

MUSCULOSKELETAL • AUTOIMMUNE • NGN NCLEX 2026

Rheumatoid *Arthritis*

Chronic, systemic, symmetric autoimmune inflammatory disease of the synovial joints — distinguished from osteoarthritis by its inflammatory pathophysiology, systemic features, and exam-tested patterns of joint involvement, lab markers, and DMARD therapy.

SYSTEM: MSK / IMMUNE

ACUITY: CHRONIC WITH FLARES

NGN FOCUS: CLINICAL JUDGMENT

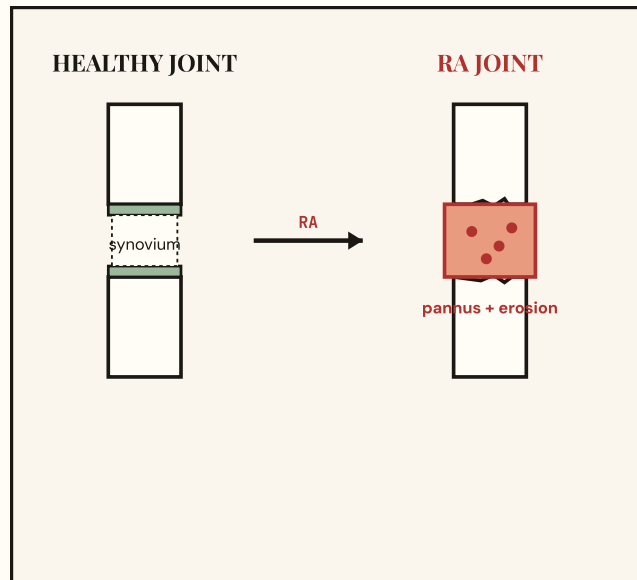
PAIR TOPIC: OA VS RA



Definition & Overview

WHAT IT IS • WHY IT MATTERS

- ◆ **Chronic, progressive, systemic autoimmune disorder** in which the immune system attacks the synovium (joint lining), producing bilateral, symmetric inflammation.
- ◆ **Hallmark joints:** small joints first — PIPs, MCPs, wrists — then knees, shoulders, ankles. *Spare the DIPs* (a classic NCLEX distinguisher from OA).
- ◆ **Systemic disease:** fatigue, low-grade fever, weight loss, rheumatoid nodules, and risks to lungs, heart (pericarditis, ↑ MI risk), eyes (scleritis), and vessels (vasculitis).
- ◆ **Female > Male (3:1)**, typical onset 30–60 years. No cure — goal is **remission, joint preservation, and prevention of deformity**.

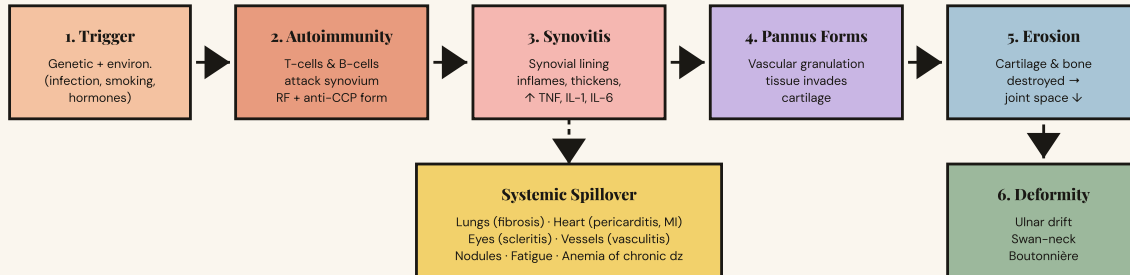


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Pathophysiology *Simplified*

AUTOIMMUNE TRIGGER → SYNOVITIS → PANNUS → EROSION → DEFORMITY

From immune trigger to joint destruction — and beyond the joint



RED FLAG

Key concept: RA is not "wear and tear." It is an **autoimmune systemic disease that happens to attack joints** — which is why fatigue, fever, weight loss, and organ involvement are part of the picture, and why DMARDs (not just analgesics) are the cornerstone of therapy.



