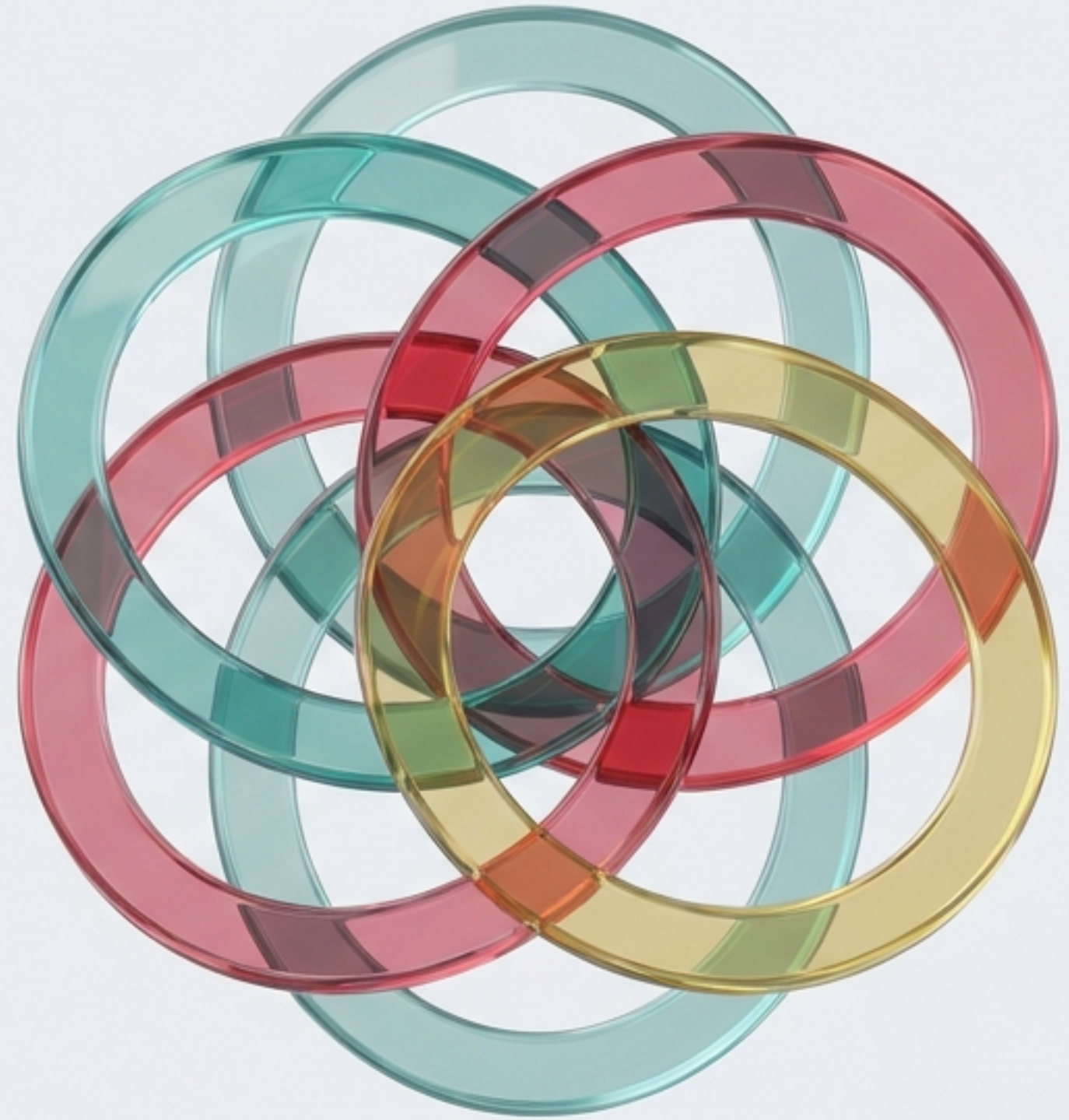


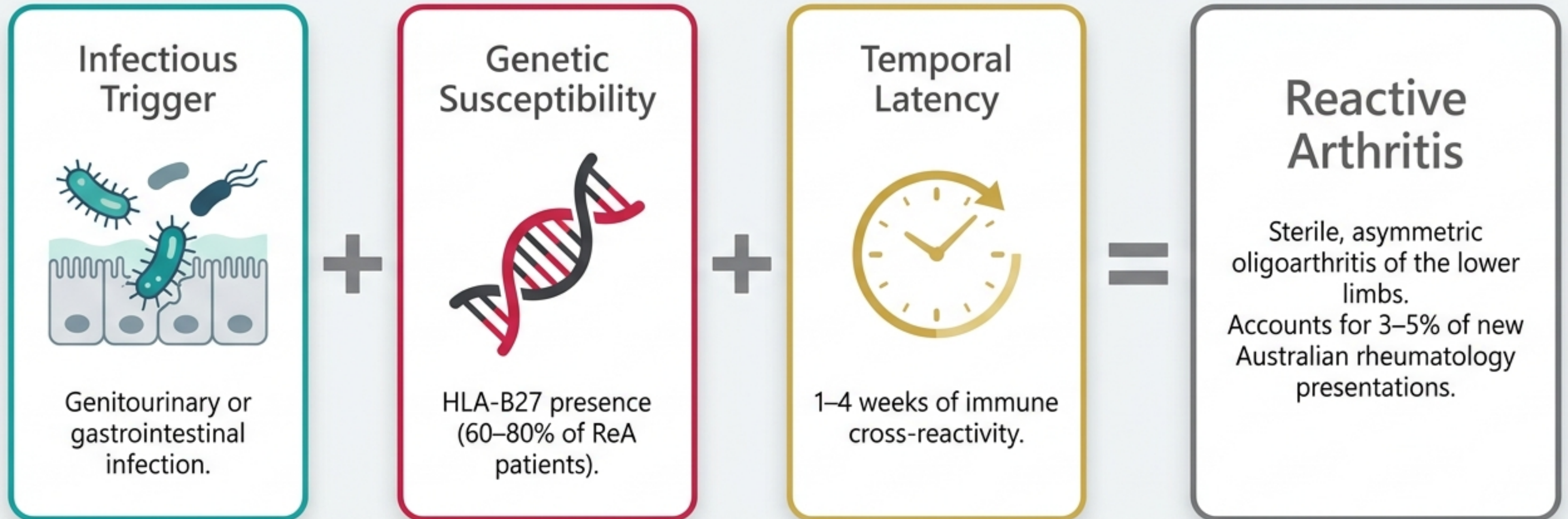
# Reactive Arthritis: The Clinical Atlas

