

# Research Project - Spondyloarthritis

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## Glossary

**Spondyloarthritis (SpA)** – umbrella term for inflammatory disease that affect joints.

**Seronegative spondyloarthropathies** – another name for SpA – inflammation markers do not present in blood tests.

**Peripheral Spondyloarthritis (pSpA)** – inflammation in joints and tendons other than in spine or pelvis

**Axial Spondyloarthritis (axSpA)** – inflammation in spine and pelvis

**Non-radiographic axial Spondyloarthritis (nr-AxSpA)** – disease not seen on X-ray.

**Radiographic axial Spondyloarthritis (r-AxSpA)** – disease that can be seen on X-ray.

**Ankylosing spondylitis (AS)** – chronic inflammation in spine. Progressed to cause fusion and new bone formation.

**Psoriatic arthritis (PsA)** – type of arthritis that affects people with psoriasis.

**DMARDs** - Disease-modifying anti-rheumatic drugs

**Biologics** – similar to DMARDs to reduce inflammation – also known as TNF blockers or anti-TNF medication.

**TNF** - Tumour necrosis factor

## A study of the physiology and pathology of Spondyloarthritis.

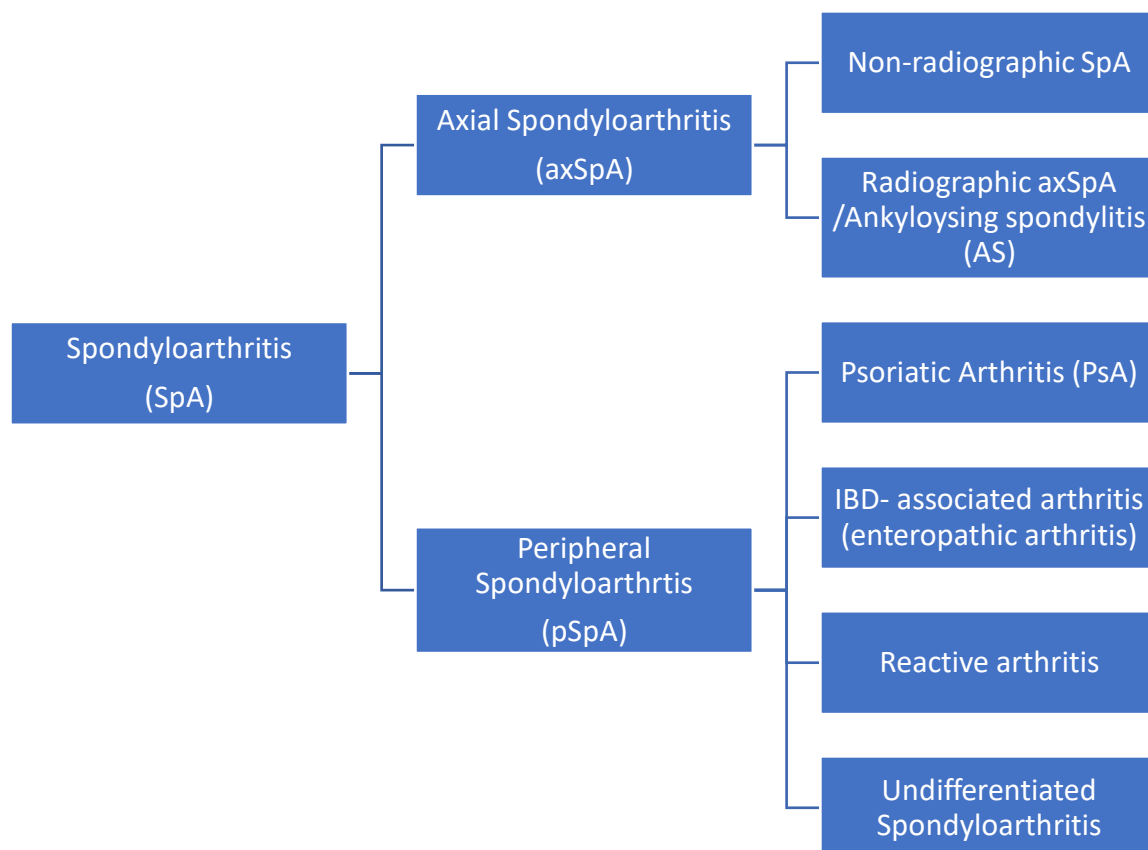
Its variations, orthodox treatment, and prognosis.

Spondylarthritis (SpA) is the group name for a family of inflammatory autoimmune diseases that includes:

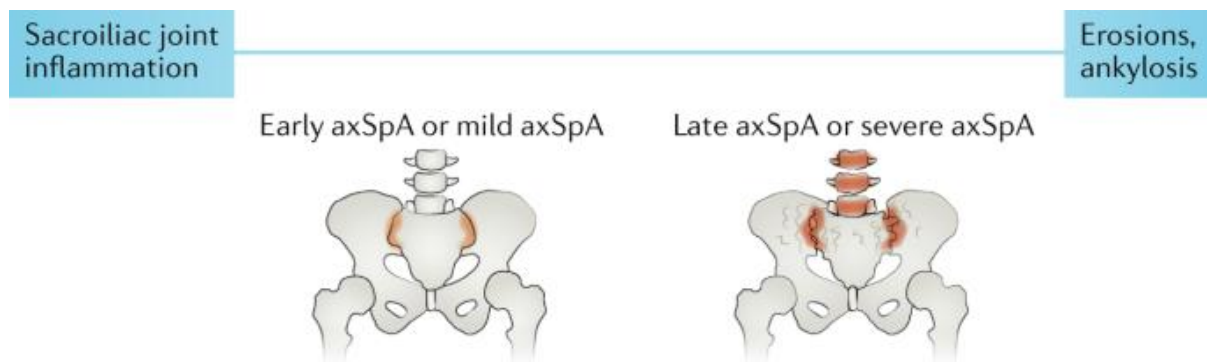
- **axial spondyloarthropathy** (axSpA) which incorporates ankylosing spondylitis (AS) and non-radiographic axial spondyloarthropathy (nr-axSpA)
- **psoriatic arthritis** (PsA), peripheral enthesitis,
- **reactive arthritis**
- **enteropathic arthritis** which includes inflammatory bowel disease such as ulcerative colitis and Crohn's disease.

In particular I am going to focus on axSpA as I was recently diagnosed with this condition, alongside peripheral SpA.

Axial SpA, a form of inflammatory arthritis, predominantly affects the axial spine but as a complex condition has many related, often invisible, issues. It is characterised by inflammation of one or both sacroiliac joints.



Non radiographic is the early stages of axSpA – damage cannot be seen on an X-ray but can be found on an MRI scan. Radiographic means that the damage is significant enough to be seen on an X-ray.



Source: <https://www.nature.com/articles/s41584-020-00552-4>

## Statistics

- 1 in 200 of the adult population in the UK have axSpA.<sup>1</sup> 1.5 million Americans are affected by axSpA.<sup>2</sup>
- In the UK, the average age of onset is 24.<sup>3</sup> Using Worldwide data, the median age for onset of symptoms is 26.<sup>1</sup>
- 95% of sufferers are aged less than 45 when their symptoms start.<sup>3</sup>
- It takes 8.5 years on average to get a diagnosis in the UK,<sup>3</sup> Worldwide this averages to 11 years<sup>1</sup>.
- 59% of people with axSpA report mental health problems<sup>3</sup>.
- It used to be thought of as a predominantly male condition but now it is seen as a gender-neutral disease – however men are more likely to experience changes to bones and fusion which is easier to see on X-rays. Women tend to have higher rates of inflammation rather than fusion. Worldwide, diagnosis is still skewed to male dominated due to diagnosis not taking place until erosion and fusion is seen on X rays (radiographic.)
- There can be a genetic component to axSpA with a gene called HLA-B27 with over 85% of axSpA sufferers having this gene. Approx. 8% of white western Europeans have this gene. However, only 1 in 15 people with the gene go on to develop axSpA.<sup>1</sup>

<sup>1</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9044547/>

<sup>2</sup> <https://www.verywellhealth.com/axial-spondyloarthritis-overview-and-more-5207838>

<sup>3</sup> <https://nass.co.uk/about-as/what-is-axialspa/>

## Diagnosis

### Main symptoms:

- **Pain in the lower back** - this is usually the first and most common symptom of axSpA and tends to have some of the following characteristics:
  - Symptoms begin in early adulthood (before 45 years of age)
  - Gradually gets worse over time rather than as a result of an acute injury or disc issue.
  - Pain is worse in the morning on waking or after period of inactivity.
  - Being active improves the pain and stiffness.
  - Pain can wake you up in the night – often towards the morning when you have been immobile for a period of time.
  - It can take you a while to get moving in the morning due to stiffness and pain – this can take 30 minutes or more.
  - Can be associated with buttock pain that alternates between the left and right sides.
- **Reduced spinal flexibility** - as the condition progresses, flexibility becomes limited in the back and neck due to erosion and fusion. In AS, the degree of inflexibility ranges from minor to complete inflexibility. This can make day to day activities like putting on shoes/socks or doing up zips on dresses hard/impossible.

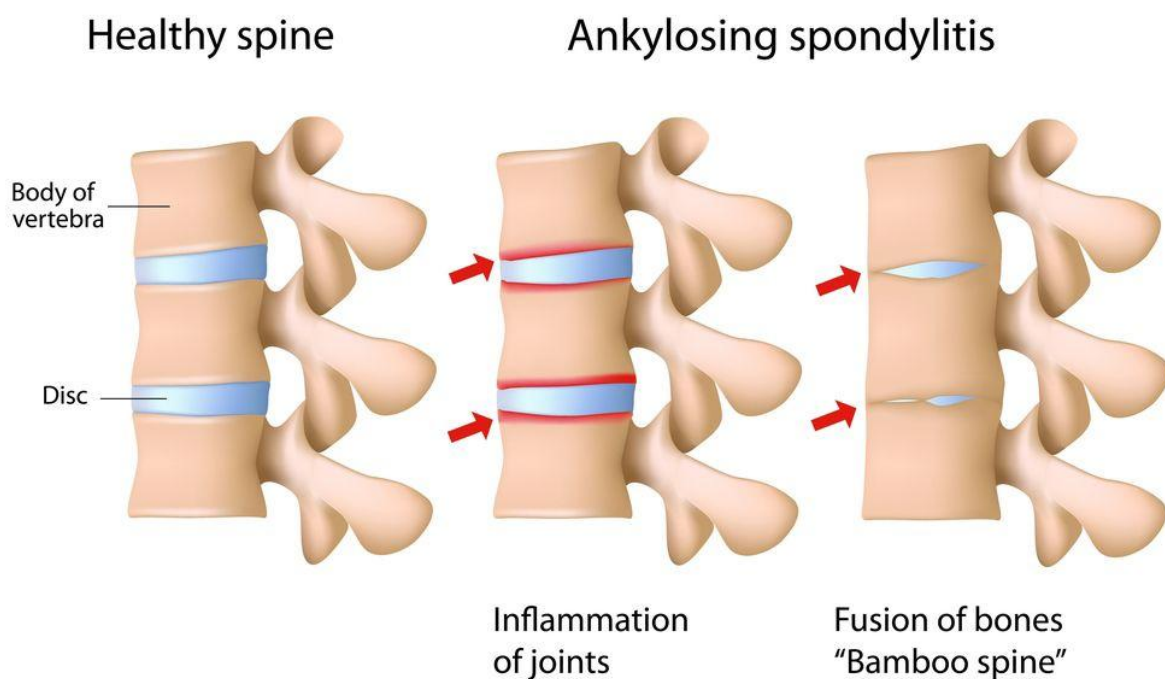


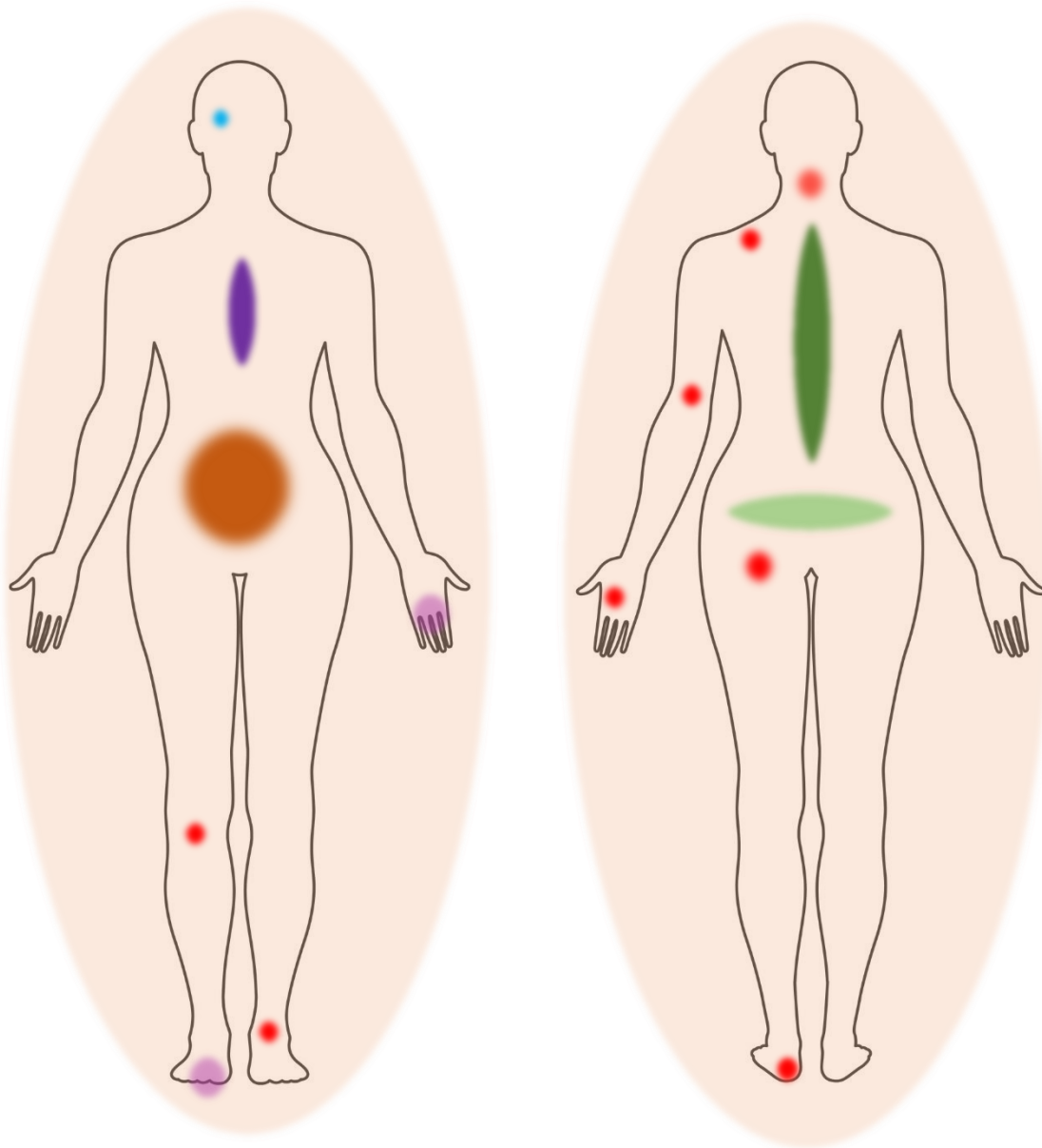
Image Source: <https://www.rheumatologynetwork.com/view/are-radiographic-axspa-and-ankylosing-spondylitis-one-same>









Other symptoms:

- **Fatigue and sleeplessness** – the body thinks it is constantly under attack which causes inflammation throughout the entire body which is tiring. Interrupted or lack of sleep due to pain exacerbates the problem.
- **Anxiety and depression** – a diagnosis can provide relief as individuals finally have a name for what they are suffering. It can be an uphill battle to get a diagnosis as the disease presents as so many other diseases. On diagnosis this relief can turn into anxiety, depression, and grief as you come to terms with your changing abilities and an uncertain future.
- **Hip pain** – arthritis in the hips is fairly common in AS, but less so with axSpA/nr-axSpA. Hip arthritis can cause pain in the groin or buttocks or difficulty walking.
- **Heel pain** – a very common area of inflammation is the heel causing pain at the back of the heel (Achilles tendinitis) and in the sole of the foot (plantar fasciitis).
- **Shoulder pain** – Inflammation of the tendon and bone may cause shoulder pain, frozen shoulder, rotator cuff injuries and reduced mobility of the affected shoulder(s).