Signs & Symptoms

EARLY VS LATE · RED FLAG FINDINGS



Early Manifestations

- ◆ **Morning stiffness > 1 hour** (classic NCLEX cue — OA stiffness is < 30 min)
- ◆ **Bilateral, symmetric joint pain** — PIPs, MCPs, wrists first
- ◆ Warm, swollen, "boggy" joints — soft, spongy on palpation
- ◆ Fatigue, malaise, low-grade fever ($\leq 100.4^{\circ}\text{F}$ / 38°C)
- ◆ Generalized weakness, anorexia, weight loss
- ◆ Paresthesias of hands/feet



Late / Advanced Manifestations

- ◆ **Joint deformities:** ulnar drift, swan-neck, boutonnière, hallux valgus
- ◆ **Rheumatoid nodules** — firm, non-tender, over bony prominences (elbows, occiput)
- ◆ Severely limited ROM, contractures, instability
- ◆ **Systemic:** pericarditis, pleural effusion, pulmonary fibrosis, vasculitis, scleritis
- ◆ **Sjögren's syndrome** — dry eyes, dry mouth
- ◆ **Felty's syndrome** — RA + splenomegaly + leukopenia
- ◆ Anemia of chronic disease, osteoporosis



RED FLAG

RED-FLAG findings — escalate immediately:

- ◆ **New chest pain + pericardial friction rub** → pericarditis / tamponade risk
- ◆ **Progressive dyspnea, dry cough, crackles** → interstitial lung disease / pulmonary fibrosis
- ◆ **Sudden vision change, severe red eye, eye pain** → scleritis (can cause permanent vision loss)
- ◆ **Sudden neck pain, weakness, paresthesias** in long-standing RA → *cervical (C1-C2) subluxation* — pre-op intubation precaution
- ◆ **Fever > 101°F, joint hot/red/very painful** on a stable DMARD/biologic regimen → septic joint or opportunistic infection until proven otherwise

OA vs RA — The NCLEX Comparison

Osteoarthritis (OA)

- › Degenerative ("wear & tear") — non-inflammatory
- › **Asymmetric**, weight-bearing joints (knees, hips, spine)
- › **DIPs & PIPs** — Heberden's & Bouchard's nodes
- › Stiffness < 30 min, worse with use
- › No systemic symptoms
- › Labs: normal RF / CRP / ESR

Rheumatoid Arthritis (RA)

- › Autoimmune — inflammatory, systemic
- › **Symmetric**, small joints first (PIPs, MCPs, wrists)
- › **Spare DIPs**
- › Stiffness > 1 hr, worse after rest
- › Systemic: fatigue, fever, nodules, organ involvement
- › Labs: ↑ RF, ↑ anti-CCP, ↑ ESR, ↑ CRP, anemia
- › Tx: **DMARDs first-line** + NSAIDs / steroids / biologics

- › Tx: acetaminophen, NSAIDs, weight loss, joint replacement



Priority Nursing *Interventions*

ABCS • SAFETY • PRIORITIZATION

Assess

- ◆ **Pain** — 0–10 scale, location, symmetry, duration of morning stiffness
- ◆ **ROM & function** — ability to perform ADLs, grip strength
- ◆ **Joint exam** — warmth, swelling, deformity, nodules
- ◆ **Systemic** — lungs, heart (rub), eyes, skin (vasculitis), neuro (cervical instability)
- ◆ **Labs** — RF, anti-CCP, ESR, CRP, CBC (anemia, leukopenia), LFTs (MTX), renal
- ◆ **Mood/coping** — chronic illness, body-image, depression screen

Implement

- ◆ **Balance rest & activity** — rest inflamed joints, but encourage gentle ROM to prevent contractures
- ◆ **Heat** for chronic stiffness; **cold** for acute inflammation/flare
- ◆ Apply **splints** during flares to maintain functional position
- ◆ Administer **DMARDs, NSAIDs, steroids, biologics** as prescribed; monitor labs and infection risk
- ◆ Encourage **low-impact exercise** (swimming, walking) when not in flare
- ◆ Refer to **PT / OT** for assistive devices, joint protection, energy conservation
- ◆ Promote **nutrition** — anti-inflammatory diet, adequate protein, calcium/Vit D (steroid bone loss)
- ◆ Pre-op: alert anesthesia to **cervical instability** — gentle intubation positioning

NCLEX Prioritization Cheat — "Which patient do I see first?"

