

GERD TREATMENTS (Part 1 of 2)

The following is a list of pharmacological treatments available for the management of gastroesophageal reflux disease (GERD), erosive esophagitis (EE), and nonerosive reflux disease (NERD). Recommendations are based on guidelines published by The American College of Gastroenterology (ACG).

Generic	Brand	Strength	Form	Dose
RECOMMENDED THERAPY				
Proton Pump Inhibitors^{1,2,3,4}				
dexlansoprazole	Dexilant	30mg, 60mg	caps	Adults and Children: <12yrs: not established. ≥12yrs: EE healing: 60mg once daily up to 8wks. <i>Maintenance of EE healing and heartburn relief:</i> 30mg once daily up to 4mos (12–17yrs) or up to 6mos (≥18yrs). <i>Symptomatic NERD:</i> 30mg once daily for 4wks. <i>Hepatic impairment (Child-Pugh B):</i> EE healing: 30mg daily up to 8wks; <i>(Child-Pugh C):</i> not recommended.
esomeprazole	Nexium	20mg, 40mg	caps	Adults: Symptomatic GERD: 20mg once daily for 4wks; may repeat for additional 4wks. <i>EE healing:</i> 20mg or 40mg once daily for 4–8wks; may repeat for additional 4–8wks. <i>Maintenance of EE healing:</i> 20mg once daily (up to 6mos in controlled studies). <i>Severe hepatic impairment:</i> max 20mg once daily. Children: <1mo (EE healing), <1yr (symptomatic GERD): not established. EE healing: 1mo–<1yr (3–5kg): 2.5mg; (>5–7.5kg): 5mg; (>7.5–12kg): 10mg; give once daily up to 6wks ⁷ . 1–11yrs (<20kg): 10mg; (≥20kg): 10mg or 20mg; give once daily up to 8wks ⁷ . 12–17yrs: 20mg or 40mg once daily for 4–8wks. <i>Symptomatic GERD: 1–11yrs:</i> 10mg once daily up to 8wks ⁷ . 12–17yrs: 20mg once daily for 4wks.
		2.5mg, 5mg, 10mg, 20mg, 40mg	granules for oral susp	
	Nexium I.V.	40mg	pwd for IV inj or infusion after reconstitution	Adults: Give by IV inj ≥3mins or infuse over 10–30mins. <i>EE healing:</i> 20mg or 40mg once daily for up to 10 days; switch to oral form when feasible. <i>Severe hepatic impairment:</i> max 20mg once daily. Children: <1mo: not established. EE healing: infuse over 10–30mins; give once daily up to 10 days; switch to oral form when feasible. 1mo–<1yr: 0.5mg/kg. 1–17yrs (<55kg): 10mg; (≥55kg): 20mg.
lansoprazole	Prevacid	15mg, 30mg	caps	Adults: Symptomatic GERD: 15mg once daily up to 8wks. <i>EE healing:</i> 30mg once daily up to 8wks; may repeat for additional 8wks. <i>Maintenance of EE healing:</i> 15mg once daily (up to 12mos in controlled studies). <i>Severe hepatic impairment:</i> 15mg once daily. Children: <1yr: not established. 1–11yrs: Symptomatic GERD, EE healing: give once daily up to 12wks; (≤30kg): 15mg; (>30kg): 30mg. 12–17yrs: Symptomatic NERD: 15mg once daily up to 8wks. <i>EE healing:</i> 30mg once daily up to 8wks.
	Prevacid SoluTab	15mg, 30mg	ODT	
omeprazole	—	10mg, 20mg, 40mg	caps	Adults: Symptomatic GERD: 20mg once daily up to 4wks. <i>EE:</i> 20mg once daily for 4–8wks; may repeat for additional 4wks (may give additional 4–8wks if relapse of EE or GERD symptoms occurs). <i>Maintenance of EE healing:</i> 20mg once daily (up to 12mos in controlled studies); max 10mg once daily in hepatic impairment, Asians. Children: <1mo (EE), <1yr (symptomatic GERD, maintenance of EE healing): not established. EE: 1mo–<1yr (3–<5kg): 2.5mg; (5–<10kg): 5mg; (≥10kg): 10mg; give once daily up to 6wks. 1–16yrs (5–<10kg): 5mg; (10–<20kg): 10mg; (≥20kg): 20mg; give once daily for 4–8wks; may repeat for additional 4wks (may give additional 4–8wks if relapse of EE or GERD symptoms occurs). <i>Symptomatic GERD, maintenance of EE healing: 1–16yrs</i> (5–<10kg): 5mg; (10–<20kg): 10mg; (≥20kg): 20mg; give once daily up to 4wks (GERD) or up to 12mos in controlled studies (maintenance).
	Prilosec	2.5mg, 10mg	granules for oral susp	
omeprazole/ sodium bicarbonate	Zegerid	20mg/1100mg, 40mg/1100mg	caps	Adults: Symptomatic GERD: 20mg once daily up to 4wks. <i>EE healing:</i> 20mg once daily for 4–8wks; may repeat for additional 4wks (may give additional 4–8wks if relapse of EE or GERD symptoms occurs). <i>Maintenance of EE healing:</i> 20mg once daily (up to 12mos in controlled studies); avoid use in hepatic impairment, Asians. Children: Not established.
		20mg/1680mg, 40mg/1680mg	pwd for oral susp	
pantoprazole	Protonix	20mg, 40mg	tabs	Adults: EE healing: 40mg once daily up to 8wks; may repeat for additional 8wks. <i>Maintenance of EE healing:</i> 40mg once daily (up to 12mos in controlled studies). Children: <5yrs: not recommended. ≥5yrs: EE healing (≥15–<40kg): 20mg; (≥40kg): 40mg; give once daily up to 8wks.
		40mg	granules for oral susp	
	Protonix I.V.	40mg	pwd for IV infusion after reconstitution	Adults: Infuse over 2mins or 15mins. <i>GERD with history of EE:</i> 40mg once daily for 7–10 days; switch to oral form when feasible. Children: Not established.
rabeprazole	Aciphex	20mg	tabs	Adults: Symptomatic GERD: 20mg once daily up to 4wks; may repeat for additional 4wks. <i>EE healing:</i> 20mg once daily for 4–8wks; may repeat additional 8wks. <i>Maintenance of EE healing:</i> 20mg once daily (up to 12mos in controlled studies). <i>Severe hepatic impairment:</i> avoid; monitor if treatment is necessary. Children: <12yrs: not recommended. ≥12yrs: Symptomatic GERD: 20mg once daily up to 8wks.

