

RECOGNISING INFLAMMATORY BACK PAIN



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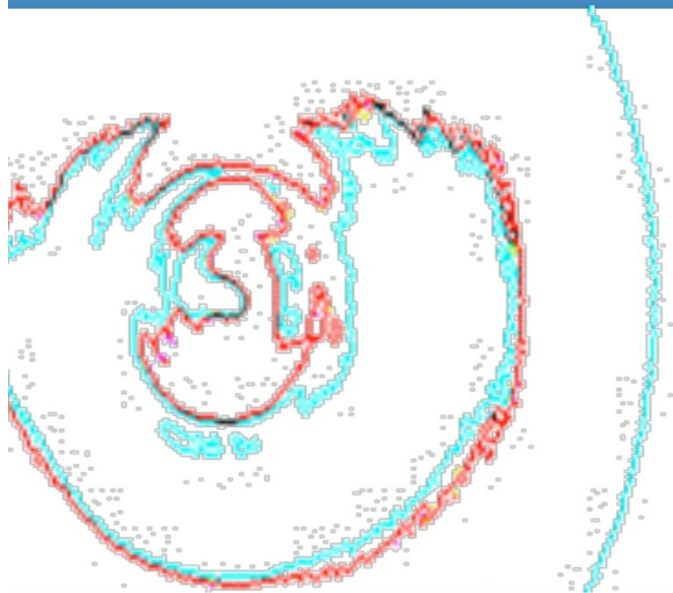
Bwrdd Iechyd
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Inflammatory back pain: overview

Back pain: scope of the issue

- Back pain is common; 60-80% of UK population report back pain at some point in their life¹
- One fifth to one quarter of all GP consultations are musculoskeletal related²
- Approximately 5% of patients with chronic back pain have ankylosing spondylitis³
- Differentiating chronic simple back pain from other more serious kinds of back pain is difficult, especially in a typical GP consultation period

1. Waddell, G *et al.* Occupational health guidelines for management of low back pain at work: evidence review. *Occup. Med* 2001;51(2):124-135

2. House of Commons. *Early identification and diagnosis of rheumatoid arthritis*. Available: <http://www.publications.parliament.uk/pa/cm200910/cmselect/cmpublic/46/4605.htm>. Last accessed February 2011.

3. McKenna, F. Spondyloarthritis. *Reports on the Rheumatic Diseases* 2010;6(5):1-6

Common causes of low back pain (LBP)¹

- **Mechanical**
 - Unknown cause, degenerative disc/joint disease, vertebral fracture, congenital deformity, spondylolysis
- **Neurogenic**
 - Herniated disc, spinal stenosis, osteophytic nerve root compression, infection (e.g. herpes zoster)
- **Non-mechanical spinal conditions**
 - Neoplastic disease, inflammatory diseases (e.g. spondyloarthritis), infection (e.g. osteomyelitis), Paget's disease
- **Referred visceral pain**
 - GI disease (e.g. IBD, pancreatitis), renal disease
- **Other**
 - Fibromyalgia, somatoform disorders

Inflammatory back pain (IBP)

- IBP is an inflammatory disease of unknown cause^{1A}
- IBP primarily affects the lower back, buttocks, structures of the spine and large peripheral joints^{1B}
- Inflammatory back pain may lead to ankylosis²

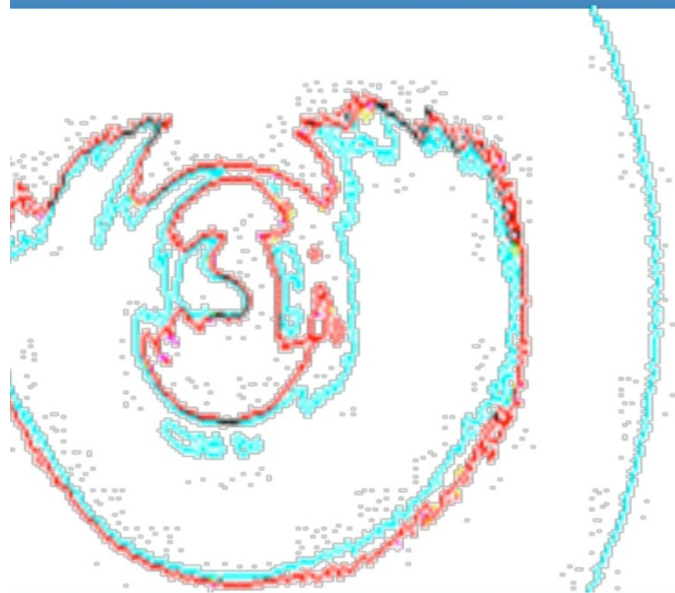
1. Braun, J *et al.* Clinical significance of inflammatory back pain for diagnosis and screening of patients with axial spondyloarthritis. *Ann Rheum Dis* 2010;69:1264-1268
2. Lories, R *et al.* Inhibition of osteoclasts does not prevent joint ankylosis in a mouse model of spondyloarthritis. *Rheum* 2008;47:605-608

