Med2Date Clinical Guidelines // Updated Reference

Modern Gout & Crystal Arthropathy

A Clinical Blueprint for the Paradigm Shift in Urate-Lowering Therapy

The Australian Burden of Disease

General Population

- 6.8% of Australian men and 2.0% of women.
- Prevalence accelerates with age: >15% in men over 70 years.
- >500,000 GP consultations annually.

The ATSI Impact

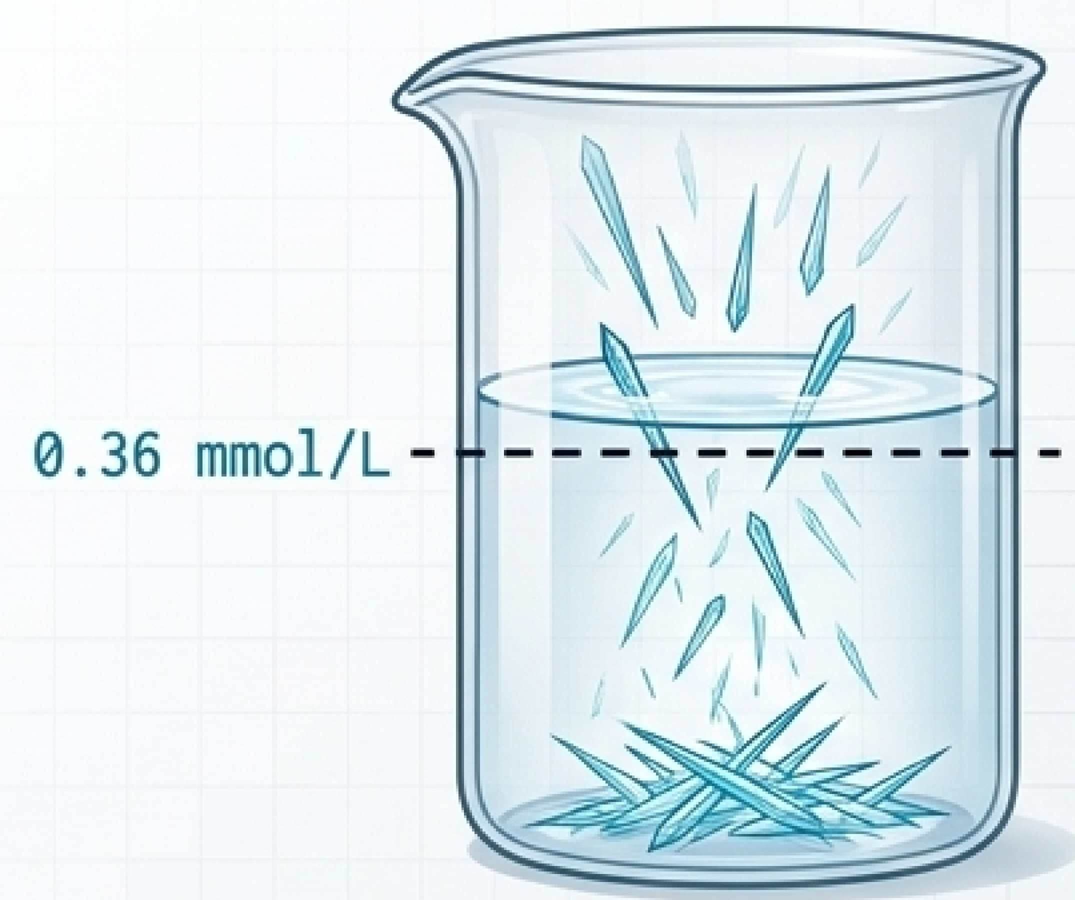
- **1.5–2x higher prevalence** in Aboriginal & Torres Strait Islander peoples.
- **Earlier onset** and **more severe**, tophaceous disease driven by a disproportionate **CKD burden**.

The Economic & Clinical Reality

- Rising parallel to **metabolic syndrome**, **obesity**, and **chronic kidney disease**.

