

Symptoms/associations

Dysrhythmias; ECG changes (ST depression, T wave flattening/inversion, U waves)
Digoxin sensitivity
Muscle weakness, rhabdomyolysis
Lethargy, confusion
Tetany, extensor muscle spasms of hands/feet
Paraesthesiae of hands/feet
Polyuria

Low Potassium (K+) result received:

If cause is obvious:

- Investigate and treat any underlying cause such as diarrhoea
- Consider potassium replacement treatment

If cause is unclear:

- Review medication for drugs known to cause hypokalaemia
- Consider nutritional status and dietary potassium intake
- Low magnesium can cause hypokalaemia
- Consider testing random urine **potassium:creatinine ratio**, **>2.5 mmol/mmol suggests renal loss**
- If hypertensive, consider need for renin-aldosterone studies
- Consider ectopic ACTH production (typically from small cell lung carcinoma), particularly if severe or rapidly developing

Potassium Ref Range 3.5 – 5.3 mmol/L

It is important to identify patients at particular risk from the effects of hypokalaemia, e.g. elderly and patients with dysrhythmias or conditions predisposing to them.

The classification of hypokalaemia as mild, moderate or severe may not be applicable in these patients: any low potassium concentration may have serious consequences.

Serum Potassium

<2.5 mmol/L

2.5-3.0 mmol/L

3.1-3.5 mmol/L

- Compare with previous result, if available**
- Repeat measurement urgently if inconsistent with previous result**
- Seek urgent specialist advice; admission is likely to be indicated regardless of whether clinical features of hypokalaemia are present**

- Compare with previous result, if available
- Repeat measurement same/next-day if inconsistent with previous result
- Assess clinical features and risk status; seek urgent specialist advice if clinical features of hypokalaemia are present and in high risk patients
- Perform ECG (if available) and seek urgent specialist advice if features of hypokalaemia are present
- Consider the risks and benefits of oral potassium replacement on an individual basis

- Compare with previous result if available
- In otherwise untreated low-risk patients may be of limited clinical significance
- Oral replacement appropriate if indicated

Drugs and agents that may cause hypokalaemia

Diuretics: particularly loop and higher dose thiazides, metolazone and indapamide
Mineralocorticoids
Beta-adrenergic mimetics, caffeine, theophylline

Insulin
Penicillin (high doses) (some penicillins are formulated as potassium salts)
Laxatives (abuse)
Liquorice

Drugs primarily causing hypomagnesaemia
Aminoglycosides
Cisplatin
Amphotericin B
Verapamil, chloroquine (in overdose)