infants of 2 months to 2 years of age with polysaccharide-protein conjugate vaccines?**

A) The conjugate protein is diphtheria toxoid, and the goal is for the infant to develop simultaneous immunity to diphtheria.

**B) Infants 2 months to 2 years of age do not immunologically respond to polysaccharide vaccines that are not conjugated to a protein.**

C) The conjugate vaccine is designed for older children and adults as well as infants.

D) Maternal (trans placental) antibodies against Hemophilus influenza are gone from the infant's circulation by 2 months of age.

E) None of the above.

**-Lobar pneumonia with epiglottitis (patient leaning forward raising his head up), which of the following is component of vaccine used against the causative agent?**

**A. Polyribitol phosphate plus toxoid**

B. Capsular polysaccharide

C. Live-attenuated

**-a bacterium which is alpha hemolytic, optochin sensitive, bile soluble, which of the following is considered of its virulence factors?**

**A. Capsule and pneumolysin**

B. M protein

C. Filamentous hemagglutinin and pertactin

D. Adenylate cyclase

**-Which of the following is optochin sensitive?**

**A. Strep. Pneumonia**

B. Strep. Pyogenes

C. Strep. Viridans

D. Staph. Aureus

E. Strep. Agalactiae

**-A 3-year-old child develops Hemophilus influenza meningitis. Therapy is begun with cefotaxime. Why is this third-generation cephalosporin used rather than ampicillin?**

a- About 80% of Hemophilus influenza organisms have modified penicillin-binding proteins that confer resistance to ampicillin.

b- The drug of choice, trimethoprim-sulfamethoxazole, cannot be used because the child is allergic to sulfonamides.

c- It is easier to administer intravenous cefotaxime than intravenous ampicillin.

d- There is concern that the child will rapidly develop a penicillin (ampicillin) allergy.

**e- About 20% of Hemophilus influenza organisms have a plasmid that encodes or  $\beta$ -lactamase**

**-A 13-valent capsular polysaccharide protein conjugates vaccine for pneumococcal infections is recommended for:**

a- For children up to age 18 years and for selected adults

b- Only on exposure to a patient with disease caused by the organism

**c- For all children ages 2-60 months plus selected older children and adults with immunocompromising conditions**

d- For children ages 24-72 months

e- For all age groups older than age 2 months

**-The pathogenesis of the organism causing the infection (in the previous question) includes which of the following?**

a- Invasion of cells lining the alveoli and entry into the pulmonary venous circulation

b- Resistance to phagocytosis mediated by M proteins

c- Migration to mediastinal lymph nodes where hemorrhage occurs

d- Lysis of the phagocytic vacuole and release into the circulation

**e- Inhibition of phagocytosis by a polysaccharide capsule**



**A 48-year-old alcoholic man is admitted to a hospital because of stupor. He is unkempt and homeless and lives in an encampment with other homeless people, who called the authorities when he could not be easily aroused. His temperature is 38.5°C, and his blood pressure 125/80 mm Hg. He moans when attempts are made to arouse him. He has positive Kerning and Brzezinski signs, suggesting meningeal irritation. Physical examination and chest radiography show evidence of left lower lobe lung consolidation. An endotracheal aspirate yields rust-colored sputum. Examination of a Gram-stained sputum smear shows numerous polymorph nuclear cells and numerous gram-positive lancet-shaped diplococci. On lumbar puncture, the cerebrospinal fluid is cloudy and has a white blood cell count of 570/ $\mu$ L with 95% polymorph nuclear cells; Gram stain shows numerous gram-positive diplococci. Based on this information, the likely diagnosis is:**

- a- Pneumonia and meningitis caused by *Staphylococcus aureus*
- b- Pneumonia and meningitis caused by *Streptococcus pyogenes*
- c- Pneumonia and meningitis caused by *Streptococcus pneumoniae***
- d- Pneumonia and meningitis caused by *Enterococcus faecalis*
- e- Pneumonia and meningitis caused by *Neisseria meningitidis*

**The patient in the previous question is started on antibiotic therapy to cover many possible microorganisms. Subsequently, culture of sputum and cerebrospinal fluid yields gram-positive diplococci with a minimum inhibitory concentration to penicillin G of greater than 2  $\mu$ g/mL . The drug of choice for this patient until further susceptibility testing can be done is:**

- a- Penicillin G
- b- Nafcillin
- c- Trimethoprim–sulfamethoxazole
- d- Gentamicin
- e- Vancomycin**

**-- This infection of the patient in the previous question might have been prevented by ?**

- a- Prophylactic intramuscular benzathine penicillin every 3 weeks
- b- A 23-valent capsular polysaccharide vaccine**
- c- A vaccine against serogroups A, C, Y, and W135 capsular polysaccharide
- d- A vaccine of polyribosylribitol capsular polysaccharide covalently linked to a protein
- e- Oral penicillin twice daily

## Lecture 4

**-In which stage of pertussis is the characteristic whooping sound made?**

a- convalescence

b- catarrhal

**c- Paroxysmal**

d- Prodromal

e- None of the above

**--All of the following statements regarding acellular pertussis vaccines are correct except?**

a- All formulations of the vaccine contain at least two antigens.

b- The acellular vaccine has replaced the whole cell vaccine in the childhood vaccine series.

c- All children should receive five doses of the vaccine before school entry.

**d- The vaccine is approved only for young children and adolescents.**

e- The vaccine is safer than and as immunogenic as whole cell vaccines.

**--An 8-year-old boy, who recently arrived in the United States, develops a severe sore throat. On examination, a greyish exudate is seen over the tonsils and pharynx with oral membrane that bleeds profusely when touching it, he also has lymphadenopathy The cause of the boy's pharyngitis is most likely:**

a- Gram negative aerobic non encapsulated bacteria

b- Gram positive anaerobic encapsulated bacteria

c- Gram negative anaerobic encapsulated bacteria

**d- Gram positive aerobic non encapsulated bacteria**

**--how diphtheria becomes toxigenic?**

**Answer: by a Beta bacteriophage (lysogenic conversion)**

-An 8-year-old boy develops a severe sore throat. On examination, a grayishwhite exudate is seen on the tonsils and pharynx .The differential diagnosis includes group A streptococcal infection, Epstein-Barr virus infection, severe adenovirus infection, and diphtheria. (Neisseria gonorrhoeae pharyngitis would also be included, but the patient has not been sexually abused.) The cause of the boy's pharyngitis is most likely?

