

## Arterial Blood Gas Practice Questions

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Assume the ABG is interpretable. Assess the ABG for acid/base status. Each question is worth 10 points. There are 10 questions, resulting in a total of 100 possible points.

1. An 84 year old female presents with dyspnea, fever, and a 5 day history of a productive cough with yellow sputum. The Chest X-ray reveals bilateral lower lobe pneumonia. An ABG is drawn in the emergency department. The ABG results are:

pH: 7.27  
PCO<sub>2</sub>: 58  
PaO<sub>2</sub>: 60  
HCO<sub>3</sub>: 26

Uncompensated Respiratory  
Acidosis

2. A 63 year old female presents to the ED with persistent vomiting. The client states the persistent vomiting started 2 days ago. Her ABG in the ED reveals:

pH: 7.58  
PCO<sub>2</sub>: 55  
PaO<sub>2</sub>: 80  
HCO<sub>3</sub>: 46

Partially Compensated metabolic  
Alkalosis

3. A 28 year old male with obsessive compulsive disorder presents to the ED with a severe anxiety attack. The client complains of shortness of breath, chest pain, and tingling in bilateral upper and lower extremities. Client states "I feel like I am about to pass out". The physical exam reveals a heart rate of 124 and a respiratory rate of 38. An ABG is drawn and the results are as follows:

pH: 7.55  
PCO<sub>2</sub>: 23  
PaO<sub>2</sub>: 99  
HCO<sub>3</sub>: 19

Partially Compensated Respiratory  
Alkalosis

4. A 50 year old female with a past medical history of cirrhosis secondary to alcoholism arrives to the clinic for a new patient visit. An ABG is performed. The result of this ABG reveals \_\_\_\_\_

pH: 7.46  
PCO<sub>2</sub>: 20  
PaO<sub>2</sub>: 80  
HCO<sub>3</sub>: 17

Partially Compensated Respiratory  
Alkalosis

5. A 20 year old male with ulcerative colitis presents with profuse diarrhea. The client states that the diarrhea started 3 days ago. An ABG is obtained and it is:

pH: 7.28  
PCO<sub>2</sub>: 27  
PaO<sub>2</sub>: 90  
HCO<sub>3</sub>: 13

Partially Compensated metabolic  
Acidosis

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6. A 30 year old female arrives to the ED with complaints of a cough with productive green sputum, blurry vision, shortness of breath, polyuria, and polydipsia. The client admits to being an insulin dependent diabetic since age 6 and chronic kidney disease with a baseline creatinine of 2.3. A CXR is performed and reveals significant bilateral infiltrates. A point of care blood sugar is completed and reads >600 HIGH. Patients UA is positive for ketones. Sputum culture is pending. An ABG is completed and reveals:

pH: 7.19  
PCO<sub>2</sub>: 35  
PaO<sub>2</sub>: 60  
HCO<sub>3</sub>: 9

Uncompensated Metabolic Acidosis

7. A 55 year old male with idiopathic pulmonary fibrosis presents with abdominal pain. A BMP, CBC, ABG, and Abdominal CT is completed. The ABG is:

pH: 7.33  
PCO<sub>2</sub>: 52  
PaO<sub>2</sub>: 50  
HCO<sub>3</sub>: 26

Uncompensated Respiratory Acidosis

8. The ABG on a 29 year old pregnant woman reveals:

pH: 7.48  
PCO<sub>2</sub>: 30  
PaO<sub>2</sub>: 95  
HCO<sub>3</sub>: 20

Partially Compensated Respiratory Alkalosis

9. A 36 year old provider begins to have stridor shortly after putting on latex gloves. The provider has a significant history of asthma with allergies to pollen. An ABG is completed and reveals:

pH: 7.21  
PCO<sub>2</sub>: 64  
PaO<sub>2</sub>: 70  
HCO<sub>3</sub>: 26

Uncompensated Respiratory Acidosis

10. A 75 year old male with hypertension, hyperlipidemia, coronary artery disease, stage III CHF secondary to ischemic cardiomyopathy presents to his PCP for a routine appointment. The PCP is aware that the patient takes 40mg of furosemide twice daily. Labs are performed. The ABG reveals the patient is in:

pH: 7.48  
PCO<sub>2</sub>: 49  
PaO<sub>2</sub>: 75  
HCO<sub>3</sub>: 37

Partially Compensated Metabolic Alkalosis