IBP – relevant signs can include:¹

- Age at onset of back pain <45 years (Peak age of onset 15 – 35yrs)
- Back pain lasting > 3 months (possibly intermittent)
- Night pain
- Early morning pain and stiffness lasting more than one hour
- Pain improves with exercise
- Tenderness/inflammation over SI joint(s) (often seen as alternating buttock pain)
- Insidious onset (often distinguishes from mechanical back pain)

Early diagnosis is key for IBP, as it is the main symptom of the spondyloarthropathies

1. Sieper, J *et al.* New criteria for inflammatory back pain in patients with chronic pain: a real patient exercise by experts from the assessment of spondylarthritis International Society (ASAS). *Ann Rheum Dis* 2009;68(6):784-8



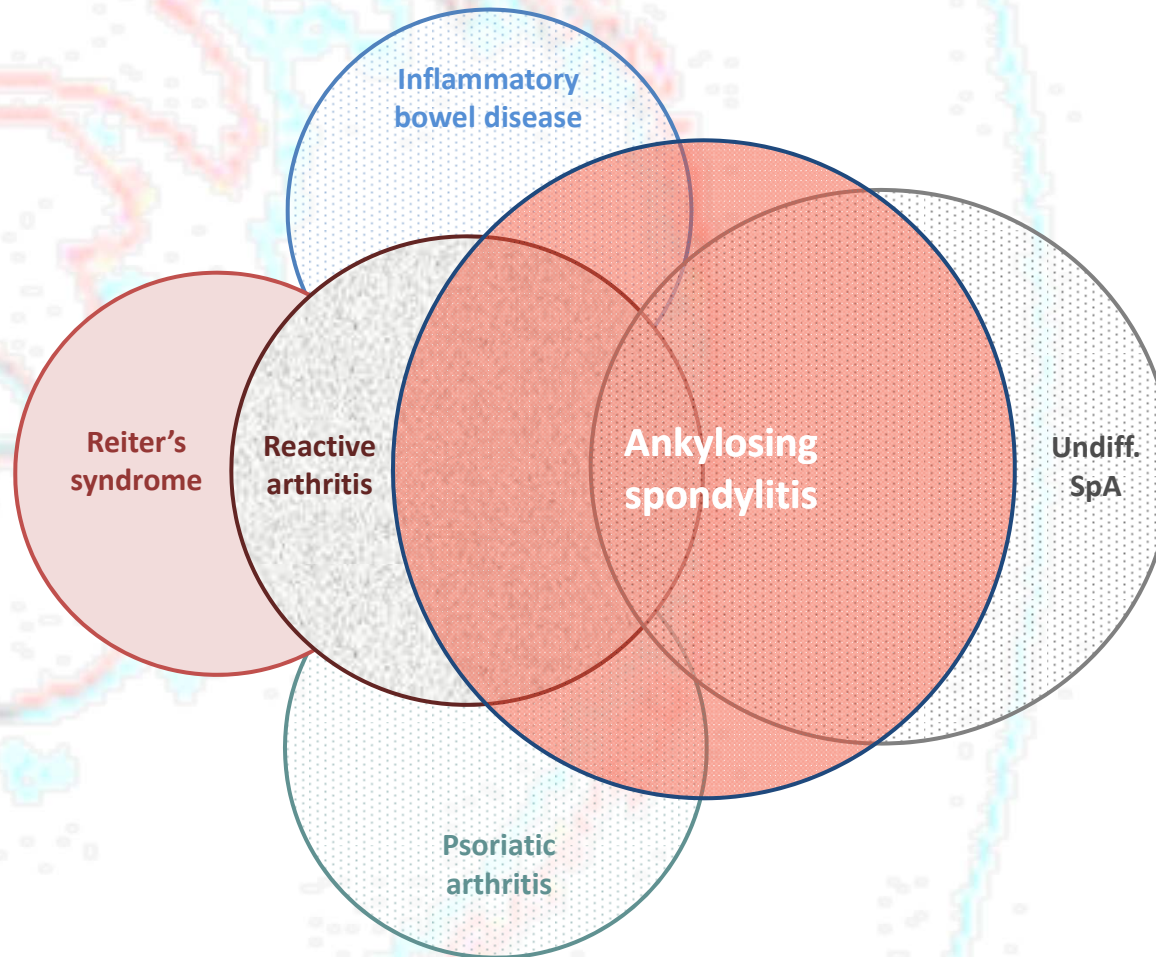
Overview: spondylarthropathies

Spondyloarthropathies (SpA)

- A heterogenous group of immune-mediated inflammatory diseases^{1A}
- Can be divided into two subgroups according to the predominant symptoms (though may overlap):^{1B}
 - Axial SpA (spine)
 - Peripheral SpA (peripheral joints)
- SpA can result in abnormal bone formation with eventual ankylosis of the spine, resulting in substantial disability²
- Diseases belonging to this group share clinical and genetic characteristics, which distinguish them from rheumatoid arthritis³

