

Arterial Blood Gas Practice Quiz Questions and Answers PDF

Arterial Blood Gas Practice Quiz Questions And Answers PDF

Disclaimer: The arterial blood gas practice quiz questions and answers pdf was generated with the help of StudyBlaze AI. Please be aware that AI can make mistakes. Please consult your teacher if you're unsure about your solution or think there might have been a mistake. Or reach out directly to the StudyBlaze team at max@studyblaze.io.

Which component of an ABG reflects the metabolic component of acid-base balance?

- PaO₂
- PaCO₂
- HCO₃⁻ ✓
- SaO₂

The metabolic component of acid-base balance in an arterial blood gas (ABG) is primarily reflected by the bicarbonate (HCO₃⁻) level. Changes in HCO₃⁻ indicate metabolic acidosis or alkalosis, which are key aspects of the body's acid-base status.

What is the typical normal range for PaO₂ in an ABG?

- 60-80 mmHg
- 75-100 mmHg ✓
- 100-120 mmHg
- 120-140 mmHg

The typical normal range for PaO₂ in an arterial blood gas (ABG) analysis is between 75 to 100 mmHg. Values outside this range may indicate respiratory issues or other health concerns.

Which component of an ABG measures the level of carbon dioxide in the blood?

- PaO₂
- SaO₂
- PaCO₂ ✓
- HCO₃⁻

The component of an arterial blood gas (ABG) that measures the level of carbon dioxide in the blood is the partial pressure of carbon dioxide (PaCO₂). This value is crucial for assessing respiratory function and acid-base balance in the body.

Which of the following conditions is characterized by high pH and low PaCO₂?

- Respiratory acidosis
- Metabolic acidosis
- Respiratory alkalosis ✓
- Metabolic alkalosis

The condition characterized by high pH and low PaCO₂ is respiratory alkalosis, which occurs when there is excessive loss of carbon dioxide due to hyperventilation.

Which of the following are components of an arterial blood gas analysis? (Select all that apply)

- PaO₂ ✓
- PaCO₂ ✓
- Blood glucose
- HCO₃⁻ ✓

An arterial blood gas analysis typically includes measurements of pH, partial pressure of carbon dioxide (PaCO₂), partial pressure of oxygen (PaO₂), bicarbonate (HCO₃⁻), and oxygen saturation (SaO₂). These components are essential for assessing a patient's respiratory and metabolic status.

What condition is indicated by a low pH and high PaCO₂ in an ABG?

- Respiratory alkalosis
- Metabolic acidosis
- Respiratory acidosis ✓
- Metabolic alkalosis

A low pH and high PaCO₂ in an arterial blood gas (ABG) analysis indicate respiratory acidosis, which occurs when the lungs cannot remove enough carbon dioxide from the body, leading to increased acidity in the blood.

What mechanisms can the body use to compensate for acid-base imbalances? (Select all that apply)

- Respiratory compensation ✓
- Metabolic compensation ✓
- Hematologic compensation
- Neurological compensation

The body can compensate for acid-base imbalances through several mechanisms, including respiratory adjustments (changing breathing rate), renal adjustments (alteration of bicarbonate and hydrogen ion

excretion), and buffer systems (using bicarbonate, proteins, and phosphate buffers).

What are the typical signs of metabolic acidosis on an ABG? (Select all that apply)

- Low pH ✓
- High HCO_3^-
- Low HCO_3^- ✓
- High PaCO_2

Metabolic acidosis is characterized by a decrease in blood pH and bicarbonate levels, along with compensatory respiratory alkalosis. Typical signs on an ABG include low pH, low bicarbonate (HCO_3^-), and potentially a compensatory decrease in pCO_2 .

What is the normal range for blood pH in an arterial blood gas analysis?

- 7.25-7.35
- 7.35-7.45 ✓
- 7.45-7.55
- 7.55-7.65

The normal range for blood pH in an arterial blood gas analysis is typically between 7.35 and 7.45. Values outside this range may indicate acidosis or alkalosis, which can have significant clinical implications.

Which of the following is a common site for arterial puncture in ABG sampling?

- Jugular vein
- Radical artery ✓
- Cephalic vein
- Subclavian artery

The radial artery is the most common site for arterial puncture in arterial blood gas (ABG) sampling due to its accessibility and proximity to the surface of the skin.

What is the normal range for HCO_3^- in an ABG?

- 18-22 mEq/L
- 22-26 mEq/L ✓
- 26-30 mEq/L
- 30-34 mEq/L

The normal range for HCO_3^- (bicarbonate) in an arterial blood gas (ABG) test is typically between 22 to 28 mEq/L. This range is crucial for assessing the metabolic component of acid-base balance in the body.

Which of the following are potential causes of respiratory acidosis? (Select all that apply)

- Chronic obstructive pulmonary disease (COPD)** ✓
- Hyperventilation
- Severe asthma** ✓
- Pulmonary embolism

Respiratory acidosis can be caused by conditions that impair the lungs' ability to expel carbon dioxide, leading to increased levels of carbonic acid in the blood. Common causes include chronic obstructive pulmonary disease (COPD), severe asthma, respiratory muscle weakness, and central nervous system depression.

Which conditions can be identified by an ABG test? (Select all that apply)

- Diabetes mellitus
- Respiratory acidosis** ✓
- Metabolic alkalosis** ✓
- Hypertension

An ABG test can identify conditions such as respiratory acidosis, metabolic acidosis, respiratory alkalosis, and metabolic alkalosis, as well as assess oxygenation and carbon dioxide levels in the blood.

In which conditions might you see an elevated HCO_3^- level? (Select all that apply)

- Metabolic alkalosis** ✓
- Respiratory acidosis** ✓
- Metabolic acidosis
- Respiratory alkalosis

Elevated HCO_3^- levels can occur in conditions such as metabolic alkalosis, chronic obstructive pulmonary disease (COPD), and compensation for respiratory acidosis. These conditions reflect an imbalance in acid-base homeostasis, often due to either excess bicarbonate or loss of acid.