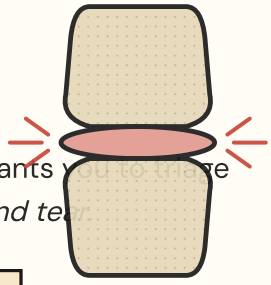
NGN NCLEX 2026 · MUSCULOSKELETAL · IMMUNOLOGY

Acute & Chronic Arthritis



Joint inflammation — sudden & severe, or slow & relentless. The NCLEX wants you to triage which is an *emergency*, which is *autoimmune*, and which is simply *wear and tear*.

SEPTIC = EMERGENCY | RA = SYSTEMIC | OA = MECHANICAL | GOUT = CRYSTALS

1 DEFINITION / OVERVIEW
What is arthritis?

Arthritis = inflammation of one or more joints producing pain, stiffness, swelling, and reduced range of motion. The clinical picture depends on **onset**, **cause**, and **number of joints involved**.

⚡ ACUTE ARTHRITIS

Sudden onset · Hours to days

- Often **monoarticular** (single joint, hot/red/swollen)
- Caused by **infection**, **crystals**, or **trauma**
- May be a **medical emergency** (septic arthritis)

EXAMPLES

Septic arthritis · Gout · Pseudogout · Reactive arthritis · Traumatic hemarthrosis

⏳ CHRONIC ARTHRITIS

Gradual onset · Months to years

- Often **polyarticular** (multiple joints, symmetric or asymmetric)
- Caused by **autoimmunity** or **cartilage degeneration**
- Managed long-term · **no cure**, slow progression

EXAMPLES

Osteoarthritis (OA) · Rheumatoid arthritis (RA) · Psoriatic arthritis · Ankylosing spondylitis · JIA · SLE-associated

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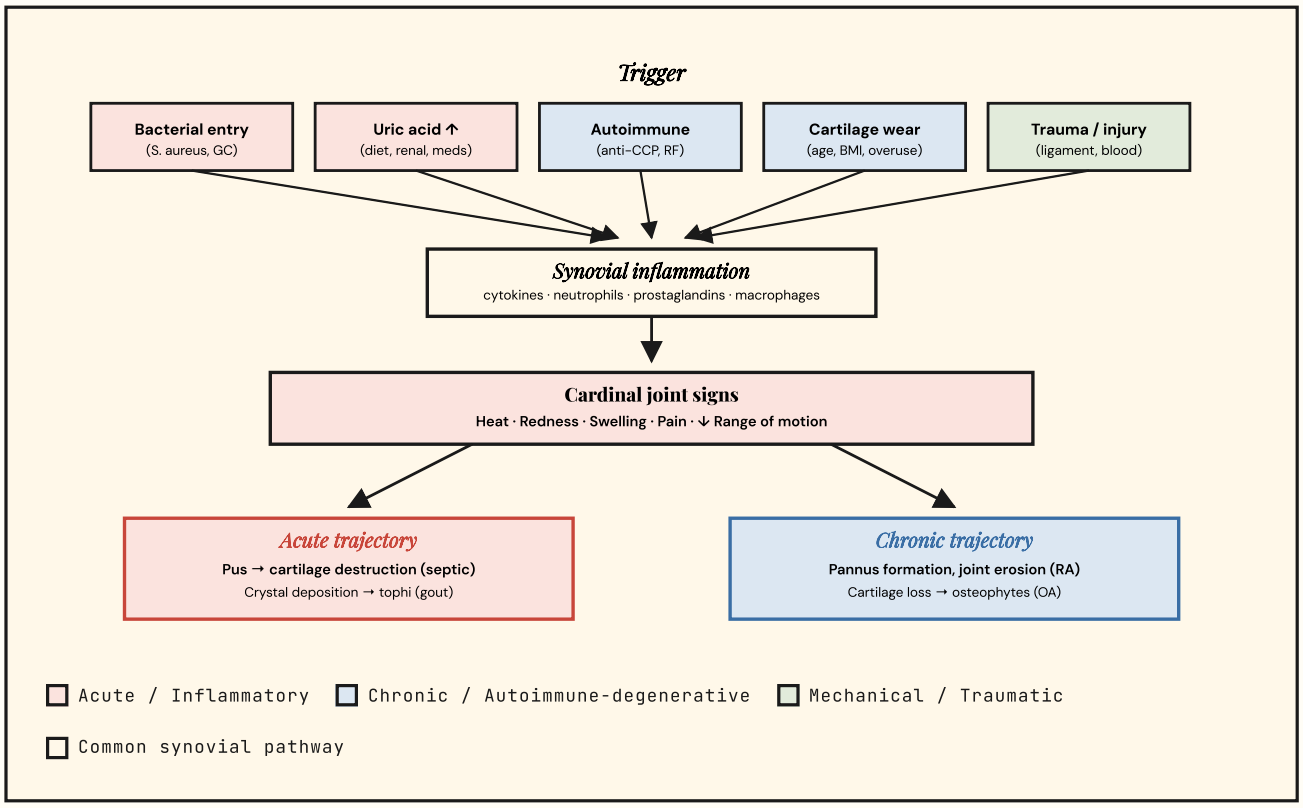
PATHOPHYSIOLOGY

