

The osmolality of the product of the present invention is less than 300 mOsm. Preferably, the osmolality is approximately 100 to about 250 mOsm.

In order to provide sufficient nutritional requirements, the present invention includes a protein content that comprises greater than 17% of the total calories of the product. Preferably, the protein content is approximately 18 to about 25% of the total calories of the product. The protein content can be provided by, for example, casein, hydrolyzed casein, hydrolyzed whey protein, or hydrolyzed soy protein.

Additionally, the present invention has a fat content that comprises greater than 33% of the total calories of the product. Preferably, the fat content of the product is approximately 35 to about 50% of the total calories. The fat content can be provided by, for example, a blend of medium chain triglycerides and soy oil.

In order to provide an anti-diarrhea product, the present invention includes a fiber content of at least 14 gms/liter. Preferably, the product has a fiber content of greater than 15 gms/liter. As used in the patent application, "fiber" includes, inter alia, the following: insoluble soy polysaccharide; soluble pectin; hydrolyzed plant gums; carob pod, e.g., carob pod powder; or a tannin-enriched extract of carob pod.

If desirable, the formulation can include arginine, ornithine, cysteine, L-2-oxothiazolidine-4-carboxylate, and/or omega-3 rich lipids, such as marine oil or canola oil.

Due to the structure of the present invention, the typical hospital practice of diluting an enteral product to $\frac{1}{2}$ to $\frac{3}{4}$ strength is not necessary. The composition already includes a reduced nutrient load.

However, in contrast to dilutions that are made in the hospital, the fiber content of the product is not reduced. Indeed, the product of the present invention provides a fiber content that is greater than normal. Because the caloric density is reduced, the inventor of the present invention has found that the amount of fiber can be increased. Furthermore, the sterility of the closed system of the product as manufactured is maintained because dilution is not required.

The present invention also provides, in a preferred embodiment, a protein content that is greater than protein requirements in a typically calorie reduced product. Likewise, the present invention includes a higher lipid content. This reduces osmolality and slows transit time period.

The addition of arginine, ornithine, cysteine, L-2-oxothiazolidine-4-carboxylate, and/or omega-3 rich lipids can also provide an advantage in normalizing gut mucosal structure and function. If desirable, a carob pod product, e.g., carob pod powder, can be added. The carob pod product provides anti-diarrhea characteristics. Additionally, the carob pod product provides antibacterial and anti-viral activity. The carob pod product can be constructed in accordance with U.S. Pat. No. 4,999,197, the disclosure of which is incorporated herein by reference.

Furthermore, the present invention can include the necessary USRDA of vitamins and minerals. This provides an advantage over a diluted product wherein the necessary USRDAs of vitamins and minerals is not provided. However, preferably, a reduced level of magnesium is provided. Rather than the USRDA of 400 mg/day of magnesium, preferably only 150-250 mg/day will be provided.

By way of example, and not limitation, examples of products of the present invention are as follows:

EXAMPLE NO. 1

Caloric density 0.75 kcal/ml	
Protein	= casein at 25% kcal of the product
Lipid	= 50% MCT; 50% canola at 40% kcal of the product
Carbo	= Malto dextrin at 35% kcal of the product
Fiber	= 20 gms/liter (10 gms soy polysaccharide; 10 gms tannin-rich carob extract)
Vit/Min	= delivers USRDA in 1500 ml with the exception that magnesium is at 250 mg/1500 ml

EXAMPLE NO. 2

Caloric density 0.5 kcal/ml	
Protein	= hydrolyzed whey, at 20% kcal of the product
Lipid	= 70% MCT; 30% Canola at 40% kcal of the product
Carbo	= maltodextrin at 40% kcal of the product
Fiber	= 20 gms/liter (10 gms tannin-rich carob extract; 5 gms soluble pectin; 5 gms soy polysaccharide)
Vit/Min	= delivers USRDA in 1500 ml with the exception that magnesium is at 250 mg/1500 ml

In use, for the average patient, approximately 1500 ml of products of either Example 1 or 2 would be given per day. Of course, depending on patient requirements and other adjunct therapy and solutions that are used more or less product can be given.

It should be understood that various changes and modifications to the presently preferred embodiments described herein will be apparent to those skilled in the art. Such changes and modifications can be made without departing from the spirit and scope of the present invention and without diminishing its attendant advantages. It is therefore intended that such changes and modifications be covered by the appended claims.

We claim:

1. An enteral product for providing nutritional requirements to a patient comprising: a protein, fat, and carbohydrate source; the enteral product having a caloric content of less than 1.00 Kcal/ml and an osmolality of less than 300 mOsm; and a fiber content of at least 14 gms/ml.
2. The enteral product of claim 1 including approximately 18 to about 25% of the total calories as protein.
3. The enteral product of claim 1 including approximately 35 to about 50% of the total calories as fat.
4. The enteral product of claim 1 wherein fiber includes one or more components selected from the group consisting of: insoluble soy polysaccharide; pectin; hydrolyzed plant gum; carob pod; and tannin-enriched extract of carob pod.
5. The enteral product of claim 1 wherein the composition includes at least one further component selected from the group consisting of: arginine; ornithine; cyste-