A definitive visual reference for pathophysiology, diagnosis, and point-of-care management.

Med2Date Clinical Guidelines  
Spondyloarthropathy Series

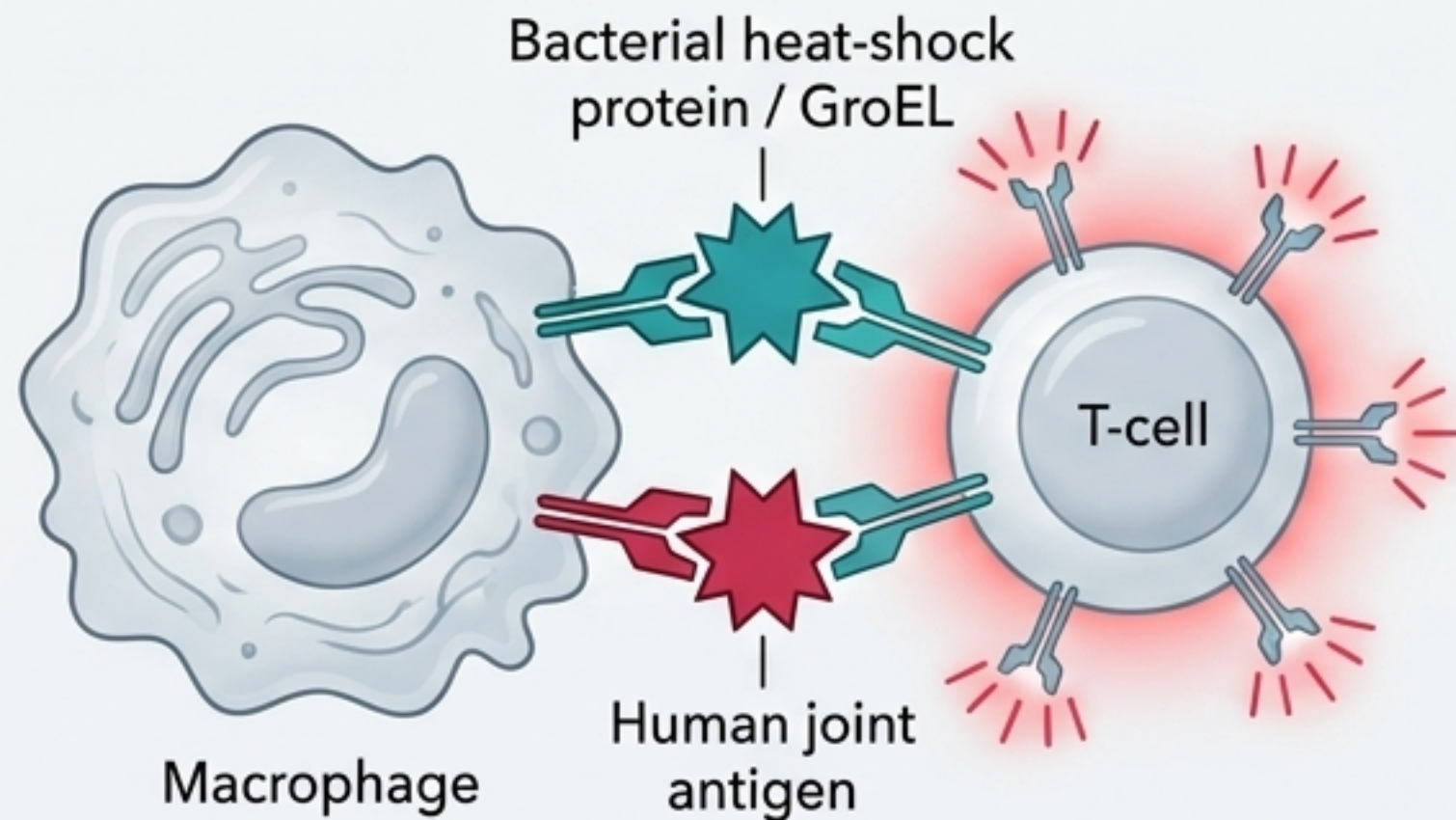


# The Pathogenic Equation: The Perfect Storm



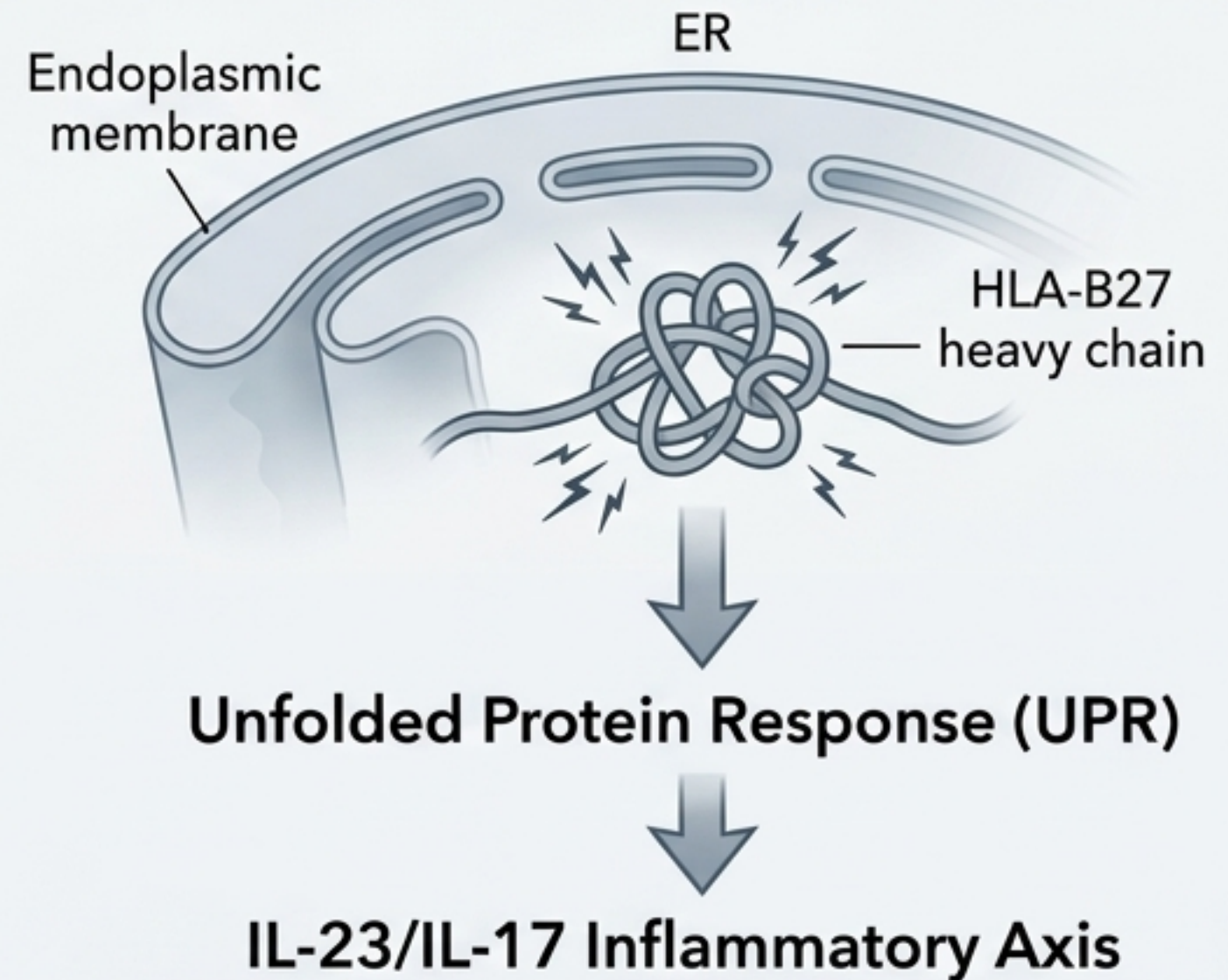
# Cellular Pathophysiology: Why is the Joint Sterile but Inflamed?

## The Molecular Mimicry "Lock & Key"



T-cells become confused by structural homology and initiate a CD4+/CD8+ attack on healthy synovium.

## The HLA-B27 Misfolding Mechanism



**Clinical Note:** Persistent *Chlamydia* reticulate bodies in the synovium may drive chronicity without active replication.

# Diagnostic Window: The Temporal Timeline

## Phase 1: Day 0

The Primary Infection



Urogenital or Enteric Infection.

*Clinical Pitfall: Up to 70-80% of female and 50% of male urogenital Chlamydia infections are completely asymptomatic.*

## Phase 2: Days 7–28

The Latency Window

Asymptomatic incubation of the cross-reactive immune response.

## Phase 3: Days 14–42+

The Acute Onset



Sudden Onset Sterile Arthritis

Asymmetric oligoarthritis predominating in lower limbs (knees, ankles, MTP joints).

**MANDATORY:** Routine STI screening (NAAT) is required for all undifferentiated inflammatory arthritis, regardless of symptomatic history.

# The Tale of Two Triggers

## Urogenital Triggers



### Pathogen:

Chlamydia trachomatis (serovars D-K).  
Estimated 1-4% ReA incidence post-infection.



### Demographics:

Male predominant (M:F ratio ~5:1).  
Typical age 20-40.



### Classic Features:

Higher rates of conjunctivitis, anterior uveitis,  
and circinate balanitis.



