



## Complete Summary

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### GUIDELINE TITLE

American Gastroenterological Association medical position statement: nausea and vomiting.

### BIBLIOGRAPHIC SOURCE(S)

American Gastroenterological Association medical position statement: nausea and vomiting. Gastroenterology 2001 Jan; 120(1):261-2.

## COMPLETE SUMMARY CONTENT

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INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT  
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IDENTIFYING INFORMATION AND AVAILABILITY

## SCOPE

### DISEASE/CONDITION(S)

Acute or chronic nausea and vomiting

### GUIDELINE CATEGORY

Diagnosis  
Evaluation  
Management  
Risk Assessment  
Treatment

### CLINICAL SPECIALTY

Family Practice  
Gastroenterology  
Internal Medicine

### INTENDED USERS

Physicians

## GUIDELINE OBJECTIVE(S)

- To assist clinicians in the recognition and correction of any consequences or complications of nausea and vomiting
- To assist clinicians in identifying the underlying cause(s) of nausea and vomiting, whenever possible
- To assist the clinician in developing therapeutic strategies to suppress or eliminate symptoms

## TARGET POPULATION

Individuals experiencing acute or chronic (symptoms persisting more than one month) nausea and vomiting

## INTERVENTIONS AND PRACTICES CONSIDERED

### Diagnosis

1. Initial evaluation
  - History
  - Symptom duration, frequency, and severity
  - Characteristics of vomiting episodes
  - Associated symptoms
2. Physical examination
  - Test for weight loss and dehydration
  - Vital signs/blood pressure
  - Abdominal examination, including checking for distention, visible peristalsis, abdominal or inguinal hernias, areas of tenderness, examination of epigastrium
  - Extremities examination, including finger nails
  - Inspection of teeth
  - Neurologic examination, including assessment of orthostatic hemodynamic changes, examination of cranial nerves, fundoscopic examination, and observation of gait
  - Evaluation for anxiety or depression
3. Blood tests
  - Complete blood count
  - Erythrocyte sedimentation rate
  - Electrolyte and standard chemistry profiles
  - Pregnancy test
  - Serum level of thyroid-stimulating hormone
  - Serum drug levels testing for toxicity in patients taking digoxin, theophylline, or salicylates
4. Diagnostic evaluation
  - Abdominal x-ray
  - Upper gastrointestinal (GI) barium study
  - Upper gastrointestinal and small bowel follow-through (SBFT)
  - Enteroclysis
  - Abdominal computed tomography (CT) with oral and intravenous contrast
  - Ultrasonography
  - Gastric emptying scintigraphy

- Esophagogastroduodenoscopy
  - Electrogastrography (EGG)
  - Antroduodenal manometry
5. Evaluation for central disorders
    - Magnetic resonance imaging for intracranial lesions
  6. Evaluation for psychogenic causes
    - Minnesota Multiphasic Personality Inventory instrument

[Note: Testing should be guided by the results of patient history and physical examination.]

#### Management/Treatment

1. Assessment of fluid and electrolyte status
2. Fluid replacement
3. Dietary modification, including consumption of frequent small meals, reduction of the fat content of meals, avoidance of indigestible or partially digestible material, and elimination of carbonated beverages
4. Antiemetic agents, such as phenothiazines, antihistamines, anticholinergics, dopamine antagonists, serotonin antagonists, butyrophenones, cannabinoids, other substituted benzamides, steroids, and benzodiazepines (see Table 5 of the technical report for a list of agents)
5. Prokinetic agents, such as cholinergic agonists, dopamine antagonists, and erythromycin

#### MAJOR OUTCOMES CONSIDERED

- Incidence of nausea and vomiting
- Risk factors for nausea and vomiting
- Sensitivity and specificity of diagnostic test(s)
- Symptoms of nausea and vomiting
- Consequences and/or complications of nausea and vomiting and its treatment

## METHODOLOGY

#### METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)  
 Hand-searches of Published Literature (Secondary Sources)  
 Searches of Electronic Databases

#### DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The literature on which this review was based was selected, using MEDLINE, as follows: all references from 1965 to the present that included nausea and vomiting in the title, were in English, and dealt with human subjects (n = 1073); all references from 1996 to the present that included the terms nausea, vomiting, and therapy anywhere (n = 1262); and references derived from review articles, book chapters, etc., that dealt with nausea and vomiting in general or with specific diagnostic or therapeutic issues.

