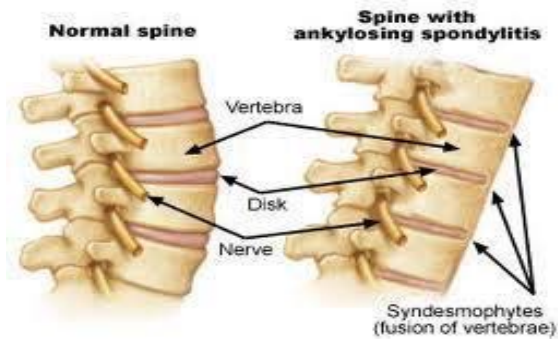


## Exercises for Ankylosing Spondylitis (AS)

Ankylosing spondylitis is a complex, and systemic inflammatory rheumatic disease mainly affecting the axial skeleton, with the potential to cause severe debilitation. Fibrosis and ossification of tendon, ligament and capsule insertion at the area of intervertebral and sacroiliac discs are the main characteristics of AS.



The pathophysiology of AS remains largely unknown. Despite developments into the understanding of this area, it is not possible to link them into a unified theory on pathophysiology; however, it is believed AS is influenced by genetic, environmental and immunologic factors.

### PHYSIOTHERAPY MANAGEMENT IN ANKYLOSING SPONDYLITIS

The physiotherapist has a key role in the management of Ankylosing Spondylitis.

- reducing pain and discomfort;
- maintaining &/or improving muscle strength and endurance;
- maintaining &/or improving flexibility, mobility and balance;
- maintaining &/or improving physical fitness, physical function and thereby social participation;
- preventing where possible spinal curve abnormalities and joint deformities.

### Exercises for ankylosing spondylitis (AS)

1. Standing with your heels and backside against a wall, push (but don't tilt) your head back towards the wall. Hold for 5 seconds then relax. Repeat about 10 times if possible.



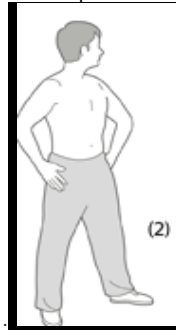
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Please contact Ms. Paramita Chakraborty @ 896 130 1963 for further clarification and advice

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**Dr. Tanoy Bose.**  
MD (general medicine).  
Chief Clinical Co-ordinator MRCP Ireland Examination  
Consultant  
Arthritis, Rheumatology & Internal Medicine  
WhatsApp: 9831336275  
Email: drtanoybose@gmail.com

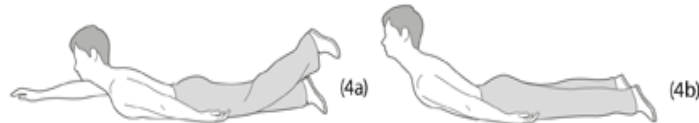
2. Stand in an open space with your feet apart. Place your hands on your hips. Turn from the waist to look behind you. Keep your knees and feet facing the front. Hold for 5 seconds. Repeat to the other side, 5 times each side



3. Lying on your back, knees bent, feet flat on the ground:
- (a) Put your hands on your ribs at the sides of your chest. Breathe in deeply through your nose and out through your mouth, pushing your ribs out against your hands as you breathe in. Repeat about 10 times. Remember, it's as important to breathe out fully as it is to breathe in deeply.
  - (b) Put your hands on the upper part of the front of your chest. Breathe in deeply through your nose and then breathe out as far as you can through your mouth. Push your ribs up against your hands as you breathe in – again about 10 times. You can do this exercise at any time in a lying or sitting position.



4. Lying on your front, looking straight ahead, hands by your sides (if necessary you can put a pillow under your chest to get comfortable):
- (a) Raise one leg off the ground keeping your knee straight, about 5 times for each leg. It helps to have the opposite arm stretched out in front of you.
  - (b) Raise your head and shoulders off the ground as high as you can – about 10 times.



5. Kneeling on the floor on all fours, stretch alternate arms and legs out parallel with the floor and hold for 10 seconds. Lower and then repeat with the other arm and leg, 5 times each side.



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Consultant  
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Email: drtanoybose@gmail.com

### Deep Breathing



Deep breathing helps you to increase and maintain your lung capacity, and can help keep your rib cage flexible.

To start, sit or lie down and observe your normal breath. Take a slow, deep breath. (You should feel air enter through your nose and move toward your lower belly.) Allow your abdomen to expand fully.

Breathe out through your mouth or nose. With one hand on your abdomen, feel it rise and fall as you breathe. Alternate normal and deep breaths a few times.

### Yoga



Yoga can help ease pain and increase flexibility. Many people find that yoga helps reduce stress and tension and promote restful sleep. If you're new to yoga, don't attempt to learn on your own. Find a class for beginners and stick with gentle poses. As your range of motion increases, you may want to try more advanced levels.

### Swimming

Inflammation due to ankylosing spondylitis can cause decreased chest expansion. The breaststroke specifically can help build and maintain chest expansion. Swimming in general is a great way to increase flexibility in your spine without jarring it. It also helps to increase flexibility in your neck, shoulders, and hips. You may find it easier to perform aerobic exercises while in the pool.



### Standing Posture



You should perform this exercise in front of a full-length mirror. Start by standing with your heels about four inches away from a wall. Keep your shoulders and buttocks as close to the wall as possible without straining. Hold this position for five seconds. Check your posture in the mirror and think about how it feels to stand straight and tall. Relax, then repeat several times.

### Lying Posture



You should perform this exercise on a firm surface. Use your bed if it has a firm mattress, or place a mat on the floor. Lie face down for 15 to 20 minutes. (If you can't do this comfortably, you may use a pillow under your chest and place your forehead on a folded towel.) You may keep your head downward, turn it to one side, or alternate sides.

You may not be able to do this for 20 consecutive minutes. That's OK. Begin with whatever feels comfortable and increase the time as you gain strength.

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### Walking Posture



Pay attention to how you walk. Aim to keep your spine as straight as possible, with your shoulders squared and your head held high. In other words, think tall! You can test and correct your posture throughout the day by standing with your back against a wall. Your head, shoulders, buttocks, and heels should touch the wall at the same time.

### Sitting Posture

If your job requires you to sit at a desk all day, it may be worth it to invest in an ergonomic chair. Make sure it's well designed and doesn't encourage a slumped or stooped position. Just like your walking posture, try to sit with your spine as straight as possible. Keep your shoulders squared and your head held high. Check and correct your sitting posture throughout the day.



### Sleeping Posture



Sleep with your spine straight, if possible. To encourage this position, your mattress should be firm, but not too hard. Sleep on your stomach if you can, and don't use a pillow. Alternatively, you can sleep on your back and use a thin pillow, or one designed to support your neck. Avoid sleeping with your legs curled and keep them as straight as you can.

**\*\*Make sure you does NOT involve any of the following\*\***

- Sit-ups
- Forward flexion of spine with round back or straight legs.
- Lifting any moderate weight
- Rotation to point of strain (e.g. Tennis, Golf).
- Sudden movements
- Activities which may increase risk of falling

### Bonus Exercise Tips

Keep these tips in mind for best results:

- It might be easier to exercise or perform deep breathing after a warm bath or shower.
- Check on and correct your posture throughout the day.
- Don't perform strenuous exercises when you're experiencing a flare up.
- Always begin with gentle exercises and increase the intensity only if you're not in pain.
- Increase exercise frequency as tolerated.
- If pain increases due to exercise, discontinue and consult with your physician.

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