

# "CLOSER LOOK AT *SpA*"

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Rheumatology Unit - KKUH







**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**

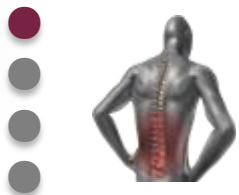
**IV. MRI**

**V. MANAGMENT**

# Spondyloarthritis (SpA) diseases:???

What are they?

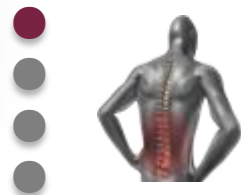
1. Ankylosing spondylitis (AS)
2. Non-radiographic axial spondyloarthritis (nr-axSpA)
3. PsA
4. IBD related arthritis
5. ReA
6. Undifferentiated Peripheral SpA



# Spondyloarthritis (SpA) diseases:???

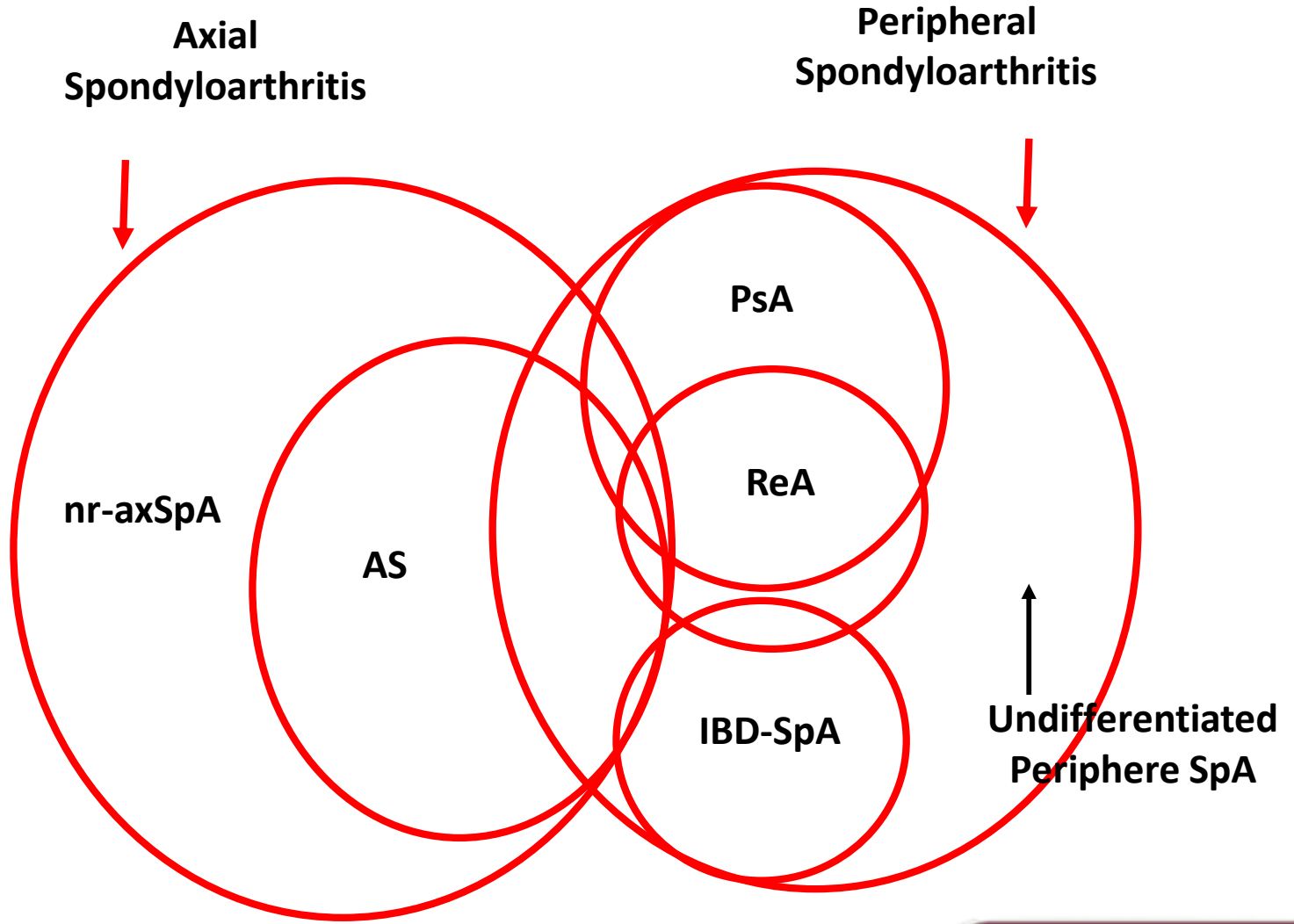
What are they?

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



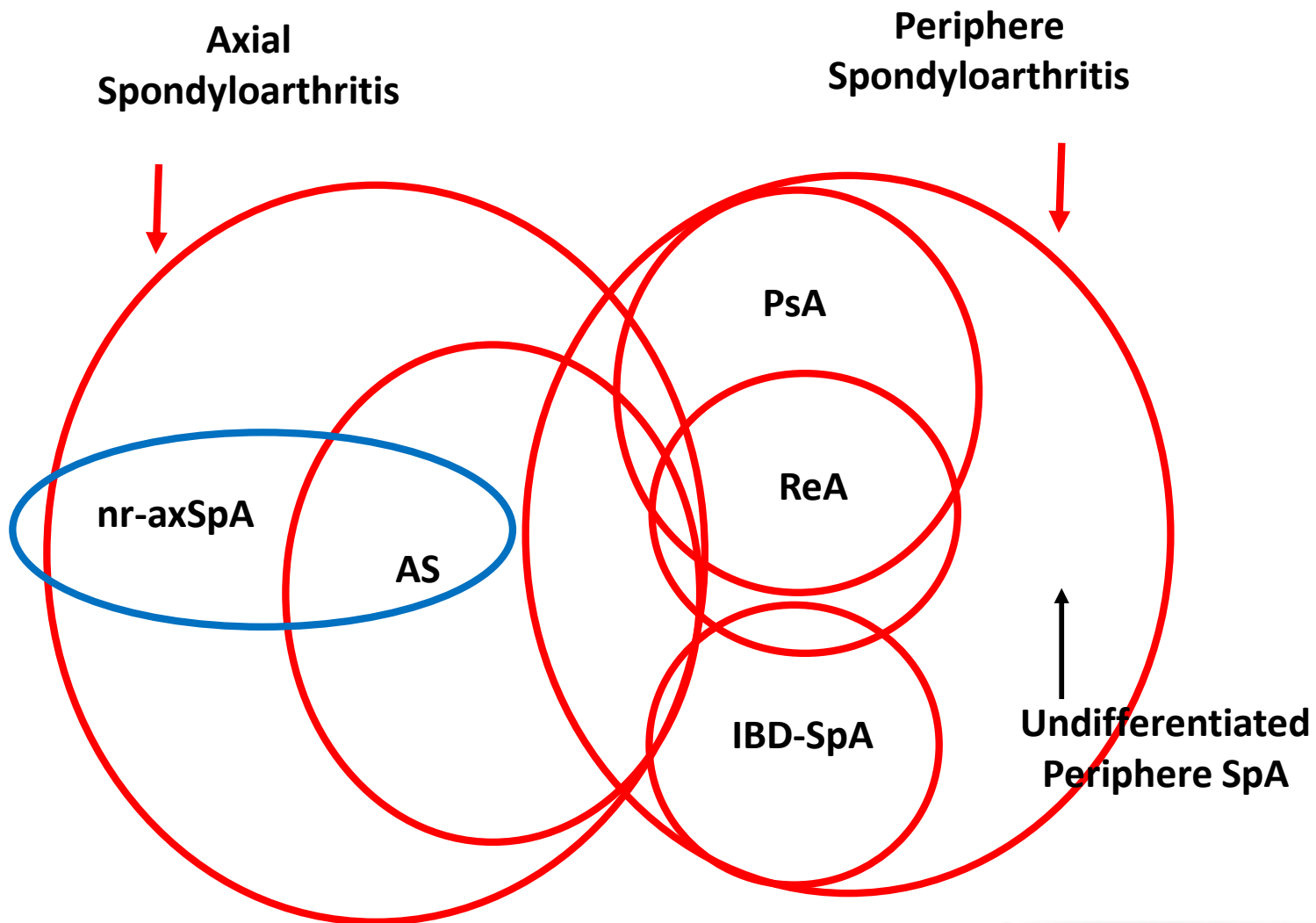
**Complex  
disease**

## 2 Broad Overlapping Categories



**Complex  
disease**

## 2 Broad Overlapping Categories





# 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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‡Health Economics and Quality of Life Research Group, Department of Dermatology, University Clinics of Hamburg, Martinistrasse 52, 20246 Hamburg, Germany

### 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.

### Correspondence

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E-mail: reich@dermatologikum.de

### Accepted for publication

29 October 2008

### Key words

epidemiology, health care, psoriasis, psoriatic arthritis

### Conflicts of interest

None declared.

DOI 10.1111/j.1365-2133.2008.09023.x

# Ankylosing spondylitis

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





- Tips
- Symptoms
- Patient History**
- Lab
- Genetics
- Imaging

**Good response to NSAIDs**

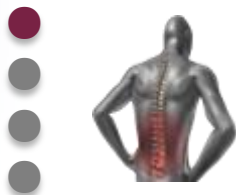


**Dealing with a Solvable Problem**



# 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.  
Reproduced with the permission of Cahner's Publishing Co.

# 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  $\geq 2$  bilaterally or grade 3-4 unilaterally

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





# NEW YORK CRITERIA

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

# ASAS Classification Criteria for Spondyloarthritis (SpA)

In patients with  $\geq 3$  months back pain and age at onset  $< 45$  years

**Sacroiliitis on imaging** plus  $\geq 1$  SpA feature

OR

**HLA-B27** plus  $\geq 2$  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

In patients with peripheral symptoms ONLY

**Arthritis or enthesitis or dactylitis** plus

$\geq 1$  SpA feature

- uveitis
- psoriasis
- Crohn's/colitis
- preceding infection
- HLA-B27
- sacroiliitis on imaging

