Clinical Policy Title: Nutritional support

Clinical Policy Number: 1052

Effective Date:	**March 1, 2013**
Initial Review Date:	September 18, 2013
Most Recent Review Date:	August 1, 2018
Next Review Date:	August 2019

Policy contains:

- Enteral nutrition.
- Parenteral nutrition.
- Total parenteral nutrition.

Related policies:

CP# 1051 Breast pumps

ABOUT THIS POLICY: *AmeriHealth Caritas has developed clinical policies to assist with making coverage determinations. AmeriHealth Caritas' clinical policies are based on guidelines from established industry sources, such as the Centers for Medicare & Medicaid Services (CMS), state regulatory agencies, the American Medical Association (AMA), medical specialty professional societies, and peer-reviewed professional literature. These clinical policies along with other sources, such as plan benefits and state and federal laws and regulatory requirements, including any state- or plan-specific definition of "medically necessary," and the specific facts of the particular situation are considered by AmeriHealth Caritas when making coverage determinations. In the event of conflict between this clinical policy and plan benefits and/or state or federal laws and/or regulatory requirements, the plan benefits and/or state and federal laws and/or regulatory requirements shall control. AmeriHealth Caritas' clinical policies are for informational purposes only and not intended as medical advice or to direct treatment. Physicians and other health care providers are solely responsible for the treatment decisions for their patients. AmeriHealth Caritas clinical policies are reflective of evidence-based medicine at the time of review. As medical science evolves, AmeriHealth Caritas will update its clinical policies as necessary. AmeriHealth Caritas' clinical policies are not guarantees of payment.*

Coverage policy

AmeriHealth Caritas considers the use of nutritional support to be clinically proven and, therefore, medically necessary when one of the following criteria is met:

- Location of care: Critically ill hospitalized patients (severe traumatic brain injury, major trauma/surgery, mechanical ventilation, patient anticipated to be *nil per os* (nothing by mouth) > seven days, malnourishment anticipated for > two days).
- Physiologic status: Member has permanently inoperative body organ or function, or in the judgment of the attending physician that impairment will be long or of indefinite duration.
- Type of nutritional support (at least one):
  - Enteral nutrition: Functioning gastrointestinal tract, pathology or non-function of structures normally permitting food to reach digestive tract, inability to maintain weight and strength commensurate with general condition.
  - Specialized infant formulas: For inborn errors of metabolism or inherited metabolic diseases where such formulas are sole sources of nutrition.

- Daily parenteral nutrition: Severe pathology of alimentary tract precluding absorption of sufficient nutrients to maintain weight and strength commensurate with general condition.

Limitations:

All other uses of nutritional supplements or aids are not medically necessary, including, but not limited to, the following:

- Standardized or specialized infant formula except as above.
- Food thickeners.
- Dietary and food supplements.
- Lactose-free products or aids to lactose digestion.
- Gluten-free food products.
- Weight loss foods or aids.
- Normal grocery items.
- Low carbohydrate items.
- Baby food.
- Grocery items that can be blenderized and used for enteral feeds.
- Nutritional supplement puddings.
- High protein powders and mixes.
- Oral vitamins and minerals.

Alternative covered services:

Physician assessment and nutritional counseling within the network.

Background

Ninawer (2001) reported a consensus that nutritional support should be provided to intensive care unit patients, rationalizing that hospitalized patients with malnutrition (macro- and/or micro-nutrient deficiency) are at increased risk for infections, prolonged stays, and death. Even patients with adequate pre-hospital nutritional statuses are subject to stress, infection, and impaired organ function, all of which increase calorie needs during their stays.

Nutritional support interventions include enteral nutrition ("tube feeding") administered via trans-oral, -nasal, or -gastric routes or by surgical jejunostomy (directly into the small intestine), and parenteral or total parenteral nutrition used when enteral routes are unavailable or contraindicated. Calorie requirements for critically ill patients are estimated pragmatically as 25 kilocalories per kilogram of ideal body weight, administered in a fluid volume consistent with the patient's needs and with protein sources comprising 15 to 20 percent of daily calorie requirements: glucose, 30 – 70 percent; and fats, 15 – 30 percent.