**(A) A catalase-negative Gram-positive coccus that grows in chains**

(B) A single-stranded positive-sense RNA virus

(C) A catalase-positive Gram-positive coccus that grows in clusters

(D) A catalase-negative Gram-positive bacillus

(E) A double-stranded RNA virus

- An 8-year-old boy, who recently arrived in the United States, develops a severe sore throat. On examination, a grayish exudate (pseudo membrane) is seen over the tonsils and pharynx. The differential diagnosis of severe pharyngitis such as this includes group A streptococcal infection, Epstein-Barr virus (EBV) infection, Neisseria gonorrhoeae pharyngitis, and diphtheria. The cause of the boy's pharyngitis is most likely:

(A) A Gram-negative bacillus

(B) A single-stranded positive-sense RNA virus

(C) A catalase-positive, Gram-positive coccus that grows in clusters

**(D) A club-shaped Gram-positive bacillus**

(E) A double-stranded RNA virus

- The primary mechanism in the pathogenesis of the boy's disease in previous Question is

(A) A net increase in intracellular cyclic adenosine monophosphate

(B) Action of pyrogenic exotoxin (a super antigen)

(C) Inactivation of acetylcholine esterase

(D) Action of enterotoxin A

**(E) Inactivation of elongation factor 2**

**- All of the following statements regarding acellular pertussis vaccines are correct except**

- (A) All formulations of the vaccine contain at least two antigens.
- (B) The acellular vaccine has replaced the whole cell vaccine in the childhood vaccine series.
- (C) All children should receive five doses of the vaccine before school entry.
- (D) The vaccine is approved only for young children and adolescents.**
- (E) The vaccine is safer than and as immunogenic as wholecell vaccines

**- A 3-month-old infant is brought to the pediatric emergency department in severe respiratory distress. The child appears dehydrated, and there is a prominent peripheral lymphocytosis. The chest radiograph reveals perihilar infiltrates. The child's grandmother, who watches the infant now that the mother has returned to work, has had a dry hacking cough for about 2 weeks.**

**The most likely causative agent is**

- (A) H. influenza type b
- (B) B. pertussis**
- (C) Streptococcus agalactiae
- (D) C. pneumoniae5
- (E) B. bronchiseptica

**--the factor responsible for the profound lymphocytosis in ( B. pertussis) is?**

- (A) A hemagglutinin
- (B) A polysaccharide capsule
- (C) An A/B structured toxin**
- (D) A heat-labile toxin
- (E) A neuraminidase

**- All of the following cause zoonotic infections except?**

- (A) F. tularensis
- (B) B. melitensis
- (C) B. pertussis**
- (D) Bacillus anthracis
- (E) Leptospira interrogans

**- Which of the following is not a recognized virulence factor of B. pertussis?**

- (A) Heat-labile toxin**
- (B) Filamentous hemagglutinin
- (C) Tracheal cytotoxic
- (D) Pertussis toxin
- (E) Dermonecrotic toxin

## Lecture5

--Which of the following statements regarding interferon- release assays (IGRAs) is correct?

- a- They are useful for evaluating immunocompromised patients for active Tuberculosis.
- b- they detect antigens present in all Mycobacterium species.
- c- They are not available yet for testing in the hospitals.
- d- They are performed using molecular probes that detect organism DNA.
- e- They are used as alternatives to the tuberculin skin test to evaluate for latent tuberculosis.**

-- The definition of extensively drug-resistant (XDR) tuberculosis includes?

- a- Resistance to isoniazid
- b- Resistance to a fluoroquinolone
- c- Resistance to capreomycin, amikacin or kanamycin
- d- Resistance to rifampin
- e- All the above**

--A homeless, malnourished chronic alcoholic presents with severe headache and dyspnea. Physical examination reveals a disheveled man with poor hygiene. His temperature is 41.0 C (105.8 F), blood pressure is 110/78 mm Hg, and pulse is 96/minute and regular .Auscultation of the chest reveals absence of breath sounds over the left middle lung fields. A chest x- ray confirms left lobar pneumonia. Sputum stain reveals partially acid-fast bacilli with branching rods. Which of the following agents is the most likely cause?

- A. Mycobacterium avium-intracellulare
- B. Mycobacterium kansasii
- C. Mycobacterium leprae
- d. Mycobacterium tuberculosis

**E. Nocardia asteroides**

--what is the role of the trehalose dimycolate (cord factor) in mycobacterial cell wall?

- A. Responsible for inhibiting phagolysosome formation
- B. Serpentine growth**

-- A 60-year-old man has a 5-month history of progressive weakness and a weight loss of 13 kg along with intermittent fever, chills, and a chronic cough productive of yellow sputum, occasionally streaked with blood. A sputum specimen is obtained, and numerous acid-fast bacteria are seen on the smear. Culture of the sputum is positive for *M. tuberculosis*. Which treatment regimen is most appropriate for initial therapy?

- (A) Isoniazid and rifampin
- (B) Sulfamethoxazole–trimethoprim and streptomycin
- (C) Isoniazid, rifampin, pyrazinamide, and ethambutol**
- (D) Isoniazid, cycloserine, and ciprofloxacin
- (E) Rifampin and streptomycin

--If the patient's *M. tuberculosis* isolate proves to be resistant to isoniazid, the likely mechanism for resistance is?

- (A)  $\beta$ -Lactamase
- (B) Mutations in the catalase-peroxidase gene**
- (C) Alterations in the  $\beta$  subunit of RNA polymerase
- (D) Mutations in the DNA gyrase gene
- (E) Mutations in the genes encoding the S12 protein and 16S rRNA

-- A 47-year-old woman presents with a 3-month history of progressive cough, weight loss, and fever. Chest radiography shows bilateral cavitory disease suggestive of tuberculosis. Sputum culture grows an acid-fast bacillus that is a photochromogenic (makes an orange pigment when exposed to light). The organism most likely is?