- ◆ **SEE FIRST:** RA patient on methotrexate/biologic with *fever 101.5°F + productive cough* — immunosuppression + possible sepsis/pneumonia (airway/circulation risk).
- ◆ **SEE FIRST:** RA patient reporting *new chest pain + friction rub* — pericarditis / tamponade risk.
- ◆ **SEE LATER:** RA patient with chronic morning stiffness, stable pain — expected finding.

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Pharmacology — Tiered Therapy

DMARDS FIRST • BIOLOGICS IF INADEQUATE RESPONSE • SYMPTOM RELIEF LAYERED ON

CLASS / DRUG	MECHANISM	KEY SIDE EFFECTS	NURSING CONSIDERATIONS
Methotrexate (MTX) <i>DMARD — first-line anchor drug</i>	Folate antagonist; suppresses immune-cell proliferation & inflammatory cytokines.	Bone marrow suppression , hepatotoxicity, pulmonary fibrosis, mucositis/stomatitis, infection, teratogenic .	Give weekly (not daily — fatal error). Co-prescribe folic acid to reduce toxicity. Monitor CBC, LFTs, renal q 4–8 wk . Avoid pregnancy (stop 3–6 mo before conception). No alcohol. Hold for active infection.
Hydroxychloroquine (Plaquenil) <i>DMARD (mild)</i>	Antimalarial; modulates immune response in synovium.	Retinal toxicity (irreversible), GI upset, rash.	Baseline + annual eye exam . Take with food. Report vision changes immediately.
Sulfasalazine <i>DMARD</i>	Anti-inflammatory + immunomodulator.	GI upset, rash, photosensitivity, bone marrow suppression, orange-yellow body fluids.	Take with food & full glass of water. Sulfa allergy is a contraindication. Monitor CBC and LFTs. Sun protection.
Leflunomide	Pyrimidine synthesis inhibitor → ↓ lymphocyte proliferation.	Hepatotoxicity, diarrhea, alopecia, teratogenic .	Monitor LFTs. Strict contraception. Long half-life — washout protocol if pregnancy desired.
TNF-α inhibitors <i>Etanercept, Adalimumab, Infliximab</i>	Bind & neutralize TNF-α → ↓ synovial inflammation.	Serious infection (reactivation of TB, fungal, sepsis), injection-site reaction, ↑ malignancy risk, demyelinating disease, heart failure worsening.	Screen for TB (PPD/IGRA) before starting . Hold for active infection, surgery, live vaccines. Teach SQ self-injection & refrigeration. Report fever, cough, night sweats.
Rituximab / Abatacept / Tocilizumab	Target B-cells (rituximab), T-cell co-stim (abatacept), or IL-6 (tocilizumab).	Infusion reactions, infection, ↑ lipids (tocilizumab), GI perforation (tocilizumab).	Premedicate per protocol. Monitor during infusion. Screen for infection & hepatitis B. Lipid panel q 4–8 wk for tocilizumab.
JAK inhibitors <i>Tofacitinib, Baricitinib</i>	Block Janus kinase signaling → ↓ cytokine activity.	Infection, VTE / PE , ↑ lipids, ↑ cardiovascular events, malignancy.	Screen for TB & hepatitis. Avoid in patients with VTE history. Monitor lipids, CBC, LFTs.
NSAIDs <i>Ibuprofen, Naproxen, Celecoxib</i>	Inhibit COX → ↓ prostaglandins → ↓ pain & inflammation. Do NOT modify disease.	GI bleeding, renal injury, HTN, fluid retention, ↑ cardiovascular events.	Take with food. Monitor for melena, BUN/Cr. Avoid with anticoagulants. Bridge therapy only — not a substitute for DMARDs.

