

Medical Coverage Policy | Electrogastrography (EGG)



EFFECTIVE DATE: 04|01|2001
POLICY LAST UPDATED: 02|15|2023

OVERVIEW

Electrogastrography (EGG) describes the recording and interpretation of electrical activity of the stomach.

MEDICAL CRITERIA

Not applicable

PRIOR AUTHORIZATION

Not applicable

POLICY STATEMENT

Medicare Advantage Plans

Electrogastrography is not covered as the evidence is insufficient to determine the effects of the technology on health outcomes.

Commercial Products

Electrogastrography is not medically necessary as the evidence is insufficient to determine the effects of the technology on health outcomes.

COVERAGE

Benefits may vary between groups and contracts. Please refer to the appropriate section of the Benefit Booklet, Evidence of Coverage, or Subscriber Agreement for applicable not medically necessary/not covered benefits/coverage.

BACKGROUND

The electrical activity of the stomach can be subdivided into two general categories: electrical control activity (ECA) and electrical response activity (ERA). ECA is characterized by regularly recurring electrical potentials, originating in the gastric pacemaker located in the corpus of the stomach and sweeping in an annular band with increasing velocity toward the pylorus. ECA is not associated with contractions of the stomach unless coupled with action potentials, referred to as ERA.

The usual practice is to record several cutaneous electroencephalographic (EEG) signals from various standardized positions on the abdominal wall and to select the one with the highest amplitude for further analysis. Nonetheless, the recorded signal is relatively weak and difficult to distinguish from the surrounding background “noise” related to unwanted signals, such as cardiac, respiratory, duodenal, and colonic electrical activity. For this reason, direct visual analysis of the EGG signals is problematic. Various methods of filtering out background noise and automated analysis have been developed; running spectral analysis is most common. The EGG is usually evaluated in terms of changes in the EGG amplitude and frequency. Deviations from the normal frequency of 3 cycles per minute may be referred to as brady- or tachyarrhythmia.

The use of EGG has been most widely studied in patients with gastroparesis and functional dyspepsia. Gastroparesis is defined as a chronic disorder of gastric motility as evidenced by delayed gastric emptying of a solid meal. Symptoms include bloating, distention, nausea, and vomiting. When severe and chronic,

gastroparesis can be associated with dehydration, poor nutritional status, and poor glycemic control in diabetics. While most commonly associated with diabetes, gastroparesis is also found in chronic pseudo-obstruction, connective tissue disorders, Parkinson's disease, and psychological pathology. Functional dyspepsia is an enigmatic disorder characterized by persistent symptoms of abdominal discomfort with no identifiable etiology, including gastric emptying. In this setting, disorders in gastric motility may be considered. Treatment of gastric motility disorders typically includes the use of prokinetic agents, such as cisapride, domperidone, or metoclopramide.

Scintigraphic gastric emptying is considered the gold standard test for evaluating gastroparesis. The test consists of ingestion of a solid meal spiked with 99-technetium. Serial scintigraphic measurements are then performed every 20 minutes for 2-3 hours after the meal. Delayed gastric emptying is diagnosed if more than 50% of the radiolabeled food is retained at the end of the study period. While gastric emptying evaluates the efficiency of gastric emptying, EGG focuses on the underlying myoelectrical activity.

EGG recording faces several technical challenges, many of them related to measuring cutaneous signals, rather than directly measuring electrical activity along the stomach mucosa or serosa. Several studies have compared EGG with gastric emptying tests and have reported a poor correlation between the two. There are inadequate data to determine how the results of this test may be used to benefit patient management.

A position statement on the diagnosis and treatment of gastroparesis from the American Gastroenterological Association in 2004 reported that the guideline developers discussed, but did not recommend, the use of EGG to test for gastric myoelectrical activity.

Validation of the clinical use of any diagnostic test focuses on 3 main principles: 1) the technical feasibility of the test; 2) basic statistical measurements, such as sensitivity, specificity, and positive and negative predictive values in different populations of patients and compared to the gold standard; and 3) how the results of the diagnostic test will be used in the management of the patient and whether or not the change in treatment will result in an overall improvement in health outcomes. Based on a review of the published peer-reviewed literature, there are inadequate data to evaluate any of the above principles, therefore electrogastrography is considered not medically necessary as there is no proven efficacy.

CODING

Medicare Advantage Plans and Commercial Products

The following CPT code(s) are not covered for Medicare Advantage Plans and not medically necessary for Commercial Products:

- 91132** Electrogastrography, diagnostic, transcutaneous
- 91133** Electrogastrography, diagnostic, transcutaneous; with provocative testing

RELATED POLICIES

None

PUBLISHED

- Provider Update, April 2023
- Provider Update, June 2022
- Provider Update, May 2021
- Provider Update, April 2020
- Provider Update, May 2019

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