

SmartPill®

Title

Evaluation of gastrointestinal transit in clinical practice: position paper of the American and European Neurogastroenterology and Motility Societies.

Rao SS, Camilleri M, Hasler WL, Maurer AH, Parkman HP, Saad R, Scott MS, Simren M, Soffer E, Szarka L.

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Key Points

1. The SmartPill wireless motility capsule (WMC) is capable of measuring regional and whole gut transit including gastric emptying time (GET), small bowel transit time (SBTT), colonic transit time (CTT), and whole gut transit time (WGTT).
2. The WMC is a standardized, radiation-free method for assessment of small bowel transit and is recommended for clinical use to facilitate detection of small bowel dysfunction in subjects with a more generalized GI motility disorder.
3. The diagnostic utility of WMC versus conventional motility tests was assessed in 86 patients stratified into upper GI (UGI, n = 36), and lower GI (LGI, n = 50) dysfunction.
4. Significant new diagnostic information was obtained with WMC in the UGI (p=0.001) and LGI (p=0.006) groups when compared to conventional motility tests. Moreover, WMC detected a motility disorder affecting more than one region in 51% of subjects. It influenced management in 30% of LGI and 88% of UGI subjects. In another study, WMC lessened the need for further invasive motility tests.
5. The WMC is a validated and standardized test, and is recommended for assessment of colonic transit time in subjects with constipation and suspected colonic disorders. It also provides measurements of regional and whole gut transit.

Abstract:

Background: Disorders of gastrointestinal (GI) transit and motility are common, and cause either delayed or accelerated transit through the stomach, small intestine or colon, and affect one or more regions.

Assessment of regional and/or whole gut transit times can provide direct measurements and diagnostic information to explain the cause of symptoms, and plan therapy.

Purpose: Recently, several newer diagnostic tools have become available. The American and European Neurogastroenterology and Motility Societies undertook this review to provide guidelines on the indications and optimal methods for the use of transit measurements in clinical practice. This was based on evidence of validation including performance characteristics, clinical significance, and strengths of various techniques. The tests include measurements of: gastric emptying with scintigraphy, wireless motility capsule, and (13) C breath tests; small bowel transit with breath tests, scintigraphy, and wireless motility capsule; and colonic transit with radioopaque markers, wireless motility capsule, and scintigraphy. Based on the evidence, consensus recommendations are provided for each technique and for the evaluations of regional and whole gut transit. In summary, tests of gastrointestinal transit are available and useful in the evaluation of patients with symptoms suggestive of gastrointestinal dysmotility, since they can provide objective diagnosis and a rational approach to patient management.

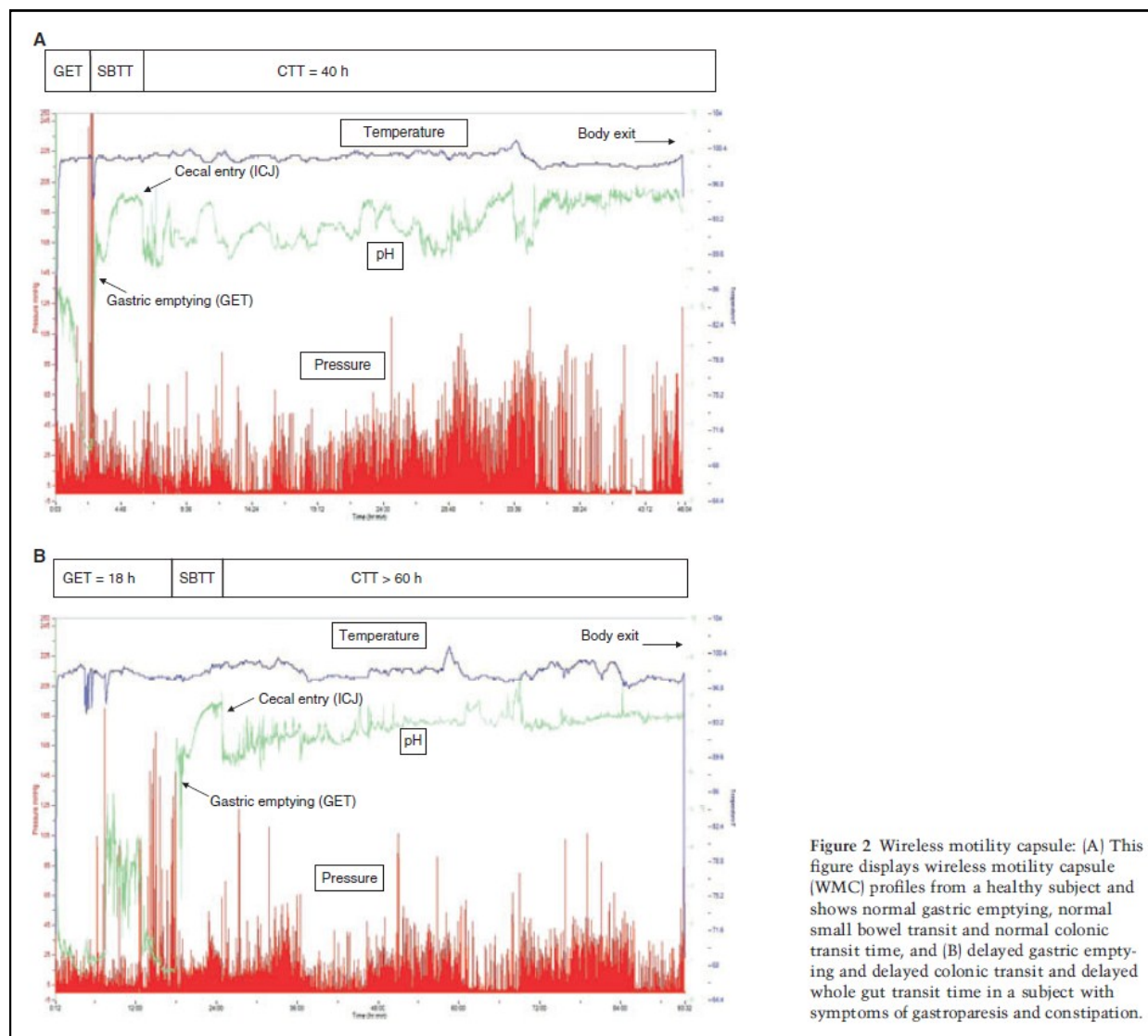


Figure 2 Wireless motility capsule: (A) This figure displays wireless motility capsule (WMC) profiles from a healthy subject and shows normal gastric emptying, normal small bowel transit and normal colonic transit time, and (B) delayed gastric emptying and delayed colonic transit and delayed whole gut transit time in a subject with symptoms of gastroparesis and constipation.