"CLOSER LOOK AT SpA"

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As many women as men suffer from ankylosing spondylitis. Early treatment can reduce pain and long-term consequences, such as blindness, heart problems or a hunched back. PHOTO: ASSESSMENT OF SPONDYLOARTHRITIS INTERNATIONAL SOCIETY

Closer look at SpA

I. Categories
II. SIGN & SYMPTOMS
III. X-RAY
IV. MRI

V. MANAGMENT

Spondyloarthritis (SpA) diseases:???

What are they?

1. **Ankylosing spondylitis (AS)**
2. **Non-radiographic axial spondyloarthritis (nr-axSpA**
3. **PsA**
4. **IBD related arthritis**
5. **ReA**
6. **Undifferentiated Peripheral SpA**

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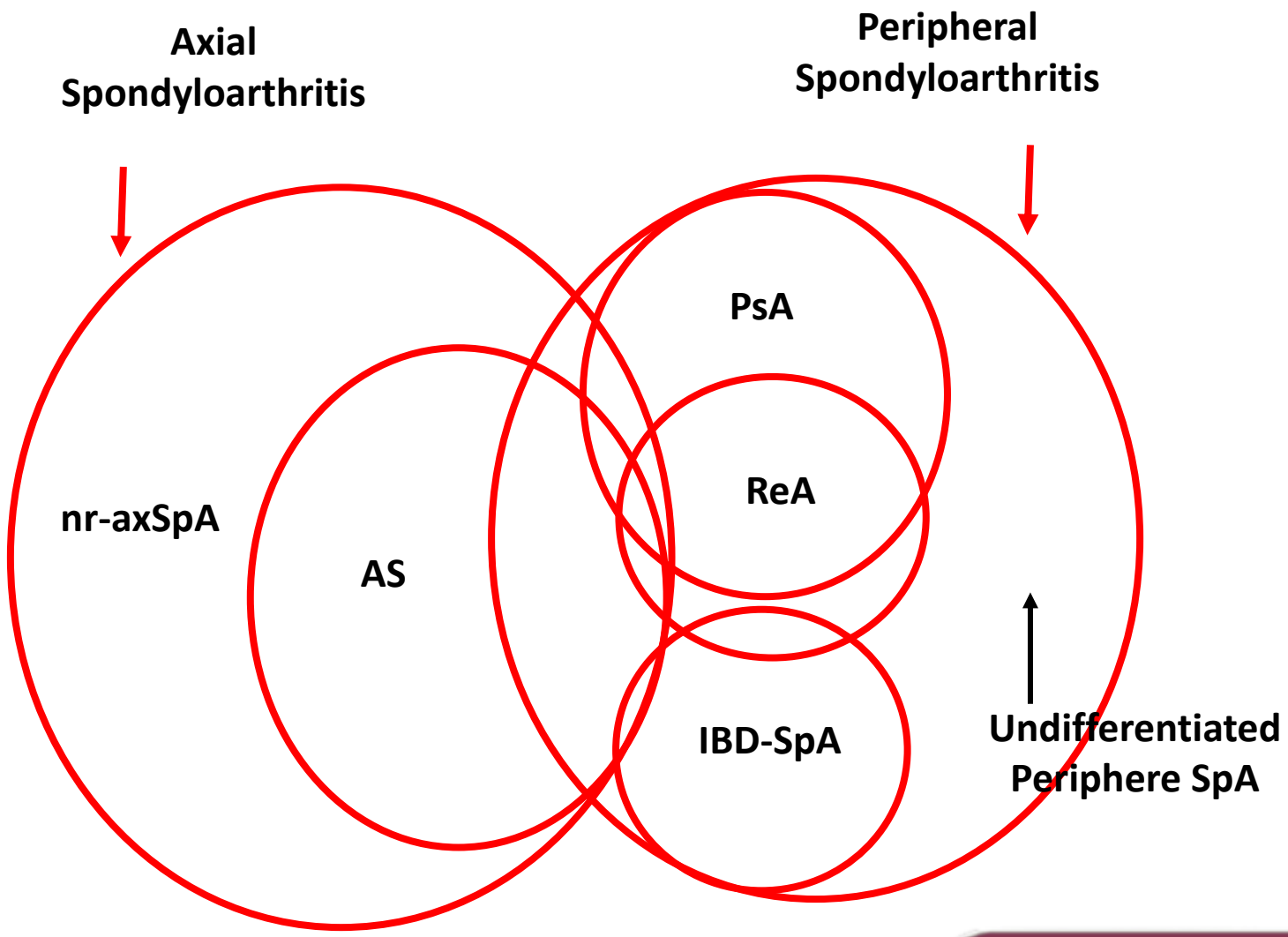
Complex disease

2 Broad Overlapping Categories



Complex disease

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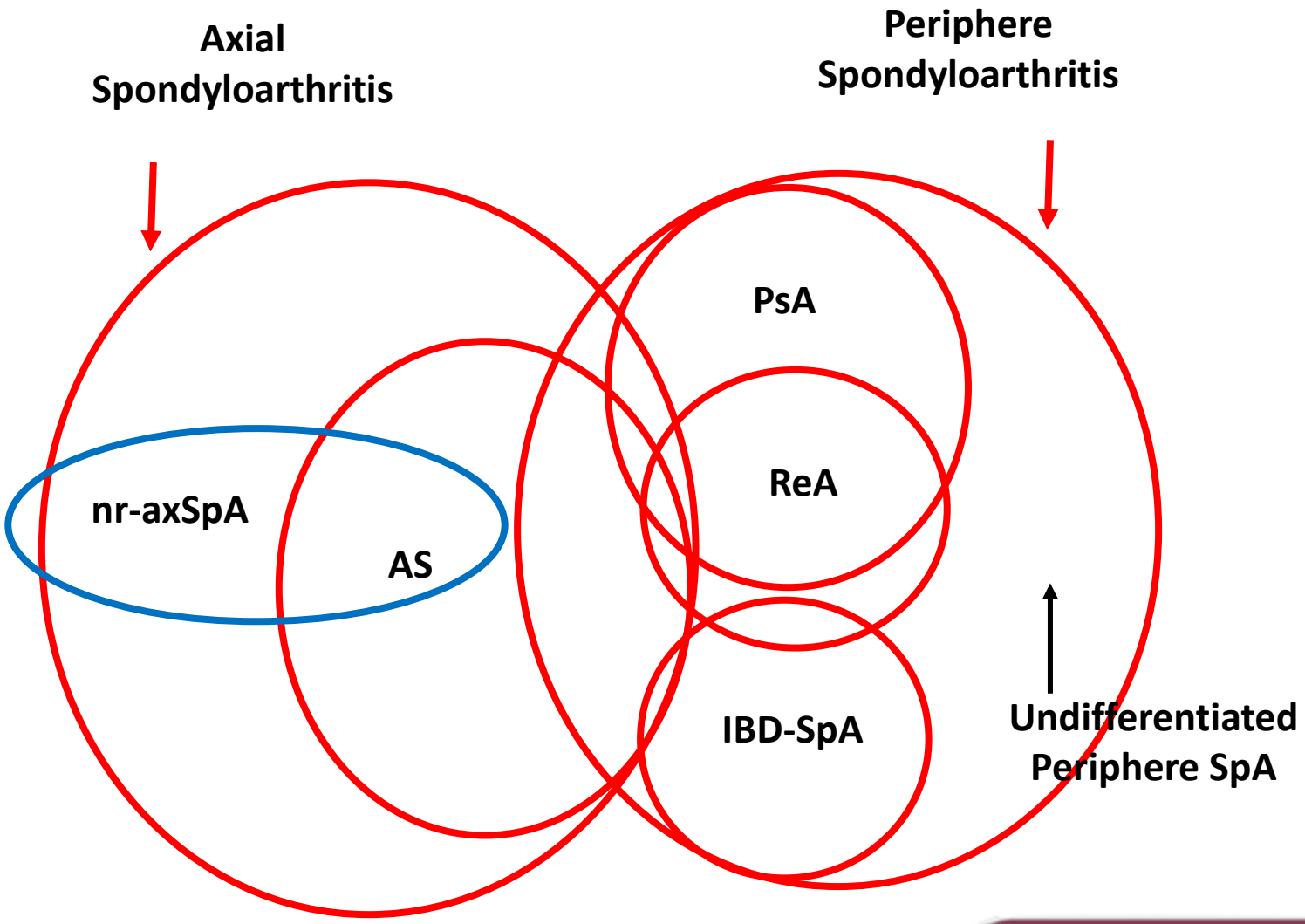
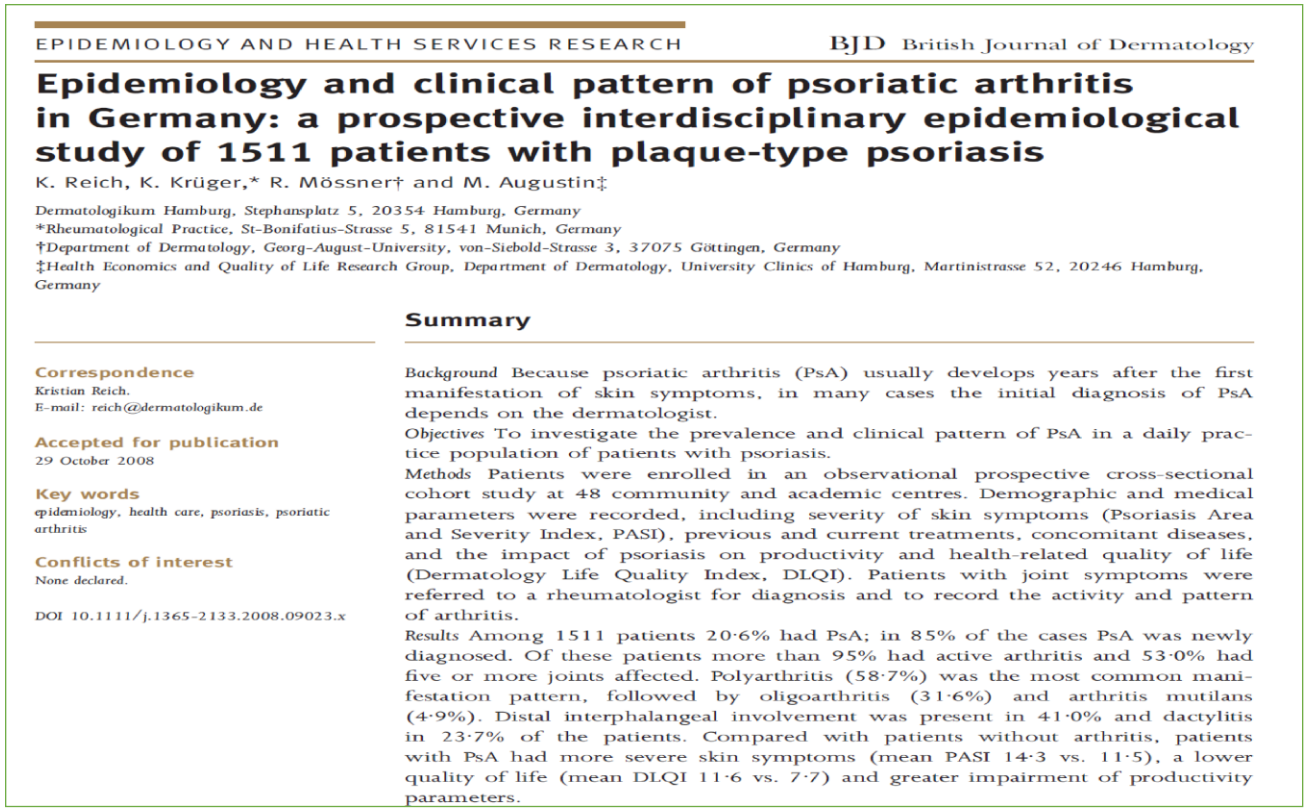


SpA IS MISSED

- Observational prospective cross-sectional cohort study at 48 community and academic centres in Germany
- 1511 patients with psoriasis
- Patients with joint symptoms were referred to a rheumatologist
- Among 1511 patients 20.6% had PsA → 85% newly Dx



EPIDEMIOLOGY AND HEALTH SERVICES RESEARCH

BJD British Journal of Dermatology

Epidemiology and clinical pattern of psoriatic arthritis in Germany: a prospective interdisciplinary epidemiological study of 1511 patients with plaque-type psoriasis

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Key words
epidemiology, health care, psoriasis, psoriatic arthritis

Conflicts of interest
None declared.

DOI 10.1111/j.1365-2133.2008.09023.x

Summary

Background Because psoriatic arthritis (PsA) usually develops years after the first manifestation of skin symptoms, in many cases the initial diagnosis of PsA depends on the dermatologist.
Objectives To investigate the prevalence and clinical pattern of PsA in a daily practice population of patients with psoriasis.
Methods Patients were enrolled in an observational prospective cross-sectional cohort study at 48 community and academic centres. Demographic and medical parameters were recorded, including severity of skin symptoms (Psoriasis Area and Severity Index, PASI), previous and current treatments, concomitant diseases, and the impact of psoriasis on productivity and health-related quality of life (Dermatology Life Quality Index, DLQI). Patients with joint symptoms were referred to a rheumatologist for diagnosis and to record the activity and pattern of arthritis.
Results Among 1511 patients 20·6% had PsA; in 85% of the cases PsA was newly diagnosed. Of these patients more than 95% had active arthritis and 53·0% had five or more joints affected. Polyarthritis (58·7%) was the most common manifestation pattern, followed by oligoarthritis (31·6%) and arthritis mutilans (4·9%). Distal interphalangeal involvement was present in 41·0% and dactylitis in 23·7% of the patients. Compared with patients without arthritis, patients with PsA had more severe skin symptoms (mean PASI 14·3 vs. 11·5), a lower quality of life (mean DLQI 11·6 vs. 7·7) and greater impairment of productivity parameters.

Ankylosing spondylitis

- Family medicine practice
- MRI?? → is very valuable

Good response to NSAIDs

Dealing with a Solvable Problem

Back Pain

- 80% of the population will experience back pain during their lifetime.
- More than 85% cannot attribute it to a specific disease or spinal abnormality.
- Up to one third (1/3) of patients report persistent back pain of at least moderate intensity 1 year after an acute episode.

Low Back Pain is caused by a specific disorder:

- Compression fracture
- Symptomatic herniated disc
- Spinal stenosis
- Ankylosing spondylitis (3%)
- Cancer
- Spinal infection

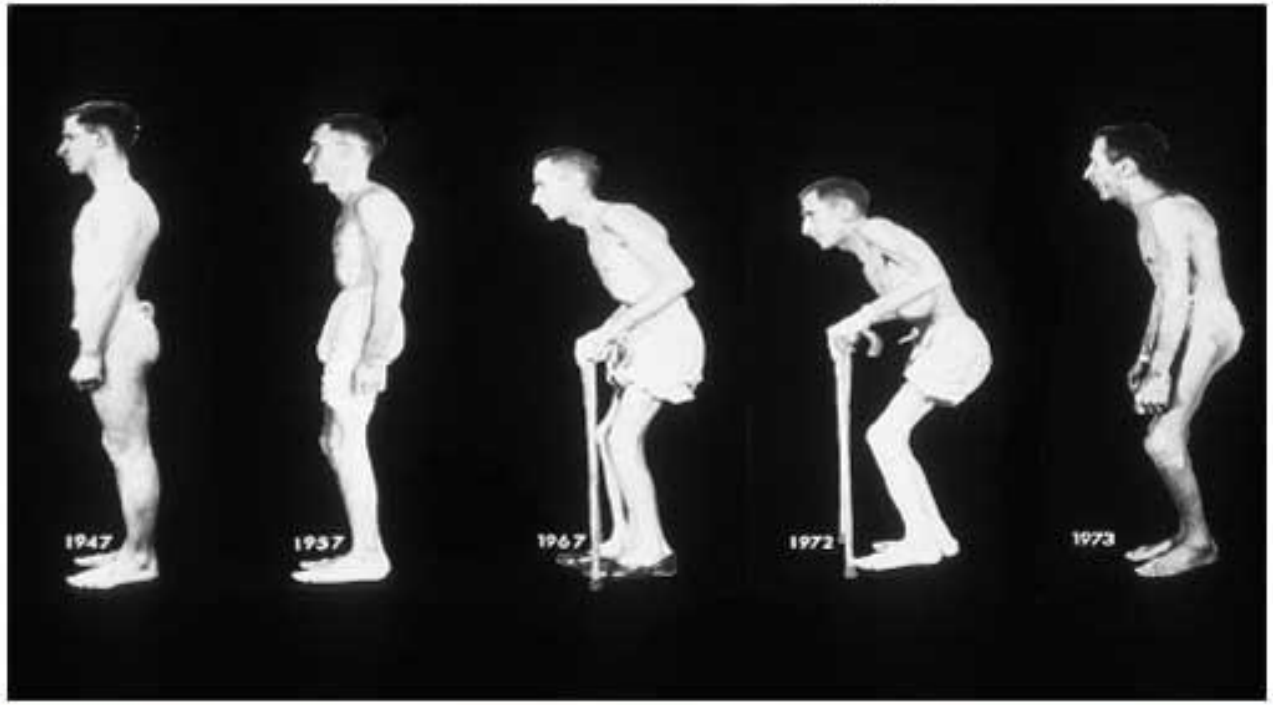
Physician role is to recognize **non-mechanical** cause

- Inflammation is bad
- ✓Inflammation is treatable

- Inflammation x Time = Damage

AS is progressive disease

Progressive deformity due to AS over a period of 36 years



Little H, Swinson DR, Cruickshank B. *Am J Med.* 1976;60:279-285.
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Modified New York Criteria for Ankylosing Spondylitis (1984)

1. Clinical criteria:

a.Low back pain and stiffness for more than 3 months which improves with exercise, but is not relieved by rest.

b.Limitation of motion of the lumbar spine in both the sagittal and frontal planes.

c.Limitation of chest expansion relative to normal values correlated for age and sex.

2. Radiological criterion:

Sacroiliitis grade ≥ 2 bilaterally or grade 3-4 unilaterally

Definite ankylosing spondylitis if the radiological criterion is associated with at least 1 clinical criterion.

van der Linden S et al. Arthritis Rheum 1984;27:361

NEW YORK CRITERIA

- MRI??
- Extra-articular features??
- HLA-B27

ASAS Classification Criteria for Spondyloarthritis (SpA)

In patients with ≥3 months back pain and age at onset <45 years

Sacroiliitis on imaging plus ≥1 SpA feature

OR

HLA-B27 plus ≥2 other SpA features

SpA features
- inflammatory back pain (IBP)
- arthritis
- enthesitis (heel)
- uveitis
- dactylitis
- psoriasis
- Crohn's/colitis
- good response to NSAIDs
- family history for SpA
- HLA-B27
- elevated CRP

Sensitivity: 79.5%, Specificity: 83.3%; n=975

In patients with peripheral symptoms ONLY

Arthritis or enthesitis or dactylitis

plus

≥1 SpA feature
- uveitis
- psoriasis
- Crohn's/colitis
- preceding infection
- HLA-B27
- sacroiliitis on imaging

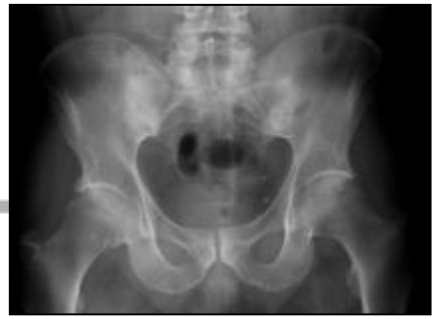
OR

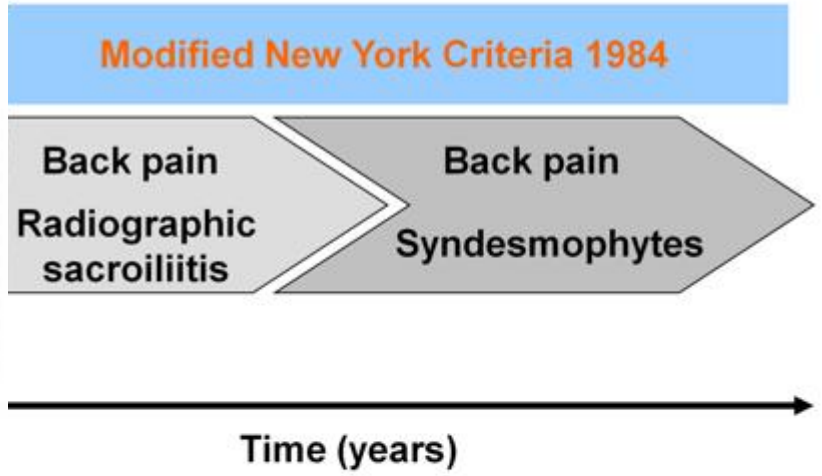
≥2 other SpA features
- arthritis
- enthesitis
- dactylitis
- IBP ever
- family history for SpA

Rudwaleit M et al. Ann Rheum Dis 2011;70:25-31 (with permission)

ASAS

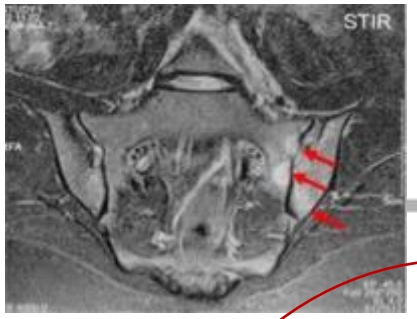
Axial Spondyloarthritis

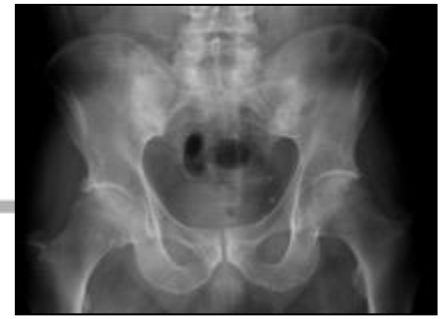


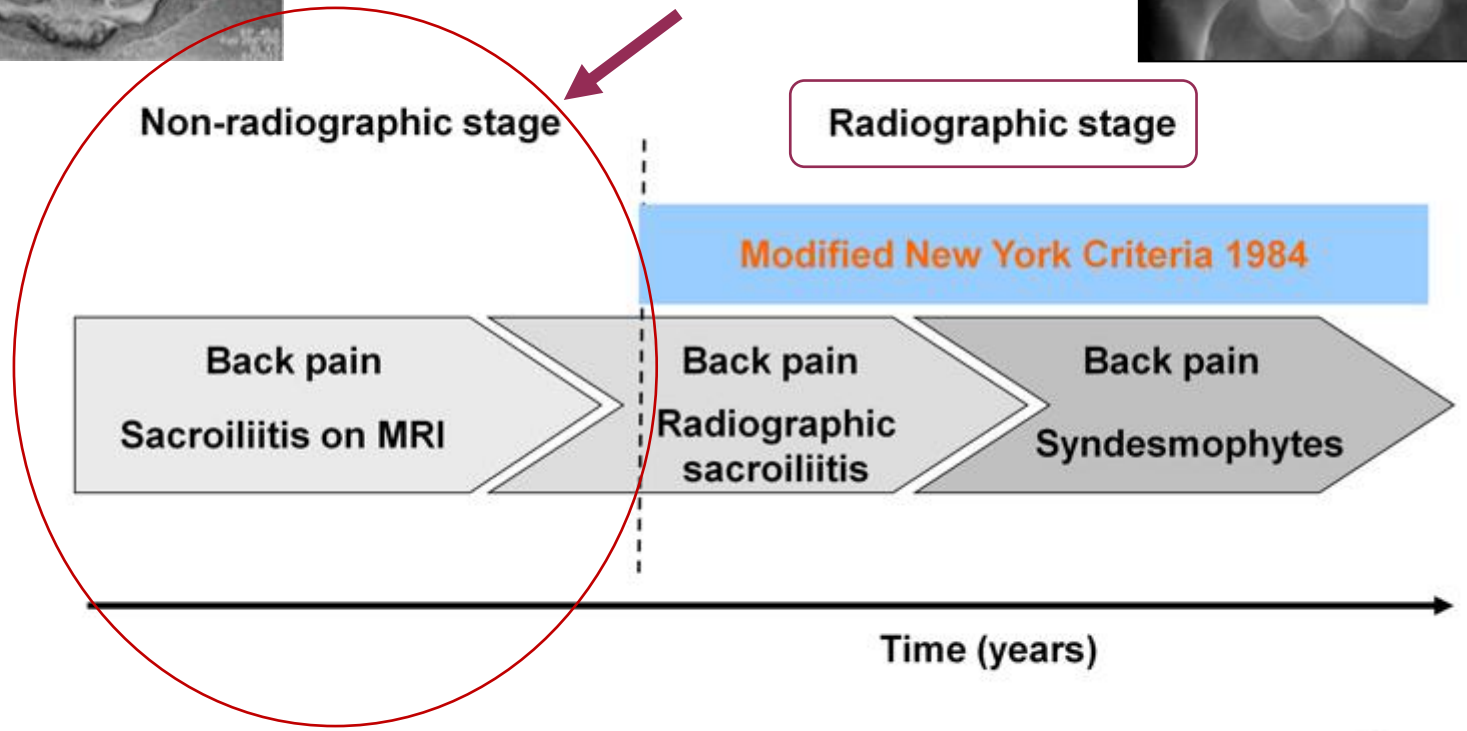


Rudwaleit M et al. Arthritis Rheum 2005;52:1000-8 (with permission)

Axial Spondyloarthritis



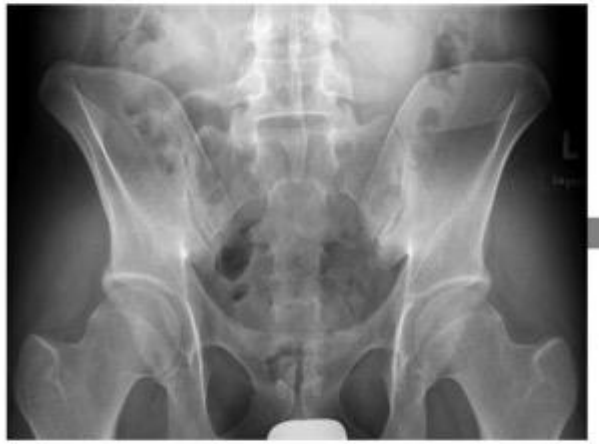




Rudwaleit M et al. Arthritis Rheum 2005;52:1000-8 (with permission)

Progression of Non-radiographic Axial SpA to AS: Data from GESPIC*

Non-radiographic axial SpA

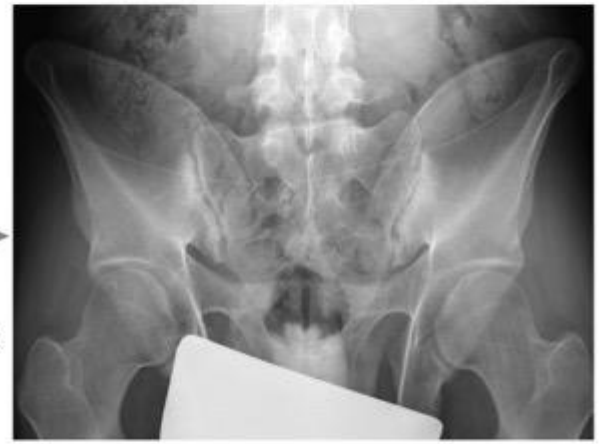


no definite radiographic sacroiliitis (grade 0 at the right side, grade 1 – possible subchondral sclerosis – at the left side)

12%
in 2 years

Main predictor:
elevated CRP**

Ankylosing spondylitis



definite radiographic sacroiliitis (grade 2 bilaterally) fulfilling the radiographic criterion of the modified New York criteria

*GESPIC = GErman Spondyloarthritis Inception Cohort

**Odds ratio for progression in patients with elevated serum C-reactive protein level (>6 mg/l) was: 4.11 (95% CI 1.13-14.95).

