



A Comparison of IMPACT® PEPTIDE 1.5 Formula

Complete Peptide-Based Nutrition for Immune Support

vs.

Perative® Formula Per Liter



| PRODUCT | IMPACT® PEPTIDE 1.5 Formula | Perative® Formula | IMPACT® PEPTIDE 1.5 Attributes |
|--|---|--|---|
| Company | Nestlé HealthCare Nutrition | Abbott Nutrition | |
| Application | Peptide-based immunonutrition for surgical and trauma patients. | Therapeutic peptide-based nutrition for metabolic stress. | ▶ IMPACT® PEPTIDE 1.5 Formula is specifically designed to promote tolerance in surgical and critically ill patients. |
| Calories (kcal/mL) | 1.5 | 1.3 | ▶ Increased caloric density may assist with volume sensitivity. |
| Calories (kcal) | 1500 kcals (1 L) | 1300 kcals (1 L) | |
| Protein (g) | 94 (25% of total kcal) | 66.7 (20.5% of total kcal) | ▶ Higher in protein to facilitate meeting the elevated needs of patients with metabolic stress. ^{5,7} |
| NPC:N Ratio | 63:1 | 97:1 | ▶ Lower ratio of non-protein calories to nitrogen may assist meeting large protein needs while decreasing the risk of overfeeding calories. |
| Protein Source | Enzymatically Hydrolyzed Casein 18.7 g supplemental L-arginine/L | Partially Hydrolyzed Sodium Caseinate, Whey Protein Hydrolysate 8 g total L-arginine/L | ▶ IMPACT® PEPTIDE 1.5 Formula contains equivalent grams L-arginine/calorie as other IMPACT® tube feeding formulas. ▶ Up to 30 g arginine per day may be required to restore arginine levels in trauma and surgery. ¹ Arginine is essential for normal T-cell function. ² ▶ Nutritional wound management shown to be more successful in humans with intakes of 17-25 g of arginine per day. ³ |
| Protein Profile | Not Detectable- Intact Protein** 21% FAA [†] 79% Peptides | 33% Intact Protein** 9% FAA [†] 58% Peptides | ▶ IMPACT® PEPTIDE 1.5 Formula contains no detectable intact protein, whereas more than 1/3 of the protein in Perative® Formula is intact. ▶ IMPACT® PEPTIDE 1.5 Formula has considerably more peptides than Perative® Formula. Peptides have been shown to promote better nitrogen absorption and utilization compared to whole protein in surgical and trauma patients. ^{4,5} ▶ If there is evidence of diarrhea, small peptides may be utilized to assist tolerance. ⁶ |
| Peptide Profile (% by weight of AA residues)‡ | 2-4: 14% 5-9: 17% 10-20: 34% 21-44: 16% >44: 19% | Contact manufacturer for peptide profile | ▶ The balanced peptide profile of IMPACT® PEPTIDE 1.5 Formula facilitates nitrogen absorption and utilization. ^{4, 8-10} |
| Fat (g) | 63.6 (38% of total kcal) | 37.3 (25% of total kcal) | |
| Fat Source | MCT Oil Fish Oil Canola Oil Soybean Oil | Canola Oil, MCT Oil, Corn Oil | ▶ IMPACT® PEPTIDE 1.5 Formula contains EPA & DHA from fish oil to help modulate the inflammatory response. ¹¹ ▶ Data indicate that formulas with both supplemental arginine and fish oil are needed to decrease the risk of infection, wound complications and help decrease LOS in high-risk surgery patients ¹² |
| MCT:LCT | 50:50 31.8 grams MCT/L 31.8 grams LCT/L | 40:60 14.9 grams MCT/L 22.3 grams LCT/L | ▶ IMPACT® PEPTIDE 1.5 Formula contains 2 times more MCT than Perative® Formula per liter. MCT is an easily absorbed, non-protein, non-carbohydrate source of calories. ▶ MCT may enhance tolerance to enteral nutrition in severe acute pancreatitis. ⁶ ▶ MCT does not promote proinflammatory prostaglandin E ₂ synthesis in vitro. ¹³ ▶ Increased amount of MCT may be associated with decreased inflammatory response. ¹³ |

**Data on file. Multiple batches tested by an external laboratory using the SDS-PAGE (sodium dodecyl sulfate-polyacrylamide gel electrophoresis) method.

Intact protein defined as having a weight of 19 kDa (kilodaltons) or greater.

†Data on file. Multiple batches tested by an external laboratory using acid extraction and derivitization of amino acids determined by HPLC with DAD detection.

‡Data on file. Peptide profile shown is typical based on determination of average molecular weights of peptides measured within (+/-) 2% absolute variability.