## Extra-axial manifestations, comorbidities, and complications

It's not unusual for sufferers to have extra-axial or other symptoms that affect other parts of the body:



	Main symptom: Inflammation and erosion of sacroiliac joint (s)		Enthesis
	Progression to AS - fusion		Inflammatory Bowel Disease
	Costochondritis		Uveitis
	Psoriasis		Dactylitis

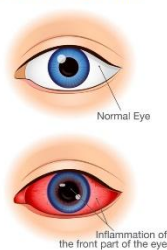
## ❖ **Peripheral SpA**

- **Arthritis in other joints** – Pain, stiffness, and swelling of other joints can occur. Arthritis may affect a single joint (monoarthritis) or a few joints (oligoarthritis). This is mainly seen in the hips, knees, ankles, heels, and feet.
- **Enthesitis** – this is inflammation of the enthesis which is where the ligaments, tendons, fascia etc attach to the bones. This can be at any point in the body. Inflammation can lead to wearing away of the bone where the enthesis attaches. This is called enthesopathy.

- ❖ **Psoriasis** – known as psoriatic arthritis this is a condition in its own right and can affect the skin throughout the whole body. Symptoms include thickening of the skin causing redness and white or silvery scales. Nails can become ridged and pitted and lift away from the nail bed. Approx. 9% of AS sufferers will have psoriasis.<sup>4</sup>

- ❖ **Inflammatory Bowel Disease** – ulcerative colitis and Crohn's disease often coexists with SpA, causing cramps and pain in the stomach/abdomen along with diarrhoea and blood in the faeces. Some SpA sufferers also have ulcerations in the bowel lining. Approx. 7% of AS sufferers will also have IBD.<sup>5</sup>

Anterior Uveitis



- ❖ **Uveitis** – which can be confused with conjunctivitis, is the inflammation of the eye or part of the eye. It affects the iris causing pain, blurring of vision and sensitivity to light. This requires immediate attention as not treating can ultimately cause blindness. Treatment is with eye drops. Approx. 25% of AS sufferers will have a uveitis attack during their lives.<sup>6</sup>

<sup>7</sup><https://www.allaboutvision.com/conditions/infections-allergies/anterior-uveitis/>

- ❖ **Dactylitis** or "Sausage-digits" – Sausage-shaped swelling that can affect one or several toes and fingers.
- ❖ **Costochondritis** – this is inflammation of the cartilage where the ribs connect to the sternum. It can cause pain on breathing and moving. The pain is sharp and can mimic the symptoms of a heart attack. The pain can radiate into arms and shoulders. Being able to draw a full breath is difficult and along with coughing and sneezing is often restricted and extremely painful.
- ❖ **Lung complications** – in addition to costochondritis, as a result of systemic inflammation, severe AS sufferers can develop other lung complications such as interstitial lung disease, sleep apnoea, lung infections and lung collapses.
- ❖ **Fibromyalgia** – this is a widespread neurological disorder and AS sufferers have an increased risk of developing this condition. Approx. 15% of axSpA sufferers also meet the criteria for fibromyalgia.<sup>8</sup>
- ❖ **Cardiovascular disease, heart problems and hypertension** – as a chronic inflammatory disease, AS/SpA and axSpA sufferers have a higher risk of hypertension and heart problems such as inflammation of the aorta, arrhythmia and heart valve disease.

<sup>4</sup> <https://nass.co.uk/about-as/what-is-axialspa/your-skin/>

<sup>5</sup> <https://nass.co.uk/about-as/what-is-axialspa/your-gut/>

<sup>6</sup> <https://nass.co.uk/about-as/what-is-axialspa/your-eyes/>

<sup>7</sup> <https://www.allaboutvision.com/conditions/infections-allergies/anterior-uveitis/>

<sup>8</sup> <https://creakyjoints.org/living-with-arthritis/symptoms/factors-influence-fibromyalgia-in-axial-spondyloarthritis/>

- ❖ **Jaw pain and gum disease** – inflammation of the jaw leading to stiffness can make opening the mouth difficult. Inflammation also puts sufferers at an increased risk of gum disease.
- ❖ **Osteoporosis** – AS sufferers are at a greater risk of osteopenia and osteoporosis.
- ❖ **Kyphosis** - severe AS can lead to an irreversible kyphosis or head-forward "hunchback" posture.
- ❖ **Spinal fractures** - fusion in the spine, sometimes called a “bamboo spine” removes the natural flexibility of the spine and in impact injuries can lead to spinal fractures.
- ❖ **Spinal Stenosis** – severe AS can lead to a narrowing of the spinal column which can cause nerve pain and or damage.
- ❖ **Cauda equina syndrome** – a severe form of spinal stenosis, luckily a rare complication as a result of severe AS, which can lead to permanent paralysis and incontinence. Symptoms include weakness in the lower limbs and bowel and bladder incontinence.
- ❖ **Sjögren's syndrome** – this is an autoimmune condition that affects areas in the body that produce fluid – predominantly eyes and mouth but joints are affected too. Dry eyes, mouth, and skin along with tiredness and skin rashes are the main symptoms.
- ❖ **Lupus** - another chronic autoimmune disease that attacks the whole body.
- ❖ **Cancer** – AS sufferers are at an increased risk of cancer due to higher levels of inflammation and the medications used to treat the condition (biologics) increase the risk of cancers, including skin cancers.

## Causes

SpA, AS and axSpA has no known cause although the following can be indicators.

- ❖ **Family History** – if there are family members with AS or axSpA then other family members have a higher likelihood of developing the condition as well. In some family's autoimmune disorders of varying types are prevalent.
- ❖ **HLA-B27 gene.** Research has shown more than 9 out of 10 people with AS carry a particular gene known as human leukocyte antigen B27 (HLA-B27).<sup>9</sup> These antigens are proteins that should help the body identify the difference between harmful and non-harmful substances in the body,
- ❖ **Tumour Necrosis Factor (TNF)** – Is a protein that has a role in the body's natural response to infection or injury. In a healthy person TNF is sent to the location required, creates inflammation to deal with the issue and is then deactivated when the levels are appropriate. When the TNF process is not working effectively and the body either creates too much in response to a trigger or creates it when it's not needed, this causes excess inflammation and triggers an autoimmune disorder.

If you have an autoimmune disease, then elevated levels of TNF can cause a flare in symptoms.

- ❖ **IL-17A** – this is a protein that is instrumental in the immune system process. Over production, as for TNF can be a key indicator in autoimmune disorders.

## The relationship between Stress, inflammation, and autoimmune disorders.

While stress, per se, is not listed by the medical profession as a cause of axSpA, it is well known that persistent stress has a negative impact on multiple body systems. It creates a dysregulated immune system leading to increased inflammation and potentially causing the development or exacerbation of autoimmune disorders in those individuals with a genetic predisposition. Not only does stress cause disease, but the disease itself also causes significant stress in the patients, creating a vicious cycle (Stojanovich and Marisavljevich, 2008).

Chronic stress can also make existing autoimmune disorder worse as it creates a persistent inflammatory state.

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<sup>9</sup> <https://111.wales.nhs.uk/encyclopaedia/a/article/ankylosingspondylitis>

## Consultant assessment and diagnosis

To get to a formal diagnosis requires persistence from the sufferer and a number of exams and tests:

- ❖ **Physical exam** – there is no single test for SpA, axSpA or AS and in the early days of the disease many people dismiss the symptoms as other issues. In addition, the combination of symptoms varies from person to person. If a GP has an inkling that there is an arthritic component, after a rudimentary exam they should send you to a specialist Rheumatologist department. The actual protocol is likely to differ by region. The final diagnosis of AS or nr-axSpA is made by a Rheumatologist.
- ❖ **Medical history review** – the medical team will need to discuss your medical history to build a picture of the issues that the patient is dealing with. AS also has genetic involvement.
- ❖ **X Rays** – will be used to see whether there is obvious damage to the spine. Only AS can be picked up on an X Ray.
- ❖ **MRI scans** – will be able to see inflammation and less obvious structural damage.
- ❖ **Blood Tests** – there are a number of blood tests and markers that will be used as part of the diagnosis process:
  - **CRP** – a CRP test is looking for elevated levels of C-reactive protein which can indicate inflammation in the body.
  - **HLA B27** – research has shown that 9 out of 10 people with AS carry this gene. But having the gene does not necessarily mean AS will develop.
  - **Erythrocyte sedimentation rate (ESR)** – this test aims to measure the levels of proteins in the body that correlate to inflammation. The higher the rate the more likely inflammation is present. It is often used to rule out rheumatoid arthritis.
  - **Rheumatoid factor** – this blood test is used to rule out (or in) rheumatoid arthritis or Sjogren's syndrome.
  - **Seronegative test results** – this is where a person has been tested for inflammation, but the readings are not high enough to trigger a positive result. This is not unusual for axSpA and SA patients.

Ultimately the rheumatology consultant will look at a mix of all of the above issues rather than one thing in isolation to arrive at a diagnosis. [See appendix 1 for consultant mapping process.](#)

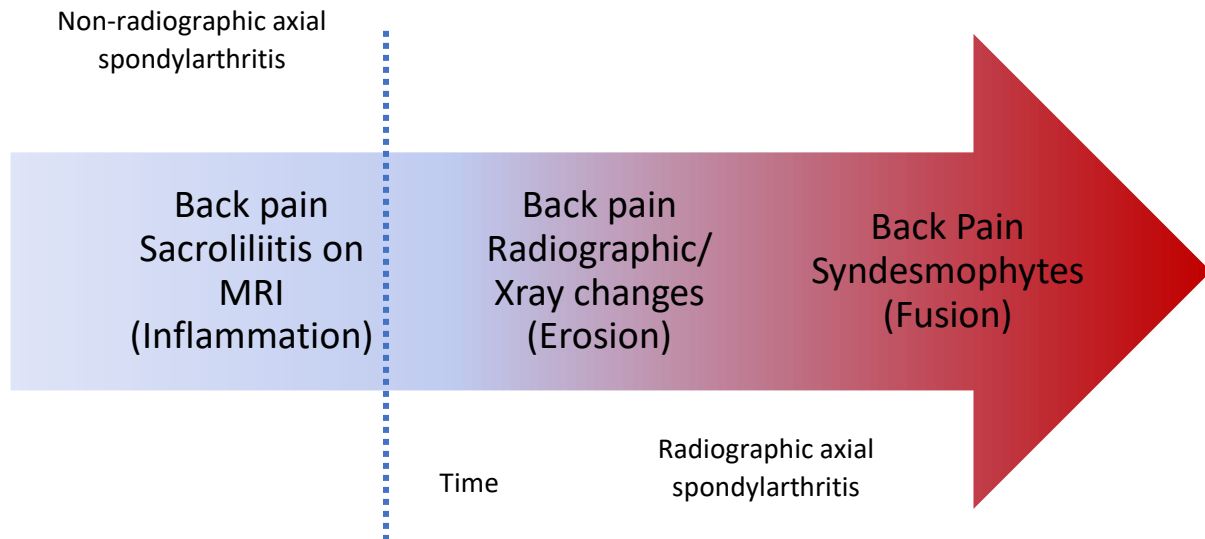
- ❖ **Bath indices** – this is a set of measurements that are used in the UK to aid diagnosis of axSpA and AS. It is also used to monitor progression or activity of the disease. There are 4 different types of indices used: the Bath AS Metrology Index (BASMI), the Bath AS Functional Index (BASFI), the Bath AS Disease Activity Index (BASDAI) and the Bath AS Patient Global Score (BAS-G).<sup>10</sup>

The key measurements used are the BASMI measurements. [See appendix 2 for the BASMI table used by clinicians.](#)

<sup>10</sup> <https://nass.co.uk/wp-content/uploads/2018/09/Bath-Indices.pdf>

### Illness pathway

SpA is chronic and progressive and if not treated early enough axSpA can develop into full blown AS. Modern medicine aims to stop the progression from early axSpA but cannot reverse the damage already in place.



Source: <https://bpac.org.nz/BPJ/2016/July/img/fig1.jpg>

Repeated cycles of inflammation lead to bone erosion which leads to bone fusion or syndesmophytes. This is a clear indicator of AS. Syndesmophytes cause bone spurs in the ligaments and irreversible spinal damage and vertebral fusing. This results in pain, rigidity, and loss of mobility.

### Progressive deformity due to AS over a period of 36 years



Little H, Swinson DR, Cruickshank B. Am J Med. 1976;60:279-285.  
Reproduced with the permission of Cahner's Publishing Co.

Modern medicine aims to bring the illness as close to remission as possible, to prevent flares of symptoms and improve quality of life.

## Treatment pathways

### Pharmacological treatments

Rheumatology consultants follow a fairly strict medication pathway and protocol and will start with the lowest type of pain medication to manage symptoms. This is normally a mix of traditional analgesics and anti-inflammatory drugs. They may also layer in specific drugs to slow the progression of the disease which are known as anti TNF medications. TNF stands for tumour necrosis factor which is a protein responsible for the inflammatory response in the body. For more detailed information about the pathways as well as names and types of drugs used please refer to [appendices 3 & 4](#).

