

¹³C Fructose Breath Test

RELEVANCE:

The [¹³C]fructose breath test is used for studying small intestinal hexose absorption, especially for investigating fructose malabsorption which is supposed to be a cause of recurrent abdominal pain and chronic non-specific diarrhea in children. Moreover the effect of simultaneously ingested amino acids and glucose is studied by this test.

SUBSTRATE / TEST MEAL:

Children from 12 to 16 years of age receive 25 g fructose labelled with 15 mg [6-¹³C]D-fructose, eventually together with equimolar doses of glucose or L-alanine. For children from 3 to 6 years of age a dose of 2 g fructose per kg body mass (maximum 37.5 g), alone or with an equimolar dose of L-alanine, is chosen.

STATUS OF PATIENT: After overnight fast

TIMING OF SAMPLE COLLECTION:

Immediately before tracer intake and then every 15 minutes for two hours

EVALUATION:

In contrast to older children L-alanine addition results in significantly lower increases of ¹³CO₂ in breath of younger ones.

REFERENCES:

Hoekstra JH, van der Aker JH, Kneepgens CM et al. (1996): Evaluation of ¹³CO₂ Breath Tests for the Detection of Fructose Malabsorption. J Lab Clin Med 127, 303-309