- (A) *M. tuberculosis*
- (B) *M. kansasii***
- (C) *M. gordonae*
- (D) *M. avium* complex
- (E) *M. fortuitum*

-- A 31-year-old Asian woman is admitted to the hospital with a 7-week history of increasing malaise, myalgia, nonproductive cough, and shortness of breath. She has daily fevers of 38–39°C and a recent 5-kg weight loss. She had a negative chest radiograph when she entered the United States 7 years ago. The patient's grandmother died of tuberculosis when the patient was an infant. A current chest radiograph is normal; results of other tests show a decreased hematocrit and liver function test abnormalities. Liver and bone marrow biopsies show granulomas with giant cells and acid-fast bacilli. She is probably infected with

- (A) *M. leprae*
- (B) *M. fortuitum*
- (C) *M. ulcerans*
- (D) *M. gordonae*
- (E) *M. tuberculosis***

**--It is very important that the patient with acid-fast bacilli also be evaluated for**

**(A) HIV/AIDS**

(B) Typhoid fever

(C) Liver abscess

(D) Lymphoma

(E) Malaria

**-- Of concern regarding the patient with acid-fast bacilli is that she could be infected with a Mycobacterium that is**

(A) Susceptible only to isoniazid

(B) Resistant to streptomycin

(C) Resistant to clarithromycin

(D) Susceptible only to ciprofloxacin

**(E) Resistant to isoniazid and rifampin**

**--Which of the following statements about the purified protein derivative (PPD) and the tuberculin skin test is most correct?**

(A) It is strongly recommended that medical and other health science students have PPD skin

tests every 5 years.

(B) Persons immunized with BCG rarely, if ever, convert to positive PPD skin test results.

(C) The intradermal skin test is usually read 4 hours after being applied.

**(D) A positive tuberculin test result indicates that an individual has been infected with M. tuberculosis in the past and may continue to carry viable mycobacteria.**

(E) A positive PPD skin test result implies that a person is immune to active tuberculosis.

**--A 72-year-old woman has an artificial hip joint placed because of degenerative joint disease. One week after the procedure, she has fever and joint pain. The hip is aspirated, and the fluid is submitted for routine culture and for culture for acid-fast organisms. After 2 days of incubation, there is no growth on any of the media. After 4 days, however, bacilli are seen growing on the sheep blood agar plate, and similar-appearing acidfast bacilli are growing on the culture for acidfast bacteria. The patient is most likely infected with**

(A) *M. tuberculosis*

**(B) *M. chelonae***

(C) *M. leprae*

(D) *M. kansasii*

(E) *M. avium* complex

**--- A 10-year-old child has a primary pulmonary *M. tuberculosis* infection. Which of the following features of tuberculosis is most correct?**

**(A) In primary tuberculosis, an active exudative lesion develops and rapidly spreads to lymphatics and regional lymph nodes.**

(B) The exudative lesion of primary tuberculosis often heals slowly.

(C) If tuberculosis develops years later, it is a result of another exposure to *M. tuberculosis*.

(D) In primary tuberculosis, all of the infecting *M. tuberculosis* organisms are killed by the patient's immune response.

(E) In primary tuberculosis, the immune system is primed, but the PPD skin test result remains negative until there is a second exposure to *M. tuberculosis*.

**-- All of the following organisms are rapidly growing mycobacteria except**

(A) *M. fortuitum*

(B) *M. abscessus*

(C) *M. mucogenicum*

**(D) *M. nonchromogenicum***

(E) *M. chelonae*



## Lecture: 6

--Humans become infected with *Legionella pneumophila* by one of the following?

- a- Kissing a person who is a legionella carrier
- b- Breathing aerosols from environmental water sources**
- c- Receiving a mosquito bite
- d- Consuming undercooked pork
- e- All the above

--*Mycoplasma pneumoniae* is considered. All of the following are methods to confirm the clinical suspicion except?

- a- PCR amplification of *Mycoplasma pneumoniae* DNA in sputum
- b- Culture of sputum for *Mycoplasma pneumoniae*
- c- Gram stain of sputum smear**
- d- Culture of a lung aspirate for *Mycoplasma pneumoniae*
- e- Enzyme immunoassay test of acute and convalescent sera

--A 13-year-old boy develops infection with *Mycoplasma pneumoniae*. What is the risk for infection in other members of his household?

- a- None; it is sexually transmitted
- b- 1–3%
- c- 10–15%
- d- 20–40%
- e- 50–90%**

--Pathogen endemic in Ohio (North America) and found in birdseeds is?

- A. *Histoplasma capsulatum***
- B. *Paracoccidioides Brasiliense*'s
- C. *Blastomyces dermatitis*'s
- D. *Coccidioides imcites*
- E. *Trichomonas*

**--which of the following about chlamydia pneumonia is most accurate?**

**A. It transmitted by person to person by respiratory droplets**

B. It has glycogen-rich intracytoplasmic stained by iodine stain.

C. It is composed of three strains, two that can cause systemic manifestation..

**--Which of the following is important in the pathogenesis of mycoplasmal infections?**

(A) The peptidoglycan in the mycoplasmal cell wall

(B) The presence of lacto-N-neotetraose with a terminal galactosamine as the host cell receptor

**(C) The structures and the interactive proteins that mediate adhesion to host cells**

(D) The absence of cilia on the surface of the host cells

(E) Growth in an anatomic site where anaerobic organisms thrive

**-- A 25-year-old medical student has contact with a patient who has pneumonia with fever and cough. Four days later, the medical student develops fever and cough, and chest radiographs show consolidation of the right lower lobe. Routine bacterial sputum culture results are negative. Pneumonia caused by M. pneumoniae is considered. All of the following are methods to confirm the clinical suspicion except**

(A) PCR amplification of M. pneumoniae DNA in sputum

(B) Culture of sputum for M. pneumoniae

10

**(C) Gram-stain of sputum smear**

(D) Culture of a lung aspirate for M. pneumoniae

(E) Enzyme immunoassay test of acute and convalescent ser

**- Which type of test is most readily used to obtain laboratory confirmation of *M. pneumoniae* infection?**

(A) Culture in broth containing serum, glucose, and a penicillin (to inhibit other flora)

(B) PCR

(C) Electron microscopy

**(D) EIA tests on acute and convalescent phase sera**

**-- Initiation of infection by *M. pneumoniae* begins with**

(A) Elaboration of a polysaccharide capsule that inhibits phagocytosis

(B) Secretion of a potent exotoxin

(C) Endocytosis by ciliated respiratory epithelial cells

**(D) Adherence to respiratory epithelial cells mediated by P1 adhesin**

(E) Phagocytic uptake by alveolar macrophages

**-- As part of the control of *C. psittaci* and psittacosis in birds:**

(A) All psittacine birds imported into the United States are first vaccinated.