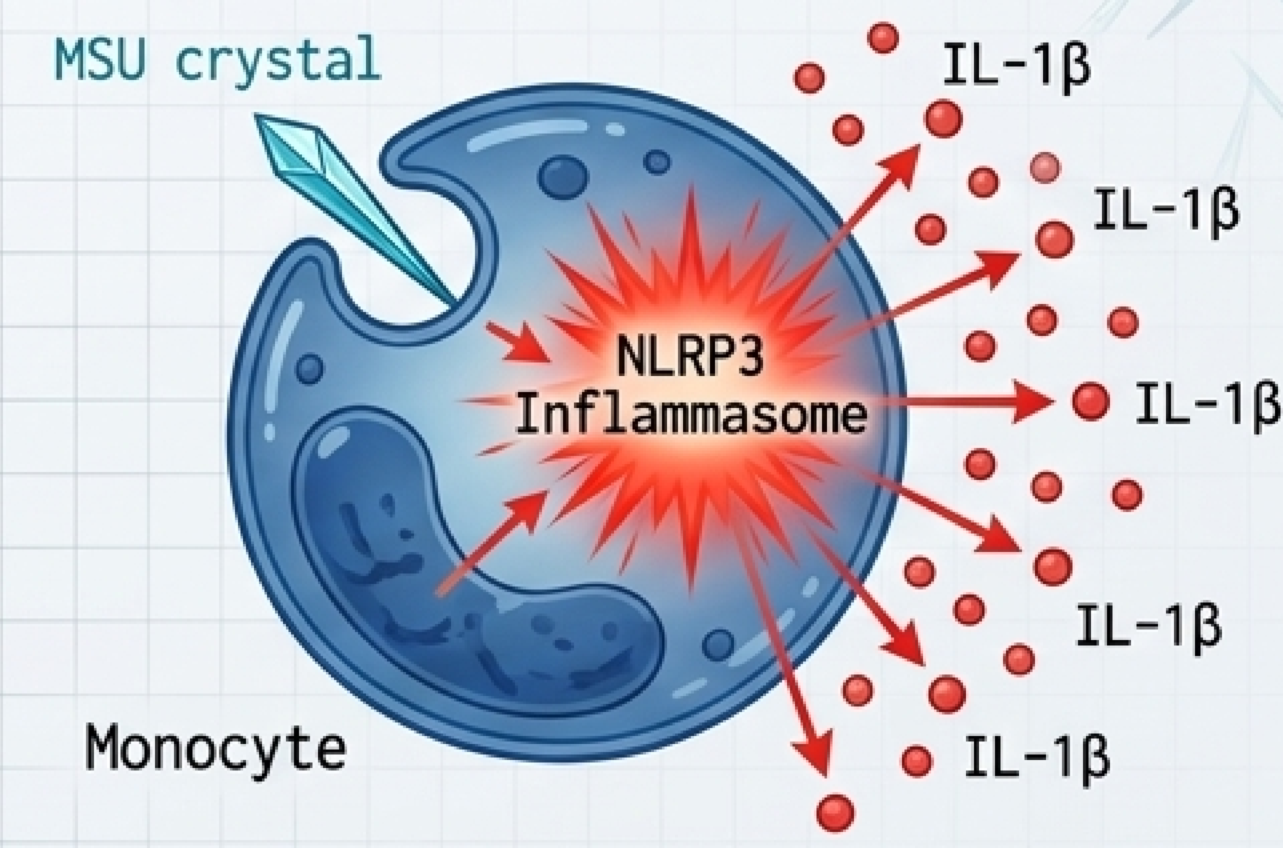
Pathophysiology: Saturation and Inflammation

The Saturation Beaker



Humans lack uricase. Above 0.36 mmol/L, Monosodium Urate (MSU) crystals spontaneously nucleate in synovial fluid and soft tissues.

