



What Is Parenteral Nutrition?

Intravenously Infusing Nutrients, Bypassing the Gastrointestinal Tract

Nutrition is fundamental for health and resistance to disease. In the majority of patients, an adequate dietary intake can be ensured by providing a balanced diet. In case nutritional requirements cannot be met with regular and normal food, clinical nutrition support involving oral supplementation, enteral tube feeding and/or parenteral nutrition (PN) becomes indispensable.¹

PN, the intravenous infusion of nutrients directly into the systemic circulation bypassing the gastrointestinal (GI) tract, becomes necessary when the GI tract is not able to absorb sufficient nutrients strictly via the enteral route.

PN may be indicated following an extensive examination of the patient to assess:

- Underlying and pre-existing diseases and therapies
- Condition of the gastrointestinal (GI) tract
- Possibilities for oral and/or enteral food intake
- Venous access, nutritional status
- Laboratory values

PN infusion is generally delivered via peripheral or central venous catheters. Location of insertion is determined by the duration of treatment, i.e. short-term, long-term, or permanent, with peripheral insertion for short-term and central venous insertion for short-term, long-term, or permanent use.²

Indications for PN include:^{1,3}

- Intestinal failure due to:
 - (Post-operative) paralytic and mechanical ileus
 - Trauma
 - Inflammatory bowel disease
 - Enterocolitis (AIDS, chemo/radiation therapy)
 - Intestinal resection (short bowel syndrome)
 - Pancreatitis
 - High output fistula
 - Burn injury
 - Gastrointestinal (right in full, GI) cancer
 - Immaturity (premature babies)

- Insufficient enteral/oral feeding

Why is PN Important to the Patient?

The overall aim of PN is to ensure that total nutrient intake provides the sufficient nutrients and energy to meet the patient's need. It provides the patient with the vital nutrients and fluids needed to:

- Deliver energy
- Build up tissues and cell components
- Treat and prevent hospital malnutrition
- Reinforce the body to fight diseases and improve immune function
- Avoid complications during therapy
- Maintain and improve nutritional status to enhance quality of life

References

1. National Collaborating Centre for Acute Care (UK). Nutrition Support for Adults Oral Nutrition Support, Enteral Tube Feeding and Parenteral Nutrition. NICE Clinical Guidelines, No. 32 London 2006.
2. Jauch KW, Schregel W, Stanga Z et al. Access technique and its problems in parenteral nutrition - Guidelines on Parenteral Nutrition, Chapter 9. German Medical Science 2009;7:1-18.
3. Rothaermel S, Bischoff SC, Bockenheimer-Lucius G et al. Ethical and legal points of view in parenteral nutrition - guidelines on parenteral nutrition chapter 12. Ger Med Sci 2009;7:Doc16.