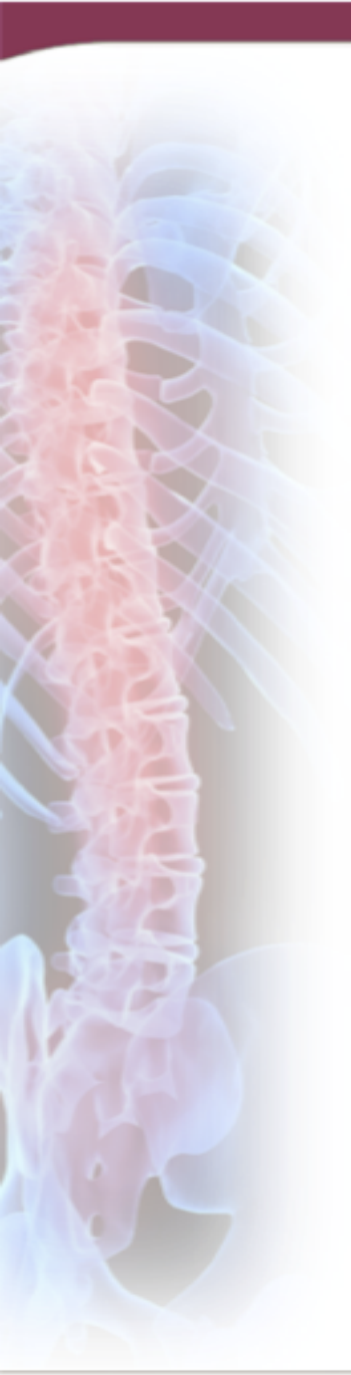
Poddubnyy D et al. Ann Rheum Dis 2011;70:1369-74

Back Pain

Comparison of inflammatory back pain (IBP) and chronic mechanical back pain (MBP)

IBP	MBP
Age of onset <40 years	Age of onset: any age
Insidious onset; less likely to be acute	Variable onset; may be acute
Pain improves with exercise	Pain may worsen with movement
Pain does not improve with rest	Pain often improves with rest
Morning stiffness >30 minutes*	
Pain at night which may wake patient during second half of the night	

This Back in Focus resource was developed in collaboration with Claire Harris, Susan Gurden, Dr Jane Martindale, Claire Je ries and organized and funded by AbbVie.
Date of Preparation: August 2015 Job Code: AXHUR150732

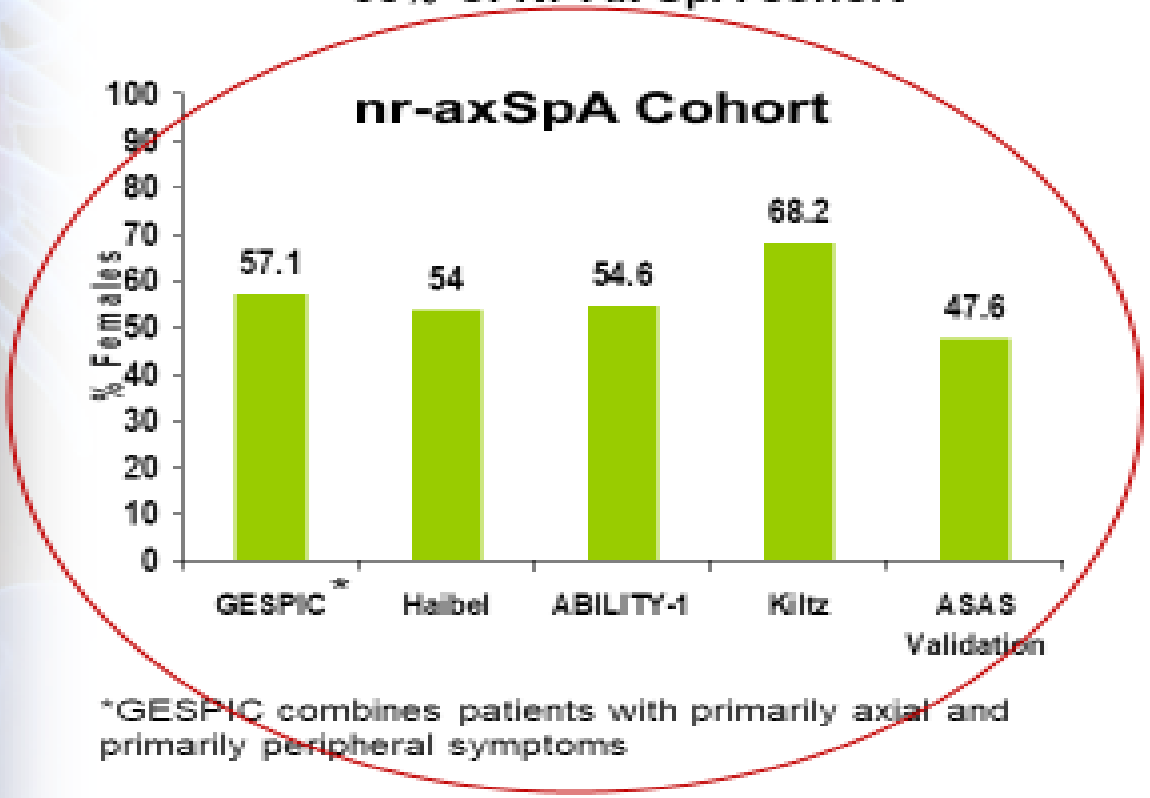


M vs F

(♀ : ♂)

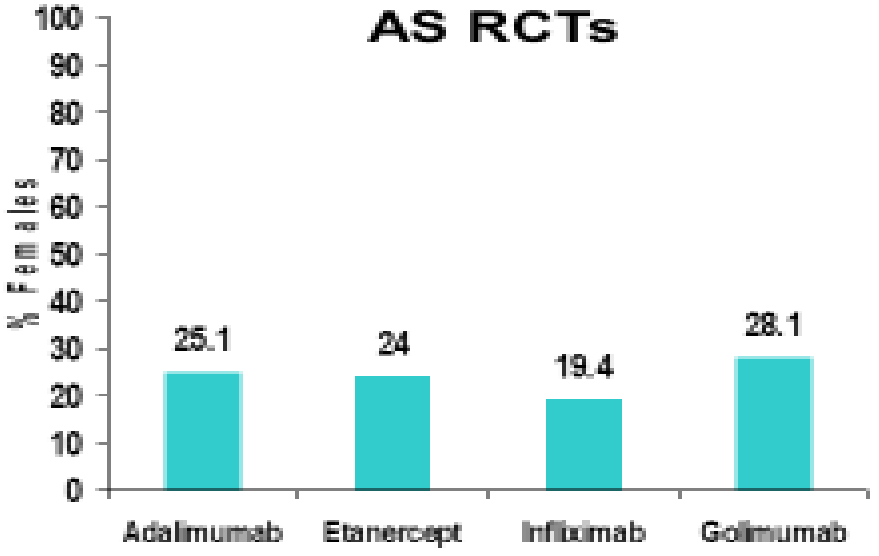
Percent of Female in Nr-Ax SpA Cohorts & AS Clinical Studies:

- Female gender generally >50% of Nr-Ax SpA cohort



*GESPIC combines patients with primarily axial and primarily peripheral symptoms

- Male gender more common in AS study populations

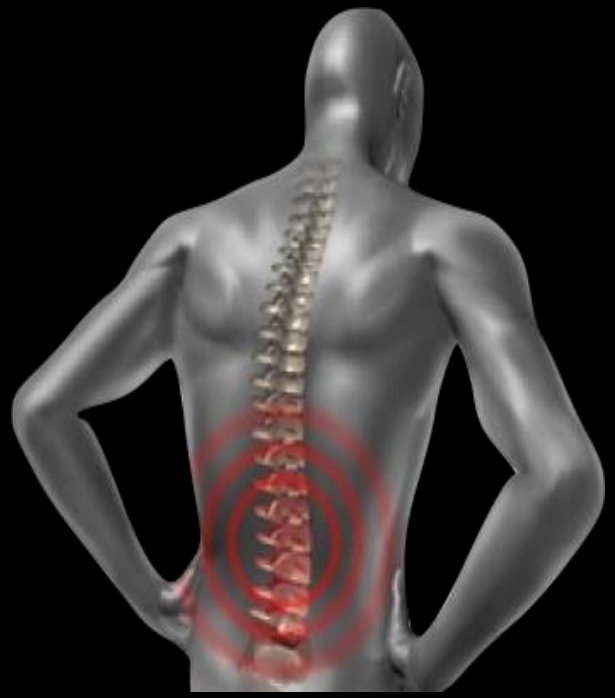


1. Rudwaleit. Arthritis Rheum. 2009;60(3)717–727.
2. Haibel et al. Arthritis Rheum 2008;58(7):1981-91.
3. Sieper et al. ACR 2011. Tuas2486A.
4. Kiltz et al. EULAR 2011 FRI 0529.
5. Rudwaleit et al Ann Rheum Dis 2009;68:777-783.

1. Adalimumab: van der Heijde et al. Arthritis Rheum. 2006;54:2136-2146
2. Etanercept:: Davis et al. Arthritis Rheum. 2003;48:3230-3236
3. Infliximab: van der Heijde et al. Arthritis Rheum. 2005;52:582-591
4. Golimumab: Inman et al. Arthritis Rheum 2008 Nov;58(11):3402-12

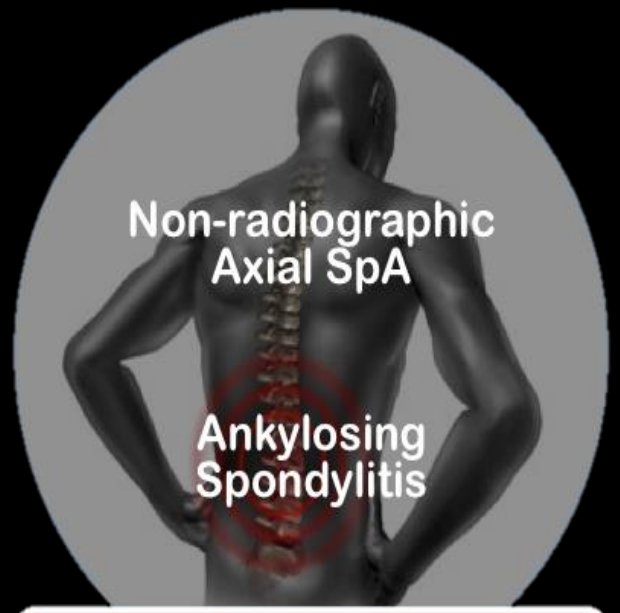
Spondyloarthropathies – SpA

Is it only SPINE?



Updated ASAS Concept of Spondyloarthritis (SpA)

Groups Diseases into 2 Broad Overlapping Categories



Predominately Axial SpA

Predominately Peripheral SpA

van den Berg R, et al. Polskie Archiwum Medycyny Wewnętrznej. 2010;120(11):452-457.

Predominately Axial SpA

Inflammatory Back Pain

In patients with chronic back pain (>3 months), IBP criteria are fulfilled if at least 4 out of 5 parameters are present:

I P A I N

Insidious onset

No improvement with rest

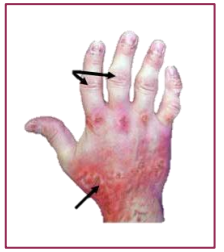
Pain at night

Age at onset <45 years

Improvement with exercise

An **insidious** disease is any disease that comes on slowly and does not have obvious symptoms at first. The person is not aware of it developing.

Extra-articular Manifestations



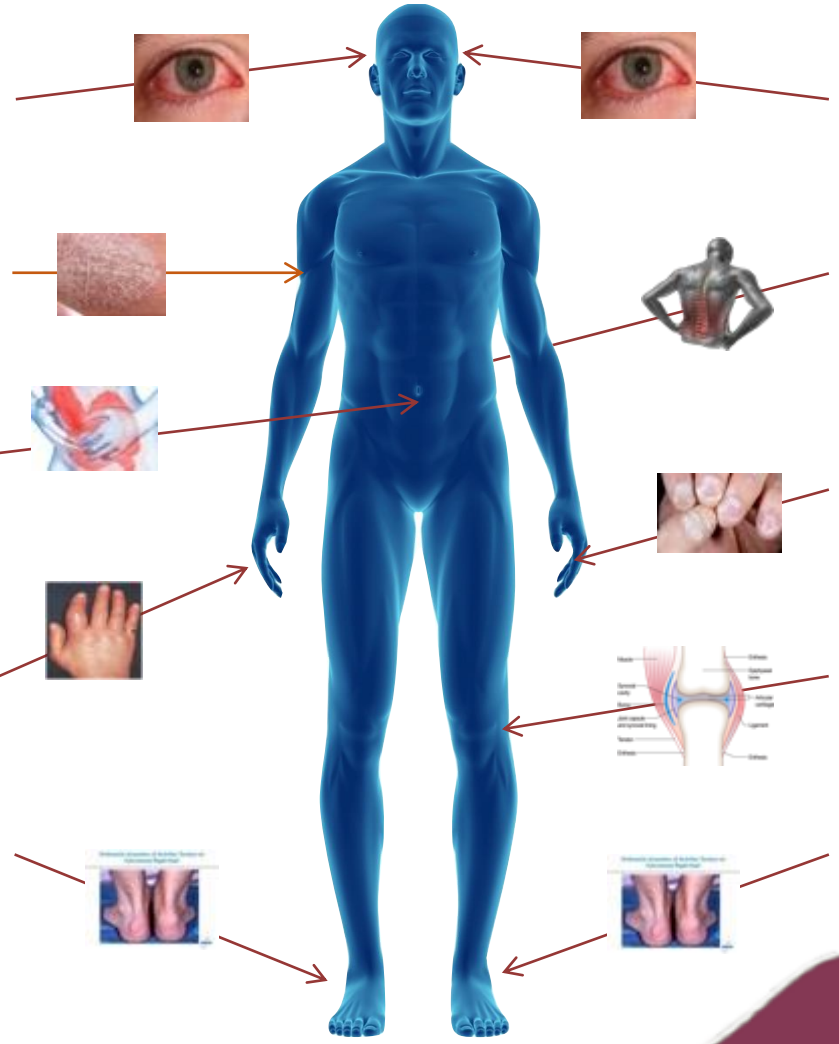
Uveitis
25-40% of patients affected

Psoriasis
16% of patients affected

Inflammatory bowel Disease (IBD)
10% of patients affected
(UC & CD)

Dactylitis
21.5% of patients affected

Enthesitis
25-58% of patients affected



Uveitis
25% of patients affected

Axial Disease
40% of patients affected

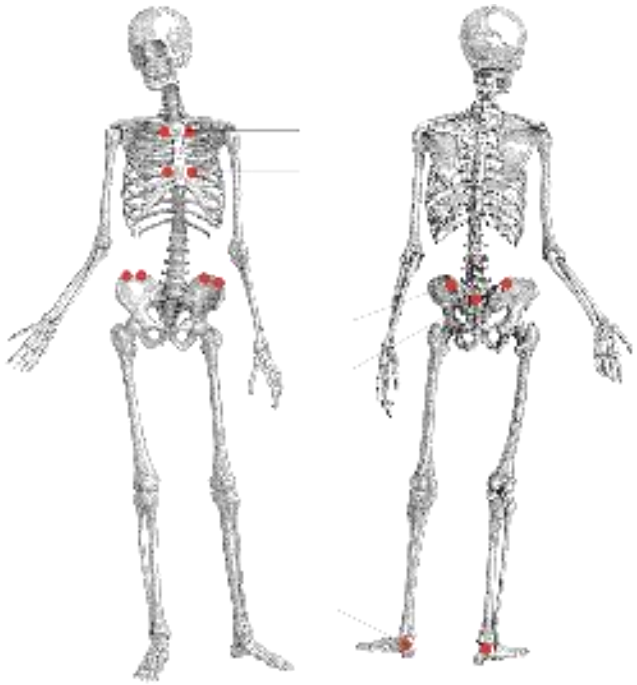
Nail Psoriasis
80-90% of patients affected at some point

Synovial joint involvement

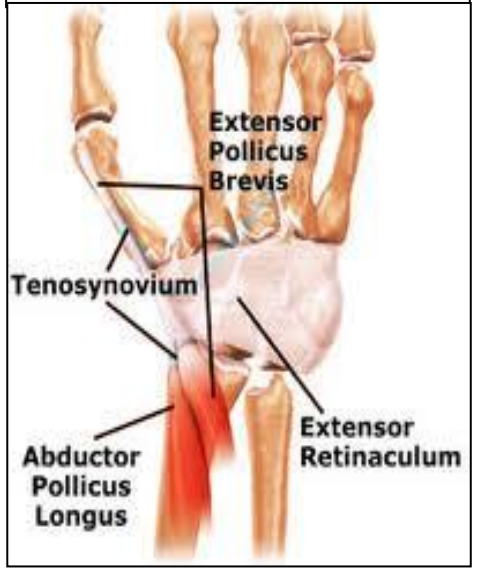
Enthesitis
20% of patients affected

Heel Pain - Enthesitis

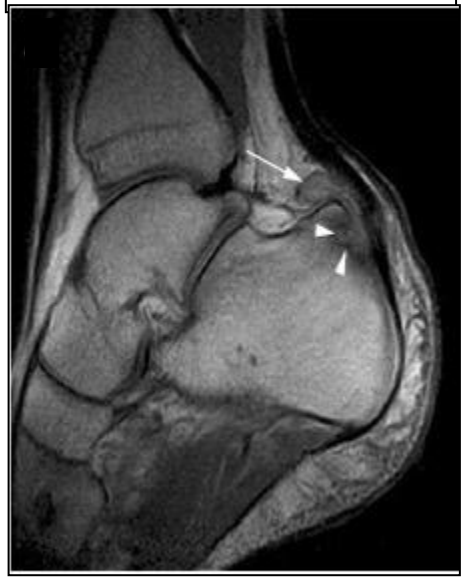
- Enthesitis is inflammation of Entheses.
  - ✓ Entheses are sites where tendons, ligaments, joint capsules, or fascia attach to bone.
- Heel Enthesitis is most common.



Tenosynovitis Enthesitis

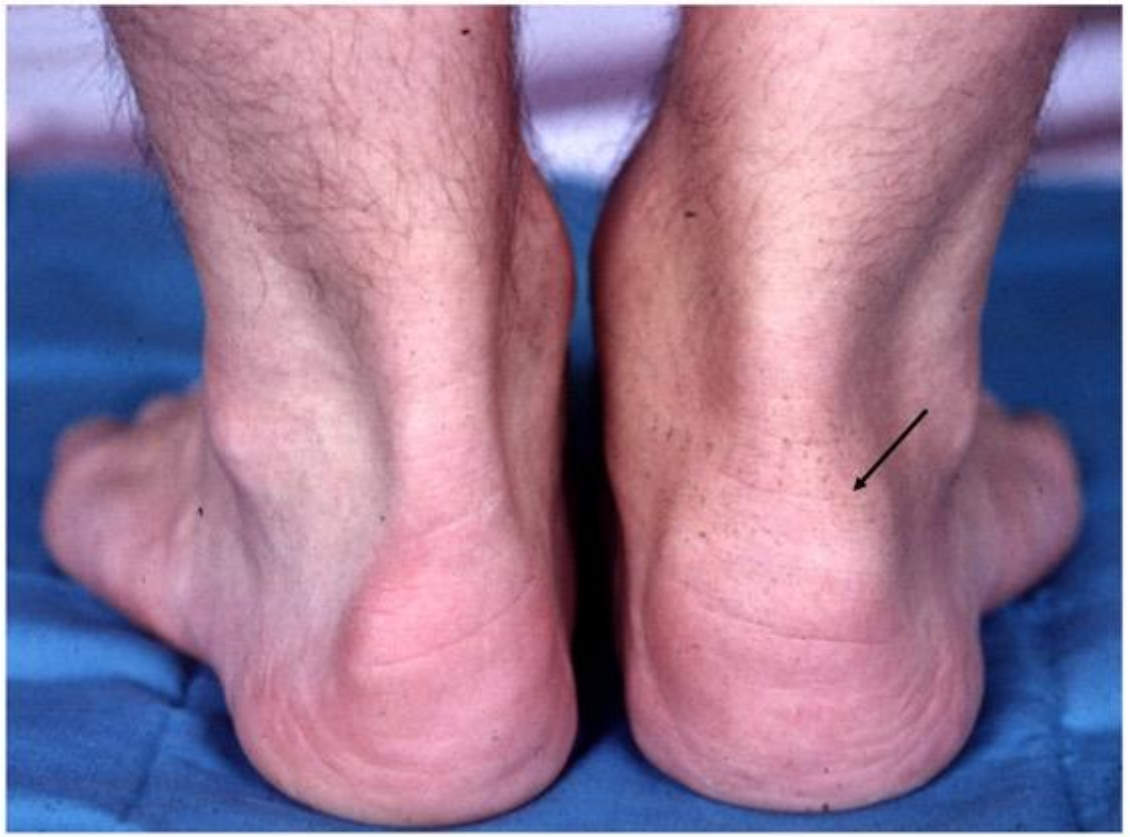


Achilles heel Enthesitis



Eshed I, et al. Ann Rheum Dis 2007;66:1553–9

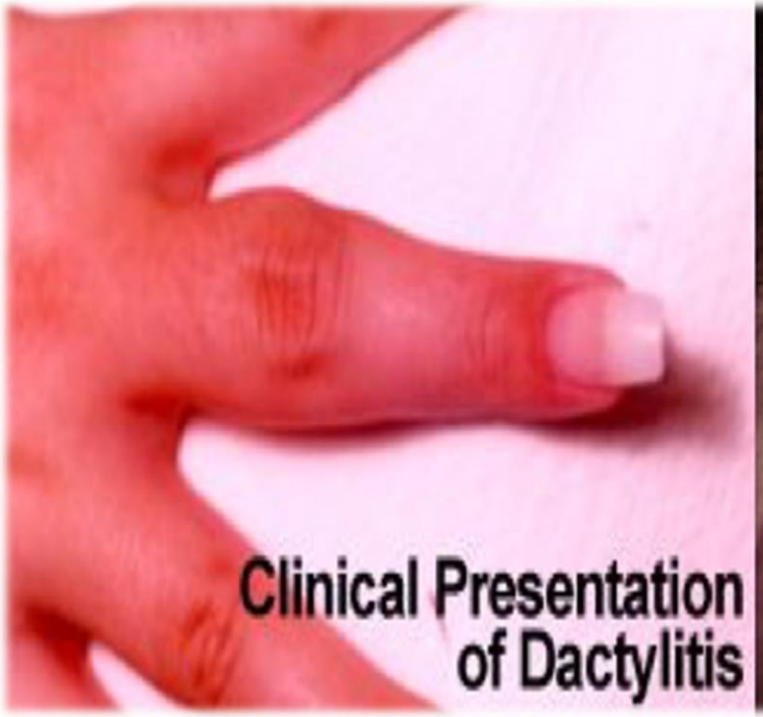
Enthesitis (Insertion of Achilles Tendon at Calcaneus) Right Heel

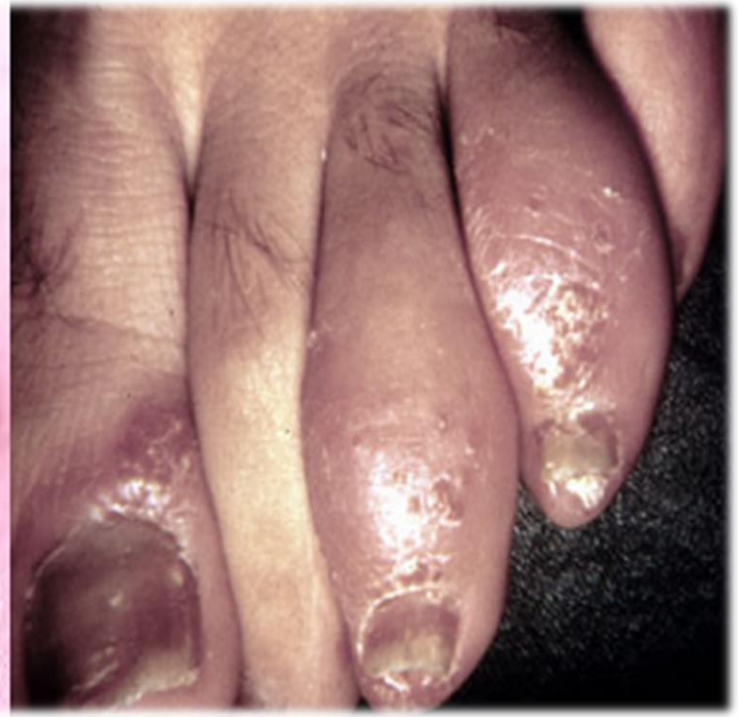


ASAS

25-58% of patients affected

Dactylitis

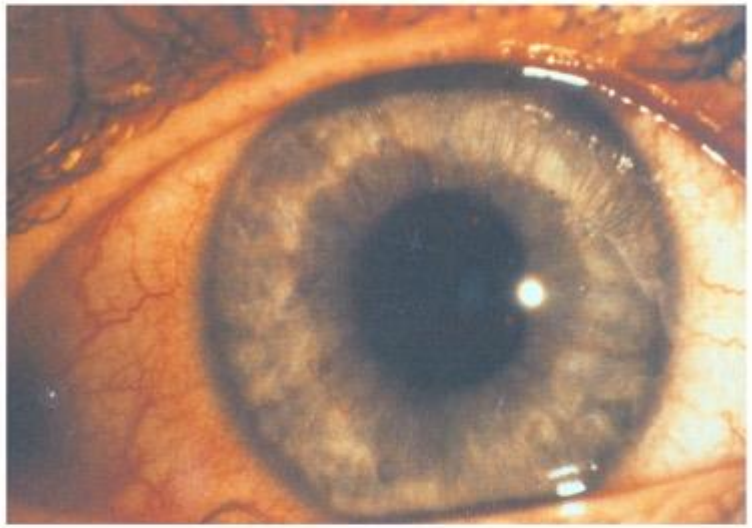




21.5% of patients affected

Eye: Acute Anterior Uveitis in Spondyloarthritis

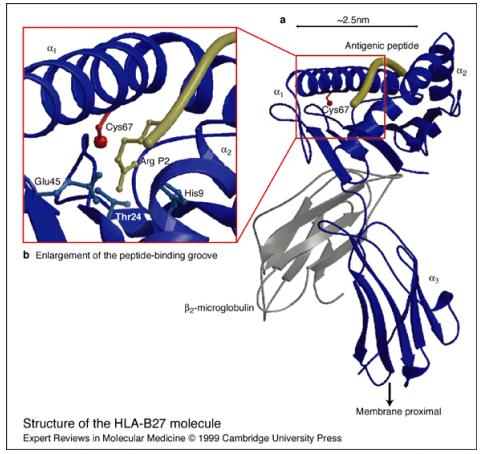
- Acute onset
- Unilateral
- Anterior
- Spontaneous remission
- Recurrent
- Related to HLA B27



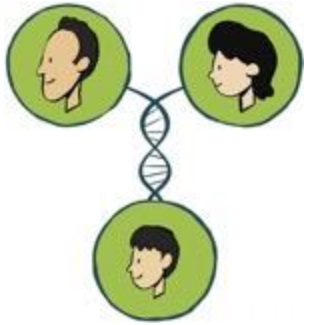
25-40% of patients affected

ESR & C-reactive protein

- ✓ Levels are increased up to 70% in most As. Patient.
- ✓ No relation with disease activity.
- ✓ If ESR or CRP is normal this doesn't reflect that there is no AS.