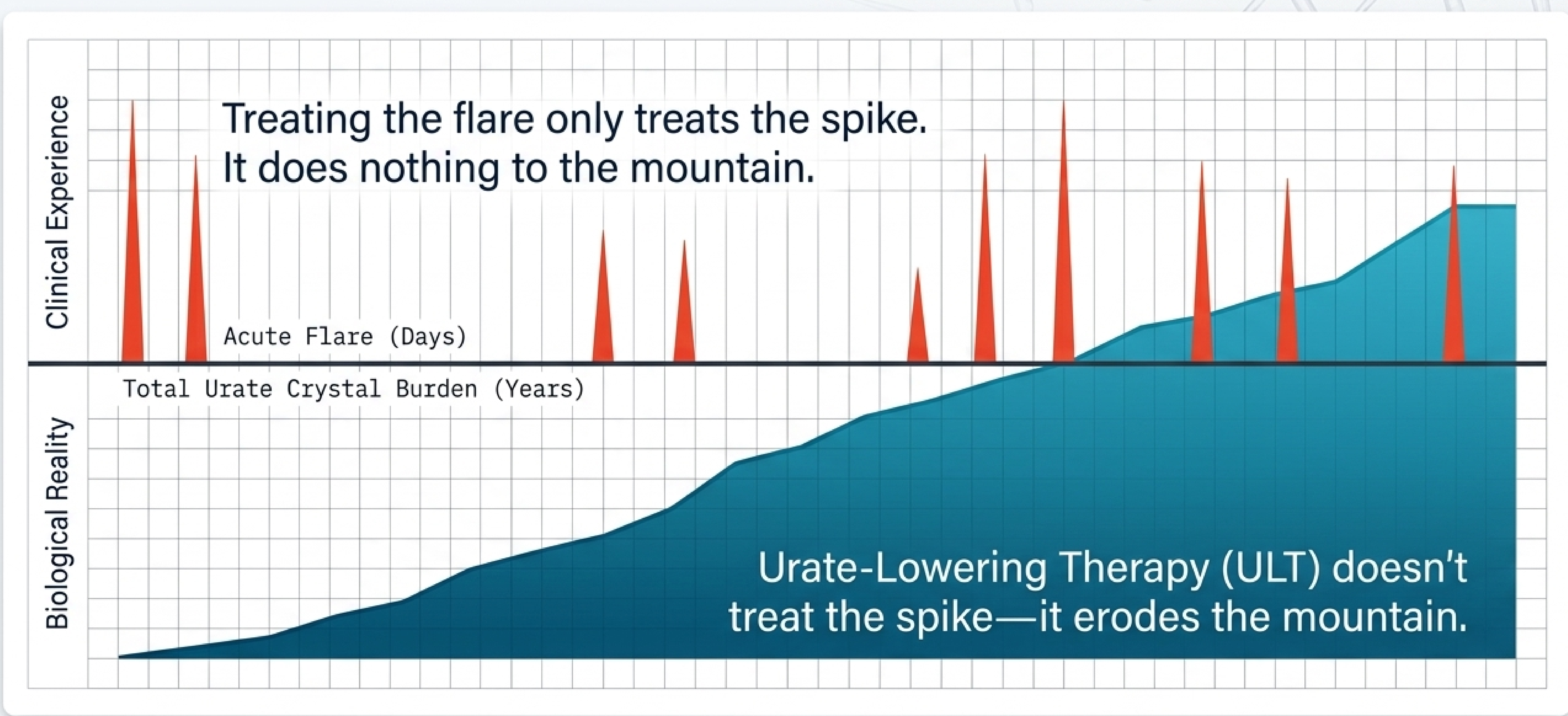
The Inflammasome Loop



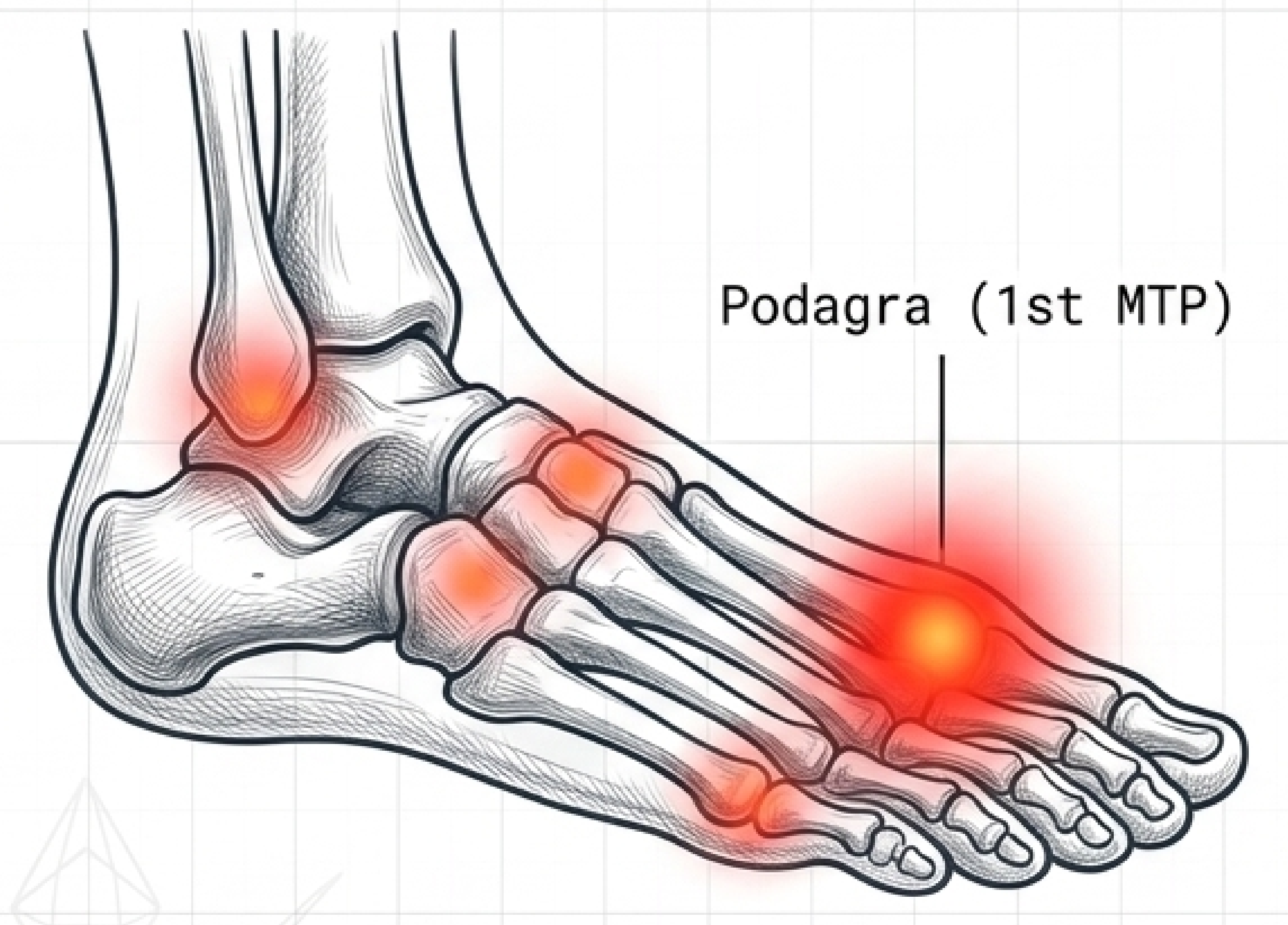
Innate immune recognition triggers an intense, localized neutrophil storm—driving rapid-onset severe pain and erythema.

CLINICAL PEARL: Asymptomatic hyperuricaemia is NOT gout. Deposition takes years.

