NCLEX-RN · 2026 TEST PLAN · NGN PHARMACOLOGY · VOL. 47

Crohn's *vs* Ulcerative Colitis — Drugs & Treatment

A side-by-side pharmacologic decoding of the two faces of inflammatory bowel disease — where the drugs converge, where they diverge, and what the NCLEX wants you to catch first.

SYSTEM · GASTROINTESTINAL / IMMUNOLOGIC | CROHN'S DISEASE | ULCERATIVE COLITIS

HIGH-ALERT: BIOLOGICS + IMMUNOSUPPRESSANTS

DISEASE 01 · THE SKIPPER

Crohn's Disease

- **Mouth → Anus** · any GI segment, terminal ileum classic
- **Skip lesions** · healthy tissue between inflamed
- **Transmural** · full-thickness wall → fistulas, abscesses, strictures
- **"Cobblestone"** mucosa on endoscopy
- Diarrhea typically **non-bloody**, cramping RLQ pain, weight loss
- **Smoking WORSENS** Crohn's
- Surgery is **NOT curative** — disease recurs

DISEASE 02 · THE CONTINUOUS

Ulcerative Colitis

- **Colon only** · always begins in rectum, extends proximally
- **Continuous** inflammation · no skip areas
- **Mucosa & submucosa** only — superficial
- Pseudopolyps, friable mucosa on endoscopy
- **Bloody diarrhea** hallmark, LLQ pain, tenesmus, urgency
- Smoking paradoxically *improves* UC (never recommend)
- Surgery **IS curative** · total proctocolectomy

01 DRUG OVERVIEW
Why we treat — and what each class is for

IBD treatment is **step-up therapy**: start with the least toxic agent that works for severity, escalate as needed. Both diseases share most drug classes, but **UC responds best to 5-ASAs** while **Crohn's leans heavily on biologics and immunomodulators**. Goals: induce remission, maintain remission, prevent complications, avoid surgery (or in UC — cure with it).

▲ STEP-UP THERAPY PYRAMID · MILD → SEVERE

1 **Aminosalicylates (5-ASAs)**
Mild–moderate UC · 1st line · limited Crohn's role
mesalamine · sulfasalazine
balsalazide · olsalazine

2	**Corticosteroids** Acute flare induction ONLY · NEVER maintenance	prednisone · budesonide hydrocortisone enema
3	**Immunomodulators** Steroid-sparing maintenance · slow onset (3–6 mo)	azathioprine · 6-MP methotrexate (Crohn's)
4	**Biologics** Moderate–severe disease · TNF-α, integrin, IL inhibitors	infliximab · adalimumab vedolizumab · ustekinumab
5	**Small-molecule + Antibiotics** JAK inhibitors (UC) · ABX for Crohn's fistulas/abscess	tofacitinib · upadacitinib metronidazole · ciprofloxacin
6	**Surgery** **UC = curative** (colectomy) · **Crohn's = palliative** (recurs)	last resort or life-saving for toxic megacolon

02 MECHANISM OF ACTION
How each class flips the inflammatory switch

5-ASAs (mesalamine, sulfasalazine)

`Topical anti-inflammatory in gut lumen` → ↓ prostaglandins + leukotrienes → ↓ mucosal inflammation → remission of **distal colitis**

Corticosteroids (prednisone, budesonide)

`Block phospholipase A2` → ↓ arachidonic acid → ↓ ALL inflammatory mediators (cytokines, prostaglandins, leukotrienes) → rapid flare control · **but systemic immunosuppression**

Immunomodulators (azathioprine, 6-MP, methotrexate)

`Block purine synthesis` → ↓ T-cell & B-cell proliferation → ↓ chronic gut inflammation → steroid-free remission (slow: 3–6 months)

TNF-α Inhibitors (infliximab, adalimumab)

Bind & neutralize TNF-α → ↓ macrophage activation → ↓ granuloma + fistula formation → mucosal healing in **moderate-severe Crohn's** + UC

Integrin Inhibitor (vedolizumab) · IL-12/23 (ustekinumab) · JAK (tofacitinib)

Block immune-cell trafficking to gut (vedo) → gut-selective immunosuppression → safer systemic profile · IL/JAK = broader cytokine block

