

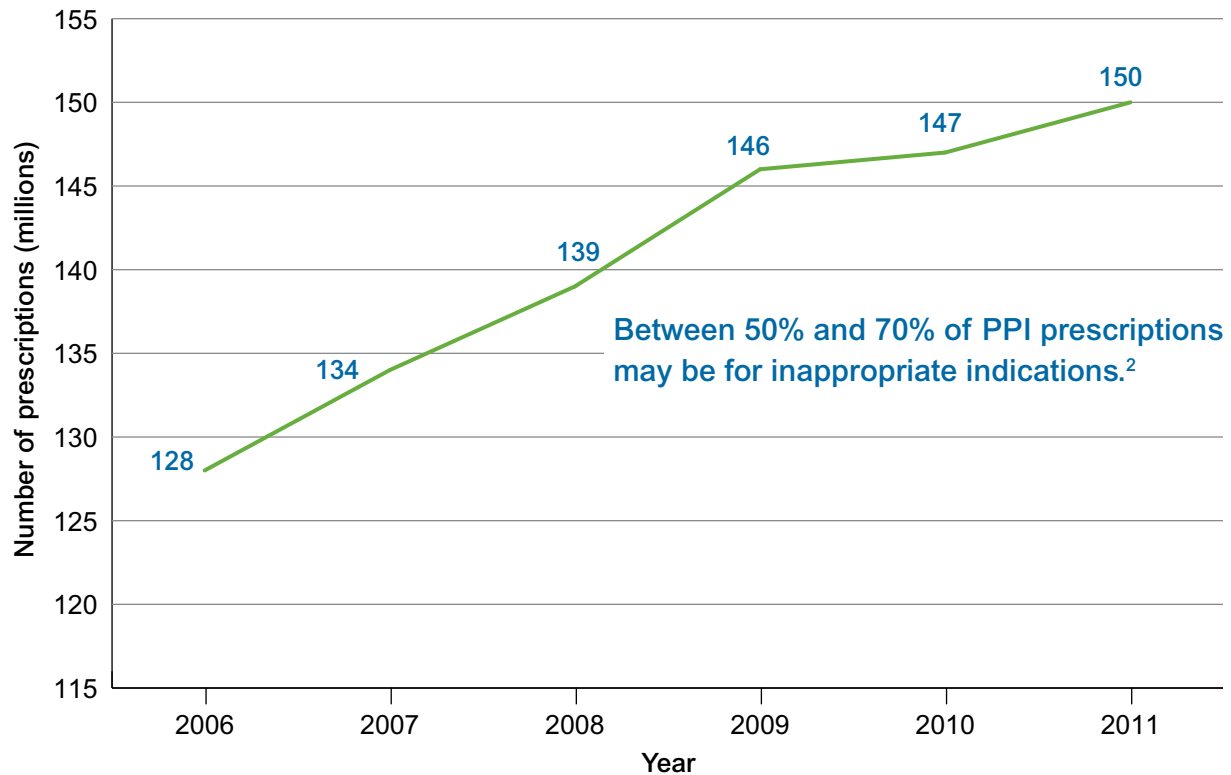
Acid suppression therapy: Neutralizing the hype

Many patients taking chronic PPIs do not need them.



Proton pump inhibitors (PPIs) are among the most widely used drugs in the US but many patients who take them do not need them.

FIGURE 1. Number of PPI prescriptions dispensed per year in the US¹



Only a few conditions require long-term use of PPIs:

- ✓ GERD with esophagitis, ongoing symptoms, or complications such as Barrett's esophagus
- ✓ recurrent peptic ulcer disease
- ✓ Zollinger-Ellison Syndrome