OR

$\geq 2$  other SpA features

- arthritis
- enthesitis
- dactylitis
- IBP ever
- family history for SpA

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

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



# Axial Spondyloarthritis



Non-radiographic stage

Radiographic stage

Modified New York Criteria 1984

Back pain  
Sacroiliitis on MRI

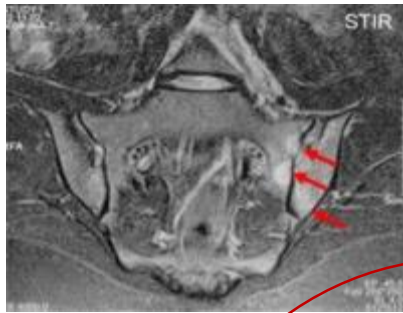
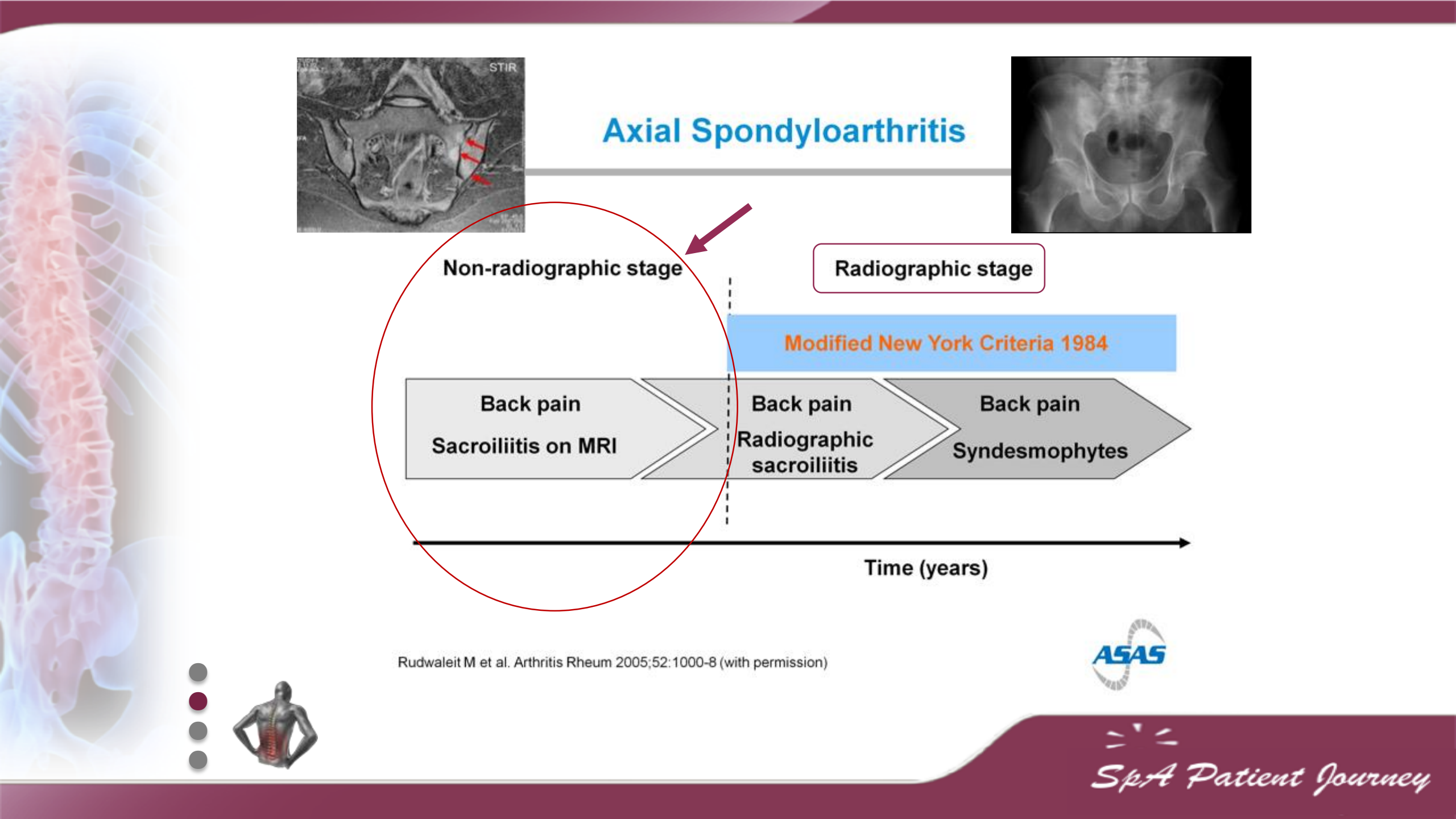
Back pain  
Radiographic sacroiliitis

Back pain  
Syndesmophytes

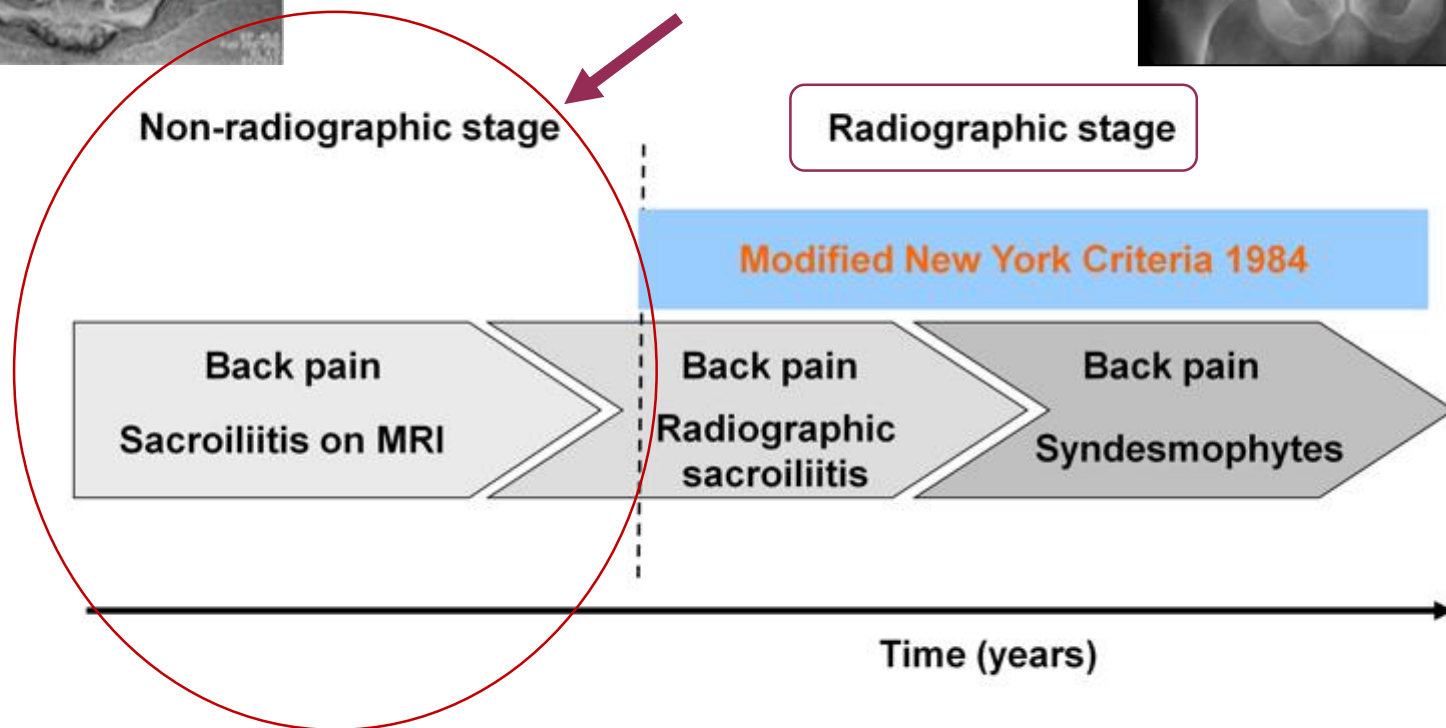
Time (years)

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

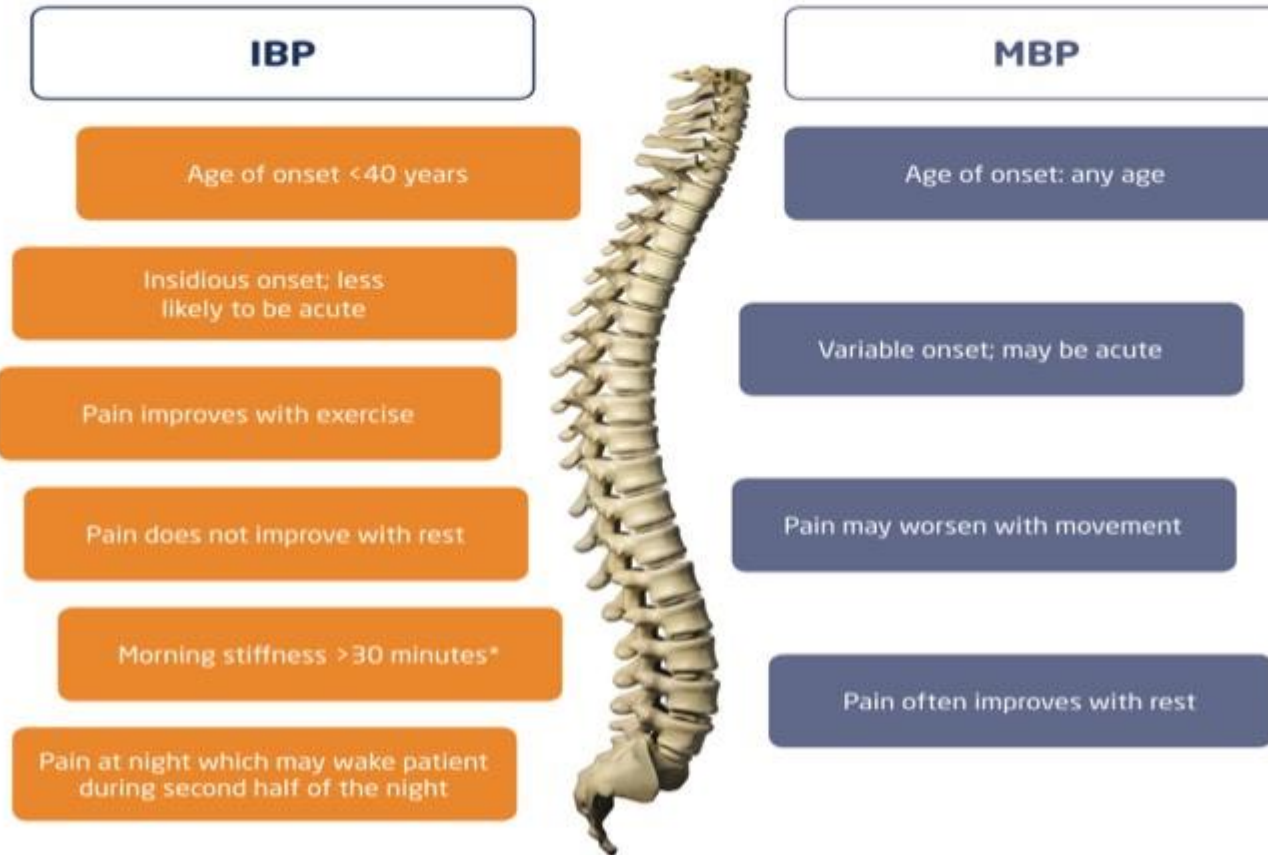
\*\*Odds ratio for progression in patients with elevated serum C-reactive protein level (>6 mg/l) was:  
4.11 (95% CI 1.13-14.95).

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)



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

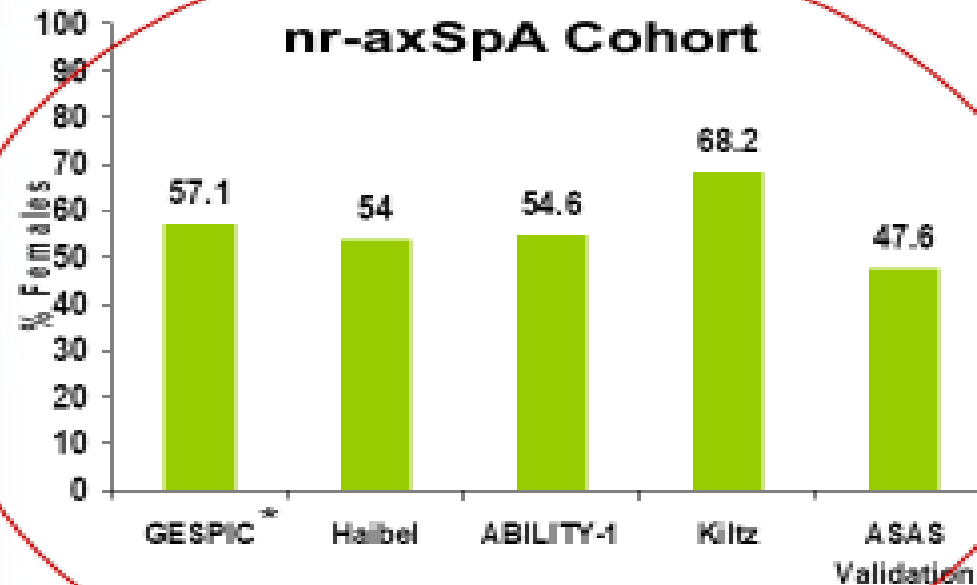


**M vs F**

(♀ : ♂)

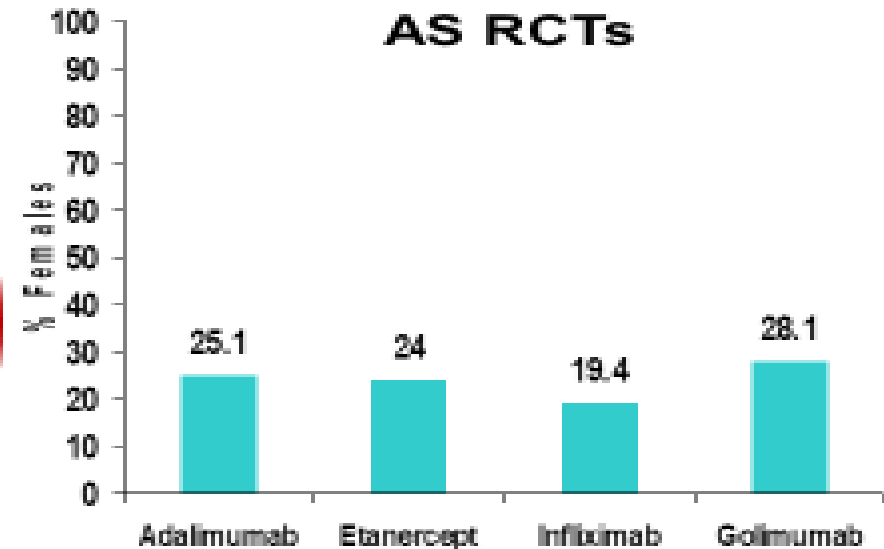
## Percent of Female in Nr-Ax SpA Cohorts & AS Clinical Studies:

- 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. 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

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. Kitz et al. EULAR 2011. FRI 0529.
5. Rudwaleit et al. Ann Rheum Dis 2009;68:777-783.