How joints get inflamed



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SIGNS & SYMPTOMS

Acute vs. chronic presentation

⚡ ACUTE — Sudden & hot

- **Single joint** intensely red, hot, swollen
- Severe pain at rest **AND** with movement
- **Fever & chills** (septic, gout)
- ↑ WBC, ↑ ESR, ↑ CRP
- **Septic:** joint fluid purulent, WBC > 50,000
- **Gout:** 1st MTP joint (podagra), tophi, ↑ uric acid > 6.8 mg/dL
- Cannot bear weight; refuses to move limb
- Onset **hours to days**

⏳ CHRONIC — Slow & stiff

- **RA:** symmetric, small joints (MCP, PIP, wrist)
- **RA:** morning stiffness > **1 hour**
- **OA:** asymmetric, large weight-bearing joints (knee, hip)
- **OA:** morning stiffness < **30 minutes**, worse w/ activity
- **RA:** systemic — fatigue, low-grade fever, anorexia
- **RA:** Heberden & Bouchard absent · ulnar drift, swan-neck
- **OA:** Heberden (DIP) & Bouchard (PIP) nodes, crepitus
- Progressive ↓ function over **months/years**

🚨

RED-FLAG: SEPTIC ARTHRITIS — ORTHOPEDIC EMERGENCY

A **single** hot, red, swollen joint + **fever** + refusal to move the joint is septic arthritis until proven otherwise. **Joint aspiration must occur BEFORE antibiotics**. Permanent cartilage destruction can occur within hours. Most common pathogen: **Staphylococcus aureus**. In sexually active young adults, suspect **disseminated gonococcal infection**.

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PRIORITY NURSING INTERVENTIONS

ABCs, safety, joint protection

AIRWAY & SYSTEMIC ASSESSMENT — A

ASSESS For septic arthritis: monitor for sepsis (fever, ↑ HR, ↓ BP, ↑ lactate). In RA, watch for cervical spine subluxation — caution with intubation.

BEDSIDE JOINT ASSESSMENT — B

INSPECT Compare both sides. Measure swelling, ROM, warmth, redness, tenderness. Document baseline pain (0–10) every shift.

CULTURES & ASPIRATION FIRST — C

OBTAIN For suspected septic arthritis: **joint aspiration before** the first dose of IV antibiotics. Send for Gram stain, culture, crystals, cell count.

DRUGS — RIGHT DRUG, RIGHT GOAL — D

ADMINISTER Acute septic → IV antibiotics (vancomycin/ceftriaxone). Gout flare → NSAIDs, colchicine, steroids. RA → DMARDs (methotrexate) + biologics.

EASE PAIN & INFLAMMATION — E

APPLY **Acute**: ICE + immobilize + elevate. **Chronic**: HEAT (moist) + gentle ROM. Never massage an inflamed joint.