03 THERAPEUTIC EFFECTS
What "working" looks like at the bedside

SIGNS OF RESPONSE · CROHN'S

- → ↓ stool frequency & cramping
- → Weight gain · improved nutritional status
- → Healing of **fistulas + perianal disease** (esp. with infliximab)
- → ↓ CRP, ESR, fecal calprotectin
- → Resolution of extraintestinal symptoms (joint, skin, eye)
- → Mucosal healing on endoscopy (gold standard)

SIGNS OF RESPONSE · UC

- → ↓ **bloody stools** · resolution of urgency & tenesmus
- → Formed stool returning
- → ↓ stool frequency to ≤ 3/day
- → ↓ CRP, ESR, fecal calprotectin
- → Hgb & albumin trending up · iron stores recover
- → Mayo score ↓ · endoscopic remission

04 SIDE EFFECTS & ADVERSE REACTIONS
By class — what to expect, what to fear

CLASS / DRUG	COMMON	SERIOUS 🚨	USED IN
Mesalamine *Asacol, Pentasa, Lialda*	Headache, nausea, abd pain, flatulence, alopecia (mild)	**Nephrotoxicity (interstitial nephritis)** · pancreatitis · pericarditis	UC PRIMARY
Sulfasalazine *Azulfidine*	N/V, anorexia, **orange-yellow urine/skin** (harmless), photosensitivity, oligospermia (reversible)	**Stevens-Johnson Syndrome** · hemolytic anemia (G6PD) · folate deficiency · agranulocytosis	UC CROHN'S COLON
Prednisone *systemic steroid*	Cushingoid features, mood changes, ↑ appetite/weight, insomnia, ↑ glucose, fluid retention	**Adrenal suppression on abrupt stop** · osteoporosis · GI bleed/ulcer · psychosis · masked infection	BOTH — FLARES

CLASS / DRUG	COMMON	SERIOUS	USED IN
Budesonide *Entocort, Uceris*	Fewer systemic SE (high first-pass metabolism), HA, nausea	Same as steroids but **much milder** at typical doses; still suppresses adrenal at high dose	CROHN'S ILEAL · UC
Azathioprine / 6-MP *Imuran / Purinethol*	N/V, fatigue, ↑ LFTs, flu-like sx	**Bone marrow suppression** · pancreatitis · hepatotoxicity · ↑ **lymphoma + skin cancer risk** · serious infection	BOTH — MAINT
Methotrexate *Trexall*	Stomatitis, nausea, alopecia, fatigue	**TERATOGENIC (Cat X)** · hepatotoxicity · pulm fibrosis · BM suppression · folate deficiency	CROHN'S PRIMARILY
Infliximab *Remicade* · IV	Infusion reaction, HA, nausea, URI	**TB & Hep B reactivation** · serious/opportunistic infection · lymphoma (incl. hepatosplenic T-cell) · HF worsening · demyelinating disease	BOTH — MOD-SEVERE
Adalimumab *Humira* · SubQ	Injection-site reaction, URI, HA	Same TNF-class risks as infliximab · injection-site cellulitis	BOTH
Vedolizumab *Entyvio* · IV	HA, arthralgia, nasopharyngitis · *gut-selective = safer profile*	Infusion reaction · infection (less than TNF) · rare PML	BOTH
Ustekinumab *Stelara*	HA, fatigue, URI, injection reaction	Serious infection · rare reversible posterior leukoencephalopathy	BOTH
Tofacitinib *Xeljanz* · JAK inhibitor	HA, diarrhea, ↑ cholesterol, URI	● **BLACK BOX: thrombosis (PE/DVT), MACE, malignancy, serious infection, mortality** in >50 yo	UC
Metronidazole *Flagyl*	Metallic taste, nausea, dark urine	**Disulfiram reaction with alcohol** · peripheral neuropathy (long-term) · seizures	CROHN'S FISTULA/ABSCESS
Ciprofloxacin *Cipro*	N/V, photosensitivity, HA	**Tendon rupture (esp. Achilles)** · QT prolongation · C. diff · aortic aneurysm	CROHN'S PERIANAL

05 PRIORITY NURSING CONSIDERATIONS
Assess · Monitor · Hold · Notify

→ ASSESS & MONITOR

- **Baseline before biologics:** PPD/Quantiferon, Hep B+C panel, CXR — **screen for latent TB**
- **Baseline before azathioprine/6-MP:** TPMT enzyme activity (low = toxicity risk)
- Daily: stool count + character, abd pain, F/E status, weight, I&O