### Disease Course:

Higher risk of persistent aberrant forms  
driving chronicity.



## Enteric Triggers



### Pathogens:

Salmonella (6-15%), Shigella (7-15%),  
Yersinia (10-25%), Campylobacter (1-5%).



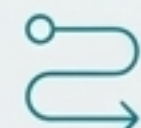
### Demographics:

Affects all age groups equally. Often linked  
to foodborne outbreaks (OzFoodNet).



### Classic Features:

Less urethritis/balanitis.  
Very high HLA-B27 association (~70%).



### Disease Course:

Tends to have a more self-limiting course  
than urogenital ReA.

# Systemic Presentation: The Anatomical Body Map

## Ocular

**Anterior Uveitis (15-25%): URGENT REFERRAL.** Unilateral red eye, pain, photophobia. Risk of synechiae/glaucoma.

**Conjunctivitis:** Bilateral, mild, self-limiting.

## Oral

Painless, transient shallow erosions on palate/buccal mucosa.

## Genitourinary

**Circinate Balanitis (20-40% males):** Painless shallow erosions on glans.

**Urethritis:** Sterile discharge, dysuria.

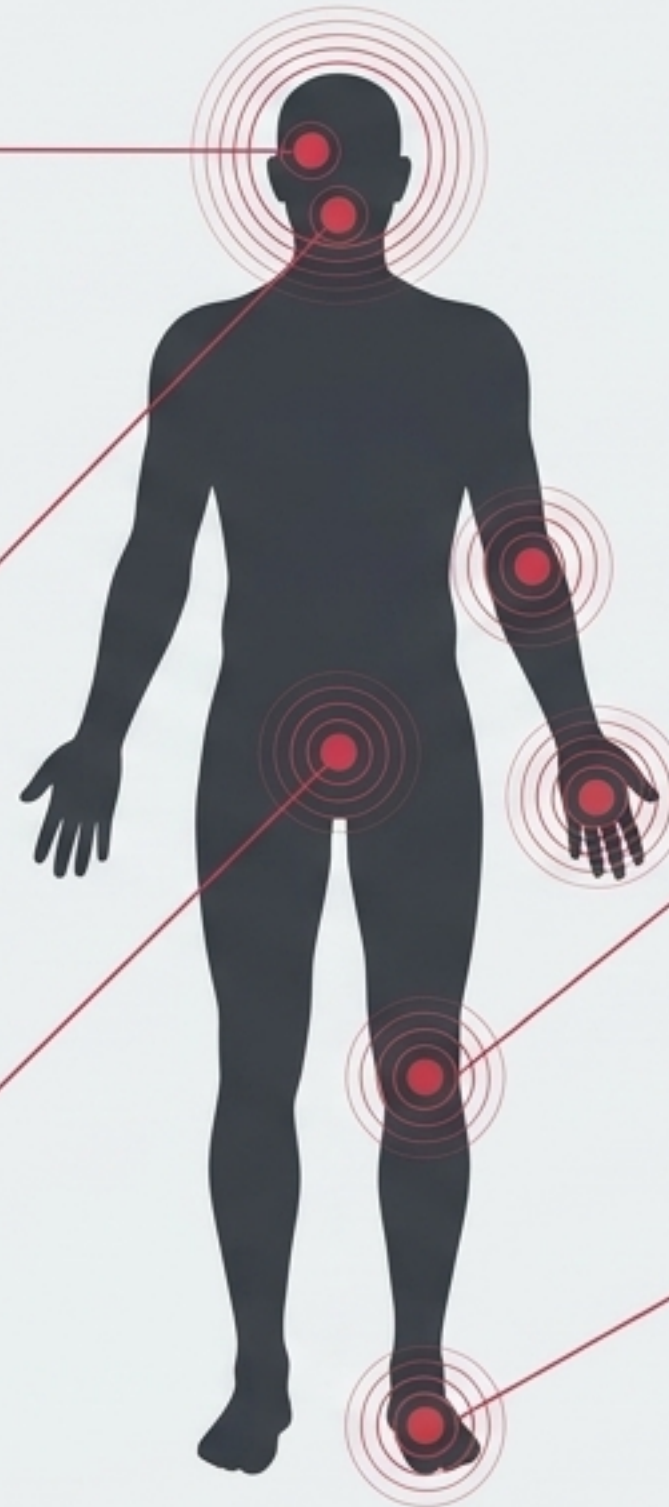
## Joints

**Asymmetric oligoarthritis** (predominantly lower limbs).

**Classic Triad** (Arthritis + Urethritis + Conjunctivitis) seen in only ~30% of cases.

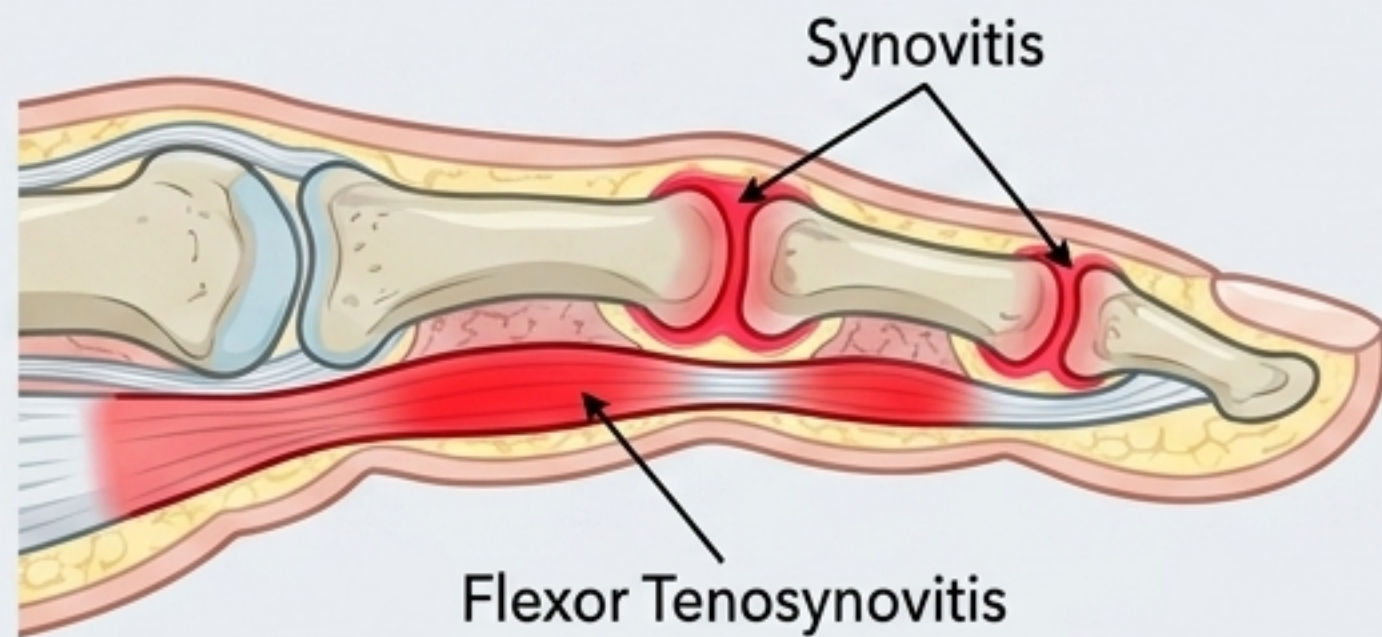
## Skin

**Keratoderma Blennorrhagicum:** Hyperkeratotic, psoriasiform lesions resembling pustular psoriasis.



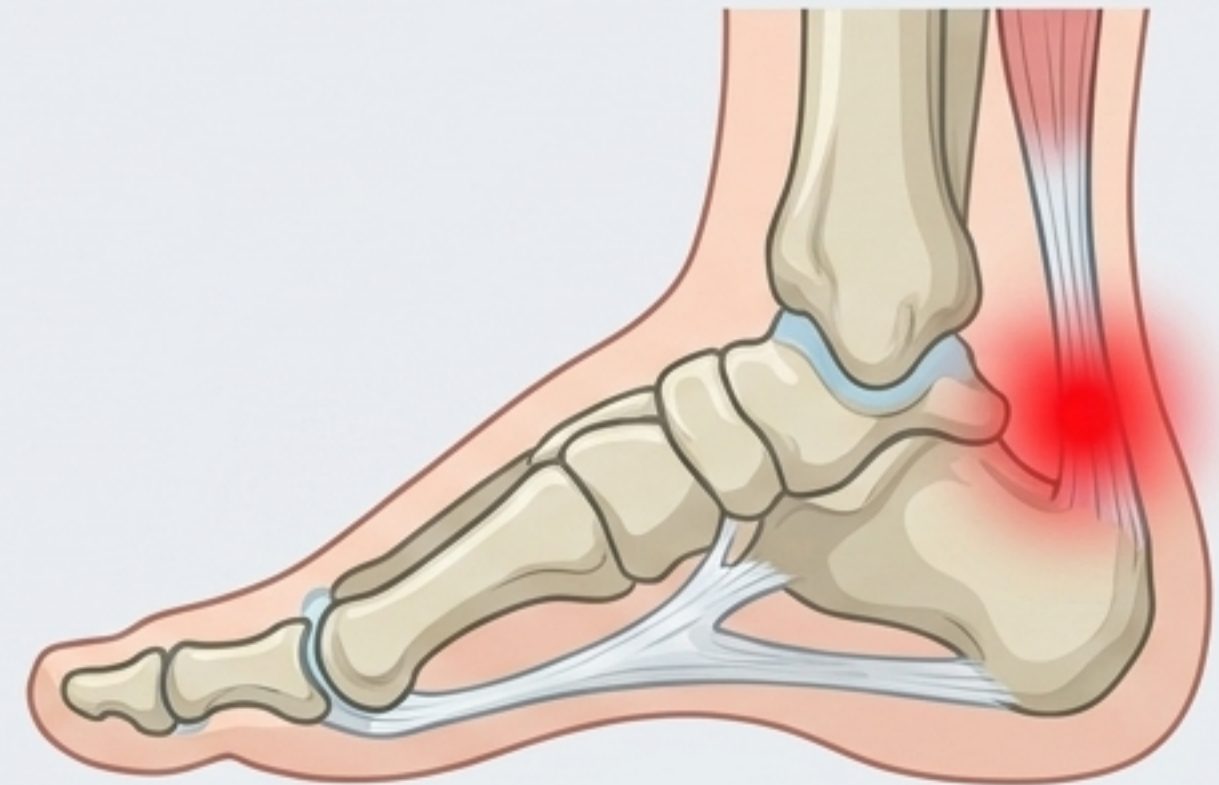
# Hallmarks of Spondyloarthropathy: Structural Pathology

