

POTASSIUM REPLACEMENT		
Severity	Serum Potassium Concentration	IV Potassium Replacement Dose
Mild to Moderate	2.5 – 3.4	20 – 40 mEq
Severe	< 2.5	40 – 80 mEq

^aIn patients with normal renal function; patients with renal insufficiency should receive ^a50% of the initial empirical dose. Rate of infusion = 10–20 meq potassium per hour; maximum infusion rate = 40 meq potassium per hour. Continuous cardiac monitoring and infusion via a central venous catheter are recommended for infusion rates >10 meq potassium per hour. Maximum potassium = 80 meq/L via a peripheral vein; up to 120 meq/L via a central vein (admixed in 0.9% or 0.45% sodium chloride injection).

PHOSPHATE REPLACEMENT	
Serum Phosphorous Concentration	IV Phosphate Replacement Dose (mmol/kg)
2.3 – 2.7	0.08 – 0.16
1.5 – 2.2	0.16 – 0.32
< 1.5	0.32 – 0.64

^aIn patients with normal renal function; patients with renal insufficiency should receive $\leq 50\%$ of the initial empirical dose. Maximum infusion rate = 7 mmol phosphate per hour. ^bThe authors suggest using adjusted body weight (AdjBW) in patients who are significantly obese (weight of >130% of ideal body weight [IBW] or have a body mass index of ≥ 30 kg/m²): AdjBW (men) = ((wt (kg) – IBW (kg)) x 0.3) + IBW; AdjBW (women) = ((wt (kg) – IBW (kg)) · 0.25) + IBW.

CALCIUM REPLACEMENT			
Degree of Hypocalcemia	Preferred Calcium Salt	Intermittent Bolus Dosage	Continuous Infusion Dosage
Mild to moderate, asymptomatic	Gluconate	1-2 grams over 30-60 min. May repeat q6h	(same as bolus)
Severe, symptomatic	Chloride or gluconate	1g chloride or 3g gluconate over 10min PRN	13.6 mEq calcium over 10 minutes PRN
Severe, symptomatic; refractory to intermittent bolus doses	Chloride or gluconate	N/A	0.8 – 1.5 mEq calcium per minute; monitor serum calcium q6h (or more frequently)

^aCalcium chloride should be administered via a central venous catheter to avoid extravasation and tissue necrosis; 1000 mg calcium chloride = 13.6 meq calcium; 1 g calcium gluconate = 4.56 meq calcium.

^bMaximum rate of intravenous infusion = 1.5 meq calcium per minute.

MAGNESIUM REPLACEMENT		
Severity	Serum Magnesium Concentration	IV Magnesium Replacement Dose
Mild to Moderate	1 – 1.5	8 – 32 mEq magnesium (1-4 grams mag sulfate), up to 1 mEq/kg
Severe	< 1	32 – 64 mEq magnesium (4-8 grams mag sulfate), up to 1.5 mEq/kg

^aIn patients with normal renal function; patients with renal insufficiency should receive ^a50% of the initial empirical dose. Maximum rate of infusion = 8 meq magnesium per hour (1 g magnesium sulfate per hour), up to 100 meq magnesium (approximately 12 g magnesium sulfate) over 12 hours if asymptomatic; up to 32 meq magnesium (4 g magnesium sulfate) over 4–5 minutes in severe symptomatic hypomagnesemia. 1 g magnesium sulfate = 8.1 meq magnesium.

^bThe authors suggest using adjusted body weight (AdjBW) in patients who are significantly obese (weight of >130% of ideal body weight [IBW] or have a body mass index of ≥ 30 kg/m²): AdjBW (men) = ((wt (kg) – IBW (kg)) · 0.3) + IBW; AdjBW (women) = ((wt (kg) – IBW (kg)) · 0.25) + IBW.