CONDITION

Ankylosing spondylitis

Learn how ankylosing spondylitis affects the spine and other parts of the body, including its symptoms, diagnosis, treatment, complications, and follow-up care.

WHAT IT IS
Long-term inflammatory spinal and joint condition

BODY SYSTEM
Bones and joints

MAIN SYMPTOMS
Lower back pain, morning stiffness, reduced flexibility, tiredness

WHAT CAUSES IT
Inherited traits and immune system activity

HOW IT IS DIAGNOSED
Clinical assessment with pelvic X-ray or MRI

MAIN TREATMENT
Exercise, physical therapy and anti-inflammatory medicines

CAN IT BE CURED?
No, treatment controls inflammation and symptoms

IS IT AN EMERGENCY?
Sometimes, neurologic symptoms or severe post-injury pain

LONG-TERM OUTLOOK
Variable, with possible spinal fusion and reduced movement

Overview

Ankylosing spondylitis is a long-term inflammatory condition that mainly affects the spine and the joints connecting the spine to the pelvis. These are called the sacroiliac joints. Inflammation can cause ongoing back pain and stiffness, especially in the lower back and buttocks.

Ankylosing spondylitis belongs to a broader group of conditions called axial spondyloarthritis. "Axial" refers to the spine and pelvis. Ankylosing spondylitis is also called radiographic axial spondyloarthritis because changes caused by inflammation can be seen on an X-ray.

The condition often begins in the teenage years or early adulthood, although it may be recognized later. Symptoms and their severity vary. Some people have intermittent pain and stiffness, while others develop more persistent symptoms or loss of spinal movement.

Over time, repeated inflammation may cause new bone to form between spinal bones. This can reduce flexibility and, in some people, lead to partial or complete fusion of sections of the spine. Modern treatment aims to control inflammation, preserve movement, support daily function, and reduce the risk of long-term damage.

Ankylosing spondylitis can also affect the eyes, hips, shoulders, ribs, skin, or digestive system. Because the condition may involve more than the back, care is often coordinated by a rheumatologist, a doctor who specializes in inflammatory joint and immune system conditions.

Symptoms

Back pain from ankylosing spondylitis often behaves differently from pain caused by a muscle strain or age-related wear. It usually develops gradually and may improve with movement rather than rest.

Common features include:

Inflammation in the joints between the ribs and spine may cause chest wall pain or make it harder to take a deep breath. This usually develops gradually. Sudden chest pain or shortness of breath should not be assumed to come from ankylosing spondylitis and requires prompt medical assessment.

Some people develop anterior uveitis, which is inflammation in the front part of the eye. It may cause rapid-onset eye pain, redness, blurred vision, and sensitivity to light, usually in one eye. These symptoms need urgent, same-day eye assessment because early treatment helps protect vision.

Ankylosing spondylitis may occur with psoriasis or inflammatory bowel disease, including Crohn's disease and ulcerative colitis. Tell a clinician about ongoing diarrhea, blood in the stool, abdominal pain, or a new scaly skin rash. These concerns usually need timely medical review but are not always emergencies.

- Pain and stiffness in the lower back or buttocks lasting several weeks or longer
- Symptoms that are worse during the night, early morning, or after sitting still
- Morning stiffness that improves with activity
- Pain that may alternate between the left and right buttock
- Reduced flexibility of the back
- Tiredness that can persist even after adequate sleep
- Pain or swelling in the hips, shoulders, knees, ankles, or other joints

- Tenderness where tendons or ligaments attach to bone, especially at the heel

Causes and risk factors

The exact cause of ankylosing spondylitis is not fully understood. It appears to result from a combination of inherited traits and changes in immune system activity. It is not caused by poor posture, exercise, or an injury.

A gene called HLA-B27 is strongly associated with the condition. This gene helps the immune system identify substances that belong in the body and those that may be harmful. However, most people who carry HLA-B27 never develop ankylosing spondylitis. Some people with the condition do not carry the gene. A positive or negative result therefore cannot confirm or rule out the diagnosis on its own.

Having a close relative with ankylosing spondylitis or another form of spondyloarthritis raises the likelihood of developing it. Related health problems in a family may include psoriasis, inflammatory bowel disease, or repeated episodes of uveitis.

Symptoms often begin before age 45. Ankylosing spondylitis has historically been diagnosed more often in men, but it also affects women. Women may have less obvious changes on X-rays, which can contribute to delayed recognition.

Smoking does not directly establish the diagnosis, but it is associated with worse disease outcomes and can further reduce heart and lung health.

Diagnosis

There is no single test that diagnoses ankylosing spondylitis. A clinician considers the pattern of symptoms, physical examination, imaging, blood tests, and whether other conditions could explain the problem.

During the examination, the clinician may check spinal movement, posture, chest expansion, painful joints, and areas where tendons attach to bone. They may ask whether pain improves with activity, causes waking during the second half of the night, or began before age 45. A history of eye inflammation, psoriasis, bowel disease, or affected relatives is also relevant.