## NUMBER OF SOURCE DOCUMENTS

2335+ references were reviewed

## METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Subjective Review

## RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

## METHODS USED TO ANALYZE THE EVIDENCE

Review  
Review of Published Meta-Analyses

## DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

## METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

## RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

## COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

## METHOD OF GUIDELINE VALIDATION

Peer Review

## DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

This document was approved by the Clinical Practice and Practice Economics Committee on March 4, 2000, and by the American Gastroenterological Association Governing Board on May 21, 2000.

## RECOMMENDATIONS

### MAJOR RECOMMENDATIONS

Nausea and vomiting are common and distressing symptoms with a myriad of underlying causes. Although most instances of acute nausea and vomiting can be readily diagnosed on clinical grounds alone, chronic nausea and vomiting, defined as symptoms persisting more than one month, may present a greater diagnostic and therapeutic challenge.

Assessment of the patient with nausea and vomiting begins with differentiation of these symptoms from bulimia, regurgitation, and rumination and should include a clear delineation of the duration, frequency, and severity of these symptoms together with a description of their characteristics and the nature of any associated symptoms. The physical examination should be directed toward two objectives: a search for any consequences or complications of vomiting per se and identification of any signs that may point to the cause of these symptoms. Thus, for example, vomiting of central origin is usually accompanied by signs and/or symptoms suggestive of an intracranial or labyrinthine lesion. Diagnostic testing should be directed by the clinical algorithm (see Figure 1 of the original guideline document). Thus, symptoms suggestive of gastrointestinal obstruction should prompt appropriate radiologic studies, and complaints consistent with upper gastrointestinal mucosal disease are best evaluated by esophagogastroduodenoscopy. Although well-documented disorders of enteric nerve and muscle such as the pseudo-obstruction syndrome may result in nausea and vomiting, the role of gastrointestinal dysmotility and gastroparesis, in particular, in the patient with isolated chronic nausea and vomiting remains unclear. Although gastroparesis is common among patients in this category, its primacy remains in dispute, and the interrelationships between such entities as functional and psychogenic vomiting, idiopathic gastroparesis, and functional dyspepsia remain unclear. For these same reasons, the place of such tests of motor function as gastric emptying studies, electrogastrography, and manometry have not been defined, and the yield of such diagnostic studies has not been adequately compared with a therapeutic trial of an antiemetic and/or prokinetic agent. For the moment, reluctance to accept gastroparesis per se as the primary cause of these symptoms seems appropriate and prudent. The clinician should consider psychogenic factors and a psychologic evaluation in the assessment of patients with chronic unexplained nausea and vomiting.

Management of nausea and vomiting should include, first, recognition and correction of any consequences or complications; second, identification, wherever possible, of the underlying cause(s), followed by appropriate therapy; and third, where necessary, therapeutic strategies to suppress or eliminate symptoms. With regard to the first, particular attention must be paid to recognition and replacement of any depleted fluid, electrolyte, vitamin, trace element, or nutrient, as well as identification and correction of acid-base and metabolic disturbances. Symptomatic therapy should be based on symptom severity and clinical context. Thus mild nausea and uncomplicated vomiting may be treated empirically with oral antiemetics, whereas severe intractable episodes require parenteral administration of such agents as phenothiazines, butyrophenones, or metoclopramide. The management of these symptoms in specific clinical contexts reflects, in large part, our understanding of the pathophysiology of these symptoms and the neuropharmacology of available agents. Thus, motion sickness and related disorders are treated primarily with histamine H<sub>1</sub> and muscarinic, cholinergic M<sub>1</sub>-receptor antagonists, whereas the prevention and treatment of both acute cancer chemotherapy-related and postoperative nausea and vomiting

have come to be based largely on the use of serotonergic 5-HT<sub>3</sub>-receptor antagonists; when gastroparesis is thought to play a causative or contributory role, prokinetic agents may prove particularly effective. It must be conceded that, with the notable exception of postchemotherapy and postoperative nausea and vomiting, relatively few controlled trials have compared either various therapeutic strategies or available pharmacologic agents in the symptomatic therapy of nausea and vomiting.

#### CLINICAL ALGORITHM(S)

An algorithm is provided for the evaluation and management of nausea and vomiting.

### EVIDENCE SUPPORTING THE RECOMMENDATIONS

#### TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated for each recommendation.

### BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

#### POTENTIAL BENEFITS

Nausea and vomiting, from all causes, involve significant social and economic costs to affected patients, their employers, and the health care industry. Appropriate diagnosis, management, and treatment of nausea and vomiting could lead to quicker resolution of symptoms and improved functioning and quality of life.

