

## A Comparison of IMPACT® PEPTIDE 1.5 Formula

Complete Peptide-Based Nutrition for Immune Support

vs.

## Pivot® 1.5 Cal Formula Per Liter



PRODUCT	IMPACT® PEPTIDE 1.5 Formula	Pivot® 1.5 Cal Formula	IMPACT® PEPTIDE 1.5 Benefits
Company	Nestlé HealthCare Nutrition	Abbott Nutrition	
Application	Peptide-based immunonutrition for surgical and trauma patients.	Very high protein, calorically dense formula for use in the metabolically stressed, immunosuppressed patient.	▶ IMPACT® PEPTIDE 1.5 Formula is specifically designed to promote tolerance in surgical and critically ill patients.
Calories (kcal/mL)	1.5	1.5	
Calories (kcal)	1500 kcals (1 L)	1500 kcals (1 L)	
Protein (g)	94 (25% of total kcal)	93.8 (25% of total kcal)	
NPC:N Ratio	63:1	75:1	▶ Lower ratio of non-protein calories to nitrogen may assist meeting large nitrogen needs while decreasing the risk of overfeeding calories.
Protein Source	Enzymatically Hydrolyzed Casein  18.7 g supplemental L-arginine/L	Hydrolyzed Sodium Caseinate, Whey Protein Hydrolysate  11.3 g supplemental L-arginine/L	▶ IMPACT® PEPTIDE 1.5 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 <sup>1</sup> Arginine is essential for normal T-cell function. <sup>2</sup>  ▶ Nutritional wound management shown to be more successful in humans with intakes of 17-25 g of arginine per day. <sup>3</sup>
Protein Profile	Not Detectable- Intact Protein** 21% FAA† 79% Peptides	36% Intact Protein** 10% FAA† 54% Peptides	▶ IMPACT® PEPTIDE 1.5 contains no detectable intact protein, whereas more than 1/3 of the protein in Pivot® 1.5 Cal is intact.  ▶ IMPACT® PEPTIDE 1.5 Formula has considerably more peptides than Pivot® 1.5 Cal. Peptides have been shown to promote better nitrogen absorption and utilization compared to whole protein. <sup>4,5</sup>  ▶ If there is evidence of diarrhea, small peptides may be utilized to assist tolerance. <sup>6</sup>
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 facilitates nitrogen absorption and utilization. <sup>4, 7-9</sup>
Fat (g)	63.6 (38% of total kcal)	50.8 (30% of total kcal)	
Fat Source	MCT Oil Fish Oil Canola Oil Soybean Oil	Structured lipid as Interesterified Marine Oil/MCT Soybean Oil Canola Oil	▶ MCT in its native form (i.e., not part of a structured lipid) has been shown to be rapidly absorbed and utilized by the body. <sup>10,11</sup>  ▶ No human studies are published showing a metabolic advantage of enteral structured lipids over physical mixtures of MCT and LCT having the same fatty acid profiles.
MCT:LCT	50:50 31.8 grams MCT/L 31.8 grams LCT/L	20:80 10.16 grams MCT/L 40.64 grams LCT/L	▶ IMPACT® PEPTIDE 1.5 Formula contains 3 times more MCT than Pivot® 1.5 Cal. MCT is an easily absorbed, non-protein, non-carbohydrate source of calories.  ▶ MCT content may enhance the tolerance to enteral nutrition in severe acute pancreatitis. <sup>6</sup>  ▶ MCT does not promote proinflammatory prostaglandin E <sub>2</sub> synthesis. <sup>12</sup>  ▶ Increased amount of fish oil may be associated with decreased inflammatory response. <sup>12</sup>  ▶ LCT content sufficient to avoid essential fatty acid deficiency (greater than 2-4% of total calories)

