Enterocolitis

versus NEC & Toxic Megacolon

Three bowel emergencies. Three distinct populations. One infographic to keep them straight on exam day.

★ SAVE · PRINT · STUDY

§ 01 At a Glance

INFLAMMATORY

Enterocolitis

Inflammation of small intestine and colon — usually infectious.

WHO	Any age — often infants/kids
TRIGGER	Bacterial, viral, parasitic
HALLMARK	Fever + diarrhea + cramping
RISK	Dehydration, electrolyte loss

NEONATAL EMERGENCY

Necrotizing Enterocolitis

Ischemic necrosis of bowel in the premature neonate.

WHO	Premature infants (<32 wks)
TRIGGER	Ischemia + formula + bacteria
HALLMARK	Feeding intolerance + distension
RISK	Perforation · 20–30% mortality

SURGICAL CRISIS

Toxic Megacolon

Massive colonic dilation with systemic toxicity.

WHO	Peds: Hirschsprung, IBD, C.diff
TRIGGER	Severe colitis or aganglionosis
HALLMARK	Distension + fever + shock
RISK	Perforation → sepsis → death

§ 02 The Deep Dive

CONDITION 01

Entero-colitis

Infectious or inflammatory process of the small intestine and colon — the umbrella term under which NEC sits.

! CARDINAL SIGNS

- **Diarrhea** — often bloody or mucoid
- **Fever** + chills
- Crampy **abdominal pain**
- **Vomiting**, anorexia
- Signs of **dehydration**: ↓urine, sunken fontanel, poor skin turgor

? CAUSES TO KNOW

- **Bacterial:** Salmonella, Shigella, *E. coli* O157:H7, *C. difficile*
- **Viral:** rotavirus, norovirus
- **Parasitic:** Giardia
- Food protein–induced (FPIES) in infants

DX DIAGNOSTICS

- **Stool culture** + ova & parasites
- **CBC:** ↑WBC with left shift

- **BMP:** watch K^+, Na^+, bicarbonate
- Avoid anti-diarrheals in bloody diarrhea

RX NURSING PRIORITIES

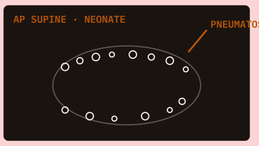
- **ORT** (oral rehydration) — first-line for mild/moderate
- **IV fluids** for severe dehydration
- **Contact precautions** — especially C.diff (soap & water, NOT alcohol gel)
- **Daily weights** + strict I&O
- Antibiotics only if bacterial cause confirmed

> **⚑ Red Flag**
> Bloody diarrhea + oliguria + pallor in a child post-*E. coli* O157:H7 → think **Hemolytic Uremic Syndrome (HUS)**. Do NOT give antibiotics — they worsen HUS risk.

CONDITION 02

Necrotizing Enterocolitis

A life-threatening ischemic-inflammatory necrosis of the bowel, overwhelmingly a disease of the premature neonate.



! CARDINAL SIGNS

- **Feeding intolerance** + ↑ gastric residuals
- **Abdominal distension** — shiny, taut, discolored
- **Bilious vomiting** (green emesis)
- **Bloody stools** (occult or frank)
- **Temperature instability**, apnea, bradycardia, lethargy

? RISK FACTORS

- **Prematurity** (<32 wks) — #1 risk
- Very low birth weight (<1500 g)
- **Formula feeding** (human milk protects)
- Perinatal asphyxia, PDA, sepsis
- Rapid feeding advancement

PATHOGNOMONIC

X-RAY FINDING — DIAGNOSTIC

Pneumatosis intestinalis *(gas within the bowel wall)* → confirms NEC. Portal venous gas & pneumoperitoneum → perforation, surgical emergency.

RX NURSING PRIORITIES

- **STOP feeds — NPO** immediately
- **OG/NG tube** to low intermittent suction (decompress)
- **TPN** for nutrition; bowel rest 7–14 days
- **Broad-spectrum IV antibiotics** (ampicillin + gent + metronidazole)
- **Measure abdominal girth** q4–6h · avoid rectal temps
- Prepare for **surgery** if perforation

✓ PREVENTION

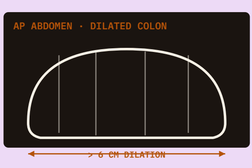
- **Breast milk** feeding (protective)
- **Slow, standardized** feeding advancement
- Probiotics (per unit protocol)
- Antenatal steroids for at-risk deliveries

> **⚑ Red Flag**
> Sudden **pneumoperitoneum** (free air under diaphragm) = bowel perforation. Call surgery NOW — prepare for emergent laparotomy or peritoneal drain.

CONDITION 03

Toxic Megacolon

Massive non-obstructive dilation of the colon plus systemic toxicity — a surgical emergency riding on top of severe colitis.



