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Research in Action: Remote Controlled Investigation of the Stomach using Magnetically Controlled Capsule Endoscopy

Ryan Antar

1/31/2023

Gastrointestinal (GI) diseases account for a significant burden on the US healthcare system, with abdominal pain being the [most common reason](#) for ED visits. Endoscopy remains the standard of care for many upper GI conditions and screenings, and nearly [22.2 million endoscopies](#) were performed in 2021. The need for developing more accessible diagnostics and treatments for GI conditions has driven technological advancements, such as the capsule endoscope. [Capsule endoscopes](#) offer an alternative to traditional upper endoscopes (EGD) for visualizing the digestive tract that does not require a gastroenterologist at the bedside nor sedation and may be more affordable and less invasive than traditional endoscopic procedures. Since capsules do not require sedation, patients may prefer it to traditional endoscopy, which may increase overall compliance. Traditionally, capsules only moved passively via peristalsis and gravity but clinicians could not control the movement, thus hindering their ability to focus on anatomical features and areas of concern and limiting their utility.

One potential way to remotely control a capsule inside the GI tract is through the use of external magnets. The Magnetically Controlled Capsule for Assessment of Gastric Mucosa in Symptomatic Patients ([MAGNET](#)) study is the first trial in the US to test the feasibility and accuracy of a magnetically-controlled capsule endoscopy (MCCE) in visualizing the stomach for the standard indications for EGD. This MCCE trial is testing the video capsule endoscope called the [NaviCam® Stomach System](#), developed by AnX Robotica. MCCE allows clinicians to drive

the capsule inside the stomach with remote control. This technology could help clinicians explore regions of interest in the stomach to improve diagnostics and evaluate patients for abdominal pain, gastric conditions, ulcers, and cancers.

One potential advantage of MCCE versus standard practice is a shorter procedure that is less invasive. Another advantage would be to expand the accessibility of endoscopic procedures to various outpatient and acute care settings. The low-risk profile and easy administration could make MCCE a cost-effective option for [early screening of gastric cancers](#). As MAGNET pilot study nears completion, it represents one possible step in the advancement of capsule innovation that can change how clinicians screen and diagnose millions of patients suffering from GI conditions.

Author has no conflicts to report.