**(B) Psittacine birds hatched in the United States are preferred as pets.**

(C) All birds are tested for *C. psittaci* infection.

(D) The shipment of all birds between states is highly regulated.

(E) Psittacine birds are fed penicillin G prophylactically.

**--Perinatal *C. trachomatis* infections frequently manifest as:**

(A) urogenital disease.

(B) necrotic pneumonia.

**(C) inclusion conjunctivitis.**

(D) a pustular rash.

(E) endophthalmitis

**-- Which of following statements about trachoma is most accurate?**

- (A) It follows an acute eye infection with *C. trachomatis*.
- (B) Millions of people in the United States have trachoma.
- (C) There is no chlamydial vaccine to prevent trachoma.**
- (D) Progression of trachoma is accelerated by intermittent treatment with azithromycin.
- (E) Trachoma involves direct damage to corneal epithelium

**-- Which of the following is not effective in the elimination of blinding trachoma?**

- (A) Periodic administration of azithromycin
- (B) Face washing and hygiene
- (C) Periodic culture screening of conjunctiva swab specimens for *C. trachomatis***
- (D) Environment improvements to sewage systems to decrease the number of flies
- (E) Surgery on deformed eyelids

**--Which one of the following statements about *C. pneumoniae* is most correct?**

- (A) Transmission from person to person is by the airborne route.**
- (B) It makes glycogen-rich inclusions that stain with iodine.
- (C) There are multiple serovars, including three that cause a systemic illness.
- (D) They are resistant to macrolides.
- (E) The reservoir is house cats

**-- *C. pneumoniae* pneumonia most resembles infection caused which of the following organisms?**

- (A) *Streptococcus pneumoniae*
- (B) *Mycoplasma pneumoniae***
- (C) *Haemophilus influenzae*
- (D) *C. trachomatis*
- (E) Rhinovirus

**-- Inclusion conjunctivitis of the newborn**

**(A) Is a mucopurulent conjunctivitis that occurs 7–12 days after delivery**

(B) Is caused by *C. psittaci*

(C) Is a result of exposure to pet birds in the home

(D) Is treated with systemic penicillin because it may progress to pneumonia

(E) None of the above

**-- The diagnostic method of choice for *C. trachomatis* pneumonia in the newborn is**

(A) A nucleic acid amplification test that targets the *ompA* gene

**(B) Culture of respiratory secretions in McCoy cells or other cell lines**

(C) Enzyme immunoassay testing of respiratory secretions

(D) IgG antibodies detected by complement fixation

**-- Humans become infected with *L. pneumophila* by**

(A) Kissing a person who is a legionella carrier

**(B) Breathing aerosols from environmental water sources**

(C) Receiving a mosquito bite

(D) Consuming undercooked pork

**-- A 70-year-old man presents with bilateral pneumonia. His Legionella urinary antigen test result is positive. Which of the following is the likely cause of his pneumonia?**

**(A) *L. pneumophila* serogroup 1**

(B) *L. micdadei* serogroup 4

(C) *Legionella bozemanii* serogroup 2

(D) *L. longbeachae* serogroup 2

(E) All of the above because the urinary antigen test is genus specific and not species or serotype specific

-- A 65-year-old man comes to the emergency department feeling feverish and “really tired.” He has a chronic cigarette cough, but this has dramatically increased in the past week and he has been producing whitish sputum. The previous day he had a temperature of 38°C and watery diarrhea. Physical examination reveals inspiratory and expiratory wheezes and rales over the right lower lung field. Chest radiography shows a patchy right lower lobe infiltrate. The differential diagnosis of this patient’s disease is

- (A) Streptococcus pneumoniae pneumonia
- (B) L. pneumophila pneumonia
- (C) Haemophilus influenzae pneumonia
- (D) Mycoplasma pneumoniae pneumonia
- (E) All of the above**

-- Routine sputum cultures for the patient in Question 45 grow normal microbiota. Treatment with ampicillin for 2 days yields no improvement. A diagnosis of Legionnaires’ disease is considered, and bronchoscopy is done to obtain bronchial alveolar lavage fluid and deep airway specimens. Which of the following would suggest a diagnosis of disease caused by L. pneumophila serotype 1?

- (A) Legionella urinary antigen assay
- (B) Direct fluorescent antibody on the bronchial alveolar lavage fluid
- (C) Culture of the bronchial alveolar lavage on charcoal yeast extract medium with antibiotics
- (D) Antibody assay on paired (acute phase and convalescent phase) sera
- (E) All of the above**

**--An important factor in the pathogenesis of Legionnaires' disease is that**

- (A) *L. pneumophila* kills polymorphonuclear cells.
- (B) Alveolar macrophages phagocytose *L. pneumophila* using coiled pseudopods**
- (C) *L. pneumophila* invades pulmonary capillaries, leading to dissemination and systemic illness.
- (D) *L. pneumophila* induces alveolar macrophage phagosomes to fuse with lysosomes.
- (E) *L. pneumophila* outer surface protein A (OspA) is important for invasion of alveolar macrophages

**--All of the statements below regarding infections with Legionella are correct except**

- (A) Hospitals that care for patients at risk for Legionella infections should know if their potable water systems contain Legionella.
- (B) Human-to-human transmission is the major mechanism of transmission of Legionella infection.**
- (C) Legionella species can be visualized with Gram-stain if carbolfuchsin is used for the counter stain.
- (D) The chest radiograph of a patient who has Legionella pneumonia is indistinguishable from that of patients with pneumonia caused by other pathogens.
- (E) A macrolide or quinolone are the drugs of first choice for treatment of Legionella infections.

