

RESPIRATORY ALKALOSIS



Definition

- An decrease in carbon dioxide levels due to increased excretion by the lungs
- Excess carbon dioxide leads to pH imbalance.

Common Causes

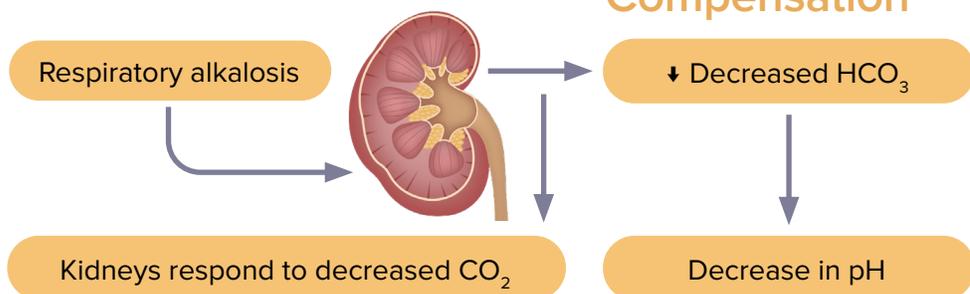
Hyperventilation



Lab Values

Disturbance	pH	CO ₂	HCO ₃₋	Cause	Compensation
Respiratory alkalosis	↑ Increased	↓ Decreased	Normal or ↓ decreased	Lungs excrete CO ₂ .	Kidneys control HCO ₃₋ .
Normal values	7.35–7.45	35–45 mm Hg	22–26 mmol/L	O ₂ levels are not part of ABG imbalance determination.	

Compensation



Uncompensated:
Opposite system is not responding (levels remain normal), pH remains imbalanced.

Partial compensation:
Opposite system is working to correct imbalance, pH not yet normalized.

Full compensation:
Homeostasis, all lab values return to normal.

Kussmaul breathing: an abnormal rapid, deep breathing pattern that helps the body blow off extra CO₂; often seen in DKA

Example

Steps:

1. Identify pH (acidosis or alkalosis).
2. Identify CO₂ (↑, ↓, normal).
3. Identify HCO₃ (↑, ↓, normal).
4. Which label matches pH?
5. Look at opposite system, evaluate if it is bringing pH back to normal.

Disturbance	pH	CO ₂	HCO ₃₋
???	7.48	27	19

Answer: metabolic acidosis partially compensated

Treatment



Fix the underlying cause to slow breathing.



Address anxiety, assist client with relaxation.



Renal system decreases HCO₃₋.

NOTES