| PRODUCT | IMPACT® PEPTIDE 1.5 Formula | Perative® Formula | IMPACT® PEPTIDE 1.5 Attributes |
|--|--|--|--|
| n6:n3 EPA + DHA (g/L) | 1.4:1 4.9 | 4.8:1 NA | <ul style="list-style-type: none"> ▶ IMPACT® PEPTIDE 1.5 Formula contains the same n6:n3 fatty acid ratio as other IMPACT® tube feeding formulas. ▶ Low n6:n3 ratio is associated with modulation of inflammatory response.¹⁴ ▶ An n6:n3 ratio of 2:1 is suggested for critically ill patients.^{15,16} ▶ Perative® Formula has an n6:n3 ratio similar to some standard enteral formulas. |
| Nucleotides (g) | 1.8 | NA | <ul style="list-style-type: none"> ▶ IMPACT® PEPTIDE 1.5 Formula contains equivalent grams/calorie of dietary nucleotides as other IMPACT® tube feeding formulas. ▶ In a meta-analysis of 28 studies of immunonutrition formulas, only IMPACT® formula containing arginine, n-3 fatty acids and nucleotides showed significantly reduced infection rates vs. standard nutrition after major elective surgery.¹⁷ |
| Carbohydrate (g) | 140 (37% of total kcal) | 180.3 (54.5% of total kcal) | ▶ Relatively low level of carbohydrate to support blood glucose management. ¹⁸ |
| Carbohydrate Source | Maltodextrin, Corn Starch | Maltodextrin | |
| Dietary Fiber (g) | 0 | 6.5g | ▶ Soluble and insoluble fiber should be avoided in patients at high risk for bowel ischemia or severe dysmotility. ⁶ |
| Fiber Source | N/A | Fructooligosaccharides (FOS) | |
| Vitamin C (mg) | 1000 | 260 | ▶ Vitamin C is essential for collagen formation and is important in enhancing connective tissue synthesis. ¹⁹ |
| Vitamin E (IU) | 100 | 40 | ▶ IMPACT® PEPTIDE 1.5 Formula contains 133% of the RDI for Vitamin E. Vitamin E is part of the body's antioxidant defense system that protects against oxidative damage. Vitamin E also promotes cell membrane integrity. ²⁰ |
| Selenium (mcg) | 100 | 61 | ▶ Selenium is a key component of selenoproteins, important for the maintenance of the redox system and modulating the immune system. ²¹ |
| Zinc (mg) | 36 | 20 | <ul style="list-style-type: none"> ▶ Zinc is a cofactor for at least 100 different pathways in relationship to wound management including collagen formation and protein synthesis.¹⁹ ▶ Higher levels of zinc may be important in patients with hypermetabolism and/or high output fistulae, diarrhea, and fluid loss through wound exudate.^{19,22} ▶ IMPACT® PEPTIDE 1.5 Formula contains 44% more zinc than Perative® Formula. ▶ Zinc excretion is increased in patients on propofol sedation, due to EDTA. A higher zinc content may help minimize zinc depletion.²³ |
| Vitamin D (IU) | 800 | 350 | ▶ IMPACT® PEPTIDE 1.5 Formula meets the 2011 IOM recommendation for increased Vitamin D in 1000 mL. ^{24†} |
| Volume to meet 100% RDI for key micronutrients | 1000 mL (1500 kcal) | 1155 ml (1500 Cal) | |
| Osmolality (mOsm/kg H ₂ O) | 510 | 460 | |
| Packaging | 250 mL Tetra Prisma® 1000 mL ULTRAPAK® Closed System with SpikeRight® PLUS Port | 237 mL cans 1000 mL and 1500 mL Ready-To-Hang | <ul style="list-style-type: none"> ▶ Now with enhanced label design in convenient, easy to use cartons. ▶ Case of 24-250 mL cartons provides 5% more volume (or 312 mL more) vs. case of 24-237 mL cans. ▶ Closed system with SpikeRight® PLUS port, the first available proximal-end enteral connector system designed to be incompatible with IV equipment.²⁵ ▶ All Tetra Prisma® and UltraPak® packaging is made without the use of BPA. |
| Flavors | Unflavored | Unflavored | |
| Recommended Tube Feeding Sizes | Gravity (Fr) 8 Pump Assisted (Fr) 5 | Gravity (Fr) 10 Pump Assisted (Fr) 8 | ▶ IMPACT PEPTIDE® 1.5 Formula accommodates smaller enteral feeding tubes than Perative® Formula. |

†2011 DRI for Vitamin D is 600 IU/day (ages 1-70 years) and 800 IU/day (ages >70 years)

IMPACT[®] PEPTIDE 1.5 Formula offers:

- A more hydrolyzed formula providing a higher concentration of peptides than Perative[®] Formula. Peptides have been shown to promote better nitrogen absorption and utilization compared to whole protein in surgical and trauma patients.^{4,5}
- A balanced peptide and fat profile uniquely designed to help support absorption and tolerance.
- Same unique evidence-based immunonutrient blend (arginine, n-3 fatty acids, nucleotides) associated with positive outcomes observed for other formulas in the IMPACT[®] family when fed early in surgery and critical care patients, including: decreased risk of infectious complications, decreased LOS and decreased ventilator days.^{18,26,27}
- More supplementary immune-modulating ingredients supported by Critical Care Nutrition Guideline E1.^{6**}
- EPA & DHA which may help to decrease the production of inflammatory cytokines.
- Macronutrient and micronutrient profile designed to support wound management.

IMPACT[®] PEPTIDE 1.5 Formula Facilitates Tolerance with:

- ▶ **Balanced Peptide Profile**
- ▶ **High MCT content**
- ▶ **Moderate osmolality**

IMPACT[®] PEPTIDE 1.5 is the latest addition to the IMPACT[®] family of formulas, which have more Level 1 evidence, in more patients, with more positive outcomes than any other immune-modulating formula.

**The above statement does not constitute an endorsement of IMPACT[®] formulas or any other Nestlé HealthCare Nutrition products by SCCM or A.S.P.E.N.

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