The Dual-Track Nature of Gout



Acute Flare Presentation



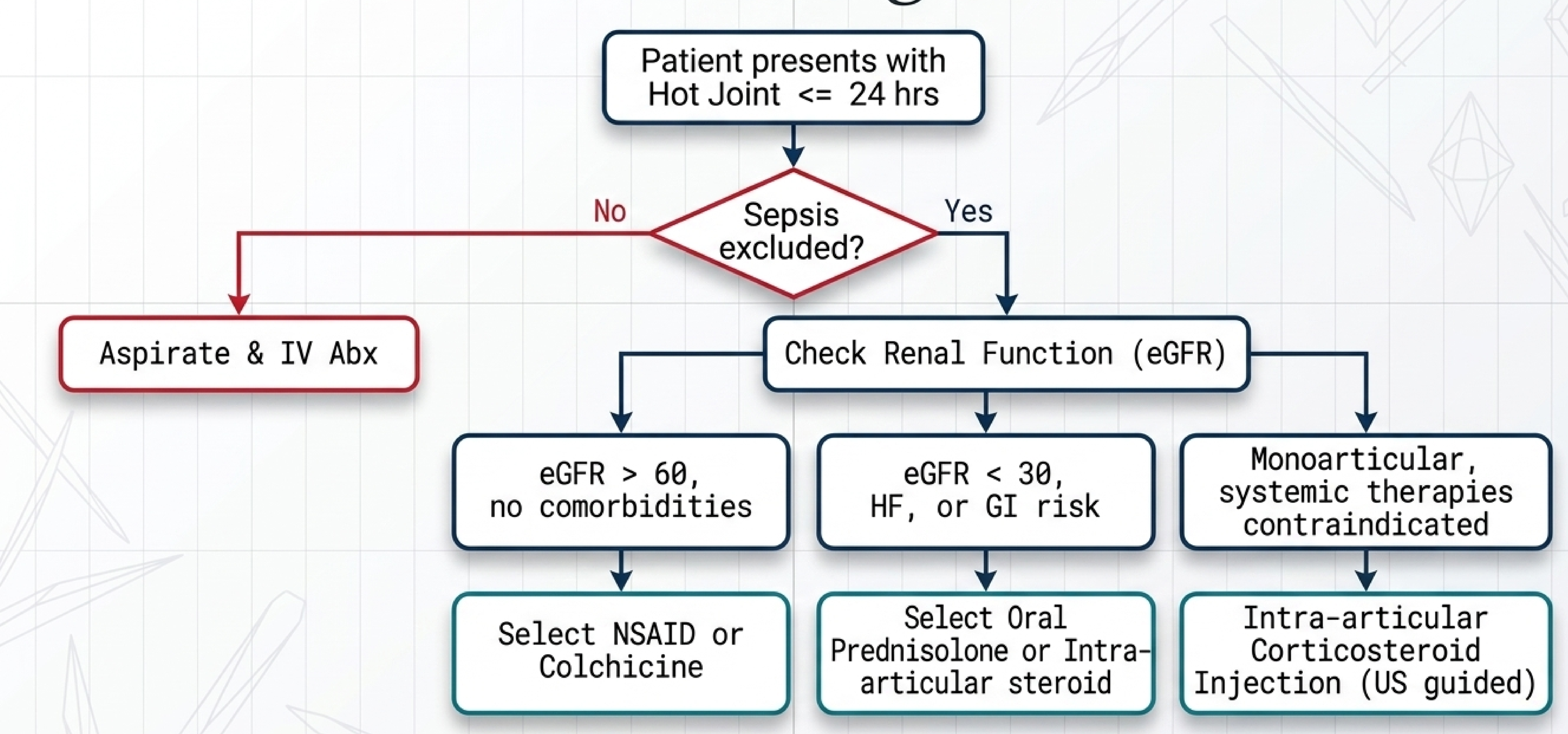
- **Rapid onset** (max intensity in 6–24 hours).
- **Erythema**, marked swelling, loss of joint landmarks.
- **Desquamation** (peeling sign) as flare resolves.

CRITICAL: Acute gout mimics septic arthritis (co-infection occurs in 1-2%). In any hot, swollen joint, aspirate to rule out sepsis BEFORE commencing anti-inflammatories.

The Master Diagnostic Matrix

	Gout (MSU)	CPPD	Septic Arthritis
Crystal Morphology	Negatively birefringent.	Weakly positively birefringent.	No crystals; Gram stain/culture positive.
Classic Joints	1st MTP, midfoot	Knee, wrist	Knee, hip
Onset	6-24h	Hours-days	Rapid
WCC (Synovial Fluid)	>2,000/μL	>2,000/μL	>50,000/μL

Acute Flare Treatment Algorithm



The Fire Extinguishers: Acute Pharmacology

Colchicine (Colgout®)

0.5 mg PO BD for 3-5 days.

Max 3 tabs (1.5mg) total Day 1. AVOID old high-dose loading (toxicity). eGFR 10-50: max 0.5 mg daily. Avoid in severe hepatic/renal impairment.

Naproxen

750 mg PO stat, then 250 mg TDS.

Avoid if eGFR <30.

Indomethacin

50 mg PO TDS (3-5 days), then 25 mg TDS.

Prednisolone

30-35 mg PO daily for 5 days.

No taper needed. Preferred in CKD.

