NGN NCLEX 2026 · GASTROINTESTINAL SYSTEM · HIGH-YIELD

# Hernias & Dumping Syndrome

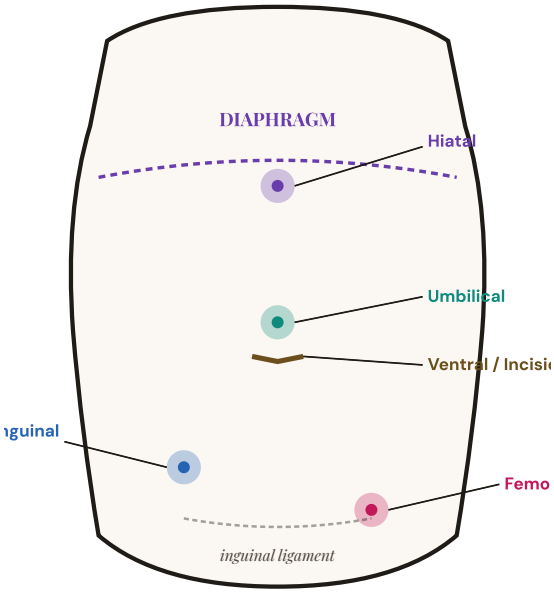
Five hernia types compared side-by-side, plus the post-gastrectomy complication that NCLEX loves to test. Strangulation is a surgical emergency. Dumping syndrome shows up early and late — know the difference.

GI · SURGICAL | NCJMM INTEGRATED | STRANGULATION = 911 | COMPARE & CONTRAST

## 1 Definition & Overview

WHAT IS A HERNIA · WHY IT MATTERS

- **Hernia =** protrusion of an organ or tissue (usually intestine or omentum) through a weakened area in the muscle/fascia that normally contains it.
- **Reducible:** contents can be pushed back manually. **Incarcerated:** stuck. **Strangulated:** blood supply cut off — **surgical emergency**.
- **Why NCLEX cares:** Strangulation kills bowel within hours → necrosis, perforation, sepsis. Recognize early. Prioritize surgery.




*Five hernia locations · diaphragm to groin*

## 2 Pathophysiology — Simplified

FROM WEAK WALL TO SURGICAL EMERGENCY

**1 Weakness**
Congenital defect, surgical scar, or stretched muscle wall.

**2 ↑ Pressure**
Lifting, coughing, straining, obesity, pregnancy → intra-abdominal pressure rises.

**3 Protrusion**
Organ/tissue pushes through the weak spot → visible bulge.

**4 Incarcerated**
Bulge can no longer be pushed back. Bowel obstruction risk rises.

**5 Strangulated**
Blood supply cut off → ischemia → necrosis → perforation → sepsis.

# 3 The Five Types — Compared

LOCATION · POPULATION · KEY NCLEX CUE

## Inguinal Hernia

MOST COMMON · 75%

| | |
|---|---|
| LOCATION | Inguinal canal — bulge in the groin, may extend into scrotum. |
| WHO | Predominantly **males**. *Indirect* = congenital, all ages. *Direct* = acquired, older adults. |
| TRIGGERS | Heavy lifting, chronic cough, straining, obesity. |
| NCLEX CUE | Bulge that ↑ with cough/Valsalva, ↓ when supine. Reducible early on. |

## Femoral Hernia

HIGHEST STRANGULATION RISK

| | |
|---|---|
| LOCATION | Femoral canal — bulge in upper thigh, **below** the inguinal ligament. |
| WHO | Predominantly **females** (especially older, multiparous, obese). |
| WHY DANGEROUS | Narrow, rigid neck → bowel gets trapped quickly → highest strangulation rate of all hernias. |
| NCLEX CUE | "Older woman with thigh bulge + nausea + cramping" → suspect strangulation, prep for surgery. |

## Umbilical Hernia

INFANTS · ADULTS W/ ASCITES

| | |
|---|---|
| LOCATION | At/near the umbilicus (belly button) — soft bulge, often pops out with crying or straining. |
| WHO | Common in **infants** (often closes spontaneously by age 3–5). In **adults**: obesity, pregnancy, ascites, chronic cough. |
| PEDIATRIC NOTE | Do NOT tape coins or trusses — no benefit, can damage skin. Reassure parents; surgery only if persistent >5 yrs or symptomatic. |
| NCLEX CUE | Adult cirrhotic with ascites + new umbilical bulge → high rupture risk. |

## Ventral / Incisional

POST-OP · ABDOMINAL WALL

| | |
|---|---|
| LOCATION | Through a previous abdominal surgical incision (or any weak area of the anterior wall). |
| WHO | Post-surgical patients — risk ↑ with obesity, wound infection, poor nutrition, smoking, steroids. |
| PREVENTION | Splint incision when coughing/sneezing/turning. Avoid lifting >10 lb for 4–6 wks post-op. |
| NCLEX CUE | Bulge along an old scar — recent obese surgical patient, lifted something heavy. |