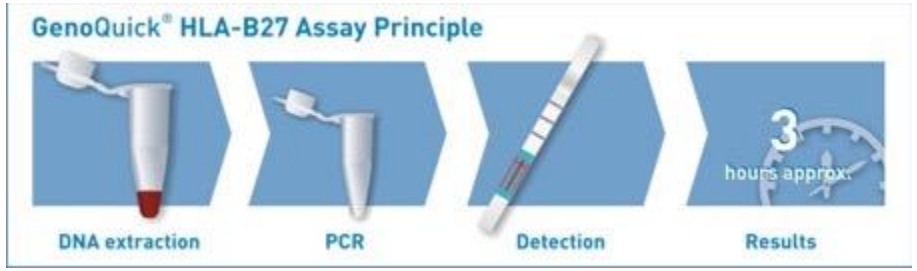


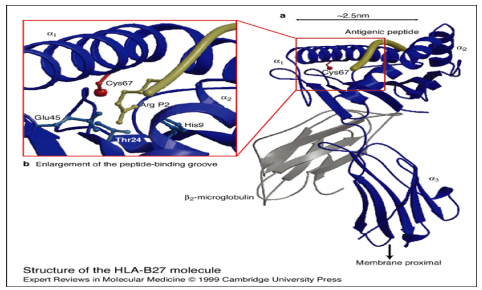
Structure of the HLA-B27 molecule
Expert Reviews in Molecular Medicine © 1999 Cambridge University Press



HLA-B27

- ✓ 90% to 95% of AS patient.
- ✓ Is neither necessary nor sufficient for the diagnosis of patient that their history and physical examination suggest AS.
- ✓ If the radiographic finding is not clear the lab, Test may be confirmatory.





Structure of the HLA-B27 molecule
Expert Reviews in Molecular Medicine © 1999 Cambridge University Press

HLA-B27

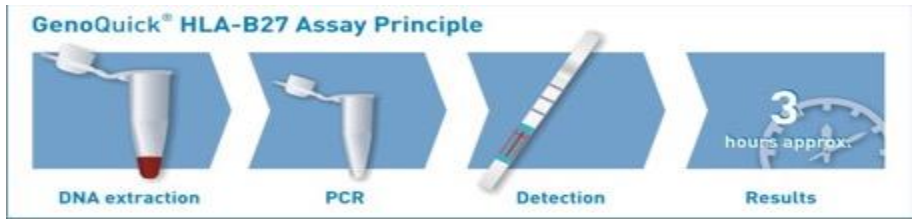
Prevalence of HLA-B27 in the general population and in patients with axial spondyloarthritis in Saudi Arabia.

Omair MA[1], AlDuraibi FK[2], Bedaiwi MK[3], Abdulaziz S[4], Husain W[5], El Dessougi M[6], Alhumaidan H[7], Al Khabbaz HJ[8], Alahmadi I[9], Omair MA[10], Al Saleh S[2], Alismael K[11], Al Awwami M[12].

Author information

Abstract

The prevalence of HLA-B27 in the general population and in axial spondyloarthritis (axSpA) patients in Saudi Arabia is unknown. The aim of this study was to evaluate the prevalence of HLA-B27 in these two populations and describe the delay in diagnosis of axSpA patients. The prevalence of HLA-B27 in the general population was evaluated using cord blood and healthy organ transplant donor databases. Data from patients with axSpA were collected retrospectively from five centers. Ankylosing spondylitis (AS) was diagnosed based on a positive X-ray, as evaluated by two independent readers. Patients with inflammatory bowel disease and psoriasis were excluded. A total of 134 axSpA patients were included, of whom 107 (79.9%) had AS, and most (67.2%) were males. HLA-B27 was positive in 60.4, 69, and 25.9% of patients with axSpA, AS, and non-radiographic axSpA (nr-axSpA), respectively. The median and interquartile range (IQR) ages at symptom onset and disease diagnosis were 26 (20-33) and 30 (25-38) years, respectively. The median delay to diagnosis was 3 (1-6) years. There was a negative correlation between the time of onset of symptoms and the delay in diagnosis ($r = -0.587$). Male gender and HLA-B27 positivity were associated with a younger age at symptom onset/diagnosis ($p < 0.05$). HLA-B27 was positive in 82/3332 (2.5%) and 27/1164 (2.3%) individuals in the cord blood and healthy organ transplant donor databases, respectively. The prevalence of HLA-B27 is lower in the general Saudi population and in axSpA patients compared to Caucasians, thus, limiting its utility as a diagnostic criterion.



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2. Radiological criterion:

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Definite ankylosing spondylitis if the radiological criterion is associated with at least 1 clinical criterion.

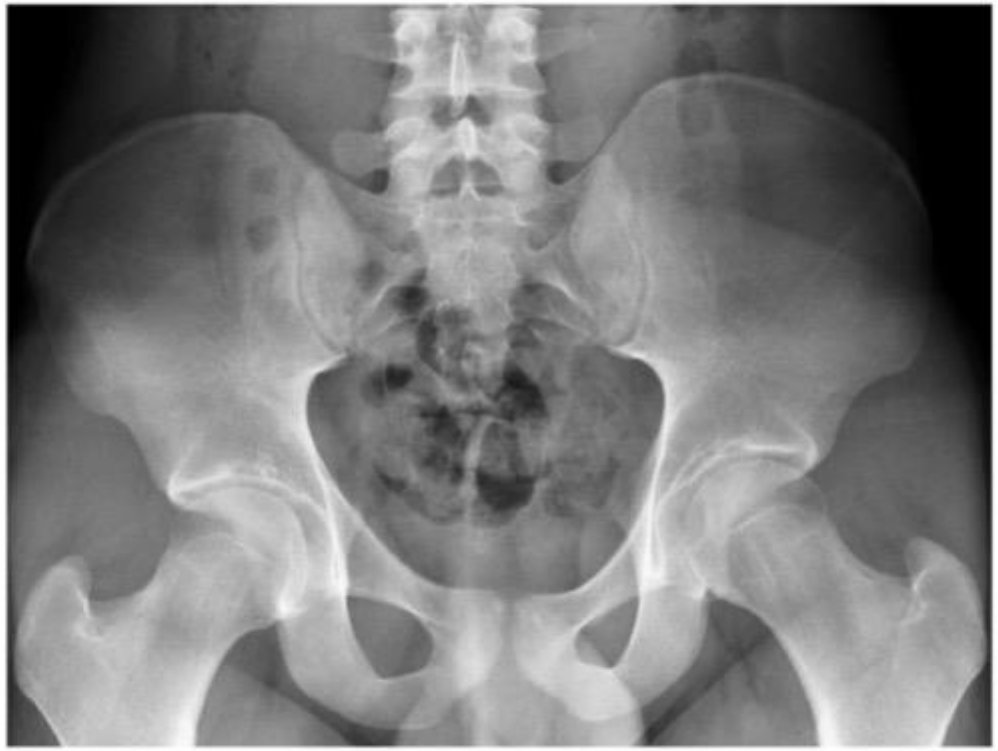
van der Linden S et al. Arthritis Rheum 1984;27:361

Grading of Radiographic Sacroiliitis (1966)

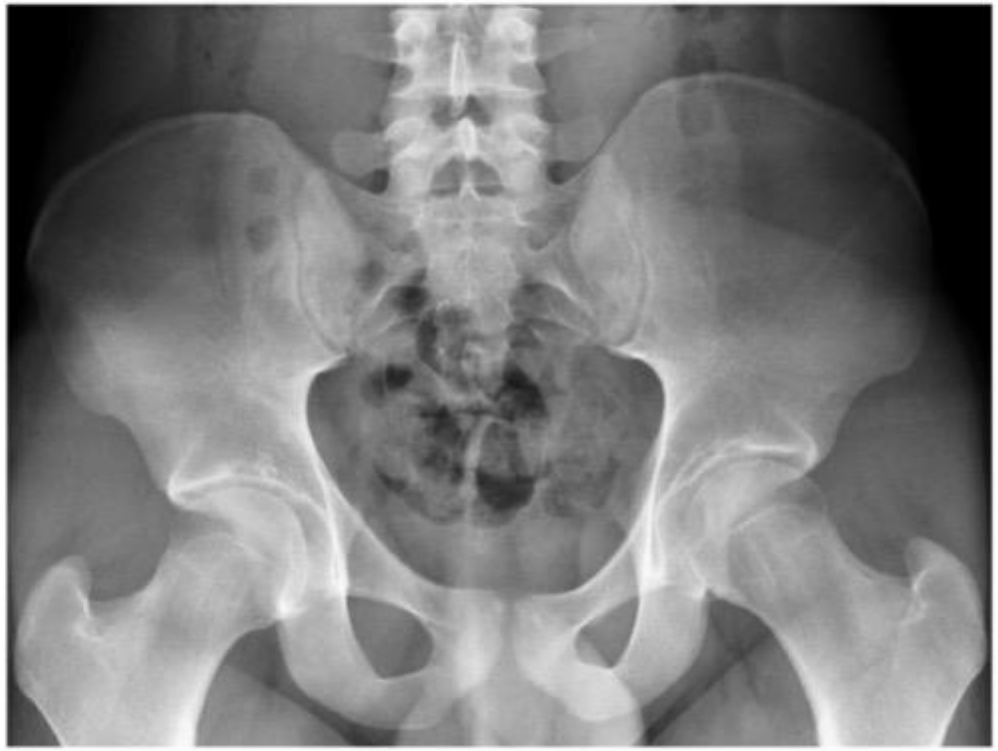
- **Grade 0** normal
- **Grade 1** suspicious changes
- **Grade 2** minimal abnormality – small localized areas with erosion or sclerosis, without alteration in the joint width
- **Grade 3** unequivocal abnormality – moderate or advanced sacroiliitis with one or more of: erosions, evidence of sclerosis, widening, narrowing, or partial ankylosis
- **Grade 4** severe abnormality – total ankylosis

Bennett PH, Burch TA: Amsterdam.Excerpta Medica Foundation International Congress Series 148, 1966:456-457

Sacroiliitis Grade



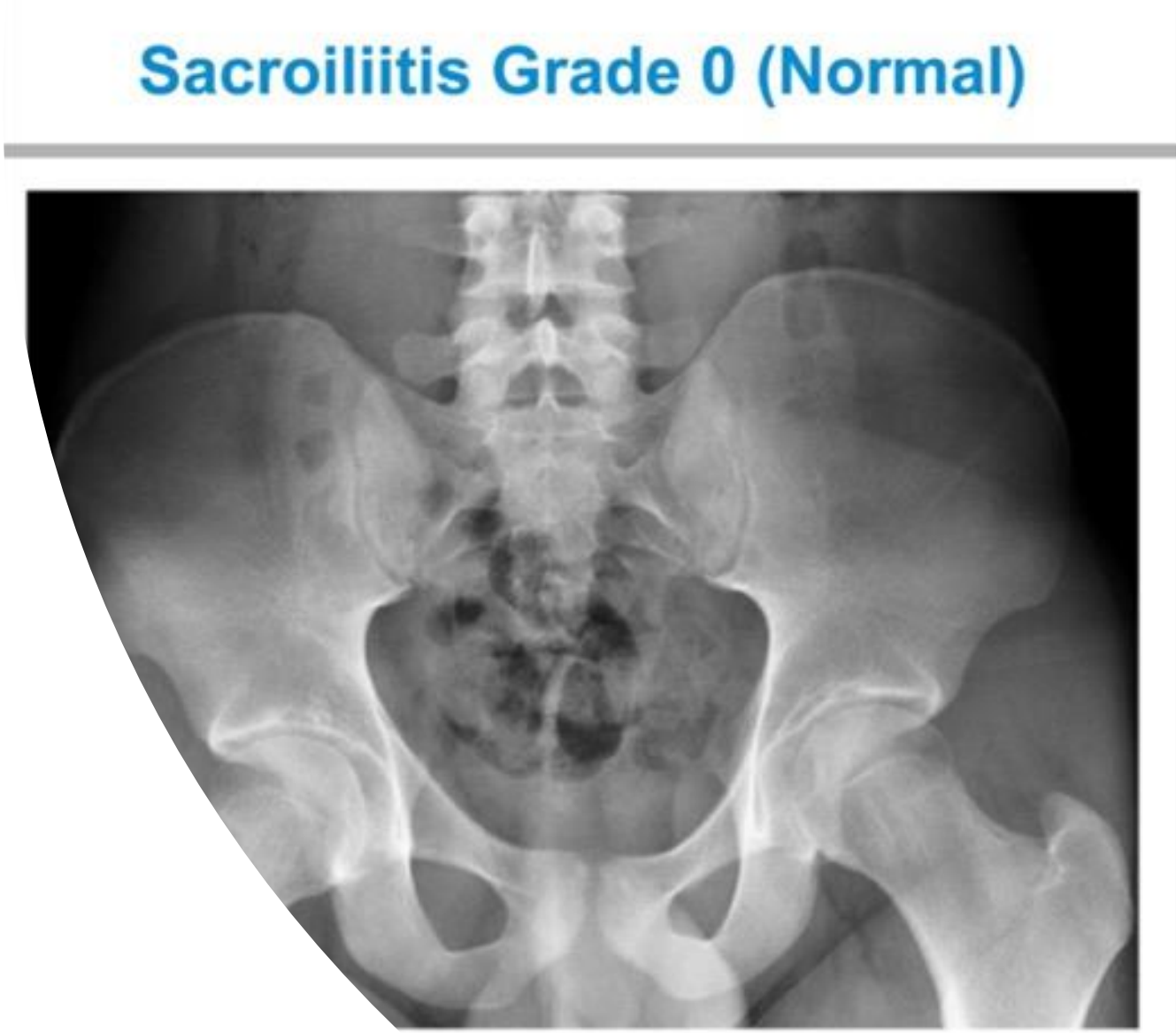
Sacroiliitis Grade 0 (Normal)



Q

- 22 y.o male.
- Inflammatory back pain for a year.
- Recurrent iritis.
- Family Hx of SpA
- Good response to NSAIDs

- **What's the diagnosis**
- **Whats the next step?**



ASAS Classification Criteria for Spondyloarthritis (SpA)

In patients with ≥3 months back pain and age at onset <45 years

Sacroiliitis on imaging plus ≥1 SpA feature

OR

HLA-B27 plus ≥2 other SpA features

SpA features
- inflammatory back pain (IBP)
- arthritis
- enthesitis (heel)
- uveitis
- dactylitis
- psoriasis
- Crohn's/colitis
- good response to NSAIDs
- family history for SpA
- HLA-B27
- elevated CRP

Sensitivity: 79.5%, Specificity: 83.3%; n=975

In patients with peripheral symptoms ONLY

Arthritis or enthesitis or dactylitis

plus

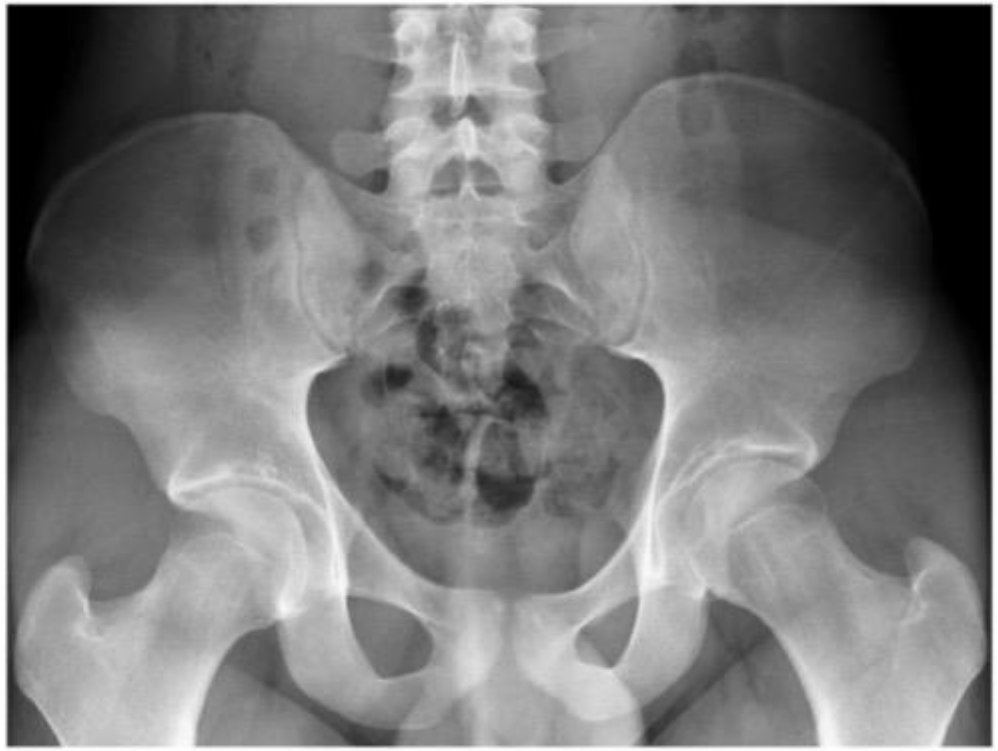
≥1 SpA feature
- uveitis
- psoriasis
- Crohn's/colitis
- preceding infection
- HLA-B27
- sacroiliitis on imaging

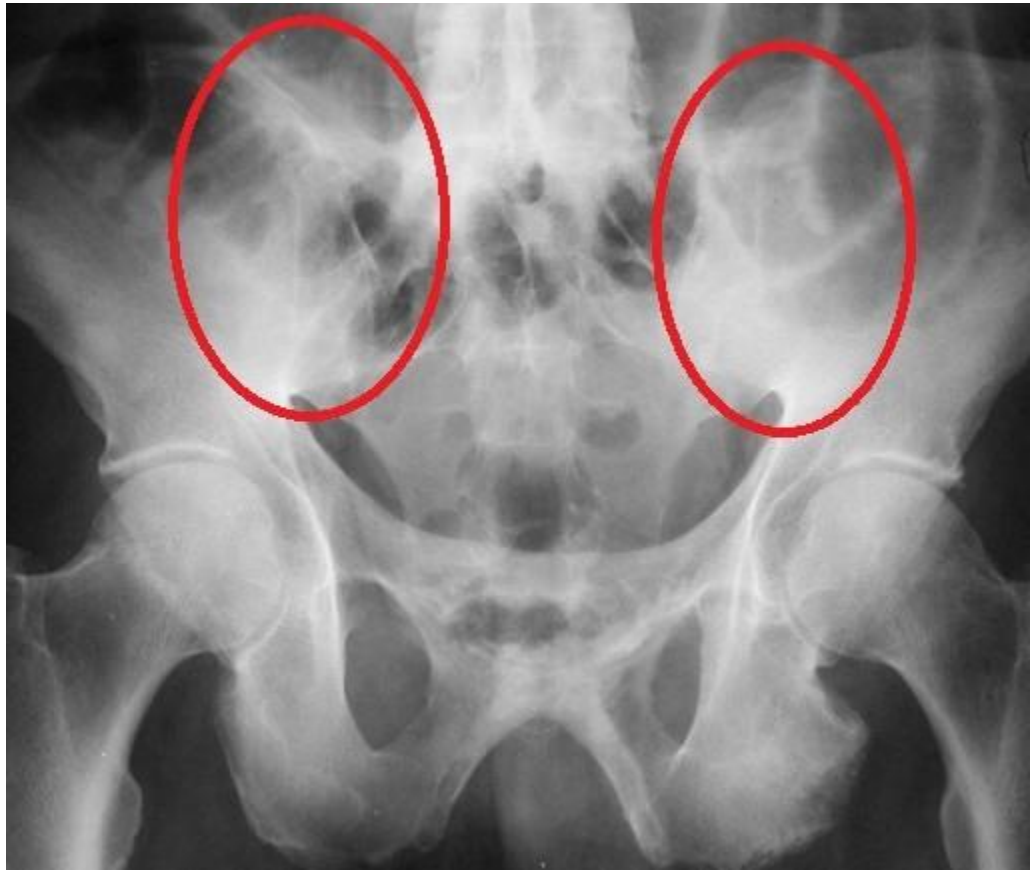
OR

≥2 other SpA features
- arthritis
- enthesitis
- dactylitis
- IBP ever
- family history for SpA

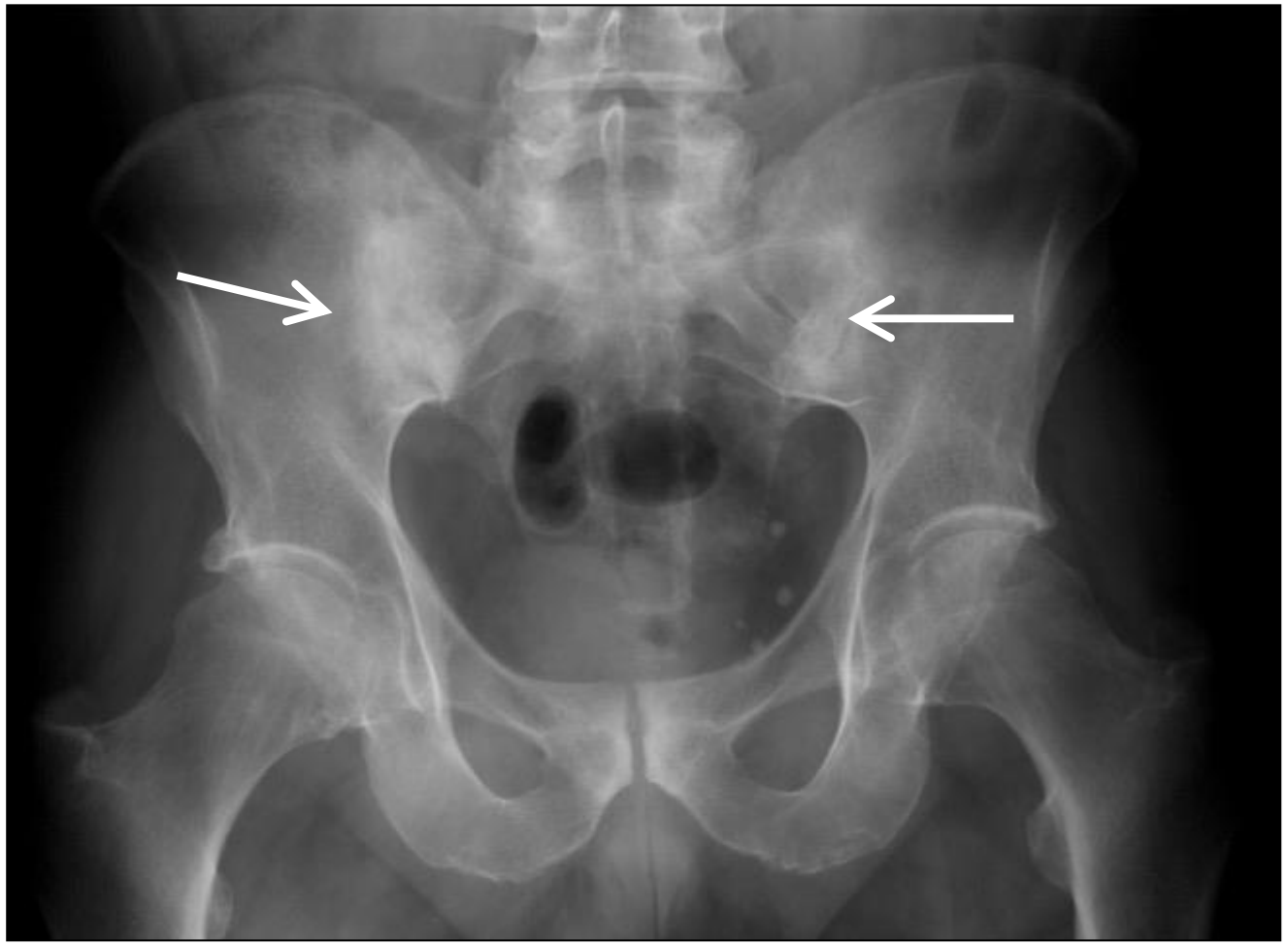
Rudwaleit M et al. Ann Rheum Dis 2011;70:25-31 (with permission)

