CLAIMS

What is claimed is:

1. A feeding regimen for an infant, comprising

(a) feeding to a newborn infant a first synthetic composition which comprises:

i. a fat or lipid;

ii. a protein source, wherein the protein source comprises from 72% to 90% whey and from 10% to 28% casein;

iii. a prebiotic composition;

iv. at least ~~about~~ 72 IU/100 kcal of vitamin D, and

(b) feeding to a later stage infant a second synthetic composition which comprises:

i. a fat or lipid;

ii. a protein source, wherein the protein source comprises from 50% to 70% whey and from 30% to 50% casein;

iii. a prebiotic composition;

iv. no greater than 70 IU/100 kcal of vitamin D;

wherein the prebiotic composition of each of the first and second synthetic compositions comprises at least 20% of an oligosaccharide which comprises galacto-oligosaccharide and polydextrose.

2. The feeding regimen of claim 1, wherein the first synthetic composition comprises from 74 to 90 IU of vitamin D.

3. The feeding regimen of claim 1, wherein the second synthetic composition comprises from 52 to 67 IU of vitamin D.

4. The feeding regimen of claim 1, wherein each of the first and second synthetic compositions comprises 3 to 7 g/100 kcal of a fat or lipid.

5. The feeding regimen of claim 1, wherein each of the first and second synthetic compositions comprises 1 to 5 g/100 kcal of a protein source.

6. The feeding regimen of claim 1, wherein each of the first and second synthetic compositions comprises 5 to 100 mg/100 kcal of a source of long chain polyunsaturated fatty acids which include DHA.

7. The feeding regimen of claim 1, wherein the prebiotic composition of each of the first and second synthetic compositions comprises ~~about~~ 2.0 g/L to ~~about~~ 8.0 g/L of a prebiotic composition having at least 20% of an oligosaccharide which comprises galacto-oligosaccharide and polydextrose.

8. The feeding regimen of claim 1, wherein each of the first and second synthetic compositions further comprises at least one probiotic.

9. The feeding regimen of claim 8, wherein the probiotic is selected from the group consisting of *Bifidobacteria* spp., *Lactobacillus* spp and combinations thereof.

10. The feeding regimen of claim 1, wherein the first synthetic nutritional composition comprises at least ~~about~~ 3.95 milligrams (mg)/100 kcal of cholesterol and the second synthetic nutritional composition comprises no greater than ~~about~~ 3.90 mg/100 kcal of cholesterol.

11. A method for providing nutrition to an infant, comprising

(a) feeding to a newborn infant a first synthetic composition which comprises:

i. a fat or lipid;

ii. a protein source, wherein the protein source comprises from 72% to 90% whey and from 10% to 28% casein;

iii. a prebiotic composition;

iv. at least ~~about~~ 72 IU/100 kcal of vitamin D, and

(b) feeding to a later stage infant a second synthetic composition which comprises:

i. a fat or lipid;

ii. a protein source, wherein the protein source comprises from 50% to 70% whey and from 30% to 50% casein;

iii. a prebiotic composition;

iv. no greater than 70 IU/100 kcal of vitamin D;

wherein the prebiotic composition of each of the first and second compositions comprises at least 20% of an oligosaccharide which comprises galacto-oligosaccharide and polydextrose.

12. The method of claim 11, wherein the first synthetic composition comprises from 74 to 90 IU of vitamin D.

13. The method of claim 11, wherein the second synthetic composition comprises from 52 to 67 IU of vitamin D.

14. The method of claim 11, wherein each of the first and second synthetic compositions comprises 3 to 7 g/100 kcal of a fat or lipid.

15. The method of claim 11, wherein each of the first and second synthetic compositions comprises 1 to 5 g/100 kcal of a protein source.

16. The method of claim 11, wherein each of the first and second synthetic compositions comprises 5 to 100 mg/100 kcal of a source of long chain polyunsaturated fatty acids which include DHA.

17. The method of claim 11, wherein the prebiotic composition of each of the first and second synthetic compositions comprises 2.0 g/L to 8.0 g/L of a prebiotic composition having at least 20% of an oligosaccharide which comprises galacto-oligosaccharide and polydextrose.

18. The method of claim 11 wherein each of the first and second synthetic compositions further comprises at least one probiotic.

19. The method of claim 18, wherein the probiotic is selected from the group consisting of *Bifidobacteria* spp., *Lactobacillus* spp and combinations thereof.

20. The method of claim 11, wherein the first synthetic nutritional composition comprises at least ~~about~~ 3.95 milligrams (mg)/100 kcal of cholesterol and the second synthetic nutritional composition comprises no greater than ~~about~~ 3.90 mg/100 kcal of cholesterol.