→ HOLD · NOTIFY · CONTRAINDICATED

- ⚠ **HOLD biologic / immunomodulator** if active infection, fever, or sepsis signs
- ⚠ **HOLD methotrexate** if pregnancy possible · ↑ LFTs · BM suppression
- ⚠ **NEVER stop steroids abruptly** — taper to prevent adrenal crisis

- Watch for **toxic megacolon** in UC: distended abd + fever + tachycardia + ↓ BS
- Signs of perforation: sudden severe pain, rigid abd, rebound tenderness
- Infection screen at every visit on immunosuppressants — fever is **NEVER normal**

⚠ **Sulfasalazine CONTRAINDICATED** in sulfa allergy & G6PD deficiency

⚠ **TNF inhibitors CONTRAINDICATED** in active TB, severe HF (NYHA III–IV), demyelinating disease

⚠ **Live vaccines CONTRAINDICATED** on biologics/high-dose steroids

⚠ Notify provider: bloody stool ↑, fever, weight loss, new abd pain, vision changes, jaundice

06 LABS & DIAGNOSTICS
Numbers that change your nursing action

LAB / TEST	WHY · WHAT IT TELLS YOU	CRITICAL / ACTION THRESHOLD
CBC w/ diff	BM suppression on AZA / 6-MP / MTX · anemia from blood loss (UC)	WBC < 3,500 or ANC < 1,500 → **hold drug, notify**
CRP & ESR	Inflammation markers — rising = flare; falling = drug working	Trend > absolute; spike during therapy = treatment failure
Fecal calprotectin	Gut-specific inflammation marker · best for monitoring remission	> 250 µg/g → active inflammation
Hgb, MCV, ferritin	Iron-deficiency anemia (UC bleeds) or B12 deficiency (Crohn's terminal ileum)	Hgb < 10 → consider IV iron; < 7 → transfusion
Albumin	Nutritional status · marker of severity in IBD	< 3.5 g/dL → malnutrition · < 2.5 → severe
LFTs (ALT, AST)	Hepatotoxicity from MTX, AZA, 6-MP, infliximab	> 3× ULN → **hold drug**
Creatinine / BUN	Mesalamine nephrotoxicity · dehydration from diarrhea	↑ Cr from baseline > 0.5 → notify
PPD / Quantiferon-Gold	**BEFORE** any TNF inhibitor (infliximab, adalimumab)	Positive → treat latent TB before starting biologic
Hep B surface Ag / core Ab	Reactivation risk on biologics	Positive → consult ID before biologic
TPMT activity	Before azathioprine / 6-MP — low TPMT = severe BM toxicity	Low/absent → reduce dose or avoid drug
K+, Mg++	Lost via diarrhea; corticosteroids ↓ K+	K < 3.5 → replace · monitor cardiac rhythm
Glucose / HbA1c	Steroid-induced hyperglycemia	BG > 200 → sliding scale insulin coverage

07 ADMINISTRATION & SAFETY
Route, timing, high-alert handling

ROUTES & TARGETED DELIVERY

- → **Mesalamine PO** — pH/time-release reaches ileum/colon · do **NOT crush**
- → **Mesalamine enema/supp** — for distal UC (proctitis, L-sided)
- → **Sulfasalazine** — give **WITH food + 8 oz water** · push fluids ≥ 2 L/day
- → **Budesonide** — *swallow whole*, do not chew · ileal release form
- → **Methotrexate** — weekly dosing (not daily!) · take folic acid 1 mg daily
- → **Infliximab** — IV infusion over ≥ 2 hr · pre-medicate (acetaminophen ± diphenhydramine ± steroid) · resuscitation cart available
- → **Adalimumab/ustekinumab** — SubQ, rotate sites, store refrigerated
- → **Metronidazole** — avoid alcohol during + 72 hr after (disulfiram reaction)

HIGH-ALERT & SAFETY PEARLS

- → **Steroid taper** — never abrupt; carry medical alert bracelet during chronic use
- → **Stress-dose steroids** needed for surgery/illness if on chronic steroids
- → **TB + Hep B screen REQUIRED** before first dose of any TNF inhibitor
- → **Live vaccines** — give ≥ 4 weeks BEFORE biologic; not during therapy
- → **Infusion reaction** — stop infusion, slow rate, IV fluids, diphenhydramine, steroids ready
- → **Avoid NSAIDs** — can trigger IBD flare & mask perforation pain
- → **Avoid antidiarrheals** (loperamide) in active severe colitis → toxic megacolon risk
- → **Methotrexate is teratogen** — contraception during + 3 mo (men 3 mo · women 1 cycle minimum)

08 PATIENT EDUCATION
What every IBD patient must walk out knowing

A
This is lifelong therapy

Even when you feel well, keep taking maintenance meds — stopping = relapse. Remission is not cure.