1. Braun, J *et al.* Clinical significance of inflammatory back pain for diagnosis and screening of patients with axial spondyloarthritis. *Ann Rheum Dis* 2010;69:1264-1268
2. Colbert, RA. Classification of juvenile spondyloarthritis: enthesitis-related arthritis and beyond. *Nat Rev Rheumatol* 2010;6:477-485
3. Burgos-Vargas, R. From retrospective analysis of patients with undifferentiated spondyloarthritis (spa) to analysis of prospective cohorts and detection of axial and peripheral spa. *Rheum* 2010;37:6

Ankylosing spondylitis is the prototype axial SpA¹



- Although each condition has its own characteristics, there is **significant overlap** between them and one can evolve into another^{2,3}

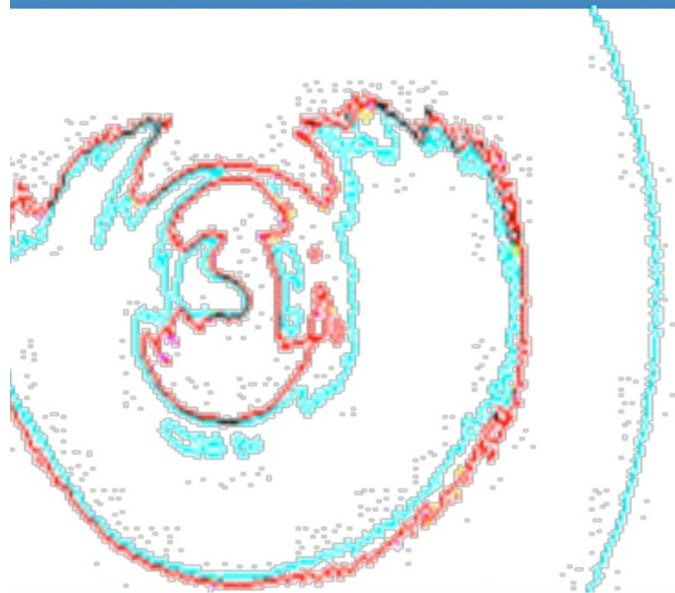
1. Sieper, J *et al.* The Assessment of SpondyloArthritis International Society (ASAS) handbook: a guide to assess spondyloarthritis. *Ann Rheum Dis* 2009;68:ii1-ii44
2. Burgos-Vargas, R. From retrospective analysis of patients with undifferentiated spondyloarthritis (spa) to analysis of prospective cohorts and detection of axial and peripheral spa. *Rheum* 2010;37:6
3. Nash, P *et al.* Seronegative spondyloarthropathies to lump or split?. *Ann Rheum Dis* 2005;64:ii9-ii13

Slide 10

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Graphic taken from Wyeth AS training module

Jeyni Gnanapragasam, 08/03/2011



Ankylosing spondylitis

Ankylosing spondylitis (AS)

- AS is the major subtype and a main outcome of SpAs^{1A}
- Clinical features include:^{1B}
 - IBP
 - Peripheral oligoarthritis (predominantly of lower limbs)
 - Enthesitis
 - Specific organ involvement (including anterior uveitis, psoriasis, IBD)
- Pain generally felt deep in the buttock and/or lower lumbar regions^{1C}
- Age of onset is usually from late teens and early adulthood^{1D}
- Strong genetic association
 - 90-95% of patients are positive for HLA B27^{1E}
- Family history in associated conditions has a strong effect on the risk of developing the disease^{1F}

Epidemiology of AS

Gender differences	Men more affected than women, with 2-3:1 ratio ^{1A}
Symptom onset	~80% develop first symptoms <30 years, <5% present at >45 years ^{1B}
Prevalence	2-5 per 1000 in UK ^{2A} In 2006 an estimated 200,000 were diagnosed in UK ^{2B}
Incidence	~7 per 100,000 people per year ^{3A} 2,300 new diagnosis England and Wales per year ^{3B}
Prevalence amongst populations	Differs depending on ethnic background; AS is more prevalent in Caucasian population, and rare in black populations ^{1C, 4}
Mean age at diagnosis	33 ⁵
Mean diagnostic delay	10 years ^{2C}

1. Braun ,J *et al.* Ankylosing spondylitis. *Lancet* 2007;369:1379-1390

2. National Ankylosing Spondylitis Society. *Looking ahead : Best practice for the care of people with ankylosing spondylitis*. Available: <http://www.nass.co.uk/NASS/en/loose-leaf-pages/resources-for-health-professionals-2/>. Last accessed February 2011.

3. NICE. *Ankylosing spondylitis - adalimumab, etanercept and infliximab: appraisal consultation document*. Available: <http://www.nice.org.uk/guidance/index.jsp?action=article&r=true&o=34836> . Last accessed February 2011.

