

¹³C Leucine Breath Test

RELEVANCE:

Evaluation of nutritional concepts and dietetic products; studying amino acid and protein metabolism particularly in paediatric, postoperative, phenylketonuria and gestational diabetes mellitus patients, diagnosis of maple syrup urine disease.

SUBSTRATE / TEST MEAL:

Term newborn infants receive an intravenous dose of 4 mg of L-[1-¹³C]leucin per kg body mass on two consecutive days.

For adults a bolus dose of 1 mg per kg body mass is recommended.

To investigate adults suffering from maple syrup urine disease an oral dose of 38 µmol per kg body mass is ingested.

STATUS OF PATIENT: Except from infants after overnight fast

TIMING OF SAMPLE COLLECTION:

0, 15, 30 and 60 minutes and then every full hour for eight hours

REFERENCES:

Schadewaldt P, Bodner A, Brösicke HG et al. (1998): Assessment of Whole Body L-Leucin Oxidation by Noninvasive L-[1-¹³C]Leucin Breath Test: A Reappraisal in Patients with Maple Syrup Urine Disease, Obligate Heterocytotes, and Healthy Subjects. Paediatric Research 43, 592-600

Bodner-Leidecker A, Hammen H-W, Wendel U et al. (1999): Whole Body Leucine Oxidation (WBLO) in Patients with Classical and Variant Form of Maple Syrup Urine Disease.

22. Jahrestagung der Arbeitsgemeinschaft Stabile Isotope e. V. (Abstract), 6