

Fortifying Standard Tube Feed with XtraCal Plus™

“Increase the calories and protein per liter of feeding to help streamline your formulary and still meet the varying nutritional needs of each of your patients

One of the goals for nursing homes is to run a tube feeding for only 12-14 hours - not all day. In order to achieve that goal and still provide adequate nutrition, the run rate of the feeding formula needs to be increased which, in turn, can increase the risk of aspiration. Conversely, if a facility uses a concentrated tube feed formula they increase the risk of diarrhea. Two-calories-per-ml products rely on regular fat for caloric density and high concentrations of fat can induce diarrhea. In addition, concentrated formulas contain less water - so additional fluids must be ordered by the physician and given by the nurse to prevent dehydration.

So if nursing uses a standard tube feeding formula they must administer the TF for more than 14 hours - generally all day - or they risk aspiration pneumonia or malnutrition. If they use a concentrated TF formula they risk diarrhea and dehydration. Underfeeding increases the risk of malnutrition, skin breakdown and mortality.

A solution to this problem is to add XtraCal Plus to a standard tube feeding formula giving added calories and protein in a well tolerated form. Since the fat source for XtraCal Plus is MCT oil - it is used directly by the liver without requiring pancreatic bile to break it down - it does not promote diarrhea like supplements with fat from other sources such as corn oil, soybean oil, canola oil, etc. XtraCal Plus contains hydrolyzed protein and MCT oil and, as such, is considered an “elemental” product so it can be added to elemental tube feedings (Peptamen, Perative) without changing the properties of the formula.

The advantage of this protocol is that adding XtraCal Plus to a standard TF allows the facility to standardize their tube feedings - same Tube Feed, delivered at the same rate at the same time, just with or without XtraCal Plus - the Physician signs off on one of just two different order sets, less inventory, less chance of a medication error.

Look at the attached chart and see how each TF formula can be enhanced by adding one packet of XtraCal Plus. Jevity 1.0 for example can be easily turned into the nutritional equivalent of Jevity 1.2. Jevity 1.2 can be turned into the nutritional equivalent of Jevity 1.5 and so on.

Standardizing Tube Feed Formulas by adding XtraCal Plus would reduce the risk of med errors - all the TFs would be the same - which would make it easier for the nurses to administer and require less inventory. If the facility uses a ready-to-hang 1 liter bottle/bag – they would only use one liter bag/bottle of feeding per patient per day meaning they would have less waste, less disposal. The order set would need to be determined by the dietitian to select a product and a delivery rate and time so that one liter of TF would provide the minimum protein and calories that the average patient would need.

Here is a brief description of some of the more common tube feed formulas. All of these products are made for supplemental or sole source nutrition.

Jevity 1.0 from Abbott Nutrition. May be used for oral feeding of patients with altered taste perception

- Complete balanced nutrition for long term feeding with 1.0 cal/mL and 44.3 g Pro/liter.
- 14.4 grams of total dietary fiber. Helps maintain normal bowel function and may be useful in the dietary management of diarrhea and constipation.

Perative from Abbott Nutrition. High protein high calorie complete semi-elemental formula for metabolically stressed patients with 1.3 cal/mL, 67 g Pro/liter and 8 g/liter of arginine.

Jevity 1.2 Cal. Concentrated calories (1.2 cal/mL) and high in protein (56 g/liter) to help tube-fed patients gain and maintain healthy weight.

Jevity 1.5. Concentrated calories (1.5 cal/mL) and high in protein (64 g/liter) to help tube-fed patients gain and maintain healthy weight.

Glucerna 1.0 Cal Abbott Nutrition. Specialized nutrition with fiber for impaired glucose tolerance

- Glucerna is a reduced carbohydrate, modified fat fiber containing formula clinically shown to blunt blood

glucose response in patients with abnormal glucose tolerance. Glucerna provides only 34.3% of total calories as carbohydrates.

- This helps minimize the glycemic response. XtraCal Plus™ adds only 9 g of sugar for 230 calories so adding one packet of XtraCal Plus to a liter of Glucerna actually lowers the percent of calories from carbohydrates to 31%.
- For patients with type 1 and type 2 diabetes.
- For patients with abnormal glucose tolerance resulting from metabolic stress such as illness, trauma and infection.
- For supplemental or total nutrition.

Glucerna 1.2. Glucerna 1.2 is a specialized calorically dense formula with a unique carbohydrate blend for enhanced glycemic control. Provides 35% of calories from carbohydrates. One liter of Glucerna 1.2 and one pack of XtraCal Plus lowers the percent of calories from carbohydrates to 32.1%.

IsoSource HN High Nitrogen-Nestle Nutrition, A high protein, standard complete liquid formula with 1.0 cal/mL and 53 g Pro/liter.

IsoSource 1.5 Cal from Nestle Nutrition. High Calorie-High Nitrogen Complete Liquid Formula with 1.5 cal/mL and 68 g Pro/liter.

- 8 grams of total dietary fiber. Helps maintain normal bowel function and may be useful in the dietary management of diarrhea and constipation.

Peptamen Nestle Nutrition. Complete elemental formula with a balanced peptide profile promotes proximal through distal GI absorption and integrity with 1.0 cal/mL and 40 g Pro/liter.

- 100% whey based protein to facilitate gastric emptying
- 70% of fat from MCT oil to decrease potential for fat malabsorption
- Complete tube feeding or oral supplementation

Peptamen 1.5. High calorie, high protein complete elemental formula to address nutritional needs in a smaller volume with 1.5 cal/mL and 68 g Pro/liter.

Fortifying Standard Tube Feeding Formula with XtraCal Plus

Tube Feed Formula	kcal/1000 mL Calories	Grams/1000mL Protein	Grams/1000mL Carbohydrates	Grams/1000mL Total Fat
Jevity 1.0	1060	44.3	154.7	34.7
Jevity + XtraCal Plus	1290	58.3	164.7	50.7
Jevity 1.2	1200	55.5	169.4	39.3
Jevity 1.2+ XtraCal Plus	1430	69.5	179.4	55.3
Jevity 1.5	1500	63.8	215.7	49.8
Jevity 1.5 + XtraCal Plus	1730	77.8	225.7	65.8
Glucerna 1.0	1000	41.8	95.6	54.4
Glucerna 1.0 + XtraCal Plus	1230	55.8	105.6	70.4
Glucerna 1.2	1200	60	114.5	60
Glucerna 1.2 + XtraCal Plus	1430	74	124.5	66
IsoSource 1.5	1500	68	170	65
IsoSource 1.5+XtraCal Plus	1730	82	180	81
IsoSource HN	1200	53	160	39
IsoSource HN+ XtraCal Plus	1430	67	170	55
Peptamen	1000	40	127	39
Peptamen + XtraCal Plus	1230	54	137	55
Peptamen1.5	1500	67.6	188	56
Peptamen 1.5 + XtraCal Plus	1730	81.6	198	72
Perative	1300	66.7	180.3	56
Perative+ XtraCal Plus	1530	70.7	190.3	72