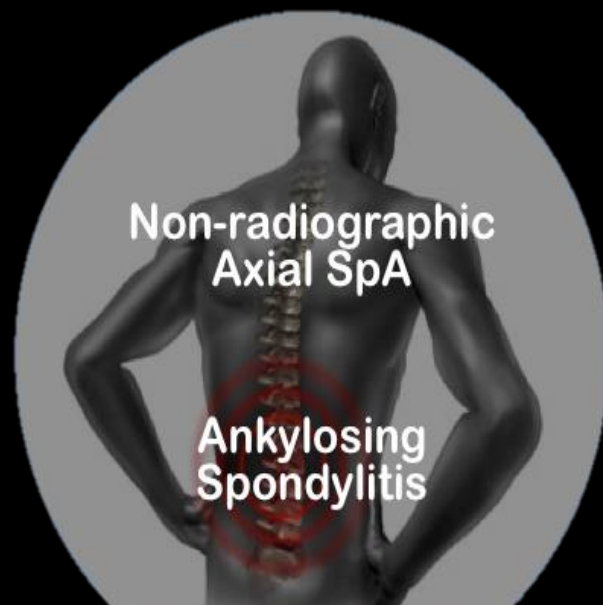
# Spondyloarthropathies – SpA

Is it only **SPINE**?



# Updated ASAS Concept of Spondyloarthritis (SpA)

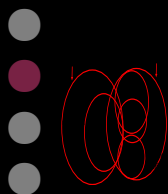
Groups Diseases into 2 Broad Overlapping Categories



Predominately Axial SpA



Predominately Peripheral SpA





**Non-radiographic  
Axial SpA**

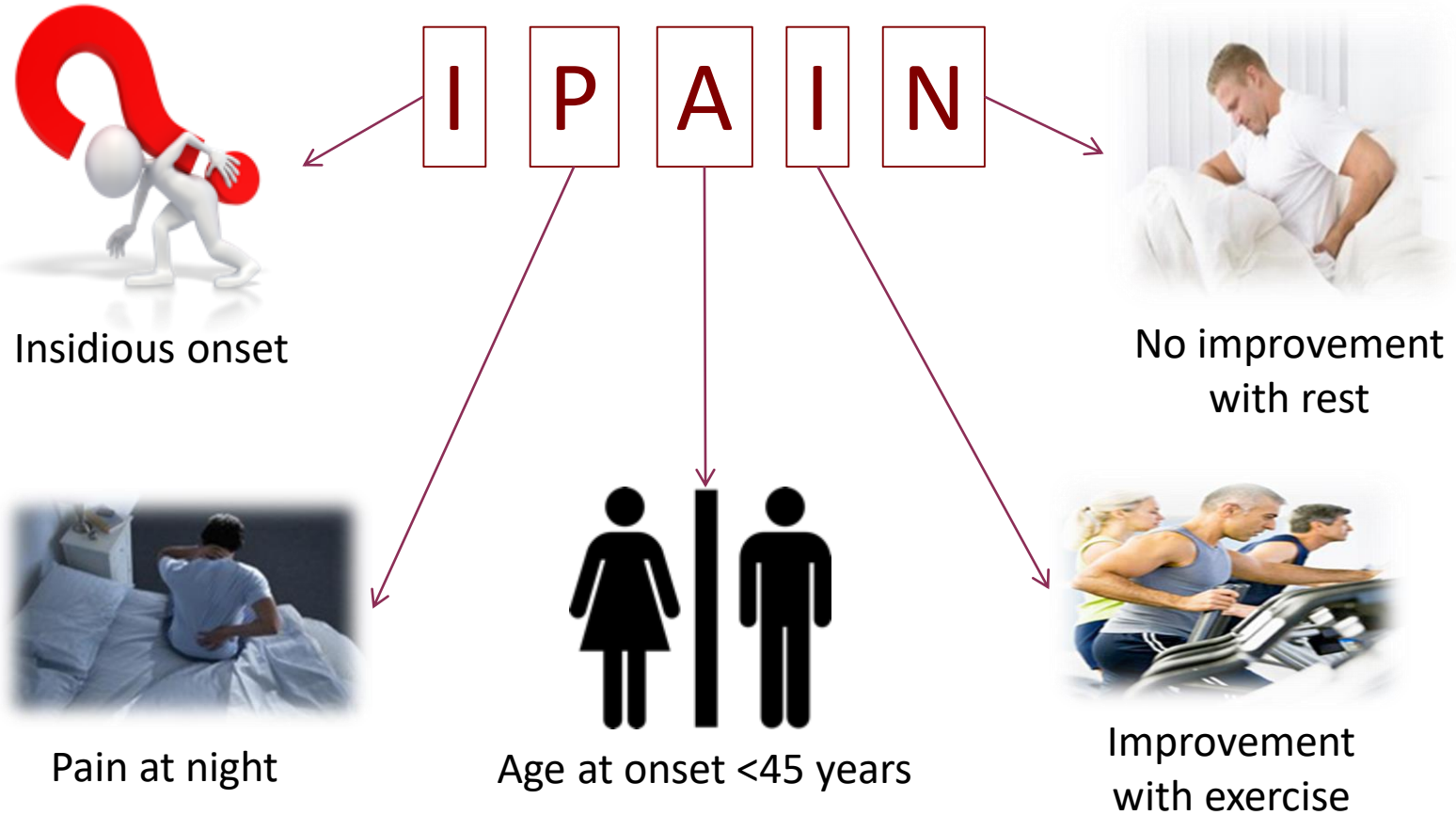
**Ankylosing  
Spondylitis**

**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:



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.



- Tips
- Symptoms
- Patient History
- Lab
- Genetics
- Imaging

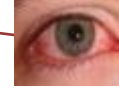


# Extra-articular Manifestations



## Uveitis

25-40% of patients affected



## Uveitis

25% of patients affected

## Psoriasis

16% of patients affected



## Axial Disease

40% of patients affected

## Inflammatory bowel Disease (IBD)

10% of patients affected (UC & CD)



## Nail Psoriasis

80-90% of patients affected at some point

## Dactylitis

21.5% of patients affected



## Synovial joint involvement

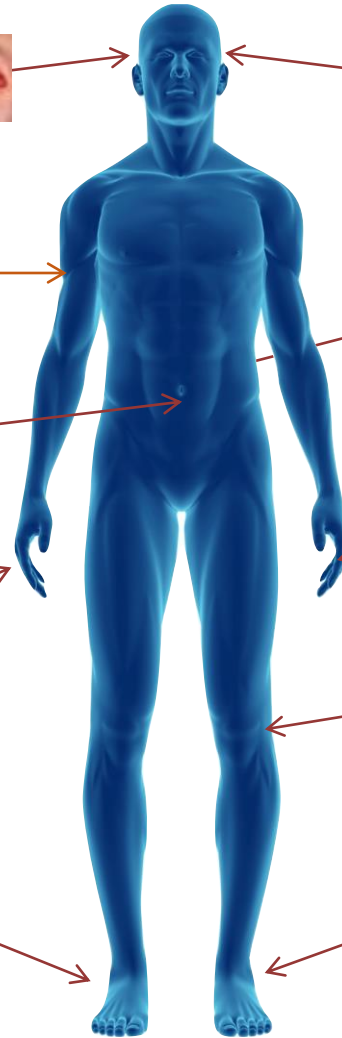
## Enthesitis

25-58% of patients affected



## Enthesitis

20% of patients affected



# Heel Pain - Enthesitis

Tips

Symptoms

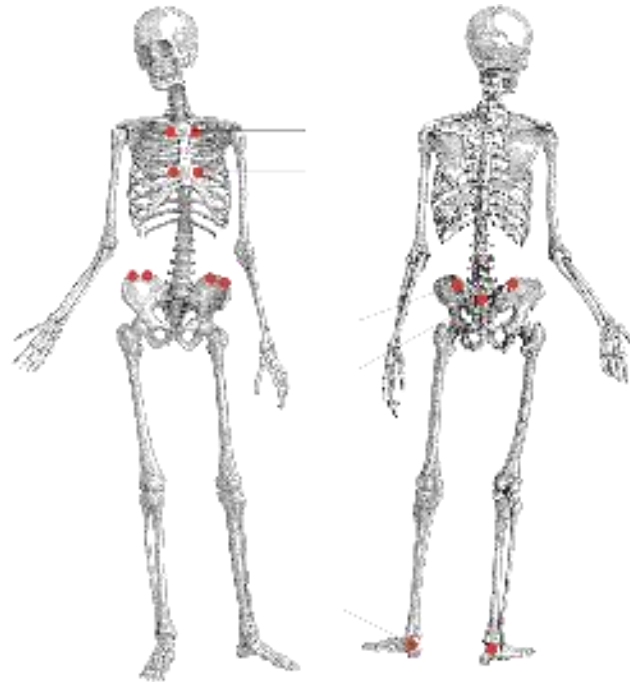
Patient History

Lab

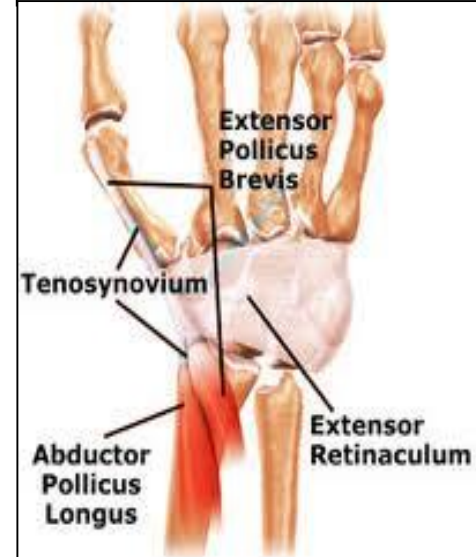
Genetics

Imaging

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



## Tenosynovitis Enthesitis



## Achilles heel Enthesitis



## Enthesitis (Insertion of Achilles Tendon at Calcaneus) Right Heel

Tips

Symptoms

Patient History

Lab

Genetics

Imaging



25-58% of patients affected



# Dactylitis

Tips

Symptoms

Patient History

Lab

Genetics

Imaging



21.5% of patients affected



## Eye: Acute Anterior Uveitis in Spondyloarthritis

Tips

Symptoms

Patient  
History

Lab

Genetics

Imaging

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



**25-40% of patients affected**



*SpA Patient Journey*



- Tips
- Symptoms
- Patient History
- Lab**
- Genetics
- Imaging



## 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.





Tips

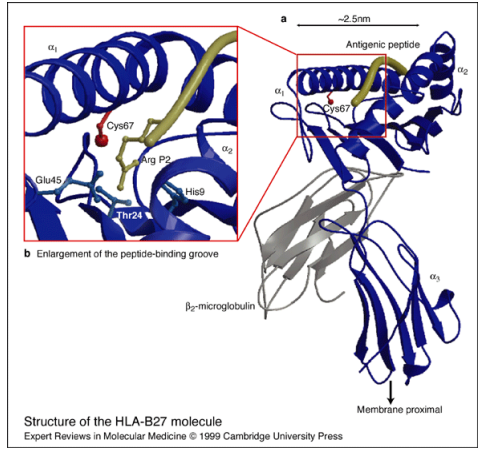
Symptoms

Patient History

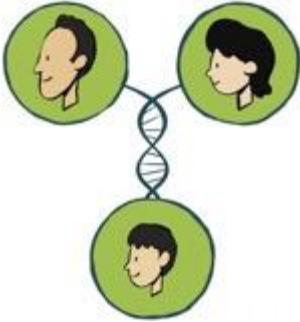
Lab

Genetics

Imaging



# 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.



Tips

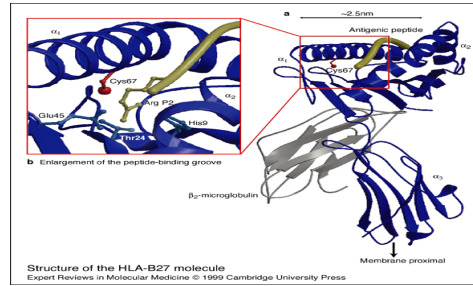
Symptoms

Patient History

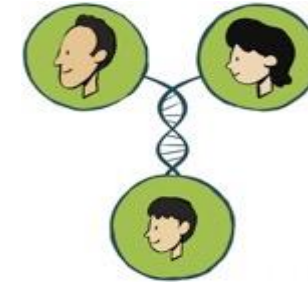
Lab

Genetics

Imaging



## HLA-B27



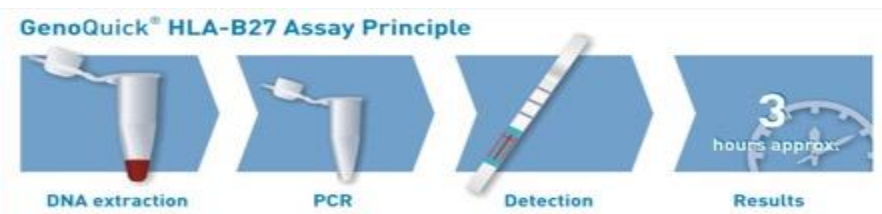
### Prevalence of HLA-B27 in the general population and in patients with axial spondyloarthritis in Saudi Arabia.

