individuals and other potential prediabetics, to prevent or delay the development of diabetes. It would additionally be beneficial if the nutritional compositions could be used for treating and/or managing and/or controlling and/or reducing insulin resistance and glucose intolerance, as well as their related metabolic defects including hyperglycemia.

SUMMARY OF THE DISCLOSURE

[0008] The present disclosure is directed to nutritional compositions including beta-hydroxy-beta-methylbutyric acid and to methods of using the compositions to improve glucose intolerance and glucose metabolism in an individual, including pediatric individuals, adult individuals, and older adult individuals. The compositions and methods of the present disclosure may be particularly beneficial for pediatric, adult, and older adult individuals who have a family history of diabetes as the nutritional compositions and methods may delay or prevent altogether the onset of diabetes.

~~[0009] In one embodiment, there is provided beta-hydroxy-beta-methylbutyric acid for use in improving glucose tolerance in a pediatric individual.~~

~~[0009a] In one embodiment, there is provided beta-hydroxy-beta-methylbutyric acid for use in improving glucose tolerance in an adult individual.~~

~~[0009b] In one embodiment, there is provided beta-hydroxy-beta-methylbutyric acid for use in improving glucose tolerance in an older adult individual.~~

~~[0009c] In one embodiment, there is provided a method of improving glucose tolerance in a pediatric individual in need thereof, the method comprising administering to the pediatric individual a composition comprising an effective amount of beta-hydroxy-beta-methylbutyric acid, thereby improving glucose tolerance in the pediatric individual.~~

~~[0009d] In one embodiment, there is provided a method of improving glucose tolerance in an adult individual in need thereof, the method comprising administering to the adult individual a composition comprising an effective amount~~

~~of beta-hydroxy-beta-methylbutyric acid, thereby improving glucose tolerance in the adult individual.~~

~~[0009e] In one embodiment, there is provided a method of improving glucose tolerance in an older adult individual in need thereof, the method comprising administering to the older adult individual a composition comprising an effective amount of beta-hydroxy-beta-methylbutyric acid, thereby improving glucose tolerance in the older adult individual.~~

[0009] In one embodiment, there is provided the use of beta-hydroxy-beta-methylbutyric acid or a salt thereof in the manufacture of a composition for the treatment of glucose intolerance in a pediatric individual.

[0009a] In one embodiment, there is provided the use of beta-hydroxy-beta-methylbutyric acid or a salt thereof in the manufacture of a composition for the treatment of glucose intolerance in a prediabetic adult individual.

[0009b] In one embodiment, there is provided the use of beta-hydroxy-beta-methylbutyric acid or a salt thereof in the manufacture of a composition for the treatment of glucose intolerance in a prediabetic older adult individual.

[0009~~c~~f] One embodiment of the present disclosure is directed to a pediatric nutritional composition comprising at least one of fat, protein, carbohydrate and from about 0.1% to about 2.0% beta-hydroxy-beta-methylbutyric acid by weight.

[0010] Another embodiment of the present disclosure is directed to a method for improving glucose tolerance in a pediatric individual in need thereof. The method comprises administering to the pediatric individual a composition comprising an effective amount of beta-hydroxy-beta-methylbutyric acid.

[0011]Another embodiment of the present disclosure is directed to a pediatric nutritional composition comprising calcium beta-hydroxy-beta-methylbutyric acid, whey protein, casein protein, soy protein, medium chain triglyceride oil, and fructooligosaccharides.

[0012] Another embodiment of the present disclosure is directed to a method for improving glucose tolerance in an adult individual in need thereof. The method

WHAT IS CLAIMED IS:

1. Use of beta-hydroxy-beta-methylbutyric acid or a salt thereof in the manufacture of a composition for the treatment of glucose intolerance in a pediatric individual.

2. Use of beta-hydroxy-beta-methylbutyric acid or a salt thereof in the manufacture of a composition for the treatment of glucose intolerance in a prediabetic adult individual.

3. Use of beta-hydroxy-beta-methylbutyric acid or a salt thereof in the manufacture of a composition for the treatment of glucose intolerance in a prediabetic older adult individual.

4. The use according to claim 1, wherein the pediatric individual is prediabetic.

5. The use according to any one of the preceding claims, wherein the composition comprising beta-hydroxy-beta-methylbutyric acid or salt thereof is for daily administration.

6. The use according to any one of the preceding claims, wherein the composition comprising beta-hydroxy-beta-methylbutyric acid or salt thereof is for administration for a period of at least 6 months.