\*\*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	Pivot® 1.5 Cal Formula	IMPACT® PEPTIDE 1.5 Benefits
n6:n3 EPA/DHA (g/L)	1.4:1 4.9	1.7:1 3.9	<ul style="list-style-type: none"> <li>▶ IMPACT® PEPTIDE 1.5 contains the same n6:n3 fatty acid ratio as other IMPACT® tube feeding formulas.</li> <li>▶ Low n6:n3 ratio associated with modulation of inflammatory response.<sup>13</sup></li> <li>▶ An n6:n3 ratio of 2:1 is suggested for critically ill patients.<sup>14</sup></li> </ul>
Nucleotides (g)	1.8	NA	<ul style="list-style-type: none"> <li>▶ IMPACT® PEPTIDE 1.5 contains equivalent grams/calorie of dietary nucleotides as other IMPACT® tube feeding formulas.</li> <li>▶ 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.<sup>15</sup></li> </ul>
Carbohydrate (g)	140 (37% of total kcal)	172.4 (45% of total kcal) 7.5 g FOS	▶ Relatively low level of carbohydrate to support blood glucose management. <sup>16</sup>
Carbohydrate Source	Maltodextrin, Corn Starch	Corn Syrup Solids	
Dietary Fiber (g)	0	7.5	▶ Soluble and insoluble fiber should be avoided in patients at high risk for bowel ischemia or severe dysmotility. <sup>6</sup>
Fiber Source	N/A	Fructooligosaccharides	
Vitamin C (mg)	1000	300	▶ Vitamin C is vital in collagen formation and is important in enhancing connective tissue synthesis. <sup>17</sup>
Vitamin E (IU)	100	250	▶ Both exceed RDI for daily Vitamin E.
Selenium (mcg)	100	70	<ul style="list-style-type: none"> <li>▶ Vitamin E is part of the body's antioxidant defense system that protects against oxidative damage. Vitamin E also promotes cell membrane integrity.<sup>18</sup></li> <li>▶ Key component of selenoproteins important for the maintenance of the redox system and modulating the immune system.<sup>19</sup></li> </ul>
Zinc (mg)	36	25	<ul style="list-style-type: none"> <li>▶ Zinc is a cofactor for at least 100 different pathways in relationship to wound management including collagen formation and protein synthesis.<sup>17</sup></li> <li>▶ Higher levels of zinc may be important in patients with hypermetabolism and/or high output fistulae, diarrhea, and fluid loss through wound exudate.<sup>17,20</sup></li> <li>▶ IMPACT® PEPTIDE 1.5 formula contains 30% more zinc.</li> <li>▶ Zinc excretion is increased in patients on propofol sedation, due to EDTA. A higher zinc content may help minimize zinc depletion.<sup>21</sup></li> </ul>
Vitamin D (IU)	800	400	▶ Meets the 2011 IOM recommendation for increased Vitamin D in 1000 mL. <sup>22‡</sup>
Volume to meet 100% RDI for key micronutrients	1000 mL (1500 kcal)	1000 mL (1500 kcal)	
Osmolality (mOsm/kg H <sub>2</sub> O)	510	595	▶ Lower osmolality in a calorically dense formula may enhance tolerance.
Packaging	250 mL Tetra Prisma® 1000 mL ULTRAPAK® Closed System with SpikeRight® Port	237 mL cans 1000 mL Ready-To-Hang®	<ul style="list-style-type: none"> <li>▶ Now with enhanced label design in convenient, easy to use cartons.</li> <li>▶ Case of 24-250 mL cartons provides 5% more volume (or 312 mL more) vs. case of 24-237 mL cans.</li> <li>▶ All Tetra Prisma® and UltraPak® packaging is made without the use BPA.</li> <li>▶ ULTRAPAK® Closed System comes standard with SpikeRight® port to help decrease the risk of contamination and tubing misconnections.<sup>23</sup></li> </ul>

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

## IMPACT<sup>®</sup> PEPTIDE 1.5 Formula offers:

- A more hydrolyzed formula providing a higher concentration of peptides than Pivot<sup>®</sup> 1.5 Cal. Peptides have been shown to promote better nitrogen absorption and utilization compared to whole protein.<sup>4,5</sup>
- 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<sup>®</sup> family when fed early in surgery and critical care patients, including: decreased risk of infectious complications, decreased LOS and decreased ventilator days.<sup>15,24,25</sup>
- Immune-modulating ingredients supported by the 2009 Critical Care Nutrition Guidelines.<sup>6\*\*</sup>
- Increased amount of EPA/DHA which may help to decrease the production of inflammatory cytokines.
- Macronutrient and micronutrient profile designed to support wound management.

## IMPACT<sup>®</sup> PEPTIDE 1.5 Formula Facilitates Tolerance with:

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

**IMPACT<sup>®</sup> PEPTIDE 1.5 is the latest addition to the IMPACT<sup>®</sup> family of formulas, with 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<sup>®</sup> formulas or any other Nestlé HealthCare Nutrition products by SCCM or A.S.P.E.N.

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Data is based on information available as of the date of publication and is subject to change. Please contact the manufacturer for the most current information. This information is provided for comparison purposes only; not all clinical considerations are listed. This is not intended as a substitute for clinical judgment. For assistance in product selection and clinical application call **1-800-422-2752** or visit **www.nestlenutrition.com/us**.