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

#### ⊕ 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.



# 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  $\geq 2$  bilaterally or grade 3-4 unilaterally

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

## Grading of Radiographic Sacroiliitis (1966)

Tips

Symptoms

Patient  
History

Lab

Genetics

Imaging

- **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



Tips

Symptoms

Patient History

Lab

Genetics

Imaging



## Sacroiliitis Grade 0 (Normal)

Tips

Symptoms

Patient  
History

Lab

Genetics

Imaging





## 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  $\geq 3$  months back pain and age at onset  $< 45$  years

**Sacroiliitis on imaging plus  $\geq 1$  SpA feature**

OR

**HLA-B27 plus  $\geq 2$  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

In patients with peripheral symptoms ONLY

**Arthritis or enthesitis or dactylitis plus**

$\geq 1$  SpA feature

- uveitis
- psoriasis
- Crohn's/colitis
- preceding infection
- HLA-B27
- sacroiliitis on imaging

OR

$\geq 2$  other SpA features

- arthritis
- enthesitis
- dactylitis
- IBP ever
- family history for SpA

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

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



## Sacroiliitis Grade 0 (Normal)

Tips

Symptoms

Patient  
History

Lab

Genetics

Imaging





- Tips
- Symptoms
- Patient History
- Lab
- Genetics
- Imaging



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

Tips

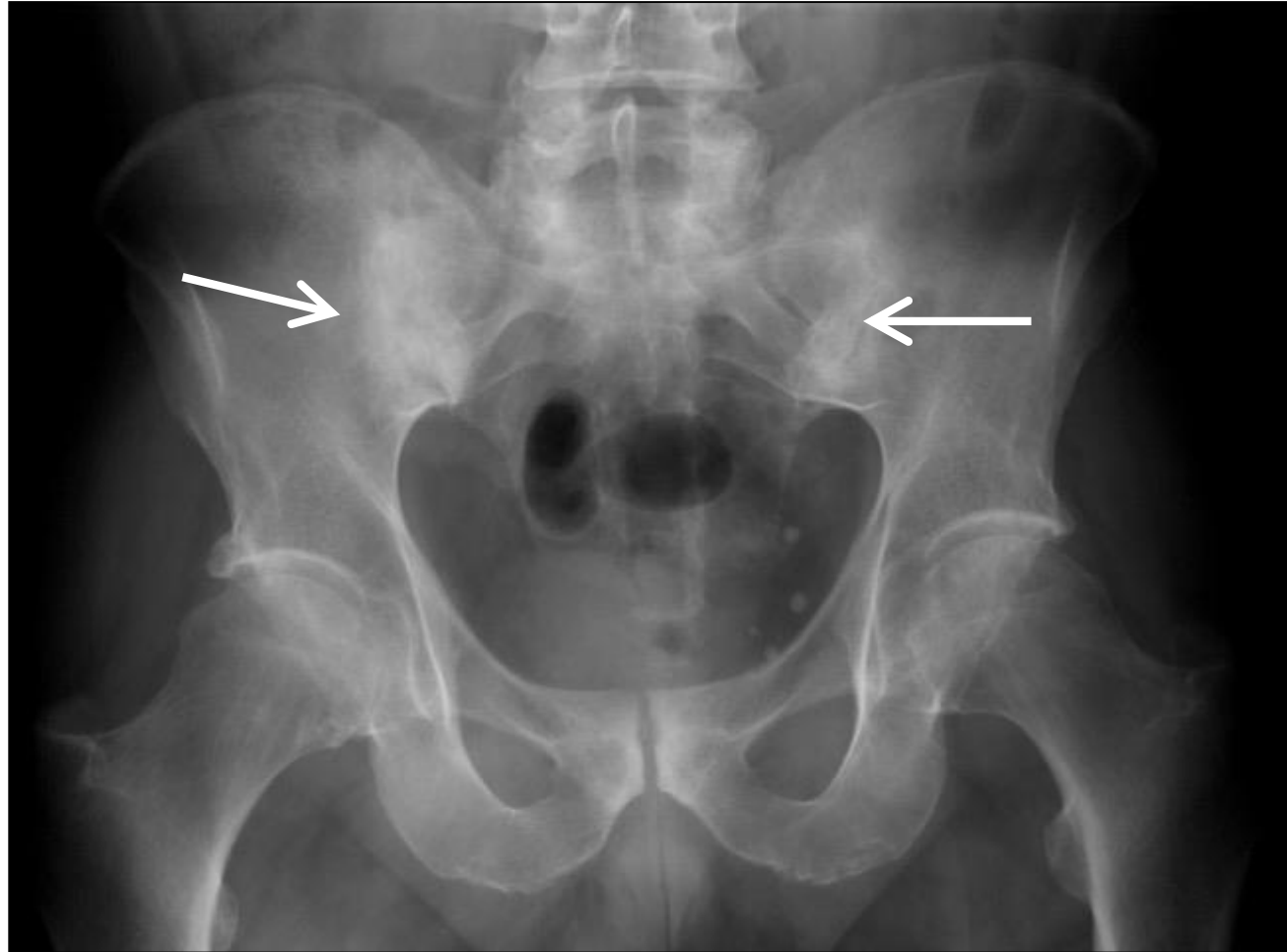
Symptoms

Patient  
History

Lab

Genetics

Imaging



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

Tips

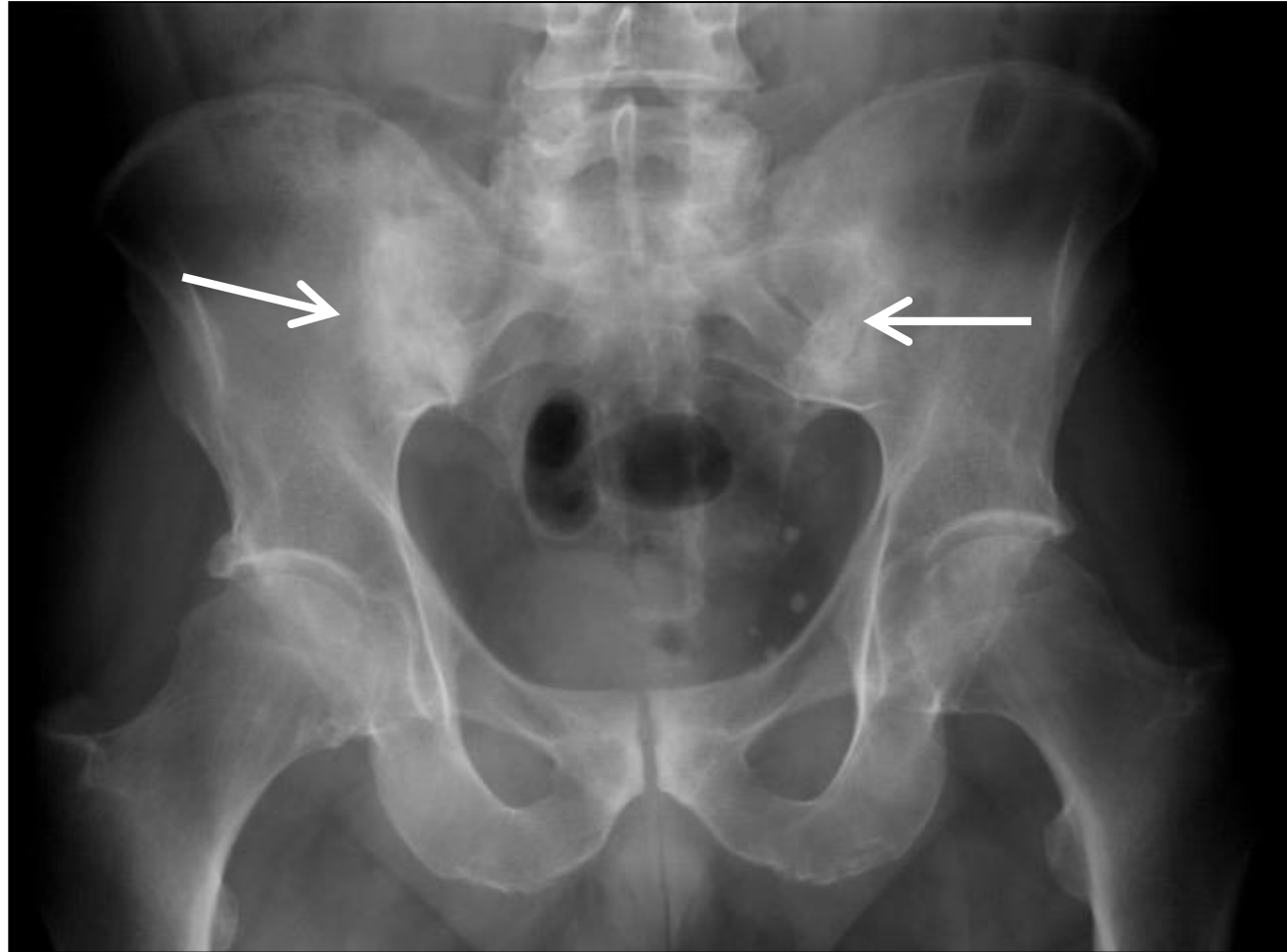
Symptoms

Patient  
History

Lab

Genetics

Imaging



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

Tips

Symptoms

Patient  
History

Lab

Genetics

Imaging



# Spondylitis

Tips

Symptoms

Patient History

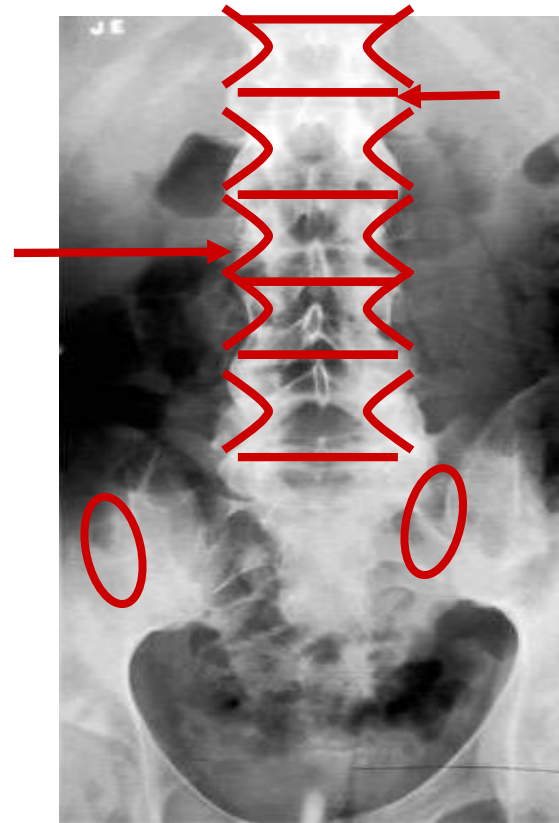
Lab

Genetics

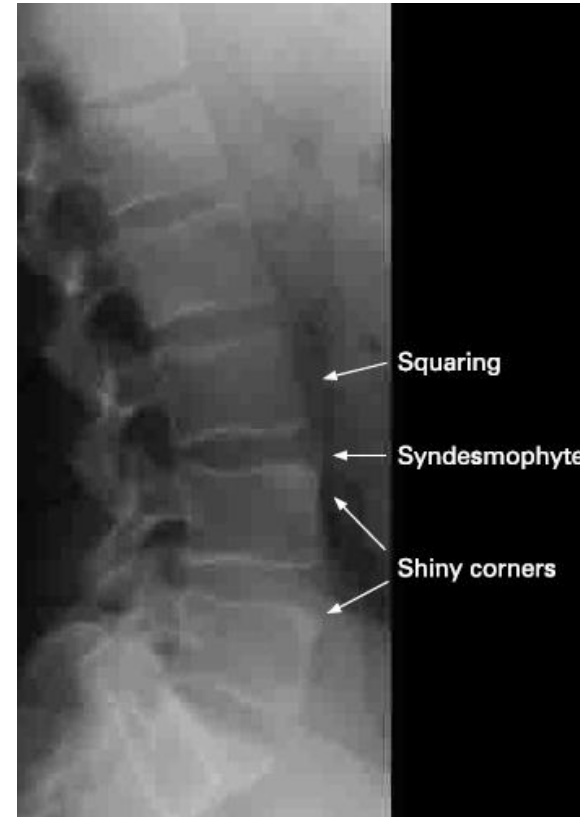
Imaging



Normal



Ankylosing Spondylitis:  
Bamboo Spine, Lumbar Vertebrae

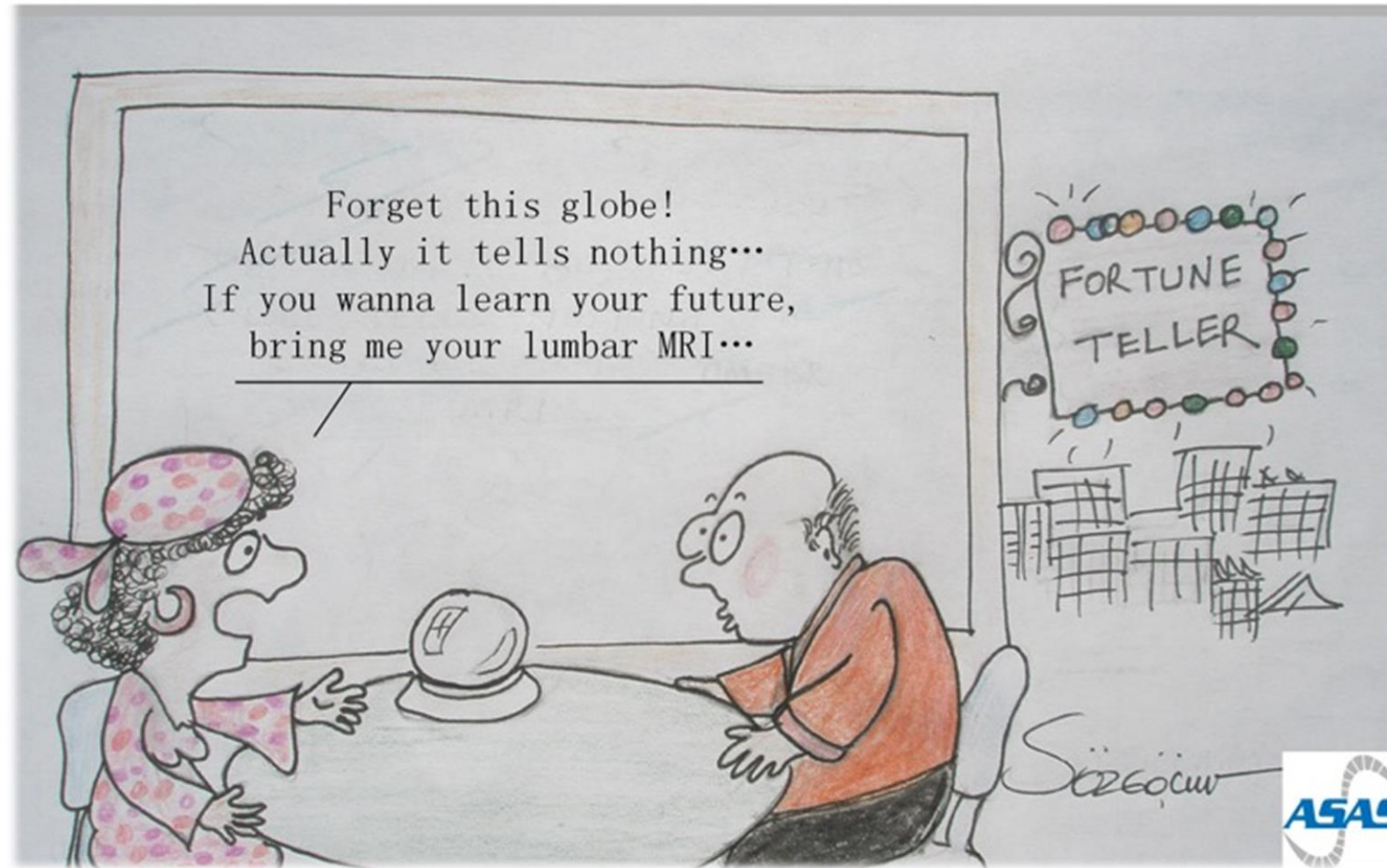


Rheumatology Image Bank 2011 ACR AS Bamboo Spine Image 99-07-0044  
Kelley's Textbook of Rheumatology. 2009:813.: Figure 53-58. Radiopaedia.org



“Ask Your Patients to bring their  
lumber MRI”