ALTERNATIVE THERAPY

Histamine 2 Receptor Antagonists^{2,4,5}

famotidine	Pepcid	20mg, 40mg	tabs	Adults: Symptomatic NERD: 20mg twice daily up to 6wks. <i>EE healing:</i> 20mg or 40mg twice daily up to 12wks. <i>Renal impairment (CrCl 30–60mL/min):</i> Symptomatic NERD: 20mg once daily; EE healing: 20mg once daily or 40mg every other day ⁶ . <i>CrCl <30mL/min:</i> Symptomatic NERD, EE healing: 10mg once daily or 20mg every other day ⁶ . Children: <40kg: use oral susp. <i>GERD: Birth–<3mos:</i> initially 0.5mg/kg/day; may increase to 1mg/kg/day. 3mos–<1yr: initially 0.5mg/kg twice daily; may increase to 1mg/kg twice daily; max 40mg/day. 1–16yrs: 0.5mg/kg twice daily; max 40mg twice daily. Treat for up to 8wks ¹¹ (birth–<1yr) or up to 6–12wks (1–16yrs).
		40mg/5mL	pwd for oral susp	

(continued)

GERD TREATMENT (Part 2 of 2)

Generic	Brand	Strength	Form	Dose
ALTERNATIVE THERAPY (continued)				
Histamine 2 Receptor Antagonists ^{2,4,5} (continued)				
cimetidine ⁸	—	200mg, 300mg, 400mg, 800mg	tabs	Adults: <i>EE healing:</i> 800mg twice daily or 400mg 4 times daily for max 12wks. <i>Severe renal impairment:</i> 300mg every 12hrs; may increase to every 8hrs if needed. Children: <16yrs: not recommended. Doses of 20–40mg/kg/day have been used.
		300mg/5mL	oral soln	
nizatidine	—	150mg	caps	Adults: <i>Symptomatic GERD, EE healing:</i> 150mg twice daily for up to 12wks. <i>Renal impairment</i> (CrCl 20–50mL/min): 150mg once daily; (CrCl <20mL/min): 150mg every other day. Children: <12yrs: not established. ≥12yrs: <i>Symptomatic GERD, EE healing:</i> 150mg twice daily for up to 8wks; max 300mg/day. <i>Renal impairment</i> (CrCl 20–50mL/min): 150mg once daily; (CrCl <20mL/min): 150mg every other day.
		15mg/mL	oral soln	
Antacids ⁹				
aluminum hydroxide/magnesium carbonate	Gaviscon Extra Strength	160mg/105mg	chew tabs	Adults: 2–4 chew tabs or 10–20mL 4 times daily. Children: Not recommended.
		254mg/237.5mg per 5mL	oral liq	
aluminum hydroxide/magnesium hydroxide/simethicone	Mylanta Maximum Strength	800mg/800mg/80mg per 10mL	oral liq	Adults and Children: <12yrs: consult physician. ≥12yrs: 10–20mL as needed between or after meals and at bedtime; max 60mL per 24hrs.
bismuth subsalicylate ¹⁰	Pepto Bismol	262mg	caplets, chew tabs	Adults and Children: <12yrs: use children's form. Caplets: take with water; do not chew. ≥12yrs: 2 chew tabs or caplets every 30–60mins as needed; max 16 chew tabs or caplets per 24hrs.
		525mg/30mL	oral susp	
calcium carbonate	—	500mg	chew tabs	Adults and Children: <12yrs: not recommended. ≥12yrs: 2–4 chew tabs as symptoms occur; max 15 chew tabs per 24hrs. Pregnancy: max 10 chew tabs per 24hrs.
	Pepto Kids	400mg	chew tabs	Adults: Use other forms. Children: <24lbs (<2yrs): not recommended. 24–47lbs (2–5yrs): 1 chew tab as needed; max 3 chew tabs per 24hrs for 2 weeks. 48–95lbs (6–11yrs): 2 chew tabs as needed; max 6 chew tabs per 24hrs.
	Tums Extra	750mg	chew tabs	Adults and Children: <12yrs: not recommended. ≥12yrs: 2–4 chew tabs as symptoms occur; max 10 chew tabs per 24hrs. Pregnancy: max 6 chew tabs per 24hrs.
