MEDICAL POLICY

Excellus
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Medical Policy Title	**Total Parenteral Nutrition (TPN) or Hyperalimentation**
Policy Number	**11.01.04**
Current Effective Date	**February 19, 2026**
Next Review Date	**February 2027**

Our medical policies are guides to evaluate technologies or services for medical necessity. Criteria are established through the assessment of evidence based, peer-reviewed scientific literature, and national professional guidelines. Federal and state law(s), regulatory mandates and the member's subscriber contract language are considered first in the determination of a covered service.
(Link to Product Disclaimer)

POLICY STATEMENT(S)

I. Total parenteral nutrition (TPN), is considered **medically appropriate** for malnourished individuals (Please refer to Policy Guideline VI) with indications that include, but are not limited to:

A. Gastrointestinal (gut) failure:

1. Short bowel syndrome (e.g., secondary to mesenteric infarction, surgical treatment of Crohn's disease, midgut volvulus, traumatic gastroschisis, small bowel atresia in neonates);
2. Radiation enteritis;
3. Intestinal pseudo-obstruction-motility disorder;
4. Idiopathic diarrhea; **or**
5. Secondary gastrointestinal failure (e.g., scleroderma);

B. Crohn's disease:

1. Growth delay;
2. Diffuse small bowel disease refractory to medical management; or
3. Enterocutaneous fistulae;

C. Severe mucosal injury with intractable malabsorption (e.g., selected cases of celiac disease, immunodeficiency syndromes with enterocolitis, idiopathic mucosal failure with congenital failure to develop villi);

D. Cystic fibrosis with malnutrition unresponsive to enteral nutrition;

E. Intestinal lymphangiectasia with failure of dietary management;

F. Short-term treatment of a condition requiring "bowel rest," where prolonged hospitalization would otherwise be required (e.g., pancreatic pseudocysts, proximal enterocutaneous fistulae in which surgical management is not indicated);

G. Short-term treatment for children with severe reflux and aspiration who fail to thrive, until a

surgical procedure can be performed;

H. Adjunctive therapy for malnourished individuals with specific cancers who are receiving intense and frequent chemotherapy that causes severe gastrointestinal toxicity;

I. Liver failure in children approved for liver transplants, who fail to grow while receiving enteral nutritional support;

J. Liver failure in adults who have hepatic encephalopathy and cannot tolerate a protein source consisting of standard amino acids or enteral nutritional support (TPN used for the administration of a liver-specific amino acid mixture);

K. Acute necrotizing pancreatitis in adults with an inadequate oral intake for longer than a week, where enteral feedings exacerbate abdominal pain, ascites, or fistulous output.

II. Parenteral therapy with home TPN for the management of intractable hyperemesis gravidarum is considered **medically appropriate** when **ALL** of the following criteria have been met:

A. The individual has attempted and failed the step therapy approach;

B. Other potential causes of nausea and vomiting have been ruled out;

C. Information about symptoms, food intake, urinary ketones, urine specific gravity, and daily weights is supplied;

D. Clinical signs of hyperemesis gravidarum, including nausea and vomiting, have been persistent for three (3) or more weeks;

E. Within this time, there has been documented weight loss and dehydration or electrolyte abnormalities;

F. There has been over five (5) percent weight loss since the beginning of pregnancy, and the individual is over 14 weeks pregnant;

G. Has failed intravenous (IV) or subcutaneous (SQ) Zofran or Reglan therapy;

H. Has failed, or is not a candidate for, enteral therapy (nausea is unrelated to olfactory or gustatory cues);

I. Has fully consented with respect to the risks of line infection, bacteremia, sepsis, thrombosis, and fetal loss; **and**

J. The peripherally inserted central catheter (PICC) line is started by a qualified medical professional within an appropriate clinical setting (e.g., inpatient or outpatient).

III. Intradialytic nutrition, including intradialytic parenteral nutrition (IDPN) or intraperitoneal nutrition (IPN), for individuals with end-stage renal disease (ESRD) who are undergoing hemodialysis or peritoneal dialysis, is considered **medically appropriate** when **BOTH A and B** are met:

A. It is utilized as an alternative to regularly scheduled TPN in individuals who meet the criteria for TPN therapy; **and**

B. Intradialytic nutrition is used to provide an incremental boost in calories and is not used as the sole source of nutrition.