## Dactylitis ("Sausage Digit")




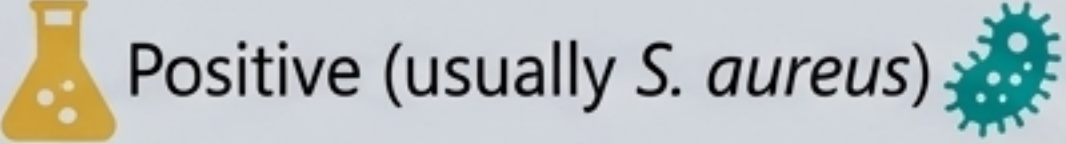










A hallmark clinical clue representing a dual pathology: simultaneous inflammation of the tendon sheath AND the joint space, resulting in uniform swelling of the entire digit.

## Enthesitis



Inflammation at the tendinous insertion point. Occurs in 40-70% of cases, most commonly at the Achilles tendon, plantar fascia, or tibial tuberosity.

# The Critical Differential: Reactive vs. Septic Arthritis

Diagnostic Feature	Reactive Arthritis	Septic Arthritis
Synovial Fluid Culture	 Sterile	 Positive (usually <i>S. aureus</i> )
WBC Count	 10,000–50,000/ $\mu\text{L}$	 Usually $>50,000/\mu\text{L}$
Joint Pattern	 Asymmetric, oligoarticular, lower limb	 Usually monoarticular
Systemic Toxicity	 Mild–moderate	 Fever, rigors, sepsis
Extra-articular Features	 Uveitis, skin lesions, enthesitis	 Absent
Antibiotic Response	 No benefit for joint inflammation	 Essential, life-saving

**DO NOT MISS:** Mandatory action is to aspirate synovial fluid urgently if septic arthritis is suspected.

# Targeted Diagnostic Workup



## Baseline Bloods

- **FBC, ESR, CRP:** Elevated in acute phase.
- **Urate:** Essential to exclude gout.
- **RF/anti-CCP:** Usually negative, positive result suggests rheumatoid arthritis.



## Infection Screening

- **Urogenital NAAT:** For Chlamydia/Gonorrhoea (Essential for all patients).
- **Stool Multiplex GI PCR:** Request if patient has a diarrhoeal history.
- **Serology:** HIV/Syphilis/Hep C based on risk profile.



## Synovial Fluid Analysis

- **Mandatory** to exclude infection and crystals.
- **Findings:** Inflammatory cell count (2,000-50,000 WBCs, neutrophil predominant), negative Gram stain, absent crystals.



## Imaging

- **Plain X-rays:** Often normal early; assess for periostitis/erosions later.
- **MRI:** Detects early bone marrow oedema (active sacroiliitis).
- **Specialist Ultrasound:** For identifying enthesitis/tenosynovitis.

# Decoding HLA-B27: Prognostic, Not Diagnostic



## The Statistics

- Present in **6-8%** of the general population, but found in **60-80%** of ReA patients.
- Positive result  $\neq$  ReA diagnosis.
- Negative result  $\neq$  ReA excluded (20-40% are negative).



## Clinical Utility



- Do **not** order reflexively.
- Best utilized when **diagnostic uncertainty** exists (e.g., differentiating from rheumatoid arthritis) or for **determining long-term patient prognostication**.

## Prognostic Impact of Positivity



HLA-B27+ individuals face: **10-50x higher** ReA risk post-infection, strong association with **sacroiliitis** and axial progression, and higher rates of **chronicity** and **uveitis**.



# Management: The Treatment Staircase

## Third-Line (DMARDs)

For arthritis persisting >6 weeks or frequent relapses. Requires specialist rheumatology guidance.

## Second-Line (Corticosteroids)

Intra-articular injections (after excluding septic arthritis) for persistent mono/oligoarthritis. Systemic oral steroids reserved for severe, refractory polyarticular disease.

## First-Line (NSAIDs)

Mainstay of symptomatic relief. Use lowest effective dose for shortest duration. Co-prescribe PPI for GI protection in at-risk patients.



## NO ANTIBIOTICS FOR JOINTS

Multiple RCTs show prolonged antibiotics provide zero benefit for established reactive arthritis and only increase the risk of *C. diff* and antimicrobial resistance.


# Pharmacological Dashboard

## NSAID

### Naproxen (NSAID)

**Dose:** 500 mg PO BD with food (max 1000 mg/day). 


**Renal:** Avoid if eGFR <30.

**Monitoring:** Watch for GI and renal adverse effects. 

## NSAID

### Indomethacin (NSAID)

**Dose:** 25–50 mg PO TDS with food.


**Profile:** Higher CNS side-effect profile compared to other NSAIDs (headache, dizziness). 

## DMARD

### Sulfasalazine (DMARD)

**Dose:** Titrate to 1 g BD.


**Indication:** First-line DMARD for chronic ReA.

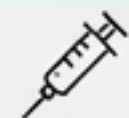
**Requirements:** FBC/LFT/UEC monitoring and baseline G6PD check. PBS Authority Required. 