4. Brent, LH *et al.* Ankylosing Spondylitis and Undifferentiated Spondyloarthritis. *eMed J* 2001;2:1–23

5. Sieper, J *et al.* Ankylosing spondylitis: an overview. *Ann Rheum Dis* 2002;61(3):iii8–iii18

Impact of AS

- Pain and disability of AS can be similar to that of rheumatoid arthritis^{1A}
- UK data from 2001 shows **31%** patients with AS unable to work²
- Standard mortality ratio (SMR) of 1.5 (similar to RA) – cardiac valve disease and fractures^{1B}
- Quality of life studies indicate:^{1C}
 - Stiffness 90%
 - Pain 83%
 - Fatigue 62%
 - Poor sleep 54%
 - Concerns about appearance 51%
 - Worry about the future 50%
 - Medication side effects 41%

1. Keat, A.(2004). *BSR guideline for prescribing TNF α blockers in adults with ankylosing spondylitis*. Available: http://www.rheumatology.org.uk/includes/documents/cm_docs/2009/p/prescribing_tnf_alpha_blockers_in_adults_with_ankylosing_spondylitis.pdf . Last accessed February 2011.

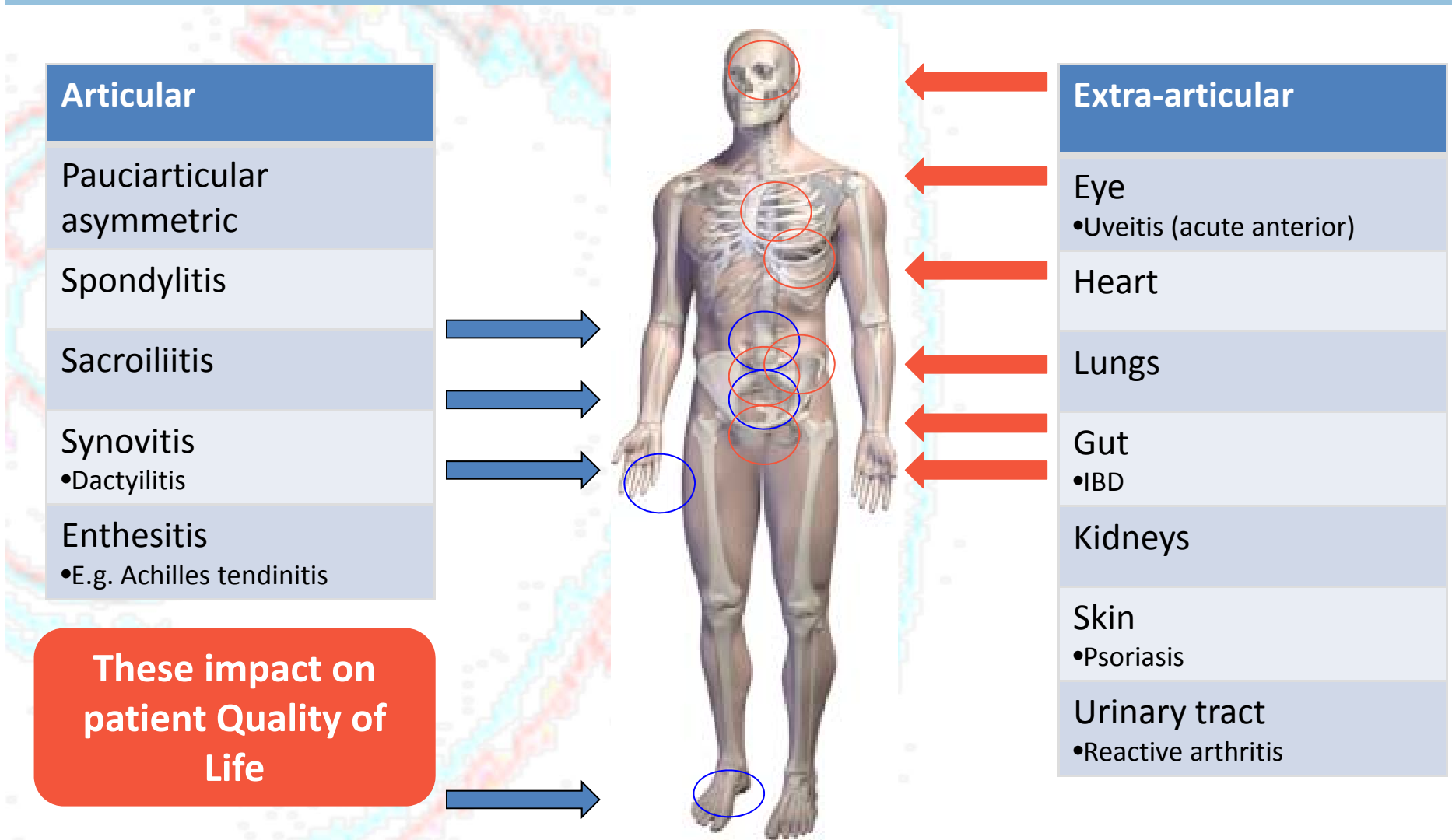
2. Barlow, JH *et al*. Work Disability and family life; comparisons with US population Arthritis Rheumatism. *Arthritis Care & Research* 2001;45:424–429

