

NGN NCLEX 2026 • PHARMACOLOGY • GASTROINTESTINAL PROTECTANTS

Sucralfate (*Carafate*)

A mucosal protectant that forms a sticky paste-like barrier over ulcer beds. Not an acid blocker — it physically shields ulcerated tissue from acid, pepsin, and bile salts so healing can occur.

CLASS: MUCOSAL PROTECTANT

CYTOPROTECTIVE

PO ONLY

EMPTY STOMACH

PREGNANCY CAT. B

SOURCE NOTE: Student's uploaded notes briefly reference sucralfate (Medications and Mealtimes: "Give on an empty stomach, 1 hour before meals and at bedtime"). The remainder of this infographic is drawn from standard NGN NCLEX 2026 references — Saunders Comprehensive Review, ATI Pharmacology Made Easy, and Lippincott Pharmacology for Nurses.

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Definition & Overview

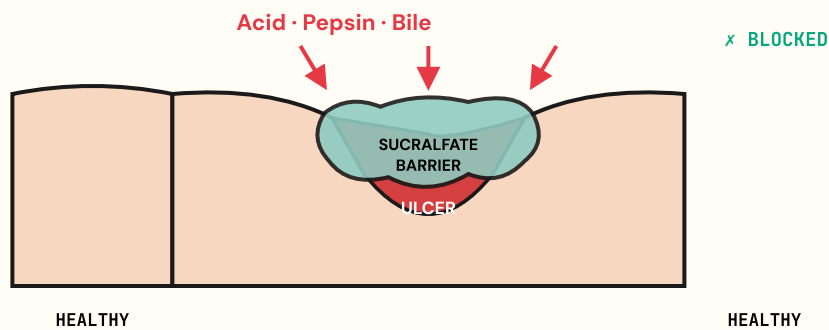
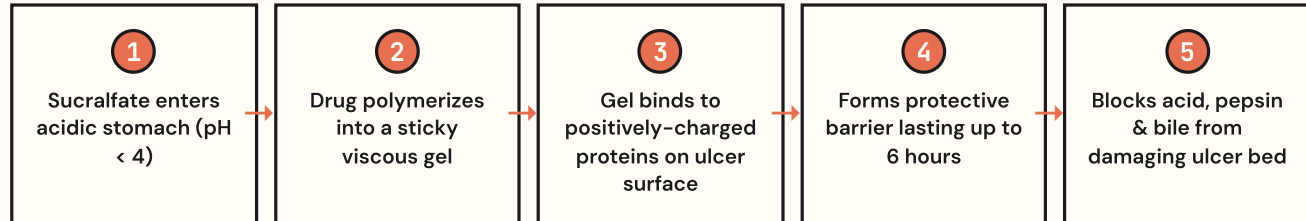
WHAT & WHY

- ▶ **What it is:** Sucralfate is an aluminum-sucrose complex (aluminum hydroxide + sulfated sucrose) classified as a *mucosal protectant* or *cytoprotective agent*.
- ▶ **What it does:** In the acidic stomach environment, it forms a thick, sticky, paste-like gel that adheres selectively to ulcerated tissue — creating a physical barrier against gastric acid, pepsin, and bile salts.
- ▶ **Why it matters:** Unlike H₂ blockers and PPIs, sucralfate does **not** reduce acid secretion or neutralize acid. It works *locally* at the ulcer site — so timing and pH are everything.

"Sucralfate is the band-aid of the GI tract — it sticks to the wound, not to healthy mucosa."

Mechanism of Action

Sucralfate is unusual because it needs **stomach acid to activate**. This is why antacids and acid-suppressing drugs must be spaced apart from it.



KEY FEATURE

Minimal systemic absorption (< 5%). Works locally, which is why side effects are mostly GI and why it's relatively safe in pregnancy.

CRITICAL DETAIL

Needs an acidic environment to polymerize.
Giving an antacid right before/with sucralfate inactivates the drug.