## DMARD

### Methotrexate (DMARD)

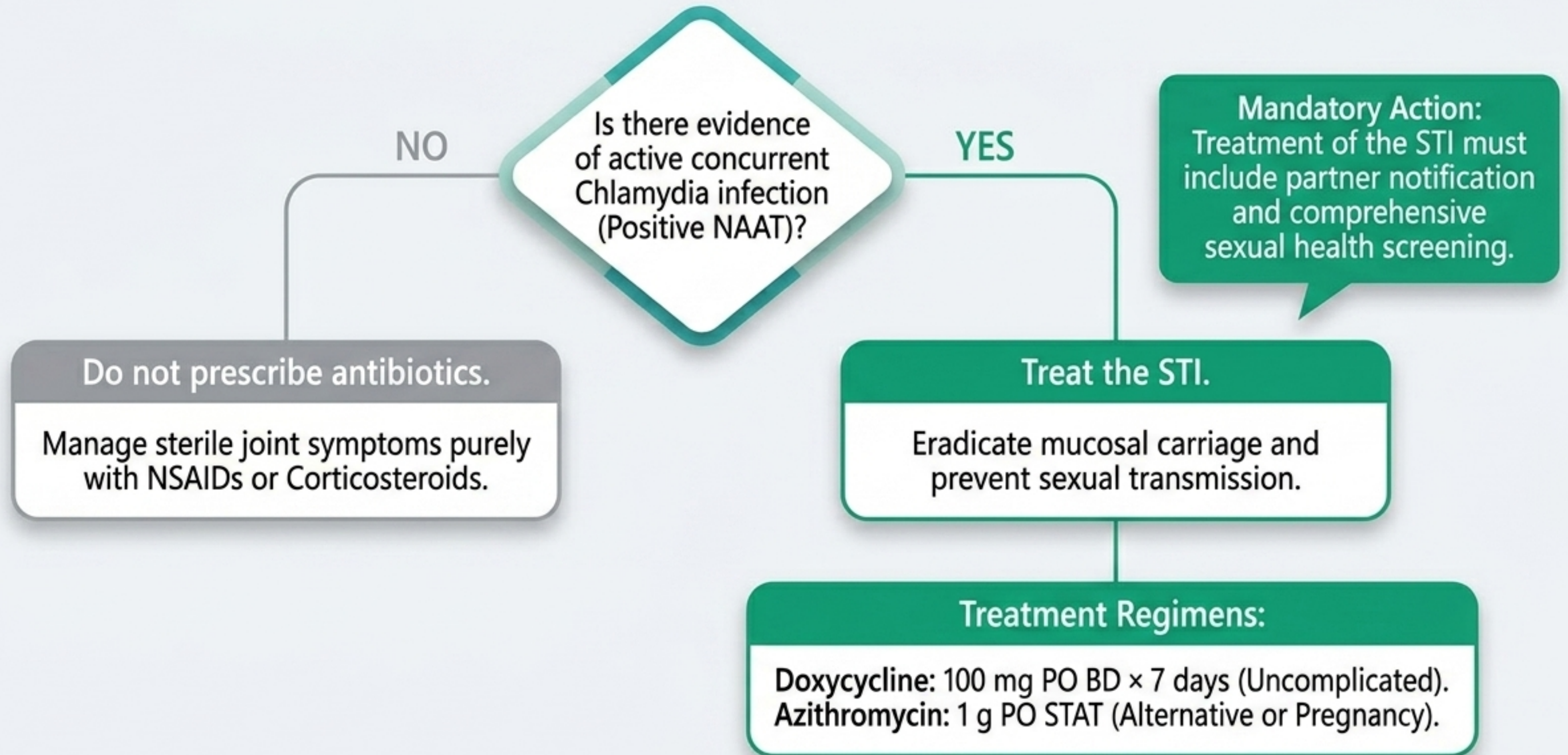
**Dose:** 7.5–15 mg once weekly + folic acid.

**WARNING:** STRICTLY CONTRAINDICATED in pregnancy (teratogenic, requires effective contraception for both sexes). Hepatotoxic. 



Intra-articular Triamcinolone (10-40mg) is highly effective localized therapy.

# The Narrow Indication for Antibiotics



# Clinical Triage & Risk Stratification Matrix

## Favourable

**60-75% - Self-Limiting**

- **Profile:**  
HLA-B27 negative, Enteric trigger, <6 weeks duration, single episode, no extra-articular features (except mild conjunctivitis).
- **Clinical Setting:**  
GP Management. NSAIDs + 3-6 monthly review. Complete remission expected in 6-12 months.



## Intermediate

**Prolonged / Recurrent**

- **Profile:**  
HLA-B27 positive, Urogenital trigger, Persistent oligoarthritis >6 weeks, Enthesitis or Dactylitis.
- **Clinical Setting:**  
GP + Rheumatology Co-management. Consideration of early DMARD therapy.



## Unfavourable

**15-20% - Chronic / Destructive**

- **Profile:**  
HLA-B27 positive, Sacroiliitis/Axial involvement, Recurrent uveitis, >12 months duration.
- **Clinical Setting:**  
Rheumatology-led. DMARD or Biologic therapy required. High risk of evolution to Ankylosing Spondylitis.



# Special Populations Dashboard



## Pregnancy

- **Avoid NSAIDs >20 weeks** (risk of premature ductus arteriosus closure).
- Methotrexate is strictly contraindicated (teratogenic).
- Sulfasalazine is Category A. Azithromycin safe for **Chlamydia**.



