

***Anesthesiology Rounds*
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Oxygenation before Anesthesia (Preoxygenation) in Adults

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Objectives:

After reading this issue of *Anesthesiology Rounds*, the reader should be able to:

- understand the physiological principles and indications of preoxygenation
- describe the slow and fast techniques of preoxygenation
- apply these techniques in the healthy adult with normal weight
- modify these techniques in obese patients, in pregnant women, and in the elderly
- briefly describe preoxygenation devices other than the face mask.

Questions: (only one answer is correct)

1. After preoxygenation, the largest available oxygen reserve is found in:
 - a. The lungs
 - b. Plasma
 - c. Red blood cells
 - d. Myoglobin
 - e. Interstitial tissue

2. Apnea time without desaturation is decreased in all of the following, EXCEPT:
 - a. Pregnancy
 - b. Obesity
 - c. Fever
 - d. The elderly
 - e. When functional residual capacity (FRC) is decreased

3. Compared with the supine position, the half-sitting position during preoxygenation in the obese should:
 - a. Decrease functional residual capacity (FRC)
 - b. Increase atelectasis
 - c. Improve tolerance to apnea
 - d. Decrease the effectiveness of diaphragmatic contraction
 - e. Improve intubating conditions

4. The optimal strategy to monitor the effectiveness of preoxygenation is to:

- a. Wait until oxygen saturation reaches 100%
- b. Use tidal volume preoxygenation for 3 minutes
- c. Measure partial pressure of oxygen in arterial blood (PaO₂)
- d. Give at least 10 L/min fresh gas flow
- e. Wait until expired oxygen fraction exceeds 90%

5. About failure to preoxygenate properly:

- a. An important cause is a leak around the face mask
- b. A leak can be corrected by increasing fresh gas flow
- c. When a leak is present, a fast technique is more effective than a slow technique
- d. When a leak is present, a slow technique is more effective than a fast technique
- e. Even when they are small, leaks can be detected easily

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