CLASS / DRUG	MECHANISM	KEY SIDE EFFECTS	NURSING CONSIDERATIONS
Corticosteroids <i>Prednisone</i>	Broad anti-inflammatory & immunosuppressive.	Hyperglycemia, osteoporosis, weight gain, mood changes, immunosuppression, adrenal suppression, cataracts, HTN.	Never stop abruptly — taper. Take with food in the morning. Monitor glucose & BP. Add calcium + Vit D + bisphosphonate for long-term use. Sick-day stress dosing teaching.

 RED FLAG

 Top pharm safety pearls:

- ◆ **Methotrexate is dosed WEEKLY for RA.** Daily dosing causes lethal bone-marrow toxicity — always verify on MAR.
- ◆ **TB screen mandatory** before any TNF inhibitor or biologic — these drugs reactivate latent TB.
- ◆ **Hold immunosuppressants for active infection, surgery, and live vaccines.**
- ◆ **No live vaccines** on biologics, JAK inhibitors, or high-dose steroids.
- ◆ NSAIDs *relieve symptoms*; only DMARDs *change the disease course*.

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NCLEX Test Traps

WRONG VS RIGHT • THE EXAM LOVES THESE DISTINCTIONS

✗ TRAP "RA and OA look the same — both are arthritis."

✓ CORRECT RA is **symmetric, inflammatory, systemic, affects PIPs/MCPs, spares DIPs, has >1 hr morning stiffness, ↑ RF/anti-CCP**. OA is asymmetric, non-inflammatory, affects DIPs/weight-bearing joints, stiffness < 30 min, normal labs.

✗ TRAP "Methotrexate is taken every day, just like other RA drugs."

✓ CORRECT For RA, MTX is dosed **once weekly**. Daily dosing is a **fatal medication error**. Always co-administer folic acid; monitor CBC and LFTs.

✗ TRAP "Apply heat — heat always helps arthritis."

✓ CORRECT **Cold** during an **acute flare** (hot, swollen joint). **Heat** for **chronic stiffness**. Misapplying heat to an inflamed joint worsens swelling.

✗ TRAP "RA pain — give an NSAID; we don't need a DMARD."

✓ CORRECT NSAIDs treat *symptoms*. **DMARDs are first-line** and the only drugs that slow joint destruction. Start within 3 months of diagnosis ("window of opportunity").

✗ TRAP "Patient is on prednisone — they can stop when they feel better."

✓ CORRECT Corticosteroids must be **tapered** — abrupt withdrawal causes adrenal crisis. Teach sick-day stress dosing.

✗ TRAP "Patient on etanercept and got a flu shot today — perfect."

✓ CORRECT **No live vaccines** on biologics (e.g., live nasal flu, MMR, varicella, zoster live). Inactivated flu shot is acceptable; verify the formulation.

✗ TRAP "Bedrest is best for an RA flare."

✓ CORRECT **Rest the inflamed joint**, but maintain **gentle ROM**. Prolonged bedrest causes contractures, deconditioning, and worsens function.

✗ TRAP "Pre-op for RA patient — routine intubation is fine."

✓ CORRECT Long-standing RA causes **C1–C2 cervical instability**. Notify anesthesia; gentle positioning required. Hyperextension can cause spinal cord injury.

