PATIENT INFORMATION | RHEUMATOLOGY

Understanding Inflammatory Back Disease

An evidence-based guide for patients in Pakistan to axial spondyloarthritis (including ankylosing spondylitis) — what it is, how it differs from ordinary back pain, and how modern treatment can prevent disability and keep your spine flexible for life.

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At a glance

~1%	< 45 yrs	2 – 3 : 1	> 90%
Prevalence in Pakistan (Lahore)	Typical age of onset	Male-to-female ratio	Of patients are HLA-B27 positive

Inflammatory back disease refers to a group of conditions in which the immune system attacks the joints of the spine and pelvis, producing chronic back pain and stiffness that behave very differently from ordinary “mechanical” back pain. The umbrella term is **axial spondyloarthritis (axSpA)**, which now includes the well-known disease **ankylosing spondylitis**. Although chronic and lifelong, axial spondyloarthritis is highly treatable. With early diagnosis and modern biologic therapy, the days of patients becoming bent over and severely disabled are largely behind us.

What is axial spondyloarthritis?

Axial spondyloarthritis (axSpA) is an inflammatory disease that targets the **sacroiliac joints** (where the lower spine meets the pelvis), the spine itself, and the entheses (where ligaments and tendons attach to bone). Over time, untreated inflammation can lead to fusion of the vertebrae — the classical “bamboo spine” of advanced ankylosing spondylitis. The disease belongs to a wider family of related conditions called the **spondyloarthritides**, which also includes psoriatic arthritis, reactive arthritis, and the arthritis associated with inflammatory bowel disease.

A note on terminology

You may have heard several different names. The modern classification (ASAS, 2024) prefers **axial spondyloarthritis** as the umbrella term, with two forms:

Term	Meaning
Radiographic axial spondyloarthritis (r-axSpA)	Damage to the sacroiliac joints is visible on a plain X-ray. This is the long-established disease known as **ankylosing spondylitis (AS)**. The two terms now refer to the same condition.
Non-radiographic axial spondyloarthritis (nr-axSpA)	Active inflammation is present and visible on **MRI**, but the plain X-ray is still normal. This represents the early phase of the disease, which may or may not progress to structural damage. It is treated as seriously as r-axSpA.

Term	Meaning
Peripheral spondyloarthritis (pSpA)	Predominant involvement of joints, tendons, or finger/toe swelling outside the spine. Includes psoriatic arthritis, reactive arthritis, and arthritis of inflammatory bowel disease.

Incidence and epidemiology

Worldwide prevalence of axial spondyloarthritis ranges from **0.1% to 2%** of adults, closely tracking the population frequency of the **HLA-B27** genetic marker. Prevalence is highest in Northern European populations (where HLA-B27 is carried by 8–10% of people) and lowest in Sub-Saharan Africa and Japan. Men are affected approximately two to three times more often than women, although women are increasingly recognised as having the same disease with a more peripheral or milder spinal presentation — often leading to diagnostic delay.

South Asian and Pakistani context

Inflammatory back disease is significantly under-recognised in Pakistan, where chronic back pain is usually attributed to occupation or age. The available evidence is summarised below:

• A landmark community-based study from **Lahore** (using the COPCORD methodology) found **inflammatory back pain in 6.7%** of adults on initial screening, with **3%** confirmed by rheumatologist review. **Radiographic axial spondyloarthritis was present in approximately 1%** of the surveyed population.
• **HLA-B27** is carried by approximately **6–8% of the general South Asian population** — modestly lower than European populations, but still common enough that axSpA is a substantial public-health issue in Pakistan.
• Among Pakistani patients with established ankylosing spondylitis, **over 90% are HLA-B27 positive** — the same strength of association as reported globally.
• The **Pakistani Ankylosing Spondylitis Cohort with Cardiovascular Disease (PAS-CVD) study** (Wagan & Surahyo, *Pak J Med Sci* 2024) has begun to document the elevated cardiovascular risk in this population — an important and often-overlooked long-term complication.

The classical Pakistani patient is a young man, often in his 20s, presenting with months or years of low back pain that has been repeatedly dismissed as mechanical strain. The average diagnostic delay in South Asia is 5–7 years — during which time joint damage can become irreversible. Recognising inflammatory back pain early is the single most important step.

Who is at higher risk?