## Magic MRI...

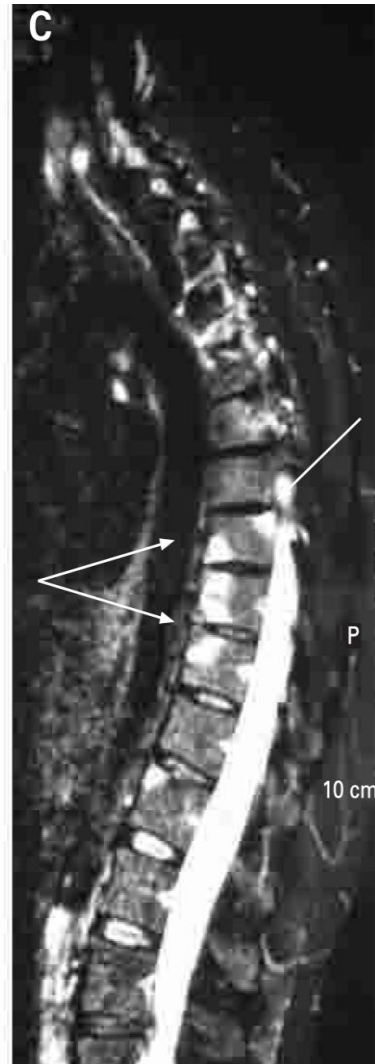




### Box 8 Signal characteristics of MRI sequences used for the imaging of spine and sacroiliac joints

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

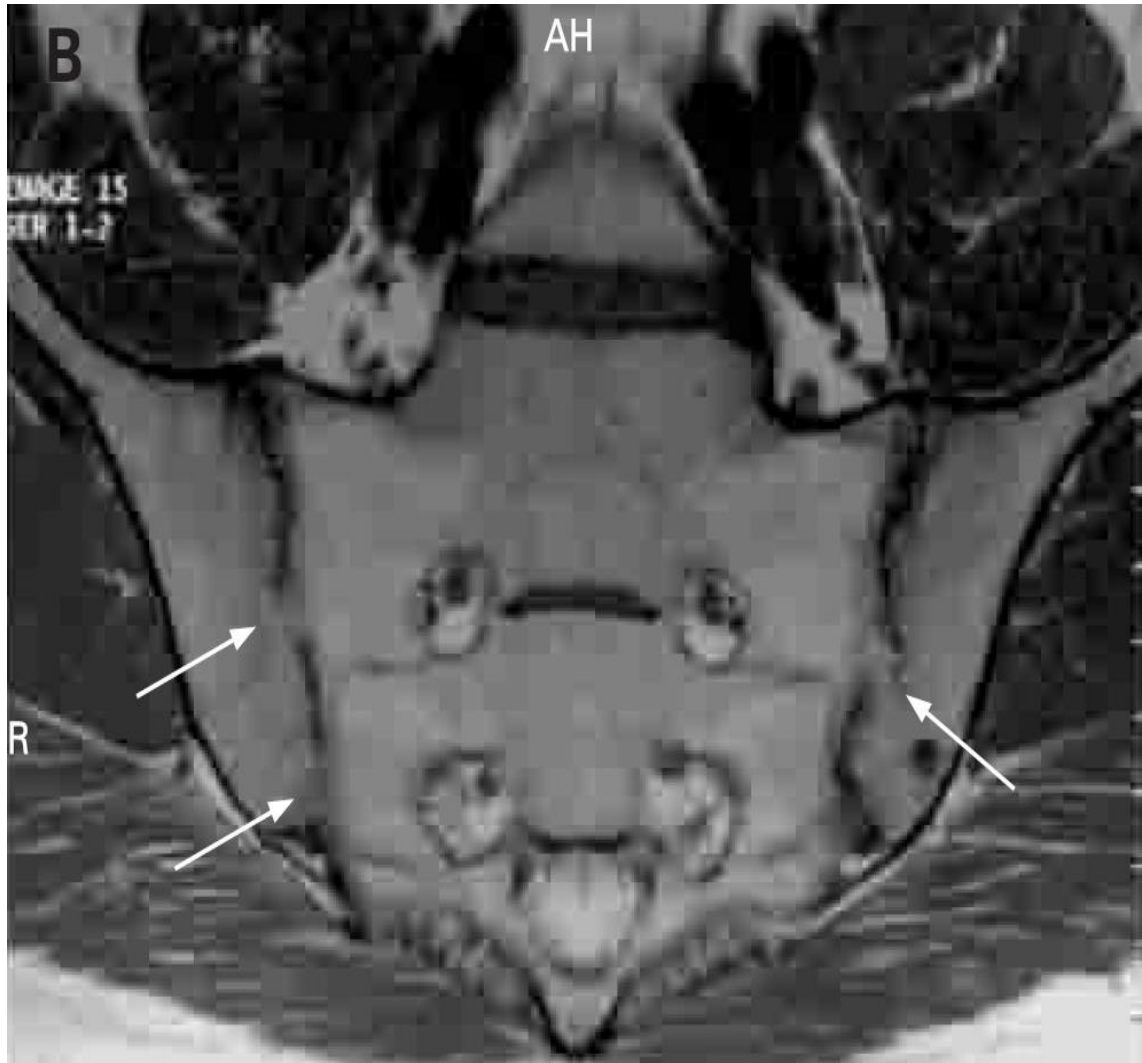
# MRI



## 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 <sup>1</sup>	Hypointense <sup>1</sup>	Hyperintense <sup>1</sup>	Hypointense <sup>1</sup>
T1-weighted post-gadolinium	Hypointense <sup>2</sup>	Hypointense <sup>2</sup>		Hyperintense <sup>2</sup>
With fat saturation			Hypointense <sup>2a</sup>	
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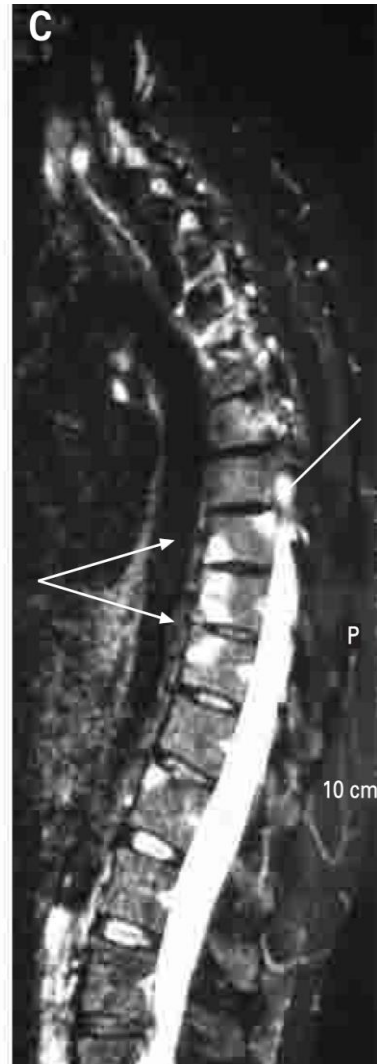
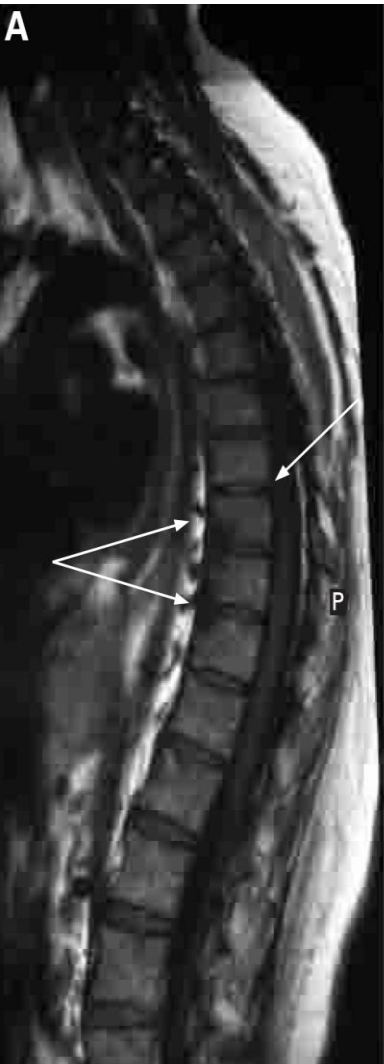
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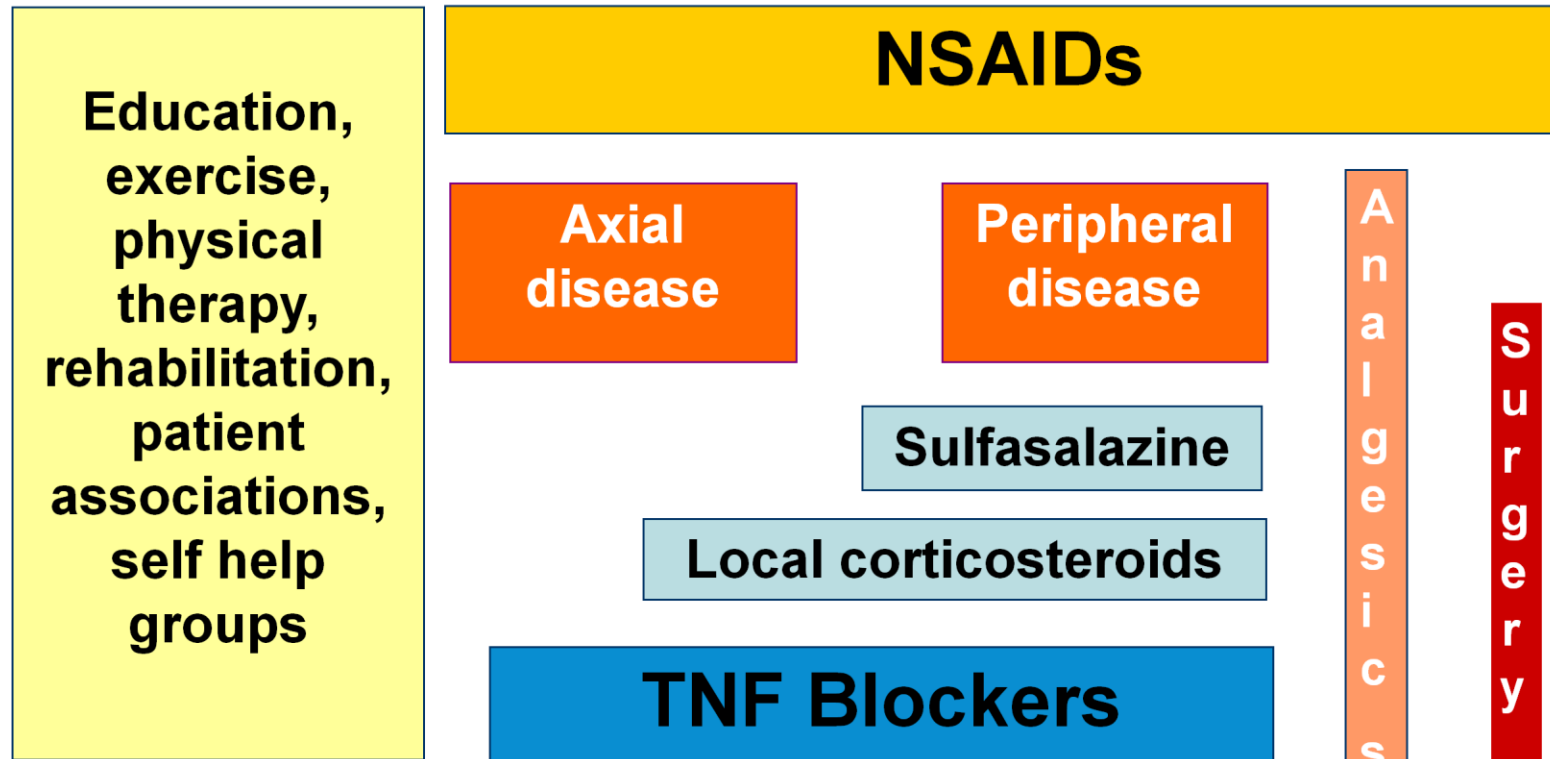
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# ASAS/EULAR Recommendations for the Management of Ankylosing Spondylitis

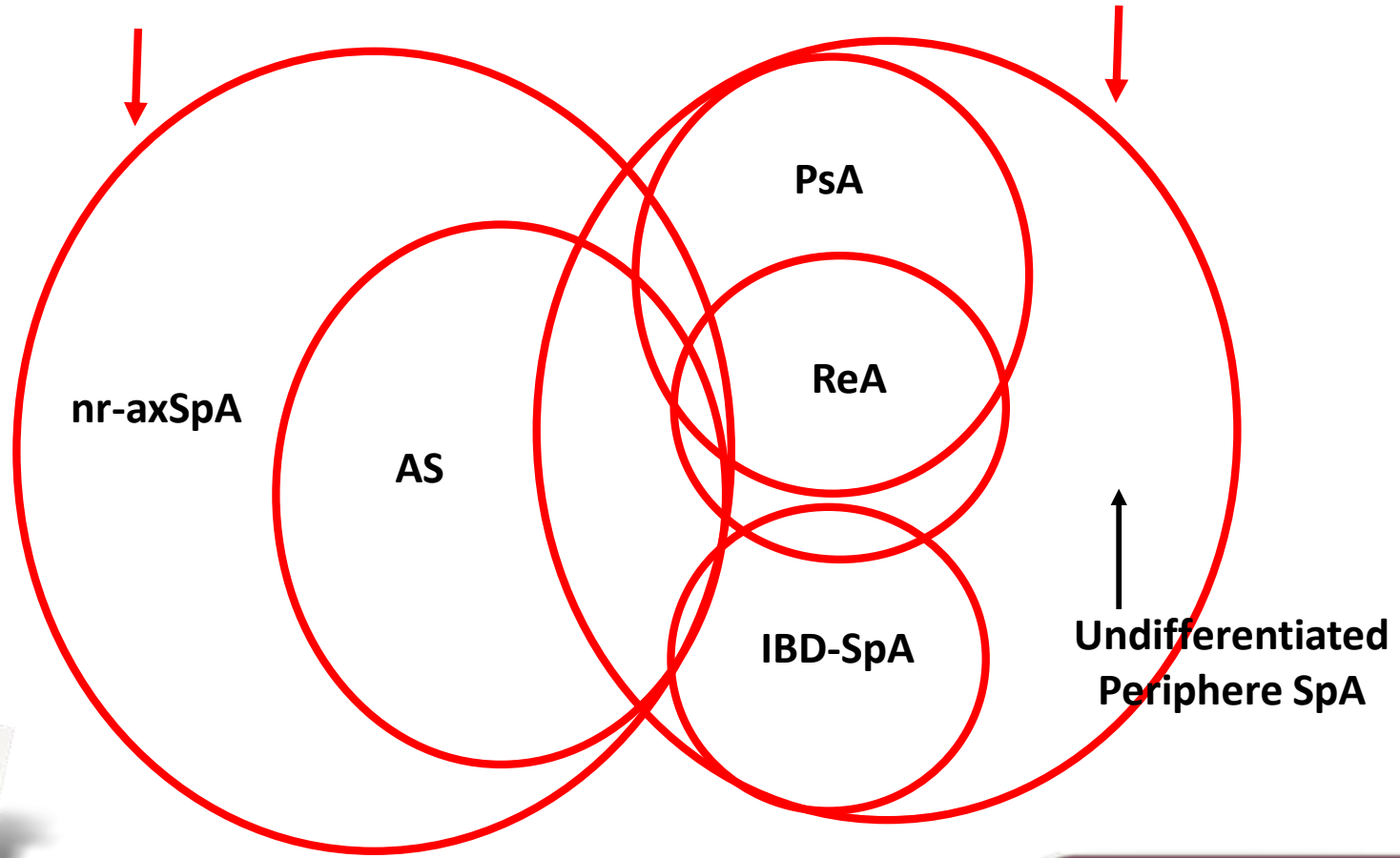


Complex disease

# SpA - Complex Overlapping diseases

Axial Spondyloarthritis

Periphere Spondyloarthritis



# Updated ASAS Concept of Spondyloarthritis (SpA)

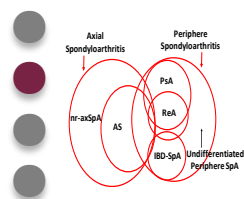
Groups Diseases into 2 Categories



Predominately Axial SpA



Predominately Peripheral SpA







Psoriatic Arthritis

Reactive Arthritis

Inflammatory Bowel  
Disease Associated  
Arthritis

Undifferentiated SpA

Tips

Patterns

Pathogene  
sis

Morbidity

Predominately Peripheral  
SpA



# PsA is a chronic progressive disease

**Skin changes**



**Swelling**



**Affected nails**



**Mutations**



**Time/Years**



# 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.

Tips