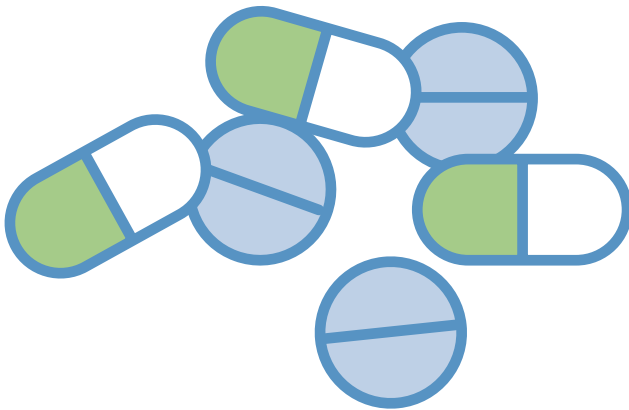
Some patients who require long-term NSAID use but have GI intolerance may benefit from concurrent use of a PPI.

PPIs cause more adverse effects than H₂ blockers:³

- headache
- diarrhea
- abdominal pain

PPIs carry a risk of more serious adverse effects:

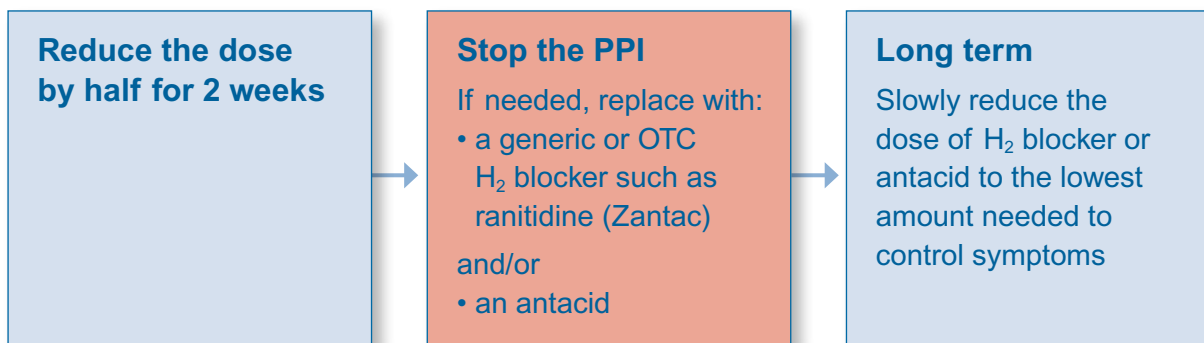
- *Clostridium difficile* infection
—(FDA warning: 2/8/2012)
- fractures^{4,5}
—(FDA warning: 5/25/2010, updated 3/23/2011)
- interstitial nephritis
- pneumonia^{6,7}
- potential for drug-drug interactions
- rebound acid hyper-secretion when PPI stopped
- low serum magnesium levels
—(FDA warning: 3/2/2011)



Attempt to taper and then discontinue PPIs in patients with:

- GERD without esophagitis, if symptom-free after 4 weeks of therapy
- Peptic ulcer disease, if symptom-free after *H. pylori* eradication and 4-8 weeks of PPI use
- Non-ulcer dyspepsia, if symptom-free after 4-8 weeks of therapy

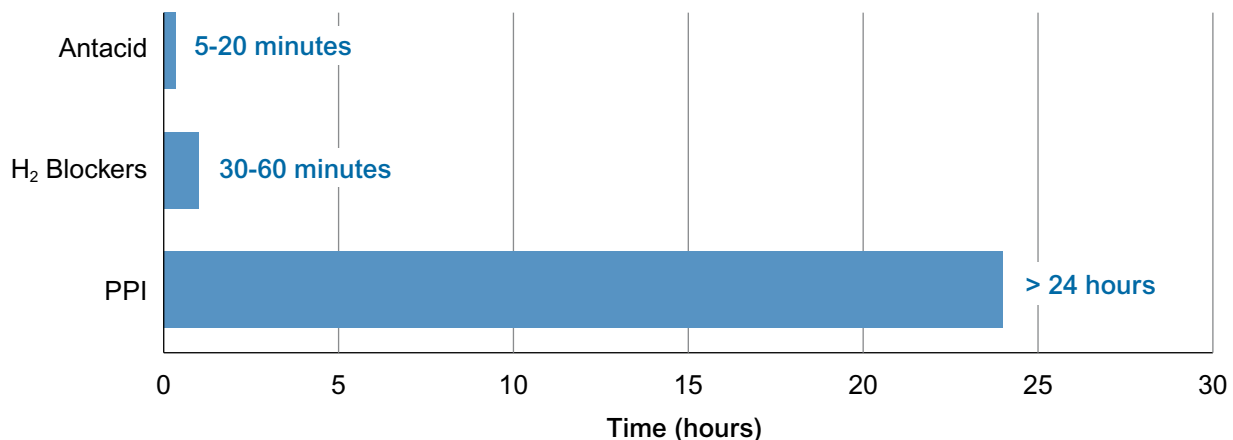
A tapering regimen can prevent or control rebound symptoms and provide the best chance of successfully stopping unneeded PPIs.⁸