- **HLA-B27 positivity** — the strongest single risk factor. Approximately 5% of HLA-B27-positive individuals develop axSpA during their lifetime.
- **Male sex** — two to three times more common in men, although women are now increasingly recognised.
- **Age under 45** at onset of symptoms — axSpA almost always begins in the second to fourth decade.
- **Family history** — a first-degree relative with axSpA, psoriasis, uveitis, or inflammatory bowel disease increases your risk.
- **Personal history of uveitis** (a painful red eye), **psoriasis**, or **inflammatory bowel disease** — these conditions share the same genetic background as axSpA.
- **Recurrent reactive arthritis** after gastrointestinal or genitourinary infection.

How does it develop?

Axial spondyloarthritis is an immune-mediated disease that develops in genetically predisposed individuals. The exact trigger is unknown, but several mechanisms are well-established:

Process	What happens in the body
1. Genetic predisposition	**HLA-B27** and several non-MHC genes predispose to abnormal immune responses, particularly involving the gut microbiome.
2. Enthesitis as the primary lesion	Inflammation begins at the **entheses** — where ligaments and tendons attach to bone — driven by innate immunity and the **interleukin-23/interleukin-17 (IL-23/IL-17) pathway**.
3. Bone changes	Inflammation produces bone **erosion** followed by paradoxical **new bone formation** and, eventually, **syndesmophytes** — bony bridges between vertebrae that gradually fuse the spine.
4. Wider effects	TNF-α and IL-17 also drive uveitis, psoriasis, and inflammatory bowel disease, explaining why these conditions cluster together in the same family.
5. Modern targeted therapy	Biologic drugs block **TNF-α** (e.g. adalimumab, etanercept, infliximab) and **IL-17** (e.g. secukinumab, ixekizumab, bimekizumab) — the very molecules that drive the disease.

Understanding this pathway explains why axSpA needs immune-targeted treatment, not simply painkillers. Effective early treatment can prevent the irreversible bony fusion that characterises advanced disease.

Symptoms — recognising inflammatory back pain

The single most important step in diagnosing inflammatory back disease is recognising **inflammatory back pain (IBP)** and distinguishing it from the much commoner **mechanical** ("ordinary") back pain. The two have very different patterns:

Feature	Inflammatory back pain	Mechanical back pain
Age of onset	Usually under 45	Any age, especially older adults
Onset	Gradual, insidious (weeks to months)	Often sudden, related to injury or lifting
Duration	More than 3 months	Usually self-limited, weeks
Morning stiffness	Marked, lasting **over 30 minutes**	Brief, less than 30 minutes
Effect of activity	**Improves** with exercise and movement	Worsens with activity
Effect of rest	**Worsens** with rest; pain wakes you in the second half of the night	Improves with rest
Response to NSAIDs	Often dramatic improvement	Variable, partial
Associated features	Alternating buttock pain, heel pain, uveitis, psoriasis, IBD	Usually none

Other features of axial spondyloarthritis

Feature	What you may notice
Peripheral arthritis	Swelling and pain in the knees, ankles, or hips — typically **asymmetric** and affecting the lower limbs more than the upper.
Enthesitis	Pain at sites where tendons and ligaments insert into bone. Common sites: **Achilles tendon, plantar fascia (heel pain), lateral elbow, knee**. Often misdiagnosed as sports injury.
Dactylitis	Uniform swelling of an entire finger or toe ("sausage digit"). More common in psoriatic arthritis but can occur in axSpA.

Feature	What you may notice
Anterior uveitis	Sudden onset of **red, painful, light-sensitive** one-sided eye. Occurs in up to 30% of patients at some stage — requires urgent ophthalmology assessment.
Skin and gut	**Psoriasis** (5–10% of axSpA patients) and **inflammatory bowel disease** (Crohn's or ulcerative colitis, in 5–10%) cluster with axSpA.
Constitutional	Fatigue, occasional low-grade fever, and weight loss in active disease.
Advanced disease	Restricted spinal mobility, reduced chest expansion, stooped posture ("hunched-over" appearance), and an inability to look upwards or to the side. Modern treatment aims to **prevent these outcomes entirely**.

Red-flag features needing urgent assessment

- **Sudden red, painful, light-sensitive eye** — possible uveitis. Seek same-day ophthalmology review; untreated uveitis can damage vision.
- **New numbness, weakness, or bladder/bowel disturbance** in advanced disease — possible cauda equina or spinal cord compression. **Medical emergency.**
- **Sudden severe new spinal pain after minor trauma** in a patient with established axSpA — the fused spine fractures easily.
- **Persistent abdominal pain, diarrhoea, or rectal bleeding** — possible inflammatory bowel disease.
- **New chest pain, breathlessness, or signs of heart failure** — axSpA is associated with aortic regurgitation, conduction defects, and accelerated cardiovascular disease.

