

56- Following admission for injuries suffered in a motorcycle collision, a 41-year-old man develops worsening hypoxemia and requires mechanical ventilation with a high inspired oxygen fraction. A chest radiograph performed at the time of intubation reveals diffuse bilateral opacities. Which of the following changes in pulmonary function would you expect to see in this patient?

- A. Increased lung compliance
- B. Increased FRC
- C. Increased shunt
- D. Severe hypercarbia
- E. Decreased airway resistance

57- Shortly after being born at only 31 week' s gestation, a baby girl is noted to have nasal flaring, intercostal retractions, and hypoxemia on pulse oximetry. After a chest radiograph shows bilateral alveolar opacities, she is started on nasal continuous positive airway pressure. Which of the following medications should be also administered to speed resolution of her respiratory failure?

- A. Digoxin
- B. Diuretics
- C. Inhaled albuterol
- D. Inhaled ipratropium
- E. Inhaled surfactant

58- A 71-year-old man with very severe COPD (FEV1 ~28% predicted) presents with increasing cough, dyspnea, and sputum production following a viral upper respiratory infection. On examination, his SpO2 is 81% breathing air, and he has a prolonged expiratory phase and diffuse musical sounds on expiration. Which of the following physiologic changes are you most likely to see in his current clinical situation?

- A. Decreased airway resistance
- B. Increased ventilation-perfusion mismatch
- C. Increased arterial pH
- D. Reduced alveolar-arterial Po2 difference
- E. Decreased arterial Pco2

59- A previously well young man was admitted to the emergency department with a benzodiazepine overdose that caused severe hypoventilation. When he was given 50% oxygen to breathe, there was no change in his arterial Pco2 . Approximately how much would his arterial Po2 (mm Hg) be expected to rise?

- A. 25
- B. 50
- C. 75
- D. 100
- E. 200

60- A patient with congenital heart disease has a right-to-left shunt of 20% of the cardiac output and an arterial Po2 of 60 mm Hg during air breathing. When he is given 100% oxygen to breathe, you would expect his arterial Po2 to:

- A. Fall.
- B. Remain unchanged.
- C. Increase by less than 10 mm Hg.
- D. Increase by more than 10 mm Hg.
- E. Rise to about 600 mm Hg.