

# Ankylosing Spondylitis



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**Ankylosing spondylitis (AS):** A chronic progressive inflammatory arthropathy, which may lead to radiographical changes in the spine and sacroiliac joints.

## Risk factors:

- HLA-B27 genotype
- Family history of AS
- Male

## Pathophysiology:

- AS involves a combination of inflammation, joint erosion and ossification
- **Systemic inflammation** → Increased number & activation of osteoclasts → increased bone resorption → **joint erosion**
- The body attempts to repair the joint erosion via **ossification** → ossification of the outer fibres of the annulus fibrosus of an intervertebral disc → **syndesmophyte**

## Presentation

- Early morning stiffness in the lumbar spine which lasts for >1 hour
- Improvement of stiffness with exercise
- Typically presents among individuals aged 20 years and older
- Resolution of symptoms using non-steroidal anti-inflammatory drugs (NSAIDs)
- Alternating buttock pain
- Waking in the second half of the night with back pain
- **Enthesitis** - inflammation of the entheses, the sites where tendons or ligaments insert into the bone
- Psoriasis
- **Uveitis** - painful red eye with blurry vision
- Inflammatory bowel disease
- Dyspnoea
- Fatigue

## Assessment

- Loss of lumbar lordosis and flexion
- Tenderness at sacroiliac joints
- Thoracic kyphosis
- Hip, knee or shoulder pain/stiffness
- **Positive schober's test** - decrease in lumbar flexion range of motion
- X-ray - at cervical, thoracic, lumbar spines & pelvis may show sacroiliac joint fusion, paraspinal ligament calcification, syndesmophytes & vertebral osteoporosis
- Ultrasound - to visualise the presence and magnitude of enthesites
- Blood test - increased erythrocyte sedimentation rate and C-reactive protein



## Management

- **Patient education** on nature of AS and prognosis. Also provide education on exercises to complete during flare-ups of increased disease activity & rescue medications
- **Hydrotherapy** - may improve function and help with pain management
- Energy-conservation - give advice on regular physical activity, taking regular scheduled breaks from activities of daily living before the onset of fatigue & adopting good sleep hygiene
- Occupational therapy - provide ergonomic equipment to protect affected joints
- Providing advice on diet and smoking cessation
- Individualised whole-body **stretching exercise programme**
- Individualised daily **aerobic exercise programme**
- **Thoracic expansion exercises** - may improve inspiratory muscle function & reduce loss of chest expansion
- Medical: NSAIDs & TNF-alpha inhibitors

## Want to learn more?

With AcePhysio the learning journey doesn't stop here! Take a look at our further reading recommendations below to become an expert in Ankylosing spondylitis:

1. Zhu, W., He, X., Cheng, K., Zhang, L., Chen, D., Wang, X., Qiu, G., Cao, X., & Weng, X. (2019). Ankylosing spondylitis: etiology, pathogenesis, and treatments. *Bone Research*, 7, 22. <https://doi.org/10.1038/s41413-019-0057-8>.
2. Sharan D, Rajkumar JS. Physiotherapy for ankylosing spondylitis: systematic review and a proposed rehabilitation protocol. *Curr Rheumatol Rev*. 2017;13(2):121-5.
3. Millner JR, Barron JS, Beinke KM, et al. Exercise for ankylosing spondylitis: an evidence-based consensus statement. *Semin Arthritis Rheum*. 2016 Feb;45(4):411-27.