#### POTENTIAL HARMS

##### Diagnostic tests

There are risks associated with some diagnostic tests, including minimal or modest radiation exposure associated with x-ray and computed tomography. There is a risk of possible reaction to intravenous contrast used for an abdominal computed tomography. There are minimal risks of bleeding, perforation, and sepsis associated with esophagogastroduodenoscopy.

##### Adverse effects of pharmacological treatment

Anticholinergic agents. Although a variety of anticholinergic agents have been shown to have antiemetic effects, their clinical utility has been limited by relatively modest efficacy and poor tolerance because of the frequency of other anticholinergic side effects.

Antihistamines. These agents induce variable degrees of drowsiness.

Phenothiazines. Side effects of these compounds are relatively frequent and include sedation, orthostatic hypotension, and extrapyramidal symptoms, including dystonia and tardive dyskinesia. Rarely, other phenothiazine-type idiosyncratic reactions, such as the neuroleptic malignant syndrome, blood dyscrasias, and cholestatic jaundice, have also been reported.

Butyrophenones. Side effects include sedation, agitation, and restlessness.

Serotonin antagonists. Gastrointestinal upset and headache appear to be relatively uncommon.

Metoclopramide. Significant adverse effects include fatigue and such extrapyramidal phenomena as dystonia, dyskinesia, akathisia, opisthotonos, and oculogyric crises. Metoclopramide also induces hyperprolactinemia, which may result in gynecomastia and galactorrhea. The overall incidence of adverse effects with metoclopramide is 10%-20%.

Domperidone. The overall frequency of side effects with domperidone appears to be in the region of 5%-10%; extrapyramidal effects are distinctly uncommon, but hyperprolactinemia-related effects and headaches do occur.

Cannabinoids. Side effects include sedation, hypotension, ataxia, dizziness, and euphoria.

Cholinergic agents. Given their nonspecificity, they are associated with a significant incidence of adverse effects, and their use has virtually disappeared with the advent of newer agents.

Subgroups Most Likely to be Harmed:

Adverse effects of metoclopramide appear to be particularly common in young children and the elderly.

## IMPLEMENTATION OF THE GUIDELINE

### DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

## INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

### IOM CARE NEED

Getting Better  
Living with Illness

### IOM DOMAIN

Effectiveness  
Safety

## IDENTIFYING INFORMATION AND AVAILABILITY

### BIBLIOGRAPHIC SOURCE(S)

American Gastroenterological Association medical position statement: nausea and vomiting. Gastroenterology 2001 Jan; 120(1): 261-2.

### ADAPTATION

Not applicable: The guideline was not adapted from another source.

### DATE RELEASED

2000 May 21 (reviewed 2001)

### GUIDELINE DEVELOPER(S)

American Gastroenterological Association - Medical Specialty Society

### SOURCE(S) OF FUNDING

American Gastroenterological Association

### GUIDELINE COMMITTEE

American Gastroenterological Association Clinical Practice and Practice Economics Committee

### COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Not stated

### FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

### GUIDELINE STATUS

This is the current release of the guideline.

An update is not in progress at this time.

According to the guideline developer, the Clinical Practice Committee meets 3 times a year to review all American Gastroenterological Association guidelines. This review includes new literature searches of electronic databases followed by

expert committee review of new evidence that has emerged since the original publication date.

This guideline has been reviewed by the developer and is still considered to be current as of Dec 2001.

#### GUIDELINE AVAILABILITY

Electronic copies: Available from the [American Gastroenterological Association \(AGA\) Gastroenterology journal Web site](#).

Print copies: Available from American Gastroenterological Association, 4930 Del Ray Avenue, Bethesda, MD 20814.

#### AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Eamonn M. M. Quigley; William L. Hasler; and Henry P. Parkman. AGA technical review on nausea and vomiting. *Gastroenterology*. 2001 Jan; 120(1):263-86. [262 references].

Electronic copies: Available from the [American Gastroenterological Association \(AGA\) Gastroenterology journal Web site](#).

Print copies: Available from American Gastroenterological Association, 4930 Del Ray Avenue, Bethesda, MD 20814.

#### PATIENT RESOURCES

None available

#### NGC STATUS

This summary was completed by ECRI on June 5, 2002. The information was verified by the guideline developer on July 12, 2002.

#### COPYRIGHT STATEMENT

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