

# Hypokalemia

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## Rationale

Reduced serum potassium, a common clinical problem, is most often discovered on routine analysis of serum electrolytes or suspected by electrocardiogram (ECG) results. Symptoms, such as muscle weakness, develop when depletion is quite severe.

## Causal Conditions

(list not exhaustive)

- Decreased intake (e.g., anorexia nervosa)
- Redistribution (e.g., alkalemia, insulin, beta 2-adrenergic stimulating drugs)
- Increased losses
  - a. Renal losses
  - b. Gastrointestinal (GI) losses (e.g., vomiting, diarrhea)

## Key Objectives

Given a patient with hypokalemia, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will recognize the urgency of hypokalemia associated with severe muscle weakness and/or ECG abnormalities.

## Enabling Objectives

Given a patient with hypokalemia, the candidate will

- list and interpret critical clinical findings, including
  - a. performing a history and a physical examination to determine the cause and complications (e.g., medications, blood pressure);

- list and interpret critical investigations, including
  - a. an ECG to identify life-threatening conduction abnormalities;
  - b. tests to distinguish between causes of hypokalemia (e.g., serum and urine electrolytes);
- construct an effective initial management plan, including
  - a. ensuring appropriate potassium replacement with monitoring in a severe case;
  - b. reducing renal excretion of potassium and/or GI losses;
  - c. referring the patient for specialized care, if necessary.