Total Parenteral Nutrition (TPN) FAQs

What is parenteral nutrition?

Parenteral nutrition is nutrition administered through an IV. Partial parenteral nutrition supplies only part of the patient's daily nutritional requirements, usually as a supplement to oral food intake. Many hospital patients receive dextrose or amino acid solutions by IV as part of their routine care.

What is TPN?

***TPN** stands for total parenteral nutrition, also known as hyperalimentation. This is a complete form of nutrition, containing protein, sugar, fat and added vitamins and minerals as needed for each individual. TPN is also administered through IV infusion, usually through a central line.*

What are the applications for TPN?

TPN is given to patients unable to absorb adequate nutrition through their own intestines. Common indications for TPN administration include:

- *Malnourishment prior to surgery*
- *Enterocutaneous fistula (hole in stomach)*
- *Renal and hepatic failure*
- *Sepsis*
- *Short bowel syndrome*
- *Radiation and chemotherapy*
- *Severe burns*
- *Neonates*
- *Conditions requiring bowel rest such as Crohn's disease, ulcerative colitis and pancreatitis*

What's in a TPN solution?

2-in-1 solutions include dextrose and amino acid. 3-in-1s include dextrose, amino acid and fat. Following are common components:

Fluid	*Water*
Energy source	*Dextrose*
Protein source	*Amino acids*
Electrolytes	*Sodium, potassium, calcium, magnesium, phosphate*
Fats	*Lipids*
Vitamins	*A, B-complex, C, D, folic acid, multivitamin*
Elements	*Copper, zinc, chromium, manganese*

How are TPN solutions mixed?

Depending on the volume of solutions mixed each day at a given institution, TPN bags may be mixed manually, through an outsource partner or on automated compounding equipment.

What automated compounders are used for TPN mixing?

The following equipment is in use for automated TPN solution compounding. The Abbott and B Braun compounders are out of date and no longer supported. Baxa is the only manufacturer that provides a system combining macro and micro ingredient delivery in a single compounder.

Abbott	*Nutramix – 4 macro leads, Micro – 10 micro leads*
Baxa	*ExactaMix™2400 – 24 macro or micro leads*
	MicroMacro™23 – 23 macro or micro leads
	MicroMacro™12 – 12 macro or micro leads
	ExactaMix™600 – 6 macro leads
Baxter	*Automix – 6 macro leads, Micromix – 10 micro leads*
Secure	*Autocomp – 6 macro leads*

What are possible complications of TPN therapy?

Hyperglycemia
Hypoglycemia
Electrolyte imbalances
Acidosis
Hypertriglyceridemia
Liver dysfunction
Catheter-related sepsis
Pneumothorax
Hematoma
Calcification of vena cava or right atrium