Sacroiliitis Grade 0 (Normal)





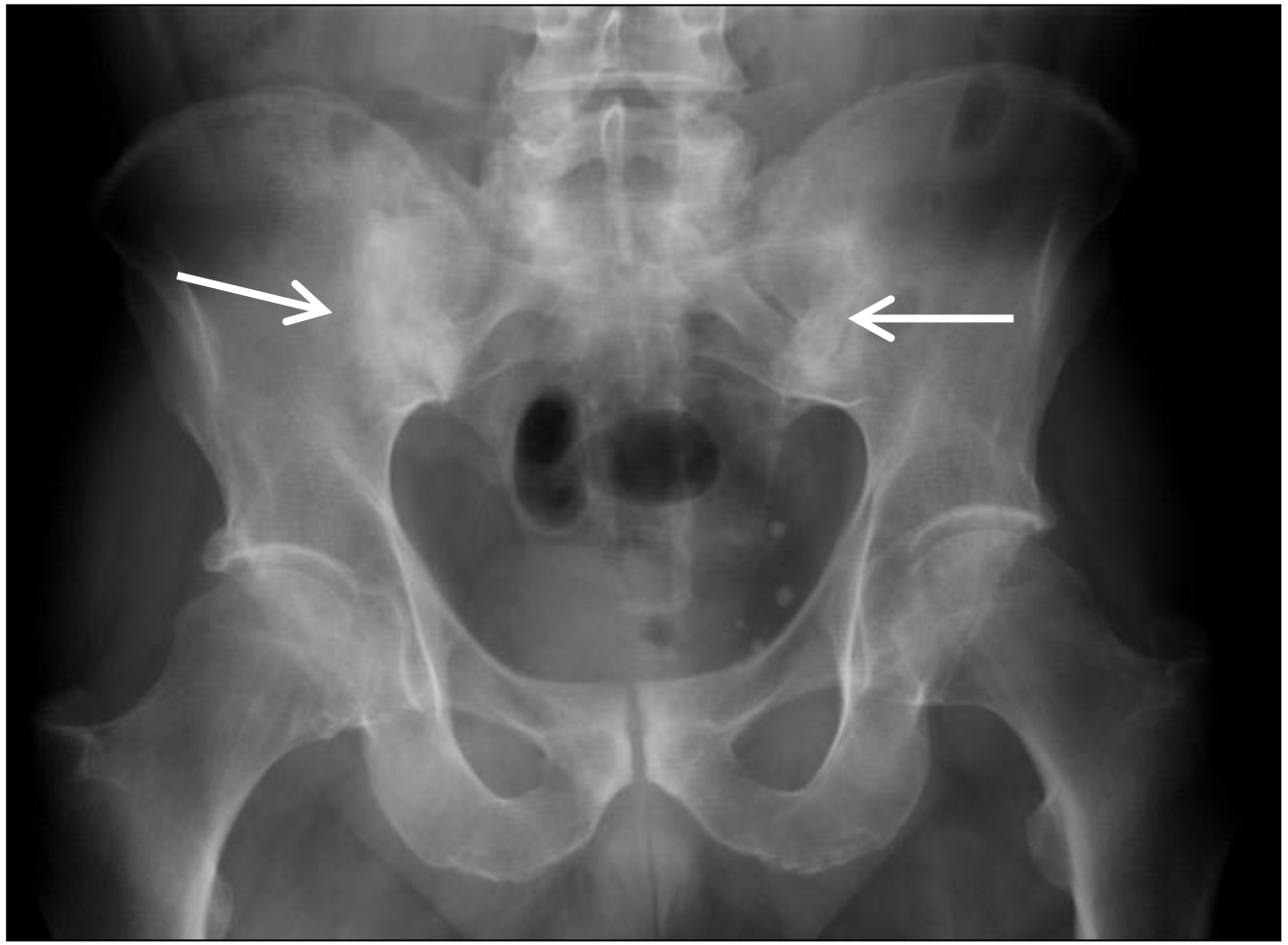
Bilateral Grade Radiographic Sacroiliitis:
Bony Changes
Inflammation is not Visible on Plain X-ray



Arrows point to sacroiliac (SI) joints

***Note loss of the clear SI joint line and "fluffy" white area surrounding both SI joints**

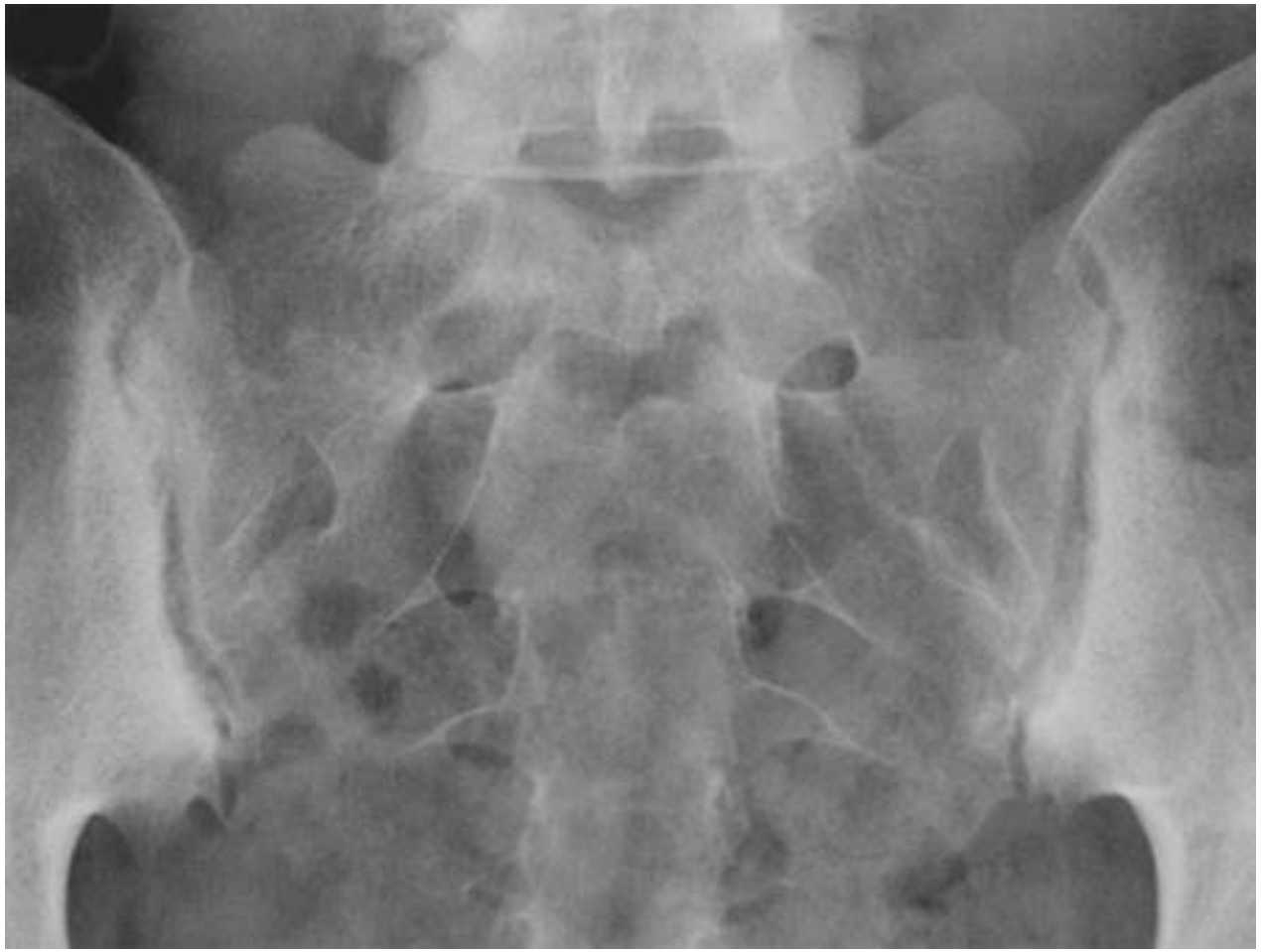
Bilateral Grade 3 Radiographic Sacroiliitis:
Bony Changes
Inflammation is not Visible on Plain X-ray



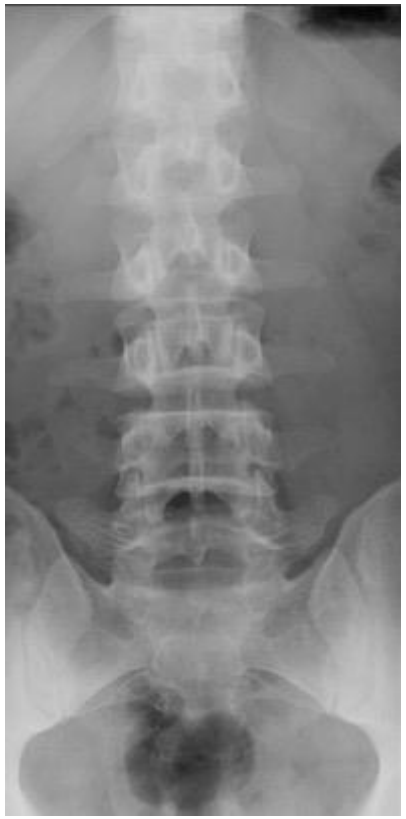
Arrows point to sacroiliac (SI) joints

***Note loss of the clear SI joint line and "fluffy" white area surrounding both SI joints**

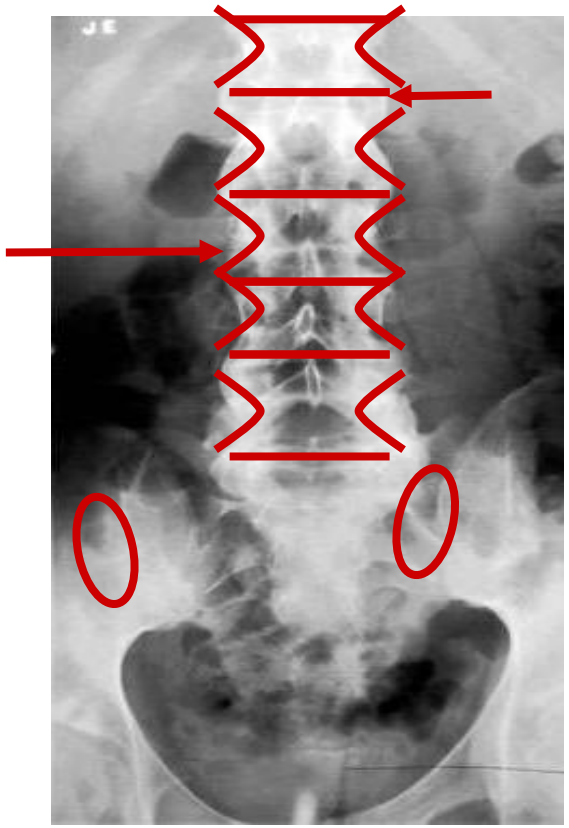
Bilateral Grade Radiographic Sacroiliitis:
Bony Changes

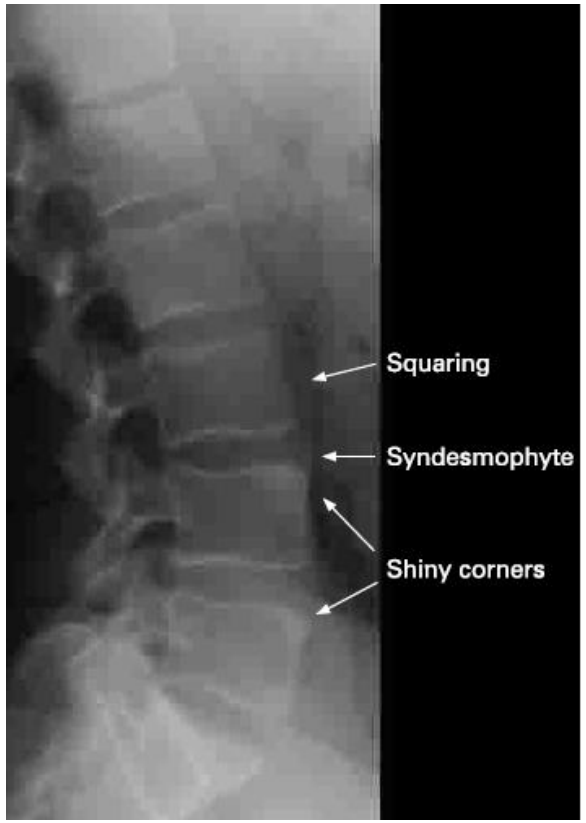


Spondylitis



Normal



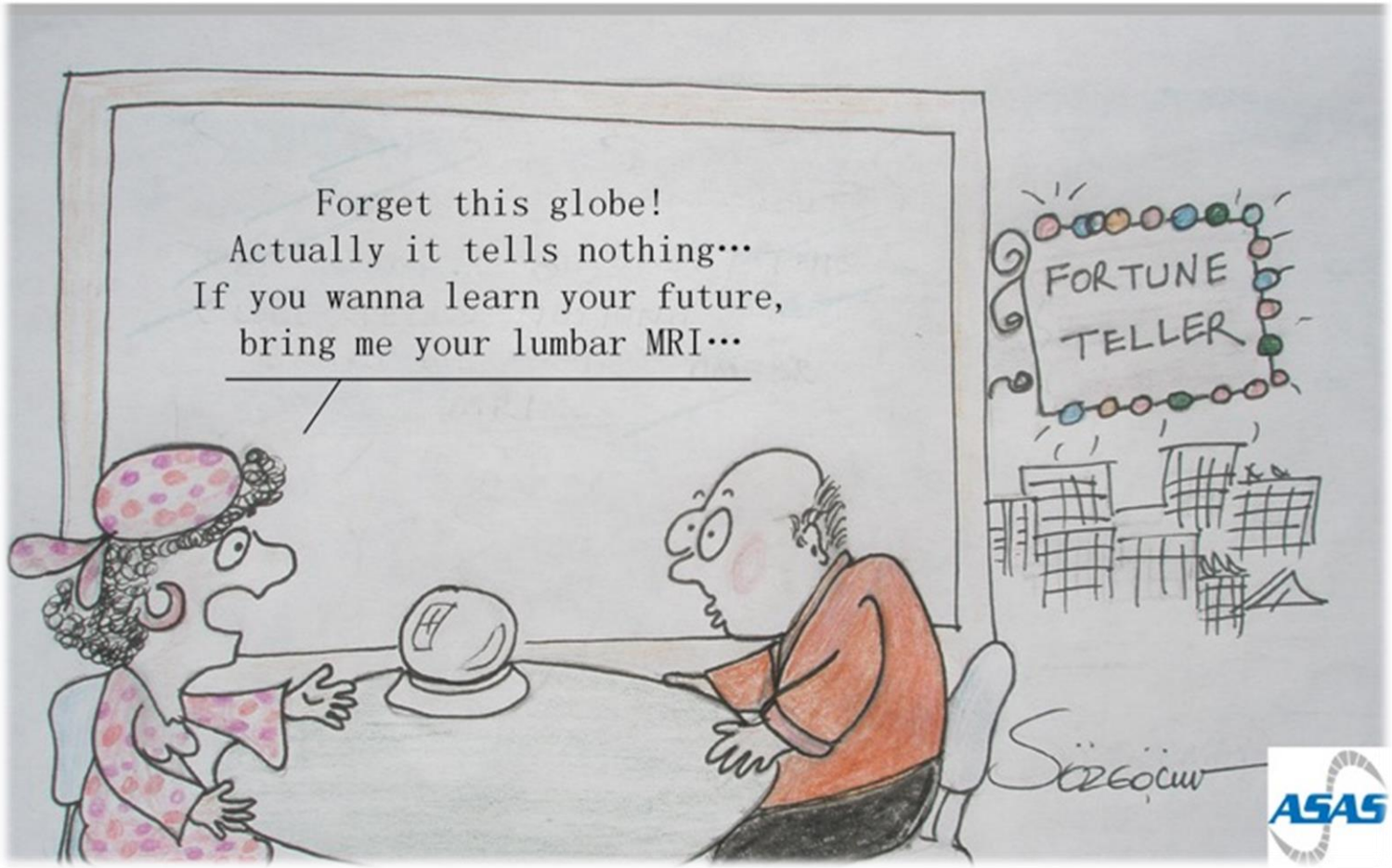


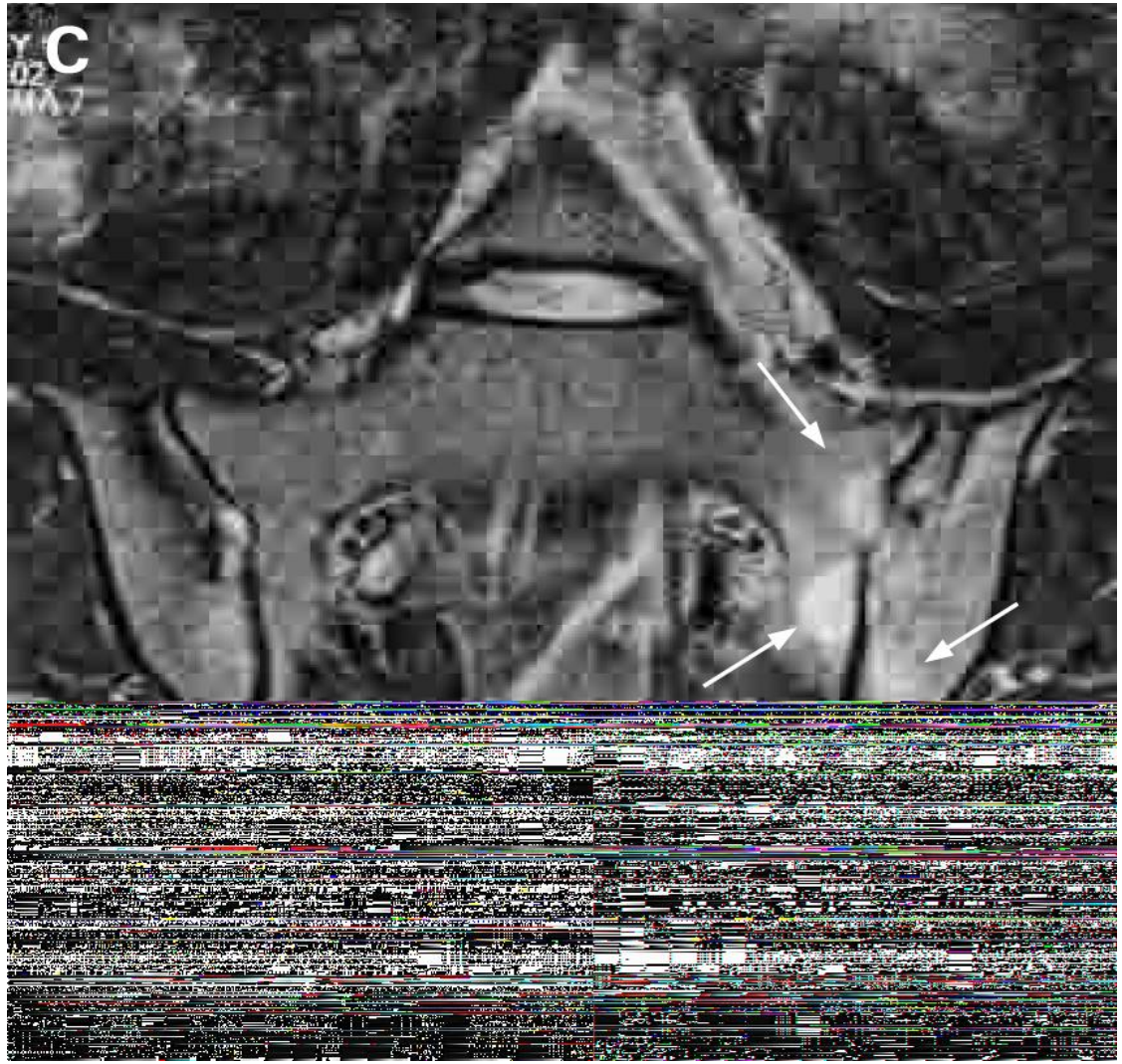
Ankylosing Spondylitis:
Bamboo Spine, Lumbar Vertebrae

Rheumatology Image Bank 2011 ACR AS Bamboo Spine Image 99-07-0044
Kelley's Textbook of Rheumatology. 2009:813.: Figure 53-58. Radiopaedia.org

"Ask Your Patients to bring their lumber MRI"

Magic MRI…

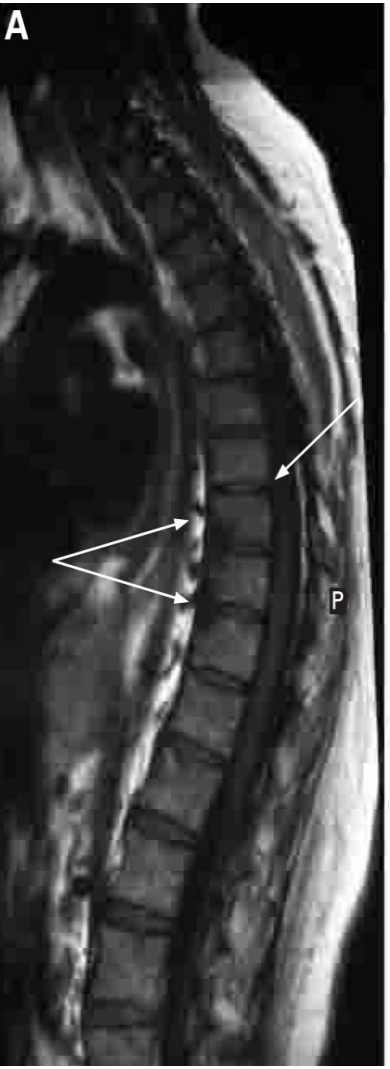


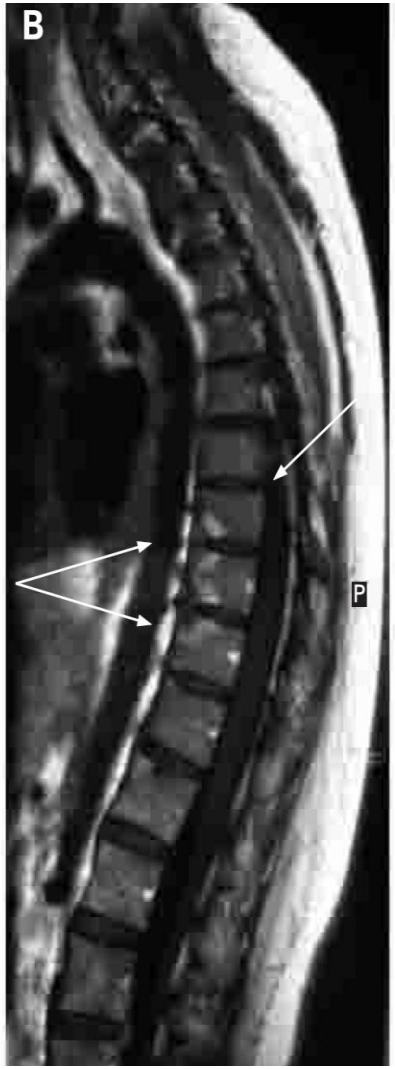


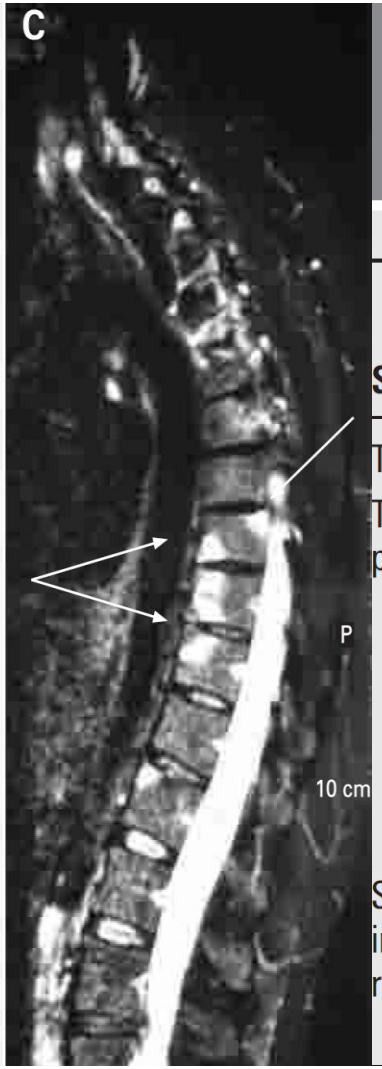
Box 8 Signal characteristics of MRI sequences used for the imaging of spine and sacroiliac joints

Sequence	Spinal fluid (water content)	Intervertebral disc (water content)	Subcutaneous fat tissue	Active inflammatory lesions
T1-weighted	Hypointense[1]	Hypointense[1]	Hyperintense[1]	Hypointense[1]
T1-weighted post-gadolinium	Hypointense[2]	Hypointense[2]		Hyperintense
With fat saturation			Hypointense[2a]	
Without fat saturation (not recommended)			Hyperintense[2b]	
Short tau inversion recovery (STIR)	Hyperintense[3]	Hyperintense[3] (hypointense if disc is degenerative)	Hypointense[3]	Hyperintense