Imaging may include:

Blood tests may measure C-reactive protein or the erythrocyte sedimentation rate. These tests look for inflammation but can be normal in someone with ankylosing spondylitis. HLA-B27 testing may support the assessment in selected situations, but the result is not

diagnostic by itself.

A rheumatology referral may be appropriate when back pain has features of inflammation, particularly when it began before age 45 or is accompanied by uveitis, psoriasis, inflammatory bowel disease, or a family history of spondyloarthritis.

- Pelvic X-rays: These can show inflammation-related damage in the sacroiliac joints. Changes may take years to become visible.
- Magnetic resonance imaging: An MRI may detect active inflammation before clear damage appears on an X-ray. MRI results still need to be interpreted alongside symptoms and examination findings.
- Other imaging: Additional X-rays or scans may be used when a complication, fracture, or another cause of pain is suspected.

Treatment and management

Treatment is tailored to the person's symptoms, disease activity, other health conditions, and preferences. The goals are to reduce pain and inflammation, maintain posture and movement, protect function, and limit structural damage.

Regular exercise is a central part of management. A physical therapist can teach exercises for spinal flexibility, strength, posture, balance, and deep breathing. Swimming, walking, and other aerobic activities may support fitness without placing excessive stress on painful joints. Exercise plans may need adjustment during a flare, but complete inactivity can increase stiffness.

Nonsteroidal anti-inflammatory drugs like ibuprofen or naproxen , or NSAIDs, are often used for pain and stiffness. Examples include ibuprofen, naproxen, and prescription NSAIDs. These medicines are not suitable for everyone and may affect the stomach, kidneys, blood pressure, or cardiovascular system. A clinician or pharmacist can help assess their safe use.

If symptoms remain active despite appropriate non-drug care and NSAID treatment, a rheumatologist may discuss targeted medicines. Options include tumor necrosis factor inhibitors, interleukin-17 inhibitors, or certain Janus kinase inhibitors. These medicines act on specific parts of the immune system and may reduce inflammation and improve function.

The choice of targeted treatment depends on factors such as eye inflammation, psoriasis, inflammatory bowel disease, infection risk, pregnancy plans, and previous treatment response. Screening for infections such as tuberculosis or hepatitis may be needed before some medicines. Ongoing blood tests or other monitoring may also be required.

Medicines known as conventional disease-modifying antirheumatic drugs, including

methotrexate, generally do not treat inflammation that is limited to the spine. Sulfasalazine may sometimes be considered when arthritis mainly affects joints outside the spine.

A clinician may occasionally recommend a corticosteroid injection into a painful joint or nearby inflamed area. Long-term corticosteroid tablets are generally not a routine treatment for axial symptoms because their risks can outweigh the benefits.

Helpful self-management measures include avoiding tobacco, maintaining a weight that supports joint health, and using a supportive mattress and sleeping position. Workplace adjustments, scheduled movement breaks, and ergonomic seating may reduce strain, although posture changes alone do not treat inflammation.

Surgery is not needed for most people. Joint replacement may be considered for severe hip damage. Specialized spinal surgery is reserved for selected cases involving major deformity, instability, or certain fractures.

Medicines commonly used for this include adalimumab and etanercept . Which one suits you, if any, is a decision for you and your doctor.

Complications

Ongoing inflammation may gradually reduce spinal flexibility. In some people, bones of the spine fuse, leading to a more fixed posture. Reduced rib movement can limit chest expansion, although regular breathing exercises and physical activity may help maintain function.

Bone thinning, called osteoporosis, can occur even when extra bone is forming around the spine. A stiff or weakened spine is more vulnerable to fracture. Severe new neck or back pain after a fall or other injury needs urgent assessment, even if the injury seemed minor.

Other possible complications include repeated uveitis, hip damage, psoriasis, and inflammatory bowel disease. Ankylosing spondylitis is also associated with a higher cardiovascular risk, making blood pressure, cholesterol, physical activity, and smoking status important parts of routine health care.

Seek emergency care for new leg weakness, spreading numbness, loss of bladder or bowel control, numbness around the groin, severe pain after an injury, chest pressure, or major breathing difficulty. These symptoms are not typical routine flares and require immediate evaluation.

Follow up

Regular follow-up helps the care team assess pain, stiffness, mobility, fatigue, daily function, and treatment side effects. The schedule depends on disease activity and the medicines being used.

Routine visits may include examination of the spine and joints, blood tests, review of exercise goals, and discussion of eye, skin, or bowel symptoms. Repeated spinal X-rays are not needed at every visit but may be used when the result could change management.

People taking medicines that affect the immune system should discuss infection precautions and vaccination with their care team. Contact the prescribing clinician about fever, a significant infection, or plans for surgery. Do not stop a prescribed medicine without guidance unless urgent medical instructions say otherwise.

Pregnancy planning should be discussed in advance because some medicines may need review before conception, during pregnancy, or while breastfeeding.

Between routine appointments, arrange earlier review if symptoms are steadily worsening, treatment is no longer helping, or medicine side effects develop. A painful red eye with light sensitivity needs same-day assessment. Neurologic symptoms, serious breathing problems, or severe pain after an injury require emergency care.

Sources

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