## Hiatal Hernia

DIFFERENT — STOMACH THROUGH DIAPHRAGM

| | |
|---|---|
| LOCATION | Stomach protrudes UP through the esophageal hiatus of the **diaphragm** into the thorax — this is GI/thoracic, not abdominal wall. |
| TYPES | **Sliding (Type I, ~90%):** GE junction slides up — reflux symptoms. **Paraesophageal (Type II–IV):** stomach rolls up alongside esophagus — strangulation risk. |
| SYMPTOMS | Heartburn, regurgitation, dysphagia, chest pain (can mimic MI!), worse after meals & lying flat. |
| NCLEX CUE | "Burning chest pain after big meal, relieved by sitting up" — think hiatal/GERD before MI, but **always rule out cardiac first**. |
| TREATMENT | Lifestyle: small frequent meals, HOB elevated, avoid eating 2–3 hrs before bed, weight loss, no tight clothing. Drugs: H2 blockers, PPIs, antacids. Surgery: **Nissen fundoplication** for severe cases. |

# 4 Signs & Symptoms

REDUCIBLE VS. RED-FLAG

## 🟢 Early / Reducible

- **Visible bulge** — soft, may disappear when supine
- Bulge enlarges with cough, lifting, Valsalva
- **Mild discomfort** or aching at site, especially after activity
- No systemic symptoms, no fever, normal vital signs
- Hiatal: heartburn, regurgitation, mild dysphagia

## 🚨 Strangulated / Red Flag 🚨

- **Severe, sharp pain** at hernia site (out of proportion to exam)
- Bulge becomes **tense, red, hot, tender** — cannot be reduced
- **Nausea, vomiting** — may be feculent (late, ominous)
- Bowel obstruction: distension, no flatus, no BM
- **Fever, tachycardia, hypotension** → impending sepsis
- Absent bowel sounds over the area

⚠ SURGICAL EMERGENCY · TIME-CRITICAL

## Strangulated Hernia — Recognize & Act in Minutes

Strangulation = blood supply to the herniated bowel is cut off. Within **4–6 hours** you risk ischemia → necrosis → perforation → peritonitis → septic shock. The nurse who recognizes this first saves the bowel.

### 🔍 RECOGNIZE

- Hernia is firm, tense, **irreducible**
- Severe localized pain
- Skin red/dusky/discolored
- Nausea, vomiting, ↑ HR

### ⚡ ACT NOW

- **NPO** immediately
- Call surgeon — STAT
- 2 large-bore IVs · NS bolus
- NG tube to suction (decompress)
- Pre-op labs · type & cross

### 🚫 DO NOT

- Do NOT attempt to reduce a strangulated hernia
- Do NOT apply heat (↑ metabolism of dying bowel)
- Do NOT give food/fluids by mouth
- Do NOT delay surgical consult

# 5 Dumping Syndrome

POST-GASTRECTOMY / BARIATRIC · EARLY VS. LATE

→ **What it is:** Rapid emptying of *hyperosmolar* stomach contents into the small intestine after gastric surgery (Billroth II, gastrectomy, gastric bypass, Roux-en-Y, fundoplication).

→ **Why it matters:** Causes severe vasomotor and GI symptoms; can cause weight loss, malnutrition, and reactive hypoglycemia. Up to 50% of post-gastrectomy patients.

→ **Two phases:** EARLY (15–30 min after eating — fluid shift) and LATE (1–3 hrs after — reactive hypoglycemia).

## Early Dumping

15–30 MIN POST-MEAL

> *Hypertonic chyme dumps into jejunum → fluid shifts from blood vessels INTO bowel → ↓ circulating volume + bowel distension.*

**Vasomotor + GI symptoms:**

- Tachycardia, palpitations, hypotension
- Diaphoresis, dizziness, syncope, pallor
- Abdominal cramping, nausea, urgent diarrhea
- Borborygmi (loud bowel sounds), bloating
- Weakness, desire to lie down

## Late Dumping

1–3 HRS POST-MEAL

> *Sugar floods small intestine → spike in blood glucose → excess insulin release →* ***reactive hypoglycemia****.*

**Hypoglycemia symptoms:**

- Sweating, shakiness, tremors
- Anxiety, confusion, difficulty concentrating
- Hunger, weakness, fatigue
- Tachycardia, palpitations
- Improves with simple carbs (juice) — but this perpetuates the cycle