### Physical therapies

- **Manual therapy** – osteopathic and chiropractic work should be undertaken with care as spinal manipulation can trigger flares and in the case of spinal fusion can cause fractures.
- **Physiotherapy** – this can be used to increase spinal mobility and reduce morning stiffness. A good physio can create a personalised program of exercises and stretches to help the patient.
- **Hydrotherapy** – gentle exercise in warm water will help to support the body, takes less effort and is less painful. Being in a warm pool will help movement and doesn't strain the joints while providing some resistance to build muscle tone.

### Alternative therapies

- **TENS** – a TENS unit can be used to direct electrical pulses to points of pain on the body. By stimulating sensory or motor nerve endings TENS can be used to block pain signals to the brain.
- **Massage** – deep tissue, aromatherapy, stone based, and Swedish massage are all effective tools to help reduce muscles tension and improve wellbeing. Care should be taking with work around the sacral region as going too deep or hard can induce a flare.
- **Aromatherapy** – the use of appropriate essential oils to release muscle tension and reduce stress is an effective tool to help manage symptoms. Pre blended muscle blends can be used to massage into affected areas. Ideally working with a qualified aromatherapist who understands the condition and can create a personalised blend would be more effective.
- **Acupuncture** – there are two types of acupuncture that can be beneficial – traditional Chinese acupuncture that works with meridians in the body and can be useful to improve wellbeing and energy levels. Western acupuncture involves inserting fine needles at specific acupuncture points in the belly of the muscle, joints and at multiple points on the body. This has been proven to improve blood flow and reduce inflammation and pain. This can be undertaken with TENS units to increase efficacy.
- **Reflexology** – this therapy can help to reduce inflammation throughout the body by encouraging blood flow to the affected area. It can also increase a sense of wellbeing and relaxation in the body.
- **Cannabis** - medical grade cannabis (THC) and CBD have been seen to reduce pain and increase a sense of wellbeing in the body. THC activates cannabinoid receptors in the nerve cells to reduce pain. CBD reduces inflammation in the body and can also help with anxiety.

## Self-care

- ❖ **Exercise** - Keeping moving, even when everything hurts is critical in managing axSpA and SA. Low impact activities that prevent stiffness and preserve range of motion in the back and neck are imperative. Rheumatologists recommend swimming, yoga, tai chi, walking and exercises to strengthen the core and legs.
- ❖ **Diet** – lots of different diets are suggested when researching this condition – from clean eating to intermittent fasting. Everyone is different and speaking to a nutritionist is best. However, it is usually recommended that a Mediterranean diet is followed with plenty of fatty fish, fruits, vegetables, whole grains, and extra virgin olive oil. Limit red meat, sugar, and processed foods.
- ❖ **Give up smoking** – this is because smoking impacts the immune system generally and speeds up disease activity which can increase joint damage. It will also make it harder to breathe which is not helpful, especially if you are dealing with costochondritis.
- ❖ **Posture** – maintaining good posture is so important especially to prevent kyphosis as much as possible. Making sure that working stations are height appropriate and sit/stand desks are useful to prevent patients sitting for too long.
- ❖ **Stretching** – build stretching into daily life – from the moment of waking, after a shower or bath, at the desk or after driving for a long time before bed. Keeping moving is really helpful to prevent and manage pain.
- ❖ **Knowing when to stop** – symptoms will some days be good and others bad – it's important that patients understand their triggers, learn to pace themselves and know when to stop. There is a balance – give up too much and a sedentary life will lead to flares, do too much and fatigue will set in.
- ❖ **Build a [wellness recovery action plan](#)** – often a patient's mental health is severely impacted by the condition and they can feel that they have no control. Taking time to understand triggers and what helps to relieve symptoms can bring control back and ease anxiety and depression.

## Lifestyle implications

- ❖ **Dealing with flares** – SpA/axSpA/AS sufferers will have flares that can be triggered by illness, stress, being over tired or doing too much. It's not always obvious what has caused a flare so it's useful to keep a diary to see patterns so that changes to lifestyle can be made. Flares can relate to pain, fatigue and stiffness and are often a combination of the three. Understanding triggers and what tools can be used to support and prevent are important.
  - **Pain management** - It will help the patient if they have discussed pain management in a flare with their rheumatology nurse or consultant.
  - **Movement & exercise** - It will depend on the cause and the severity of the flare but getting moving is key to improvement. The temptation to stay in bed will only make the situation worse.
  - **Heat** – a warm bath or shower will help to ease muscle stiffness and relieve joints. Essential oils and Epsom salts can help. Essential oils in a blend can be rubbed into the skin before showering if getting into a bath is too difficult.
  - **TENS** machines can help relieve pain.
  - **Alternating temperature** - Use hot water bottles or heated packs applied topically can help as can freeze packs and gel. – the patient can try alternating these to get relief.
  - **Meditation**, breathing and mindfulness can help dissociate from the pain – distraction until pain reduces can be helpful.
- ❖ **AS at work** – getting going in the mornings can be a real issue for sufferers and it may be worth trying to speak to employers to see if a later start time is possible or flexible working from home so that flares can be managed without impacting work. Sitting still for too long is also a no-no as it will cause pain and stiffness. Employers have a duty of care to ensure that reasonable adjustments are made to enable AS sufferers can work – this includes how, where and what work is undertaken.
- ❖ **Medical appointments and relevant treatments** – interactions with medical departments will increase following diagnosis – especially if the patient is on biologic type treatments. Injections may take place weekly or biweekly and on average blood tests are required every 3 months. Rheumatology consultant appointments are required twice a year, nurse appointments 4 times a year plus any associated holistic therapies. It can become quite an undertaking to keep mobile and well – creating a constant reminder to the patient of their disease.
- ❖ **Socialising and going out** – it can be a lonely experience having a chronic and often invisible illness. Friends and family need to be educated so that they can understand that when the patient is in a lot of pain that they are likely to hibernate. Managing how often you go out can be key in managing flares. For example, going out Friday and Saturday night every week might not be the best idea – this can be hard especially if the patient is young.
- ❖ **Intimate relations** – when your body is not working the way you want it to or you are in a lot of pain, will have a negative impact on your intimate relations. Sex during a flare can be painful if joints are sore or the patient is really fatigued. Often the patient will have low mood, self-esteem or body image or libido is impacted by the medication taken. Communication with the partner is key. Referral to relationship counsellors might be advisable if communication breaks down.

- ❖ **Childbearing and managing family life** – SpA doesn't directly affect ability to conceive or have children but some of the medications taken may need to be reviewed. For example, taking NSAIDs in the first trimester carries risk. Methotrexate shouldn't be taken when trying for a baby or during pregnancy. Biologics should also be avoided. Birth plans will require a tri medical approach with rheumatology, midwifery and anaesthetic departments working with the patient to agree a plan. Epidurals can be technically more difficult to administer. Flares are also likely after birth so additional support will be needed, especially if a C-section was advised.

Family life with small children also needs some planning to ensure that equipment is lightweight, carrying young children also needs to be undertaken with care to protect joints and prevent strain. Support from partners, family, friends, and medical services is key.

Ultimately SpA sufferers will need to think about the following to live well:



## Mental and emotional impact

The mental and emotional impact of axSpA cannot be downplayed and those with chronic illness are often in a cycle of stress, depression and anxiety which exacerbates the condition. As mentioned earlier in this report, diagnosis can take years and once the initial relief of being diagnosed has passed, the patient may face feelings of grief and being out of control.

### Kleshas

The Kleshas are a helpful tool to help assess the patient. As described by Patanjali, they are obstacles in the mind that create suffering and stop an individual from living to their true potential.

Looking at axSpA in light of the Kleshas and the 7 stages of grief it is possible to see how they overlap and the impact on the patient.

Kleshas	Stages of grief	Narrative
<b>Avidya</b> (delusion/ ignorance)	<b>Denial</b>	At the point of diagnosis, the patient is likely to be in some form of shock. Although they may have had symptoms for a long while, getting the diagnosis is challenging. They may feel that the medical profession has got the diagnosis wrong, or they may 'stick their head in the sand' and hope it just goes away. If they have been diagnosed with the condition for a period of time, they may be in a position that they feel that they cannot do anything for themselves to alleviate the condition and that they have no control.
<b>Asmita</b> (egoism)	<b>Pleading, bargaining and desperation.</b>	There will be plenty of bargaining and pleading with self and the medical profession at the point of diagnosis. There is likely an element of guilt and self-flagellation – 'what did I do wrong?' 'it's all my fault' – 'I have done too much. If it's a long-standing diagnosis there may be pleading for new drugs to resolve the pain. They may also associate themselves as the victim of the illness and identify as an 'ill' person which can make them self-absorbed.
<b>Raja</b> (attachment)	<b>Anger</b>	This is a tricky but important part of the grieving process – fear of the future and holding on to what they planned to do can make people angry, and patients are likely to lash out at family and medical professionals while they process what is happening. Holding on to the unfairness of the illness further escalates the feelings of anger. Alternatively, a patient may inadvertently choose to cling to the victimhood of the illness, becoming attached to it and therefore defining themselves by the illness.
<b>Dvesha</b> (aversion/ repulsion)	<b>Anxiety &amp; depression</b>	Depression is a very real issue for axSpA and all chronic and progressive illnesses. Anxiety over what the future holds, and the impact of the illness can lead to catastrophising and victimhood. Patients can avoid facing what they can do, withdrawing into themselves leading to anxiety and depression. Alternatively patients can refuse to face the disease, avoiding its realities, not taking care of themselves and thereby their own suffering worse. Dvesha and Raja can end up being an unfortunate push-me-pull-you of emotions that can spiral out of control.
<b>Abhinivesha</b> (clinging to life)	<b>Loss of self and confusion</b>	If a patient has been very active or had specific plans based on assumed health, a chronic and progressive illness diagnosis can be very disorientating for them. They may not be able to do what they did before, and this stage is likely to go hand in hand with depression. Fear of change and lack of control can lead a patient to cling to what they could always do, exacerbating the disease if they are not listening to their body and resting.

	<b>Re-evaluation of life, roles, and goals</b>	The client will start to think about their new reality and what it means for them. Revaluating life goals and plans will take some time and can trigger relapses into previous stages.
	<b>Acceptance</b>	This is where the patient has accepted and come to terms with the chronic condition and what it means for them. They will be most responsive at this stage to try new things to help themselves.

<sup>11</sup>Adapted from: Pratt, Amanda. "7 Stages of Grief for Chronic Pain and Chronic Illness: St. Petersburg Therapist." Chronic Illness Therapy, 3 Aug. 2018,

A diagnosis like axSpA, takes away the sense of control from a person and it is easy to fall into the victim mindset. A useful approach to bring back control is the identification and creation of a wellness recovery self-help tool kit. This aligns very well with the Yoga Therapy approach as it is a holistic view of self-care.

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<sup>11</sup> <https://imaginelifetherapy.com/7-stages-of-grief-for-chronic-pain-and-illness/>

## Yoga Models to assess axSpA.


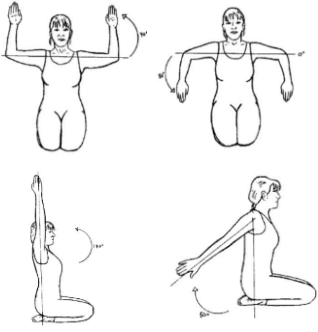
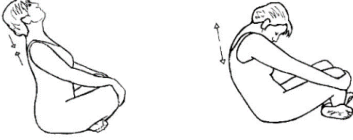


The first indicator – other than disclosure from the medical intake questionnaire would be a postural and mobility assessment to understand progression of the disease and where its physically impacting the patient most.

The energy models will help you to understand the emotional state of the patient as well as appreciating the mental and spiritual impact of the disease on their day to day lives. The models can also assist in pinpointing the cause of any imbalance.

### Postural and mobility assessment

Specific assessment of neck and head position, shoulders and lower back is needed to understand possible kyphosis and lordosis.

A mobility assessment is imperative with this condition to understand current range of motion and what causes pain, with particular focus on the sacral region, neck, and shoulders. Specific areas to look at are indicated below:

<b>Spine extension/flexion</b>		How stiff are they in the sacrum – does this cause pain or relief. Any signs of lordosis? Does this cause issues into the shoulders or relief?
<b>Shoulder internal/external Rotation, flexion &amp; extension</b>		Check that there are no issues with rotator or frozen shoulder.
<b>Scapula adduction/abduction</b>		Is there any fusion or stiffness in the neck? Is there any sign of kyphosis?
<b>Spine rotation</b>		Is there pain or stiffness on rotation? Check that there isn't fusion or osteopenia/osteoporosis.
<b>Neck flexion/extension/lateral flexion &amp; rotation</b>		Does this cause pain or relief? What is the impact on the trapezius? Is it tight?

## The Energy models.

### Koshas

The Koshas, a philosophical and spiritual concept from Vedanta, are the 5 sheaths representing dimensions of human existence. The Koshas help us to understand how the (gross) body interacts and interrelates with the more subtle aspects of the mind.

<b>Gross Body</b>	<b>Annamaya (Physical Sheath)</b>	The impact of axSpA on the physical body is easier to comprehend. This can relate to the pain, inflammation and erosion that is felt and seen in the hips and spine. Certain food and drink can also have an inflammatory effect on the body and trigger flares.
<b>Subtle Body</b>	<b>Pranamaya (Vital Energy Sheath)</b>	Autoimmune conditions create fatigue in the body, especially when in a flare. There is a fine balance between resting to preserve energy and moving to improve mental health and create a general sense of wellbeing. If the patient is dealing with costochondritis breathing may also be compromised so care is needed here.
	<b>Manomaya (Mental Sheath)</b>	Stress is a major factor in all autoimmune conditions. With axSpA, more stress = more inflammation = more erosion = more pain = more fusion = more stiffness. Reducing stress is key to managing the condition and reducing symptoms. Keeping emotions relating to the condition in check are also important – feelings of grief, anger, guilt, and frustration are normal, and not helpful.
	<b>Vijnanamaya (Intellectual Sheath)</b>	It is important for an axSpA sufferer to have knowledge of their inflammatory triggers and how it impacts their disease. Encouraging this 'knowing' will help them to manage their condition more instinctively and help them to discriminate in their day-to-day choices, without emotion.
<b>Causal Body</b>	<b>Anandamaya (Bliss Sheath)</b>	axSpA has a pretty big impact on the sufferer but it's important for them to find those moments of joy and the ability to feel connected to themselves. Perhaps the illness can help them make significant changes to their lives, free of guilt, for the better. An opportunity to create and find joy in simpler things.

