WHAT IS CLAIMED IS:

1. A nutritional powder comprising from 0.1% to 10% by weight beta-hydroxy-beta-methylbutyrate, from 0.001% to 5% by weight of iron, and at least one nutrient selected from fat, protein, or carbohydrate, wherein the nutritional powder comprises fat and the fat comprises a long chain polyunsaturated fatty acid in an amount from 0.01% to 5% by weight total fat in the nutritional powder.

2. The nutritional powder of claim 1, further comprising at least one of vitamins and minerals.

3. The nutritional powder of claim 2, wherein the nutritional powder comprises at least one vitamin selected from the group consisting of folic acid, vitamin B12, vitamin C, vitamin D, vitamin E and combinations thereof.

4. The nutritional powder of claim 2 or claim 3, wherein the nutritional powder comprises from 0.0000001% to 0.00001% by weight of vitamin D.

5. The nutritional powder of any of claims 2 to 4, wherein the nutritional powder comprises from 0.000001% to 0.001% by weight of folic acid.

6. The nutritional powder of any of claims 1 to 5, wherein the nutritional powder comprises casein

7. The nutritional powder of any of claims 1 to 6, comprising a weight ratio of beta-hydroxy-beta-methylbutyrate: iron of from 150:1 to 600:1.

8. A packaged composition comprising a metal container and a nutritional product packaged therein, the nutritional product comprising from 0.1% to 10% by weight beta-hydroxy-beta-methylbutyrate and at least one nutrient selected from fat, protein, or carbohydrate, wherein the nutritional product is in at least partial contact with a metal surface of the metal container and the metal container comprises at least one metal component selected from a transition metal.

9. The packaged composition of claim 8, wherein the metal container comprises at least 10% metal on an interior surface in contact with the nutritional product.