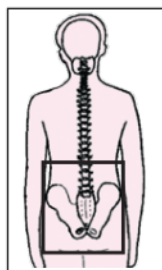
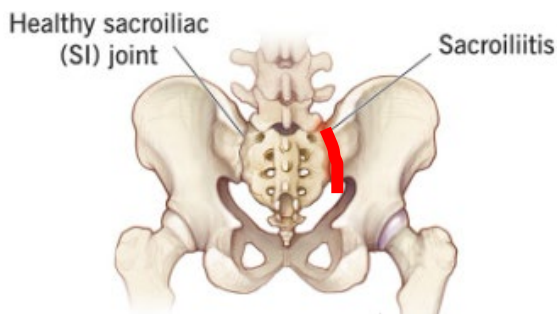
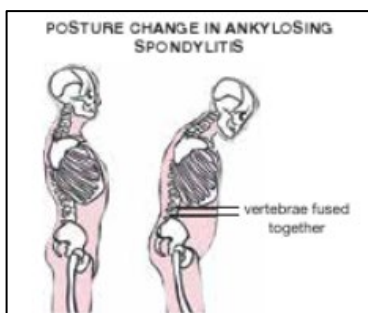


Patient and Family Information Leaflet
**Ankylosing Spondylitis/
Axial Spondyloarthritis**

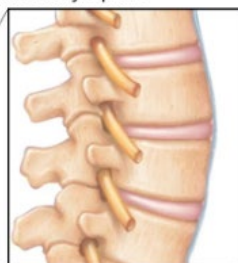
What is Ankylosing Spondylitis?

Ankylosing Spondylitis (AS) is a type of arthritis mainly affecting the spine (back-bone) and the buttocks (sacroiliac joints). It is a chronic disease that causes inflammation in the joints of the spine and buttocks.

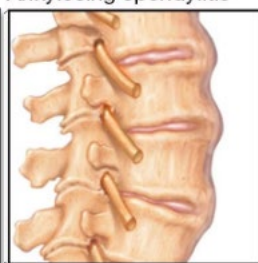
Damaged joints lead to stiffening of the spine and loss of flexibility of the back. Ankylosing spondylitis (AS) is a subset of AxSpA (Axial Spondyloarthritis) and occurs in patients with X-ray changes in the joints in the buttocks (sacroiliac joints). AS usually affects teenagers and young adults less than 40 years old and is more common in men.



Healthy spine



Ankylosing spondylitis



What causes AS?

AS is an autoimmune condition. The exact cause of AS is unknown, but genetics is a risk factor, particularly with the presence of the HLA B-27 gene, which is found in 90% of patients with AS.

What are the symptoms of AS?

- Back pain and stiffness, which usually starts from the lower back, buttock or neck, and persists over several months. The pain is usually worse in the morning and may wake you up at night. Rest does not make it better, but exercise eases the pain.
- Other joints at the arms and legs may be affected, leading to joint pain swelling and stiffness.
- Tendons and ligaments may be affected leading to pain that is worse with specific movements e.g. pain over the back of the heel where the Achilles tendon inserts (tendoachilles tendinitis), sole of the feet (plantar fasciitis) and around the elbow (tennis elbow or golfer's elbow)
- Other symptoms may include:
 - Eye involvement: The eye may become inflamed: painful, red with severe sensitivity to bright lights (acute anterior uveitis)
 - Gastrointestinal involvement: Diarrhoea, blood in the stools which may occur to inflammation in the intestines
 - Tiredness

How is AS diagnosed?

Diagnosis is made based on a combination of a patient's symptoms, clinical examination, blood tests (such as raised inflammatory markers e.g. CRP) and imaging studies such as X-rays or MRI. A genetic test (for HLA B-27) may be performed.

Further evaluation by an ophthalmologist (eye doctor) or gastroenterologist (stomach and intestine doctor) may be required if there is suspicion of eye or gastrointestinal involvement respectively.

How is the treatment for AS?

AxSpA is a chronic condition. Symptoms can be alleviated, and joint damage can be prevented by prompt and appropriate treatment. Delay in treatment can lead to limitation in movement of the spine/other joints and hunching of the back which may be permanent.

1) Rest and Exercise

Exercise is a cornerstone of treatment – regular stretching can help to reduce pain and stiffness. A physiotherapist will teach you specific exercise routines. In addition, non-spinal loading exercises such as swimming are very useful.

2) Medication

- **Non-steroidal anti-inflammatory drugs (NSAIDs)** help with pain control and reduction of inflammation.
- **Biologics:** These are targeted medications for patients with severe disease in whom other treatments including NSAIDs have failed. These are given subcutaneously (injection under the skin given to the thighs or abdomen) or through the veins. Examples include infliximab, adalimumab, golimumab, etanercept, secukinumab, and ixekizumab.
- **Other disease-modifying anti-rheumatic drugs (DMARDs)** may be given in select patients who have affected joints in the upper or lower limbs. Examples include sulfasalazine and methotrexate. Patients on DMARDs will require regular blood tests to monitor for any potential side effects.

