

Louisiana State University Health Care Services Division  
Interim LSU Public Hospital  
**ADULT ELECTROLYTE REPLACEMENT PROTOCOL**  
**(FOR USE IN ICUs ONLY)**

**ELECTROLYTE GUIDELINE**

- All patients with Chronic Kidney Disease (SCr greater than 2.5mg/dl), Renal Failure or Diabetic Ketoacidosis (DKA) are excluded from any electrolyte replacement protocol
- All IV electrolytes must be infused via pump
- When both serum magnesium and serum potassium are low, replace magnesium first
- If K<sup>+</sup> less than 3.0 and no Mg<sup>++</sup> and Ca<sup>+</sup> level in last 2 days, draw Mg<sup>++</sup> and Ca<sup>+</sup> after K<sup>+</sup> run when repeat K<sup>+</sup> level drawn
- When total serum calcium less than 7.5 mg/dl, check an ionized serum calcium and notify physician if less than 1.0 mmol/L
- If calcium replacement is ordered and hypokalemia or hypophosphatemia is present, replace potassium and/or phosphate first
- Expect magnesium depletion in patients with extensive GI losses (e.g., diarrhea, high NG output), alcoholism, and those taking aminoglycosides, loop diuretics, and amphotericin B.
- Use PO replacement for all patients unless NPO or if medically contraindicated per physician
- **PROTOCOL MUST BE RENEWED BY PHYSICIAN EVERY 72 HOURS**

**Replace Electrolyte per protocol**

**Oral Potassium Protocol (Normal Range 3.6 - 5.2 mEq/L)**

Potassium Level	Potassium Dose	Repeat K level
less than 3.2-Notify MD	KCL 40 mEq po STAT then, 40 mEq by mouth every 4 hours x 2 doses *(Start 4 hours after first dose)	4 hrs after last dose
3.3 - 3.8	KCL 40 mEq by mouth every 4 hours X 2 doses*	Next AM
greater than 3.9	No treatment	

- \* Use Klor-con M20 (contains 20 mEq po KCL) if patient can swallow whole tablet. Do not crush tablets.
- \* Use KCL oral solution (available as 20 mEq/15ml) if patient has a feeding tube or has difficulty swallowing.

**IV Potassium Protocol (Normal Range 3.6 - 5.2 mEq/L)**

- For peripheral IV infusions, add 1% Lidocaine 10 mg to the 100 cc bag in order to reduce pain at infusion site

Potassium Level	Dose/infusion rate		Repeat K level
	Central access with cardiac monitor	Peripheral IV Access or central access without cardiac monitoring	
< 3.2 Notify MD	20 mEq/100 ml over 1 hour X 3 doses	10 mEq/100 ml over 1 hourx 6 doses	30 min after last dose infused
3.3 – 3.8	20 mEq/100 ml over 1 hour X 2 doses	10 mEq/100 ml over 1 hourx 4 doses	Next AM
greater than 3.9	No treatment	No treatment	None

**MAGNESIUM (Normal range 1.5 - 2.6 mg/dl)**

Serum magnesium level	Replace with	Recheck
less than 0.8 mg/dl - Notify MD	1 gram Magnesium sulfate IV x 8 doses	Next AM
0.8 - 1.1 mg/dl	1 gram Magnesium sulfate IV x 6 doses	Next AM
1.2 - 1.4 mg/dl	1 gram Magnesium sulfate IV x 4 doses, or 400 mg magnesium oxide by mouth every 4 hours x 2 doses	Next AM
1.5 - 1.9 mg/dl	1 gram magnesium sulfate IV x 2 doses, or 400 mg magnesium oxide by mouth x 1 dose	

- \* IV replacement is with 1 gram magnesium sulfate in 100 ml D5W given over 30 minutes (max rate).

**PHOSPHATE If K less than or equal to 4.0 mEq/L (Normal range 2.5 - 4.7 mg/dl)**

Serum Phosphorus	Replace with	Recheck level
less than 1.6 mg/dl. Notify MD	30 mmol KPO4 IV*	6 hours after replacement
1.6 - 1.9 mg/dl	30 mmol KPO4 IV*, or Na/K phos** - 1 package by mouth every 6 hours x 4 doses	Next AM
2.0 - 2.5 mg/dl	15 mmol KPO4 IV*, or Na/K phos** - 1 package by mouth every 6 hours x 2 doses	Next AM

- \* Mix KPO4 in 250 mL NS and infuse over 4 hours; \*\* Phos-NaK is PO formulation of Phos Replacement

**PHOSPHATE If K greater than 4.0 mEq/L (Normal range 2.5 - 4.7 mg/dl)**

Serum Phosphorus	Replace with	Recheck level
less than 1.6 mg/dl. Notify MD	30 mmol NaPO4 IV*	6 hours after replacement
1.6 - 1.9 mg/dl	30 mmol NaPO4 IV*, or Na/K phos** 1 package by mouth every 6 hours x 4 doses	Next AM
2.0 - 2.5 mg/dl	15 mmol NaPO4 IV*, or Na/K phos** 1 package by mouth every 6 hours x 2 doses	Next AM

- \* Mix NaPO4 in 250 mL NS and infuse over 4 hours; \*\* Phos-NaK is PO formulation of Phos Replacement

Physician's Stamp

Doctor's Printed Name: \_\_\_\_\_

Signature: \_\_\_\_\_ I.D. #: \_\_\_\_\_

Beeper: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_