AS in women

- Historically, AS was considered a disease that overwhelmingly affects men^{1A}
- Recent studies have shown a significant proportion are women, with a ratio of men:women approaching 2:1 as opposed to 3:1^{1B}
 - Women have a significantly earlier age of disease onset and worse functional outcomes despite more radiographic severity in men^{1D}
 - There is suggestion that women have more peripheral arthritis^{1E}
 - A greater proportion of first degree relatives have a history of the disease^{1C}
- The delay in diagnosis may be due to the lack of recognition of the disease in women^{1F}
- As the phenotype of the disease tends to differ between the genders, this may influence the timing of diagnosis and initiation of treatments^{1G}

AS/SpA is associated with co-morbidities¹

And is closely linked to the genetic marker, HLA-B27²



1. Turkiewicz , A et al. *Spondyloarthropathies and Associated Comorbidities: What Else Should We Be Looking For?* Available: <http://www.medscape.com/viewarticle/567228>. Last accessed February 2011.
 2. www.spondylitis.org

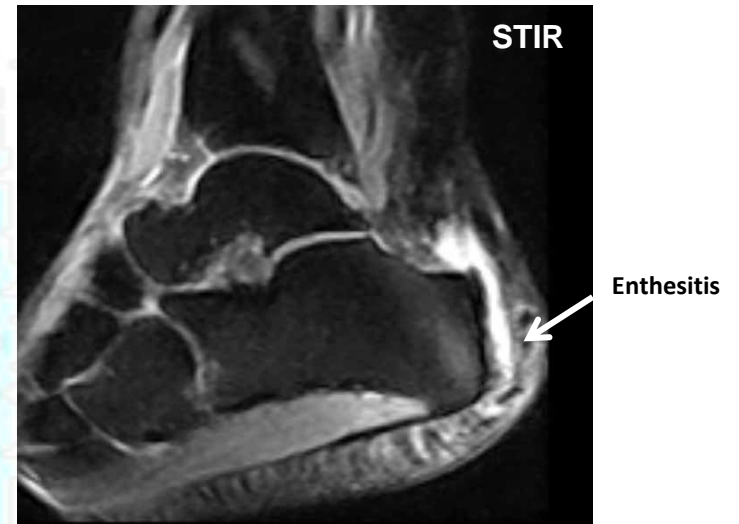
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Graphics taken from approved AS training module (Wyeth)

Jeyni Gnanapragasam, 02/03/2011

AS and enthesitis¹

- Enthesitis is an inflammation of the enthesis
 - Occurs in approximately one third of AS patients^{1A}
- Swelling of the tendon or ligament insertion results in painful and tender lesions
 - Reactive bone forms overgrowth or syndesmophyte^{1B}
- Occurs in the spine and in peripheral sites
 - e.g. the insertion of the Achilles tendon and the plantar fascia on the calcaneus^{1C} (see image)



AS – Classification Criteria

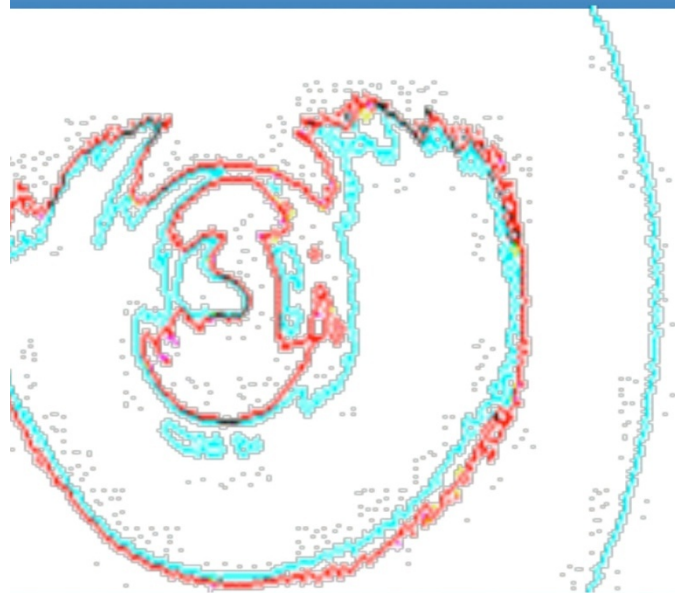
- The 1984 Modified New York criteria (mNYC) is used to classify and diagnose AS, and introduced the clinical parameter for IBP^{1A}

Clinical criteria:

- Low back pain and stiffness for more than 3 months that improves with exercise, but is not relieved by rest
- Limitation of motion of the lumbar spine in the sagittal and frontal planes
- Limitation of chest expansion