Avoid “as-needed” PPI use

Although PPIs are often taken on an as-needed basis, they do not work well in this way because they can take more than 24 hours to reduce acid production and provide symptom relief. By contrast, antacids are effective within minutes and H₂ blockers work within an hour.

FIGURE 2. Time needed for acid suppressing drugs to provide symptom relief



Initial assessment of patients with acid-related symptoms⁹⁻¹³

1

Look for precipitating medications, including aspirin, NSAIDs, anticholinergic drugs, corticosteroids, dopaminergic agents, bisphosphonates, calcium channel blockers, and dabigatran (Pradaxa).¹⁴



2

Exclude serious non-GI causes of dyspepsia, such as:

- coronary artery disease
- pericarditis
- aortic dissection
- pulmonary embolism

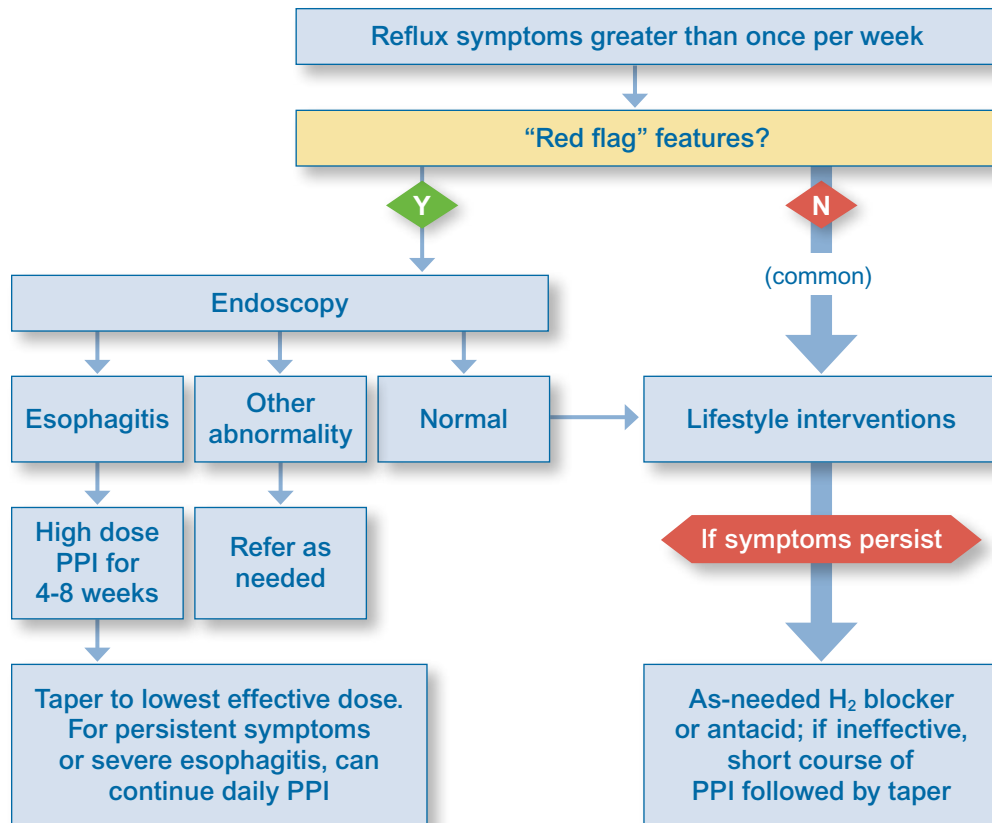


3

Look for “red flag” signs or symptoms—alarm features that might suggest cancer, stricture, severe ulceration, or another serious problem. If present, refer for endoscopy:

- hematemesis
- blood in stool
- change in bowel habits
- anemia
- pain or difficulty with swallowing
- previous GI malignancy or ulcer
- recurrent vomiting
- anorexia
- unexplained weight loss
- early satiety
- abdominal mass
- hepatomegaly
- lymphadenopathy

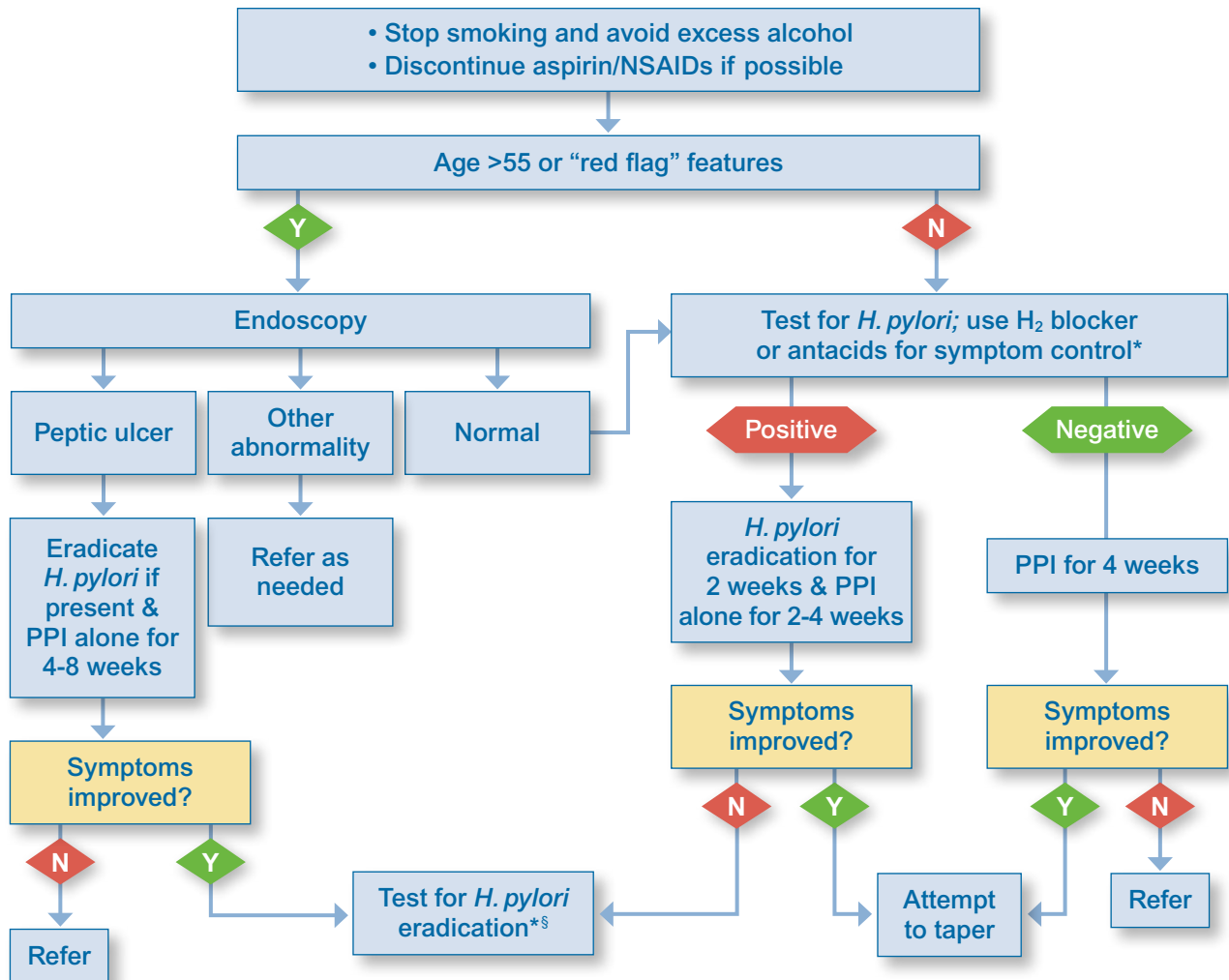
FIGURE 3. An approach to patients with GERD^{10,12,13,15}



