

ORLANDO REGIONAL HEALTHCARE GUIDELINE

CREATING ISOTONIC AND HYPERTONIC ADULT TUBE FEEDING SOLUTIONS

Approved by: Pharmacotherapy Committee

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Isotonic and hypertonic tube feeding solutions are commonly utilized to reduce free water administration, treat hyponatremia, or raise serum osmolarity. The tables below illustrate the amount of salt needed to make various tube feeding solutions either isotonic or hypertonic.

ISOTONIC TUBE FEEDING (0.9% NaCl)

| Product | Sodium Content mg (mEq) / L | Sodium needed (to total 3569 mg/L) | Number of teaspoons of sodium chloride to add per LITER | Number of teaspoons of sodium chloride to add per 500 mL |
|-------------------|--------------------------------|---------------------------------------|---|--|
| Nutren 1 | 876 (38) | 2693 | 1½ | ¾ |
| Nutren 1.5 | 1168 (51) | 2401 | 1¼ | ½ |
| Nutren 2 | 1300 (57) | 2269 | 1 | ½ |
| Glytrol | 740 (32) | 2829 | 1½ | ¾ |
| NutriRenal | 740 (32) | 2829 | 1½ | ¾ |
| Renalcal | 0 | 3569 | 1¾ | ¾ |
| FAA | 560 (24) | 3009 | 1½ | ¾ |
| Impact | 1320 (57) | 2249 | 1 | ½ |
| Nutren Pulmonary | 1168 (51) | 2401 | 1¼ | ½ |
| Nutrihep | 160 (7) | 3409 | 1¾ | ¾ |
| Peptamin w/Prebio | 560 (24) | 3009 | 1½ | ¾ |
| Peptamin 1.5 | 1020 (44) | 2549 | 1¼ | ½ |
| Probalance | 764 (33) | 2805 | 1½ | ¾ |
| Replete w/Fiber | 876 (38) | 2693 | 1¼ | ½ |
| Crucial | 1168 (51) | 2401 | 1¼ | ½ |

HYPERTONIC TUBE FEEDING (1.5% NaCl)

| Product | Sodium Content mg (mEq) / L | Sodium needed (to total 5948 mg/L) | Number of teaspoons of sodium chloride to add per LITER | Number of teaspoons of sodium chloride to add per 500 mL |
|-------------------|--------------------------------|---------------------------------------|---|--|
| Nutren 1 | 876 (38) | 5072 | 2½ | 1¼ |
| Nutren 1.5 | 1168 (51) | 4780 | 2½ | 1¼ |
| Nutren 2 | 1300 (57) | 4648 | 2¼ | 1 |
| Glytrol | 740 (32) | 5208 | 2½ | 1¼ |
| NutriRenal | 740 (32) | 5208 | 2½ | 1¼ |
| Renalcal | 0 | 5948 | 3 | 1½ |
| FAA | 560 (24) | 5388 | 2¾ | 1¼ |
| Impact | 1320 (57) | 4628 | 2¼ | 1 |
| Nutren Pulmonary | 1168 (51) | 4780 | 2½ | 1¼ |
| Nutrihep | 160 (7) | 5788 | 3 | 1½ |
| Peptamin w/Prebio | 560 (24) | 5388 | 2¾ | 1¼ |
| Peptamin 1.5 | 1020 (44) | 4928 | 2½ | 1¼ |
| Probalance | 764 (33) | 5184 | 2½ | 1¼ |
| Replete w/Fiber | 876 (38) | 5072 | 2½ | 1¼ |
| Crucial | 1168 (51) | 4780 | 2½ | 1¼ |

FORMULAS/CONVERSIONS

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|--|---|
| Molecular weight Sodium (Na ⁺) = 23 Chloride (Cl ⁻) = 35 Sodium chloride (NaCl) = 58 | Isotonic solutions (0.9%) NaCl = 9000 mg/L (154 mEq/L) Na = 3569 mg/L (154 mEq/L) |
| Converting mEq to mg 1 mEq Na = 23mg 1 mEq Cl = 35mg 1 mEq NaCl = 58 mg | Hypertonic solutions (1.5%) NaCl = 15000 mg/L (257 mEq/L) Na = 5948 mg/L (257 mEq/L) |
| Teaspoon conversions 1 teaspoon NaCl = 5000 mg NaCl 1 teaspoon NaCl = 1983 mg Na | |