### Gunas

The Gunas as discussed in the Bhagavad Gita, are the 3 fundamental qualities, energies or behaviour styles that characterise us and the material world around us. All 3 of which are innate in all of us in varying quantities and influence our mental and emotional state. The combination of these states has a direct impact on the somatic problems of the individual. Ill health will occur if there is an excess of Rajas or Tamas. A regular yoga practice will improve this balance and increase the sense of Sattva.<sup>12</sup>

<b>Rajas – activity</b>	Persistent and consistent stress is a likely cause of axSpA. Being excessively stressed or rajasic will further create inflammation and pain in the body. Flare episodes are often triggered off the back of a physical, mental, or emotional stressor. Doing too much and not acknowledging that rest is needed can also create a stress response in the body.
<b>Tamas – inertia</b>	Being in constant pain will encourage inertia in an individual. The temptation to not do anything and to sit in one position is likely to be strong. axSpA needs movement to ease symptoms. Motion is most definitely lotion and lack of movement will cause more pain the long run.
<b>Sattva – purity</b>	The key to managing this condition is balance. A balance between movement, work and rest is important to manage the physical symptoms and the mental impact and stress management.

<sup>12</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3144604/>

## Chakras

The chakra model is a useful tool to help look at the impact of axSpA, The key is to identify where the issues are physically and emotionally and use yoga therapy to balance the chakras, activating them to change state, thus improving wellbeing.



## How axSpA may manifest in the Koshas/Chakras

Chakra	Koshas				
	Anamaya	Pranamaya	Manomaya	Vijnanamaya	Anandamaya
<b>Muladhara</b> Root/base of spine energy, survival, stability, comfort, safety.	Pain in the SI joints and peripheral joints at elbow. Often shoulders are sore and hurt on rotation. Often issues with rotator cuff.	Fatigued as sleep is impacted by pain during the night and on waking. Body is also fighting a constant perceived infection which is tiring.	The impact of the illness can have a destabilising effect. Emotionally this can make the individual introspective and in survival mode.	In the early stages of diagnosis patient in survival mode and trying to find ways of deriving comfort. Over time, with information and self-learning they can feel in control.	Once the initial fear of diagnosis and survival instincts have abated – this is when planning for the future can commence.
<b>Svadhithana</b> Sacral/lower abdomen. Sensuality, sexuality, pleasure, sociability, emotions.	Comorbidities can be many and can include gynaecological issues. Intimate relations can be impacted as painful joints and medication can reduce libido. Digestive system can be compromised as the anti-inflammatory drugs are not great for digestive tract. Can cause bleeding which is an additional stressor.	The patient may struggle to find joy. Social interactions can be difficult as there can be a sense of ‘no-one understands,’ desire to hibernate can be strong.	Can be emotional- especially on bad flare days and on diagnosis while processing the impact on future life plans.	Patients struggle to acknowledge how they feel and allowing themselves to grieve a life they thought they were going to have.	Finding pleasure and joy in small things and achievements is important as the scope of the illness can be overwhelming.
<b>Manipura</b> Solar Plexus/navel area. Strength, personality, power, determination, self-esteem.	IBD/Crohn’s disease triggered by immune response/ comorbidity. IBS triggered by stress, medication, and some foods. Wheat and dairy can cause issues.	Lack of sleep and constant exhaustion will often trigger reaching for foodstuffs that keep patient awake and stimulated becoming a vicious cycle.	Stress and gut impact – causing intermittent issues with diarrhoea and constipation.	Listening to gut instinct is important – especially when the body is trying to tell the patient to slow down, and their minds is fighting against this.	Listening to the body and accepting that it knows when to rest. Self-esteem can be impacted, especially if the patient is a ‘doer.’ Need to reappraise what’s important.
<b>Anahata</b> Heart/middle of the chest, over the sternum. Love, acceptance, compassion, sincerity.	Potential issues in all connective tissues causing pain in joints/ligaments and heart valves as well as skin issues. Circulation and cardiovascular problems. Costochondritis/ inflammation in ribs causing pain on breathing and other lung conditions as difficult to clear chest. Panic attacks causing pain in the chest.	Breathing can be really impacted – especially if ribs are hurting due to costochondritis – this can trigger feelings of panic and tightness in the chest. Can also be affected by sleep apnoea	Relationships with others impacted – especially if previously the person was a do-er.	Trying to focus on what can be achieved and being kind/compassionate to self.	Acceptance and joy about a new view of life as symptoms are managed, and diagnosis has been processed. Encourage patient to learn to love the new version of themselves.

Chakra	Koshas				
	Anamaya	Pranamaya	Manomaya	Vijnanamaya	Anandamaya
<b>Vishuddha</b> Throat area. Communication, expression, creativity, inspiration.	Often historic frozen shoulder/rotator cuff injuries and neck stiffness. Throat conditions triggered by heightened immune response i.e. enlarged tonsils. Jaw pain and gum disease can be prevalent. Kyphosis as illness progresses causing pain in neck/shoulders/eye strain.	Keeping chest lifted and heart open is important – tendency to curl in on oneself in a form of self-protection resulting in pain in shoulders and neck.	Communicating what the disease means to others can be difficult. Blaming self and being blamed by others for causing the disease.	Telling others what's needed to be more comfortable can be tricky. There may be an imbalance here if giving voice to how they are feeling, and this could be over or under indexed.	Practise vocalising what gives joy so important so that people understand how they can help you.
<b>Ajna</b> Third eye/middle of the forehead. Intuition, lucidity, meditation, trust.	Eyes can be an issue – dry/gritty eyes/ blepharitis/ Sjogren's syndrome. Uveitis/inflammation of the eyes leading to blurriness and sensitivity to light. Headaches caused by stress & trapped nerves in neck.	Migraines brought on by stress and low energy.	Fighting the programming that rest is not a sign of laziness but self-preservation so that the patient's body has the best chance of operating.	The patient may find it difficult to see a future that is not all doom and gloom. They may need encouragement to focus on what can be done, not what can't.	
<b>Sahasrara</b> Crown/top of head. Knowledge, consciousness, fulfilment, spirituality.	Stressed, worry about future. Potential hair loss and impact on mental health leading to anxiety and depression.	Sleep is an issue – constant feeling of fatigue.		Focus on how life can be fulfilling despite the disease.	Finding things that bring joy – no matter how small is massively important to improve mood. Work may be needed to understand how a new approach to life can be rewarding.

## Yoga Therapy to support axSpA.

### Energetic diagnosis/conclusion

At first glance, axSpA appears to be a disorder relating purely to the physical plane and impacting the Anamaya Kosha and the Muladhara Chakra. It is an easy jump to move straight into functional issues facing the patient and focus on physical movement and spinal improvement. Postural improvement, increased breathing capacity spinal flexibility has been proved to be improved using yoga intervention (Singh et al., 2021c).

However, axSpA as an autoimmune disease is closely connected to anxiety and stress. When individuals are in a stressful situation, whether mentally or physically, the body responds by triggering the stress response. We know that inflammation in the body is the root cause of the autoimmune disorder, and that stress is one of the key drivers of inflammation. (Stojanovich and Marisavljevich, 2008). Once the immune system is compromised, any form of stress can then create pain and further inflammation in the axSpA sufferer.

Therefore, time must be spent investigating and prioritising the emotional and energetic issues facing the patient.

The mental processing of stress is held within the Subtle Body, more specifically the Manomaya and Vijnanamaya Koshas. It is likely that patterns of behaviour are entrenched and the Kleshas are in play. The patient may be in denial or Avidya about the impact of stress on their condition, perhaps angry or in a state of Raga about the impact of the illness on their bodies and their life in general. This push-me-pull-you of emotions is likely to make them swing between Rajas of overdoing everything and Tamas of inertia and not being able to do things. Finding balance is key.

Stress triggers a Rajasic response stimulating the adrenal glands to release adrenaline and cortisol. In theory, when the stressor stops then the fight or flight response stops. However, as we know the human body cannot differentiate between the historical requirement to run away from a sabre toothed tiger and a work deadline. This leaves the cortisol floating around the body which over time and persistent stress can cause an inflammatory response.

Anxiety is a more persistent issue and can be constant even if there is no immediate threat or risk. Patients who are highly anxious are likely to be presenting in a heightened Rajasic state which increases blood pressure, heart rate and increased respiration. Yoga therapy is a useful tool to help physically by lowering blood pressure, heart rate etc, as well as emotionally so that the patient feels more in control.

In their paper 'Modulation of immune responses in stress' Arora and Bhattacharjee, 2008a, identified that yoga inhibits the 'posterior or sympathetic area of the hypothalamus' which reduces or optimises 'the body's sympathetic responses to stressful stimuli,' thereby managing the body's autonomic response to stress.

Yoga creates an effective buffer to stress and is effective in quietening the HPA axis and stimulating the vagus nerve, creating a more relaxed state. (Arora et al., 2011)

Therefore, based on the research in this project, assumed mobility issues, Kosha and Chakra models I am going to focus the yoga therapy sessions on improving the patient's relationship with stress and anxiety.

## Yoga therapy to relieve anxiety and stress.

The overall aim for the therapy treatments is to help the patient understand their relationship with stress and anxiety and how it impacts their axSpA condition. The process of doing this needs to be undertaken in a gentle way and not create a sense of blame – we don't want the patient to think that we are in anyway blaming them for their condition. Secondary to this aim is to reduce pain in any afflicted areas which should increase flexibility and give them back a sense of control.

### Contraindications

- **Joint Instability:** some patients with axSpA may experience joint instability. Care must be taken to understand their current range of motion and not place excessive stress on the joints.
- **Flares:** care must be taken if the patient is in an acute inflammatory flare as movement may irritate joints.
- **Osteoporosis:** check to make sure that the patient is not suffering from this condition and modify poses accordingly. Avoid too much bending forward and twisting.
- **Limited Range of Motion within the spine:** some patients may have significant fusion in the spine. If this is the case choose poses that allow gentle stretching without pushing joints beyond their current range.
- **Fatigue:** don't do too much too soon. Fatigue is a common symptom and care must be taken to not do too much and not increase fatigue.

### Session structure

**Prior to the session:** the patient will have completed a medical and lifestyle questionnaire to provide the basis of the yoga therapy session. The therapy room will be laid out with access to a chair for each of us to sit on with a yoga mat for the floor. I will have blankets, bolsters, and blocks ready.


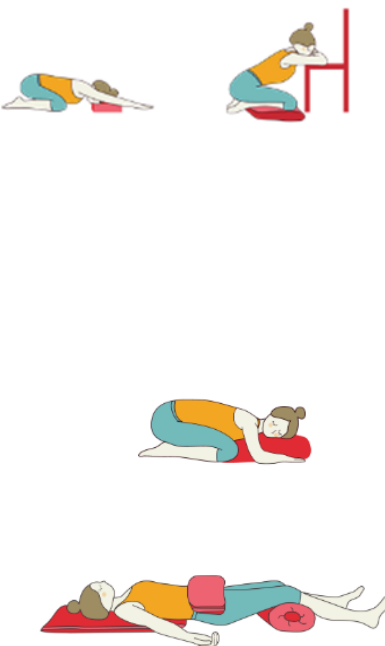
**Initial session:** I will undertake a postural/mobility assessment as part of the initial therapy session to see where the physical issues lie for the patient and how they are affected energetically.

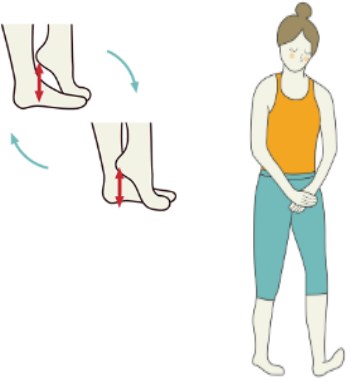
**Session structure:** For each session there will be an initial period checking in with the patient to see where they are. The next part will be very much dependent on what and how the patient is presenting and will be a mix of pranayama, asana, and guided relaxation. At the end of the session, I will check in again to see how they are feeling physically and mentally and take some time to discuss next steps.





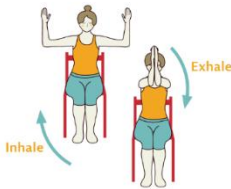
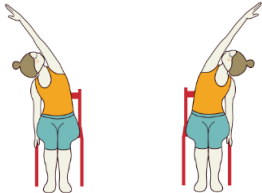

**Post session:** I will share an email with suggested practices with the patient post session. This will be mostly in a diagrammatic form so that it can act as an aide memoir when home.

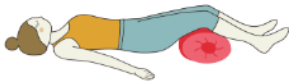
### Approach

Session	Desired outcome	Kosha	Chakra
1	Create trust and finding a stable base.	Anamaya	Muladhara & Svadisthana
2	Generate some quick wins by bringing some mobility to the base region	Anamaya	Svadisthana & Manipura
3	Learning to love and accept	Pranamaya Manomaya	Anahata & Ajna
4	Wisdom and future focus. Finding joy.	Manomaya Vijnanamaya	Ajna

Session 1	Chakra Focus: Muladhara & Svadisthana	Kosha Focus: Anamaya
<p>The initial session is very much a fact-finding session using discussion, observation and listening. It is an opportunity for the therapist to start to build trust and empathy with the patient.</p> <p>I would pay particular attention to the Kosha's to understand energetically how stressed and agitated the patient is. In <a href="#">appendix 5</a> there are suggested questions that can be used to help.</p> <p>In this first session I would focus on Muladhara &amp; Svadisthana, partly to sense the range of movement and pain felt in this region and build trust. As a fair amount of the session will be talking and observational – the plan would be to focus on breath work and meditation to calm and centre the patient.</p>		
<b>Pranayama</b>		
<p>Breathing deeply is a significant antidote to the flight or fight response. It lowers blood pressure, heart rate and increases the volume of oxygen in the body. This has a soothing effect on the body and stimulates the lymphatic system and boosts immunity.</p>		
	<ul style="list-style-type: none"><li>• <b>Breath observation</b> – if the patient is particularly agitated then start with a simple pranayama to calm and the mind. Encouraging the patient to sit with a straight back, inhale, and exhale through the nostrils. Observe the breath and visualise the breath moving from the nostrils – throat – windpipe – lungs – windpipe – throat – nostrils. If this is too much for the patient, encourage them to just focus on the belly, perhaps by placing a hand in this area. This is an opportunity for the therapist to observe how the patient is breathing – are the shoulders moving? Is the breath moving deeper into the body?</li><li>• To further extend the practice ask the patient to mentally recite 'let' on the inhalation and 'go' on the exhalation.</li><li>• If the breath is feeling restricted or the patient is struggling to deepen the breath. I would introduce breath with movement. This could be as simple as bringing the arms above the head and out to the side of the body so that they may start to connect the breath with the body.</li></ul>	
<b>Chakra guided relaxation with restorative yoga poses</b>		
	<p>Muladhara Chakra is directly connected with feelings of safety, security and in the physical body relates to the immune system and skeletal systems. This makes it the obvious choice for guided relaxation in this first session.</p> <p>Initially I would ask the patient, if they are able to come into Balasana – this could be supported or on a chair. Using a bolster or cushion can make this a very comforting asana and is useful to stretch the lower back safely as well as relax the hips and abdominal region.</p> <p>Once the patient is feeling comfortable and safe, I would encourage them to move into Savasana with a bolster under the knees and a blanket on this hips and/or over the body to maintain the feeling of safety. If comfortable I would ask them to close their eyes and perhaps offer an eye pillow to assist.</p> <p>At this point I would ask the patient to bring their focus back to their breathing – with an observation practice again but this time bringing the breath deeper into the belly.</p> <p>They key is to encourage that patient to feel grounded to counter feelings of stress and anxiety. Using a tree visualisation, I would ask the patient to</p>	

