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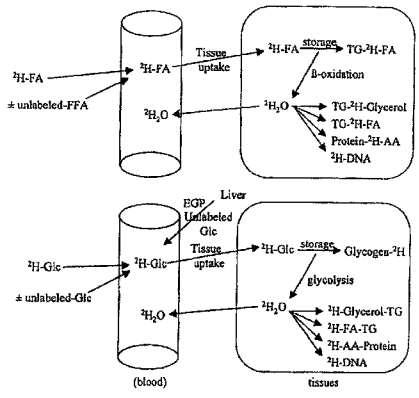
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(54) Title: DEUTERATED GLUCOSE OR FAT TOLERANCE TESTS FOR HIGH-THROUGHPUT MEASUREMENT OF THE METABOLISM OF SUGARS OR FATTY ACIDS IN THE BODY



FA, fatty acid; Glc, glucose; TG, triacylglycerol; AA, amino acid; EGP, endogenous glucose production (liver)

Schematic model of ^{2}H-glucose or ^{2}H-FA tolerance test

(57) **Abstract:** Provided herein are methods for determining the metabolism of one or more sugars and/or fatty acids, and applications thereof. Such applications include determining the rate of glycogen synthesis and glycolysis, which are believed to be early markers for predicting elevated risk of diabetes and cardiovascular disease. Other applications include methods for screening drugs that effect sugar and/or fatty acid metabolism. The methods are useful for at least partially characterizing drugs for desirable or undesirable (toxic) characteristics. Drugs that are at least partially characterized using the methods of the invention can then be further developed in preclinical testing and clinical trials. Such drugs may be found to be useful in treating obesity, diabetes, cardiovascular disease, and other disorders of metabolism.

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