HYPERKALAEMIA

Protect · shift · remove

K ≥ 6.5
or ECG = now

EMERGENCY IF K ≥ 6.5 OR ANY ECG CHANGE: peaked T waves → flat P / long PR → wide QRS → sine wave → arrest. Get a 12-lead, put on a monitor, and treat immediately.

THE THREE STEPS

protect the heart, shift, then remove

Step	Aim	Agent & dose
1 PROTECT	Stabilise the myocardium	Calcium gluconate 10% 10 mL IV over 2-3 min (repeat / $CaCl_2$ if severe). Works in minutes, lasts ~30-60 min
2 SHIFT	Drive K into cells	Insulin 10 U + 25 g glucose IV · salbutamol 10-20 mg neb · bicarbonate only if acidotic
3 REMOVE	Eliminate potassium	Haemodialysis (definitive in AKI) · loop diuretic if urine · binders (patiromer / SZC). Stop K + ACEi / ARB

FIND THE CAUSE

- **Reduced excretion -** AKI / CKD; Addison's; type-4 RTA
- **Drugs -** ACEi / ARB, spironolactone, NSAIDs, trimethoprim, heparin, K supplements
- **Cell release -** rhabdomyolysis, tumour lysis, haemolysis, acidosis, burns
- **Spurious -** haemolysed / clenched-fist sample - recheck if unexpected

MONITOR & DISPOSITION

- Cardiac monitor until K < 6.0 and ECG normal
- Recheck K at 1 h and 2-4 h - insulin/salbutamol effect is temporary
- Watch for rebound hyperkalaemia and insulin-induced hypoglycaemia
- Refer for dialysis early if AKI, oliguria or refractory

ONGOING / CHRONIC CONTROL

DIET

Low-potassium diet; dietitian input; avoid salt substitutes (potassium-based).

STOP / REDUCE DRUGS

Review ACEi / ARB, spironolactone, NSAIDs, trimethoprim; K supplements.

BINDERS + CKD

Oral binders (patiromer / sodium zirconium); treat the underlying kidney disease.

DOSING PITFALLS: calcium protects but does NOT lower K · recheck glucose after insulin (hypoglycaemia) · never give calcium and bicarbonate through the same line (they precipitate) · binders act slowly - not for the acute emergency.

PEARLS & PITFALLS

- Calcium protects the myocardium but does NOT lower potassium - always follow with shift and removal.
- Recheck glucose after insulin - hypoglycaemia is common; give ongoing dextrose.
- Insulin and salbutamol only shift potassium temporarily; K rebounds - dialysis or excretion is definitive.
- A normal-looking ECG does not exclude danger - treat on the number and the trend, not just the tracing.

References: UK Kidney Association Hyperkalaemia 2020 · standard critical-care references.

Educational aid; verify doses against local protocol and patient factors.