**-- Which of the following best represents the role of the Mip protein in Legionella pathogenesis?**

- (A) It prevents phagosome-lysosome fusion.
- (B) It acts as a siderophore to capture iron.
- (C) It prevents phagocytosis.
- (D) It facilitates adherence to the macrophage and stimulates cellular invasion.**
- (E) None of the above

**-- Which one of the following pathogenic yeasts is not a common member of the normal human flora or microbiota?**

- (A) *C. tropicalis*
- (B) *M. globosa*
- (C) *C. neoformans***
- (D) *C. glabrata*
- (E) *C. albicans*

- A 47-year-old man with poorly controlled diabetes mellitus developed a bloody nasal discharge, facial edema, and necrosis of his nasal septum. Culture of his cloudy nasal secretions yielded *Rhizopus* species. What is the most important implication of this finding?

- (A) No diagnostic value because this mold is an airborne contaminant.
- (B) Consider treatment for rhinocerebral mucormycosis (zygomycosis).**
- (C) Strongly suggestive of ketoacidosis.
- (D) Strongly suggestive of HIV infection.
- (E) The patient has been exposed to indoor mold contamination.

- A 37-year-old man with AIDS, currently living in Indianapolis, Indiana, presented with osteomyelitis of the left hip. A needle biopsy of the bone marrow was obtained, and the calcofluor white smear revealed a variety of myelogenous cells, monocytes, and macrophages containing numerous intracellular yeast cells that were elliptical and approximately  $2 \times 4 \mu\text{m}$ . What is the most likely diagnosis?

- (A) Blastomycosis
- (B) Candidiasis
- (C) Cryptococcosis
- (D) Histoplasmosis**
- (E) No diagnostic significance

-- Which statement regarding aspergillosis is correct?

- (A) Patients with allergic bronchopulmonary aspergillosis rarely have eosinophilia.
- (B) Patients receiving parenteral corticosteroids are not at risk for invasive aspergillosis.
- (C) The diagnosis of pulmonary aspergillosis is frequently established by culturing *Aspergillus* from the sputum and blood.
- (D) The clinical manifestations of aspergillosis include local infections of the ear, cornea, nails, and sinuses.**
- (E) Bone marrow transplant recipients are not at risk for invasive aspergillosis



-- A 42-year-old HIV-positive male, originally from Vietnam but now residing in Tucson, Arizona, presents with a painful ulcerative lesion on his upper lip (cheilitis). A biopsy was obtained, and the histopathologic slide (hematoxylin and eosin stain) revealed spherical structures (20–50  $\mu\text{m}$  in diameter) with thick refractory cell walls.

**What is the likely disease consistent with this finding?**

(A) Infection with *T. marneffeii*

(B) Cryptococcosis

(C) Blastomycosis

**(D) Coccidioidomycosis**

(E) No diagnostic significance

-- A 24-year-old, HIV-negative migrant worker from Colombia presented with a painful ulcerative lesion on the tongue. The edge of the lesion was gently scraped and a calcofluor white– potassium hydroxide smear revealed tissue cells, debris, and several large, spherical, multiply budding yeast cells. Based on this observation, what is the most likely diagnosis?

(A) Blastomycosis

(B) Candidiasis

(C) Coccidioidomycosis

(D) Histoplasmosis

**(E) Paracoccidioidomycosis**

**56- Which statement about blastomycosis is correct?**

(A) Similar to other endemic mycoses, this infection occurs equally in men and women.

(B) Infection starts in the skin, and the organisms commonly disseminate to the lungs, bone, genitourinary tract, or other sites.

(C) The disease is endemic to certain areas of South America.

**(D) In tissue, one finds large, thick-walled, single budding yeast cells with broad connections between the parent yeast and bud.**

**- Which statement regarding paracoccidiomycosis is not correct?**

(A) The etiologic agent is a dimorphic fungus.

(B) Most patients acquired their infections in South America.

(C) Although the infection is acquired by inhalation and is initiated in the lungs, many patients develop cutaneous and mucocutaneous lesions.

(D) The vast majority of patients with active disease are males.

**(E) The etiologic agent is inherently resistant to amphotericin**

**B**

**--Mechanism of action of toxin for bacteria grown in Bordet-Gengou medium is?**

a- ADP ribosylation of GTP binding protein

**b- ADP ribosylation of Gi**

c- inhibition of acetylcholine

d- inactivation of elongation factor 2

# physiology

A patient has a progressive lung disease that results in an ever-increasing pressure required to fill the same volume of lung. How does this disease affect lung compliance? The progressive lung disease:

- A) Increases lung compliance
- B) Does not affect lung compliance
- C) Decreases lung compliance
- D). none of the above

In quiet breathing

:

- A) Inspiration and expiration are passive
- B) Inspiration involves muscular contractions and expiration is passive
- C) Inspiration involves muscular contractions and expiration is active

The effect of surfactants on the pressure is

- A) increase
- B) there is no effect
- C) decrease

Which of the following conditions is likely to result in decreased lung compliance?

- a) Pulmonary fibrosis
- b) Emphysema
- c) Asthma
- d) Pneumonia

C,B,B,a

Which of the following factors contributes to the tendency of the lung to collapse and is minimized by the presence of functional residual capacity (FRC)?

- a) Surfactant production
- b) Compliance
- c) Elastic recoil
- d) Intrapleural pressure

Regarding the respiratory circle in adults which of the following is true:

- a) At the end of inspiration the lung is filled of 2,700 ml of stale air and 150 ml of stale air in dead space too
- b) During exhalation the alveoli loses 350 ml of gas and the 150 ml get out of end dead space
- c) During inhalation a 500 mL atmospheric air enter the lungs 350 mL of it is a fresh air enter The alveoli and 150 fresh air enter the end of space
- d) When the atmospheric air enter the lung it pushes a 150 ml of stale air in the end dead space to the alveoli

d,c

Which of the following is true regarding the intrapleural pressure:

- A) During inspiration it becomes negative with a value equals (-6).
- B) During normal expiration it becomes a more positive value than the resting value
- C) The transmural pressure equal 5 during inspiration.
- D) The intrapleural pressure proportionally related to the volume of the lung.

