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 ~~about~~ 72% to ~~about~~ 90% whey and from ~~about~~ 10% to ~~about~~ 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 ~~about~~ 50% to ~~about~~ 70% whey and from ~~about~~ 30% to ~~about~~ 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 ~~about~~ 74 to ~~about~~ 90 IU of vitamin D.

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

4. The feeding regimen of claim 1, wherein each of the first and second synthetic compositions comprises ~~about~~ 3 to ~~about~~ 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 ~~about~~ 1 to ~~about~~ 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 ~~about~~ 5 to ~~about~~ 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 compositions comprises at least 20% of an oligosaccharide which comprises galacto-oligosaccharide.~~

8~~7~~. The feeding regimen of claim ~~7~~1, wherein the prebiotic composition of each of the first and second 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.

~~9. The feeding regimen of claim 1, wherein the prebiotic composition of each of the first and second compositions further comprises polydextrose.~~

~~10~~8. The feeding regimen of claim 1, wherein each of the first and second synthetic compositions further comprises at least one probiotic.

~~11~~9. The feeding regimen of claim ~~10~~8, wherein the probiotic is selected from the group consisting of *Bifidobacteria* spp., *Lactobacillus* spp and combinations thereof.

~~12~~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.

~~13~~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 ~~about~~ 72% to ~~about~~ 90% whey and from ~~about~~ 10% to ~~about~~ 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 ~~about~~ 50% to ~~about~~ 70% whey and from ~~about~~ 30% to ~~about~~ 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.

~~14~~12. The method of claim ~~13~~11, wherein the first synthetic composition comprises from ~~about~~ 74 to ~~about~~ 90 IU of vitamin D.

~~15~~13. The method of claim ~~13~~11, wherein the second synthetic composition comprises from ~~about~~ 52 to ~~about~~ 67 IU of vitamin D.

~~16~~14. The method of claim ~~13~~11, wherein each of the first and second synthetic compositions comprises ~~about~~ 3 to ~~about~~ 7 g/100 kcal of a fat or lipid.

~~17~~15. The method of claim ~~13~~11, wherein each of the first and second synthetic compositions comprises ~~about~~ 1 to ~~about~~ 5 g/100 kcal of a protein source.

~~18~~16. The method of claim ~~13~~11, wherein each of the first and second synthetic compositions comprises ~~about~~ 5 to ~~about~~ 100 mg/100 kcal of a source of long chain polyunsaturated fatty acids which include DHA.

~~19. The method of claim 13, wherein the prebiotic composition of each of the first and second compositions comprises at least 20% of an oligosaccharide which comprises galacto-oligosaccharide.~~

~~20~~17. The method of claim ~~19~~11, 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.

~~21. The method of claim 13, wherein the prebiotic composition of each of the first and second compositions further comprises polydextrose.~~

~~22~~18. The method of claim ~~13~~ 11 wherein each of the first and second synthetic compositions further comprises at least one probiotic.

~~23~~19. The method of claim ~~22~~18, wherein the probiotic is selected from the group consisting of *Bifidobacteria* spp., *Lactobacillus* spp and combinations thereof.

~~24~~20. The method of claim ~~13~~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.