# 6 Priority Nursing Interventions

ABC · SAFETY · POST-OP CARE

### A Airway · Breathing · Circulation

- **Assess pain** — sudden severity change suggests strangulation
- Monitor VS — fever, tachycardia, hypotension = sepsis
- Auscultate **bowel sounds** — absent over hernia = ominous
- For dumping: monitor BP, HR, BG before/after meals
- Strangulation: NPO, NG to suction, IV access, surgical prep
- Hiatal hernia w/ chest pain: **rule out MI first** — EKG, troponins

### S Safety & Pre-op

- **Never force** reduction of an incarcerated/strangulated hernia
- Apply truss only if HCP-ordered & over reduced hernia (rare today)
- Splint incision when coughing/turning post-op
- Avoid lifting >10 lb · no straining at stool — give stool softeners
- Treat constipation, chronic cough, smoking — all ↑ recurrence
- For dumping: lie down for 20–30 min after meals (left side / supine)

### P Post-op Hernia Repair

- Inguinal repair: assess **scrotal swelling** — apply ice + scrotal support
- Encourage **early ambulation**; deep breathing (splint!)
- Monitor for **urinary retention** (especially older men post-inguinal)
- Watch incision: redness, drainage, dehiscence, hematoma
- Pain control — multimodal; avoid constipating opioids if possible
- Discharge: no heavy lifting × 4–6 wks; report fever, ↑ pain, bulge

# 7 Pharmacology

HIATAL HERNIA · PRE/POST-OP · DUMPING

| DRUG / CLASS | MECHANISM | KEY SIDE EFFECTS | NURSING CONSIDERATIONS |
|---|---|---|---|
| **PPIs** *omeprazole, pantoprazole, esomeprazole* | Block H+/K+ ATPase pump → ↓↓ gastric acid; first-line for hiatal/GERD. | Headache, diarrhea; long-term: ↓ Mg, ↓ B12, osteoporosis, C. difficile, kidney injury. | Give 30–60 min **before** first meal. Don't crush DR capsules. Reassess long-term need. |
| **H2 Blockers** *famotidine, cimetidine* | Block histamine-2 receptors on parietal cells → ↓ acid. | Cimetidine: confusion in elderly, gynecomastia, many drug interactions. | Famotidine preferred in elderly. Take at bedtime if nocturnal symptoms. |
| **Antacids** *aluminum, magnesium, calcium* | Neutralize gastric acid for fast symptom relief. | Aluminum → constipation; Magnesium → diarrhea; Calcium → rebound acid. | Give **1–3 hrs after meals & at bedtime**. Separate from other meds by 1–2 hrs. |
| **Prokinetics** *metoclopramide* | ↑ LES tone & gastric emptying — sometimes used for hiatal/reflux. | **Tardive dyskinesia (BLACK BOX)**, EPS, drowsiness. | Limit use to <12 weeks. Stop at first sign of involuntary movement. |
| **Octreotide** *(severe dumping)* | Somatostatin analog → slows gastric emptying & intestinal motility. | Hyperglycemia or hypoglycemia, gallstones, nausea, injection-site pain. | SQ before meals. Reserve for refractory dumping after diet changes fail. |
| **Acarbose** *(late dumping)* | α-glucosidase inhibitor → slows carb absorption → blunts insulin spike. | Flatulence, bloating, diarrhea, ↑ liver enzymes. | Take with first bite of meal. Treat hypoglycemia with **glucose** only (not sucrose). |

# 8 NCLEX Test Traps

WHERE STUDENTS LOSE POINTS

TRAP 01

### Pushing the bulge back in

✗ ~~Attempt manual reduction of a tender, red, irreducible hernia~~

✓ If strangulation suspected → NPO, NG suction, prep for emergency surgery

TRAP 02

### "Just heartburn"

✗ ~~Hiatal hernia chest pain → give an antacid & reassure~~

✓ Always rule out cardiac cause first — EKG, troponins, then treat reflux

TRAP 03

### Drinking with meals (dumping)

✗ ~~"Drink plenty of water with each meal to wash food down"~~

✓ Fluids 30–45 min BEFORE or AFTER meals — never with

TRAP 04

### Sitting up after meals (dumping)

✗ ~~"Sit up after eating to prevent reflux" — that's hiatal advice~~

✓ Dumping = LIE DOWN (left side / semi-recumbent) 20–30 min after meals

TRAP 05

### High-carb diet (dumping)

✗ ~~Encourage simple carbs & sweet beverages — "easy to digest"~~

✓ HIGH protein, HIGH fat, LOW simple carbs — small frequent meals

TRAP 06

### Coin/tape on infant umbilical hernia

✗ ~~Tell parents to tape a coin over the bulge~~

✓ Reassure — most close spontaneously by age 3–5; surgery only if persistent or symptomatic

# 9 NCJMM Clinical Judgment Scenario

SIX-STEP FRAMEWORK · NGN STYLE

> **Case:** *A 68-year-old female presents to the ED with a 6-hour history of severe right groin pain, nausea, and one episode of vomiting. She reports a "soft lump" in her thigh for the past month that "always went away when I lay down." On exam, the bulge is firm, tender, dusky red, and cannot be pushed back. VS: HR 118, BP 96/58, T 100.6°F, RR 22. Bowel sounds are diminished.*

STEP 1 · RECOGNIZE

### Cues

Irreducible thigh bulge, dusky red, severe pain, fever, tachycardia, hypotension, ↓ bowel sounds — classic strangulated **femoral hernia**.