	<p>visualise their favourite tree, encouraging them to think about the colour of the leaves in the canopy – looking through the leaves to the sky. Then to bring their attention to the trunk and the bark – imagining the colour and texture and how it might feel. Finally, to bring their attention and awareness to the root structure and visualise the roots into the ground – perhaps imagining how the soil would feel and smell.</p> <p>Bringing their awareness to their back body on the mat - feeling supported and grounded by the Earth.</p> <p>Gradually bringing the awareness back to the fingers/toes until they can bring their knees into their chest and slowly roll over to their side and up to sitting.</p>
<b>Post session 'prescription'</b>	
	<p>Following the session, the key practices to undertake would be the breathing exercises that the patient undertook at the beginning of the session, with a view to practicing this 15 minutes a day – ideally in the morning on waking and evening before going to bed.</p> <p>Additionally, to continue the grounding approach patients would be asked to practice moving their toes and feet. Perhaps walking on tip toes if balance allows. Suggestion is to combine standing on tip toes with cleaning teeth.</p> <p>In addition, it would be great if the patient could practice breathing exercises while outside. If they were feeling brave I would encourage them to take off their shoes/socks and stand on the earth outside to really ground them.</p>

Session 2		Chakra Focus: Svadisthana and Manipura	Kosha Focus: Anamaya
The initial part of the session would be to check in with the patient to understand how they are in the moment, how they felt after the last session and understand anything significant that may have happened between sessions. Would use questions to understand energy levels today. The focus of the session would be to generate some quick wins by bringing some mobility to the base region, increase range of motion and to start moving the patient up to a slightly higher chakra and promote Sattva.			
Pranayama			
		<ul style="list-style-type: none"><li>• <b>Belly breath:</b> Encourage the patient to breathe deeply and start to engage the diaphragm will help to lower heart rate, blood pressure, reduce stress hormones and strengthen the immune system.</li><li>• Invite the patient to create length in the spine and use a block or blanket under the hips if sitting on the floor, or under the feet if sitting on a chair. Encourage to take notice of the natural breathing rhythm and slowly bring the breath deeper into the belly. For ease place fingertips together over the belly and encourage the in breathe to create space between the finger tips until it feels more natural to breathe into the belly.</li></ul>	
Chakra based asana			
<b>Spinal mobilisation:</b> Encouraging mobilisation into the back, lower back, and hips to ease pain and create a sense of freedom in the hips. Also, will help the patient understand current patterns of holding and how that might be helping or hindering their condition. By the end of the movements the chakra focus will have shifted up towards the Anahata chakra.			
			
1. Cat/cow is really comforting for a sore back. Depending on the level of ability and pain, this can be done on the knees, on a chair or ball or even supine where it could become more of a pelvic tilt.		2. Hip rotations to help ease any aches and encourage movement in the spine. This can be completed sitting or standing. It can help bring tone to the spinal muscles and improve posture.	
			
		3. Seated spinal twists are useful to calm the nervous system and massage internal organs. Care needs to be taken if the patient has osteopenia/osteoporosis or spinal fusion.	
			
4. Combining movement of the arms with the breath to start to bring the energy up into higher chakras and develop strength in diaphragm. Use block under feet to keep knees level.		5. Seated side stretch to open up the ribs. Care to be taken if the patient has costochondritis. Use a block under feet to keep knees level.	
			
		6. Bringing movement into the shoulders, stretch the whole back and keep connection with the breath.	

**Chakra based guided relaxation**

Using restorative Savasana either using a bolster, chair or fully supported, encourage the patient to fully relax and focus on their breathing. Bring the breath to the belly.

This practice is about taking back control, something which axSpA sufferers often feel they don't have a lot of. Encourage the patient to think about their diagnosis – how do they feel about it?

If they are angry help them to flip the language “this disease will not control me; I can take control and make good decisions for me”.

If they are frustrated encourage them to be less judgemental about what they can't do and focus on what they can do.




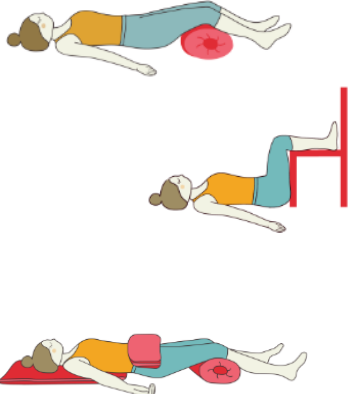

If they are sad about what they have had to stop doing or fearful of the future encourage them to think about what they have gained by doing less.





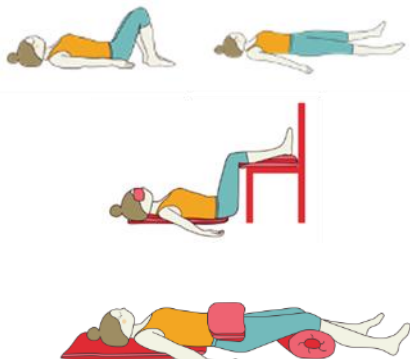
Encourage them to inhale feelings of positive control and exhale anger/frustration/sadness/fear. Understand the positive language that works as an opposite to how they are feeling.

**Post session 'prescription'**

Following the session, the key practices to undertake would be the breathing exercises that the patient undertook at the beginning of the session, with a view to practicing this 15 minutes a day – ideally in the morning on waking and evening before going to bed.

Encourage the patient to practice cat and cow movements and hip rotations to ease stiffness and increase mobility. To be done on a chair or ball during the day as often as is helpful.

Session 3	Chakra Focus: Anahata & Ajna	Kosha Focus: Pranamaya & Manomaya
Check in as per previous session and to understand how the patient is feeling emotionally today. The key focus for this session is to learn to accept the impact of the disease and love what they can do not focus energy on what they can't.		
Pranayama		
	<ul style="list-style-type: none"><li><b>Belly breath:</b> continue with the practice of belly breath to ensure that the patient is fully cognisant of their breathing. Encourage the patient to place their hand on the belly and the chest to feel the movement in the chest.</li></ul>	
Chakra based asana		
The asanas used will encourage movement of prana up towards the Anahata chakra and starting to engage the Ajna chakra. Key is to move from Anamaya through Pranamaya towards Manomaya.		
		
1. Ideally starting from Tadasana (but can be completed in seated if required). Directing the flow of prana using a circle of joy. Engaging the diaphragm and opening the chest, whilst using the breath, this series of postures and movements aim to encourage a sense of joy.	2. . Bringing the focus into Manomaya using bridge pose in either supported versions or as a pelvic tilt. At a physical level this asana helps to stabilise the hips strengthen the back. It continues to encourage relaxation and balances emotions.	
Chakra guided relaxation with restorative yoga		
	<p>Encourage the patient to settle into supported savasana using bolsters/chair etc. Introduce an Anahata Chakra based mantra to let go of negative attachments, release the hold on grief and increase the feelings of safety. Practice loving kindness meditation:</p> <p>May I be happy May I be well May I be healthy May I be free of pain May I be free of suffering</p> <p>Encourage the patient to focus on positive visualisation and affirmation with the focus on being kind to themselves.</p>	
Post session 'prescription'		
	<p>Continue with the circle of joy breathing exercise, either sitting or standing, ideally in the morning as part of a general movement and increasing the flow of prana.</p> <p>Practice letting go of negative emotions associated with the disease.</p>	

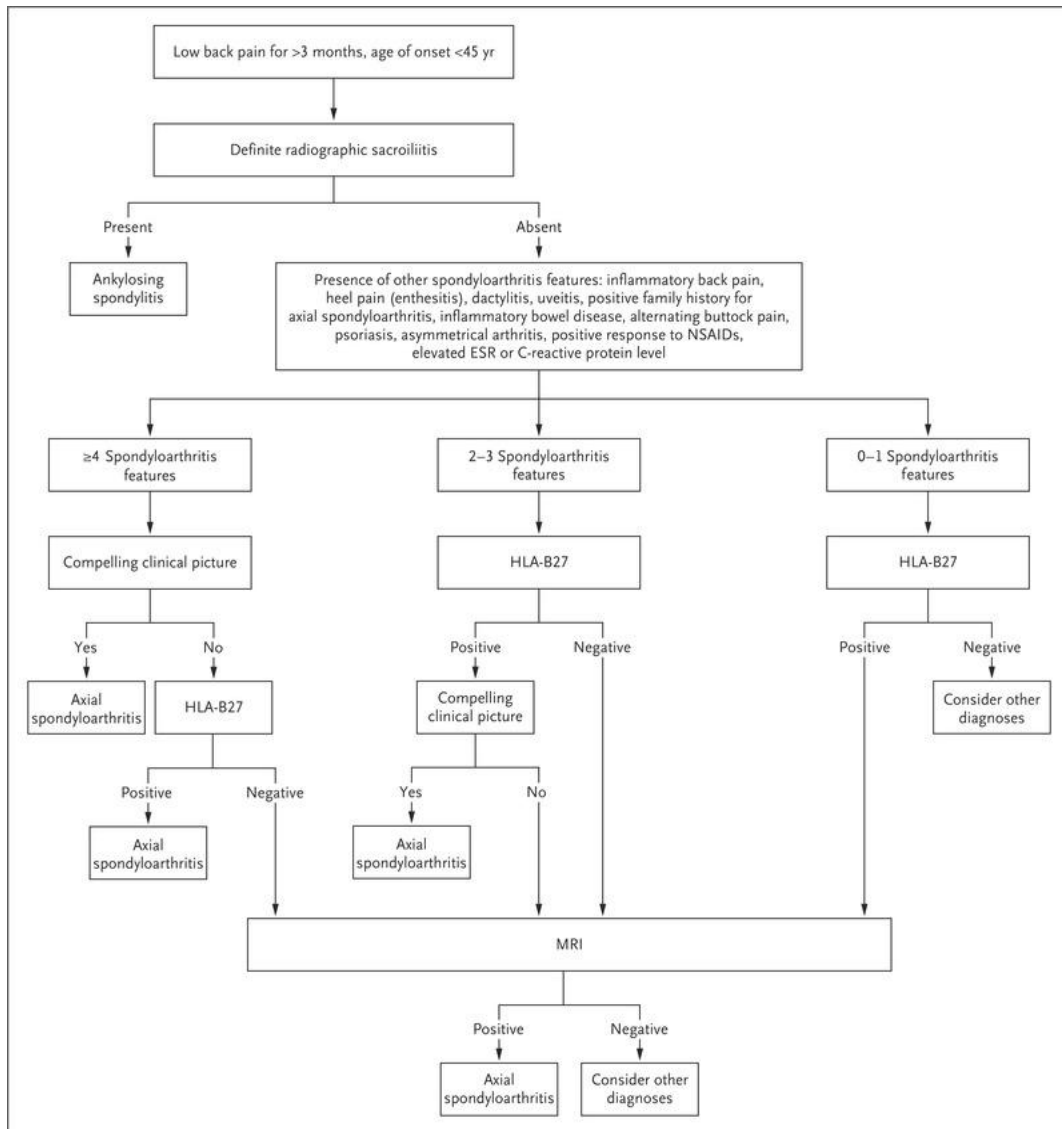
Session 4	Chakra Focus: Ajna	Kosha Focus: Manomaya & Vijnanamaya
<p>As per previous sessions, check in with the patient and understand what has worked well for them since the previous session. As a trusting relationship between the yoga therapist and the patient should now be in place, the main practice of this session is a Yoga Nidra. This practice is beneficial as it ‘promotes a profound state of relaxation’ (Pandi-Perumal et al., 2022) and works systemically to calm pain responses and inflammatory conditions. Regular practice has been shown to reduce anxiety and stress levels significantly. (Kumar, 2008)</p> <p>The focus of the Yoga Nidra will be to engage the patient’s inner wisdom, focus on a positive future and finding joy. Prior to the Yoga Nidra practice, asana will be used to create ease in the hips and back and creating a comfortable position for an extended stay on the mat. The patient needs to be comfortable and as far as possible not hold tension in their body to allow them to focus on the Yoga Nidra practice.</p>		
Pranayama		
	<ul style="list-style-type: none"><li>• <b>Calming breath:</b> Using Bhramari Pranayama (bumble bee breath) as the vibrations help to calm the body and nervous system. This style of pranayama is known to reduce stress and have a positive effect on the autonomic nervous system. (Kuppusamy et al., 2018)</li></ul>	
Asana to prepare for Nidra		
		
<p>1. As per previous sessions the use of the cat/cow asanas is to create ease and mobility in the hips. This can be undertaken from a kneeling or seated position.</p>	<p>2. A supported child's pose will help to open up the ribs and lengthen the spine. This could be undertaken using two chairs if further support is required.</p>	<p>3. Combining all movements into a flow to create flow of prana, incorporating breathwork to increase effectiveness.</p>
Yoga Nidra moving through the Koshas		
	<p>Once the patient is comfortable, a systemised approach to Yoga Nidra will be implemented as follows:</p> <ol style="list-style-type: none"><li>1. Entry and settling</li><li>2. Sankalpa with particular focus on creating a positive, future focused mindset.</li><li>3. Rotation of consciousness</li><li>4. Breathing – counting backwards with the breath.</li><li>5. Chakra based visualisation – using positive imagery and colour to move up through the spine.</li><li>6. Sankalpa revisited.</li><li>7. Return</li></ol>	
Post session ‘prescription’		
<p>Encourage the patient to continue with the practices that have helped them – incorporating breathwork, visualisation and movement. Suggest that the patient thinks about creating their own self-care tool kit or wellness recovery action plan. Advise them to use a gratitude journal to help them to process what makes them feel good about themselves and practise gratitude and find joy in the small things.</p>		

Key to the ongoing treatment for axSpA is giving the patient the feeling of control in the management of physical symptoms where yoga is key to maintaining mobility and flexibility. [Appendix 6](#) shares some yoga approaches that are useful in various situations. The condition impacts the sufferer physically, emotionally and spiritually and the holistic person-centred focus of Yoga Therapy is therapeutically useful to give control back to the sufferer so that they can manage the disease.