How is inflammatory back disease diagnosed?

Diagnosis combines a typical clinical picture with characteristic imaging findings and the **HLA-B27** blood test. The current framework is the **ASAS classification criteria for axial spondyloarthritis**. Crucially, a normal X-ray **does not** exclude axSpA — MRI of the sacroiliac joints can detect early inflammation years before X-ray changes appear.

Tests your rheumatologist will arrange

- **HLA-B27 genetic test** — positive in over 90% of South Asian patients with ankylosing spondylitis. A negative result reduces but does not exclude the diagnosis.
- **ESR and CRP** — inflammation markers; raised in active disease, but may be normal in up to 40% of patients with active axSpA.
- **Full blood count, urea, creatinine, liver function** — baseline before starting treatment.
- **Plain X-ray of the sacroiliac joints and lumbar spine** — looking for **sacroiliitis** (erosion, sclerosis, joint-space changes, or fusion) and **syndesmophytes**.
- **MRI of the sacroiliac joints** — the most sensitive test for early disease, showing **bone marrow oedema** on STIR/T2 sequences months to years before X-ray changes appear. The single most important investigation in young patients with normal X-rays.
- **Hepatitis B and C, tuberculosis screening** (chest X-ray, Quantiferon, or tuberculin) — essential **before** starting biologic therapy, particularly in Pakistan where latent TB is common.
- **Lateral lumbar X-ray and chest expansion measurement** — for baseline assessment of disease severity.

Treatment — a modern, target-driven approach

Management follows the **2022 ASAS-EULAR recommendations** (published 2023). Treatment is divided into **non-pharmacological core management** (essential for everyone) and **pharmacological treatment**, escalated stepwise until the disease is controlled. The goal is **sustained remission** or **low disease activity**, measured using the Axial Spondyloarthritis Disease Activity Score (ASDAS).

Core principles

- **Exercise is medicine.** Daily structured exercise — stretching, strengthening, swimming, and posture work — is the single most effective non-drug treatment.
- **Stop smoking.** Smoking accelerates spinal damage, worsens pain, and dramatically reduces the effectiveness of biologic therapy.
- **Do not delay diagnosis.** The earlier treatment starts, the more spinal damage is prevented.

The stepped-care ladder

Tier	Class & examples	Role
1	**Non-pharmacological core:** patient education, daily exercise (physiotherapist-guided stretching and strengthening, swimming, hydrotherapy), smoking cessation, posture training, and self-management programmes.	Foundation of every treatment plan, irrespective of severity.
2	**NSAIDs:** e.g. naproxen, etoricoxib, diclofenac, indometacin. Continuous use may be needed in active disease (with a proton-pump inhibitor for gastric protection).	First-line drug treatment. Often dramatically effective in axSpA — a good response is itself a useful diagnostic clue.
3	**Local steroid injections** for sacroiliitis, enthesitis, or peripheral joints. **Conventional DMARDs** (sulfasalazine, methotrexate) for **peripheral arthritis only** — they do not work on spinal disease.	Adjunctive therapy for specific problems. **Systemic oral steroids are not recommended** for routine axSpA management.
4	**Biologic DMARDs:** • **TNF-α inhibitors:** adalimumab, etanercept, infliximab, golimumab, certolizumab pegol • **IL-17 inhibitors:** secukinumab, ixekizumab, bimekizumab	Used when NSAIDs fail or are contraindicated. Highly effective — over 60% of patients achieve sustained low disease activity. Choice tailored by comorbidities (e.g. TNF for uveitis or IBD; IL-17 for skin psoriasis).
5	**Targeted synthetic DMARDs (JAK inhibitors):** tofacitinib, upadacitinib	Considered after biologic failure or where biologics are unsuitable. Careful assessment of cardiovascular, thrombotic, and malignancy risk required.
6	**Surgery:** total hip replacement for severe hip involvement; spinal osteotomy for fixed severe deformity (rare in the biologic era).	Reserved for advanced structural damage despite optimal medical therapy.

