

# Evaluation of Hypokalaemia

Suggested scheme for evaluation of Hypokalaemia

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## Common causes

### Transient

Common in acute illness, ? due to cell uptake consequent to adrenergic activity (stress related).

### Drugs

Insulin, salbutamol, gentamicin, cis-platinum, cyclosporin.

### Diuretics

Occurs in ~ 5% of patients on thiazide or loop diuretics. Usually associated with a high serum  $\text{HCO}_3^-$  and high urinary K and Cl.

### Diarrhoea

Hypokalaemia associated with a low serum  $\text{HCO}_3^-$  occurs in diarrhoea, Diamox therapy, and renal tubular acidosis (RTA).

### Vomiting

Associated with hypokalaemia (urinary loss), a high serum  $\text{HCO}_3^-$ , a high urinary K and a low urinary Cl.

### Magnesium deficiency

Common cause of hypokalaemia (due to renal loss) in acute/chronic alcohol excess.

### Mineralocorticoid excess (MCE)

Not a common cause of hypokalaemia, but consider Conn's syndrome in hypertension and ectopic-ACTH syndrome in patients with malignancy.

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## Evaluation

### 1. Repeat to exclude transient hypokalaemia

### 2. Evaluate $\text{HCO}_3^-$

Increased: Vomiting, diuretics  
Decreased: Diarrhoea, RTA, etc.

### 3. Spot urine for K and Cl

K:	> 20 mmol/L	Renal loss
	< 20 mmol/L	Extrarenal loss
Cl:	< 10 mmol/L	Vomiting
	> 20 mmol/L	Vomiting unlikely: Diuretics, MCE, Mg deficiency

### 4. If the cause is obscure

Consider magnesium deficiency, surreptitious vomiting, surreptitious diuretic medication, malignancy (ectopic-ACTH syndrome).