MRI







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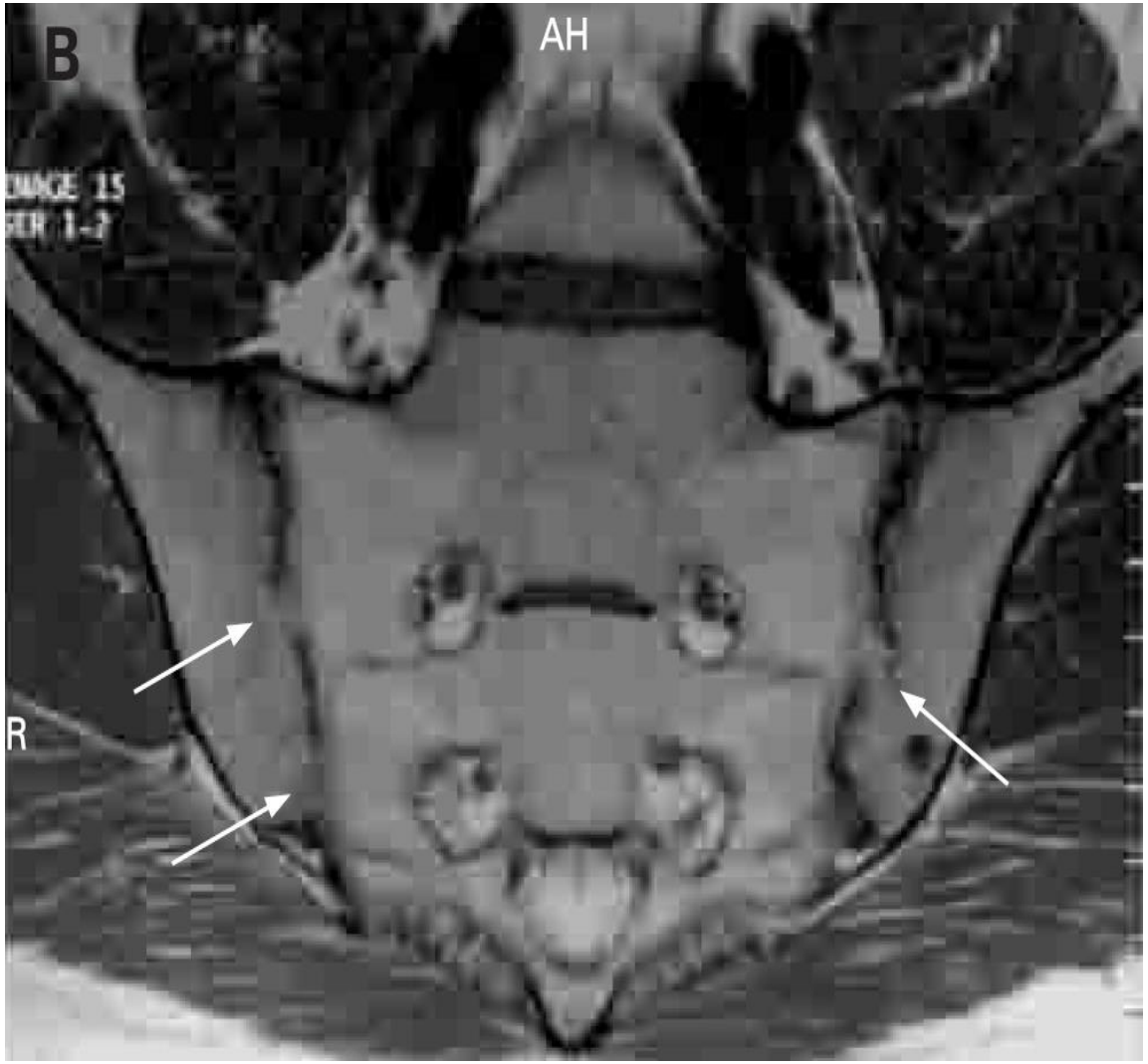
MRI



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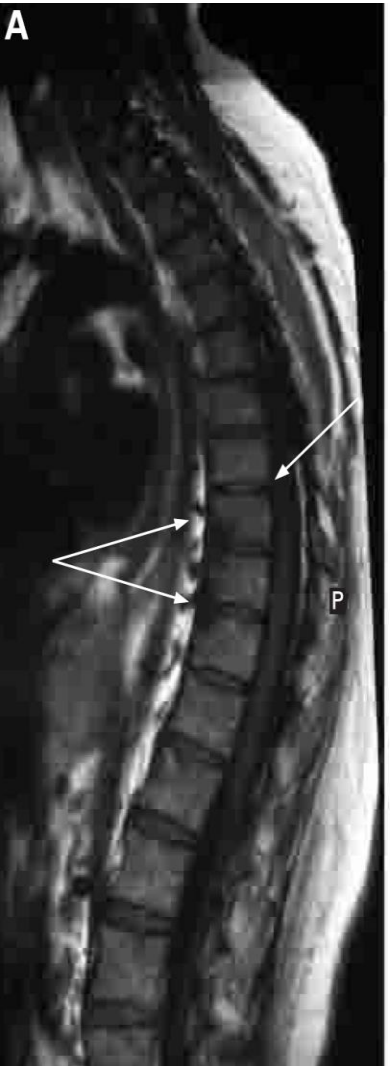
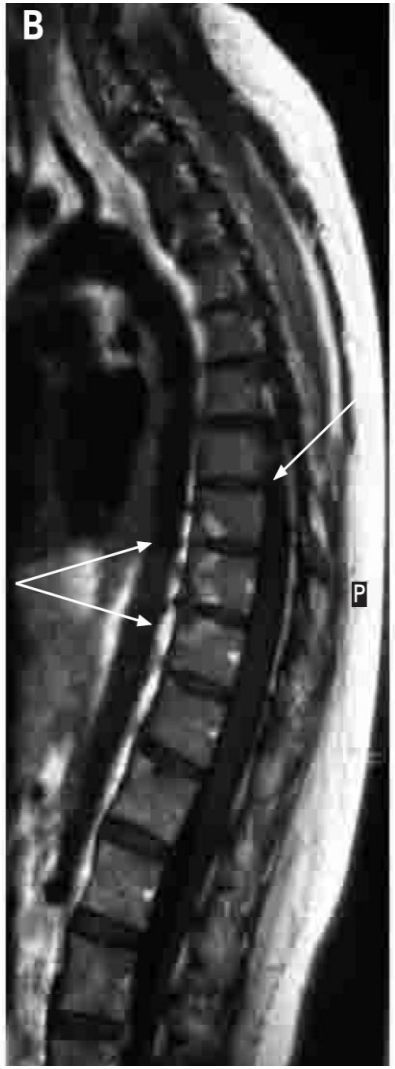
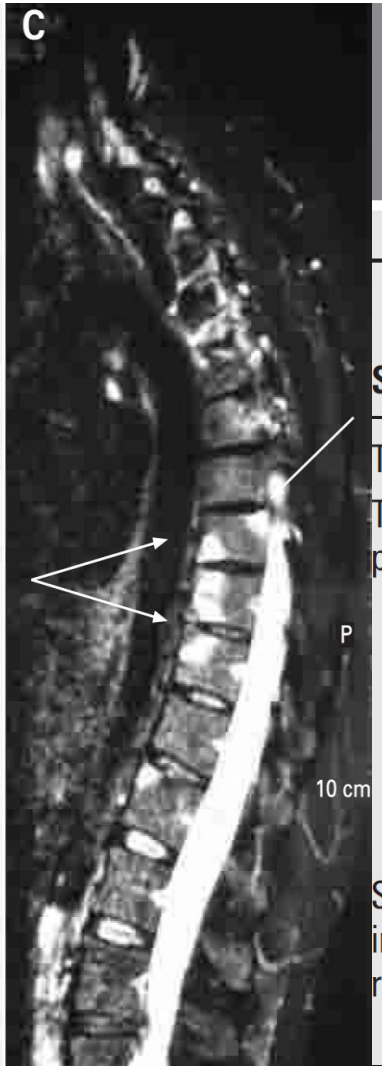
MRI







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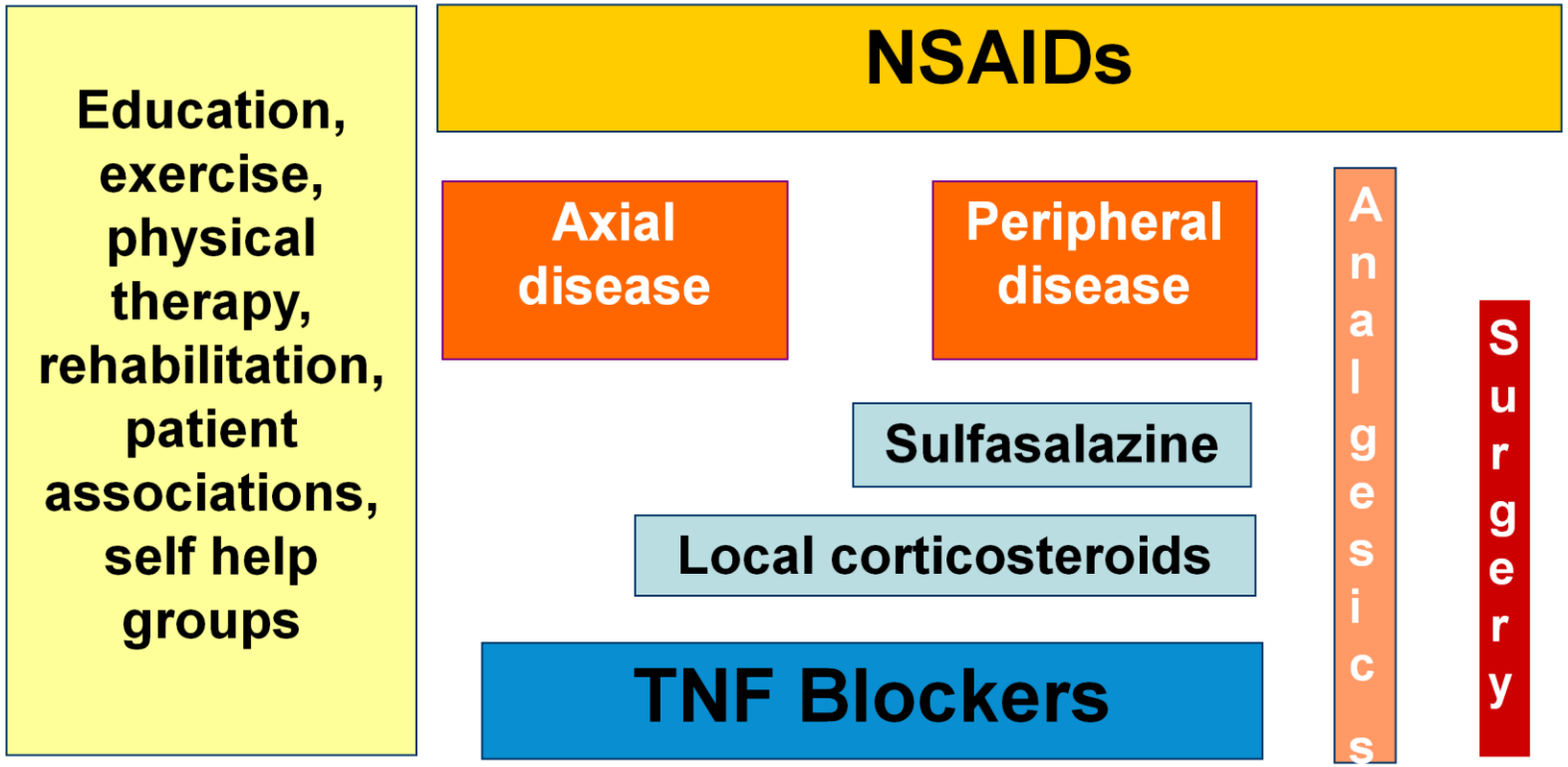
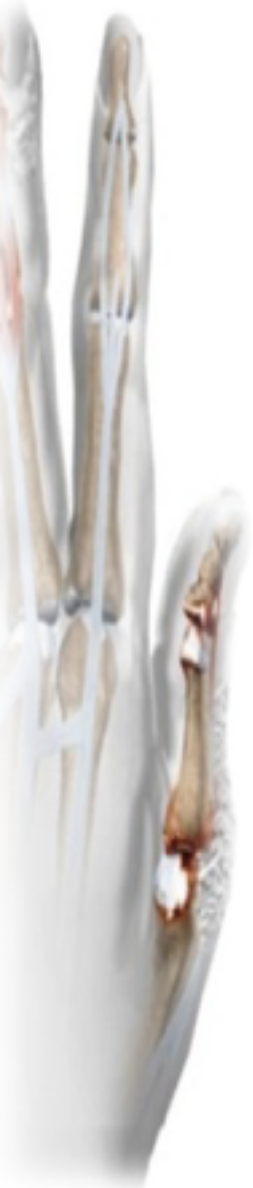
ASAS/EULAR Recommendations for the Management of Ankylosing Spondylitis

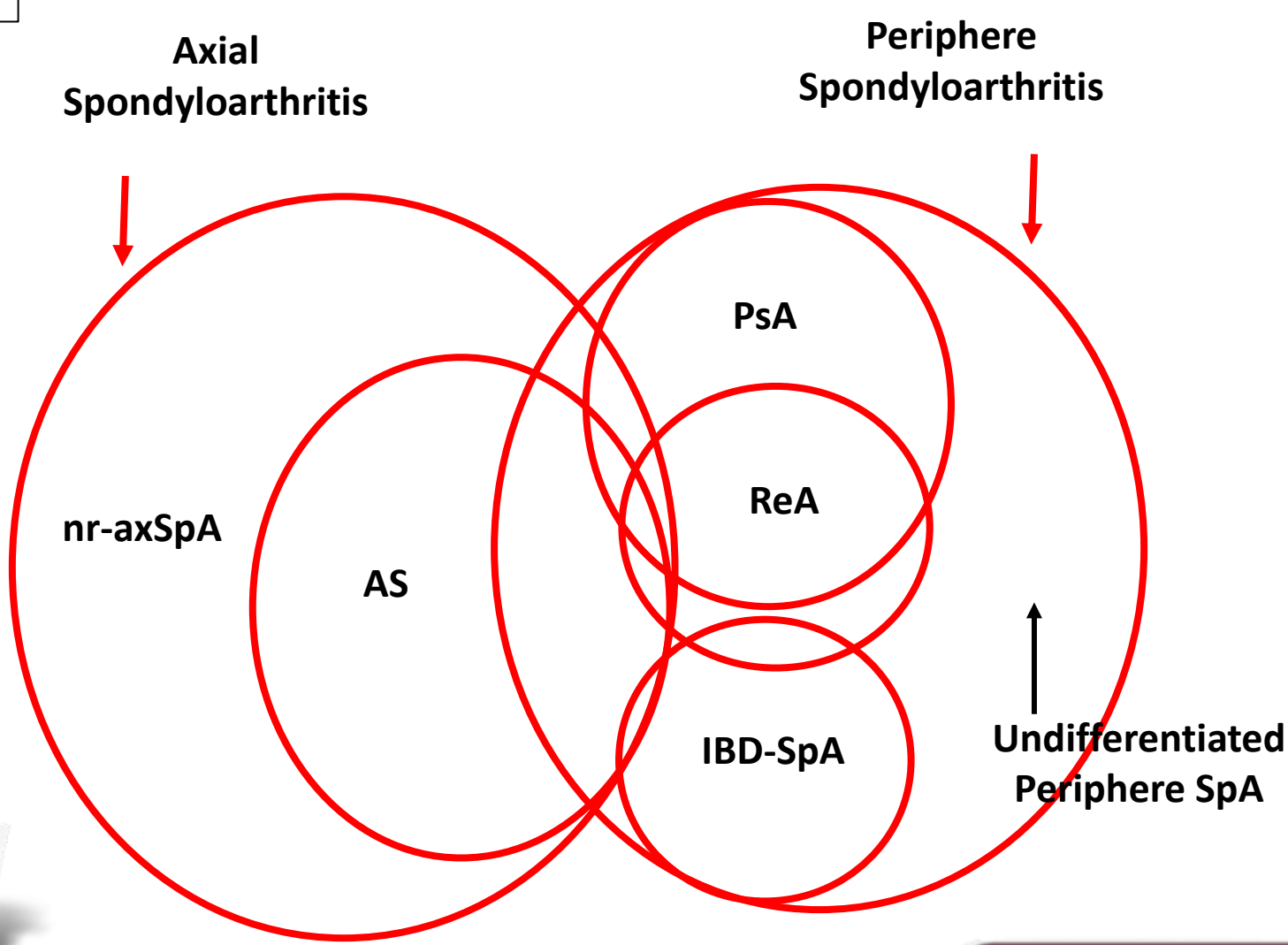


Zochling J et al. Ann Rheum Dis 2006;65:442-52 (with permission)

Complex disease

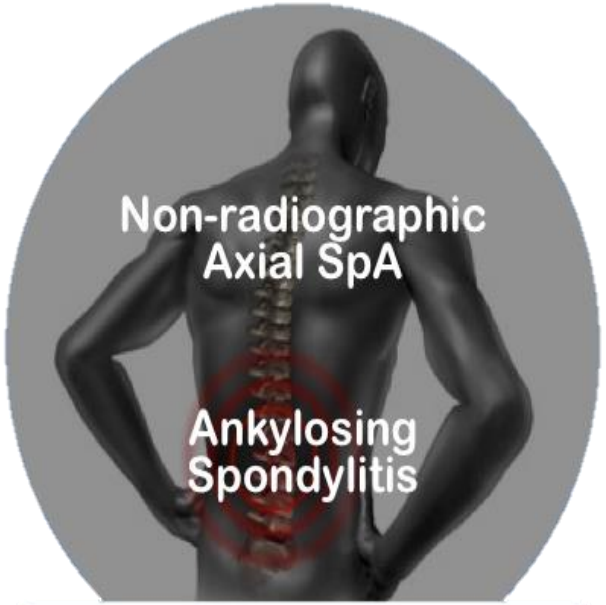
SpA - Complex Overlapping diseases





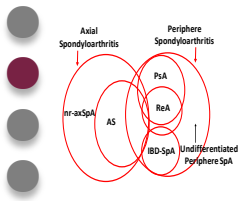
Updated ASAS Concept of Spondyloarthritis (SpA)

Groups Diseases into 2 Categories



Predominately Axial SpA

Predominately Peripheral SpA



van den Berg R, et al. Polskie Archiwum Medycyny Wewnętrznej. 2010;120(11):452-457.

Tips

Patterns

Pathogenesis

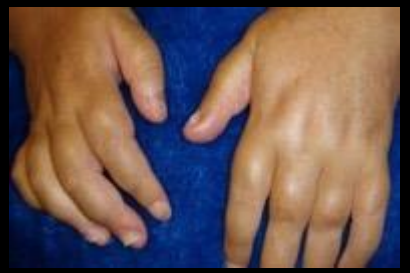
Morbidity

Predominately Peripheral SpA

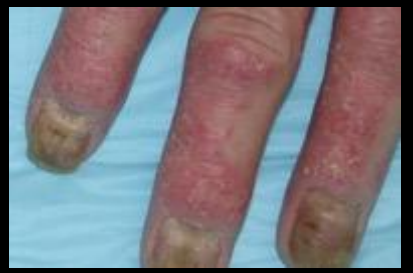
PsA is a chronic progressive disease

Skin changes

Swelling



Affected nails



Mutations

Time/Years

Psoriatic arthritis: Pictures of symptoms and progression
https://www.medicalnewstoday.com/articles/316877.php

PsA

- Arthritis associated with psoriasis,

  (a scaly rash, most frequently occurring on the elbows, knees, and scalp)

- Identifying features
  - Psoriasis
  - Other manifestations such as:
    - ✓ peripheral arthritis, spondylitis, tenosynovitis, enthesitis, dactylitis.

Olivieri I, *et al.* Imaging of psoriatic arthritis Reumatismo. 2007;59 Suppl 1:73-6
Khan MA. Ann Intern Med. 2002 Update on Spondyloarthropathies Page 900
Kelley's Textbook of Rheumatology, 8th ed, 2009:685–686

PsA

Tips

Patterns

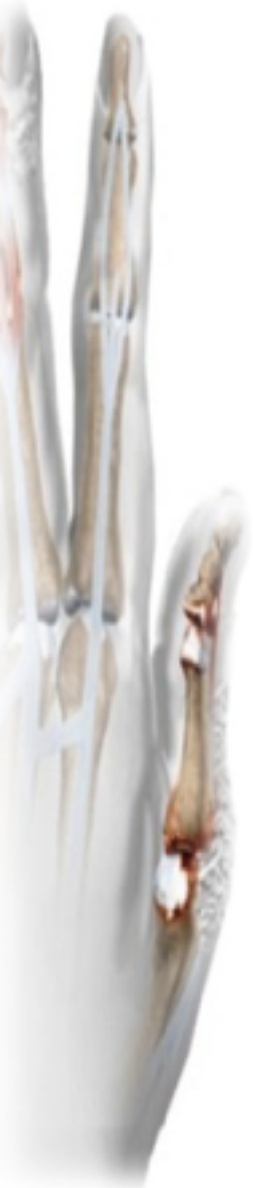
Pathogenesis

Morbidity

- Psoriatic plaques typically precede development of the arthritic component.
  - 7–42% of psoriasis (Ps) patients (in patient populations with severe Ps) may develop PsA.
  - No correlation between the severity of psoriatic plaques and PsA has been identified.
- Equal gender distribution. (♂ : ♀)
- Peak years of onset typically between the ages of 20 and 40

Kelley's Textbook of Rheumatology. 2009, Page 1201-1204
Moll JM, et al Semin Arthritis Rheum 1973;3:55–78;
Kelley's Textbook of Rheumatology, 8th ed, 2009:1201–1206

Patterns in PsA

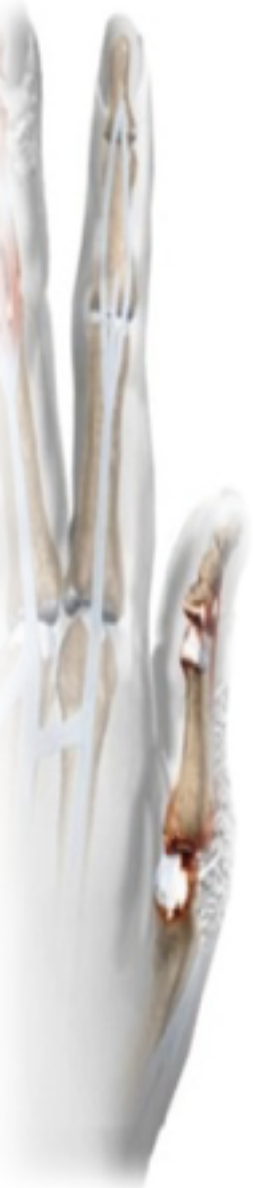


Pattern	Features	Rate
Asymmetrical	• Usually involves small joints, less frequently involves large joints • Normally oligoarthritis (≤4 joints)	~ 47%
Symmetrical	• Involves small joints and large joints • May be RF positive (clinically similar to RA) • Arthritis may develop concurrently with psoriasis	~ 25%
Spondylitis	• SIJ and vertebrae affected asymmetrically • More common in men • May coexist with peripheral PsA • Enthesitis prevalent	~ 23%
DIP synovitis	• Restricted to only DIP joints	
Arthritis mutilans	• Joint lysis • Telescoping movement	

SIJ: sacroiliac joint

Gottlieb AB. Dermatol Nurs 2003;15:107–10; Harrison's Principles of Internal Medicine, 15th ed, 2001:2003–5

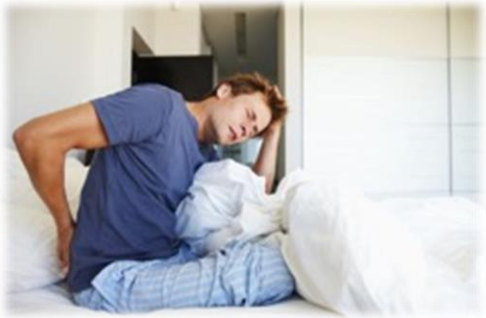
Patterns in PsA



- Tips
- Patterns
- Pathogenesis
- Morbidity

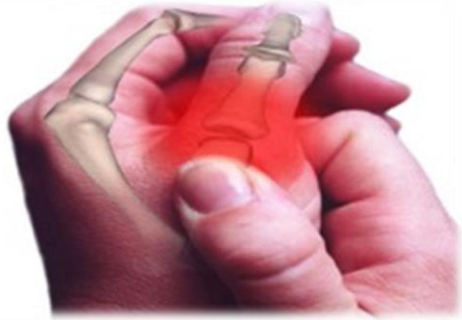
✓ **Some features are common to nearly all patterns of PsA:**