Important: tuberculosis screening before biologic therapy in Pakistan

TNF-α and IL-17 inhibitors can reactivate **latent tuberculosis**, which is **highly prevalent** in Pakistan. Before starting biologic therapy, every patient must have:
• A **chest X-ray** and **Quantiferon-TB Gold** (or tuberculin skin test).
• Screening for **hepatitis B and C** and (where appropriate) HIV.
• Treatment of latent tuberculosis with isoniazid for at least 4 weeks before starting biologics.
• Updated vaccinations — pneumococcal, annual influenza, and (where indicated) COVID-19. Live vaccines should be given **before** starting biologic therapy.

What you can do yourself

- **Move every day.** The phrase “motion is lotion” is literally true in axSpA. Daily back-stretching exercises, swimming, and gentle aerobic activity preserve spinal mobility and reduce pain.
- **Mind your posture.** Use a firm mattress, sit upright, and try not to slump. Take regular breaks if your work involves prolonged sitting.
- **Stop smoking.** This is the single most damaging modifiable factor — smoking accelerates spinal fusion and reduces the effectiveness of every biologic drug.
- **Take your NSAIDs as prescribed**, with food or a proton-pump inhibitor. Do not stop and start them erratically.
- **Watch your cardiovascular risk.** AxSpA increases the long-term risk of heart attack and stroke. Treat blood pressure, lipids, and diabetes aggressively.
- **Have your eyes checked promptly** if you develop redness, pain, or light sensitivity — untreated uveitis can damage vision permanently.
- **Plan pregnancies carefully** with your rheumatologist. Several axSpA medications are compatible with pregnancy; others must be stopped well in advance.
- **Mental health matters.** Chronic pain, sleep disturbance, and reduced activity feed depression and anxiety. These are common and treatable.

What is the outlook?

The outlook for axial spondyloarthritis has been transformed in the last twenty years. Before biologic therapy, many patients eventually developed a fused, stooped spine and significant disability. Today, with **early diagnosis**, **regular exercise**, and **modern biologic therapy** when needed, the majority of patients keep their spine flexible, remain in full employment, and maintain a normal life expectancy. The single greatest predictor of long-term outcome is **how quickly the diagnosis is made and treatment started**. A young Pakistani patient with inflammatory back pain who is diagnosed within a year typically has a far better outlook than one diagnosed after a decade of mislabelled “mechanical” pain.

When to contact your rheumatologist promptly

• A new red, painful eye — possible uveitis (urgent ophthalmology referral).
• Sudden severe new spinal pain, particularly after even minor trauma — the fused or partially fused spine fractures more easily.
• New leg weakness, numbness, or bladder/bowel disturbance.
• Fever, productive cough, or unexplained weight loss while on biologic therapy — exclude infection, particularly tuberculosis.
• New abdominal pain, diarrhoea, or rectal bleeding — possible inflammatory bowel disease.
• Worsening pain or stiffness despite optimised therapy — review of the treatment plan is needed.

Frequently asked questions

Question	Answer
Will my spine eventually fuse and bend forwards?	Not with modern treatment. The classical “bent-over” picture is increasingly rare in patients who are diagnosed early and treated effectively. Daily exercise and biologic therapy together prevent severe deformity in the vast majority.
Is HLA-B27 positivity the same as having axSpA?	No. HLA-B27 is carried by 6–8% of South Asians, but only about 5% of HLA-B27-positive people develop axSpA in their lifetime. There is a modestly increased risk in children of an HLA-B27-positive parent, but most remain unaffected.

Question	Answer
Should I rest my back when it hurts?	Generally **no**. Unlike mechanical back pain, axSpA pain **improves** with movement and worsens with rest. Gentle activity is therapeutic; prolonged bed rest is harmful.
Can I have children?	Yes. Fertility is generally normal. Pregnancy should be planned during stable disease, with medication reviewed in advance. Certolizumab is the preferred biologic during pregnancy; NSAIDs are stopped in the third trimester.
Can I fast during Ramadan?	Most stable patients fast safely. Take NSAIDs with iftar and suhoor food rather than on an empty stomach, and stay well hydrated outside fasting hours. Discuss timing of biologic injections with your rheumatologist.

Key references and further reading

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Speak to a specialist

Early diagnosis transforms the outlook in axial spondyloarthritis — book a consultation today.

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Important disclaimer. This leaflet provides general information for patients and does not replace individual medical advice from a qualified rheumatologist. Treatment decisions must take into account your full medical history, examination findings, and investigations. Please discuss any concerns directly with Dr Saira Khan or your treating physician.

Reviewed by Dr Saira Elaine Anwer Khan, May 2026.
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