### Omeprazole (5-mep-ra-zole)

**Class:** PEPSIN, PEPSIC (OTC)

**Classification:** Therapeutic: antacid agents

**Pharmacologic: proton-pump inhibitors

**Pregnancy Category:** C

### Indications
- GERD maintenance of healing or erosive esophagitis, Duodenal ulcers (with or without infections for Helicobacter pylori). Short-term treatment of active benign gastric ulcer.
- Pathologic hypersecretory conditions, including Zollinger-Ellison syndrome. Reduction of risk of GI bleeding in critically ill patients.

### Effects
- Diminished accumulation of acid in the gastric lumen with lessened gastroesophageal reflux within 1 hr within 2 hr 72–96 hr

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<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
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<tr>
<td>PO</td>
<td>within 1 hr</td>
<td>within 1 hr</td>
<td>72–96 hr</td>
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### Action
- Binds to an enzyme on gastric parietal cells in the presence of acidic gastric pH, preventing the final transport of hydrogen ions into the gastric lumen. Therapeutic: Diminished accumulation of acid in the gastric lumen with lessened gastroesophageal reflux.

### Pharmacokinetics
- Absorption: Rapidly absorbed following oral administration; immediate release formulation is not bioequivalent to parent and degradation.
- Distribution: Good distribution into gastric parietal cells.
- Protein Binding: 95%
- Metabolism and Excretion: Mostly metabolized by the liver via the cytochrome P450 (CYP) system (primarily CYP2C19 isoenzyme, but also the CYP3A4 isoenzyme) producing inactive metabolites are excreted in urine (77%) and feces. Patients using high-doses for 1 year may have significantly higher levels and may have associated adverse effects.
- Half-life: 0.5–1 hr (the CYP2C19 enzyme system exhibits genetic polymorphism; the CYP2C19 enzyme exhibits genetic polymorphism).
- Genetic Implication. CAPI TALS indicate life-threatening, underlines indicate most frequent.

### Contraindications/Precautions
- Contraindicated in: Hypersensitivity; Lactation: Discontinue omeprazole or discontinue breast-feeding.
- Use Cautionally in: Liver disease (dose may be necessary); OGT: Lactation, Pregnancy not established in pregnant or breast feeding women, or children <1 yr. Patients using high-doses for >3 years (risk of hip, wrist, or spine fractures).

### Adverse Reactions/Side Effects
- CNS: Dizziness, drowsiness, headache, weakness.
- CV: Tachycardia
- Derm: Pruritus, rash.
- Endo: Hypomagnesemia (especially if treatment duration >3 mo).
- F and E: Hypomagnesemia (monitor INR/PT).
- GI: Indigestion, flatulence, nausea, vomiting.
- MS: Weakness, bone fracture.
- Misc: Allergy reactions.

### Interactions
- Drug-Drug: Omeprazole is metabolized by the CYP450 enzyme system and may compete with other agents metabolized by this system: antifungal agents, diuretics, digoxin, flurazepam, hydantoin, penicillins, rifampin, steroids, theophylline, warfarin, and zidovudine. May significantly affect the effects of omeprazole and its metabolites (concurrent use not recommended): May risk of bleeding with warfarin (monitor INR/PT). Voriconazole may 5 days (may 2 wk; May the antidiabetic effects of glyburide; avoid concurrent use: May risk of hyperglycemia; risk of action; avoid concurrent use).

### Route/Dosage
- Pediatric (PO) Omeprazole 15–20% of Asian patients indicate most frequent. Strikethrough.

<table>
<thead>
<tr>
<th>Route/Dosage</th>
<th>PO-Adults</th>
<th>Omeprazole 40 mg</th>
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<th>10 mg</th>
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<tr>
<td>1 wk</td>
<td>20 mg</td>
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<tr>
<td>2 wk</td>
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<td>4 wk</td>
<td>20 mg</td>
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### Drug-Natural Products: St. John’s wort may may levels and may response; avoid concurrent use. Hypomagnesemia risk of action; avoid concurrent use.

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initially, then another 40 mg 6–8 hr later, followed by 40 mg once daily for up to 14 days.

Gastric hypersecretory conditions—60 mg once daily initially; may be increased up to 120 mg 3 times daily (doses ≥80 mg/day should be given in divided doses); OTC—20 mg once daily for up to 14 days.

PO (Children 1–16 yr and 5–9 kg): GERD/erosive esophagitis—10 mg once daily.

PO (Children 1–16 yr and 10–19 kg): GERD/erosive esophagitis—20 mg once daily.

NURSING IMPLICATIONS

Assessment

● Assess patient routinely for epigastric or abdominal pain and frank or occult blood in the stool, emesis, or gastric aspirate.

● Monitor bowel function. Diarrhea, abdominal cramping, fever, and bloody stools should be reported to health care professional promptly as a sign of pseudomembranous colitis. May begin up to several weeks following cessation of therapy.

● Lab Test Considerations: Monitor CBC with differential periodically during therapy.

● May cause serum gastrin concentrations to q during first 1–2 wk of therapy. Levels return to normal after discontinuation of omeprazole.

Potential Nursing Diagnoses

Acute pain (Indications)

Implementation

● Do not confuse Prilosec (omeprazole) with Princen (fluoxetine) or Pris-tiq (desvenlafaxine). Do not confuse omeprazole with fomepizole.

● PO: Administer doses before meals, preferably in the morning. Capsules should be swallowed whole; do not crush or chew. Capsules may be opened and sprinkled on cool applesauce; entire mixture should be ingested immediately and followed by a drink of water. Do not store for future use.

● PO (Children 1–16 yr and 5–9 kg): GERD/erosive esophagitis—10 mg once daily.

● PO (Children 1–16 yr and 10–19 kg): GERD/erosive esophagitis—20 mg once daily.

Patient/Family Teaching

● Instruct patient to take medication as directed for the full course of therapy, even if feeling better. Take missed doses as soon as remembered but not if almost time for next dose. Do not double doses.

● May cause occasional drowsiness or dizziness. Caution patient to avoid driving or other activities requiring alertness until response to medication is known.

● Instruct patient to notify health care professional of all Rx or OTC medications, vitamins, or herbal products being taken and consult health care professional before taking any new medications.

● Advise patient to avoid alcohol, products containing aspirin or NSAIDs, and foods that may cause an increase in GI irritation.

● Advise patient to report onset of black, tarry stools; diarrhea; abdominal pain; or persistent headache to health care professional promptly.

● Instruct patient to notify health care professional of onset of black, tarry stools; diarrhea; abdominal pain; or persistent headache to health care professional promptly.

● Advise patient to avoid alcohol, products containing aspirin or NSAIDs, and foods that may cause an increase in GI irritation.

● Advise patient to report onset of black, tarry stools; diarrhea; abdominal pain; or persistent headache to health care professional promptly.

● Advise patient not to treat diarrhea without consulting health care professional.

● Advise female patient to notify health care professional if pregnancy is planned or suspected or if breast feeding.

Evaluation/Desired Outcomes

● Decrease in abdominal pain or prevention of gastric irritation and bleeding. Healing of duodenal ulcers can be seen on x-ray examination or endoscopy.

● Decrease in symptoms of GERD and erosive esophagitis. Therapy is continued for 8–12 wk after initial episode.