	Tums Ultra	1000mg	chew tabs	Adults and Children: <12yrs: not recommended. ≥12yrs: 2–3 chew tabs as symptoms occur; max 7 chew tabs per 24hrs. Pregnancy: max 5 chew tabs per 24hrs.
calcium carbonate/magnesium hydroxide/simethicone	Mylanta Coat & Cool	1200mg/270mg/80mg per 10mL	oral liq	Adults and Children: <12yrs: consult physician. ≥12yrs: 10–20mL as needed between or after meals and at bedtime; max 60mL per 24hrs.

NOTES

Key: CrCl = creatinine clearance; EE = erosive esophagitis; H2RA = histamine 2 receptor antagonists; NERD = nonerosive reflux disease; ODT = orally-disintegrating tabs; PPI = proton pump inhibitor

¹The ACG guidelines recommend that patients with classic and no alarm symptoms should be first treated with an 8-week trial of empiric PPIs once daily, 30–60mins before a meal (twice daily for 8–12wks before additional testing if patient has both extraesophageal and classic symptoms). If no response to therapy, switch only once to another PPI. For refractory GERD, defined as persistent heartburn and/or regurgitation despite 8wks of twice daily PPI (12wks for some), optimization of PPI therapy is recommended as the first step of management. Discontinue PPI if off-therapy reflux testing is negative unless other indication for PPI use exists. Refer to the estimated relative acid-suppression potencies of individual PPIs standardized to omeprazole when switching or optimizing therapy: pantoprazole (0.23), lansoprazole (0.90), omeprazole (1.00), esomeprazole (1.60), and rabeprazole (1.82).

²The ACG guidelines recommend an intermittent or as needed PPI therapy for heartburn symptom control in NERD. Step-down therapy to H2RAs is acceptable.

³PPIs should be discontinued if symptoms resolve (consider on-demand PPI if symptoms occur) and without EE or Barrett's esophagus, however, indefinite maintenance PPI therapy is recommended for patients with LA grade C or D esophagitis.

⁴PPIs are recommended over H2RAs for healing EE and maintenance of healing for EE.

⁵The addition of as needed H2RA at bedtime may be beneficial in patients with nocturnal symptoms and those with objective evidence of nocturnal acid reflux on pH monitoring despite PPI treatment.

⁶For the 40mg twice daily regimen for EE healing, reduce to 40mg once daily for CrCl 30–60mL/min or 20mg once daily for CrCl <30mL/min.

⁷Doses over 1mg/kg/day have not been studied in patients 1–11yrs. Doses over 1.33mg/kg/day have not been studied in patients 1mo–<1yr.

⁸Use in pregnancy only if clearly needed. Avoid in nursing mothers or children under 16yrs.

⁹Antacids are recommended to be used exclusively for on-demand symptom relief. First-line therapy in pregnant patients when lifestyle modifications fail.

¹⁰Avoid in patients with allergy to salicylates (including aspirin) or concomitant salicylate products.

¹¹Consider additional 4wks if benefit outweighs potential risks.

Not an inclusive list of medications. Please see drug monographs at www.eMPR.com and/or contact company for full drug labeling.

REFERENCES

Katz PO, Dunbar KB, Schnoll-Sussman FH, Greer KB, Yadlapati R, Spechler SJ. ACG Clinical Guideline for the Diagnosis and Management of Gastroesophageal Reflux Disease.

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