FUNCTION & MOBILITY — F

CONSULT PT/OT for ROM, strengthening, assistive devices (canes used on **unaffected** side, walker, splints). Energy conservation in RA.

GUARD AGAINST FALLS & JOINT DAMAGE — G

PREVENT Non-skid footwear, clear pathways, raised toilet seats. Teach proper body mechanics. Avoid prolonged immobility (contractures).

HOLD & REASSESS — H

MONITOR Recheck CRP/ESR, joint exam, ROM, & pain after interventions. In gout, recheck uric acid; in RA, anti-CCP & CBC every 3 months on methotrexate.

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PHARMACOLOGY

Drugs to know for the NCLEX

DRUG	USED FOR	MECHANISM	KEY SIDE EFFECTS	NURSING CONSIDERATIONS
Ibuprofen / Naproxen NSAID	OA, RA, gout flare, general pain	Block COX-1 & COX-2 → ↓ prostaglandins	GI bleed, renal injury, ↑ BP, MI risk	Give **with food**. Monitor BUN/Cr, stool guaiac. Caution in elderly & CKD.
Colchicine ANTIGOUT	Acute gout flare	Inhibits neutrophil migration to crystals	Severe diarrhea, N/V, bone marrow suppression	Stop at **first sign of GI upset**. Most effective within 24 h of flare. Renal dose adjust.
Allopurinol XANTHINE OXIDASE INHIBITOR	Chronic gout *prevention*	Blocks uric acid production	Rash (Stevens-Johnson!), hepatotoxicity	**Never start during acute flare** — worsens it. Push fluids 2–3 L/day. Stop at any rash.
Probenecid URICOSURIC	Chronic gout (underexcretors)	↑ uric acid excretion in urine	Kidney stones, rash, GI upset	Push fluids. Avoid aspirin (antagonizes). Not used if CKD.
Prednisone CORTICOSTEROID	RA flare, gout flare, autoimmune arthritis	↓ inflammation & immune response	Cushingoid, hyperglycemia, osteoporosis, infection, mood	Give **with food**. Never stop abruptly — taper. Monitor BG & infection signs.
Methotrexate DMARD (FIRST-LINE RA)	RA, JIA, psoriatic arthritis	Anti-folate; ↓ immune cell proliferation	Hepatotoxicity, bone marrow suppression, pulm fibrosis, teratogenic	Weekly dosing (NOT daily!). **Folic acid** supplement. Avoid alcohol. Pregnancy category X — contraception.
Hydroxychloroquine DMARD	RA, SLE-associated arthritis	Modulates immune signaling	**Retinal toxicity**, GI upset, rash	Baseline & annual **eye exam**. Report blurred vision immediately.
Etanercept · Adalimumab · Infliximab BIOLOGIC / TNF-A INHIBITOR	Moderate–severe RA, AS, psoriatic	Block TNF-α inflammatory cytokine	Serious infection, **TB reactivation**, lymphoma risk	**Screen for TB & hep B** before starting. Hold for live vaccines & active infection. Teach SQ self-injection.
Acetaminophen NON-OPIOID ANALGESIC	OA (first-line for pain only)	Central COX inhibition	Hepatotoxicity (> 4 g/day)	Cap at **4 g/day** (3 g in liver disease). Anti-inflammatory effect is weak — not for RA.

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NCLEX TEST TRAPS

Wrong assumption vs. right answer

✗ TRAP

"Start antibiotics first for a hot, swollen joint."

Antibiotics make joint cultures unreadable.

✓ PRIORITY

Aspirate the joint FIRST, then antibiotics.

Culture + Gram stain guide therapy. Aspiration is both diagnostic and therapeutic.

✗ TRAP

"Start allopurinol during an acute gout flare."

Allopurinol shifts uric acid and worsens the flare.

✓ PRIORITY

Treat flare first (NSAID/colchicine/steroid), allopurinol for *prevention* later.