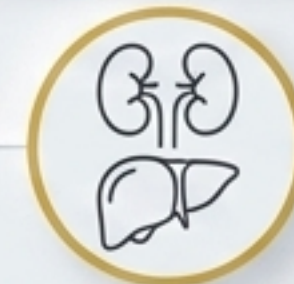
## Paediatrics

- Post-enteric ReA is most common.
- **Naproxen** (5-7 mg/kg BD) is first-line.
- **Avoid doxycycline <8 years**.
- **Prognosis** is generally excellent.



## Elderly (>65 years)

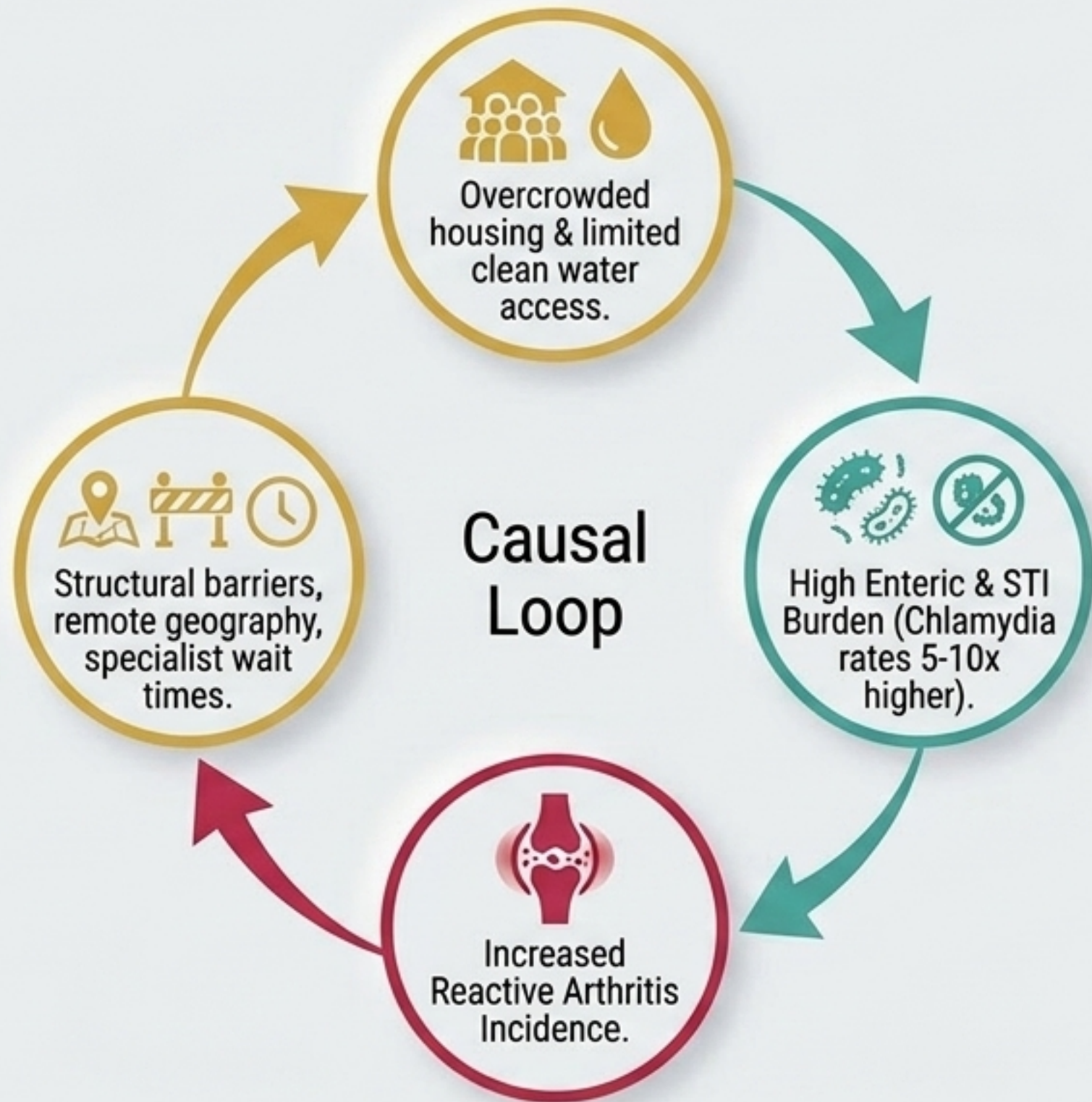
- High risk of NSAID toxicity (GI bleed, renal, cardiovascular).
- **PPI** co-prescription is strictly mandatory.
- Prefer **localized intra-articular steroid injections**.



## Organ Impairment

- **Renal**: Avoid NSAIDs if eGFR <30; MTX requires dose reduction.
- **Hepatic**: MTX contraindicated in significant impairment; NSAIDs carry elevated hepatotoxicity risk.

# Public Health Context: The Structural Cycle



## Actionable Interventions

- ✓ Integrate enteric/STI screening into routine MBS 715 Health Assessments.
- ✓ Utilize telehealth (MBS 91822) to bypass remote rheumatology access barriers.
- ✓ Engage Aboriginal Health Workers and ensure culturally safe communication.
- ✓ Utilize Closing the Gap PBS co-payments for equitable medication access.
- ✓ Maintain high vigilance for Uveitis in areas with limited eye-care access.