Morning stiffness



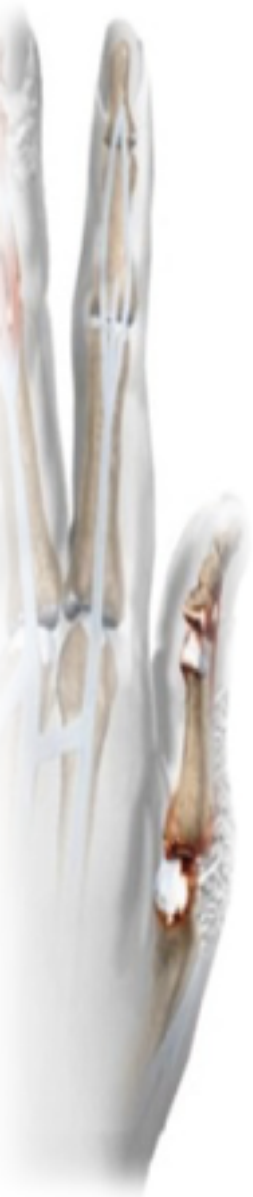
Nail disease

Joint pain

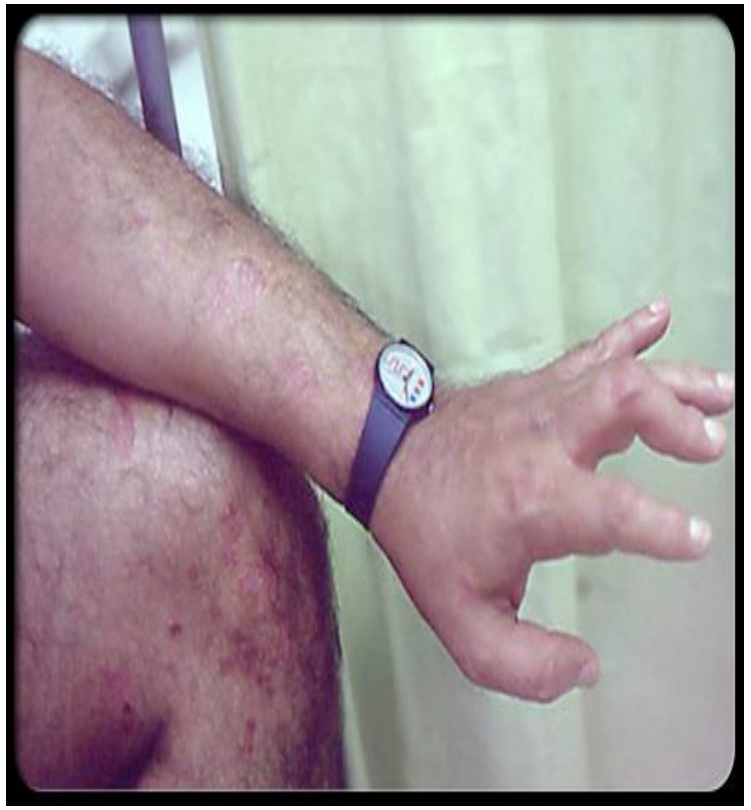


Harrison's Principles of Internal Medicine, 15th ed, 2001:2003–5

Asymmetric Psoriatic Arthritis

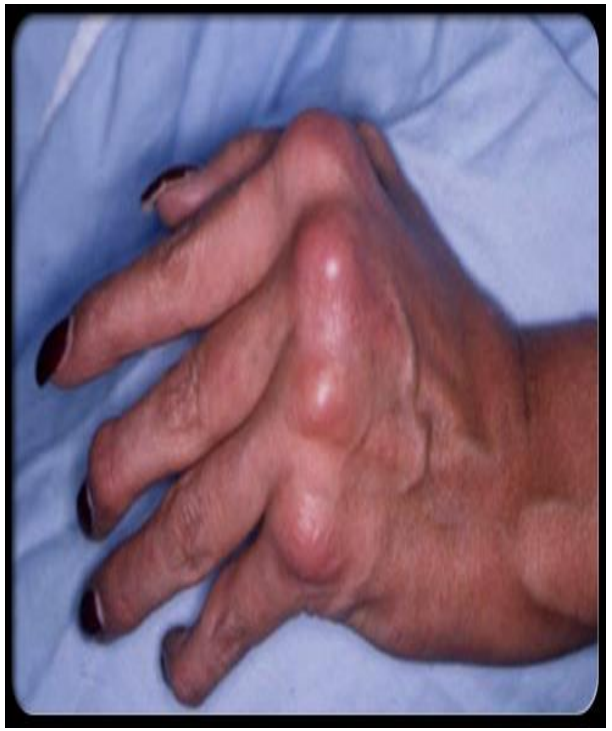


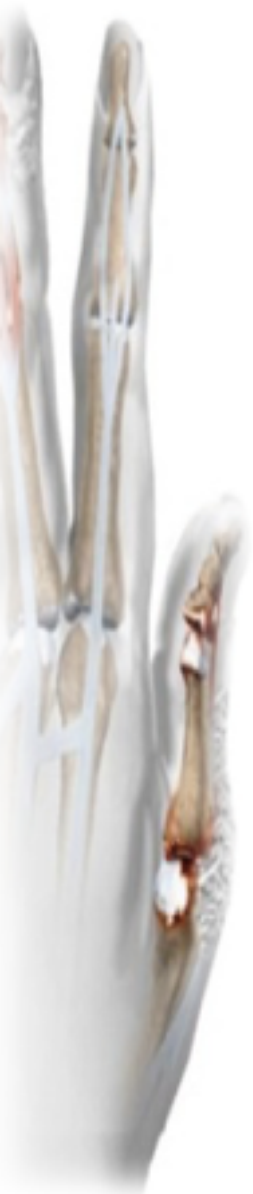
- Asymmetric psoriatic arthritis typically involves one to three joints in the body -- large or small -- such as the knee, hip, or one or several fingers.
- Asymmetric psoriatic arthritis does not affect matching pairs of joints on opposite sides of the body.



Symmetric Psoriatic Arthritis

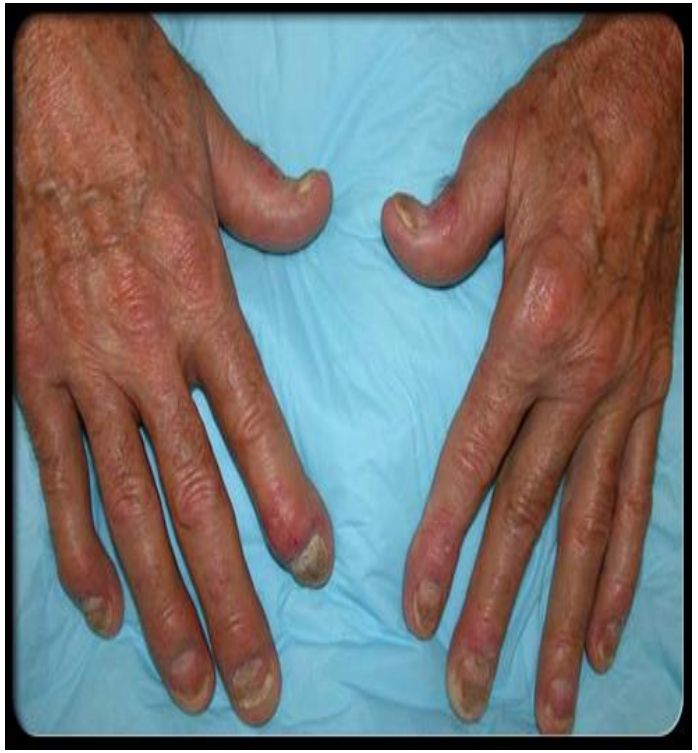
- Symmetric psoriatic arthritis affects the same joints -- usually in multiple matching pairs -- on opposite sides of the body.
- Symmetric psoriatic arthritis can be disabling, causing varying degrees of progressive, destructive disease and loss of function in 50% of people with this type of arthritis.
- Symmetric psoriatic arthritis resembles rheumatoid arthritis.



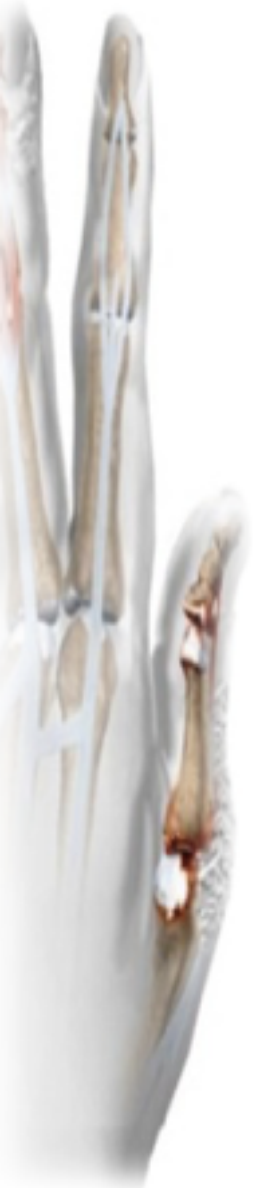


Distal Interphalangeal Predominant (DIP)

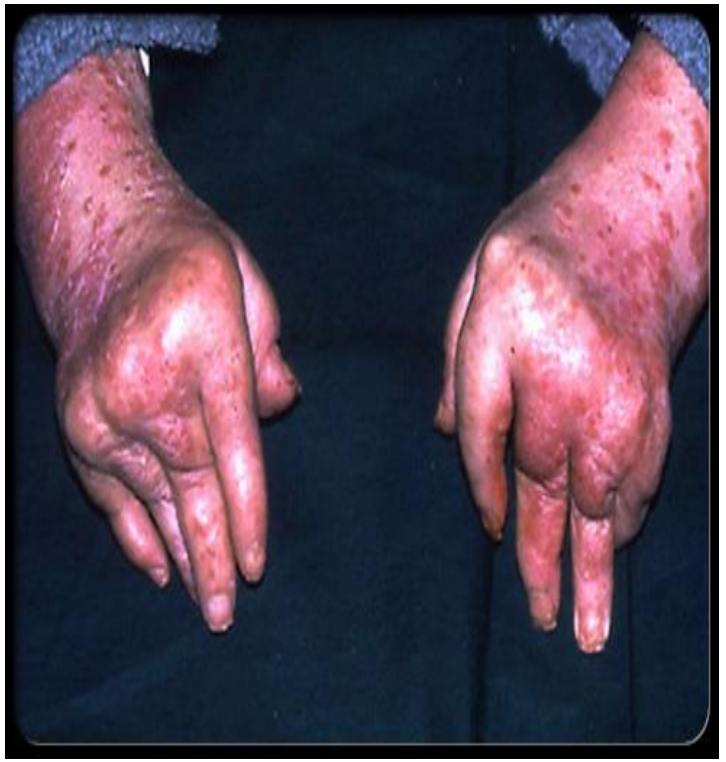
- Distal interphalangeal predominant psoriatic arthritis involves primarily the small joints in the fingers and toes closest to the nail.
- DIP psoriatic arthritis is sometimes confused with osteoarthritis, a chronic disease that causes the deterioration of joint cartilage and bone at the joints.



Arthritis Mutilans



- Arthritis mutilans is a severe, deforming, and destructive form of psoriatic arthritis that primarily affects the small joints in the fingers and toes closest to the nail. This leads to loss of function of the involved joints.
- Fortunately, this severe type of psoriatic arthritis is rare.

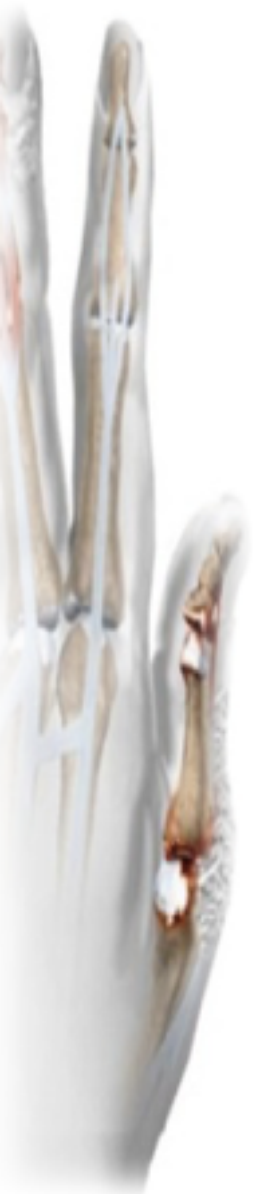


Pathogenesis of PsA

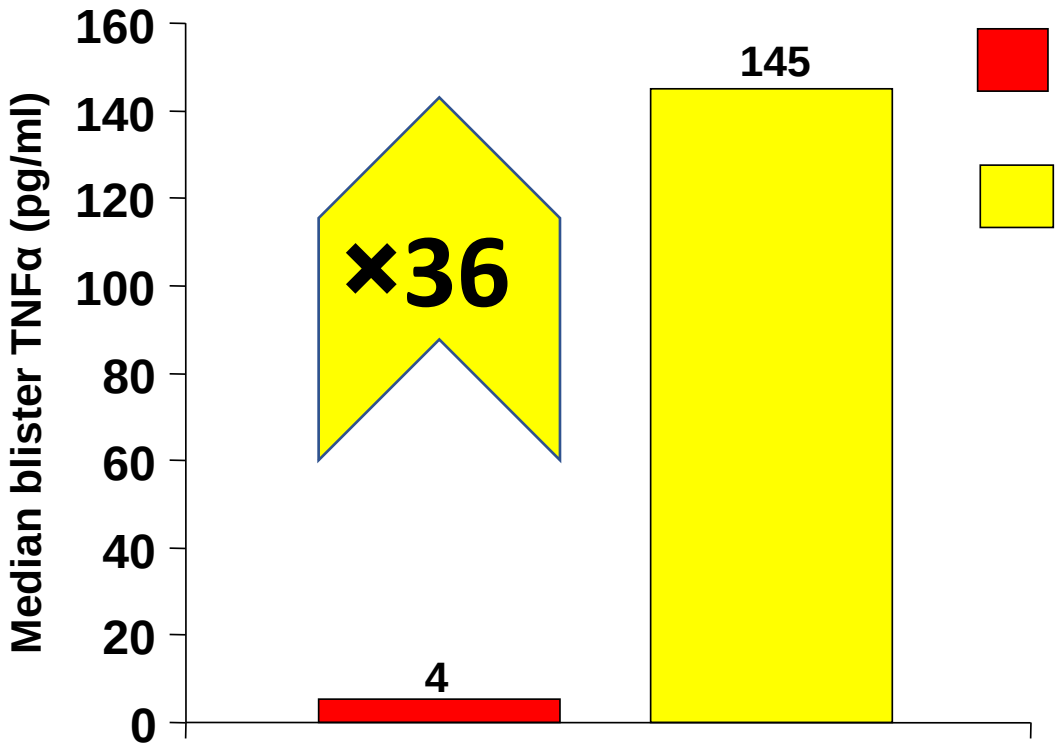
- Synovial hyperplasia and cellular infiltration.
  - Pannus formation
  - Cartilage erosion
  - Prominent role for cytotoxic (CD8+) T cells
- Increased levels of TNFα found in joint.
  - Pro-inflammatory effect
  - Stimulation of proteases
- Associated enthesitis present.

Veale DJ, et al. Ann Rheum Dis 2005;64(suppl 2):ii26–9 Gladman DD. Rheum Dis Clin North Am 1998;24:829–44

TNFα Levels in Psoriatic skin blister fluids



In a clinical trial, TNFα levels in psoriatic skin blister fluids were found to be much greater than in healthy control subjects



Control (normal skin blister fluids)

Psoriatic involved skin blister fluids

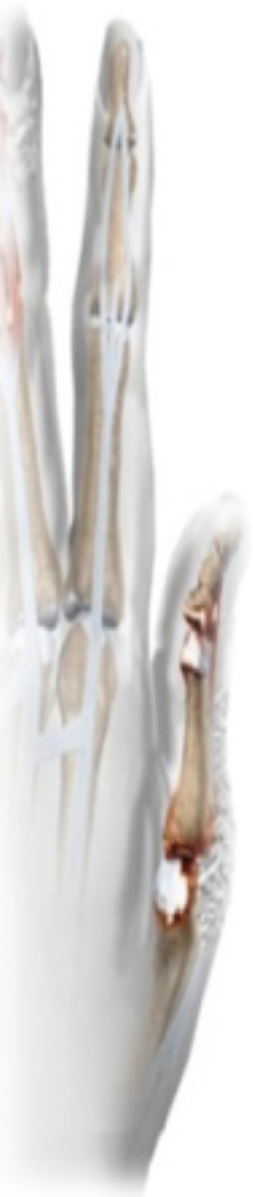
N = 30

(*P* = 0.0001)

Bonifati, 384/2/Table 1 and 384/1/2

Bonifati C, et al. *Clin Exp Dermatol.* 1994;19:383-387.

Morbidity Associated With PsA



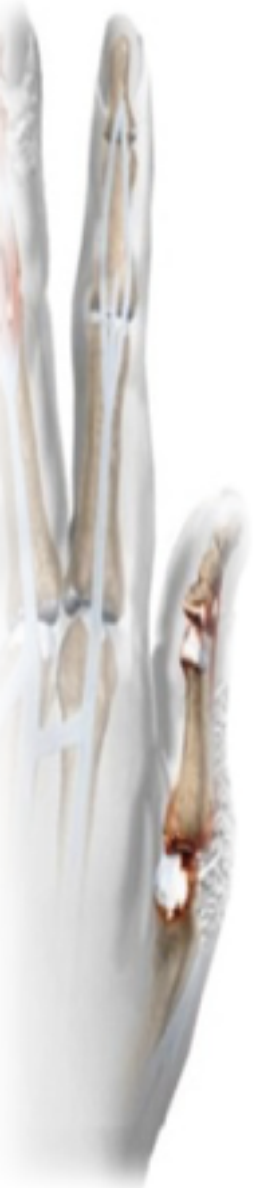
- 40–57% of patients have deforming erosive arthropathy*
- 16% of patients with at least five deformed joints*
- 11–19% of patients with disability*

*Data published in 1987 and 1991. These data may not accurately reflect current morbidity trends following recent medical advances

Torre Alonso JC, et al. Br J Rheumatol 1991;30:245–50 Gladman DD, et al. Q J Med 1987;62:127–41

Diagnosis of PsA Patients

- Subclinical
- Clinical
- Imaging
- Criteria



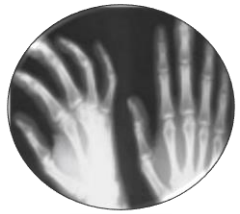
Subclinical

Clinical

Imaging

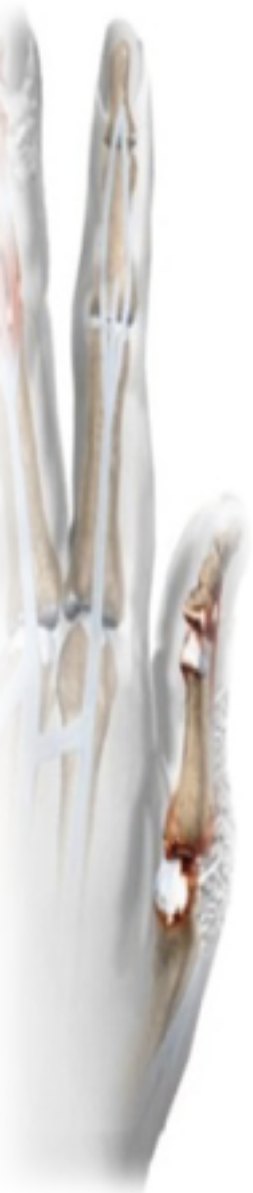
Criteria

- Arthritis in the presence of psoriasis is the key to clinical diagnosis.
- The onset depends on the subtype:
  - Delayed after psoriasis onset:
    - asymmetrical, spondylitis.
  - Concurrent with psoriasis:
    - symmetrical.
- Diagnosis is **clinical** and **radiographic**.



Harrison's Principles of Internal Medicine, 15th ed, 2001:2003–5
Gladman DD, et al. Q J Med 1987;62:127–41

Clinical Features of PsA



Subclinical

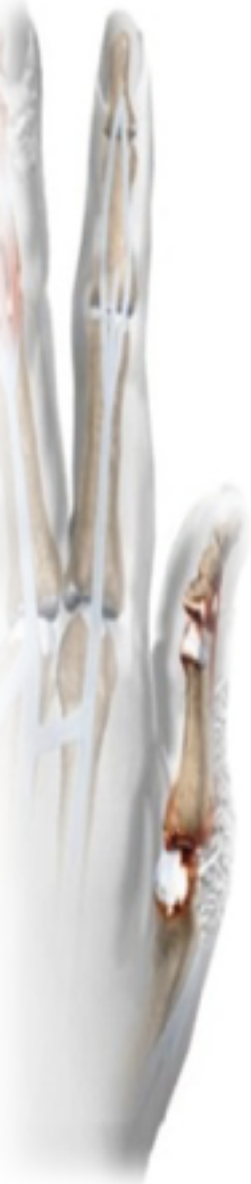
Clinical

Imaging

Criteria

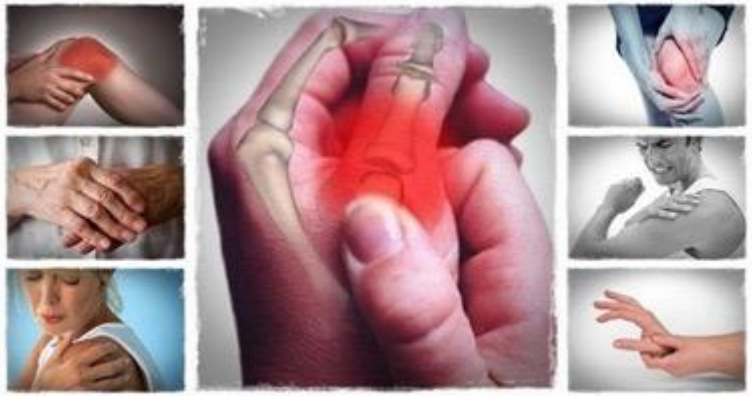
Clinical feature	Patients (%)
Actively inflamed joints	97
Plaque psoriasis	94
Nail lesions	83
DIP joint disease	54
Morning stiffness	52
Deformities: ≥1 / ≥5	43 / 16
Skin and joints flaring simultaneously	35
Dactylitis	33
Inflammatory neck pain and stiffness	23
Inflammatory back pain and stiffness	19
ACR functional class III/IV	11
Sacroiliac stress pain	10
Iritis	7

ACR: American College of Rheumatology
Gladman DD, et al. Q J Med 1987;62:127–41



- Subclinical
- Clinical
- Imaging
- Criteria

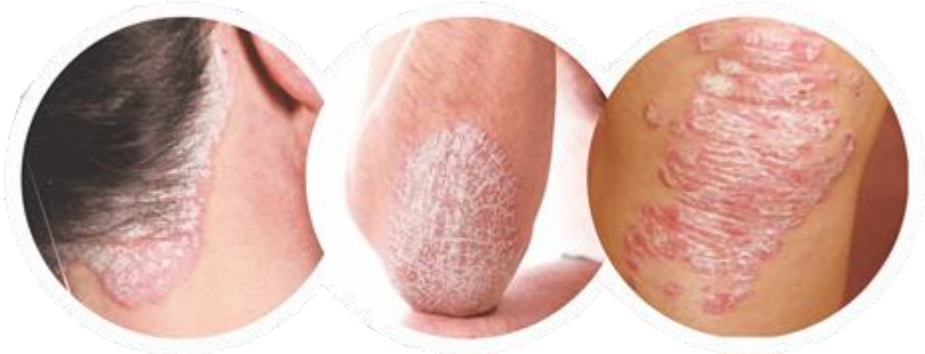
Actively inflamed joints



97% of patients affected

Plaque psoriasis

94% of patients affected

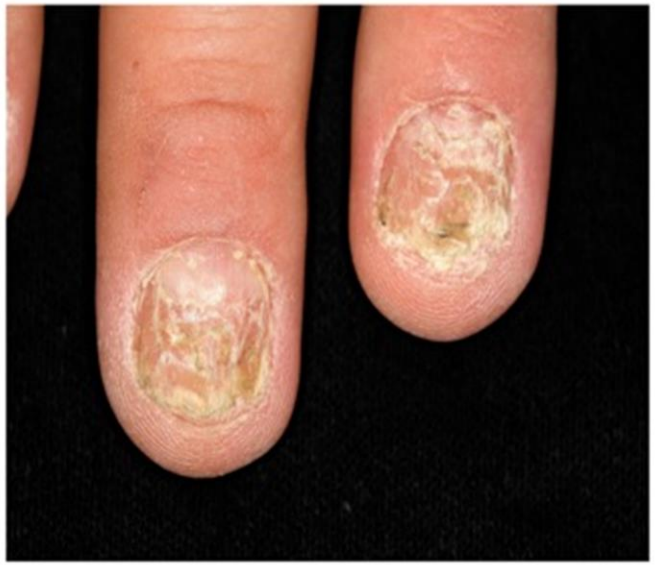


scaly rash, most frequently occurring on the scalp, elbows and knees

ACR: American College of Rheumatology
Gladman DD, et al. Q J Med 1987;62:127–41

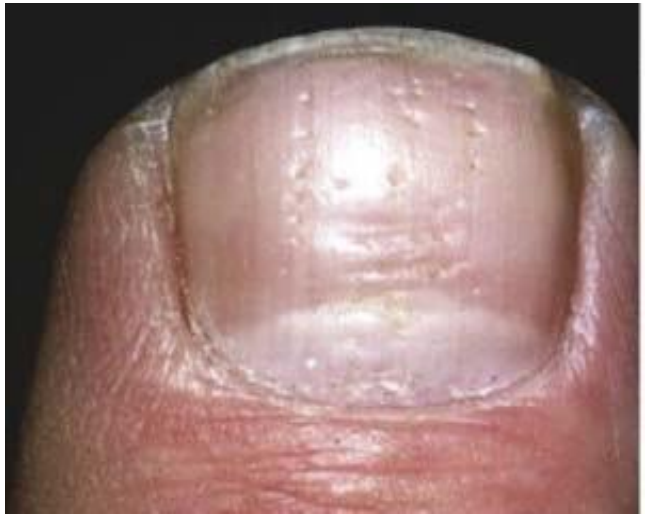
- Subclinical
- Clinical
- Imaging
- Criteria

Moderate to Severe Nail Changes in Patient with Psoriasis



83% of patients affected

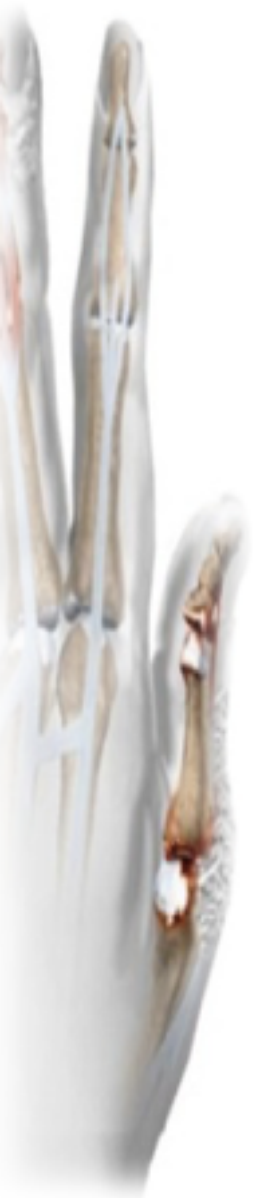
Nails



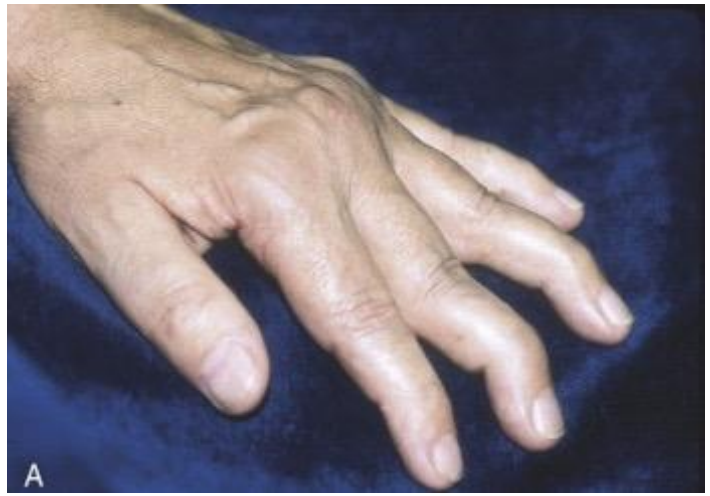
Fingernail pitting

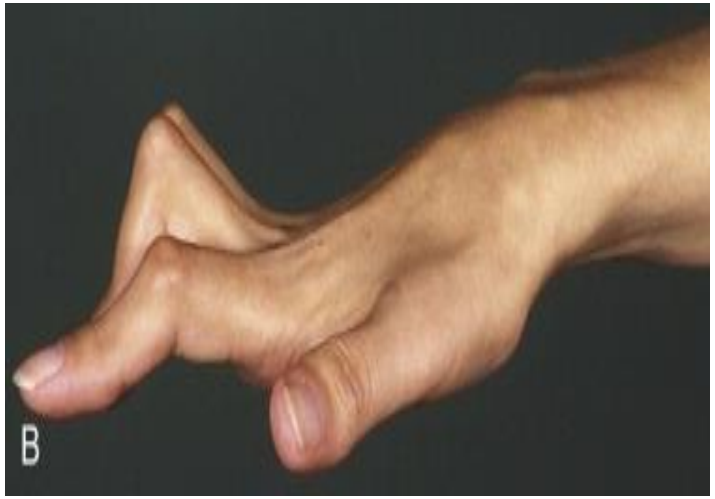
ACR: American College of Rheumatology
Gladman DD, et al. Q J Med 1987;62:127–41

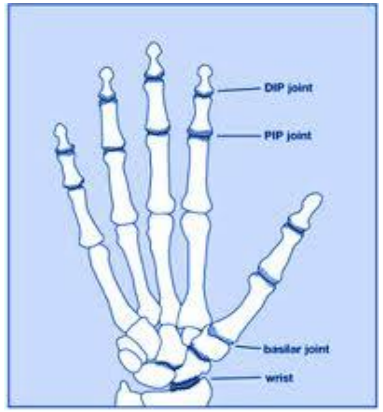
PIP and DIP synovitis



- Subclinical
- Clinical
- Imaging
- Criteria







PIP = proximal interphalangeal.
DIP = distal interphalangeal.