Searches

AmeriHealth Caritas searched PubMed and the databases of:

- UK National Health Services Centre for Reviews and Dissemination.
- Agency for Healthcare Research and Quality's National Guideline Clearinghouse and other evidence-based practice centers.
- The Centers for Medicare & Medicaid Services.

We conducted searches on June 11, 2018. The search terms were: "Nutritional Support (MeSH)" and the free text term "nutritional support."

We included:

- **Systematic reviews**, which pool results from multiple studies to achieve larger sample sizes and greater precision of effect estimation than in smaller primary studies. Systematic reviews use predetermined transparent methods to minimize bias, effectively treating the review as a scientific endeavor, and are thus rated highest in evidence-grading hierarchies.
- **Guidelines** based on systematic reviews.
- **Economic analyses**, such as cost-effectiveness, and benefit or utility studies (but not simple cost studies), reporting both costs and outcomes — sometimes referred to as efficiency studies — which also rank near the top of evidence hierarchies.

Findings

The medical literature contains many meta-analyses and systematic reviews on efficacy of nutritional support for various patient populations. This policy reports only a relatively small number of these citations, with a focus on the most current and largest-scale reviews. A summary of research findings are as follows:

- As noted above, nutritional support in critically ill hospitalized patients is based largely on consensus.
- Reviews tabulated below do not substantively alter that picture. Many find insufficient evidence for nutritional intervention benefit in the specific groups of patients considered, or instead find substantial harms.
- More and higher-quality (design and reporting) research is needed.

Studies generally show that nutritional support improves body weight, protein intake, and caloric intake for patients. Improvements such as shorter hospital stays, fewer re-admissions, and cost benefits have frequently been documented. However, mortality typically is not lower for patients receiving nutritional support compared to controls, and there is a lack of strong, consistent evidence for other improvements in outcomes.

Policy updates:

In 2015, we identified three new systematic reviews for this policy update. Two addressed the efficacy of nutritional support in critically ill adults (Wan, 2015; Li, 2014), and one in critically ill children (Wong, 2014). The results of both studies of adult populations are consistent with the Academy of Nutrition and Dietetics

guidelines (2012). Current evidence is insufficient to support recommendations for nutritional support in critically ill children. The new evidence does not change the findings of the original policy.

In 2016, we identified four new systematic reviews/meta analyses from 2016 for this policy update. Outcomes for patients given nutritional support vs. controls are addressed in several studies, including mortality, hospital readmissions, a cost-benefit analysis, and a comparison of enteral vs. total parenteral nutrition. The many other meta-analyses not included in this policy often address specific categories of patients that may or may not be generalizable to broader populations.

In 2017, we added two Cochrane reviews (Feinberg, 2017; Joffe, 2016) and two joint guideline updates by the Society of Critical Care Medicine and American Society for Parenteral and Enteral Nutrition (Mehta, 2017; McClave, 2016) to the policy. These findings are consistent with previous conclusions, and no policy changes are warranted.

In 2018, we added two guideline publications from the American Gastroenterological Association Institute on nutrition in pancreatitis (Crockett, 2018a; 2018b) and five peer-reviewed publications to the reference list. Three of the peer-reviewed publications address nutrition in specific disease conditions, while one addresses nutritional support in infants and one addresses nutritional therapy in the home. No policy changes are warranted. Policy ID changed from 15.02.03 to CCP.1052.

Summary of clinical evidence:

Citation	Content, Methods, Recommendations
Feinberg (2017) Cochrane review Nutrition support in hospitalized adults at nutritional risk	**Key points:** • Systematic review and meta-analysis of 244 randomized controlled trials with 28,619 participants comparing nutrition support versus no intervention, treatment as usual, or placebo. • Overall quality: low with high risk of bias. • Evidence suggests nutrition support has a small benefit on weight but no effect on mortality, serious adverse events, or other outcomes at short-term and long-term follow-up.
Mehta (2017) for the Society of Critical Care Medicine and American Society for Parenteral and Enteral Nutrition Guideline: nutrition support therapy in the pediatric critically ill patient	**Key points:** • Target population is the pediatric (> 1 mo and < 18 yr) critically ill patient expected to require a length of stay > 2 or 3 days in a pediatric intensive care unit admitting medical, surgical, and cardiac patients. • Enteral nutrition is the preferred route of delivery. Quality of evidence: low, GRADE recommendation: strong. • Suggest the gastric route as the preferred site. Quality of evidence: low, GRADE recommendation: weak. • Suggest early initiation of enteral nutrition, within the first 24–48 hours after pediatric intensive care unit admission, in eligible patients. Quality of evidence: low, GRADE recommendation: weak. • Not recommend initiating parenteral nutrition within 24 hours of pediatric intensive care unit admission. Quality of evidence: moderate, GRADE recommendation: strong. • Delay supplemental parenteral nutrition until one week after pediatric intensive care unit

