

ELECTROLYTE REPLACEMENT

The following information does not apply to patients with renal or adrenal insufficiency!

CALCIUM:

For every 1 g/dL decrease of serum albumin less than 4.0 g/dL, add 0.8 mg/dL to total serum calcium

Use caution in cases of concomitant digoxin therapy

Normal serum calcium range is considered to be 8.5-10.5mg/dL at OHSU.

IV replacement:

If a central access is present use: Calcium Chloride (13.2 mEq or 272 mg elemental calcium/1 gm CaCl₂)

If no central access is present use: Calcium Gluconate (4.7 mEq or 94 mg elemental calcium/1 gm calcium gluconate)

1 AMPULE Calcium Chloride = 3 AMPULES of Calcium Gluconate.

Give one gram calcium gluconate in 100 mL IV solution and infuse over one hour.	
8-8.5 mg/dL	1 gram calcium gluconate IV over 60 minutes
7-8 mg/dL	2 grams calcium gluconate IV over 60 minutes
6-7 mg/dL	3 grams calcium gluconate IV over 120 minutes and recheck your lab 4 hours after replacement
Below 6 mg/dl	Call consult service

-Give one gram calcium gluconate in 100 cc IV solution and infuse over one hour

8-8.5 mg/dL 1 gram calcium gluconate IV over 60 minutes

7-8 mg/dL 2 grams calcium gluconate IV over 60 minutes

6-7 mg/dL 3 grams calcium gluconate IV over 120 minutes and recheck your lab 4 hours after replacement

Below 6 mg/dl; Call consult service

Oral Agents:

Oral Calcium Preparations		
Calcium Preparation	Calcium Content Per Pill	Pill Size
Calcium carbonate	250 mg	650 mg
Calcium gluconate	90 mg	1000 mg
Calcium citrate	200 mg	950 mg
Calcium lactate	60 mg	300 mg

MAGNESIUM:

-Normal magnesium levels at OHSU: 1.8-2.5mg/dL

-Expect magnesium depletion in patients with extensive GI losses (e. g. diarrhea, high NG output), alcoholism, and those taking aminoglycosides, loop diuretics, and/or amphotericin

Oral:

-PO replacement is preferred in asymptomatic patients able to tolerate PO or PT meds (diarrhea)

Magnesium oxide: 400 mg to 800 mg TID
 Slow Mg: less Diarrhea, however, less Mg too.

IV:

IV replacement is with 1 g Magnesium Sulfate (MgSO₄) in 100 mL IV solution given over 60 minutes

If level is:

- 1.5-1.9 mg/dL 1 gram MgSO₄ IV over 60 minutes
- 1.2-1.4 mg/dL 2 grams MgSO₄ IV over 120 minutes
- 0.8-1.1 mg/dL 3 grams MgSO₄ IV over 120 minutes and 4 hours after replacement, check serum Mg level

PHOSPHORUS

Normal levels at OHSU: 2.4-4.7mg/dL

-Mix Na or K phosphate in 250 mL IV solution and infuse over 4-6 hours.

If serum phosphate < 1.5-2 mg/dl

AND:

$K^+ \leq 3.5$ mEq/L

Give 15 mmol ***potassium phosphate*** (0.25 mmol/kg) in 250 mL I.V. solution over 4-6 hours.

Do not give additional K⁺ replacement as this will provide 22 mEq/L of K⁺.

$K^+ > 4.5$ mEq/L

Give 15 mmol ***sodium phosphate*** (0.25 mmol/kg) in 250mL I.V. solution over 4-6 hours.

If serum Phosphate between 1.0-1.5 mg/dL

AND

$K^+ \leq 3.5$ mEq/L

Give 30 mmol ***potassium phosphate*** (0.50 mmol/kg) in 500 mL I.V. solution over 6 hours.

Do not give additional K⁺ replacement as this will provide 44 mEq/L of K⁺.

$K^+ > 4.5$ mEq/L

Give 15 mmol ***sodium phosphate*** (0.50 mmol/kg) in 250mL I.V. solution over 6 hours.

Oral Phosphate Preparations

Oral Phosphate Preparations			
Phosphate Preparation	Phosphate Content Per Pill/PK	Potassium Content Per Pill/PK	Sodium Content Per Pill/PK
K-Phos Neutral	250 mg	1.1 mEq	13.1 mEq
Neutra-Phos*	250 mg	7.1 mEq	7.1 mEq
Neutra-Phos K*	250 mg	14.2 mg	0

Oral Dosage:

K-Phos Neutral 250 mg Tablet : 1 Tablet TID

Neutral Phos: Mix one Package in 75 ml TID

Neutral Phos K: Mix one Package in 75 ml TID