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Patient & Family Education

EMPOWER SELF-MANAGEMENT • REDUCE FLARES • STAY SAFE ON THERAPY



Joint Protection

- ◆ Use **large joints** for tasks (carry with forearms, not fingers)
- ◆ Avoid prolonged gripping/pinching — use built-up utensils
- ◆ Change positions every 20–30 min
- ◆ Maintain a healthy **weight** to reduce joint load
- ◆ Use **splints** during flares to rest joints
- ◆ Wear supportive footwear



Medication Safety

- ◆ **Take MTX weekly** — same day each week
- ◆ Don't skip **folic acid**
- ◆ **No live vaccines** on biologics; do get flu (inactivated) & pneumonia vaccines
- ◆ Report **fever, sore throat, productive cough** immediately
- ◆ Avoid alcohol on MTX/leflunomide
- ◆ Never stop prednisone abruptly



Lifestyle

- ◆ **Stop smoking** — accelerates RA & lung complications
- ◆ Anti-inflammatory diet — omega-3, fruits, vegetables, whole grains
- ◆ Adequate **calcium + Vit D** (steroid bone loss)
- ◆ Low-impact exercise: **swimming, walking, cycling, tai chi**
- ◆ Balance **rest with activity**; pace yourself
- ◆ Stress reduction — mindfulness, support groups



Heat & Cold

- ◆ **Warm** shower in AM to ease morning stiffness
- ◆ **Cold packs** for an acute flare (hot, swollen joint)
- ◆ **Paraffin baths** for hand stiffness
- ◆ Apply < 20 min at a time



When to Call Provider

- ◆ Fever > 100.4°F, productive cough, painful urination
- ◆ Severe joint pain unrelieved by rest & meds
- ◆ Sudden vision changes or red, painful eye
- ◆ Chest pain, severe shortness of breath
- ◆ Black/bloody stools (NSAID bleeding)
- ◆ Mouth sores, unusual bruising/bleeding (MTX)



Psychosocial

- ◆ Acknowledge chronic illness fatigue
- ◆ Screen for **depression** — common in RA
- ◆ Encourage support groups (Arthritis Foundation)
- ◆ Family education on energy conservation
- ◆ Sexual health — discomfort, body image
- ◆ Planning ahead for flares

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Memory Boosters

MNEMONICS · PATTERN RECOGNITION

R R.A.S.H. — Hallmarks of RA

RF & anti-CCP positive · AM stiffness > 1 hour · Symmetric small joints · Hand joints (PIPs/MCPs, spares DIPs)

M "M-T-X = Monitor, Take weekly, eXtra folate"

Monitor CBC, LFTs, renal · Take once weekly (never daily) · eXtra folic acid daily

D D.M.A.R.D. priorities

Detect TB first (biologics) · Monitor labs · Avoid live vaccines · Report infection · Diet — folate, anti-inflammatory

F F.E.V.E.R. → think RA flare or infection

Fatigue · Elevated temp · Viral-like body aches · Enlarged/warm joints · Reduced ROM

OA vs RA — "OA is OLD & ONE-SIDED"

Older, One-sided/asymmetric, joint Overuse, no labs. RA = Relentless, Rheumatoid factor, Related to immunity, Rest worsens stiffness.

Heat vs Cold — "ICE for Inflammation"

Inflamed acute flare → Cold / Ice. Stiff chronic joint → Heat. Easy rule: "Hot joint gets cold; cold morning gets heat."

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NCJMM Clinical Judgment

6-STEP NEXT GENERATION CLINICAL JUDGMENT MEASUREMENT MODEL

Scenario: A 54-year-old woman with a 6-year history of RA presents to clinic for routine follow-up. Current meds: methotrexate 15 mg PO weekly, folic acid 1 mg PO daily, etanercept 50 mg SQ weekly, prednisone 5 mg PO daily. She reports new fatigue, low-grade fever (100.6°F / 38.1°C), productive cough × 4 days, and increased pain/swelling in her right wrist. Vitals: BP 132/82, HR 102, RR 22, SpO₂ 94% on room air. Lungs: scattered right-base crackles. Right wrist: warm, erythematous, very tender. Labs: WBC 14.2, ESR 78, CRP 5.4.

1

Recognize Cues

WHAT INFORMATION IS CLINICALLY RELEVANT?