7. The use according to any one of the preceding claims, wherein the composition is in a form selected from the group consisting of a nutritional powder, a nutritional liquid, and a nutritional solid.

8. The use according to any one of claims 1 to 6, wherein the composition is a liquid nutritional composition comprising from about 0.1% to about 2% by weight beta-hydroxy-beta-methylbutyric acid or a salt thereof.

9. The use according to any one of claims 1 to 6, wherein the composition is a solid nutritional composition comprising from about 0.2% to about 5% by weight beta-hydroxy-beta-methylbutyric acid or a salt thereof.

10. The use according to any one of the preceding claims, wherein the composition is a nutritional composition comprising fat, protein and carbohydrate.

11. The use according to any one of the preceding claims, wherein the composition is a pediatric nutritional composition comprising whey protein, casein protein, soy protein, medium chain triglyceride oil, and fructooligosaccharides.

12. The use according to any one of the preceding claims, wherein the composition comprises calcium beta-hydroxy-beta-methylbutyrate monohydrate.

WHAT IS CLAIMED IS:

1. Beta-hydroxy-beta-methylbutyric acid for use in improving glucose tolerance in a pediatric individual.

2. Beta-hydroxy-beta-methylbutyric acid for use in improving glucose tolerance in an adult individual.

3. Beta-hydroxy-beta-methylbutyric acid for use in improving glucose tolerance in an older adult individual.

4. Beta-hydroxy-beta-methylbutyric acid according to claim 2 wherein the adult individual is prediabetic or diabetic.

5. Beta-hydroxy-beta-methylbutyric acid according to claim 3 wherein the adult individual is prediabetic or diabetic.

6. Beta-hydroxy-beta-methylbutyric acid according to any of the preceding claims, wherein the beta-hydroxy-beta-methylbutyric acid is administered daily.

7. Beta-hydroxy-beta-methylbutyric acid according to any of claims 1-5, which is administered for a period of at least 6 months.

8. Beta-hydroxy-beta-methylbutyric acid according to any of the preceding claims, which is administered in a liquid nutritional composition comprising from about 0.1% to about 2% by weight beta-hydroxy-beta-methylbutyric acid.

9. Beta-hydroxy-beta-methylbutyric acid according to any of the preceding claims 1-7, which is administered in a solid nutritional composition comprising from about 0.2% to about 5% by weight beta-hydroxy-beta-methylbutyric acid.

10. Beta-hydroxy-beta-methylbutyric acid according to any of the preceding claims 1-7, which is in a form selected from the group consisting of a nutritional powder, a nutritional liquid, and a nutritional solid.

11. Beta-hydroxy-beta-methylbutyric acid according to any of the preceding claims, which is administered in a nutritional composition comprising fat, protein and carbohydrate.

12. Beta-hydroxy-beta-methylbutyric acid according to any of the preceding claims, which is administered in a pediatric nutritional composition comprising whey protein, casein protein, soy protein, medium chain triglyceride oil, and fructooligosaccharides.

13. Beta-hydroxy-beta-methylbutyric acid according to any of the preceding claims, wherein the beta-hydroxy-beta-methylbutyric acid is in the form of calcium beta-hydroxy-beta-methylbutyrate monohydrate.

14. A method of improving glucose tolerance in a pediatric individual in need thereof, the method comprising administering to the pediatric individual a composition comprising an effective amount of beta-hydroxy-beta-methylbutyric acid, thereby improving glucose tolerance in the pediatric individual.

15. A method of improving glucose tolerance in an adult individual in need thereof, the method comprising administering to the adult individual a composition comprising an effective amount of beta-hydroxy-beta-methylbutyric acid, thereby improving glucose tolerance in the adult individual.

16. A method of improving glucose tolerance in an older adult individual in need thereof, the method comprising administering to the older adult individual a composition comprising an effective amount of beta-hydroxy-beta-methylbutyric acid, thereby improving glucose tolerance in the older adult individual.

RECTIFIED SHEET (RULE 91) ISA/EP

17. A method according to any one of claims 14-16, wherein the beta-hydroxy-beta-methylbutyric acid is administered in a liquid nutritional composition comprising from about 0.1% to about 2% by weight beta-hydroxy-beta-methylbutyric acid.

18. A method according to any one of claims 14-16, wherein the beta-hydroxy-beta-methylbutyric acid is administered in a solid nutritional composition comprising from about 0.2% to about 5% by weight beta-hydroxy-beta-methylbutyric acid.

RECTIFIED SHEET (RULE 91) ISA/EP