Do
or
an

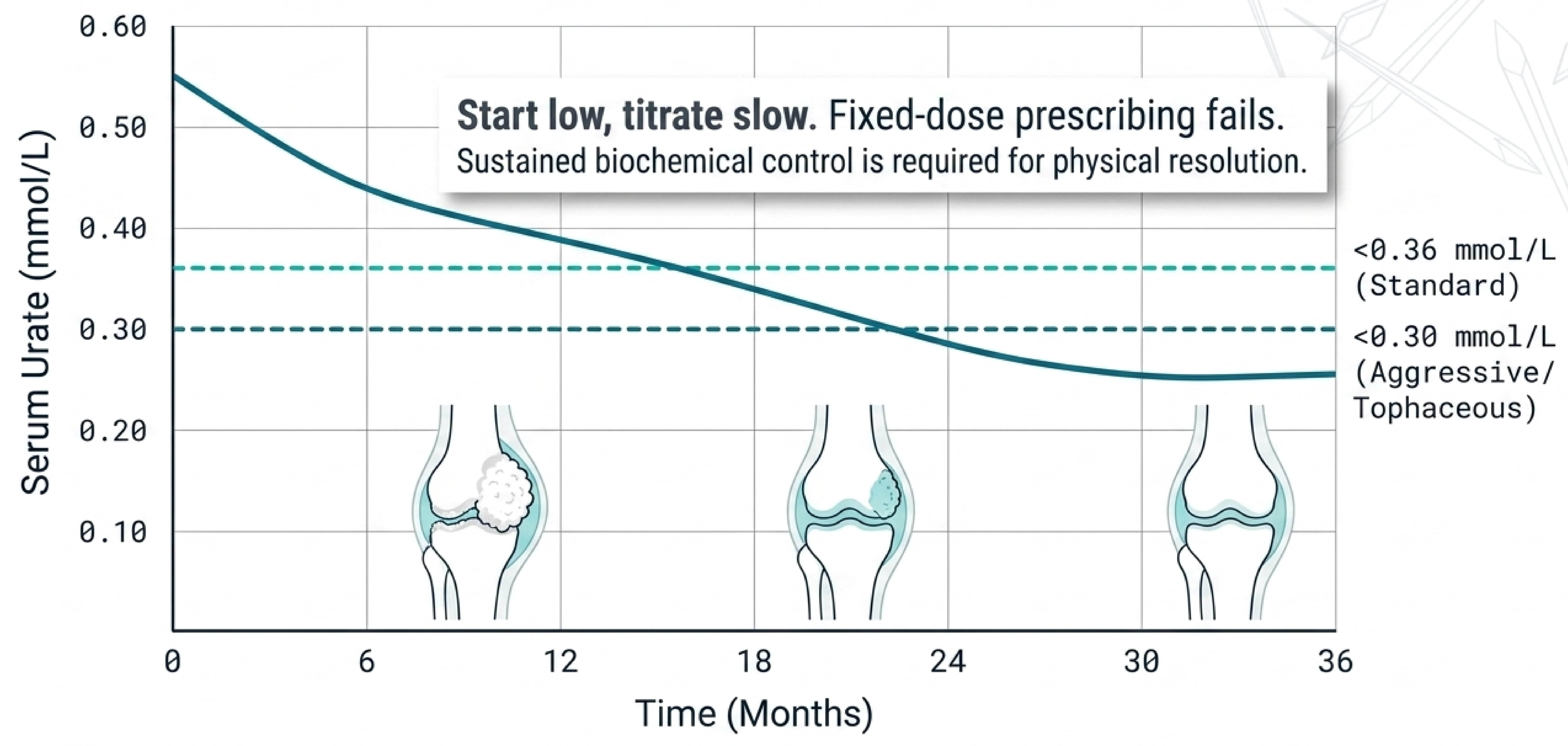
Do NOT start or stop Urate-Lowering Therapy during an acute flare.

Changing ULT doses during an acute flare **mobilizes crystals, prolonging and worsening the attack.**

If already on ULT: Continue at the exact same dose.

If starting ULT: Wait **2-4 weeks** after the flare has completely resolved.

The Treat-to-Target Glidepath



The Thermostats: When to Initiate ULT

Initiate ULT If:

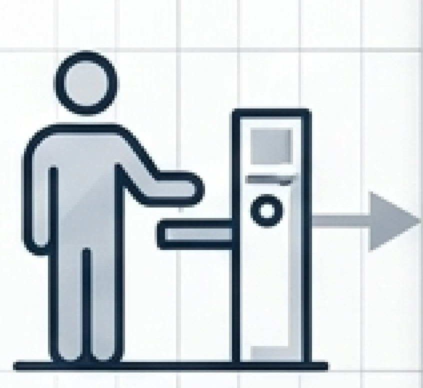
- ≥2 gout flares per year.
- Presence of tophi (clinical or imaging).
- Radiographic evidence of joint damage.
- Urate nephrolithiasis.
- First flare + Risk Factors (eGFR <60, Urate >0.54, young onset).
- CKD Stage 3+ with any flare.

Do NOT Initiate ULT If:

Asymptomatic Hyperuricaemia

Treat the disease, not the lab value.