If patient is already on allopurinol, continue it — don't start it new.

✗ TRAP

"Apply heat to a hot, swollen joint to relieve pain."

Heat worsens acute inflammation.

✓ PRIORITY

ICE for acute flares · HEAT for chronic stiffness (RA, OA).

Acute = ice. Chronic = heat (especially morning stiffness in RA).

✗ TRAP

"Methotrexate daily — like a typical pill."

Daily dosing causes severe toxicity and death.

✓ PRIORITY

Methotrexate is weekly with daily folic acid.

Always verify the schedule on the order.

✗ TRAP

"Cane on the affected (painful) side."

Increases load on the painful joint.

✓ PRIORITY

Cane on the UNAFFECTED side — advance with the weak leg.

Mnemonic: **COAL** — Cane Opposite Affected Leg.

✗ TRAP

"OA and RA are basically the same — both wear-and-tear."

Different mechanisms = different treatment.

✓ PRIORITY

OA = mechanical/cartilage; RA = autoimmune/systemic.

RA needs DMARDs early; OA managed with weight loss, PT, acetaminophen, NSAIDs.

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PATIENT & FAMILY EDUCATION

Living with arthritis

L

Lifestyle & Weight

Every 1 lb lost = 4 lb off the knees. Low-impact exercise (walking, swimming, cycling). Maintain ROM daily.

D

Diet — Gout Specific

Avoid **red meat, organ meats, shellfish, anchovies, alcohol (esp. beer), high-fructose drinks**. Drink 2–3 L water daily.

M

Med Adherence

DMARDs work in weeks–months, not days. Don't stop steroids abruptly. Take NSAIDs with food.

S

Sick-Day Rules

On methotrexate/biologics: report fever, sore throat, mouth ulcers, cough. Hold biologics if active infection.

J

Joint Protection

Use large joints & both hands. Splints during flares. Pace activity, rest before fatigue, alternate sit/stand.

A

Assistive Devices

Cane on unaffected side. Raised toilet seats, grab bars, jar openers, button hooks (RA hand deformities).

H

Heat / Cold Rules

Hot joint = cold pack (acute flare, septic, gout). **Stiff joint = warm shower / heating pad** (chronic AM stiffness).

V

Vaccines & Infection

Get pneumococcal & flu vaccines before biologics. **No live vaccines** while on biologics or high-dose steroids.

R

Report Immediately

New rash on allopurinol, vision change on hydroxychloroquine, fever on biologics, severe joint redness/heat.

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MEMORY BOOSTERS

Mnemonics & pattern recognition

PAINS

- **P** ·Pain (worse with motion, may be at rest in acute)
- **A** ·Articular swelling & effusion
- **I** ·Inflammation: heat, redness, ↑ ESR/CRP
- **N** ·Nodules (RA), tophi (gout), Heberden's (OA)
- **S** ·Stiffness (AM > 1 h RA; < 30 min OA)

COAL

- **C** ·Cane
- **O** ·Opposite
- **A** ·Affected
- **L** ·Leg

Cane goes on the side OPPOSITE the painful/weak leg.

SOAP

- **S** ·Septic = single joint + fever
- **O** ·OA = old, overused, one-sided (asymmetric)
- **A** ·Autoimmune = RA (symmetric, AM > 1 h)
- **P** ·Podagra = gout, 1st MTP (big toe)

RA vs OA

- **R** ·Rheumatoid = R for "Right & left" (symmetric, systemic)
- **A** ·AM stiffness > 1 hour
- **O** ·OsteoA = "One side, On the big joints"
- **A** ·AM stiffness < 30 min, worse w/ activity

METHO-X

- **M** ·Marrow suppression — CBC q3 months
- **E** ·Enzymes ↑ (liver) — LFTs
- **T** ·Teratogen — no pregnancy
- **H** ·Hold alcohol
- **O** ·Once a WEEK only
- **X** ·X-tra folic acid daily