Radiological: Sacroiliitis (Bilaterally Grade 2; Unilaterally 3-4)^{1B}

Definite AS if the radiological criterion is associated with at least one clinical criterion



Diagnostic challenge of ankylosing spondylitis

AS – Diagnostic challenge

- Diagnosis of AS before occurrence of irreversible damage is a challenge^{1A}
- The average time span for diagnosis is 8-11 years from onset of symptoms and definite diagnosis^{2A}
- AS can be difficult to diagnose, mainly due to:
 - Symptoms can easily be confused with other causes of back pain^{1B}
 - Multiple tests are required to confirm a diagnosis^{2B}
 - More difficult to diagnose in females^{3A}
- Earlier recognition of AS is becoming more important with the advent of more effective treatments^{1C}

1. Elyan, M *et al.* Diagnosing ankylosing spondylitis. *Rheum* 2006; 33(78):12-23

2. O'Shea F *et al.* The challenge of early diagnosis in ankylosing spondylitis. *J Rheumatol* 2007;34:5-7

3. Lee, K *et al.* Are there gender differences in severity of ankylosing spondylitis? Results from the PSOAS cohort. *Ann Rheum Dis* 2007;66(5):633-638

Red flag considerations

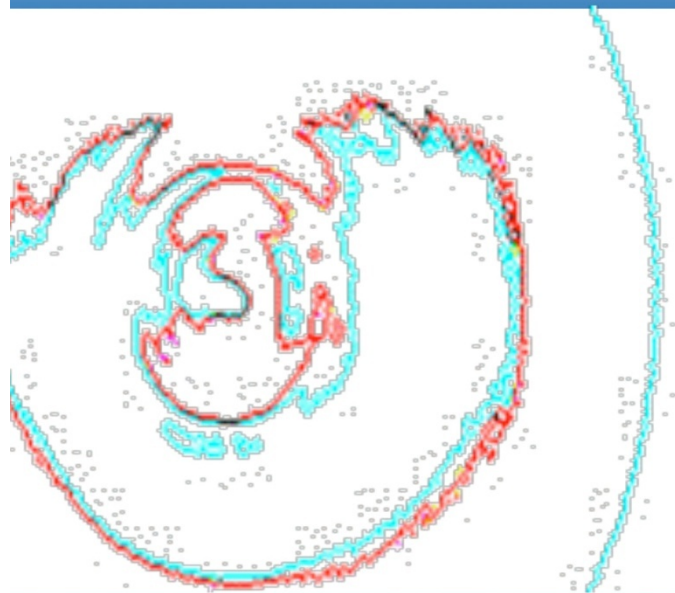
- Red flags¹:
 - Progressive non-mechanical pain
 - Persistent severe restriction of lumbar flexion
- The differential diagnosis of AS should exclude:¹
 - Cancer/Tumours (primary tumours are rare)
 - Bacterial infections
 - Metabolic bone disease (osteoporosis)

NOTE:

- X-rays should be performed to examine vertebra is out of place²
- Onset of any new or different back pain warrants investigation

1. Butler, D *et al* (2000). *The sensitive nervous system*. Adelaide. Noigroup Publications.p169

2. PubMedHealth. *Spondylolisthesis*. Available: <http://ncbi.nlm.nih.gov/pubmedhealth/PMH0002240>. Last accessed February 2011.



Diagnostic and referral algorithm

Development of a diagnostic algorithm

- There is an unacceptably long delay between the onset of symptoms and time of diagnosis for AS – an average of 8-11 years delay has been reported^{1A}
- The longer the diagnosis is delayed, the worse the functional outcome may be^{2A}
- 5% of patients presenting to the GP surgery with chronic back pain will have AS^{1B}
- To optimize diagnostic accuracy of early AS, a comprehensive approach is crucial, with an understanding of the disease and its clinical picture^{2B}