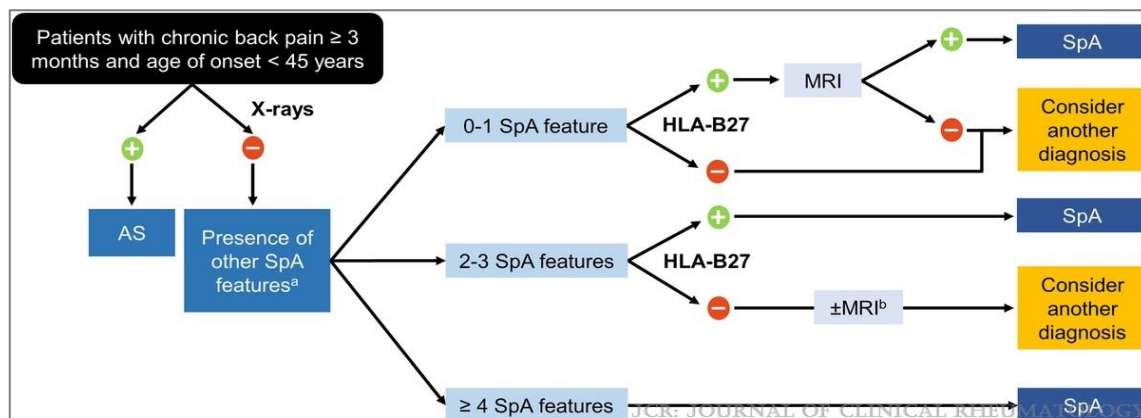
Koshas		Vayus	Kleshas	Gunas	Chakras
Causal Body	Anandamaya	Prana		Sattwa	Sahasrara
Subtle Body	Vijnanamaya	Vyana	Avidya Asmita Raga Dvesha Abhinivesha	Rajas	Ajna
	Manomaya	Vyana			Ajna
	Pranamaya	Udana Prana		Tamas	Vishuddhi Anahata
Gross Body	Anamaya	Samana Apana Vyana			Manipura Svadisthana Muladhara

## Appendices

### Appendix 1 – Consultant symptom pathway assessment



**Source:** Walsh, Jessica A.; Magrey, Marina. JCR: Journal of Clinical Rheumatology 27(8): e547-e560, December 2021. doi: 10.1097/RHU.0000000000001575



**Source:** <https://www.nejm.org/doi/10.1056/NEJMra1406182>

## Appendix 2 – Bath Indices – BASMI table

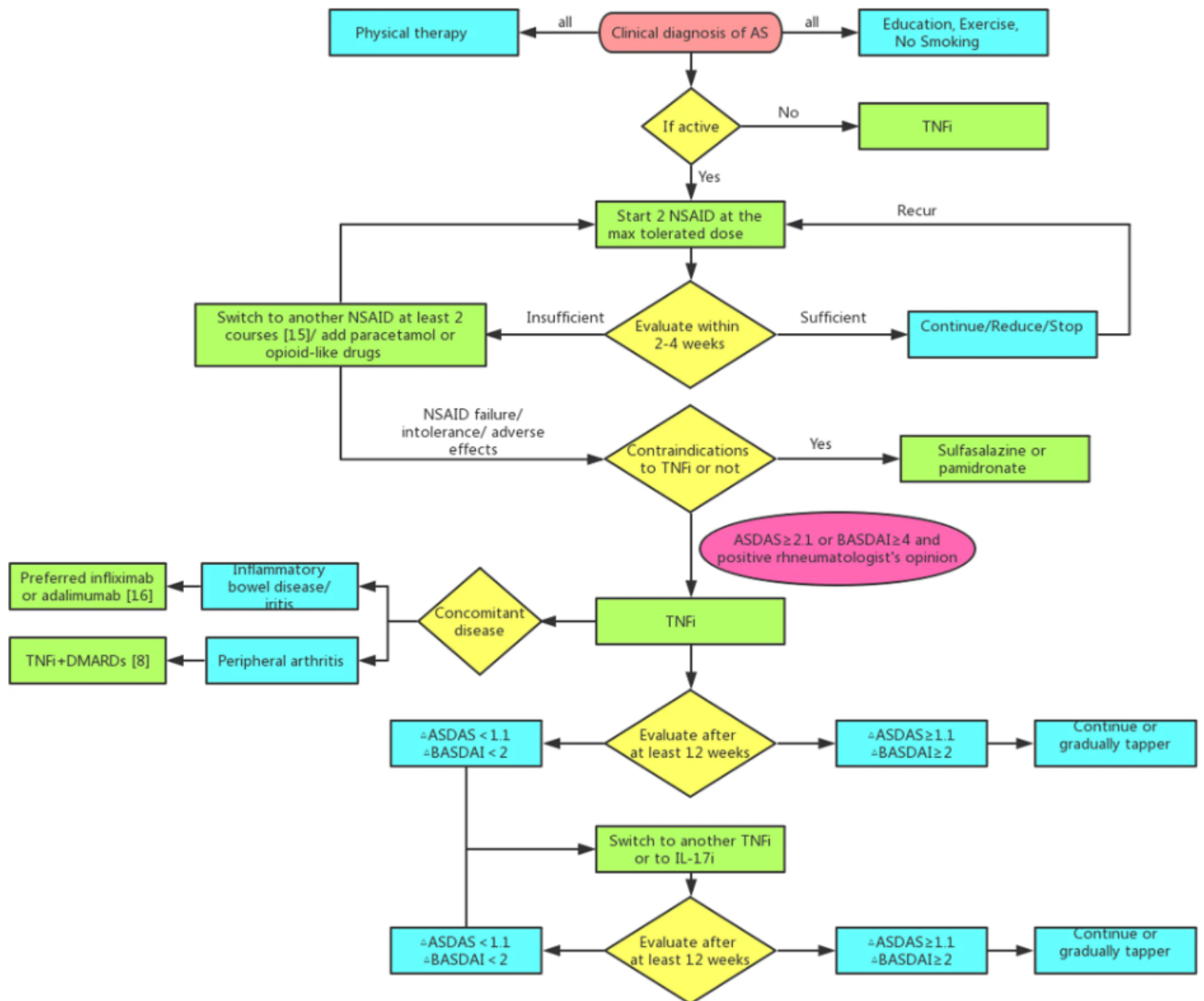
MEASURE	STARTING POSITION	METHOD	NOTES
<b>Tragus to Wall</b>	Standing bare feet; back to wall; knees straight; scapulae, buttocks, heels against wall; shoulders level; outer edges of feet 30 cm apart & feet parallel. Ensure head in as neutral position (anatomical alignment) as possible.	Patient draws chin in as far as possible (retraction). The examiner has both eyes open and side of face against wall and measures the distance between the tragus of the ear & the wall, using a rigid ruler.	Ensure no cervical extension, rotation, flexion or side flexion occurs. Best to use a wall without a skirting board. Ensure retraction is maintained whilst both sides are measured.
<b>Lumbar Side Flexion</b>	Standing bare feet; back to wall; knees straight; scapulae, buttocks, heels against wall; shoulders level; outer edges of feet 30 cm apart & feet parallel.	Before any movement occurs, keeping arms, wrist & fingers straight and shoulders depressed measure from tip of middle finger to floor. With arms relaxed by the sides, patient reaches towards floor by side flexing and maintaining shoulder depression. Re-measure from tip of middle finger to floor. Difference between 2 measurements represents amount of side flexion. Repeat on other side.	Ensure patient keeps arms, fingers & knees straight and heels on floor. Ensure any forward flexion, extension or rotation of the trunk is avoided. Best to use a wall without a skirting board. May need to accommodate a leg length discrepancy with block under foot. (NB: Ensure all conditions are recorded for accurate measurements)
<b>Lumbar Flexion (modified Schober's)</b>	Standing with outer edges of bare feet 30 cm apart and feet in line. Examiner marks a first point midway between the Dimples of Venus, a second point is marked 10 cm above this & a third 5 cm below the first to give a 15 cm line.	Patient flexes forward from the waist with knees fully extended. The distance between the upper and lower 2 marks is measured. Any increase beyond 15 cm represents the amount of movement achieved.	At the end of the movement, you may choose to allow slight knee flexion to decrease influence of hamstrings. This should be documented.
<b>Cervical Rotation</b>	Patient supine on plinth. Forehead horizontal & head in neutral position. May need to use pillow, books or foam block to achieve this. Carefully document to ensure same set up on future re-assessments.	Use goniometer / inclinometer as per manufacturer's instructions. Patient rotates his/her head as far as possible, keeping shoulders still. Measure both sides.	Ensure no neck flexion/side flexion occurs. If good range of movement may need to lie near edge of bed to allow movement to occur.
<b>Intermalleolar Distance</b>	Patient lies supine on the floor or a wide plinth. Knees in extension.	Keeping knees straight & legs in contact with the resting surface, patient is asked to take legs as far apart as possible. Distance between the medial malleoli is measured.	Measure quickly as movement can be painful. Be ready to measure before asking patient to achieve movement.

Source: <https://nass.co.uk/wp-content/uploads/2018/09/Bath-Indices.pdf> page 5

### Appendix 3 - Pharmacological treatments

- **Analgesics** – the first line of pain relief is standard painkillers such as paracetamol.
- **NSAIDs** – these are used to reduce inflammation and are the starting point for managing axSpA. Traditionally the pathway is ibuprofen, naproxen, and diclofenac. Whilst these drugs are effective, they can cause stomach issues. If is the case patients may be offered [Celecoxib](#) or [Etoricoxib](#) which less likely to cause stomach problems. NSAIDs are often given with Proton Pump Inhibitors such as [Omeprazole](#) to protect the stomach and reduce acid indigestion.
- **Corticosteroids** – steroids can be used as an injection at the site of pain i.e. into the joint. They can also be in tablet form. These drugs tend to be short term only due to the associated side effects.
- **DMARDS** – the full name is disease modifying anti-rheumatic drugs and can reduce pain, swelling and stiffness specifically for individuals who have peripheral spondylarthritis. Example drugs in this category are [Methotrexate](#) and [Sulfasalazine](#).
- **Nerve pain medication** – these drugs are used to help people who have nerve damage caused by the illness. Example drugs in this category are [Amitriptyline](#).
- **Anti TNF therapy** – this therapy interferes with the action of the protein Tumour Necrosis Factor.
- **Anti IL-17a therapy** – similar to anti TNF, this is a new therapy for axSpA but has been used for a while for Crohn’s disease and psoriasis.
- **Biologics and biosimilars** – these are complex anti TNF medicines that can only be prescribed by a consultant rheumatologist. They are delivered through injection, usually into the thigh or stomach. They block or slow down the aspects of the immune process that are attacking the joints and the spine. They are not suitable for all and carry many risks so regular blood tests are required to ensure that organs are not being compromised. Patients may try many of the drugs in this category before finding one that works. Biologics are the original formulations of these drugs and are very expensive. Biosimilars are cheaper versions that are created once the initial licences have finished. Example anti TNF drugs in this category are: [Adalimumab](#), [Certolizumab pegol](#), [Etanercept](#), [Golimumab](#) and [Infliximab](#). Anti IL-17A drugs in this category include [Secukinumab](#) and [Ixekizumab](#).
- **Surgery** – when fusion or bone on bone damage occurs sometimes the only recourse is surgery to rebuild or replace hips, knees etc. Surgery may also help straighten a severely bent forward spine.

# Appendix 4 - Pharmacological treatment pathway



**Source:** Zhu, W., He, X., Cheng, K. et al. Ankylosing spondylitis: etiology, pathogenesis, and treatments. Bone Res 7, 22 (2019). <https://doi.org/10.1038/s41413-019-0057-8>

## Appendix 5 - Kosha questions to support therapy sessions.

The following questions based around the Koshas may be helpful when assessing a patient with axSpA:

<b>Physical – Anamaya</b>	
Where is the patient in pain? Is it just in the SI joint or in peripheral areas?	
How would you describe your pain today?	
What flexibility do you have? Can you touch your toes, put on your shoes etc?	
What is your pain like on waking? How long does it take you to get moving in the morning? What makes it easier?	
How do you have to modify what you do day to day?	
What exercises are you able to do?	
<b>Yoga therapy support</b>	
<ul style="list-style-type: none"> <li>Adapt asana practice to consider their level of fitness, mobility and pain today. Think about using a chair or props to give ease.</li> <li>Help the patient understand what their body <i>can</i> do not what it <i>can't</i> do.</li> <li>Set achievable goals based on mobility or where they are in their flare cycle.</li> <li>Think about a morning and evening practice.</li> </ul>	

<b>Energy – Pranamaya</b>	
How are your energy levels today?	
Tell me about your sleep. Do you wake feeling refreshed or are you having trouble sleeping?	
How do you rest? Are you pacing yourself or overdoing it?	
<b>Yoga therapy support</b>	
<ul style="list-style-type: none"> <li>What restorative practices are appropriate? Remember that additional cushioning will be required and lots of props. Bolsters under hips can aggravate the SI joint. Prolonged holds can be tricky so take this slow. Use chairs and bolsters under knees to take pressure off lower back.</li> <li>Pranayama - Create different breathing practices dependent on energetic needs and capability. Kapalabhati breath to invigorate and wake up the body, Ujjayi to soothe and settle the mind, 3-part breath to decrease stress and diaphragmatic breathing to stimulate.</li> </ul>	

- Yoga Nidra for end of day practice could help with sleep.

**Mental/emotional – Manomaya**

How do you feel emotionally today? (Note that depression/anxiety may need to be treated elsewhere)

What are your stress/anxiety levels?

Are you taking antidepressants or anti-anxiety medication?

How are your relationships with yourself and others affected by your condition?

**Yoga therapy support**

- Yoga Nidra
- Visualisation and meditation – focus on being kind to self.
- Pranayama – Nadi shodana/alternate nostril breathing to help patient feel calmer and less anxious, bhramari /bumble bee breath to relieve stress and agitation.
- Meditate on Chakra's – pain in hips could benefit by focus on Svadisthana and Muladhara from a lower back and sacrum point of view. Anahata focus for self-compassion an acceptance and immune system. Modify depending on what's being presented.

**Wisdom - Vijnanamaya**

How has your diagnosis made you look at your life differently?

How can you help yourself live a more comfortable life?

Are you able to tune into what your body needs on any given day? What adjustments do you need to make?

What perspective has the disease given you?

**Yoga therapy support**

- Use yoga Nidra to help set a sankalpa that supports a positive mindset.
- Encourage the patient to think about their own self-care tool kit or wellness recovery action plan. Help them to process what makes them feel good about themselves.
- What lifestyle changes can they make: diet, exercise and movement, alternative therapies, singing etc.
- What does being healthy mean to them? What does it look/feel/taste like? Use this in a visualisation.
- How can they use the diagnosis to re-evaluate their life positively?



<b>Connection to self/spirit – Anandamaya</b>	
When do you take time for yourself to reflect? What does this look like?	
What brings your joy? How can you do more of it?	
<b>Yoga therapy support</b>	
<ul style="list-style-type: none"> <li>• Yoga Nidra – sankalpa – positive visualisation</li> <li>• Chakra meditation – Anahata for acceptance/compassion, Ajna for trust in the divine (if that way inclined) and Sahasrara for removal of stress/worry and focus on spirituality and fulfilment.</li> <li>• Encourage the patient to focus on what they are grateful for – gratitude journal or similar.</li> <li>• Help them review their self-care plan – what's in the tool kit – what brings them joy?</li> </ul>	

## Appendix 6 - Yoga Practices

As SpA has so many stages and facets the following yoga practices tap into different issues that may present with the condition.