IV. TPN is considered **not medically necessary** for **ANY** of the following indications:

A. Children who were previously well-nourished or mildly malnourished, who are undergoing oncologic treatment associated with a low nutrition risk (e.g., less-advanced disease, less intense cancer treatments, advanced disease in remission during maintenance treatment);

B. Individuals (either adult or pediatric) with advanced cancer whose malignancy is documented as unresponsive to chemotherapy or radiation therapy; **or**

C. Individuals for whom liver transplantation is not feasible and whose prognosis will not change despite TPN therapy.

V. Intradialytic parenteral nutrition (IDPN) or intraperitoneal nutrition (IPN), for individuals with end-stage renal disease (ESRD) who are undergoing hemodialysis or peritoneal dialysis, is considered **not medically necessary** when:

A. It is used as an adjunct to regularly scheduled TPN infusions; **or**

B. TPN is considered not medically necessary for the individual.

RELATED POLICIES

Corporate Medical Policy

10.01.03 Enteral Nutrition

Pharmacy Management Drug Policy

Intravenous Iron Replacement Products-116

POLICY GUIDELINE(S)

I. Home TPN should be employed as therapy only in individuals in whom enteral feeding (employing the individuals own gastrointestinal tract) is considered contraindicated or in whom such feeding has been unsuccessful.

II. Because of the potential risks of home TPN, this therapy should generally not be employed when simpler, more routine therapies may be the first choice of treatment (e.g., pharmacological therapy for an acute exacerbation of short segment illness due to Crohn's disease).

III. The individual must be medically stable for TPN to be safely administered in the home setting.

IV. The individual and/or caregiver must be adequately trained in the techniques of home TPN, to ensure that it is administered according to policy and that complications requiring appropriate treatment are recognized.

V. The need for continuing TPN therapy must be periodically reassessed because, in many disease processes causing gut failure, intestinal adaptation may take place.

VI. Malnourished individuals are those in a stage of wasting, as indicated by the following:

A. Weight is significantly less than normal body weight for height and age, in comparison with pre-illness weight;

B. Serum albumin is less than 2.5 grams;

C. Blood urea nitrogen (BUN) is below 10 mg (not a good marker in individuals receiving dialysis, due to protein catabolism);

D. Phosphorous level is less than 2.5 mg (normal is 3 - 4.5 mg); and

E. The individual can receive no more than 30 percent of caloric needs enterally (oral or tube feeding).

DESCRIPTION

Cederholm and colleagues (2024) summarized the three subtypes of malnutrition in adults as follows:

I. Disease related malnutrition with inflammation:

A. Related to acute disease or injury.

B. Related to chronic disease (cancer cachexia or other disease-specific cachexia).

II. Disease-related malnutrition without inflammation.

III. Malnutrition or undernutrition without disease:

A. Related to socioeconomic or psychological factors.

B. Related to malnutrition.

First line treatment of malnutrition consists of nutritional counseling, modified foods, or oral nutritional supplements. If this oral intake is inefficient or contraindicated, enteral nutrition is the preferred choice, as it is associated with fewer infectious and metabolic complications over parenteral nutrition; however, enteral nutrition requires a functioning gut.

Total parenteral nutrition (TPN), also known as hyperalimentation, is administered to individuals with medical conditions that impair gastrointestinal absorption to a degree that is incompatible with life. TPN is also used for variable periods of time to bolster the nutritional status of severely malnourished individuals with medical or surgical conditions.

TPN involves the percutaneous transvenous implantation of a central venous catheter into the vena cava or right atrium. A nutritionally adequate hypertonic solution consisting of glucose, amino acids, electrolytes, vitamins, minerals, and sometimes fats is administered daily. An infusion pump is generally used to assure a steady flow of the solution, either on a continuous or intermittent schedule.