54% of patients affected

Kelley's Textbook of Rheumatology, 8th ed, 2009:1087–1102

ACR: American College of Rheumatology
Gladman DD, et al. Q J Med 1987;62:127–41

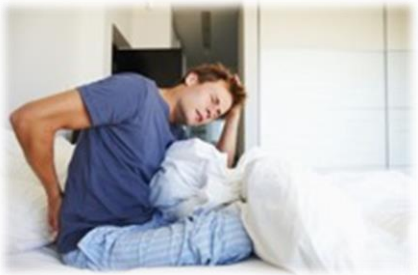
Subclinical

Clinical

Imaging

Criteria

Morning stiffness

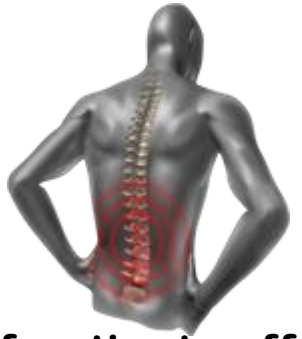


52% of patients affected

Inflammatory neck pain and stiffness

23% of patients affected

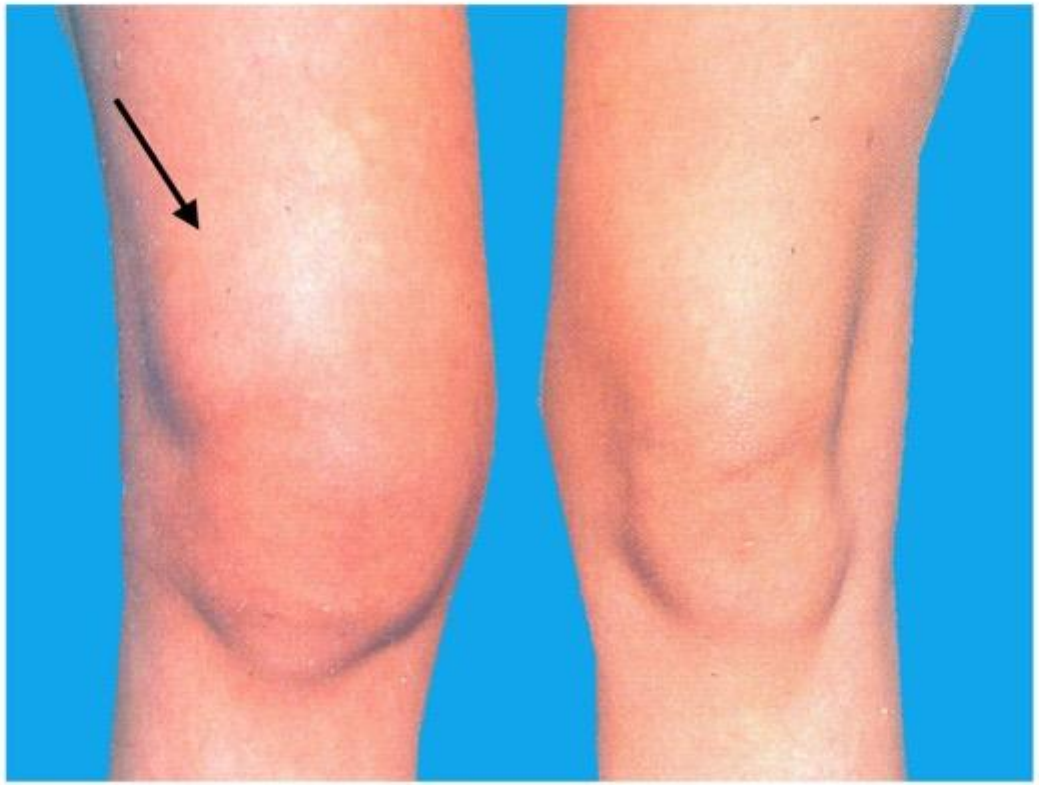
Inflammatory back pain and stiffness



19% of patients affected

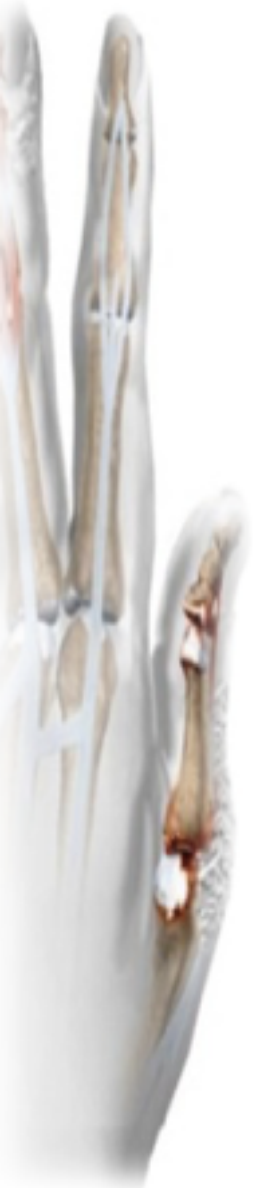
ACR: American College of Rheumatology
Gladman DD, et al. Q J Med 1987;62:127–41

Acute Arthritis of the Right Knee in a Patient with Peripheral Spondyloarthritis

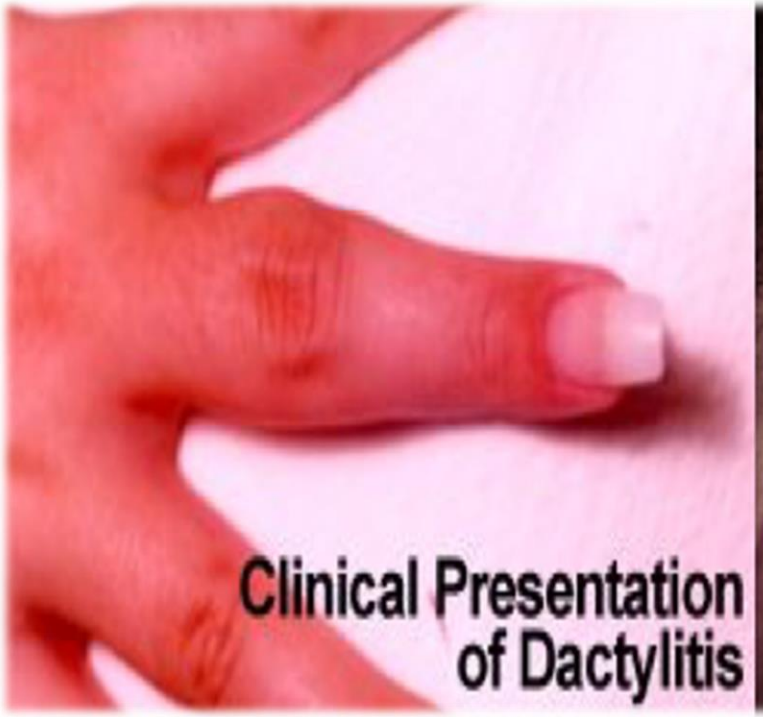


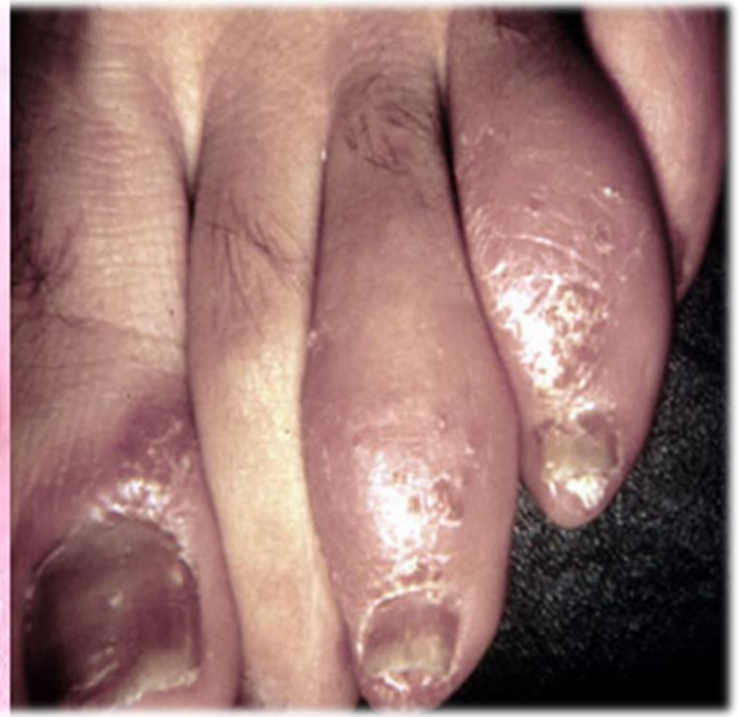
ACR: American College of Rheumatology
Gladman DD, et al. Q J Med 1987;62:127–41

Dactylitis



- Subclinical
- Clinical
- Imaging
- Criteria





33% of patients affected

ACR: American College of Rheumatology
Gladman DD, et al. Q J Med 1987;62:127–41

Heel Pain - Enthesitis

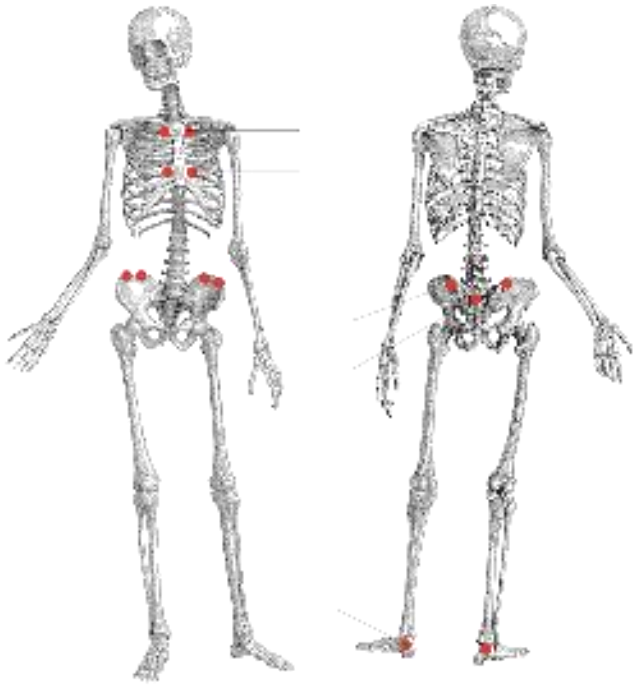
Subclinical

Clinical

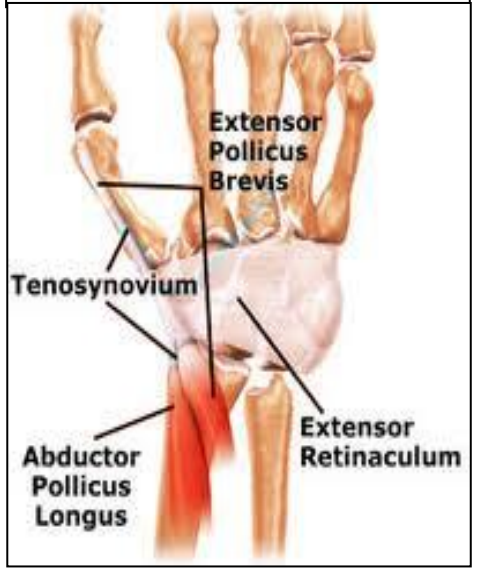
Imaging

Criteria

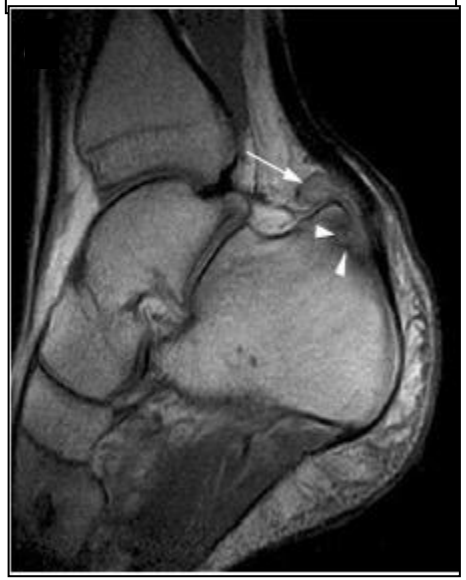
- Enthesitis is inflammation of Entheses.
  - ✓ Entheses are sites where tendons, ligaments, joint capsules, or fascia attach to bone.
- Heel Enthesitis is most common.



Tenosynovitis Enthesitis



Achilles heel Enthesitis



Eshed I, et al. Ann Rheum Dis 2007;66:1553–9

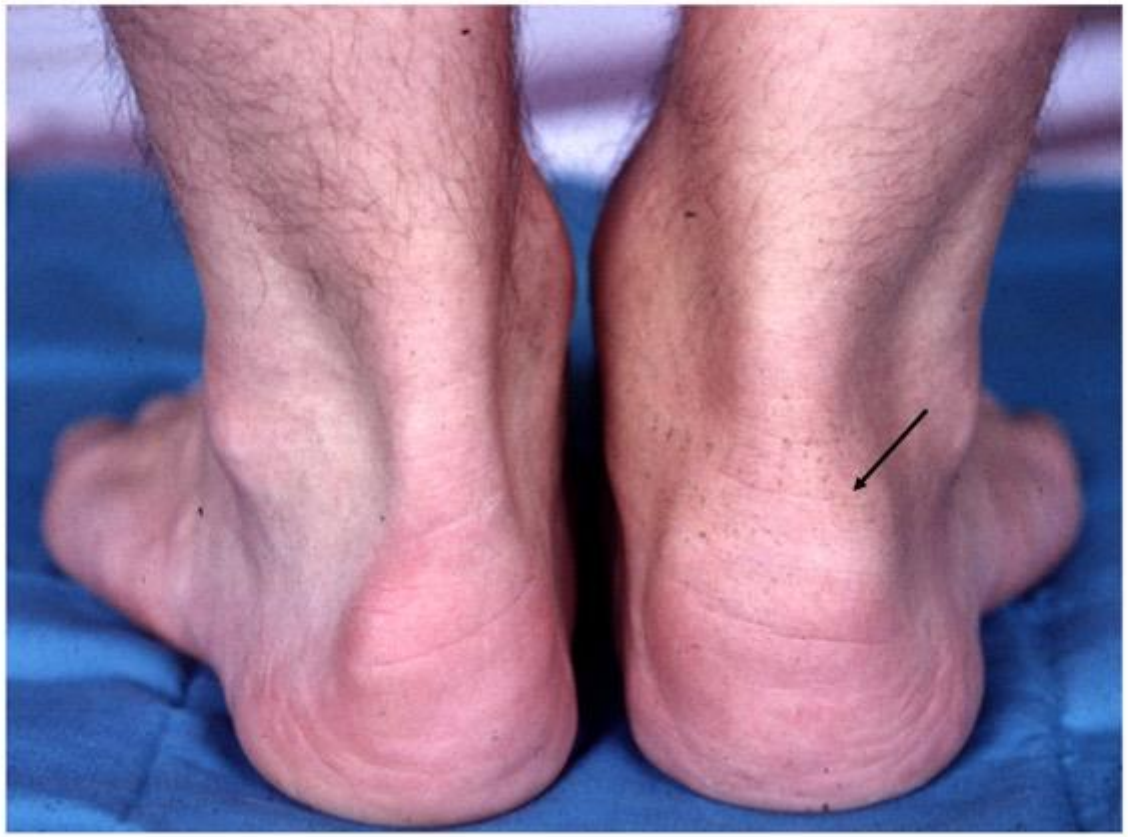
Subclinical

Clinical

Imaging

Criteria

Enthesitis (Insertion of Achilles Tendon at Calcaneus) Right Heel

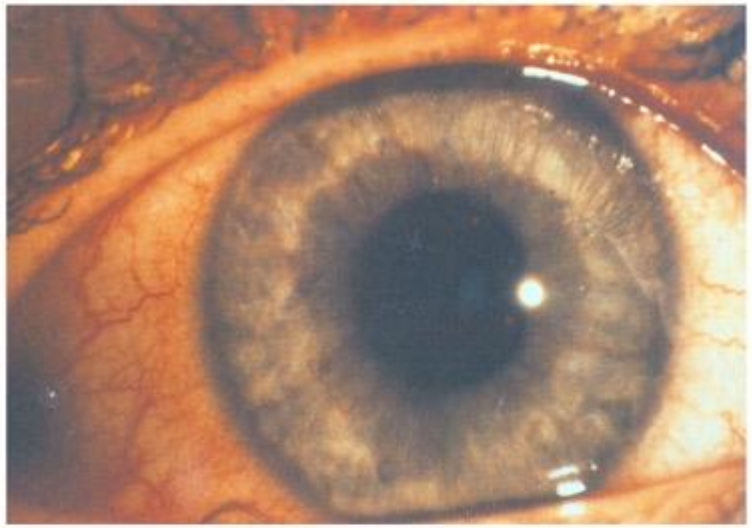


ASAS

20% of patients affected

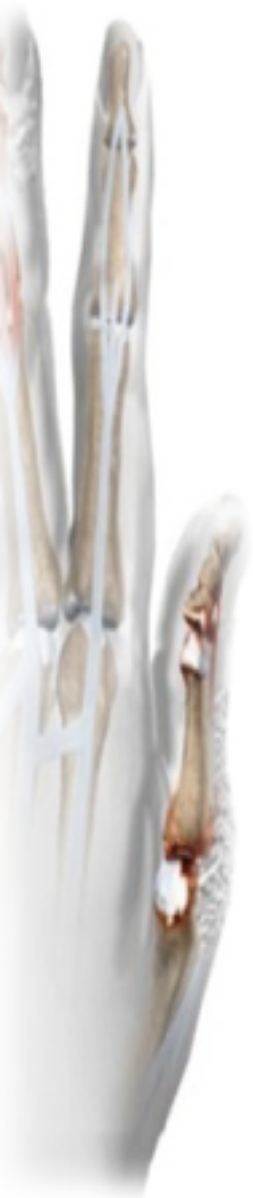
Eye: Acute Anterior Uveitis in Spondyloarthritis

- Acute onset
- Unilateral
- Anterior
- Spontaneous remission
- Recurrent
- Related to HLA B27



25% of patients affected

PsA Radiologic Features



Subclinical

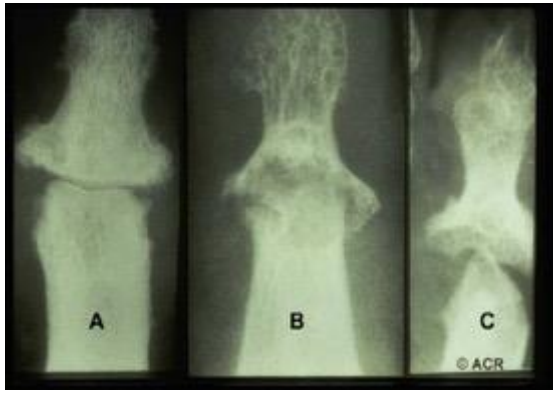
Clinical

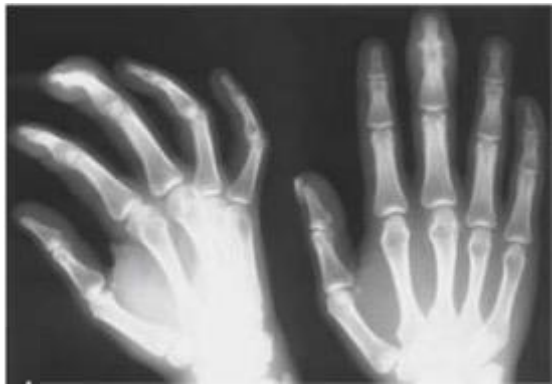
Imaging

Criteria

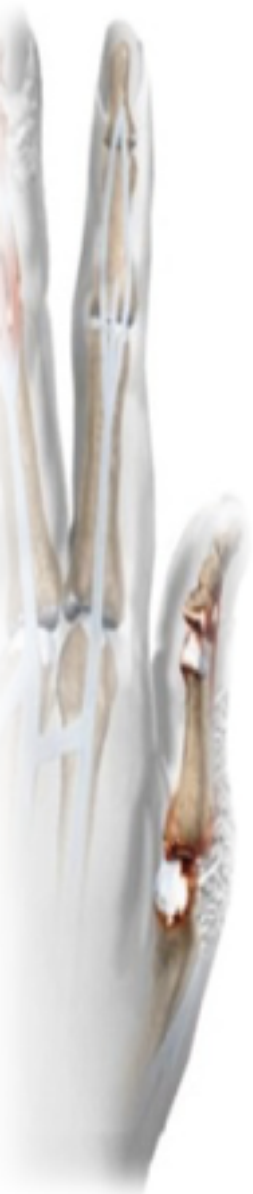
- Characteristic peripheral joint destruction progresses to cause a "**pencil in cup**" appearance.

- In spondylitis subtype, may also see sacroiliitis and changes in the spine.





Mease, P.J., *et al*. J Am Acad Dermatol 2005;52:1–19
Kelley's Textbook of Rheumatology, 8th ed, 2009:1207: Figure 72-5



Symptoms at presentation determine which pathway

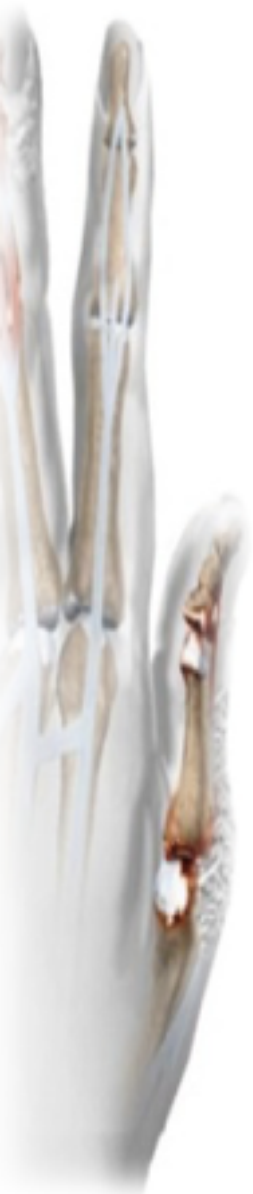
- Subclinical
- Clinical
- Imaging
- Criteria

Axial ± peripheral symptoms at time of presentation

Purely peripheral symptoms at time of presentation*

*Past inflammatory back pain allowed

[1]Rudwaleit et al. Ann Rheum Dis 2009;68:777-783. [2]Rudwaleit et al. Ann Rheum Dis 2011;70:25-31.



Subclinical

Clinical

Imaging

Criteria

ASAS Classification Criteria for Spondyloarthritis (SpA)

In patients with ≥3 months back pain and age at onset <45 years

Sacroiliitis on imaging plus ≥1 SpA feature

OR

HLA-B27 plus ≥2 other SpA features

SpA features
- inflammatory back pain (IBP)
- arthritis
- enthesitis (heel)
- uveitis
- dactylitis
- psoriasis
- Crohn's/colitis
- good response to NSAIDs
- family history for SpA
- HLA-B27
- elevated CRP

Sensitivity: 79.5%, Specificity: 83.3%; n=975

In patients with peripheral symptoms ONLY

Arthritis or enthesitis or dactylitis

plus

?