The HLA-B*5801 Gatekeeper



Check Ethnicity:

Mandatory Testing:
Han Chinese (6-8%), Korean, Thai, SE Asian, African American.

Strongly Recommended:
Māori / Pacific Islander (2-4%).

MBS Item 71162

Positive Result:
Allopurinol **is absolutely contraindicated.** High risk of fatal SCAR / SJS / TEN.

Use Febuxostat or Probenecid.

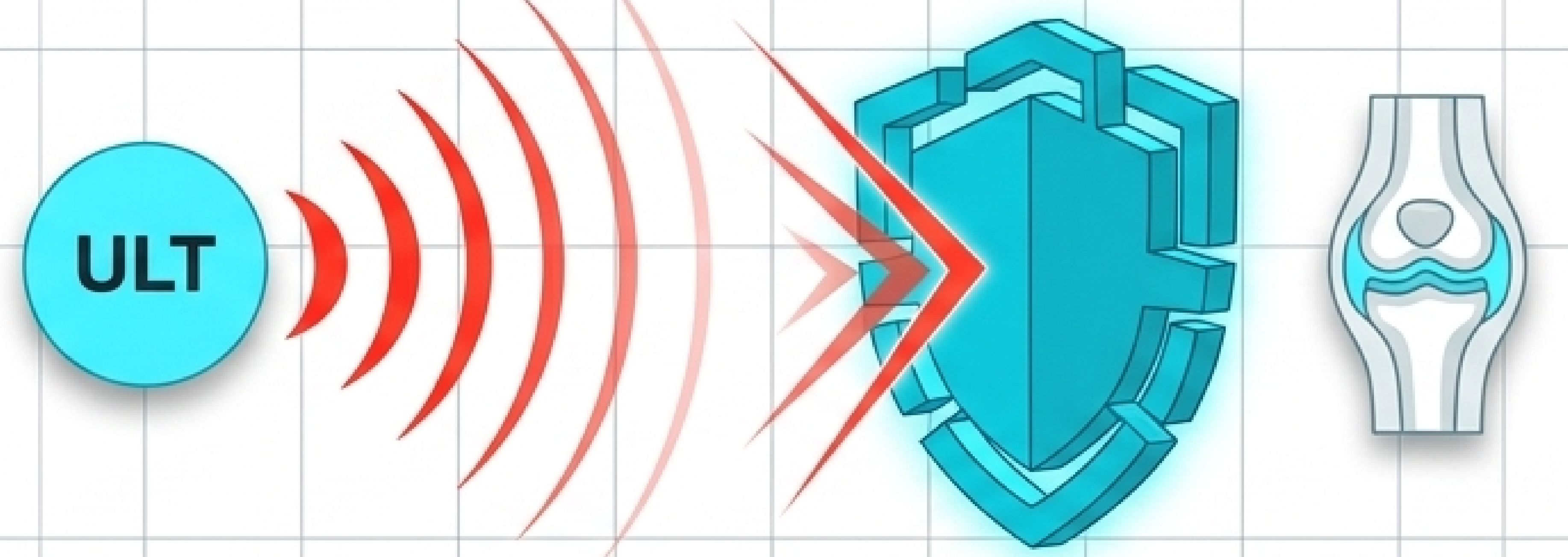
Negative Result:
Proceed with Allopurinol (start low, go slow).

The Pharmacological Arsenal (ULT)

Allopurinol (1st Line XOI)	Febuxostat (2nd Line XOI - PBS Authority)	Probenecid (Uricosuric)
Start: 50-100 mg daily. Titrate 50-100 mg every 2-4 wks. **Renal:** If eGFR <60, start 50mg. Do not impose arbitrary max doses, titrate to target. Alert: Hypersensitivity risk.	**Start:** 80 mg daily. **Renal:** No adjustment eGFR ≥30. Alert (CARES Trial): Increased cardiovascular mortality vs allopurinol in CVD patients.	**Start:** 500 mg BD. Requires hydration (≥2L). **Contraindicated:** Urolithiasis, eGFR <30.

ABSOLUTE CONTRAINDICATION: Co-administration with Azathioprine/6-MP causes fatal toxicity.

The Necessity of Flare Prophylaxis



MANDATORY: When starting or up-titrating ULT, mobilized urate crystals will trigger flares. You must co-prescribe a shield.

Colchicine Shield

0.5 mg PO once daily.
(If eGFR <45: every 2nd day).