Which one is false regarding ventilation:

- A) Increase the ventilation can decrease  $PCO_2$
- B) The factor that controls gases exchange is pressure gradient.
- C) Abdominal muscles don't contract during normal exhalation.
- D) During inspiration the lung expands as a result of air entrance

Due to polio, a patient suffers paralysis of his Intercostal muscles. For this patient, which of the following values would still be expected to be essentially normal?

A) IRV. B) ERV C) TLC. D) VC. E) none

Which of the following represents the pressure difference that acts to distend the lungs?

- A) Alveolar pressure
- B) Plural pressure
- C) Transpulmonary pressure
- D) Atmospheric pressure
- E) Esophageal pressure

Which of the following times in the respiratory cycle is the intrapleural pressure most negative?

- A) just after the beginning of Inspiration
- B) just before the end of inspiration
- C) just after the beginning of expiration
- D) just before the end of expiration
- F) Any of the above, since the intrapleural pressure is constant during the normal respiratory cycle

E , C, B

Arterial  $P_{O_2}$  is 100 mm Hg and arterial  $P_{CO_2}$  is 40 mm Hg.

Total blood flow to all muscle is 700ml/min. There is a sympathetic activation resulting in a decrease in blood flow to 350 ml/min. Which of the following will occur?

	Venous $P_{O_2}$	Venous $P_{CO_2}$
A)	↑	↓
B)	↓	↑
C)	↓	↔
D)	↔	↑
E)	↑	↑

Carbon dioxide is transported in the blood in the dissolved state, in the form of bicarbonate ion, and in combination with hemoglobin (carbaminohemoglobin). Which of the following best describes the quantitative relationship of these three mechanisms for transporting carbon dioxide in the venous blood under normal conditions (in percentages)?

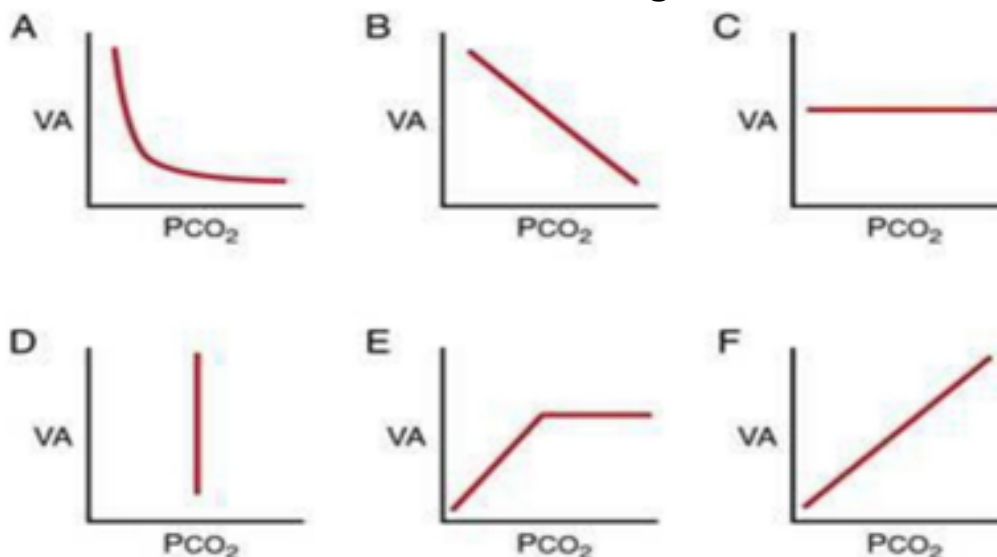
	Dissolved state	Bicarbonate ion	Carbaminohemoglobin
A)	7	70	23
B)	70	23	7
C)	23	70	7
D)	7	23	70
E)	70	7	23
F)	23	7	70

B,A

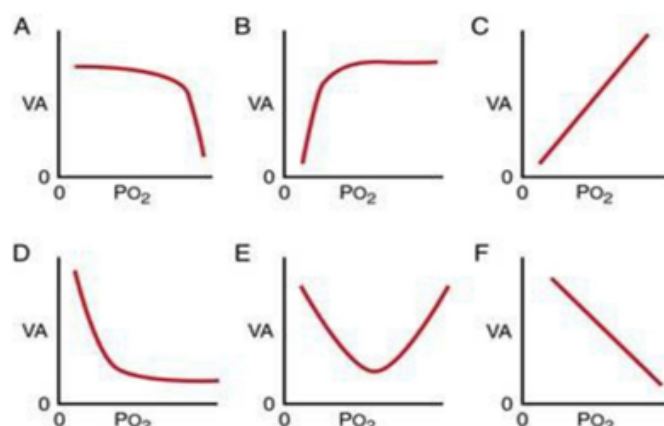
At a fraternity party a 17-year-old male places a paper bag over his mouth and breathes in and out of the bag. As he continues to breathe into this bag, his rate of breathing continues to increase. Which of the following is responsible for the increased ventilation?

- A) Increased alveolar  $P_{O_2}$
- B) Increased alveolar  $P_{CO_2}$
- C) Decreased arterial  $P_{CO_2}$
- D) Increased pH

Which diagram best describes the relationship between alveolar ventilation (VA) and arterial carbon dioxide tension ( $P_{CO_2}$ ) when the  $P_{CO_2}$  is changed acutely over a range of 35 to 75 mm Hg?



Which diagram best describes the relationship between alveolar ventilation (VA) and arterial oxygen tension ( $P_{O_2}$ ) when the  $P_{O_2}$  is changed acutely over a range of 0 to 160 mm Hg and the arterial  $P_{CO_2}$  and hydrogen ion concentration remain normal?



**B,F,D**



In strenuous exercise, oxygen consumption and carbon dioxide formation can increase as much as 20-fold. Alveolar ventilation increases almost exactly in step with the increase in oxygen consumption. Which of the following best describes what happens to the mean arterial oxygen tension ( $P_{O_2}$ ), carbondioxide tension ( $P_{CO_2}$ ) and pH in a healthy athlete during strenuous exercise?