Lifestyle modification can greatly help reduce reflux:^{10,15}

- ✓ eliminate substances that reduce tone in the lower esophageal sphincter (caffeine, alcohol, tobacco, mint, chocolate, fatty or fried foods)
- ✓ avoid large meals right before bedtime
- ✓ elevate the head of the bed
- ✓ avoid tight clothing that constricts the abdomen
- ✓ do not recline within 2-3 hours after a meal
- ✓ lose weight if overweight

FIGURE 4. An approach to patients with non-GERD dyspepsia¹³



* Use H₂ blocker or antacid for symptom control prior to testing.

§ Referral may be needed for patients with persistent symptoms or failure of *H. pylori* eradication.

Dealing with *H. pylori* infection^{9,11,13}



How to test:

For most patients:
✓ urea breath test and stool antigen test are accurate non-invasive diagnostic tools, but are cumbersome to obtain in routine practice. Use these tests if confirmation of eradication is needed.
✓ serum antibody testing has lower sensitivity and specificity, but it is commonly ordered because of its convenience. (Cannot be used to confirm eradication.)
If the patient undergoes endoscopy, a biopsy is the most accurate way to test for <i>H. pylori</i>.
Before the test for <i>H. pylori</i>, stop these drugs: <ul style="list-style-type: none">✓ PPI for 2 weeks before testing✓ H₂ blocker for 24 hours before testing✓ antibiotics for 4 weeks before testing

If treating *H. Pylori*, treat with triple therapy for 10-14 days:

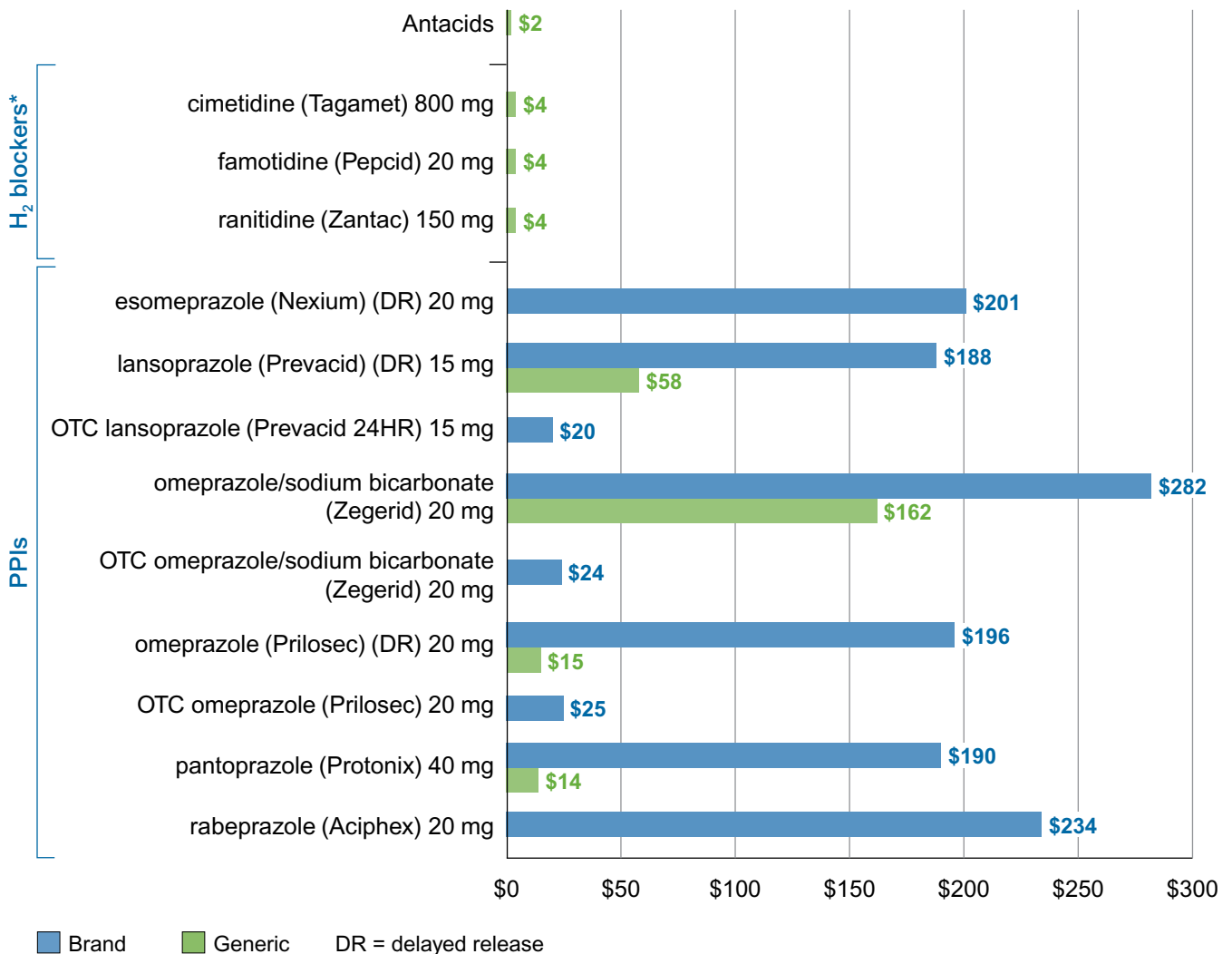
- 1) PPI, standard prescription dose twice daily (e.g., omeprazole 20 mg), and
- 2) amoxicillin* 1000 mg twice daily, and
- 3) clarithromycin 500 mg twice daily.

* Metronidazole (500 mg twice daily) should be substituted for amoxicillin in patients with penicillin allergy.

Cost

The various acid suppressing medications have similar efficacy, but big differences in economic burden.¹⁶⁻²⁰

FIGURE 5. Monthly cost of acid-suppressive medications



Listed doses reflect dosing equivalents. Drug prices obtained from Walgreens Pharmacy, Walmart Pharmacy, and GoodRx.com, June 2012.

* Not all available H₂ blockers are listed in the chart above.

FIGURE 6. Cost of *H. pylori* eradication regimen drugs

Drug regimen	Approximate cost of single prescription therapy (brand name)	Approximate cost using individual prescriptions and generics
lansoprazole (30 mg), clarithromycin (500 mg), amoxicillin (1 g)	\$500 (Prevpac)	\$118
lansoprazole (30 mg), clarithromycin (500 mg), metronidazole (500 mg)	Not available	\$115
Bismuth subsalicylate (262 mg), metronidazole (500 mg), tetracycline (500 mg), ranitidine	\$650 (Helidac)*	\$54

* Cost of Helidac includes the price of acid-suppression medication.

Listed doses reflect dosing equivalents. Drug prices obtained from Walgreens Pharmacy, Walmart Pharmacy, and GoodRx.com, June 2012.

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About this publication

These are general recommendations only; specific clinical decisions should be made by the treating physician based on an individual patient's clinical condition.



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