NSAID Shield

Naproxen 250 mg PO BD (+ PPI).

Duration

Minimum 3–6 months after reaching urate target. Continue longer if tophi present.

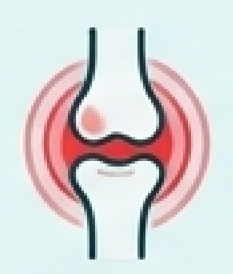
Disambiguating CPPD (Pseudogout)

Mechanism

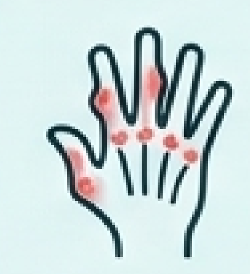
Calcium Pyrophosphate Deposition (CPPD) / Pseudogout.

- Driven by aging, OA, and metabolic disease (Hyperparathyroidism, Haemochromatosis).

Clinical Triad



Acute Pseudogout
(Indistinguishable from gout without aspiration).



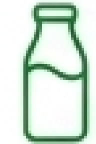
Chronic Pyrophosphate Arthropathy
(Mimics OA/RA).

Systemic/Crowned Dens
(Neck pain mimicking meningitis).

NO ROLE FOR ULT. Allopurinol does nothing to calcium crystals. Manage acutely with NSAIDs/Steroids/Colchicine.

Lifestyle Factors & Medication Review

Increase


Low-fat dairy (orotic acid promotes excretion)

Cherries, Coffee

Vitamin C (500mg daily), Plant proteins

Review Meds

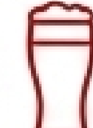
Thiazide/Loop Diuretics

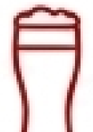
Low-dose aspirin

Ciclosporin

Swap to Losartan—it has mild uricosuric properties.

Stop/Avoid


Beer (high guanosine)


Spirits

Organ meats, Shellfish

High-fructose corn syrup

Operational Monitoring Dashboard

1 Baseline

Urate, FBC, LFTs, eGFR, Urinalysis.

2 Titration Phase (Every 2-4 Weeks)

Check serum urate.

Adjust ULT dose until <0.36 mmol/L target achieved.

3 Stable Target (At 6 Months)

Check urate. Monitor tophus resolution clinically or via Ultrasound/DECT.

Counsel patient that early flares do not mean treatment failure.

4 Ongoing (Annually)

FBC, LFTs, eGFR, Urate.

Monitor for drug toxicity.

Special Populations Matrix

Renal Impairment (CKD)

- High risk of Colchicine accumulation.
- Avoid NSAIDs <30 eGFR. Prednisolone preferred.
- Allopurinol needs slow titration, not arbitrary caps.

The Elderly

- >15% prevalence in men >70.
- High risk of NSAID GI bleeds and Colchicine toxicity (check CYP3A4 inhibitors like verapamil).
- Polypharmacy is common.

Immunocompromised/Transplant

- Ciclosporin/Tacrolimus raise urate.
- ☠ Fatal interaction between Xanthine Oxidase Inhibitors and Azathioprine.

Pregnancy & Paediatrics

- Allopurinol/Febuxostat are Category D (Avoid).
- Acute flares: use intra-articular steroids.
- Paeds gout is rare (check for HGPRT/Lesch-Nyhan).

Aboriginal and Torres Strait Islander Health Considerations

Clinical Reality

Higher burden of **CKD** means more **renal dose adjustments**, higher **drug toxicity risk**, and more **tophaceous disease**.

Access & Systems

Telehealth (MBS 91822/91823) is vital for **specialist input** in remote ACCHOs. **Point-of-care urate testing** overcomes pathology delays.

Safety Nets

Ensure utilization of the **PBS Co-payment Reduction (Closing the Gap)** for affordable, lifelong **ULT adherence**.

Cultural Safety

Avoid paternalistic dietary advice. **Engage Aboriginal Health Workers** for **blister-packing** and **health literacy**. Recognize complex mixed ancestry warrants broad **HLA-B*5801 testing** consideration.

Adapted from Gout and Crystal Arthropathy – Med2Date Clinical Guidelines.
Last updated 12 May 2026.

Key references include:

- 2020 ACR Guidelines
- 2016 EULAR Recommendations
- CARES Trial (N Engl J Med 2018)
- ALL-O Trial (BMC 2020)

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Always cross-reference with current Therapeutic Guidelines.