Citation	Content, Methods, Recommendations
	admission in patients with normal baseline nutritional state and low risk of nutritional deterioration. • Offer parenteral nutrition supplementation in children who are unable to receive any enteral nutrition during the first week in the pediatric intensive care unit. For severely malnourished or at risk of nutritional deterioration, may supplement parenteral nutrition in the first week if unable to advance past low volumes of enteral nutrition. Expert consensus.
Bally (2016) Effects of nutritional support on outcomes of medical inpatients with malnutrition	**Key points:** • Meta-analysis of 22 randomized controlled trials (3,736 total patients) comparing patients with and without nutritional support. • Mortality not different between intervention and control groups (9.8% vs. 10.3%). • Hospital-acquired infections not significantly different (6.0% vs. 7.6%). • Non-elective re-admissions reduced for intervention group (20.5% vs. 29.6%). • No differences between groups for functional outcomes (Barthel) or hospital length of stay.
Joffe (2016) Cochrane review Nutritional support for critically ill children	**Key points:** • Systematic review identified only one randomized controlled trials of 77 children in intensive care unit with burns involving more than 25% of the total body surface area randomized to either enteral nutrition within 24 hours or after at least 48 hours • Overall quality: very low with unclear risk of bias. • No statistically significant differences were observed for mortality, sepsis, ventilator days, length of stay, unexpected adverse events, resting energy expenditure, nitrogen balance, or albumin levels. • Research is urgently needed to identify best practices regarding the timing and forms of nutrition for critically ill infants and children.
McClave (2016) for the SCCM and ASPEN Guideline: Provision and assessment of nutrition support therapy in the adult critically ill patient	**Key points:** • Target population: adult (≥18 years) critically ill patient expected to require a length of stay greater than 2 or 3 days in a medical or surgical intensive care unit, including patients with traumatic brain injury, open abdomen, burns, sepsis, postoperative major surgery, chronic critically ill, obese. • Initiate early enteral nutrition within 24 to 48 hours in the critically ill patient who is unable to maintain volitional intake. Quality of evidence: Very Low, Recommendation Strength: Strong. • Use enteral nutrition over parenteral nutrition in critically ill patients who require nutrition support therapy. Quality of evidence*:* Low to Very Low, Recommendation Strength*:* Weak. • Specialized nutrition therapy over the first week of in the intensive care unit not required for patients who are at low nutrition risk with normal baseline nutrition status and low disease severity who cannot maintain volitional intake. Expert consensus. • Initiate exclusive parenteral nutrition as soon as possible following intensive care unit admission for patients at high nutrition risk (e.g., NSutrition Risk creening 2002 ≥ 5 or Nutrition Risk in the Criticallly Ill score ≥ 5) or severely malnourished, when enteral nutrition is not feasible.
Zhao (2016) Benefits of EN vs. TPN in patients with gastrointestinal cancer who	**Key points:** • Meta-analysis/systematic review of 18 studies, n = 2,540; 1,268 received enteral nutrition, 1,272 received total parenteral nutrition.