Indications & Clinical Uses

FDA-APPROVED

- ▶ **Active duodenal ulcer** (short-term treatment, up to 8 weeks)
- ▶ **Maintenance therapy** for duodenal ulcer (lower dose, after healing)

OFF-LABEL (COMMON)

- ▶ Gastric ulcers
- ▶ Stress ulcer prophylaxis in critically ill patients (ICU)
- ▶ GERD with esophagitis
- ▶ Oral mucositis from chemo/radiation (swish-and-spit)
- ▶ NSAID-induced gastritis

Administration & Timing

WHEN

Empty Stomach

Give **1 hour before meals** and at **bedtime**. Typically 4 times daily (QID): before breakfast, before lunch, before dinner, at bedtime.

FORMS

Tablet or Suspension

1 g tablets (can be dissolved in 15–30 mL water if hard to swallow); 1 g / 10 mL oral suspension (shake well before use).

DURATION

Up to 8 Weeks

Continue for the full prescribed course even if symptoms resolve. Healing of the ulcer is the goal, not symptom relief.

🚨 **SPACING IS NON-NEGOTIABLE.** Antacids → separate by 30 minutes (antacids raise pH and inactivate sucralfate). All other oral drugs → separate by 2 hours (sucralfate binds them and prevents absorption).

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Side Effects & Adverse Reactions

WATCH FOR

MOST COMMON

Constipation (2%)

By far the most reported adverse effect — caused by the **aluminum content**. Encourage fluids, fiber, and activity.

OTHER COMMON

GI / Mild Systemic

- ▶ Dry mouth, nausea, indigestion
- ▶ Flatulence, abdominal discomfort
- ▶ Dizziness, headache, drowsiness
- ▶ Rash, pruritus (rare)



RED FLAG — RENAL IMPAIRMENT: Sucralfate contains aluminum. In patients with chronic kidney disease or on dialysis, aluminum can accumulate → *aluminum toxicity, encephalopathy, osteomalacia*. Use cautiously; monitor aluminum levels with long-term use.



RED FLAG — BEZOAR FORMATION: Rare but serious. Sucralfate can clump and form a hardened mass (bezoar), especially in patients with delayed gastric emptying, tube feeds, or critical illness. Watch for new abdominal pain, distension, vomiting, or feeding tube blockage.

Drug Interactions

Sucralfate **binds to other drugs in the GI tract** and reduces their absorption. This is one of the most heavily tested points on NCLEX pharmacology.

DRUG / CLASS	INTERACTION	NURSING ACTION
Antacids	Raise gastric pH → sucralfate cannot polymerize → loss of effect	Separate by 30 min
Warfarin	↓ absorption → ↓ anticoagulation	Separate by 2 hr ; monitor INR
Digoxin	↓ absorption → ↓ therapeutic level	Separate by 2 hr; monitor dig level
Phenytoin (Dilantin)	↓ absorption → seizure risk	Separate by 2 hr; monitor phenytoin level
Fluoroquinolones (cipro, levo)	Marked ↓ absorption (chelation)	Give antibiotic 2 hr <i>before</i> sucralfate
Tetracyclines	Marked ↓ absorption	Give antibiotic 2 hr before sucralfate
Levothyroxine (Synthroid)	↓ absorption → hypothyroid symptoms	Separate by ≥ 4 hr; monitor TSH
Ketoconazole, oral fluconazole	↓ absorption	Separate by 2 hr
H₂ blockers / PPIs	↓ acidity → may ↓ sucralfate activation	Space doses if both ordered

Priority Nursing Interventions

A

ASSESS

Pain pattern, food relationship, melena/coffee-ground emesis (active GI bleed?), bowel pattern at baseline, renal function (BUN/creatinine — aluminum!), medication list for interaction risks.

B

BEFORE GIVING

Confirm **empty stomach** (1 hr pre-meal or 2 hr post-meal). Check that no antacid was just given. Shake suspension well. For tablet, may dissolve in 15–30 mL water.

C

COORDINATE

Schedule other PO meds **2 hours apart** from sucralfate. Coordinate with pharmacy and chart so antibiotics, warfarin, dig, and levothyroxine are spaced correctly across the day.