B
Call now if you have a fever

Fever ≥ 100.4°F, chills, productive cough, burning urination, or skin infection → notify provider *immediately*. Immunosuppressants mask infection.

C
No live vaccines

Avoid MMR, varicella, yellow fever, intranasal flu, oral polio. Inactivated flu & COVID are safe — get them yearly.

D
Avoid alcohol on metronidazole

Severe vomiting, flushing, headache. No alcohol during therapy + 72 hours after — including mouthwash & cough syrup.

E
Sulfasalazine warning

F
No abrupt steroid stops

Yellow-orange urine/sweat is harmless. Wear sunscreen — photosensitivity. Take with food & full glass of water.

Carry medical alert bracelet. If you miss doses or get sick, call provider — risk of adrenal crisis.

G

Diet during a flare

Low-residue, low-fiber, low-fat. Avoid raw veggies, popcorn, nuts, seeds, dairy if lactose-intolerant. Small frequent meals.

H

Crohn's: Stop smoking

Smoking *worsens* Crohn's, doubles relapse risk. (UC paradox: smoking improves UC — but never start.)

I

Cancer surveillance

UC > 8 yr → annual colonoscopy with biopsies (↑ colon cancer risk). Skin cancer screening on biologics.

J

Pregnancy planning

Methotrexate must stop 3 mo before conception. Most other IBD drugs (5-ASAs, AZA, biologics) are continued during pregnancy — flares hurt the baby more.

09 NCLEX TEST TRAPS ⚠ Where students lose points — and how to win them back

TRAP 01

"Patient with sulfa allergy started on sulfasalazine — what's your action?"

HOLD & NOTIFY. Sulfasalazine contains a sulfa moiety — risk of Stevens-Johnson Syndrome & anaphylaxis. Switch to mesalamine (no sulfa).

TRAP 02

"Steroid-dependent UC patient skipped 3 days of prednisone..."

Risk = **adrenal crisis**, NOT just a flare. Hypotension, hypoglycemia, shock. Steroids are **NEVER stopped abruptly**.

TRAP 03

"Severe UC flare with abdominal distention & fever — give loperamide?"

NO — NEVER. Antidiarrheals in severe colitis precipitate **toxic megacolon** — surgical emergency. First action: NPO, IV fluids, notify.

TRAP 04

"Crohn's patient on infliximab — should they get the shingles vaccine?"

NOT the live one. Live vaccines are contraindicated. Recombinant Shingrix is fine. Same rule: no MMR, varicella, yellow fever.

TRAP 05

"Which is FIRST before starting infliximab?"

TB screen + Hep B panel. Always before any TNF inhibitor — reactivation can be fatal. Memory: *"TB before TNF."*

TRAP 06

"Crohn's patient asks if surgery will cure them like their friend with UC."

Surgery is **curative for UC** (total proctocolectomy) but **NOT for Crohn's** — disease recurs at anastomosis. Use surgery only for complications in Crohn's.

TRAP 07

"Patient on methotrexate gets pregnant — most concerning?"

TERATOGENIC (Cat X) — fetal death & severe malformations. Discontinue immediately, notify provider, refer to MFM. Always confirm contraception before starting.

TRAP 08

"Patient on metronidazole had two glasses of wine at dinner — what's expected?"

Disulfiram-like reaction: severe N/V, flushing, tachycardia, headache. Education failure — reinforce no alcohol during + 72 hr after.

TRAP 09

"Which IBD drug needs LFTs and folic acid supplement?"

Methotrexate (and sulfasalazine reduces folate too — supplement). MTX = weekly dosing, never daily — daily dosing has killed patients.

TRAP 10

"Best long-term marker of IBD remission?"

Fecal calprotectin + endoscopic mucosal healing. Symptoms alone are unreliable. CRP/ESR help but are nonspecific.