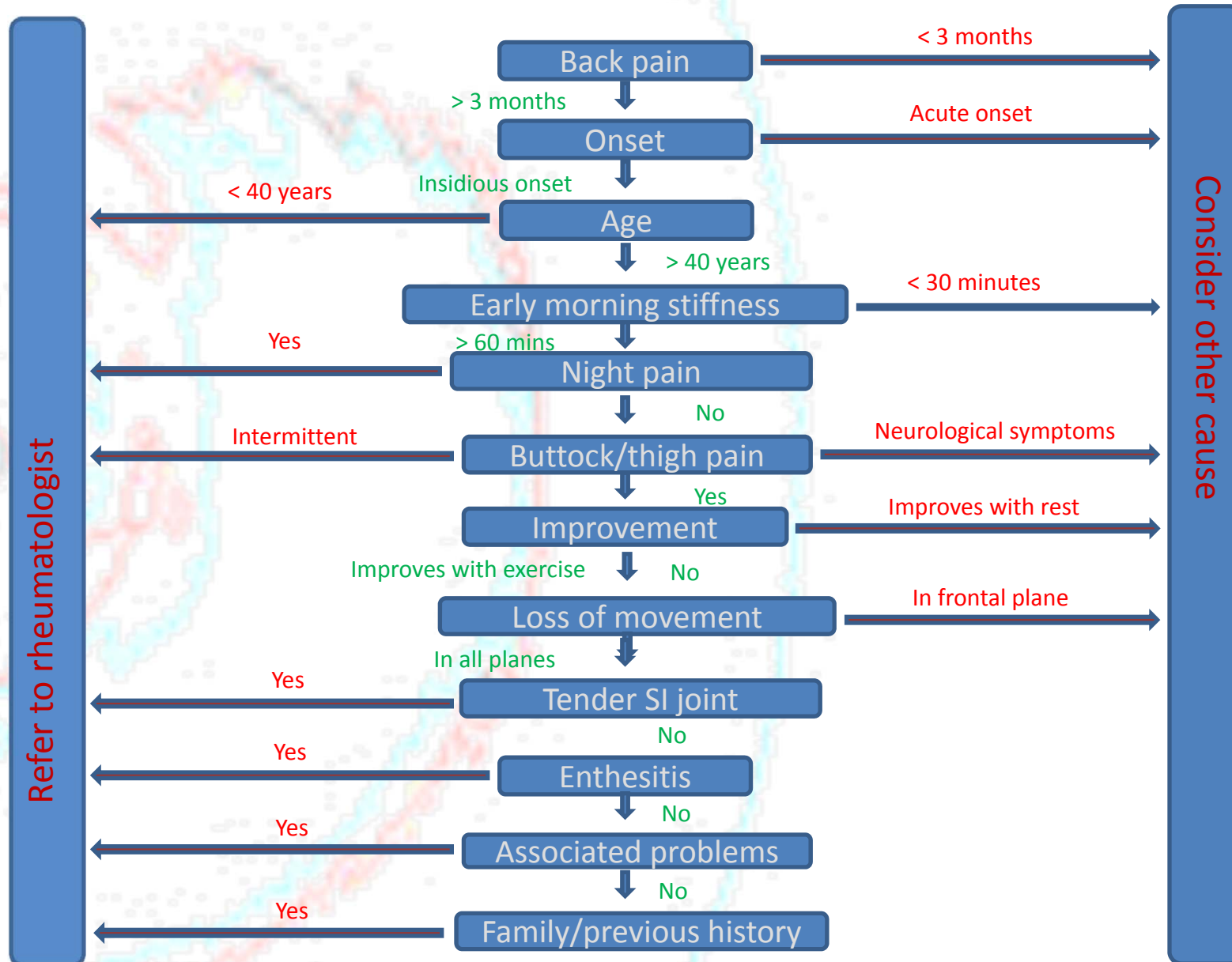
To offer an optimum quality of service to these patients, early diagnosis, and appropriate physical and medical therapies can lead to complete symptomatic remission in a significant number of cases

1. O'Shea, F *et al.* The challenge of early diagnosis in ankylosing spondylitis. *J Rheum* 2007;34:5-7
2. Elyan, M *et al.* Diagnosing ankylosing spondylitis. *Rheum* 2006;33(78):12-23