- ▶ **Monitor bowel pattern daily** — constipation is the #1 side effect. Increase fluids to 2–3 L/day if not contraindicated; encourage ambulation and fiber.
- ▶ **Assess for ulcer improvement** — decreased epigastric pain, no new hematemesis or melena, stable H&H.
- ▶ **Renal patients:** assess for confusion, bone pain, or neuro changes — possible aluminum accumulation.
- ▶ **Tube-fed patients:** flush tube before AND after with at least 30 mL water; hold tube feed for 1 hr after dose to allow drug to act on empty stomach.
- ▶ **Reinforce that this is NOT a PRN drug** — it must be taken on schedule for the full course (typically 4–8 weeks) even if symptoms resolve.

Class Comparison — Antiulcer Drugs

NCLEX loves to ask which drug works *how*. Sucralfate is the only one that physically coats — every other class targets acid itself.

DRUG / CLASS	MECHANISM	TIMING	HALLMARK NOTE
Sucralfate (Carafate)	Forms protective barrier on ulcer; does NOT block acid	Empty stomach, QID, 1 hr before meals & HS	Needs acid; constipation; spaces all other PO drugs by 2 hr
PPIs -prazole (omeprazole, pantoprazole)	Irreversibly blocks H ⁺ /K ⁺ pump → most potent acid suppressor	Before breakfast, daily	Long-term risk: ↑ fracture, C. diff, hypomagnesemia, B12 deficiency
H₂ Blockers -tidine (famotidine)	Blocks histamine at H ₂ receptor → ↓ acid secretion	HS (nighttime acid surge) or BID	Cimetidine = many drug interactions (avoid in older adults)
Antacids (aluminum, magnesium, calcium)	Neutralizes existing gastric acid	1–3 hr AFTER meals & HS	Al → constipation; Mg → diarrhea (often combined: Maalox, Mylanta)
Misoprostol (Cytotec)	Prostaglandin analog → ↑ mucus & bicarb production	With meals & HS	Prevents NSAID ulcers; contraindicated in pregnancy (causes abortion)

NCLEX Test Traps

✗ **WRONG ANSWER**

"Take sucralfate with your antacid for faster relief."

✓ **RIGHT ANSWER**

"Separate sucralfate and antacids by at least 30 minutes — antacids raise pH and inactivate sucralfate."

✗ **WRONG ANSWER**

"Take sucralfate with each meal to coat the food."

✓ **RIGHT ANSWER**

"Take it on an **empty stomach** — 1 hour before meals and at bedtime. It coats the ulcer, not the food."

✗ **WRONG ANSWER**

"Stop taking it as soon as the pain goes away."

✓ **RIGHT ANSWER**

"Finish the full prescribed course (often 4–8 weeks). Symptom relief ≠ healed ulcer."

✗ **WRONG ANSWER**

"Sucralfate reduces stomach acid like Pepcid does."

✓ **RIGHT ANSWER**

"Sucralfate does NOT reduce acid. It forms a protective barrier over the ulcer — completely different mechanism from H₂ blockers and PPIs."

✗ **WRONG ANSWER**

"Give sucralfate and ciprofloxacin together at 0900."

✓ **RIGHT ANSWER**

"Give ciprofloxacin **2 hours before** sucralfate — sucralfate chelates fluoroquinolones and tetracyclines, dramatically reducing absorption."

✗ **WRONG ANSWER**

"Diarrhea is the most common side effect — give fiber."

✓ **RIGHT ANSWER**

"**Constipation** is the most common side effect (aluminum). Encourage fluids, fiber, and activity."

Patient & Family Education

TIMING

- ▶ Take on an **empty stomach** — 1 hour before each meal and at bedtime
- ▶ Set phone alarms for 4 doses per day
- ▶ Continue for the full prescribed course, even if you feel better

OTHER MEDS

- ▶ Tell every provider (including dental) you take sucralfate
- ▶ Separate any other oral drug by **2 hours**
- ▶ Separate antacids by 30 minutes

LIFESTYLE

- ▶ Avoid smoking, alcohol, caffeine, NSAIDs (delay ulcer healing)
- ▶ Eat small, frequent, non-irritating meals
- ▶ Manage stress — it contributes to acid production

WATCH FOR

- ▶ **Black/tarry stools or vomiting blood** → call provider immediately (active GI bleed)
- ▶ Severe constipation, abdominal distension, or new pain
- ▶ Confusion or bone pain (if you have kidney disease)