- ◆ Fever 100.6°F, productive cough, ↑ WBC, ↑ ESR/CRP, crackles, SpO₂ 94%, tachycardia, tachypnea → infection / pneumonia in an immunosuppressed host
- ◆ Isolated hot, red, very tender wrist → possible septic arthritis (vs RA flare)
- ◆ Medication risk profile: MTX + etanercept + prednisone = significant immunosuppression with masked infection signs

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Analyze Cues

WHAT DO THE CUES MEAN TOGETHER?

- ◆ This presentation is **not a simple RA flare**. Pulmonary findings + systemic infection markers + hot, isolated joint = **infection on immunosuppression**.
- ◆ Etanercept (TNF inhibitor) reactivates TB and predisposes to opportunistic + bacterial infection, including pneumonia.
- ◆ An isolated hot, red, very tender joint in a biologic-treated patient is **septic arthritis until proven otherwise** — joint destruction occurs within hours.
- ◆ Steroids can **blunt fever and pain** response; even modest abnormalities are significant.

3

Prioritize Hypotheses

WHAT IS MOST LIKELY / MOST DANGEROUS?

- ◆ **#1 (highest priority):** Septic joint and/or community-acquired pneumonia in immunocompromised host — risk of sepsis & permanent joint destruction.
- ◆ #2: Reactivation of latent TB or opportunistic pulmonary infection on etanercept.
- ◆ #3: Acute RA flare (less likely given fever + isolated hot joint + pulmonary findings).
- ◆ #4: Pulmonary toxicity from MTX (subacute, dry cough — less likely with this productive picture).

4

Generate Solutions

WHAT ACTIONS COULD ADDRESS THE PRIORITY?

- ◆ **Notify provider STAT.**
- ◆ **Hold methotrexate, etanercept**, and confirm whether to continue or stress-dose prednisone (do not abruptly stop).
- ◆ Obtain **blood cultures × 2, sputum culture, CBC with diff, BMP, lactate, procalcitonin, chest X-ray**.
- ◆ Prepare for **joint aspiration (arthrocentesis)** of wrist — culture, Gram stain, cell count, crystals.
- ◆ Initiate **empiric IV antibiotics** per provider order after cultures.
- ◆ Supplemental **O₂** to maintain SpO₂ ≥ 95%, monitor for sepsis criteria.
- ◆ Patient teaching on infection precautions, hand hygiene, hold biologic until cleared.

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Take Action

WHAT DOES THE NURSE DO NOW, IN PRIORITY ORDER?

- ◆ **A — Airway / Breathing:** Apply O₂ per protocol, reassess SpO₂ and RR.
- ◆ **B — Circulation:** IV access × 2 (large-bore), draw labs & cultures *before* antibiotics.
- ◆ **C — Notify provider** and the rheumatology team; communicate using SBAR.
- ◆ **Hold MTX & etanercept**; clarify prednisone (stress dose if septic).
- ◆ Prepare patient and consent for **arthrocentesis**; obtain CXR.
- ◆ Initiate **empiric broad-spectrum IV antibiotics** per order.
- ◆ Continuous monitoring: vitals q 15–30 min, sepsis screen, urine output.
- ◆ Provide explanation & emotional support to patient/family.

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Evaluate Outcomes

DID THE INTERVENTIONS WORK? WHAT'S NEXT?

- ◆ **Improving (expected):** Temp trending down, HR < 100, RR < 20, SpO₂ ≥ 95% RA, WBC normalizing, joint swelling/pain resolving, cultures guide narrowing of antibiotics.
- ◆ **Not improving / worsening:** Persistent fever, hypotension, ↑ lactate, ↑ WBC → escalate for sepsis bundle, ICU transfer, infectious-disease consult, possible surgical washout of joint.
- ◆ **Long-term:** Once infection cleared, rheumatology re-evaluates DMARD/biologic plan; re-screen for TB and hepatitis before restarting biologic.
- ◆ **Teaching reinforced:** Report fever > 100.4°F or any new infection symptom *immediately*; importance of vaccinations, hand hygiene, avoiding sick contacts.

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