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Update on diagnostic value of breath test in gastrointestinal and liver diseases

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#### Abstract

In the field of gastroenterology, breath tests are used intermittently as diagnostic tools that allow indirect, non-invasive and relatively less cumbersome evaluation of several disorders by simply quantifying the appearance in exhaled breath of a metabolite of a specific substrate administered. The aim of this review is to have an insight into the principles, methods of analysis and performance parameters of various Hydrogen, Methane and Carbon breath tests which are available for diagnosing gastrointestinal disorders such as *H. Pylori* infection, small intestinal bacterial overgrowth, and carbohydrate malabsorption. Evaluation of gastric emptying is routinely performed by scintigraphy which is however, difficult to perform and not suitable for children and pregnant women, this review has abridged the  $^{13}\text{C}$ -octanoic acid test in comparison to scintigraphy and has emphasized on its working protocol and challenges. A new development such as electronic nose test is also highlighted. Moreover we have also explored the limitations and constraints restraining the wide use of these breath tests.

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