For individuals with severe dysfunction of the gastrointestinal tract, in whom survival was previously precluded, the individual can often be restored to a near-normal nutritional state. The goals of TPN are:

I. Nutritional repletion;

II. Avoidance of repeated and prolonged hospitalization;

III. Return to gainful employment, where appropriate; and

IV. Improvement of the quality of life.

Hyperemesis gravidarum (HG) is a term reserved to describe the most severe cases of nausea and vomiting in pregnancy. Symptoms of nausea and vomiting are often a welcome sign of a healthy pregnancy starting between the 4th and 7th week of gestation, peaking by the 9th week, resolving by the 20th week in the majority of pregnancies. Episodes occurring throughout the day and are not just confined to "morning sickness." Women with HG typically experience their worst symptoms in the first 12 weeks of pregnancy but can persist throughout gestation. Women with extreme weight loss (>15% of pre-pregnancy weight) are more likely to have symptoms of HG through the entire pregnancy. Along with nausea and vomiting, HG can be accompanied by excessive saliva, and gastro-esophageal reflux disease (with complications that can include bleeding, and strictures, although rare) and can lead to life threatening complications including Wernicke's encephalopathy, electrolyte imbalance leading to cardiac arrhythmia, and vitamin K deficiency causing coagulopathy. HG can also lead to negative outcomes for the offspring, the biggest threat being the increased chance of pregnancy termination, with 5-15% of women with the condition choosing to terminate their wanted pregnancy (Nana et al 2025). Enteral and TPN can be provided for nutritional support with multidisciplinary team input considering the higher risk of infection and vascular complications when all classes of antiemetics and IV fluids have failed to alleviate symptoms.

Most individuals with end-stage renal disease (ESRD) who are undergoing hemodialysis or peritoneal dialysis have intact and fully functional gastrointestinal systems. Many of these individuals become malnourished due to inadequate intake of nutrients as the result of anorexia, frequent acute intercurrent illness, dietary restrictions, and/or nutrient losses into the dialysate. Evidence suggests that poor nutrition may contribute to increasing the morbidity and mortality of dialysis individuals. In view of these indications, nutritional supplements, referred to as intradialytic nutrition, which include intradialytic parenteral nutrition (IDPN) and intraperitoneal nutrition (IPN), have been administered during dialysis treatment in an attempt to improve the nutritional status of these individuals. The amount and composition of solutions administered during dialysis are adjusted according to the individuals' estimated needs.

Intestinal failure in newborn infants can result from the loss of absorptive surface, mucosal dysfunction, or dysmotility. Parenteral nutrition is the standard treatment option to deliver nutrition from the time of diagnosis of short bowel syndrome until enteral autonomy is achieved (Premkumar et al 2022). Recommended treatment goals to restore energy and proteins can be achieved with a combination of glucose, proteins, carbohydrates, electrolytes, vitamins, minerals, and lipids.

SUPPORTIVE LITERATURE

Many studies have examined nutritional therapy, but conducting high-quality randomized controlled trials has been difficult. Challenges include complex patient populations, lack of agreement on outcome measures, and problems with blinding. Existing trials often focus on specific underlying diseases, making their results hard to generalize to larger populations.

Current trials that exist suggest that TPN can improve nutritional outcomes but does not reduce overall mortality in surgical or critically ill patients. TPN may lower complication rates in malnourished patients, but results vary based on factors such as patient characteristics, whether lipids were included, and the year of publication.

A landmark meta-analysis by Heyland et al in 1998 reviewed 26 randomized controlled trials (RCTs) representing 2211 patients to compare TPN with standard care in surgical and critically ill patients. Studies were included if they were RCTs, including surgical or critically ill adults who had received any form of TPN (e.g., protein, source of non-protein energy with or without lipids) and compared with those that received standard care (oral diets plus intravenous fluids). Primary outcomes were complications, length of stay, and mortality. Authors attempted to reduce heterogeneity within the studies by grouping results of studies that included only patients who were malnourished with the results of studies that included patients who were not malnourished at the study entry. Additionally, studies were grouped by their date of publication (1988 or earlier or published since 1989) and whether or not studies administered lipids. Perioperative mortality was defined as death within 30 days of operation or mortality reported at hospital discharge. Results of the aggregate analysis demonstrated there was no effect on mortality (RR, 1.03; 95% CI, 0.81-1.31). Of the 26 RCTs, 22 reported major complications, and aggregation revealed a trend toward reducing complication rates in those patients receiving TPN (RR, 0.84; 95% CI, 0.64-1.09). No difference in mortality existed when comparing malnourished patients with adequately nourished patients, however the rate of major complications was lower among malnourished patients receiving TPN. When comparing trials published in 1988 or earlier with those published in 1989 or later, those published earlier demonstrated a lower mortality rate associated with TPN, and those published later had no effect of TPN on complication rates. Complication rates were less in studies that did not use lipids. Finally, when comparing studies of surgical patients with critically ill patients, the mortality rate and complication rates were higher among those receiving TPN.

