

¹³C Tripalmitin Breath Test

RELEVANCE:

Studying fat malabsorption, pancreatic lipase activity in cystic fibrosis, Crohn's disease and aetiology of steatorrhea, particularly with respect to long chain fatty acids.

For investigating the metabolism of medium chain fatty acids [¹³C]trioctanoin breath test should be preferred.

Especially important fields of application are paediatrics, studying fat metabolism after surgical operations like pancreatoduodenectomy with or without gastrectomy and pancreatic head resection and investigation of interactions between fat and carbohydrate metabolism.

SUBSTRATE / TEST MEAL:

Children ingest 4 mg [1,1,1-¹³C₃]glyceryl tripalmitate per kg body mass at 8 a.m. together with the framework of a special meal.

STATUS OF PATIENT: After overnight fast

TIMING OF SAMPLE COLLECTION:

Breath samples are collected immediately before tracer ingestion, in 20 minute intervals during the first hour, in 30 minute intervals during the following two hours and then hourly for additional three hours.

REFERENCES:

Wutzke KD, Radke M, Breuel K et al. (1999): Triglyceride Oxidation in Cystic Fibrosis: A Comparison between Different Labelled Tracer Substances. *J Paediatr Gastroenterol Nutr* 29, 148-154

Murphy JL, Laiho KM, Jones AE et al. (1998): Metabolic Handling of ¹³C-Labelled Tripalmitin in Healthy Controls and with Cystic Fibrosis. *Arch Dis Child* 79, 44-47