

Gastric Electrical Stimulation

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Definitions

Gastric electrical stimulation (GES) has been developed as an alternative treatment for refractory gastroparesis. The device consists of 4 components: the implanted pulse generator, 2 intramuscular stomach leads, a stimulator programmer and a memory cartridge. The leads are implanted surgically using an open or laparoscopic technique and are connected to the pulse generator that is implanted in a subcutaneous pouch. The device delivers timed impulses to the gastric muscles that are intended to stimulate gastric myoelectric activity, with the goal of improving stomach emptying and relieving the symptoms of nausea and vomiting.

GES has also been proposed as an alternative to bariatric surgery for the treatment of obesity. The technique for implantation of the device is the same for treating gastroparesis but utilizes different stimulation parameters and a different location for placement of electrodes on the stomach wall. GES in the obese patient is thought to induce early satiety, but it is not known whether this is caused by stimulation of the nerves, inhibition of hormones or stimulation of the stomach muscle itself. (See [Limitations/Exclusions](#))

Guideline

GES is considered medically necessary for the treatment of chronic, intractable (drug-refractory) nausea and vomiting secondary to gastroparesis of diabetic or idiopathic etiology.

The following criteria must be met:

1. Significantly delayed gastric emptying as evidenced by standard scintigraphic imaging of solid food
2. Member is refractory or intolerant to both:
 - a. [Prokinetic medications](#) (2 out of 3 classes)
 - b. [Antiemetic medications](#) (2 out of 3)
3. Significantly poor nutritional status, as evidenced by weight loss of 10% of body weight (for height and age in comparison with pre-illness weight)

Table 1: Prokinetic Medications

Class	Common Examples
Cholinergic Agonists	dexpanthenol (Ilopan®), bethanechol (Urecholine®)
Motolin receptor agonists	Erythromycin
Dopamine receptor antagonists	metoclopramide (Reglan®)

Table 2: Antiemetic Medications

Class	Common Examples
Antihistamines	diphenhydramine (Benadryl®), dimenhydrinate (Dramamine®), meclizine (Antivert®), hydroxyzine (Vistaril®), trimethobenzamide (Tigan®)
Serotonin (5HT3) receptor antagonists	ondansetron (Zofran®), granisetron (Kytril®), dolasetron (Anzemet®)
Dopamine receptor antagonists	Metoclopramide (Reglan®), perphenazine (Trilafon®), prochlorperazine (Compazine®), promethazine (Phenergan®), thiethylperazine (Torecan®), cyclizine (Marezine®)

Limitations/Exclusions

1. GES is not considered medically necessary for gastrointestinal dysmotility disorders other than gastroparesis, obesity (or any other indication not listed above) due to insufficient evidence of therapeutic value.
2. The Medtronic Enterra® Therapy System, a high frequency electronic device, is currently FDA approved under the FDA's Humanitarian Device Exemption (HDE) program. No other GES system for treating gastroparesis has been approved to date. Therefore, requests for alternate GES systems (e.g., gastric pacing, neural gastric electrical stimulation) will be denied as not medically necessary due to insufficient evidence of therapeutic value.

Revision History

Jan. 8, 2021	Changed decrease of "≤ 90% of normal body weight" (as evidence of significantly poor nutritional status) to "weight loss of 10% of body weight"
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Applicable Procedure Codes

43647	Laparoscopy, surgical; implantation or replacement of gastric neurostimulator electrodes, antrum
43648	Laparoscopy, surgical; revision or removal of gastric neurostimulator electrodes, antrum
43881	Implantation or replacement of gastric neurostimulator electrodes, antrum, open
43882	Revision or removal of gastric neurostimulator electrodes, antrum, open
64590	Insertion or replacement of peripheral or gastric neurostimulator pulse generator or receiver, direct or inductive coupling
64595	Revision or removal of peripheral or gastric neurostimulator pulse generator or receiver

95980	Electronic analysis of implanted neurostimulator pulse generator system (eg, rate, pulse amplitude and duration, configuration of wave form, battery status, electrode selectability, output modulation, cycling, impedance and patient measurements) gastric neurostimulator pulse generator/transmitter; intraoperative, with programming
95981	Electronic analysis of implanted neurostimulator pulse generator system (eg, rate, pulse amplitude and duration, configuration of wave form, battery status, electrode selectability, output modulation, cycling, impedance and patient measurements) gastric neurostimulator pulse generator/transmitter; subsequent, without reprogramming
95982	Electronic analysis of implanted neurostimulator pulse generator system (eg, rate, pulse amplitude and duration, configuration of wave form, battery status, electrode selectability, output modulation, cycling, impedance and patient measurements) gastric neurostimulator pulse generator/transmitter; subsequent, with reprogramming
L8679	Implantable neurostimulator, pulse generator, any type
L8680	Implantable neurostimulator electrode, each
L8681	Patient programmer (external) for use with implantable programmable neurostimulator pulse generator, replacement only
L8682	Implantable neurostimulator radiofrequency receiver
L8683	Radiofrequency transmitter (external) for use with implantable neurostimulator radiofrequency receiver
L8685	Implantable neurostimulator pulse generator, single array, rechargeable, includes extension
L8686	Implantable neurostimulator pulse generator, single array, nonrechargeable, includes extension
L8687	Implantable neurostimulator pulse generator, dual array, rechargeable, includes extension
L8688	Implantable neurostimulator pulse generator, dual array, nonrechargeable, includes extension
L8689	External recharging system for battery (internal) for use with implantable neurostimulator, replacement only

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