Kittiskulnam et al (2022) conducted a prospective, open-label randomized controlled trial to evaluate the effects of intradialytic parenteral nutrition (IDPN) containing glucose, amino acids, and an immune-modulating fish oil-based lipid emulsion on nutritional outcomes. These outcomes included biochemical markers, muscle assessments, and the Malnutrition Inflammation Score (MIS). The study also examined changes in inflammatory and appetite-related biomarkers following IDPN treatment. Eligible participants were adults on maintenance hemodialysis for at least 3 months, with spontaneous dietary intake of ≥20 kcal/kg/day and ≥0.8 g/kg/day of protein, who could not tolerate oral nutritional supplements and had evidence of protein-energy wasting (defined as serum albumin <3.5 g/dL, serum prealbumin ≤30 mg/dL, mild to moderate malnutrition by 7-point Subjective Global Assessment [SGA category B], or MIS ≥5). Thirty-eight patients were randomized to receive either IDPN plus standard counseling (n=18) or intensive dietary counseling alone (n=20) for 3 months. Outcomes were assessed at baseline, 3 months, and 6 months, using intention-to-treat analysis. After 3 months, the IDPN group showed significantly greater increases in serum albumin and body weight compared to controls. Oral energy and protein intake also improved in the IDPN group by 281.2 kcal/day (95% CI: 120.9–441.4; p=0.001) and 8 g/day (95% CI: 0.4–15.5; p=0.04), while intake declined in controls. Serum prealbumin and handgrip strength were similar between groups. MIS decreased significantly in the IDPN group (from 8.7 ± 3.8 to 6.8 ± 3.2). No significant differences

were observed in inflammatory markers. At 6 months, oral intake remained higher in the IDPN group, and serum albumin decreased slightly (by 0.1 g/dL) but remained above baseline. The authors concluded that 3 months of IDPN supplementation improved serum biochemistry and nutritional status more effectively than dietary counseling alone in hemodialysis patients unable to tolerate oral supplements.

There are no randomized controlled trials comparing the use of enteral nutrition with TPN for individuals with HG. Studies describing complications associated with peripherally inserted central catheter use in pregnancy have been published (Ogura 2003, Paranyuk 2006) highlighting that TPN should be reserved for individuals who cannot tolerate enteral tube feedings.

JA Smith and colleagues (2025) published an UpToDate summary regarding nausea and vomiting of pregnancy: treatment and outcome with a section addressing the use of parenteral nutrition, stating "If enteral nutrition is poorly tolerated, parenteral nutrition is the last resort", offering guidance to consider the high rate of significant complications, including "liver function aberrations, catheter-related sepsis, and thromboembolic events, as well as adverse neonatal outcomes." The summary recommends that it may be a reasonable alternative for individuals with HG who are able to tolerate some oral intake, and that discontinuation of TPN can occur within 7-14 days.

PROFESSIONAL GUIDELINE(S)

The American College of Obstetricians and Gynecologists (ACOG) published a 2018 practice bulletin on the clinical management of nausea and vomiting of pregnancy. The ACOG does address the use of enteral and parenteral nutrition, with enteral tube feeding (nasogastric or nasoduodenal) initiation as the first line treatment to provide nutritional support to women with HG who are not responsive to medical therapy and cannot maintain their weight. The ACOG additionally states that while TPN has been described for HG for women who cannot tolerate enteral tube feedings, peripherally inserted central catheters should be used only as a last resort due to the potential for severe maternal morbidity.