Patterns

Pathogenesis

Morbidity



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



Tips

Patterns

Pathogenesis

Morbidity



Pattern	Features	Rate
Asymmetrical	<ul style="list-style-type: none"> <li>• Usually involves small joints, less frequently involves large joints</li> <li>• Normally oligoarthritis (<math>\leq 4</math> joints)</li> </ul>	~ 47%
Symmetrical	<ul style="list-style-type: none"> <li>• Involves small joints and large joints</li> <li>• May be RF positive (clinically similar to RA)</li> <li>• Arthritis may develop concurrently with psoriasis</li> </ul>	~ 25%
Spondylitis	<ul style="list-style-type: none"> <li>• SIJ and vertebrae affected asymmetrically</li> <li>• More common in men</li> <li>• May coexist with peripheral PsA</li> <li>• Enthesitis prevalent</li> </ul>	~ 23%
DIP synovitis	<ul style="list-style-type: none"> <li>• Restricted to only DIP joints</li> </ul>	
Arthritis mutilans	<ul style="list-style-type: none"> <li>• Joint lysis</li> <li>• Telescoping movement</li> </ul>	

SIJ: sacroiliac joint

*SpA Patient Journey*

# Patterns in PsA

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

Tips

Patterns

Pathogenesis

Morbidity

Morning stiffness



Nail disease



Joint pain



# Asymmetric Psoriatic Arthritis



Tips

Patterns

Pathogenesis

Morbidity

- 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



Tips

Patterns

Pathogenesis

Morbidity

- 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)