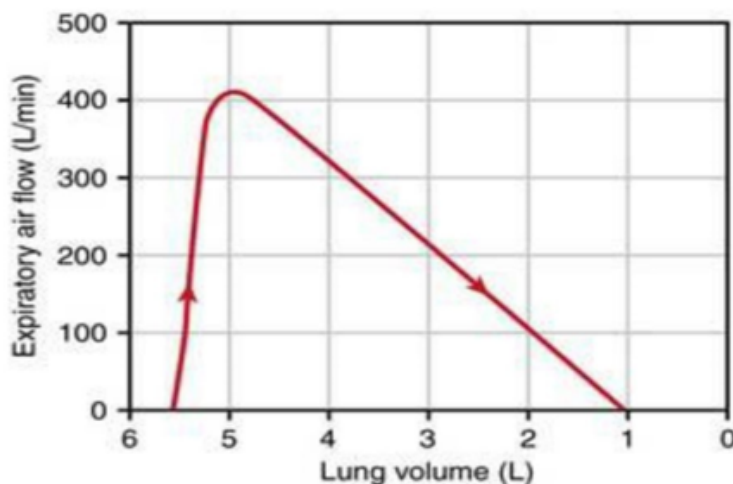
	Arterial $PO_2$	Arterial $PCO_2$	Arterial pH
A)	Decreases	Decreases	Decreases
B)	Decreases	Increases	Decreases
C)	Increases	Decreases	Increases
D)	Increases	Increases	Increases
E)	No change	No change	No change

Alveolar ventilation increases several-fold during strenuous exercise. Which of the following factors is most likely to stimulate ventilation during strenuous exercise?

- A) Collateral impulses from higher brain centers
- B) Decreased mean arterial pH
- C) Decreased mean arterial  $P_{O_2}$
- D) Decreased mean venous  $P_{O_2}$
- E) Increased mean arterial  $P_{CO_2}$

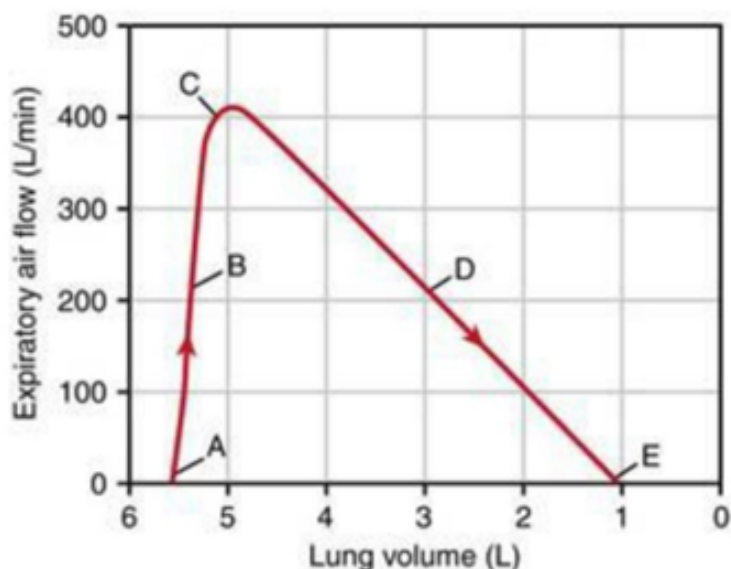
A 45-year-old man inhaled as much air as possible and then expired with a maximum effort until no more air could be expired. This produced the maximum expiratory flow-volume curve shown in the following diagram. What is the forced vital capacity of this man (in liters)?

- A) 1.5
- B) 2.5
- C) 3.5
- D) 4.5
- E) 5.5
- F) 6.5



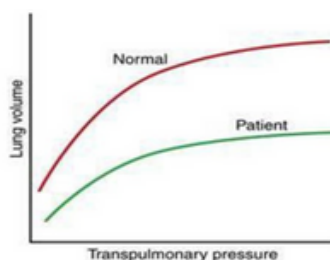
E,A,D

The maximum expiratory flow-volume curve shown in the following diagram is used as a diagnostic tool for identifying obstructive and restrictive lung diseases. At which of the following points on the curve does airway collapse limit maximum expiratory air flow?



- A)A                      B)B                      C)C                      D)D                      E)E

The volume-pressure curves shown in the next diagram were obtained from a young, healthy subject and a patient. Which of the following best describes the condition of the patient?



- A) Asthma
- B) Bronchospasm
- C) Emphysema
- D) Old age
- E) Silicosis

A 78-year-old man who smoked 60 cigarettes per day for 55 years complains of shortness of breath. The patient is diagnosed with chronic pulmonary emphysema. Which of the following sets of changes is present in this man, compared to a healthy, nonsmoker?

	Pulmonary compliance	Lung elastic recoil	Total lung capacity
A)	Decreased	Decreased	Decreased
B)	Decreased	Decreased	Increased
C)	Decreased	Increased	Increased
D)	Increased	Decreased	Decreased
E)	Increased	Decreased	Increased
F)	Increased	Increased	Increased

D,E,E

- Comparing a premature infant with respiratory distress syndrome to a normal full-term infant, how do lung compliance and surfactant levels compare?

	Compliance in preterm compared to full term infant	Surfactant in preterm compared to full term infant
A)	↑	↓
B)	↑	↑
C)	↓	↓
D)	↓	↑
E)	↔	↑
F)	↔	↓

Which of the following decreases with emphysema?

- A) Alveolar Pco<sub>2</sub>
- B) Cardiac output
- C) Diffusion area
- D) Pulmonary artery pressure

Compared to a normal healthy person, how do total lung capacity and maximal expiratory flow patient change with restrictive lung disease?

	Total lung capacity	Maximal expiratory flow
A)	↑	↓
B)	↓	↓
C)	↑	↑
D)	↓	↑

Surfactant is a

- A- mucopolypeptide
- B-causes a decrease in surface tension
- C-Keeps alveoli dry
- D-causes an increase in compliance
- E-production is reduced after a prolonged reduction in pulmonary blood flow

C,C,B,A

# histology

Bronchioles, all the following statements are correct except:

- a. In terminal bronchioles the lymphocytes are aggregated as lymphatic nodules
- b. The connective tissue and smooth muscle in terminal bronchioles are greatly reduced
- c. Bronchioles which are less than 1mm in diameter have neither cartilage nor submucosal glands
- d. In the distal part of respiratory bronchioles the Clara cells are replaced by simple epithelial cells.
- e. In respiratory bronchioles the goblet cells are entirely absent.