HOT JOINT

- **H** ·Heat (warm to touch)
- **O** ·One joint involved
- **T** ·Temperature (fever)
- **J** ·Joint aspirate STAT
- **O** ·Obtain cultures BEFORE antibiotics
- **I** ·IV antibiotics
- **N** ·No weight-bearing initially
- **T** ·Time matters — cartilage damage in hours

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NCJMM · CLINICAL JUDGMENT MEASUREMENT MODEL

Apply the six-step framework

CLINICAL VIGNETTE

Mr. Davis, 58, presents to the ED with a **right knee** that became severely painful, hot, red, and swollen over the last 12 hours. He cannot bear weight. He reports **fever and chills** since last evening. PMH: type 2 diabetes, hypertension, recent corticosteroid injection to the knee 3 weeks ago for "arthritis." Vitals: T 38.9 °C (102 °F), HR 112, BP 102/64, RR 22, SpO_2 96%. Labs: WBC 19,200/µL with left shift, CRP 142 mg/L, glucose 244 mg/dL, uric acid 6.2 mg/dL.

1

RECOGNIZE CUES

What stands out?

Single hot, swollen, red knee · **fever 38.9 °C** · **HR 112**, BP trending low · **WBC 19,200 with left shift** · CRP markedly ↑ · recent intra-articular steroid injection · diabetic (immunocompromised).

`monoarticular` `SIRS criteria` `portal of entry` `immunocompromise`

2

ANALYZE CUES

What do these cues mean together?

Fever + hot single joint + ↑ WBC + recent intra-articular injection + diabetes points strongly to **septic arthritis**. Uric acid is normal — gout less likely. The clinical pattern + risk factors fit bacterial seeding via the recent injection. Tachycardia and borderline hypotension raise concern for **early sepsis**.

`septic arthritis > gout` `sepsis risk` `joint destruction window`

3

PRIORITIZE HYPOTHESES

What's most likely & most dangerous?

1st (highest priority): Septic arthritis with early sepsis — *orthopedic + medical emergency*. **2nd:** Acute crystal arthropathy (gout/pseudogout). **3rd:** Reactive arthritis. Septic must be ruled in/out FIRST because of irreversible cartilage destruction within hours.

`priority #1: septic` `time-critical`

4

GENERATE SOLUTIONS

Plan the next interventions.

Diagnostic: Urgent joint aspiration — Gram stain, culture, cell count w/ diff, crystals. Blood cultures × 2 from separate sites. Lactate, BMP, repeat CBC. **Therapeutic:** IV access × 2, IV fluids for hypotension, empiric IV antibiotics **after** cultures (vancomycin ± ceftriaxone), antipyretic, immobilize joint, NPO for possible OR washout. Orthopedics + Infectious Disease consults.

`aspirate BEFORE abx` `cultures × 2` `empiric vanco + ceftriaxone` `ortho consult`

5

TAKE ACTION

Execute in NCLEX order.

1. Place 2 large-bore IVs & begin 0.9% NS bolus (hypotension). **2.** Draw blood cultures × 2 + labs. **3.** Assist provider with arthrocentesis — send fluid STAT. **4.** Give IV antibiotics within **1 hour** of recognition. **5.** Immobilize knee, elevate, ice. **6.** Insulin per sliding scale for glucose 244. **7.** Frequent VS — q15 min until stable.

fluids first (BP) | cultures before abx | abx within 1 h

6

EVALUATE OUTCOMES

Did the interventions work?

Expected within 24–48 h: Temp trending down, HR < 100, BP > 100/60, WBC & CRP falling, joint pain & swelling improving, glucose < 180. **Synovial fluid result drives next step:** WBC > 50,000 with PMN predominance + (+) Gram stain confirms septic arthritis → continue/narrow IV antibiotics × 2–6 weeks & arthroscopic washout. **Reassess** joint ROM, weight-bearing status, glycemic control, and education about future intra-articular injections.

temp ↓ | CRP/WBC ↓ | restored ROM | glucose target

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HOT · RED · SWOLLEN → THINK SEPTIC FIRST

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