- ❖ **Grief** – as mentioned in previous sections SpA sufferers tend to go through a period of denial and grief. The NHS are great (usually) in the diagnosis and supplying of drugs but not so great at understanding the potentially devastating impact of the diagnosis on an individual.
- ❖ **Mobilisation** – key to managing the disease is keeping moving. Specific focus on the spine and neck and 2 plans have been created that can be modified depending on the severity of pain or time that the patient has.
- ❖ **Pain relief** – pain tends to focus on the hips/lower back, shoulders, and neck. From experience problems with the feet are common so a plantar fasciitis plan has been included.
- ❖ **Sleep** – getting decent quality sleep can be challenging for SpA sufferers so a pre bedtime routine is included.

### Yoga therapy to process the stages of grief.

Working with the chakra's is a powerful tool when dealing with grief – using these as points of meditation and building a positive focused practice can help the patient work through the various stages of grief until they feel that they are in control. A yoga Nidra that incorporates the chakras could be very beneficial. Perhaps encouraging the patient to journal after the yoga Nidra and restorative practice could help them come to terms with their grief.

In the first instance providing a safe space for the patient and giving them time to process their grief, especially if this is a recent diagnosis, is very important.

Using the Guna's as a guide, grief can make the patient Tamasic - lethargic, slow, inactive and they may withdraw from day-to-day activities. Some patients will become so consumed with what they cannot do that they associate themselves only with the disease. This holding on to grief can manifest as the holding on to breath which creates additional tightness and tension in the body resulting in further pain.





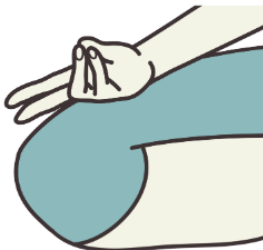


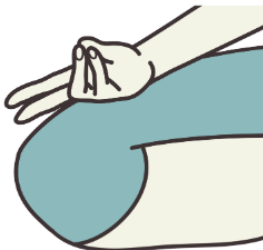


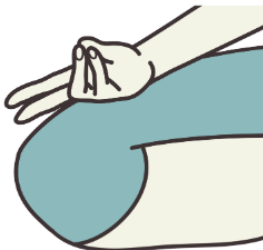

The Yama's specifically, Aparigraha or the practice of non-possessiveness, is useful in dealing with the grief associated with this disease. Letting go of the attachment to a body that is no longer able to do what it did before is part of the healing process. Releasing the breath through pranayama will help the patient physically release tension in the shoulders and chest as well as surrendering to the psychological challenges that they are facing.








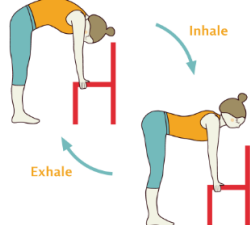




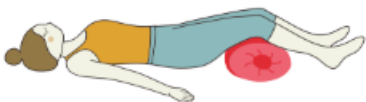


Patients are often holding on to anger as part of the grief process. This can be explored through gentle questioning and in meditation. Mikunda Stiles in Structural Yoga Therapy, pg 317, encourages us all to ponder and reflect on the following 3 questions:


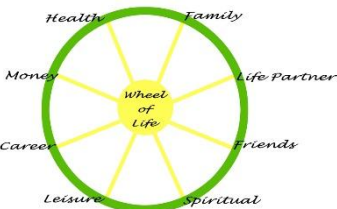

- What am I afraid of?
- What am I angry about?
- What am I holding on to?



The Kleshas also give instruction here – Raga or attachment to what we used to be able to do creates an unobtainable desire which can only cause suffering. Acceptance through meditation on the Chakra's can help to draw strength and let go.

<b>Pranayama</b>	Developing a breathing practice that extends the outbreath is useful for releasing negative emotions and stimulating the parasympathetic nervous system. Sitting comfortably, either on a chair or cross legged on the floor, the following techniques should be tried:
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	<ul style="list-style-type: none"><li>• 2:1 breathing where the outbreath is extended to twice the inbreath. This practice can work sitting or if the patient is comfortable to do so, lying down will help to focus the breath deeper into the belly. Swami Saradananda, pg 51 of The Power of Breath, suggests mentally repeating the words 'let' with the inhalation and 'go' with the exhalation. Continue this practice for as long as is comfortable.</li><li>• Single nostril breathing – sitting upright close the nostril with the ring and little finger- inhaling deeply in a 2:1 ratio. Focus on breathing in on the right nostril if practising in the morning and left nostril in the evening.</li><li>• Alternate nostril breathing – Anuloma Viloma (once happy with single nostril breathing) in rounds of 8 – inhale, pause, exhale in 1:4:2 ratio. Pausing is contra indicated with high blood pressure/pregnancy.</li></ul>						
	<div></div> <div></div> <div></div>						
<b>Mudra</b>	<p><b>Dhyana Mudra:</b> If the patient is feeling angry or agitated use the Dhyana mudra as it is a simple mudra to employ and it helps to calm the mind and bring the practitioner into a more meditative state. It is particularly useful if the patient is feeling angry or agitated. Use this in conjunction with 2:1 breathing and visualisation.</p> <p><b>Prana Mudra:</b> If the patient is Tamasic and lethargic and could do with being a little more Rajasic, the Prana mudra will help to harness prana or energy to bring focus and increase vitality. Combine this with 2:1 breathing.</p> <p><b>Vishnu Mudra:</b> This mudra is most effectively used with alternate nostril breathing as the hand is in the correct position to close off and open the nostril. It balances emotions and energy.</p> <table><tr><td><b>Dhyana Mudra</b></td><td><b>Prana Mudra</b></td><td><b>Vishnu Mudra</b></td></tr><tr><td></td><td></td><td></td></tr></table>	<b>Dhyana Mudra</b>	<b>Prana Mudra</b>	<b>Vishnu Mudra</b>			
<b>Dhyana Mudra</b>	<b>Prana Mudra</b>	<b>Vishnu Mudra</b>					
							
<b>Chakra meditation</b>	<p>Depending on the patient and where they are in the grief cycle, the following Chakra based meditations are useful:</p> <p><b>Muladhara</b> – drawing <b>strength</b>, nurturing and energy from the ground. “I have the strength to deal with the changes this illness brings to me, I am courageous”.</p> <p><b>Manipura</b> – understand your <b>anger</b> about the diagnosis – how can you use this energy to transform the situation? “this disease will not control me; I can take control and make good decisions for me”.</p> <p><b>Anahata</b> – letting go of <b>negative attachments</b> and releasing the hold on grief. Practice loving kindness meditation:</p> <p style="text-align: center;">May I be happy May I be well May I be healthy May I be free of pain May I be free of suffering</p>						

	Muladhara	Manipura	Anahata
			
<b>Asana / Restorative yoga</b>	<p>Combining gentle asana and restorative poses with chakra meditation is a deeply relaxing practice that helps the patient find peace with their illness, to work through grief and have the mental space to think about what they can control.</p> <p>Care must be taken with restorative postures as too many bolsters or blankets underneath the hips can bring more pain than ease. Check in with the patient to see what is working for them that day. Below are 3 variations depending on the flexibility and ability of the patient.</p>		
			
			
			
			
<b>Lifestyle</b>	<p>Encouraging the patient to make some small lifestyle changes to help with processing the grief associated with the disease is important. Integrating the breathing practices and regular movement is important in taking control of the disease and improving their mental state.</p> <p>Suggestions include:</p> <ul style="list-style-type: none"> <li>Walking meditation – going for a short walk outside, taking deep calming breaths and enjoying the beauty that can be found.</li> <li>Create a wheel of life model that highlights the different areas of the patients world and what 3 small things they can do in each area to improve the situation and take control. Help them to focus on small steps.</li> </ul>		

<ul style="list-style-type: none"> <li>Eat well, don't drink alcohol and move.</li> </ul>		
		

<b>Yoga to improve mobility – Morning Mobilisation</b>	
<p>Daily movement is needed to improve mobility, maintain, and improve flexibility and to reduce pain.</p> <p>Encourage the patient to find 'pockets' of time to stretch and move as blocking out time can be overwhelming.</p>	
<b>Pranayama</b>	<p>Both options to start with Kapalabhati breathing to stimulate the body. This is contraindicated for individuals with high/low blood pressure, this type of pranayama can be quite challenging to start with and may need direction to help the patient 'get it.' If it is too complicated, then alternate nostril breathing is a good option. Swami Saradananda recommends breathing in through the right nostril in the morning (left in the evening.) pg 53 The Power of Breath.</p>
<b>Mudra</b>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  <p><b>1. Vayu Mudra</b></p> </div> <div style="width: 50%;"> <p>In Mudras for Modern Life, Swami Saradananda recommends combining the Vaya mudra with Kapalabhati breath to as this mudra helps to restore energy to joints, reduces pain, increases mobility and supports healing.</p> <p>If using alternate nostril breathing, Swami Saradananda recommends the Vishnu mudra as it helps to balance physical energy.</p> </div> <div style="width: 45%;">  <p><b>2. Vishnu Mudra</b></p> </div> </div>
<b>Asana</b>	<p>Two options have been presented. The gentle morning mobilisation can be undertaken from the bed or chair. This allows for movement to take place even if the patient is in a flare. Key to the gentle version is releasing any pain in the hips and stretching the neck – usual sites of pain for SpA sufferers. The joint freeing version is for days when there is more time and pain is not a contributing factor.</p>

## Gentle Morning Mobilisation

This mobilisation routine is for those mornings when time, pain or stiffness doesn't allow for the slightly longer joint freeing routine. It can be undertaken in a chair or on the bed if required.



1. Skull Shining  
Breathing Technique  
• Kapalabhati  
Pranayama



2. Chair Neck Rolls C



3. Neck Exercise  
Turtle Neck Flow  
Close Up



4. Easy Pose Neck  
Rotation • Sukhasana  
Neck Rotation



5. Seated Shoulder  
Rolls



6. Seated Torso  
Circles • Kundalini  
Circles



7. Seated Cat Cow  
Pose • Upavistha  
Bitilasana  
Marjaryasana



8. Revolved Easy  
Pose • Parivrtta  
Sukhasana



9. Cat Cow Pose •  
Bitilasana  
Marjaryasana



10. Tail Wagging  
Pose



11. Thread the  
Needle Pose • Urdhva  
Mukha Pasasana



12. Table Top Child  
Pose Flow •  
Bharmanasana  
Balasana Flow



13. Supine Spinal  
Twist Eagle Legs  
Pose • Supta  
Matsyendrasana  
Garuda Legs Asana





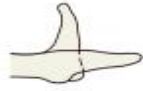










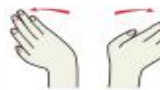













14. Reclined Hips  
Rotation • Supta Kati  
Paryayakrama



15. Reverse Pigeon  
Pose •  
Sucirandhrasana

## Joint Freeing

This routine is based on the Pavanmuktasana services. This can be undertaken when there is more time and the patients pain levels and stiffness allow.

 <p>1. Skull Shining Breathing Technique * Kapalabhati Pranayama</p>	 <p>2. Staff Pose * Dandasana</p>	 <p>3. Foot And Ankle Exercise Close Up</p>	 <p>4. Soles In Out</p>	 <p>5. Ankle Rotations Close Up</p>
 <p>6. Staff Pose Knee Stretches * Dandasana Knee Stretches</p>	 <p>7. Seated Straddle Pose Variation Sitting Upright * Upavistha Konasana Variation Sitting Upright</p>	 <p>8. Foot And Ankle Exercise Side To Side Close Up</p>	 <p>9. Cat Cow Pose * Bitilasana Marjaryasana</p>	 <p>10. Table Top Pose Variation Leg Raised * Bharmanasana Variation Leg Raised</p>
 <p>11. Balancing Table Pose With Knee To Nose Flow * Dandayamana Bharmanasana Knee To Nose Vinyasa</p>	 <p>12. Table Top Pose Hips Side Flow * Bharmanasana Hips Side Flow</p>	 <p>13. Wrist Bending</p>	 <p>14. Wrist Exercise Side To Side Close Up</p>	 <p>15. Wrist Joint Rotation * Manibandha Chakra</p>
 <p>16. Elbow Bending Close Up * Kehuni Nama Close Up</p>	 <p>17. Shoulder Socket Rotation * Skandha Chakra</p>	 <p>18. Cactus Arms Close Up</p>	 <p>19. Cactus Arms Down Close Up</p>	 <p>20. Thunderbolt Pose Arms Rotation * Vajrasana Arms Rotation</p>
 <p>21. Seated Cat Cow Pose * Upavistha Bitilasana Marjaryasana</p>	 <p>22. Easy Pose Variation Side * Sukhasana Variation Side</p>	 <p>23. Revolved Easy Pose * Parivrtta Sukhasana</p>	 <p>24. Neck Bend Exercise Close Up</p>	 <p>25. Neck Side Stretch Pose Close Up</p>
 <p>26. Neck Twists Close Up</p>		 <p>27. Corpse Pose * Savasana</p>		

## Yoga to help manage pain in the pelvis &amp; hips

Axial Spondyloarthritis is focussed in the base of the spine and sacroiliac joint. This practice aims to relieve pain and increase movement in this area.

**Pranayama** Ujjayi breath is a useful breathing technique to try as it can invigorate the nervous system, reduce depression and warming. It is contraindicated in individuals with cardiac and hypertension issues.

**Mudra** The suggested mudra is the Muladhara mudra which helps to focus energy to deal with life's trials.

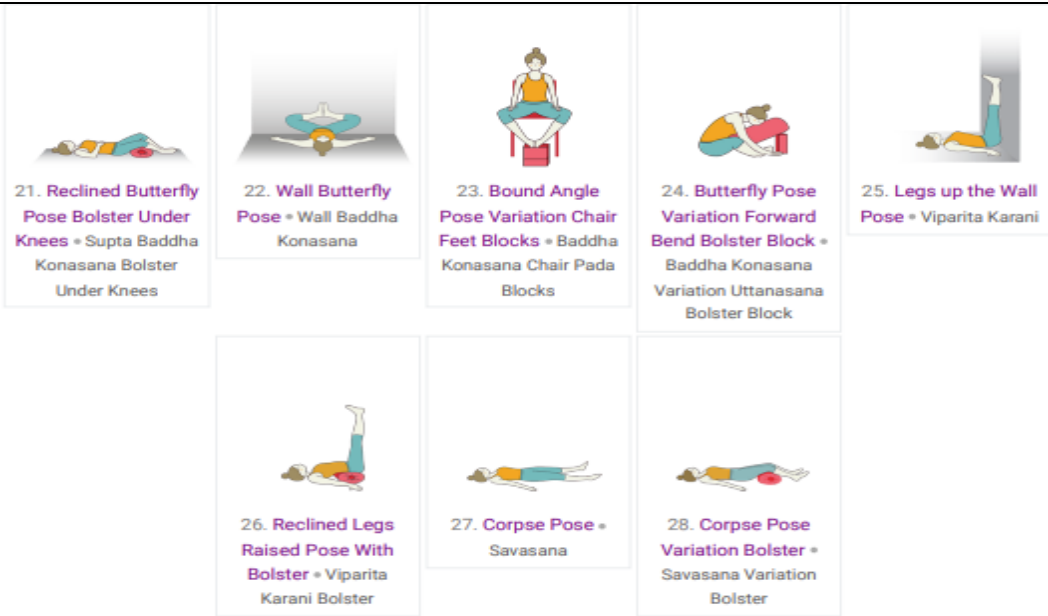


## 3. Muladhara Mudra

**Asana** The asanas suggested are focused on the pelvis and hip region. Gentle movement and circling of the hips helps to alleviate stiffness and pain. Options have been provided in standing, sitting, and using props. Gym balls are very helpful and allowing movement. Pigeon poses are useful for relieving tension in the buttocks which are often tight with this condition. Baddha Konasana can be used to stretch and relieve hips – options have been offered using bolsters, the wall and a chair depending on the level of stiffness, pain, and yoga experience of the individual.