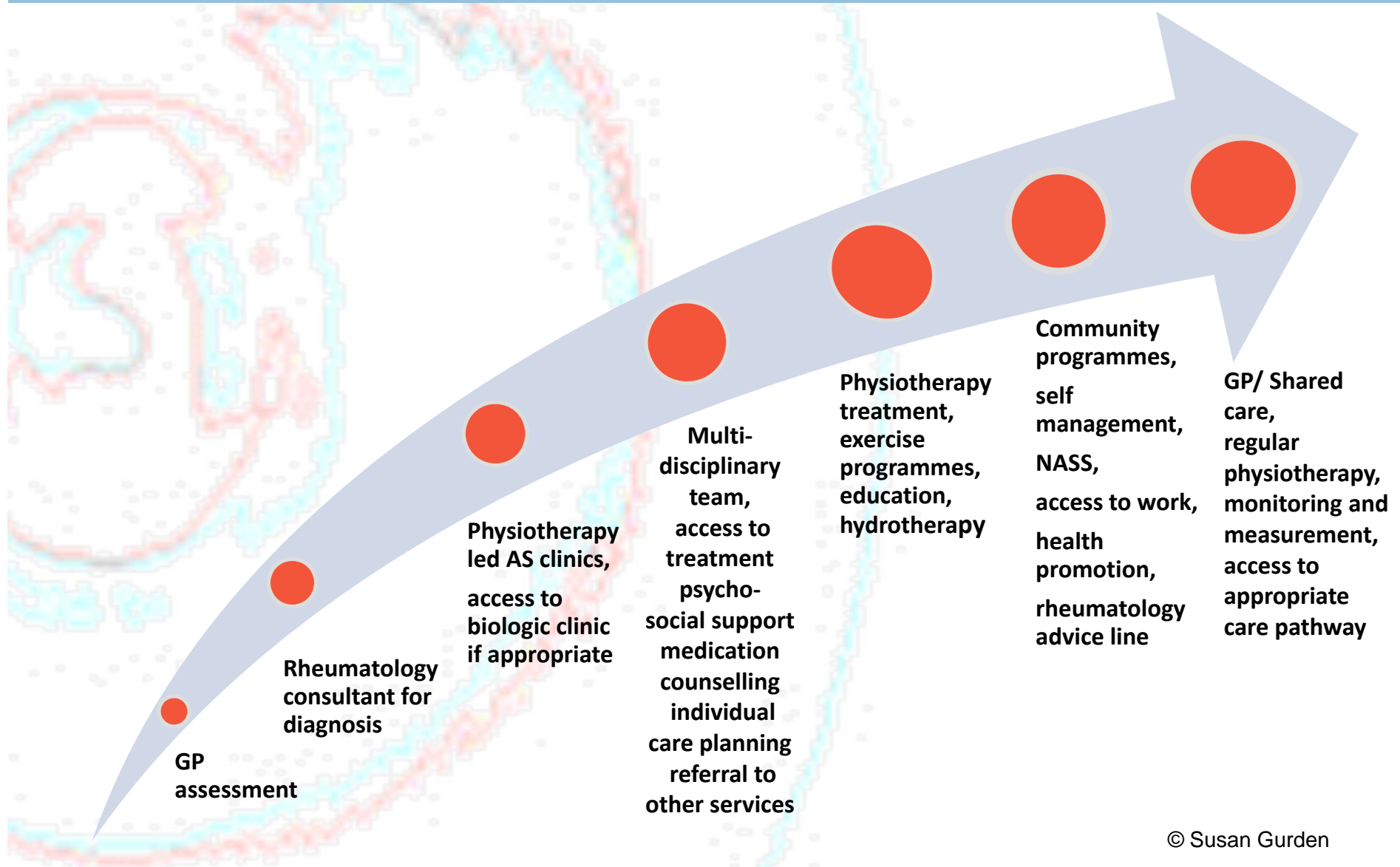
How to make a diagnosis

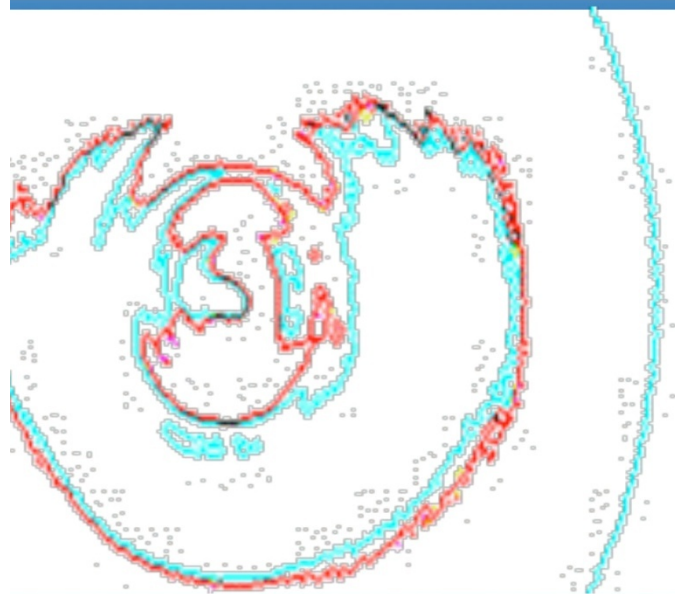
- Elicit a history suggestive of IBP^{1A}
- Ask about symptoms suggestive of HLA-B27 related diseases^{1B}
- Examine the spine briefly to see if there is restriction of movement or tenderness^{1C}
- If AS (or other SpA) is suspected, refer to rheumatologist^{1D}

Diagnostic algorithm



Secondary care pathway





Summary

Key messages

- **Early diagnosis of inflammatory back pain has proved to be a challenge** as symptoms are similar to other causes of low back pain
- Presentation of **AS can be subtle, particularly in the early stages**
- AS can be a progressive condition over time so the **earlier an accurate diagnosis in the disease course, the better the outcome for the patient**
- Referral should be considered in all patients under 40 years who present with **inflammatory back pain**
- The main value of history and physical examination is to **determine which patients should be referred for further evaluation** and this may facilitate prognosis
- **Rheumatology services could provide optimum care for AS patients** by an expert multi-disciplinary team

For further information

Arthritis Research UK

Providing answers today and tomorrow

BHPR

British Health Professionals
in Rheumatology

BSR

The British Society for Rheumatology



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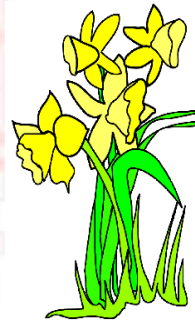
*Galluogi pobl
gydag arthrits.*

*Empowering
people with arthritis.*



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