Tips

Patterns

Pathogenesis

Morbidity

- 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



Tips

Patterns

Pathogenesis

Morbidity

- 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



Tips

Patterns

Pathogenesis

Morbidity

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



# TNF $\alpha$ Levels in Psoriatic skin blister fluids

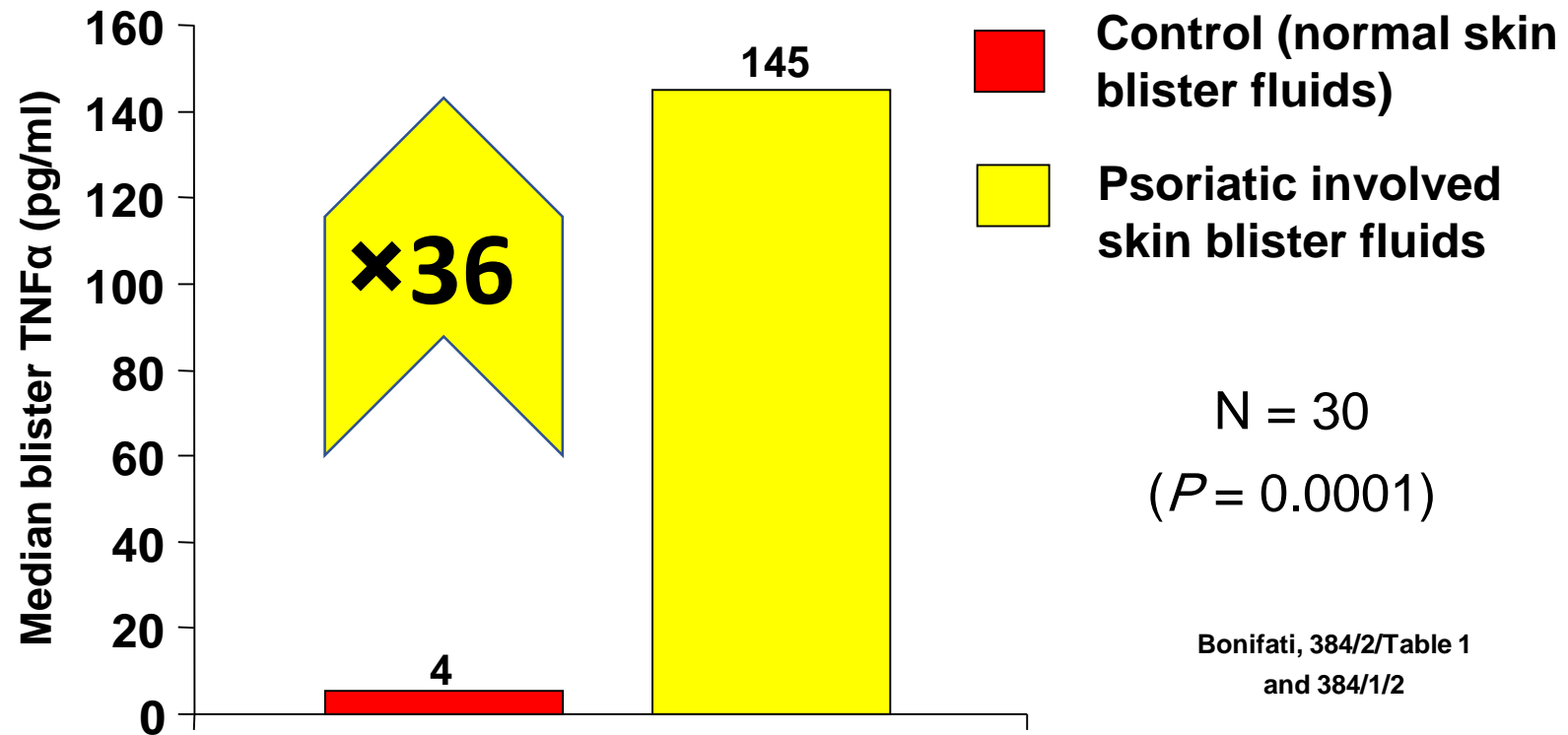
In a clinical trial, TNF $\alpha$  levels in psoriatic skin blister fluids were found to be much greater than in healthy control subjects

Tips

Patterns

Pathogenesis

Morbidity



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

# Morbidity Associated With PsA



Tips

Patterns

Pathogenesis

Morbidity

- 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



# Diagnosis of PsA Patients

Subclinical

Clinical

Imaging

Criteria





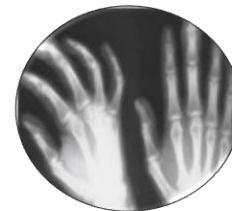
Subclinical

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**.



# 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: $\geq 1$ / $\geq 5$	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



# Actively inflamed joints



97% of patients affected

Subclinical

Clinical

Imaging

Criteria

# Plaque psoriasis

94% of patients affected



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





- Subclinical
- Clinical**
- Imaging
- Criteria



## Moderate to Severe Nail Changes in Patient with Psoriasis



83% of patients affected 

# Nails



Fingernail pitting

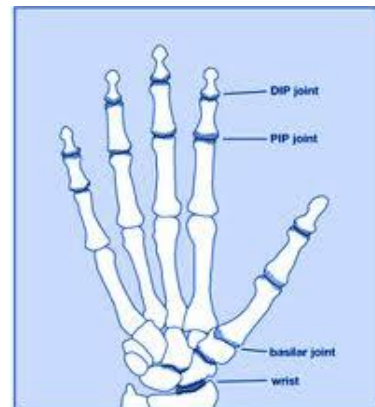
# PIP and DIP synovitis

Subclinical

Clinical

Imaging

Criteria



PIP = proximal interphalangeal.  
DIP = distal interphalangeal.

**54% of patients affected**

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



- 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

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

Subclinical

Clinical

Imaging

Criteria



*SpA Patient Journey*

# Dactylitis



Subclinical

Clinical

Imaging

Criteria



33% of patients affected



# Heel Pain - Enthesitis

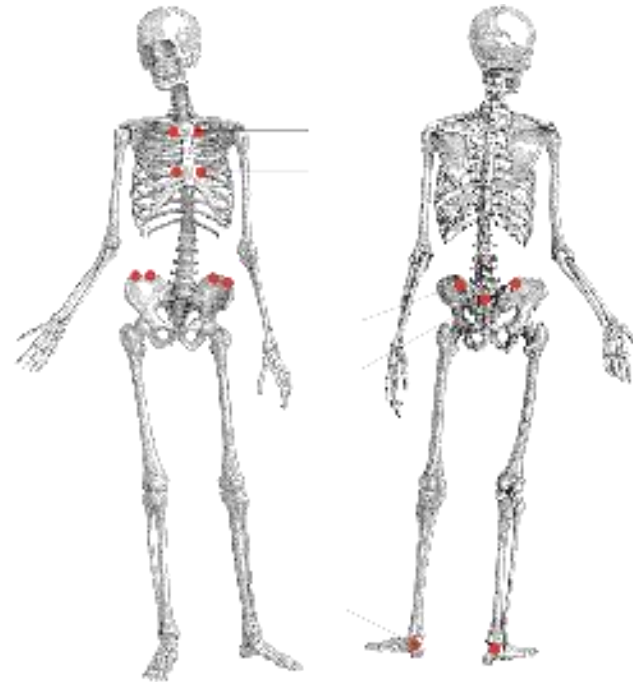
- Enthesitis is inflammation of Enteses.
  - ✓ Enteses are sites where tendons, ligaments, joint capsules, or fascia attach to bone.
- Heel Enthesitis is most common.

Subclinical

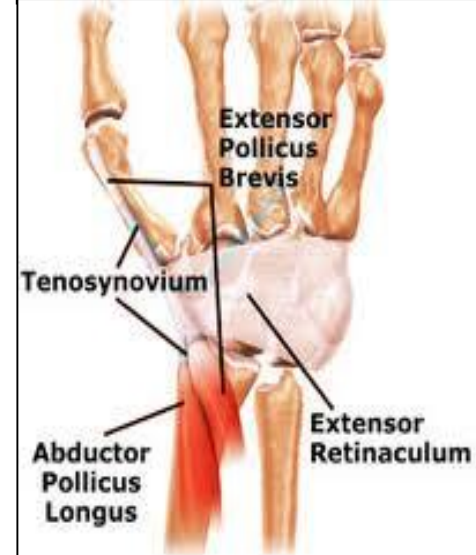
Clinical

Imaging

Criteria



## Tenosynovitis Enthesitis



## Achilles heel Enthesitis



## Enthesitis (Insertion of Achilles Tendon at Calcaneus) Right Heel

Subclinical

Clinical

Imaging

Criteria



20% of patients affected



## Eye: Acute Anterior Uveitis in Spondyloarthritis

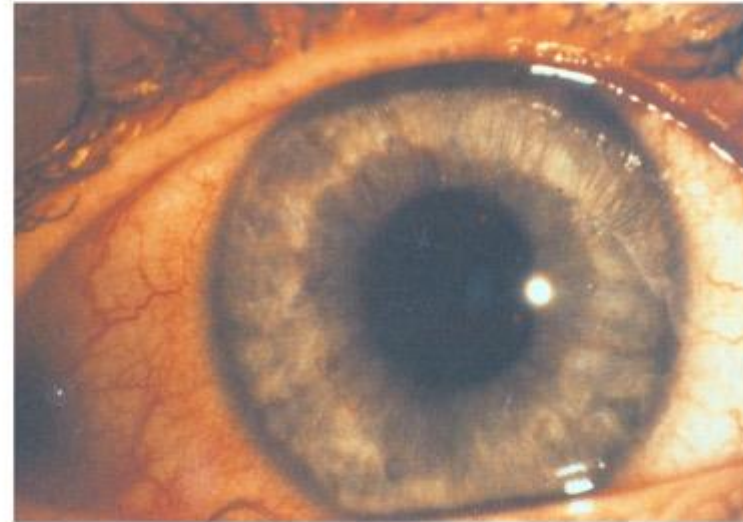
Subclinical

Clinical

Imaging

Criteria

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



25% of patients affected



# PsA Radiologic Features



Subclinical

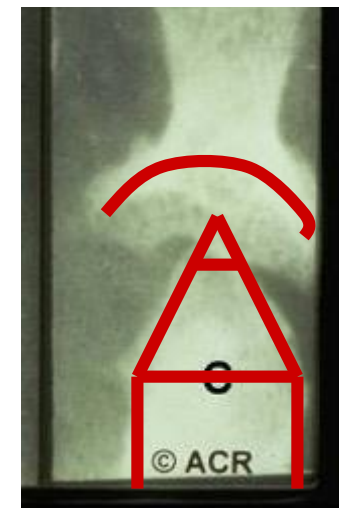
Clinical

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**.



# 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



# ASAS Classification Criteria for Spondyloarthritis (SpA)

- Subclinical
- Clinical
- Imaging
- Criteria**

In patients with  $\geq 3$  months back pain and age at onset  $< 45$  years

Sacroiliitis on imaging plus  $\geq 1$  SpA feature OR HLA-B27 plus  $\geq 2$  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

In patients with peripheral symptoms ONLY

Arthritis or enthesitis or dactylitis plus

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

- OR
- $\geq 2$  other SpA features
- arthritis
  - enthesitis
  - dactylitis
  - IBP ever
  - family history for SpA

