

New sound recording device helps doctors study link between cough and reflux

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Coughing episodes are closely related to gastroesophageal reflux symptoms in patients who experience chronic cough, irrespective of other diagnoses, according to a new study in *Gastroenterology*, the official journal of the American Gastroenterological Association (AGA) Institute. Gastroesophageal reflux occurs when the acid contents of the stomach back up, or reflux, into the esophagus. This typically produces heartburn, a burning sensation below the sternum where your ribs come together.

"This is the first study to investigate the temporal relationship between [cough](#) and reflux events using a validated sound recording device to register the precise timing and occurrence of actual cough sounds," said Jaclyn A. Smith, PhD, MRCP, of the University of Manchester and lead author of the study. "By using this novel approach, which helps prevent under-reporting of coughing occurrences, we are better able to identify how cough events and reflux events are linked to one another."

Cough — regardless of cause and duration — is the most common symptom for which patients seek medical attention. Chronic cough (i.e., persists for more than eight weeks) is estimated to affect 11 percent to 20 percent of the population, has a high socioeconomic impact and results in significant reduction in quality of life. Proposed causes of chronic cough include gastroesophageal reflux, rhino-sinusitis and asthma, although recent studies suggest that targeting such mechanisms with drugs only results in approximately half of patients reporting symptom relief.

The majority of studies assessing reflux-cough associations have used a data logger and/or symptom diary to record coughs, which has been shown to significantly under-report the occurrence of coughing.

However, in this study, novel ambulatory cough sound recordings, which allowed patients to continue with their normal routines, together with simultaneous impedance/pH monitoring (i.e., preferable technology for establishing symptom-reflux association) over 24 hours, was carried out in 71 patients with chronic cough, aged 51 to 64 years. The recordings were performed using a custom-built validated recording device and microphone; cough was manually counted using software with an audiovisual display. In addition, all patients underwent cough reflex sensitivity testing to citric acid, and 66 patients underwent gastroscopy.

The study researchers found that 70 percent of patients exhibited temporal associations, with 48 percent having a positive symptom association probability for cough preceded by reflux; 56 percent had a positive symptom association probability for reflux preceded by cough; and 32 percent had both.

The presence of cough preceding [reflux](#) points to the possible existence of a self-perpetuating cycle maintaining chronic cough. These results may partly explain the poor efficacy of traditional drugs, such as those targeting gastric acidity in the treatment of chronic cough.

Provided by American Gastroenterological Association

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