 1. Easy Pose = Sukhasana	 2. Standing Pelvic Circles	 3. Chair Torso Circles	 4. Standing Hip Rolls Wall	 5. Cat Cow Pose = Bitilasana Marjaryasana
 6. Tail Wagging Pose	 7. Revolved Easy Pose = Parivrtta Sukhasana	 8. Easy Pose Twists Ball = Parivrtta Sukhasana Ball	 9. Chair Seated Twist Pose	 10. Supine Pelvic Tilt Tuck
 11. Seated Pelvic Tilt Tuck	 12. Seated Pelvic Tilt Tuck Ball	 13. Reclined Hips Rotation = Supta Kati Paryayakrama	 14. Corpse Pose = Savasana	 15. Ujjayi Breath Close Up = Ujjayi Pranayama Close Up
 16. Full Body Stretch Pose = Supta Utthita Tadasana	 17. Half Pigeon Pose Variation I = Ardha Kapotasana Variation I	 18. Reverse Pigeon Pose = Sucirandhrasana	 19. Chair Pigeon Pose Variation Forward Bend Prayer Hands = Chair Kapotasana Variation Uttanasana Namaste	 20. Reclining Bound Angle Pose = Supta Baddha Konasana

Pain relief in pelvis &amp; hips



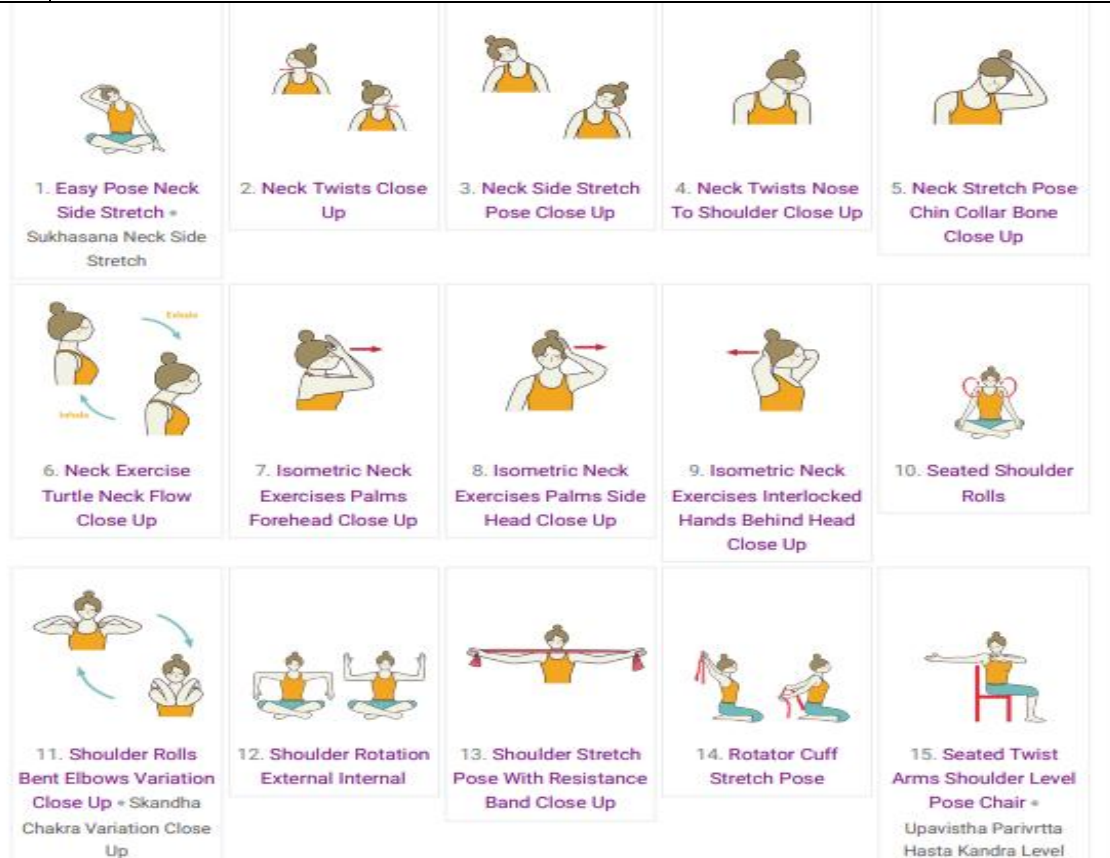
## Yoga to help manage pain in the neck and shoulders

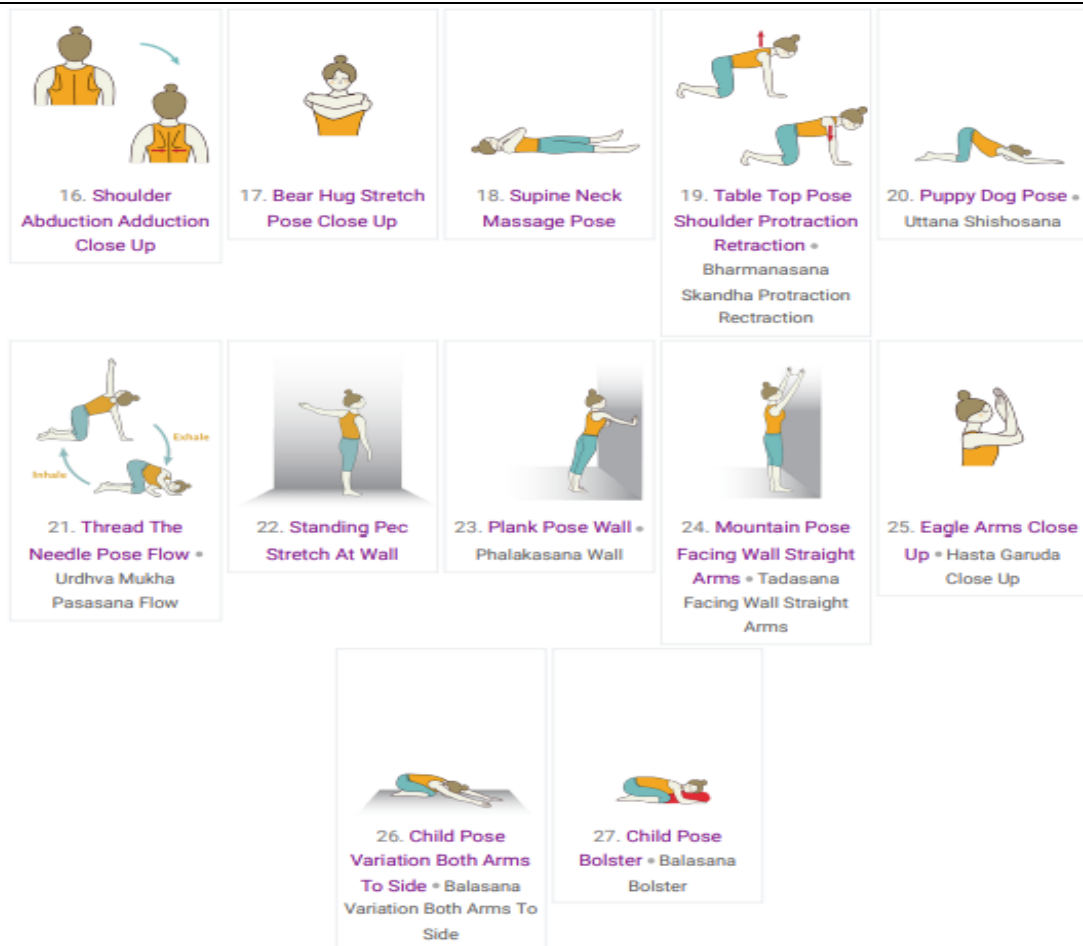
SpA sufferers often have neck pain – especially as the illness progresses and stiffness and kyphosis becomes more apparent. Shoulders can also be problematic as frozen shoulder and rotator cuff injuries can be prevalent.

**Pranayama** Ujjayi – as before.

**Mudra** Muladhara – as before

**Asana** The asanas suggested are focused on reducing muscle tension, reducing stiffness, and building strength in the neck. The shoulder postures are focused on increasing range of motion and flexibility – care should be taken if rotator injuries are new.

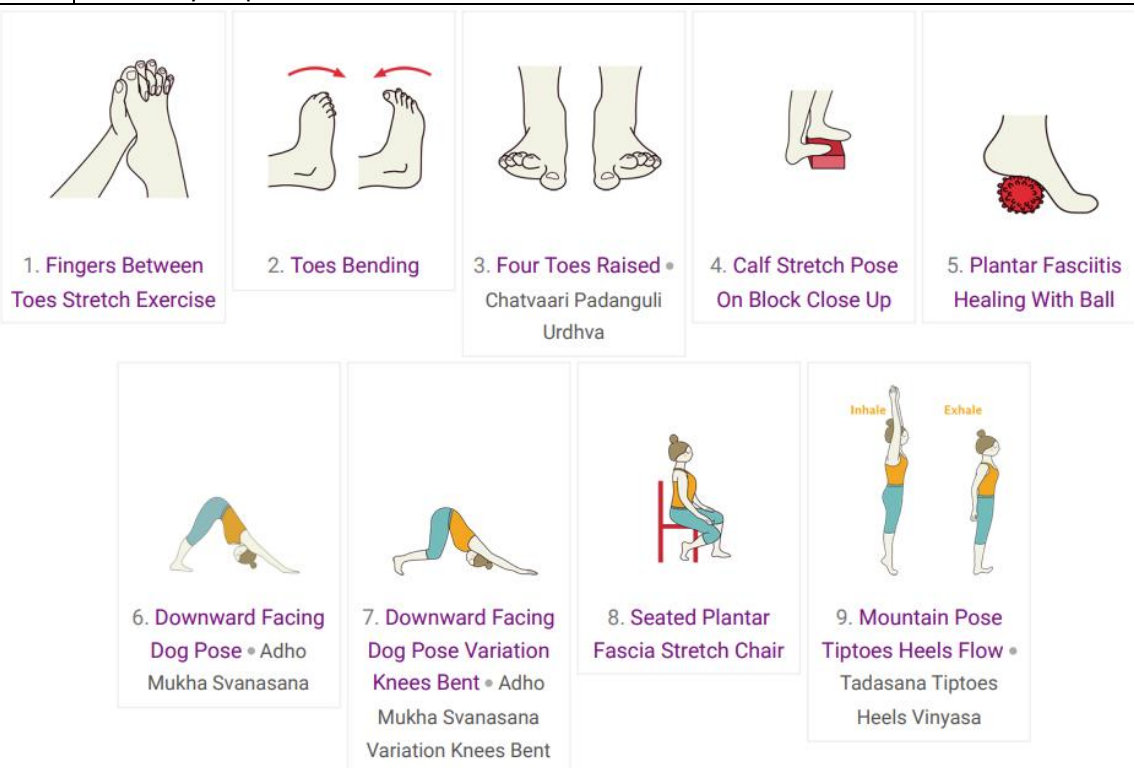




## Yoga to relieve plantar fasciitis


Plantar fasciitis can plague SpA sufferers, especially if they have peripheral SpA. The asanas below can really help pinpoint pain in these areas. In addition, the use of heat/cold can have a beneficial effect. I suffered with plantar fasciitis for years and it was only when I practiced yoga consistently and regularly did I get relief.











<b>Pranayama</b>	Ujjayi – as before.
<b>Mudra</b>	Muladhara – as before
<b>Asana</b>	The asanas proposed can be adapted dependent on the ability, pain and stiffness of the individual concerned. If the patient is severely restricted, then focus on toe raises and stretching the plantar can really help.



## Yoga therapy to improve sleep

SpA sufferers can be in a permanent state of exhaustion. The inflammation makes you tired but the pain at night stops you getting a full night's sleep.

<b>Pranayama</b>	Dirga/3-part breath pranayama is a calming and grounding practice that should help the patient feel more in tune with their body and in better place mentally to sleep. Alternate Nadi Shodhana/nostril breathing is also useful and as stated earlier in the evening the inbreath should be focused on the left nostril.
<b>Mudra</b>	<p>Shunya Mudra      The Shunya mudra is a grounding mudra that helps to bring peace.</p> 
<b>Asana</b>	The asanas suggested aim to ground the patient and should be undertaken slowly and with purpose. Props should be used to aid with comfort and release so that the patient can relax. The asanas could be undertaken just before bedtime with the 3-part breath taking place in bed.

<b>Yoga Nidra</b>	Yoga Nidra can be very useful for sleep issues – either to be used as a 20 min midafternoon yogic sleep or as a sleep-inducing visualisation before bed. Both should be tried to see which has more affect.			
				
<b>1. Easy Pose</b> Variation Arms Knees * Sukhasana Variation Arms Knees	<b>2. Alternate Nostril Breathing Close Up *</b> Nadi Shodhana Pranayama	<b>3. Balancing Table Pose With Knee To Nose Flow *</b> Dandayamana Bharmanasana Knee To Nose Vinyasa	<b>4. Downward Facing Dog Pose Table Top Pose Flow *</b> Adho Mukha Svanasana Bharmanasana Vinyasa	<b>5. Belly Twist Flow *</b> Supta Matsyendrasana li Flow
				
<b>6. Happy Baby Pose *</b> Ananda Balasana	<b>7. Wide Child Pose Face Chest Bolsters *</b> Prasarita Balasana Mukha Chest Bolsters	<b>8. Seated Straddle Pose Knees Bent Bolster *</b> Upavistha Konasana Knees Bent Bolster	<b>9. Corpse Pose Variation Chair *</b> Savasana Variation Chair	<b>10. Three Part Breath Corpse Pose *</b> Dirga Pranayama Savasana

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