Ans: a

Type II alveolar cell characterized by all of the following except:

- a. they have occluding and desmosomal junction with type I alveolar cells
- b. They are cuboidal cells, rest on basement membrane and commonly found in the angle of alveolar wall
- c. They contain secretory granules in their cytoplasm which secrete proteolytic enzymes
- d. They exhibit characteristic lamellar bodies
- e. divided by mitosis to replace their own population and also type I alveolar cells

Ans: c

**Which of the following is false regarding secondary bronchi?**

- a. They have complete muscular layer**
- b. Cartilage plates gradually disappear**
- c. Goblet cells are rarely seen**

**Ans :c**

**All of the following are present in the olfactory region EXCEPT:**

- a. Bipolar cells**
- b. Bowman serous gland**
- c. Von Ebner gland**
- d. Basal cells**

**Ans: c**

**All of the following are lined with by pseudo stratified columnar epithelium with goblet cells except:**

- a. Olfactory region**
- b. Terminal bronchioles**
- c. Posterior surface of epiglottis**
- d. False vocal cord**

**Ans :b**

**Which of the following is not found in the respiratory membrane?**

- a. Surfactant layer**
- b. Type I pneumocyte**
- c. Type II pneumocyte**
- d. Endothelial cell**
- e. Fused basal lamina.**

**Ans:c**

**All of the following are lined with by pseudo stratified columnar epithelium with goblet cells except :**

- a. Olfactory region**
- b. Terminal bronchioles**
- c. Posterior surface of epiglottis**
- d. False vocal cord**

**Ans :b**

**Cell found in the septum and is called septal cell:**

- A. Type 1 pneumocyte**
- B. Type 2 pneumocyte**
- C. Dust cell**

**Ans: B**

**Most Inspired particles such as dust fail to reach the Lung because of the:**

- a. Ciliated mucous lining in the nose**
- b. Porous structure of the nasal conchae**
- c. Abundant blood supply to nasal mucosa**
- d. Action of the epiglottis**
- e. None of the above**

**Ans: a**

**Wrong about dust cell:**

- A. Derived from monocyte circulating in the blood**
- B. Reaches the pharynx by ciliary movement**
- C. The most abundant cell in the alveolar wall**

**Ans: C**

**macrophages, all of the following is correct except?**

- a. They are transported from the bronchioles into the pharynx via the ciliary action of the respiratory epithelium.**
- b. They are the most numerous of all cell types**
- c. Often noted in the respiratory membrane**
- d. They are derived from monocytes, enters the lung via the bloodstream**
- e. They are found also in the connective tissue around the blood vessels and in the pleura**

**Ans : C**

**all of the following cells is found in the interstitium except:**

- a. Endothelium**
- b. Fibroblasts**
- c. Mast cells**
- d. Dust cells**
- e. Type 1 pneumocytes**

**Ans: e**

**# Region that has columnar epithelium with muscle but without cartilage: Ans :bronchioles**

**# The lack of the development of cartilage in the bronchus causes: Ans: bronchial stenosis**

**# Wrong about Type II cells: have proteolytic enzyme granules**

**# Wrong about Lung: Type Alveolar cels are most abundant**

**# Most numerous cells in the lungs: dust cells**

**# Wrong about surfactant: Usually deficient in "term" babies**

**# wrong about Clara cells: they exist rarely in the respiratory bronchioles**

**# Wrong about terminal bronchioles: have few glands in the lamina propria.**



- # Wrong about terminal bronchioles: have few glands in the lamina Propria
- # what is wrong about dust cell/macrophages: present in respiratory membrane
- # wrong about trachea: Posteriorly covered by striated trachealis muscle.
- # wrong about Clara cels: is part of diffuse neuro-endothelial system.
- # wrong about Clara cells: They aren't present in terminal bronchioles.
- # Wrong about surfactant: Usually deficient in "term" babies
- # Which of the following is wrong: the growth of alveoli after birth is mainly by increase in size
- # lung opacity in new born: Is normal
- # Not part of the respiratory membrane: Dust cells.
- # Al are lined with pseudo-stratified columnar epithelium except: The end of terminal bronchioles.
- # wrong about trachea: Posteriorly covered by striated trachealis muscle.
- # wrong about Clara cells:ANS: Is part of diffuse neuro-endothelial system. Additional info: Clara cells are now called Club cells.
- # Region that has columnar epithelium with muscle but without cartilage: Bronchioles
- # Wrong about Type I cells: Have proteolytic enzyme granules.
- # Wrong about Lung:Type Alveolar cells are most abundant
- # Most numerous cells in the lungs: Dust cells

**# what is wrong about dust cell/macrophages: Present in respiratory membrane**

**# which of the following isn't part of the blood air barrier: Dust cells**

**# Region that has columnar epithelium with muscle but without cartilage: bronchioles**

**# Wrong about Type II cells: have proteolytic enzyme granules**

**# Wrong about Lung: Type Alveolar cells are most abundant**

**# Most numerous cells in the lungs: dust cells**

**# wrong about Clara cells: they exist rarely in the respiratory bronchioles**

**# what is wrong about dust cell/macrophages: present in respiratory membrane**

**# not part of the respiratory membrane: Dust cells.**

**# all are lined with pseudo-stratified columnar epithelium except: The end of terminal bronchioles**

**# one of these not present in the interstitium : type 2 cells**

اللهم إني أسألك أنك العليم الكريم أن توفقنا لما تحبه وترضى، وأن  
تكتب لنا النجاح والفلاح والتوفيق في تحصيل كل علم نافع، اللهم  
مالك السماوات والأرض ومنزل الكتاب لا تنزع العلم من بيننا  
وارفعنا به، وارزقنا يا الله فهم أنبيائك وحفظ الملائكة ورسلك