Memory Mnemonics & Pattern Cues

SUCRALFATE

- S** — Sticks to the ulcer (band-aid)
- U** — Ulcer protection only (no acid effect)
- C** — Constipation (most common SE)
- R** — Renal caution (aluminum)
- A** — Antacids 30 min apart
- L** — Levothyroxine, warfarin, dig — 2 hr apart
- F** — Four times a day (QID)
- E** — Empty stomach, 1 hr before meals + HS

"The 1-2 Rule"

- 1** — Take it **1** hour before meals
- 2** — Separate other meds by **2** hours

BONUS — **30 min** apart from antacids (it's the only "exception")

QUICK CUE:

If the question mentions "*coats the ulcer*" or "*barrier*" — the answer is sucralfate. Every other antiulcer drug works on *acid*.

NCJMM Clinical Judgment Walkthrough

SCENARIO

A 62-year-old female with a duodenal ulcer, hypothyroidism, and atrial fibrillation is admitted for stabilization. Home meds: sucralfate 1 g PO QID, levothyroxine 75 mcg PO daily, warfarin 5 mg PO daily, famotidine 20 mg PO BID, aluminum hydroxide/magnesium hydroxide PRN. The medication administration record schedules all morning meds at 0800. She reports mild constipation and "feeling tired and cold lately." Latest labs: TSH 8.4 mIU/L (↑), INR 1.6 (subtherapeutic for AFib), Hgb 11.2 g/dL.

STEP 1 Recognize Cues

- ✓ Subtherapeutic INR (1.6) — warfarin not working adequately
- ✓ Elevated TSH (8.4) — levothyroxine not absorbing properly
- ✓ All meds scheduled together at 0800 (including sucralfate)
- ✓ Constipation (consistent with sucralfate aluminum content)
- ✓ Patient takes both an antacid and sucralfate

STEP 2 Analyze Cues

- ✓ Sucralfate binds warfarin → ↓ absorption → ↓ INR (explains subtherapeutic anticoagulation)
- ✓ Sucralfate binds levothyroxine → ↓ absorption → ↑ TSH (explains hypothyroid symptoms returning)
- ✓ Co-administering antacid with sucralfate inactivates sucralfate (raises pH)
- ✓ The 0800 stacking of all meds is the root cause of multiple problems

STEP 3 Prioritize Hypotheses

- ✓ **Highest priority:** Subtherapeutic INR in a patient with AFib → stroke risk
- ✓ Next: Untreated hypothyroidism affecting energy, cold tolerance, and overall recovery
- ✓ Then: Suboptimal ulcer healing if sucralfate-antacid timing is wrong
- ✓ Ongoing: Manage constipation to prevent complications

STEP 4 Generate Solutions

- ✓ Restructure med schedule: levothyroxine at 0600 (empty stomach, alone)
- ✓ Sucralfate at 0700, 1100, 1700, 2100 (1 hr before meals + HS)
- ✓ Warfarin at 1700 with dinner (≥ 2 hr from sucralfate)
- ✓ Famotidine at HS (covers night acid surge)

- ✓ Antacid PRN: ≥ 30 min from sucralfate
- ✓ Encourage 2–3 L fluid/day, fiber, ambulation for constipation
- ✓ Pharmacy consult to review timing on the eMAR

STEP 5 Take Action

- ✓ Notify provider of subtherapeutic INR and elevated TSH; request orders
- ✓ Hold further co-administration of sucralfate with other oral drugs until reordered
- ✓ Implement separated dosing schedule once order received
- ✓ Teach patient the "1-hour-before-meals + 2-hours-from-other-meds" rule
- ✓ Document constipation and start a bowel regimen
- ✓ Place fall precautions if dizziness from sucralfate is reported

STEP 6 Evaluate Outcomes

- ✓ INR rises into therapeutic range (2.0–3.0) within 1 week
- ✓ TSH trending toward normal (0.5–4.5 mIU/L) at follow-up
- ✓ Patient verbalizes the 1-hour/2-hour rule and demonstrates daily med schedule
- ✓ Daily soft formed bowel movement; no abdominal distension
- ✓ No new hematemesis or melena; H&H stable
- ✓ Endoscopy at 8 weeks shows ulcer healing

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