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.

[0009f] 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