In 2017, the American Society for Parenteral and Enteral Nutrition (ASPEN) (Worthington et al) published consensus recommendations on appropriate PN use and promote its clinical benefits while minimizing the risks associated with the therapy and provides definitions for the following:

- "Malnutrition, Adult: An acute, subacute, or chronic state of nutrition in which a combination of varying degrees of overnutrition or undernutrition, with or without inflammatory activity, has led to a change in body composition and diminished function. The etiology-based nutrition diagnoses in adults in clinical practice settings are as follows: Starvation-related malnutrition: Chronic starvation without inflammation (e.g., anorexia nervosa).
- Chronic disease-related malnutrition: Inflammation is chronic and of mild to moderate degree (e.g., organ failure, pancreatic cancer, rheumatoid arthritis, sarcopenic obesity).
- Acute disease or injury-related malnutrition: Inflammation is acute and of severe degree (e.g., major infection burns, trauma, closed head injury).
- Malnutrition, pediatric: An imbalance between nutrient requirement and intake, resulting in cumulative deficits of energy, protein, or micronutrients that may negatively affect growth,

development, and other relevant outcomes. It is recommended that growth charts based on a standard deviation z score system be used to track and assess nutrition status in children.

- Nutritionally-at-risk: Consider the individual nutritionally-at risk if any of the following is present:

  Nutritionally-At-Risk Adult:

  - Involuntary weight loss of 10% of usual body weight within 6 months or 5% within 1 month;
  - Involuntary loss of 10 lb. within 6 months;
  - Body mass index (BMI) less than 18.5 kg/m2;
  - Increased metabolic requirements;
  - Altered diets or diet schedules;
  - Inadequate nutrition intake, including not receiving food or nutrition products for more than 7 days.

  Nutritionally-At-Risk Child:

  - Weight for length, weight for height, or sex less than 10th percentile (–1.28 z score);
  - BMI for age or sex less than 5th percentile (–1.64 z score);
  - Increased metabolic requirements;
  - Impaired ability to ingest or tolerate oral feeding;
  - Documented inadequate provision of or tolerance to nutrients;
  - Inadequate weight gain or a significant decrease in usual growth percentile.

  Nutritionally-At-Risk Neonate:

  - High Risk
    - Preterm less than 28 weeks at birth;
    - Extremely low birth weight less than 1000 g;
    - Infant establishing feeds after episode of necrotizing enterocolitis or gastrointestinal perforation;
    - Infants with severe congenital gastrointestinal malformations (e.g., gastroschisis).
  - Moderate Risk
    - Preterm 28th–31st weeks, otherwise well;
    - Intrauterine growth restriction (weight less than 9th percentile);
    - Very low birth weight 1000–1500 g;
    - Illness or congenital anomaly that may compromise feeding."

In addition to providing definitions, the ASPEN recommends that "PN use not be based solely on medical diagnosis or disease state"; however, should be utilized in "patients who are malnourished or

at risk for malnutrition when a contraindication to EN exists or the patient does not tolerate adequate EN or lacks sufficient bowel function to maintain or restore nutrition status."

In 2022, ASPEN published guidelines for the provision of nutrition support therapy in the adult critically ill patient (Compher et al). The authors considered data from well-designed trials, however, only one conclusion was obtained with evidence identified as "strong," with most recommendations made based on weak or low-to moderate quality evidence leading authors to maintain existing recommendations based on the 2017 published guidelines.

In 2020, Ikizler and colleagues published the Kidney Disease Outcomes Quality Initiative Clinical Practice Guideline for Nutrition in Chronic Kidney Disease (CKD) update in partnership with the National Kidney Foundation (NKF) and the Academy of Nutrition and Dietetics. Guideline 4 addresses the use of nutritional supplementation and recommendations include the following:

- In adults with CKD 3-5 (2D) or post transplantation (opinion) at risk of or with protein-energy wasting, we suggest a minimum of a 3-month trial of oral nutritional supplements to improve nutritional status if dietary counseling alone does not achieve sufficient energy and protein intake to meet nutritional requirements.
- In adults with CKD 1-5 (D), with chronically inadequate intake and whose protein and energy requirements cannot be attained by dietary counseling and oral nutritional supplements, it is reasonable to consider a trial of enteral tube feeding (opinion).
- In adults with CKD with protein-energy wasting, we suggest a trial of TPN for CKD 1-5 patients (2C) and IDPN for CKD 5D on MHD patients (2C) to improve and maintain nutritional status if nutritional requirements cannot be met with existing oral and enteral intake (opinion)."