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

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



# 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



Joints Arthritis



Nail lesions or pitting

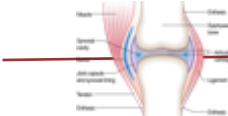


Dactylitis



**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



# 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



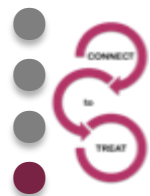
## Pain Clinic



## Family Medicine Clinic



← 6 Ys to Diagnosis by Rheumatologist →

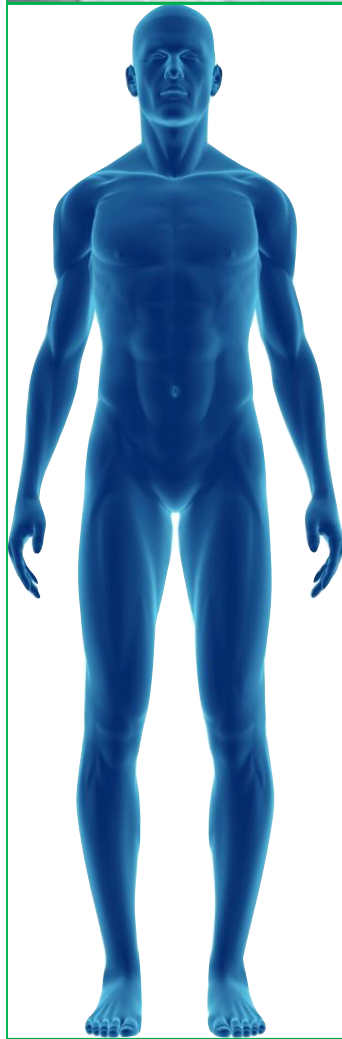




Derma Clinic



Pain Clinic

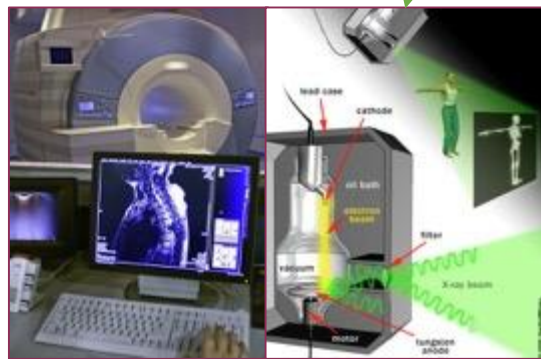


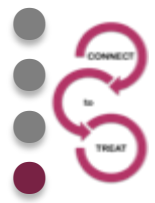
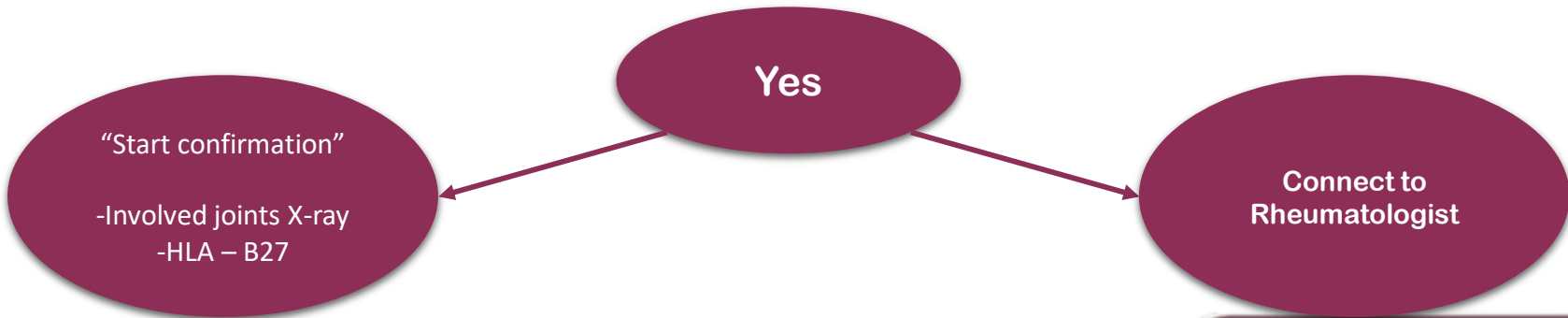
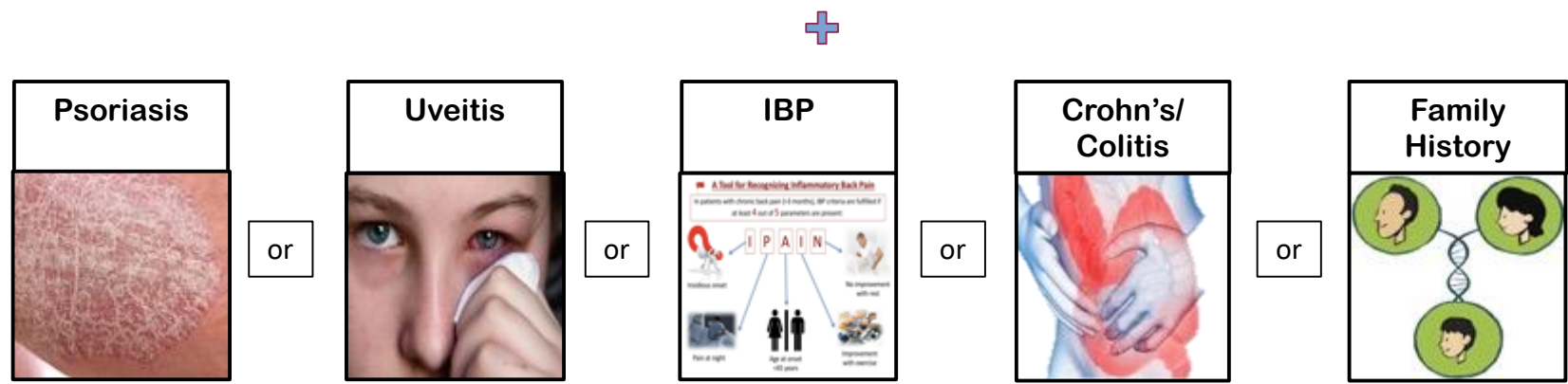
Ophtha Clinic



Family Medicine  
Clinic

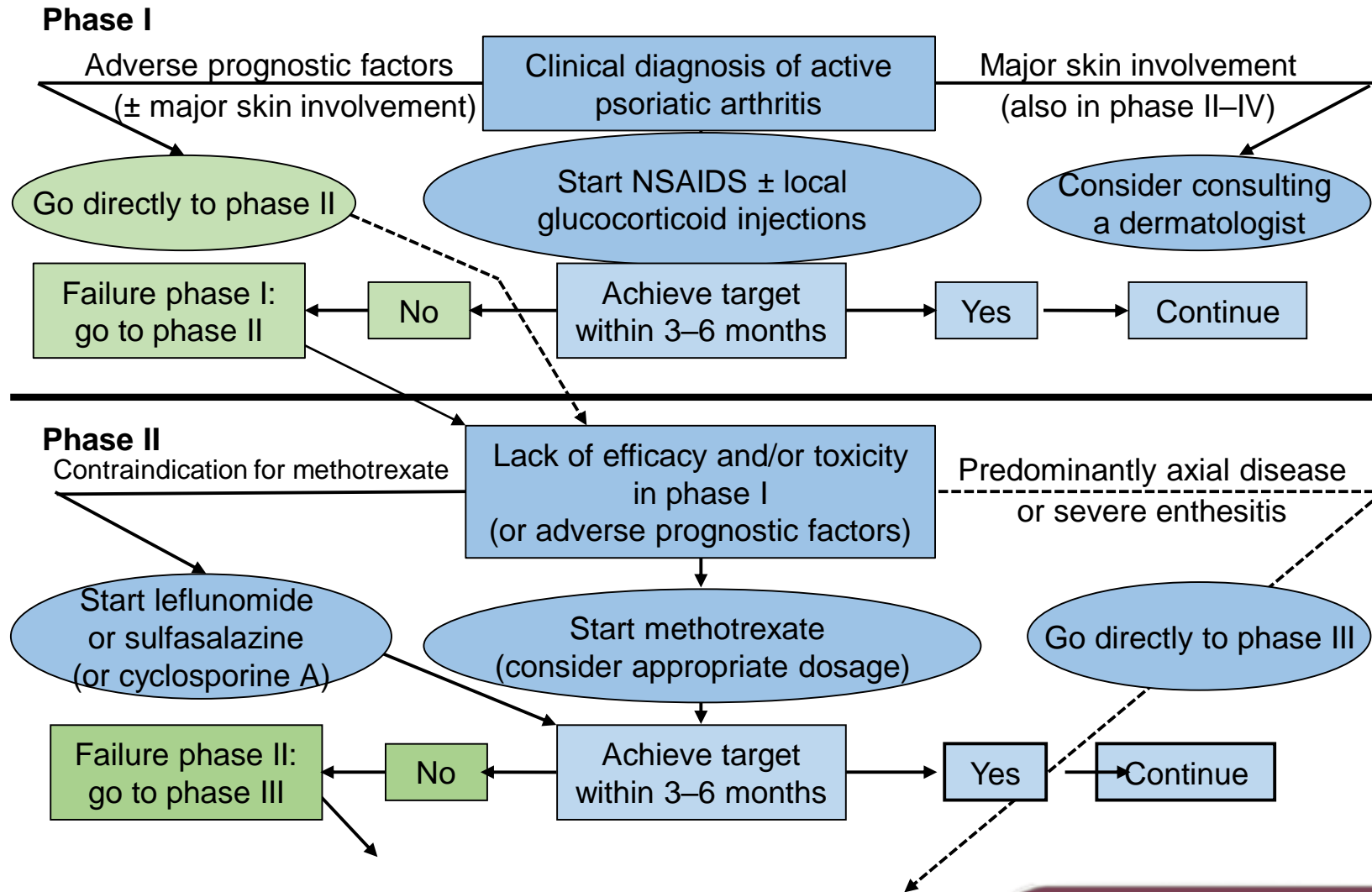
ESR, CRP,  
HLA-B27





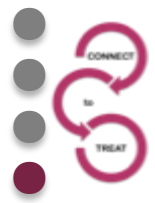


# EULAR Treatment Algorithm for PsA

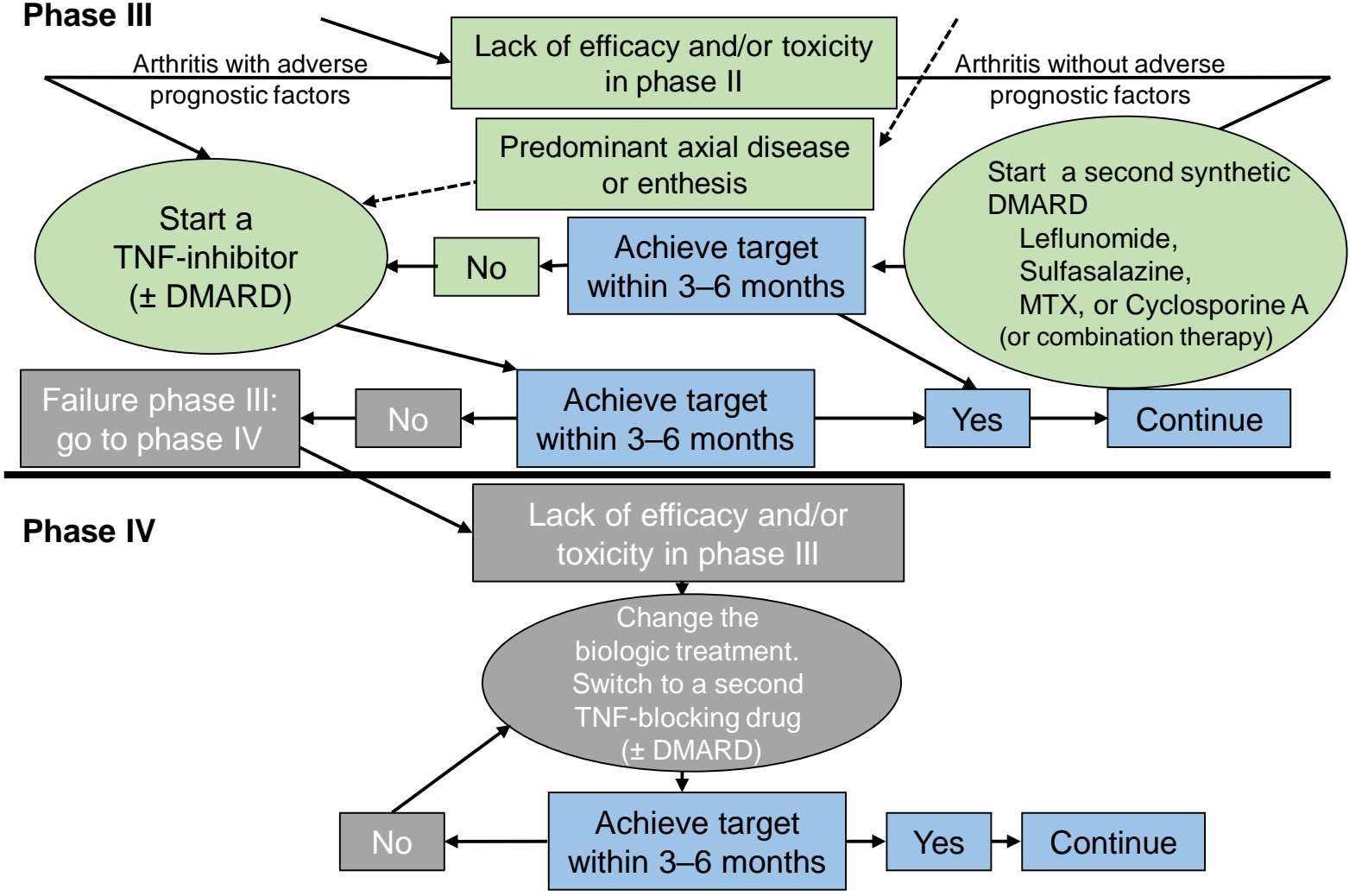


Recommendation

Algorithm

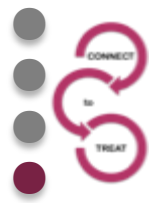


# EULAR Treatment Algorithm for PsA



Recommendation

Algorithm



# GRAPPA Treatment Recommendations for PsA (2009)



Recommendation

Algorithm