≥1 SpA feature
- uveitis
- psoriasis
- Crohn's/colitis
- preceding infection
- HLA-B27
- sacroiliitis on imaging

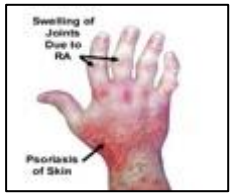
OR

≥2 other SpA features
- arthritis
- enthesitis
- dactylitis
- IBP ever
- family history for SpA

Rudwaleit M et al. Ann Rheum Dis 2011;70:25-31 (with permission)

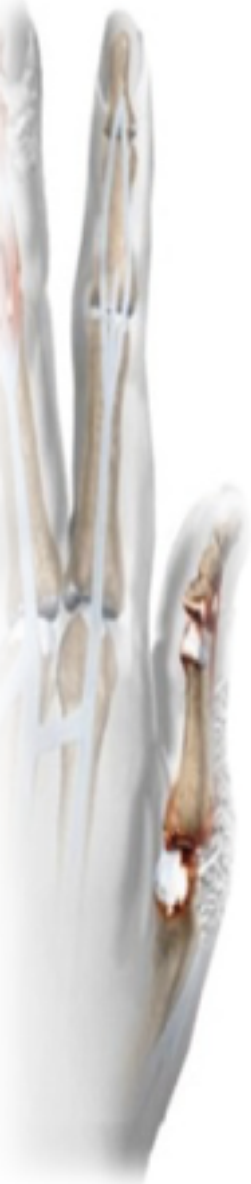
ASAS

PsA Patient



Equal gender distribution (♂ : ♀)

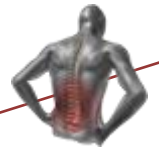
Age at onset 20-40 years



Neck Pain & Stiffness

Eye inflammation

Plaque psoriasis
(a scaly rash, most frequently occurring on the elbows, knees, and scalp)



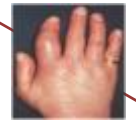
Inflammatory Back Pain (IBP)

Crohn's/ Colitis

DIP joint disease

Nail lesions or pitting

Joints Arthritis



Dactylitis

Tenosynovitis
(inflammation of the synovium that surrounds a tendon, typically leading to joint pain, swelling, and stiffness. It can be either infectious or noninfectious)

Enthesitis

- Morning stiffness
- Deformities
- Family History of SpA
- +ve HLA-B27

SpA Patient Journey

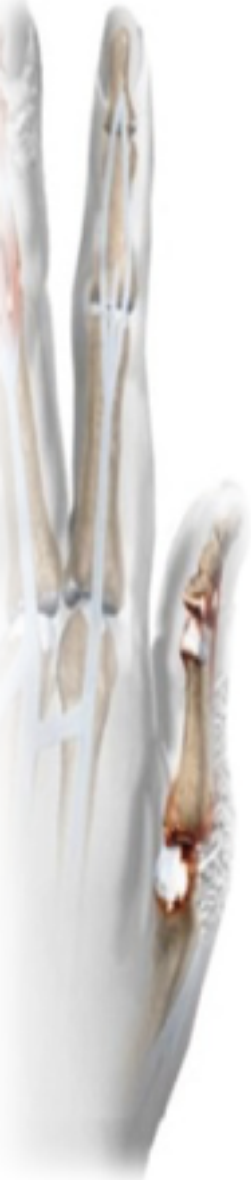
Axial-SpA Patient Journey

Derma Clinic

- ✓ 7–42% of psoriasis (Ps) patients may develop PsA.
- ✓ No correlation between the severity of psoriatic plaques and PsA has been identified.

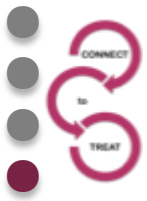
Ophtha Clinic

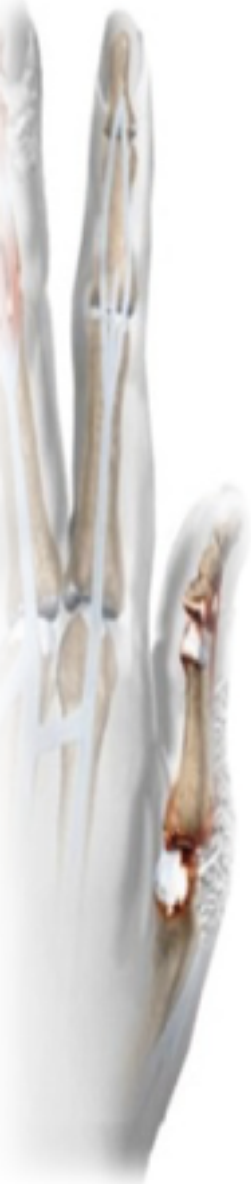
- ✓ 25% of patients may have uveitis



Pain Clinic

Family Medicine Clinic





CONNECT

to

TREAT

Derma Clinic

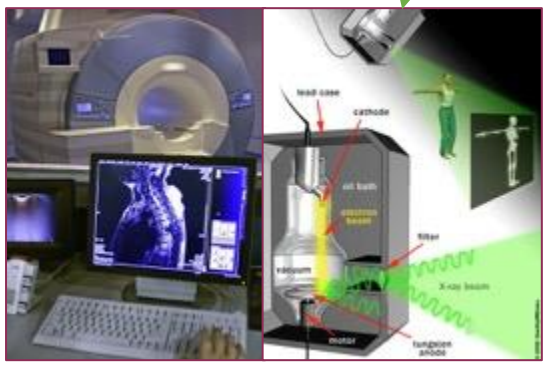
Ophtha Clinic

PAIN MANAGEMENT

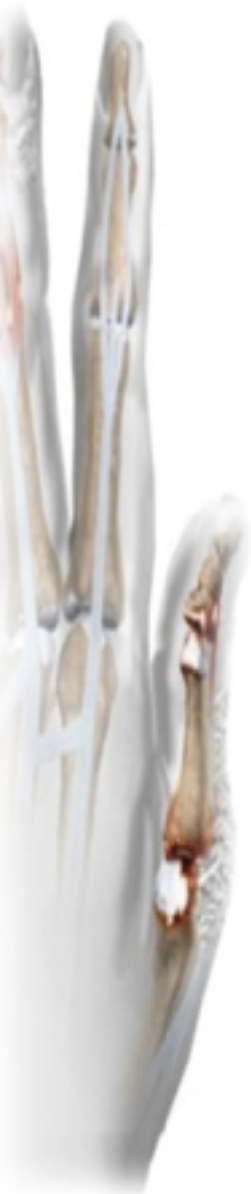
Pain Clinic

Family Medicine Clinic

ESR,CRP,
HLA-B27



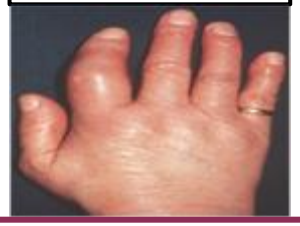
SpA Patient Journey



Arthritis

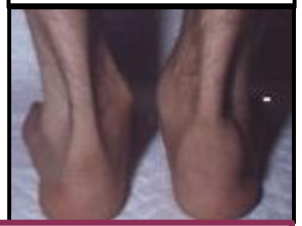
or

Dactylitis



or

Enthesitis



✓ **Age at onset 20-40 years old**

+

Psoriasis

or

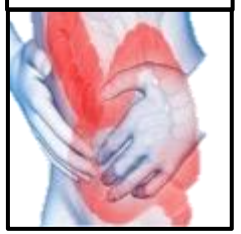
Uveitis

or

IBP

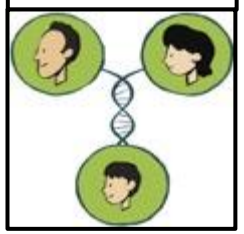
or

Crohn's/ Colitis



or

Family History



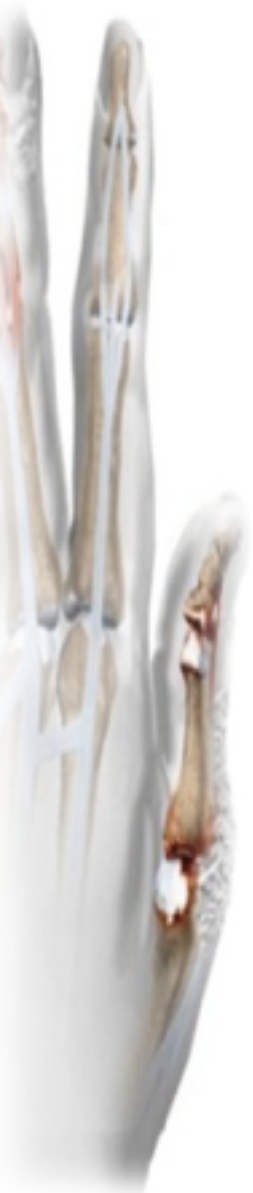
Yes

"Start confirmation"

-Involved joints X-ray
-HLA – B27

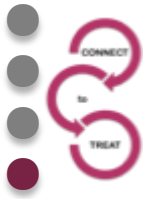
Connect to Rheumatologist

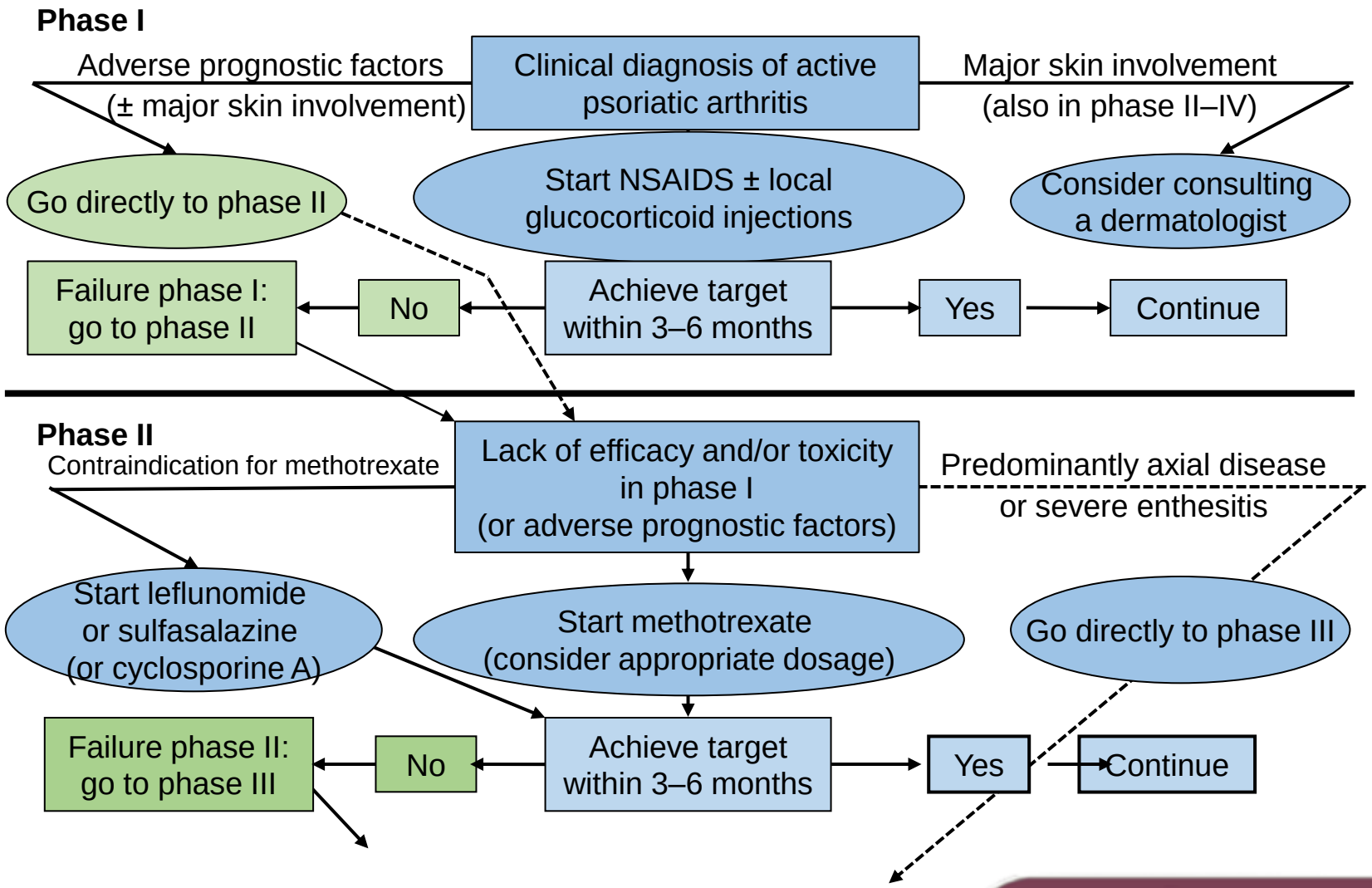
EULAR Treatment Algorithm for PsA



Recommendation

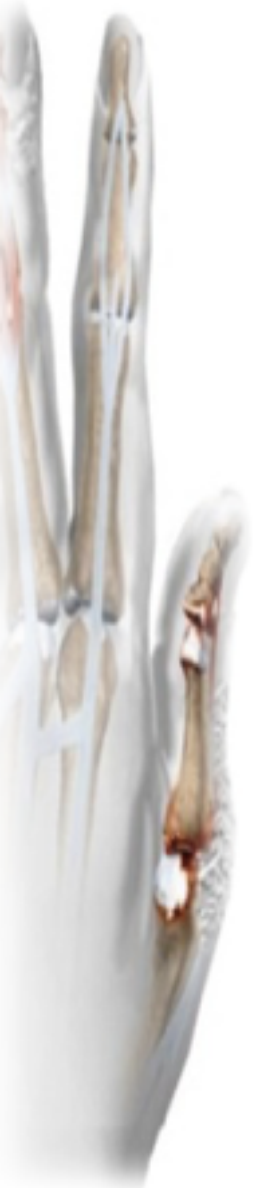
Algorithm





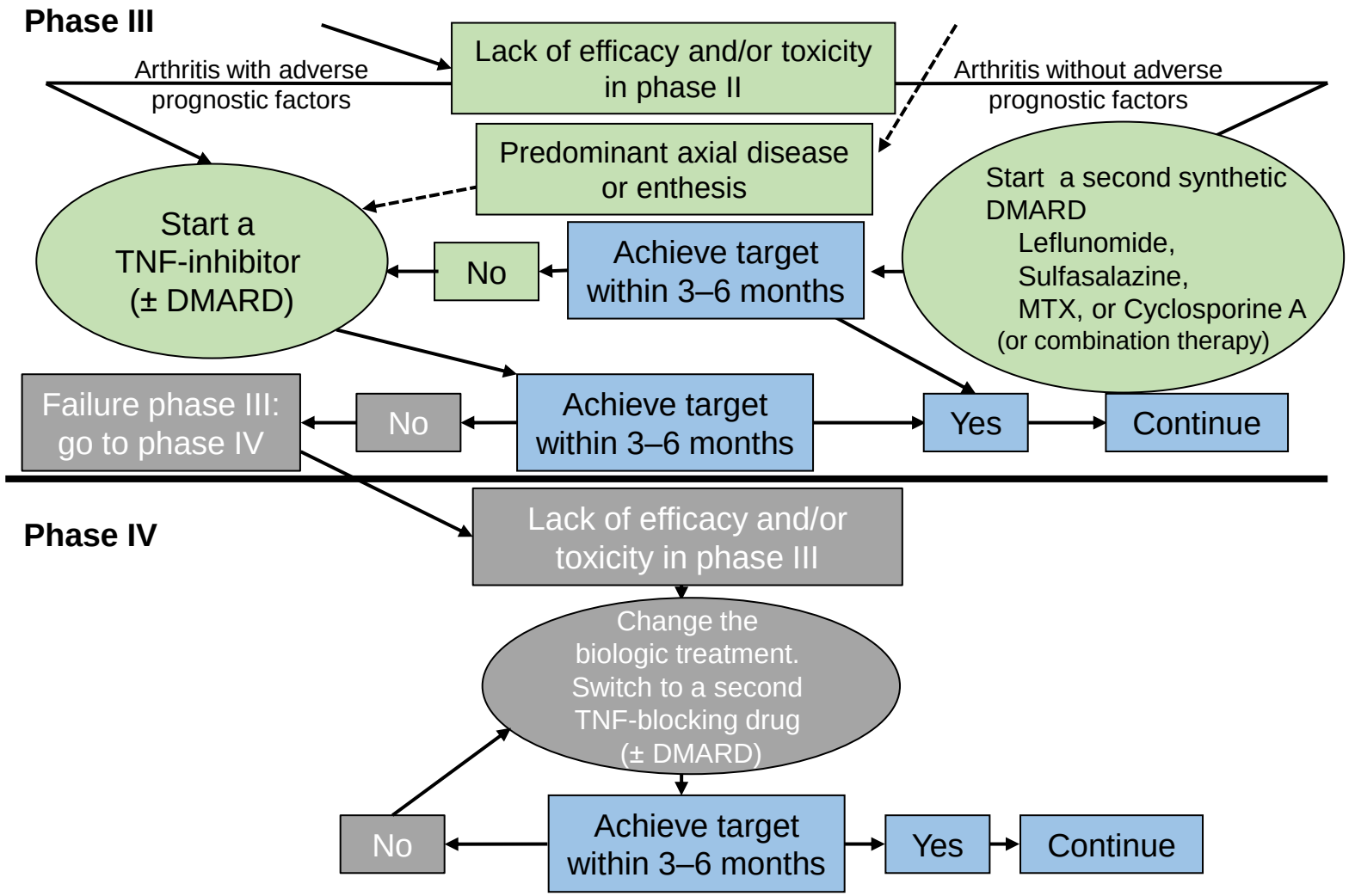
Gossec L et al., Ann Rheum Dis. 2012 Jan;71(1):4-12

EULAR Treatment Algorithm for PsA



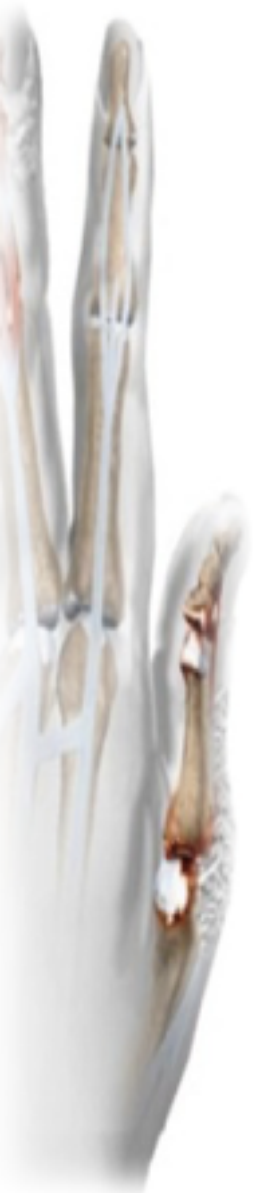
Recommendation

Algorithm



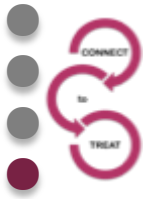
Gossec L et al., Ann Rheum Dis. 2012 Jan;71(1):4-12

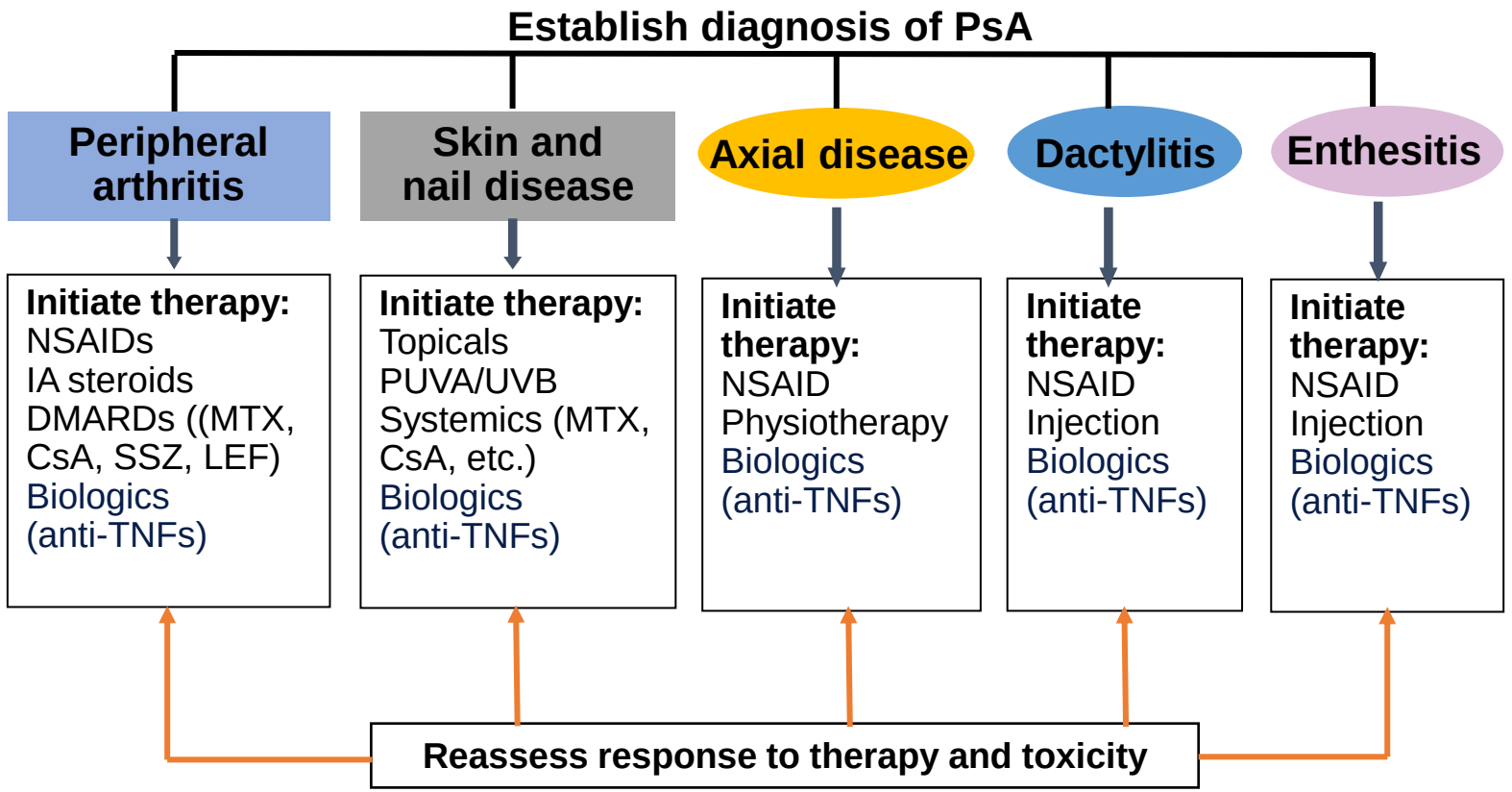
GRAPPA Treatment Recommendations for PsA (2009)



Recommendation

Algorithm





Ritchlin C, et al. ARD 2009; 68:1387-1394

Reactive arthritis

- Reactive arthritis is a rare disease even among rheumatology practices.
- Reactive arthritis has been defined by consensus as a form of arthritis that is associated with a coexisting extraarticular infection.

Reactive arthritis

- Only certain enteric and genitourinary pathogens are conventionally accepted as capable of causing reactive arthritis.
  - *Chlamydia trachomatis*,
  - *Yersinia*,
  - *Salmonella*,
  - *Shigella*,
  - *Campylobacter*,
  - *Clostridioides* (formerly *Clostridium*) *difficile*, and
  - *Chlamydia pneumoniae*.

Reactive arthritis

- Musculoskeletal features of reactive arthritis typically develop one to four weeks following an acute infection with one of the triggering organisms.

- At least one of the following is seen in all patients with this condition:
  - asymmetric oligoarthritis (often affecting the lower extremities)
  - enthesitis
  - dactylitis
  - inflammatory back pain.

- Extraarticular manifestations occur in some patients, but none are specific for reactive arthritis.
- These include eye involvement, most often with
  - conjunctivitis, but infrequently with
  - anterior uveitis
  - genitourinary tract symptoms
  - oral mucosal ulcers
  - cutaneous manifestations such as keratoderma blennorrhagica, circinate balanitis, and psoriasis-like nail changes.

- Laboratory findings may include
  - evidence of the infection,
  - elevated acute phase reactants, and
  - findings of inflammatory joint fluid in patients with arthritis.

- Antibiotic therapy should be used for treatment of active *Chlamydia trachomatis* infection, if present. In general, antibiotics are not indicated for uncomplicated enteric infections or for treatment of the arthritis itself.
- We suggest treatment of arthritis in most patients initially with nonsteroidal antiinflammatory drugs (NSAIDs)
- In patients who do not respond adequately to NSAIDs, we suggest intraarticular glucocorticoids, rather than initiating therapy with daily oral glucocorticoids or a DMARD.

- In patients who do not respond adequately to NSAIDs and intraarticular glucocorticoid injections, we suggest low to moderate doses of systemic glucocorticoids, rather than initiating treatment with a DMARD.

- A typical dose would be prednisone, 20 mg daily, titrated to the lowest dose required to control symptoms

- In patients who have not responded adequately to NSAIDs over at least four weeks and who require ongoing therapy with more than 7.5 mg of prednisone or equivalent for more than three to six months we suggest a trial of a nonbiologic DMARD, rather than continuing moderate to high dose glucocorticoids without a DMARD.
- We usually prescribe sulfasalazine.
- Methotrexate is an alternative to SSZ.

- The prognosis is good in the majority of patients, with spontaneous remission within 6 to 12 months of onset of arthritis.

- However, some patients have persistent but mild musculoskeletal symptoms, and others develop radiologic evidence of joint injury and evolve to a more chronic form of SpA.