10

MEMORY BOOSTERS

Mnemonics, suffixes, and pattern rules

MNEMONIC · CROHN'S ANATOMY

C OBBLESTONE

Cobblestone mucosa · **O**bstruction (strictures) · **B**oth ends & everywhere (mouth → anus) · **B**owel-wall transmural · **L**esions skip · **E**nteric fistulas · **S**moking worsens · **T**erminal ileum classic · **O**verall weight loss · **N**on-bloody diarrhea · **E**xtra-intestinal sx (eyes, joints, skin)

MNEMONIC · UC PATTERN

U CRY BLOOD

Ulcers continuous · **C**olon only (rectum up) · **R**esponds to 5-ASAs · **Y**our surgery is curative · **B**loody diarrhea · **L**LQ pain & tenesmus · **O**nly mucosa/submucosa · **O**besity rare (cachexia) · **D**ysplasia → CA risk after 8 yr

PATTERN · DRUG SUFFIX RECOGNITION

"-mab" = biologic

Any drug ending **-mab** = monoclonal antibody = biologic = **screen TB + Hep B first**, watch infection, no live vaccines. Inflixi**mab**, adalimu**mab**, vedolizu**mab**, ustekinu**mab**. JAK inhibitors end **-tinib** (tofaci**tinib**) — black-box clots.

RULE · STEP-UP THERAPY

A SK B EFORE I B ITE

Aminosalicylates → **B**udesonide/steroids → **I**mmunomodulators → **B**iologics. Last line: surgery. Steroids induce, never maintain.

RULE · PRE-BIOLOGIC CHECKLIST

TB before TNF

Always screen for latent **TB** + Hep B+C panel + CXR before starting any TNF-α inhibitor. Reactivation of TB on infliximab/adalimumab can be fatal.

RULE · CROHN'S VS UC LOCATION

C row's S kip · U C is C ontinuous

Crohn's has **S**kip lesions, **S**trictures, **S**moking-worsened, **S**parring of rectum often. **UC** = **C**ontinuous from rectum up, **C**olon only, **C**urable by colectomy.

MNEMONIC · STEROID SIDE EFFECTS

CUSHINGOID

Cataracts · **U**lcers · **S**kin (thinning, striae) · **H**TN/Hyperglycemia · **I**nfections · **N**ecrosis (avascular) · **G**lucose ↑ · **O**steoporosis · **I**mmune ↓ · **D**epression/mood

PATTERN · ANTIBIOTIC CLUE

"FLAGyl" + alcohol = FLAG

Flagyl (metronidazole) + alcohol = severe disulfiram-like flush. *"Wave the FLAG — no booze."* Used in Crohn's for **perianal fistulas + abscesses**, NOT UC.

● NCJMM · CLINICAL JUDGMENT SNAPSHOT

When the alarm sounds — think like the NCLEX.

Three questions you should be able to answer before you touch the patient on biologics, immunomodulators, or high-dose steroids.

Q1 · #1 PRIORITY RISK

What is the most life-threatening risk in IBD pharmacotherapy?

Serious infection & sepsis in the immunosuppressed patient — especially TB or Hep B reactivation on TNF inhibitors. Combine that with **toxic megacolon** in active severe UC (perforation, peritonitis, shock). Both kill faster than the disease itself.

Q2 · WHAT HARMS FIRST

If something goes wrong on these drugs, what gets the patient first?

Masked infection. Steroids and biologics blunt fever and pain. The classic NCLEX scenario: a "fine-looking" patient with subtle tachycardia and minimal fever already has **septic peritonitis or pneumonia**. Trust vitals over appearance. Second hit: **adrenal crisis** from abruptly discontinued chronic steroids.

Q3 · FIRST NURSING ACTION

A flaring IBD patient on infliximab presents with fever 102°F + abd distention + tachycardia. What's first?

Assess airway/breathing/circulation → place NPO → **HOLD next dose of biologic** → obtain blood cultures, lactate, abd X-ray (rule out toxic megacolon & perforation) → **notify provider STAT**. Do not give antidiarrheals. Do not give NSAIDs. Initiate sepsis bundle if criteria met.

VOLUME 47 · IBD PHARMACOLOGY COMPARISON

ALIGNED · 2026 NCLEX-RN TEST PLAN / NCJMM

FOR EXAM & PRACTICE PREP · NOT CLINICAL REFERENCE