- **Newer targeted synthetic DMARDs** have been developed and are usually reserved for patients who have failed NSAIDs and one or more biologics e.g. tofacitinib and upadacitinib.

AxSpA patients are at higher risk of comorbid conditions such as osteoporosis and cardiovascular disease. These conditions should be addressed as part of holistic care for AxSpA and AS. Certain vaccinations are recommended for patients on biologics to prevent common infections, such as influenza, pneumococcal, RSV and shingles.

What should I do if I have been diagnosed with AS?

Lifestyle changes are an important aspect of management. You are strongly encouraged to work closely with your physician and play an active role in your care.

- Avoid smoking
- Exercise and stretch regularly
- Eat a balanced diet. Raw and partially cooked food should be avoided to reduce risks of infections if you are on DMARDs or biologics
- Lose weight if you are overweight
- Reach out for support – whether through friends, family, or support groups such as the National Arthritis Foundation

Mobility Exercises

Hip Mobility Exercises



Seated Piriformis Stretch

Place your ____ ankle on your opposite knee.

Bend forwards and press down on your ____ knee.

Hold for ____.

Repeat ____ times.



Hamstring stretch

Sit on a chair. Put one leg in front with the other knee slightly bent. Lean forward keeping your back straight.

Hold ____

Do ____ times.



Seated groin stretch

Bend your knees. Place the soles of your feet together, and spread your knees apart to feel a stretch in your inner thighs.

Hold for __ seconds, repeat __ times.



Hip flexor stretch

Stand in a wide walking position, put both your hands on the knees. Keep your other knee straight. Bend your knee forward keeping your back straight.

Hold ____. Do ____ time.

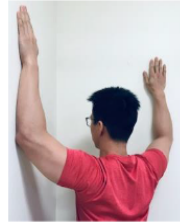
Trunk Mobility Exercises



Bent over dumbbell row.

Position yourself in a bent over lunge position with 1 hand supported. Hold a ____kg weight in the other hand, arm hanging downwards. Raise your elbow up toward the ceiling.

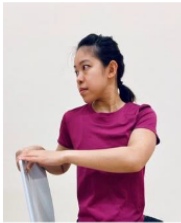
Hold _____. Do _____times.



Pec minor stretch

Stand facing a corner. Place both hands on the sides of the wall 120 degrees away from body. Gently lean forward, and feel a stretch in the front of the chest.

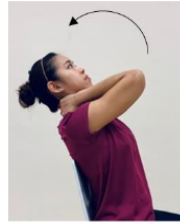
Hold _____. Do _____times.



Thoracic Rotation

Sit with the backrest of the chair on your side. Turn your upper body toward the backrest. Pull onto the backrest for a greater stretch.

Hold _____sec, repeat _____ times. _____.



Thoracic Extension

Sit on a chair with back rest that reaches your upper back. Lean back on the back rest. You should feel a stretch at your upper back.

Hold _____. Do _____times.



Scapular Retraction

Clasp your hands together behind your back.

Stretch your arms backwards.

Hold _____. Do _____times.

Cardiovascular Exercises

Stay fit by doing cardiovascular exercises regularly.

1. Swimming: _____ minutes
2. Cycling on a gym bike:
_____ Resistance
_____ minutes.

Lower Back Mobility Exercises



Lower Back Extension

Lie on your tummy.
Then prop yourself up onto your forearms.

Hold _____. Do _____ times.



Pelvic Tilts

Position yourself on your hands and knees. Drop your stomach toward the floor, then gently curve your back towards the ceiling.

Do _____ times.



Lower Back Side Flexion

Sit on a chair.
Bend sideways as shown.

Hold _____

Do _____ times



Lumbar Flexion

Lie on your back. Bring one knee toward your chest.

Hold _____

Do _____ times



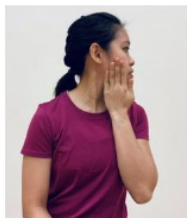
Prayer Stretch

Start in a crawling position
(on your hands and knees)

Leave your hands planted on the ground as you sit your bum onto your heels.

Hold _____. Do _____ times.

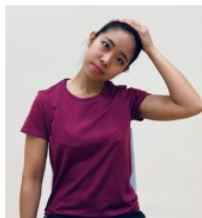
Neck Mobility Exercises



Neck Rotation.

Turn your neck.
Use your hand to stretch your neck further
Hold _____.

Do _____ time



Neck Side Flexion.

Start by bending your head toward your shoulder.

Use your hand to provide additional stretch.

Hold____. Do _____ time.

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