Citation	Content, Methods, Recommendations
underwent major surgery	• Enteral nutrition was associated with shorter length of hospital stay, shorter time to flatus, and significantly greater increases in albumin levels post-operatively.
Canadian Agency for Drugs & Technologies in Health (2014) Nutritional supplementation in patients with cancer	**Key points:** • Systematic reviews and RCTs, 2008 – Dec 2013; single included review covered 13 randomized controlled trialss or quasi-randomized controlled trialss. • Oral supplementation may be effective for preserving body weight and some aspects of quality of life. • Patients should be assessed but routine nutritional support not warranted for cancer patients in chemotherapy.
Collins (2015) Interventions to prevent and treat malnutrition in patients admitted for rehabilitation	**Key points:** • 1,765 screened studies narrowed to 10 (oral nutritional supplements, food service interventions, clinical care processes tested). • Compared to meals alone, oral supplements improved protein and energy intake, with some evidence for anthropometric and length of stay improvements. • Oral nutrition supplements and energy-dense meals may be effective strategies for malnutrition in rehabilitation.
Beck (2013) Oral nutritional support for medical and surgical patients > 65 after discharge	**Key points:** • Randomized controlled trials; methods otherwise incompletely reported. • Six trials (N = 716). • No significant effects on mortality or readmissions.
Woestenenk (2013) Nutritional intervention in cystic fibrosis	**Key points:** • Original studies with ≥ four subjects — 1997. • Seventeen studies: behavioral interventions (four); oral supplementation (six); enteral feeding (four); study designs not reported. • Enteral feeding associated with weight gain. • Inconsistent results for other interventions.
Academy of Nutrition and Dietetics (2012) Guideline	**Key points:** • If enteral nutrition is not contraindicated (e.g., by hemodynamic instability, bowel obstruction, high output fistula, or severe ileus) then enteral nutrition is recommended over parenteral nutrition for the critically ill adult patient. • Research shows less septic morbidity, fewer infectious complications and significant cost savings in critically ill adult patients who received enteral nutrition vs. parenteral nutrition. • There is limited evidence that enteral nutrition vs. parenteral nutrition affects hospital length of stay, but an impact on mortality has not been demonstrated.
Burden (2012) Cochrane review Preoperative nutrition for patients under-going gastrointestinal surgery	**Key points:** • Randomized controlled trials published through February 2012. • Six of seven trials used in meta-analysis. • Significant benefits for pre-op parenteral nutrition: reduced complications; trials of enteral nutrition or oral inconclusive.

Citation	Content, Methods, Recommendations
Collins (2012) Nutritional support in chronic obstructive pulmonary disease	**Key points:** • English-language randomized controlled trials (dietary advice or enteral) — Jan 2010. • Thirteen randomized controlled trials (N = 439). • Increase in total protein and energy intake; body weight and grip strength.
Koretz (2012) Cochrane review Nutritional support for end-stage liver disease	**Key points:** • Randomized controlled trialss through Jan 2012. • Thirty-seven trials, only one of high quality. • No compelling evidence for routine use of parenteral, enteral, or oral supplementation in patients with liver disease.

References

Professional society guidelines/other:

Academy of Nutrition and Dietetics. Critical Illness Evidence-Based Nutrition Practice Guideline. Executive summary. 2012. Academy of Nutrition and Dietetics website. https://www.andeal.org/topic.cfm?cat=4840. Accessed August 8, 2017.

Crockett SD, Wani S, Gardner TB, Falck-Ytter Y, Barkun AN. American Gastroenterological Association Institute guideline on initial management of acute pancreatitis. *Gastroenterol.* 2018a;154(4):1096-1101.

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Peer-reviewed references:

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Joffe A, Anton N, Lequier L, et al. Nutritional support for critically ill children. *Cochrane Database Syst Rev.* 2016; (5): CD005144.

Koretz RL, Avenell A, Lipman TO. Nutritional support for liver disease. *Cochrane Database Syst Rev.* 2012; 5: Cd008344.

Muscaritoli M, Krznaric Z, Singer P, et al. Effectiveness and efficacy of nutritional therapy: A systematic review following Cochrane methodology. *Clin Nutr.* 2017; 36(4): 939 – 957.

Narula N, Dhillon A, Zhang D, Sherlock ME, Tondeur M, Zachos M. Enteral nutritional therapy for induction of remission in Crohn's disease. *Cochrane Database Syst Rev.* 2018;4:Cd000542.

Osborn DA, Schindler T, Jones LJ, Sinn JK, Bolisetty S. Higher versus lower amino acid intake in parenteral nutrition for newborn infants. *Cochrane Database Syst Rev.* 2018;3:Cd005949.

Parikh HG, Miller A, Chapman M, Moran JL, Peake SL. Calorie delivery and clinical outcomes in the critically ill: a systematic review and meta-analysis. *Crit Care Resusc*. 2016; 18(1): 17 – 24.

Qiang H, Hang L, Shui SY. The curative effect of early use of enteral immunonutrition in postoperative gastric cancer: a meta-analysis. *Minerva Gastroenterol Dietol.* 2017;63(3):285-292.