The American Gastroenterological Association published a Clinical Practice Update (Baron et al 2020) on the management of pancreatic necrosis addressing the use of enteral feeding in its Best Practice Advice. The recommendation states that individuals with pancreatic necrosis should have early initiation of enteral feeding to decrease the risk of infected necrosis. It is suggested that a trial of oral nutrition is recommended immediately in patients in whom there is absence of nausea and vomiting and no signs of severe ileus or gastrointestinal luminal obstruction. When oral nutrition is not feasible, enteral nutrition by either nasogastric/duodenal or nasojejunal tube should be initiated as soon as possible. Total parenteral nutrition should be considered only in cases where oral or enteral feeds are not feasible or tolerated.

REGULATORY STATUS

Parenteral nutrition is regulated as a drug by the U.S. Food and Drug Administration (FDA), who is responsible for ensuring the safety, efficacy, and quality of drugs sold in the United States. This includes both prescription and over-the-counter medications. Refer to the FDA Drug website. Available from: https://www.fda.gov/drugs [accessed 2026 Jan 06]

The FDA maintains information for consumers and health professionals on new drug warnings and other safety information, drug label changes, and shortages of medically necessary drug products. Available from: Drug Safety and Availability | FDA [accessed 2026 Jan 06]

CODE(S)

- Codes may not be covered under all circumstances.
- Code list may not be all inclusive (AMA and CMS code updates may occur more frequently than policy updates).
- (E/I)=Experimental/Investigational
- (NMN)=Not medically necessary/appropriate

CPT Codes

Code	Description
36568 - 36573	Insertion of peripherally inserted central venous catheter (PICC) or access device (code range)

HCPCS Codes

Code	Description
B4164 - B4216 B5000 - B5200	Parenteral nutrition solutions and additives (code ranges)
B4220 - B4224	Parenteral nutrition supply/administration kit (code range)
B9004	Parenteral nutrition infusion pump, portable
B9006	Parenteral nutrition infusion pump, stationary
B9999	NOC for parenteral supplies
S9364 - S9368	Home infusion therapy, total parenteral nutrition (TPN); administrative services, professional pharmacy services, care coordination, and all necessary supplies and equipment including standard TPN formula, per diem (code range)

ICD10 Codes

Code	Description
Multiple Codes	

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SEARCH TERMS

Not Applicable

CENTERS FOR MEDICARE AND MEDICAID SERVICES (CMS)

Total Parenteral Nutrition is not addressed in National or Regional Medicare coverage determinations or policies. Please refer to the following: Medicare Prescription Drug Benefit Manual) [Last updated 2016 Jan 15; accessed 2026 Jan 06] Available from: https://www.cms.gov/medicare/prescription-drug-coverage/prescriptiondrugcovcontra/downloads/part-d-benefits-manual-chapter-6.pdf

PRODUCT DISCLAIMER

- Services are contract dependent; if a product does not cover a service, medical policy criteria do not apply.

- If a commercial product (including an Essential Plan or Child Health Plus product) covers a specific service, medical policy criteria apply to the benefit.
- If a Medicaid product covers a specific service, and there are no New York State Medicaid guidelines (eMedNY) criteria, medical policy criteria apply to the benefit.
- If a Medicare product (including Medicare HMO-Dual Special Needs Program (DSNP) product) covers a specific service, and there is no national or local Medicare coverage decision for the service, medical policy criteria apply to the benefit.
- If a Medicare HMO-Dual Special Needs Program (DSNP) product DOES NOT cover a specific service, please refer to the Medicaid Product coverage line.

POLICY HISTORY/REVISION	
Committee Approval Dates	
09/16/99, 05/17/01, 07/18/02, 07/17/03, 07/15/04, 07/21/05, 06/22/06, 06/28/07, 06/26/08, 08/27/09, 08/26/10, 08/25/11, 08/23/12, 08/22/13, 08/28/14, 08/27/15, 08/25/16, 08/25/17, 02/22/18, 08/23/18, 02/28/19, 02/27/20, 02/25/21, 02/17/22, 02/16/23, 02/22/24, 02/20/25, 02/19/26	
Date	**Summary of Changes**
02/19/26	• Annual review, policy intent unchanged.
02/20/25	• Policy intent unchanged; Changed the word "patient" to "individual" throughout the document.
01/01/25	• Summary of changes tracking implemented.
09/16/99	• Original effective date