! CARDINAL SIGNS

- **Massive abdominal distension** — tympanic, tender
- **High fever** (>38.6 °C)
- **Tachycardia** (>120), **hypotension**
- **Bloody/explosive diarrhea** then paradoxical ↓stools
- Altered mental status, dehydration, shock

? PEDIATRIC CAUSES

- **Hirschsprung-associated enterocolitis** (HAEC) — #1 peds cause
- Ulcerative colitis / Crohn's flare
- *C. difficile* colitis
- Severe infectious colitis (Shigella, Salmonella)
- Ischemic colitis

PATHOGNOMONIC

DIAGNOSTIC CRITERIA (JALAN)

Radiographic colonic dilation **>6 cm** *PLUS* ≥3 of: fever, tachycardia, leukocytosis, anemia *PLUS* ≥1 of: dehydration, altered mental status, electrolyte disturbance, hypotension.

- **NPO** + **NG decompression**
- Aggressive **IV fluids** + electrolyte replacement
- **Broad-spectrum IV antibiotics**
- **IV corticosteroids** if IBD-related
- **Rectal irrigations** if Hirschsprung-associated
- Serial abd girth + **AVOID** antidiarrheals, opioids, anticholinergics
- Prep for **subtotal colectomy** if no improvement in 24–72 h

✓ THE HIRSCHSPRUNG LINK

- **Newborn no meconium <48 h** → think Hirschsprung
- Aganglionic segment → functional obstruction → stasis → enterocolitis → **toxic megacolon**
- Definitive dx: **rectal biopsy** showing absent ganglion cells
- Treatment: **pull-through surgery**

⚑ Red Flag

Sudden relief of pain + disappearance of bowel sounds + rebound tenderness + free air on X-ray = **perforation**. Mortality climbs sharply — call surgery, start sepsis protocol.

§ 03

Side-by-Side Cheat Sheet

	ENTEROCOLITIS	NEC	TOXIC MEGACOLON
TYPICAL PATIENT	Any age — infants, toddlers, school-age	**Premature neonate** <32 wks, <1500 g	Child w/ Hirschsprung, IBD, or *C. diff*
MECHANISM	Infectious/inflammatory insult to mucosa	Ischemia + bacterial invasion → **necrosis**	Severe colitis → loss of motor tone → **dilation** + toxicity
FIRST CLUE	Fever + diarrhea (± bloody)	**Feeding intolerance** + shiny distended belly	Huge tympanic abdomen + fever + tachycardia
IMAGING HALLMARK	Usually non-specific	**Pneumatosis intestinalis** on AXR	Colonic dilation **>6 cm** on AXR
FEEDS	Continue if tolerated · BRAT out, normal diet in	**NPO · stop immediately**	**NPO · NG suction**
ANTIBIOTICS	Only if bacterial cause confirmed	**Yes — broad spectrum IV**	**Yes — broad spectrum IV**
FLUIDS	ORT first → IV if severe	IV + TPN (bowel rest)	Aggressive IV crystalloid + electrolytes
SURGERY?	Rarely	If **perforation** (pneumoperitoneum)	If no improvement in **24–72 h** → subtotal colectomy
MORTALITY	Low with treatment	**20–30%** (up to 50% if surgical)	High without rapid intervention
AVOID	Antidiarrheals in bloody diarrhea; ABX in HUS	Rectal temps; feeds; aggressive handling	**Opioids, antidiarrheals, anticholinergics**

★

NCLEX Hot Points

The distinctions that test-makers love to blur.

PICK-THE-PREEMIE

If the stem says **premature + feeding intolerance + bloody stool**, the answer is **NEC** — even before the X-ray is mentioned.

PATHOGNOMONIC PAIR

Pneumatosis intestinalis = NEC. **Colon >6 cm + toxicity** = toxic megacolon. Memorize both X-ray signatures.

NO-MECONIUM RULE

Newborn who **fails to pass meconium in 48 h** → Hirschsprung → at lifetime risk for enterocolitis → **toxic megacolon**.

DON'T GIVE THAT MED

In toxic megacolon: **no opioids, no loperamide, no anticholinergics** — they worsen dilation and mask perforation.

NEC PRIORITY ACTION

First nursing action for suspected NEC = **STOP feeds & notify HCP**. Then NG decompression, NPO, IV access.

BREAST MILK WINS

Human milk is protective against NEC. Formula is a modifiable risk factor — a favorite SATA answer.

HUS TRAP

Bloody diarrhea + *E. coli* O157:H7 + pallor/oliguria = **HUS**. **Do NOT give antibiotics** — they increase toxin release.

SILENT BELLY = BAD

Sudden **absence of bowel sounds + rigid abdomen + free air** in any of the three = **perforation**. Prep for surgery immediately.

§ 04

Mnemonics to Lock It In

ENTEROCOLITIS · "FLUIDS"

FLUIDS

- **F** **F**ever & fluid loss
- **L** **L**oose, bloody stools
- **U** **U**rine output ↓ (dehydration)
- **I** **I**solate — contact precautions
- **D** **D**aily weights
- **S** **S**tool culture first

NEC · "NEC BELLY"

BELLY

- **B** **B**loody stool, bilious emesis
- **E** **E**arly preemie & enteral feeds

L **L**ethargy + temp instability

L **L**arge distended abdomen

Y **Y**ank the feeds — NPO, NG, TPN

TOXIC MEGACOLON · "MEGA"

MEGA

M **M**assive distension (>6 cm)

E **E**levated temp & heart rate

G **G**et surgery consult early

A **A**void opioids & antidiarrheals