Wong A, Goh G, Banks MD, Bauer JD. A systematic review of the cost and economic outcomes of home enteral nutrition. *Clin Nutr.* 2018;37(2):429-442.

Zhao XF, Wu N, Shao GQ, Liu JF, Dai YF. Enteral nutrition versus parenteral nutrition after major abdominal surgery in patients with gastrointestinal cancer: a systematic review and meta-analysis. *J Investig Med*. 2016; 64(5): 1061 – 1074.

National Coverage Determinations:

180.1 Medical Nutrition Therapy.

180.2 Enteral and Parenteral Nutritional Therapy.

Local Coverage Determinations:

A52493 Enteral Nutrition

A52515 Parenteral Nutrition

L33783 Enteral Nutrition

L33798 Parenteral Nutrition

Commonly submitted codes

Below are the most commonly submitted codes for the service(s)/item(s) subject to this policy. This is not an exhaustive list of codes. Providers are expected to consult the appropriate coding manuals and bill accordingly.

CPT Code	Description	Comment
43246	EGD, flexible, transoral; with directed placement of percutaneous gastrostomy tube.	
43752	Naso- or oro-gastric tube placement (requiring physician skill and fluoroscopic guidance)	
43831	Gastrostomy, open; neonatal, for feeding	
43832	Gastrostomy, open; with construction of gastric tube (eg, Janeway procedure)	
44372	Small intestinal endoscopy, enteroscopy beyond the second portion of the duodenum not including the ileum; with placement of percutaneous jejunostomy tube	
49440	Insertion of gastrostomy tube, under fluoroscopic guidance	
49441	Insertion of jejunostomy or duodenostomy tube, percutaneous with fluoroscopy	
49446	Conversion of gastrostomy tube to gastro-jejunostomy tube, percutaneous, under fluoroscopic guidance including contrast injection(s), image documentation and report	
49450	Replacement of gastrostomy or cecostomy (or other colonic) tube, percutaneous, under fluoroscopic guidance including contrast injection(s),	

CPT Code	Description	Comment
	image documentation and report	
49451	Replacement of duodenostomy or jejunostomy tube, percutaneous, under fluoroscopic guidance including contrast injection(s), image documentation and report	
49452	Replacement of gastro-jejunostomy tube, percutaneous, under fluoroscopic guidance including contrast injection(s), image documentation and report	

ICD-10 Code	Description	Comment
E40	Kwashiorkor	
E41	Nutritional marasmus	
E42	Marasmic kwashiorkor	
E43	Unspecified severe protein-calorie malnutrition	
E44.0	Moderate protein-calorie malnutrition	
E44.1	Mild protein-calorie malnutrition	
E46	Unspecified protein-calorie malnutrition	
E64.0	Sequelae of protein-calorie malnutrition	
E70.0	Classical phenylketonuria	
E70.1	Other hyperphenylalaninemias	
K91.2	Postsurgical malabsorption, not elsewhere classified	
Z93.1	Gastrostomy status	
Z93.4	Other artificial openings of gastrointestinal tract status	

HCPCS Level II Code	Description	Comment
B4087	Gastrostomy/jejunostomy tube, standard, any material, any type, each	
B4088	Gastrostomy/jejunostomy tube, low-profile, any material, any type, each	
B4102	Enteral formula, for adults, used to replace fluids and electrolytes (e.g., clear liquids), 500 ml= 1 unit	
B4103	Enteral formula, for pediatrics, used to replace fluids and electrolytes (e.g., clear liquids), 500 ml = 1 unit	
B4104	Additive for enteral formula (e.g., fiber)	
B4149	Enteral formula, manufactured blenderized natural foods with intact nutrients, includes proteins, fats, carbohydrates, vitamins and minerals, may include fiber, administered through an enteral feeding tube, 100 calories = 1 unit	
S9364	Home infusion therapy, total parenteral nutrition (TPN); administrative services, professional pharmacy services, care coordination and all supplies including standard TPN formula	
S9365	Home infusion therapy, TPN; 1 liter per day	
S9366	Home infusion therapy, TPN; more than 1 liter, but no more than 2 liters/day.	
S9367	Home infusion therapy, TPN; more than 2 liters, but no more than 3 liters/day	
S9368	Home Infusion therapy, TPN; more than 3 liters per day	