STEP 2 · ANALYZE

### Hypothesis

Strangulation → ischemic bowel → impending necrosis & sepsis. Femoral hernia in older woman = highest risk.

STEP 3 · PRIORITIZE

### Hypotheses

Top priority: tissue perfusion / circulation. Surgical decompression within hours prevents bowel death.

STEP 4 · GENERATE

### Solutions

NPO · 2 large-bore IVs · NS bolus for hypotension · NG to suction · stat labs/type & cross · surgical consult · pain mgmt · antibiotics per orders.

STEP 5 · TAKE ACTION

### Implement

Initiate NPO, place NG, start IV fluids, draw labs, page surgeon, prep consents, monitor VS q15 min, do **NOT** attempt reduction.

STEP 6 · EVALUATE

### Outcomes

Goals: BP >90 systolic, pain ↓, no peritonitis (rigid abdomen, ↑ WBC), bowel sounds return post-op, no signs of sepsis.

# 10 Patient & Family Education

DISCHARGE TEACHING · LIFESTYLE

## Hernias — Self-Care

- **Avoid heavy lifting** >10 lb for 4–6 weeks post-op (or per surgeon).
- Bend at the knees, not the waist; splint incision when coughing or sneezing.
- Prevent constipation: high-fiber diet, fluids, stool softeners.
- Quit smoking; treat chronic cough — both ↑ recurrence.
- Maintain healthy weight; treat conditions ↑ abdominal pressure (ascites, BPH straining).
- **Call HCP NOW** if: bulge becomes hard/red/painful, vomiting, fever, no BM/flatus, severe pain.
- Hiatal: sleep with HOB elevated 6–8 in., avoid eating 2–3 hrs before bed, no tight clothing, lose weight, avoid trigger foods (caffeine, alcohol, chocolate, peppermint, fatty/spicy foods).

## Dumping Syndrome — Diet & Lifestyle

- **Six small meals** per day instead of three large ones.
- **HIGH protein, HIGH fat, LOW simple carbs.** Avoid concentrated sweets, sugary drinks, juices.
- Choose complex carbs (whole grains, vegetables); add fiber gradually.
- **No fluids with meals** — drink 30–45 min before or after eating.
- **Lie down (left side or semi-recumbent) 20–30 min after meals** to slow gastric emptying.
- Eat slowly, chew thoroughly. Avoid extremes of temperature in food.
- Carry a quick glucose source for late-phase hypoglycemia (per HCP).
- Report unintentional weight loss, persistent symptoms, or signs of malnutrition.

# 11 Memory Boosters

MNEMONICS & PATTERN RECOGNITION

## Strangulation Red Flags

### DEAD GUT

- **D** Dusky/discolored bulge
- **E** Emesis (often feculent late)
- **A** Absent bowel sounds
- **D** Distension of abdomen
- **G** Guarding / severe pain
- **U** Unable to reduce
- **T** Tachycardia & fever

## Dumping Diet Rules

### SLOW

- **S** Small frequent meals (6 ×/day)
- **L** Lie down 20–30 min after eating
- **O** Omit simple sugars; high protein/fat
- **W** Wait 30–45 min for fluids (no liquids with meals)

## Hiatal Hernia Lifestyle

### HEAD UP

- **H** HOB elevated 6–8 inches at night
- **E** Eat small frequent meals
- **A** Avoid lying down 2–3 hrs after meals
- **D** Drop weight; loose clothing
- **U** Unhook trigger foods (caffeine, ETOH, spicy, fatty, peppermint, chocolate)
- **P** PPIs / H2 blockers as ordered

## Femoral vs Inguinal · Pattern

### F = Female

- **F** **F**emoral · **F**emale · **F**atal (highest strangulation risk) · below ligament (in **F**emoral canal)
- **I** **I**nguinal · "**I**n the male" (most common) · above & into the inguinal canal/scrotum
- ⇕ Both ↑ with cough & lifting; both ↓ when supine if reducible
- **!** If irreducible + tender + red = STRANGULATED — surgical emergency