
Yoga Therapy for Disc Degeneration Disease

By Victoria Watkin



Introduction

This report details the yoga methods prescribed for a specific case who suffers from disc degeneration disease.

The student is a female, age 35, with intermittent severe back pain. She wished to undertake a personal yoga therapy routine in order to manage long term back pain as she has a complicated history of spinal issues. She has periods of severe pain and wanted to be able to manage them better.

In 2006 she suffered a fracture to her L1 vertebrae from a fall and as a result suffered scoliosis in spine due to a reduction in the height of the vertebrae on the right side.

In 2007 she suffered pain from degenerative disc at position L4/5, and had epidural steroid injections every 3 months to manage pain. In 2009 she went through major spinal surgery and the L4/5 disc was removed and a replacement disc fitted. A slow and painful recovery meant that student also suffered from severe depression which was then also managed with medication.

In 2013 she suffered a degenerated disc which was bulging at level T12/L1 for which she had a steroid injection to manage the pain. She is still suffering from some nerve pain in her anterior right thigh.

In addition she is now also suffering from pain from a degenerated disc at L5/S1.

Patient has no other medical issues and is otherwise medically fit and follows a healthy lifestyle.

This report details the the symptoms suffered, the possible causes of the disc problems, how her issues were diagnosed and the possible treatment routes together with a yoga therapy recovery plan.

Contents

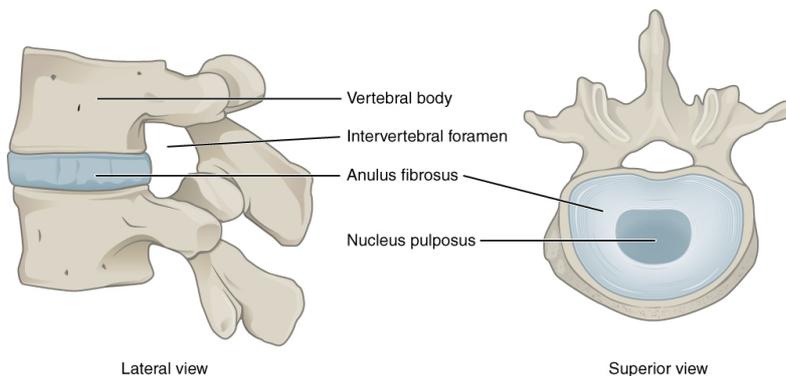
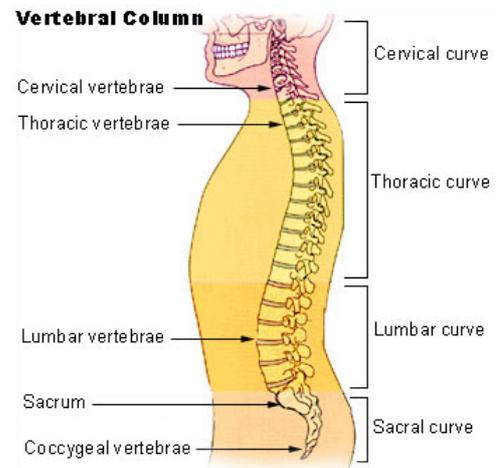
	Page Number
The Spine	4
Disc Degeneration Disease	5
- Symptoms	5
- Causes	6
- Diagnosis	6
- Treatments	6
Yoga Therapy	8

Anatomy of the Spine

The Spine

The spine is the back bone of the human body and consists of 24 articulating bones called vertebrae and 9 fused vertebrae. Its main purpose is protect the spinal cord which is the main nerve which carries nerve impulses to and from the brain. It also provides the body with flexibility and movement and support to the body and head.

It consists of 7 cervical vertebrae, 12 thoracic vertebrae, and 5 lumbar vertebrae. It also has a sacrum and coccyx which is referred to as the tailbone. This consists of 9 fused vertebrae; 5 in the sacrum and 4 in the coccyx.



Vertebral Disc

In-between the vertebrae are discs which provide cushioning and aid movement in the spine.

They comprise of a tough outer layer called the Anulus Fibrosus and an gel like substance inside called the Nucleus Pulposus. see diagram.

In addition the spines movement is assisted by many ligaments and muscles which are attached to each individual vertebrae on the various bony prominences.

At each vertebrae level a nerve root exits the spinal cord to provide nerve impulses to and from the body to the brain. The lumbar spine providing nervation to the lower limbs and hips, the thoracic spine to the main torso and the cervical spine to the neck, arms, and shoulders. The spinal cord stops at around L1/2 in adults. Below this the nerve roots form the caudal equina.

Disc Degeneration Disease (DDD)

DDD is the breakdown or ageing of the vertebral spinal discs. It is thought to be a part of the natural ageing process were by the discs breakdown due to wear and tear, thought to be from either overuse, everyday strain, or misuse.

As the vertebral discs degenerate, the water content reduces and the protein layer of the outer capsule breaks down. The discs start to dehydrate and become stiff and rigid. This then restricts movement and cause stiffness in the spine. The breakdown may also cause the discs to bulge, herniate/prolapse (where the outer layer breaks and in the inner jelly like substance seeps out) or thin completely and may also cause changes to the vertebrae causing bone spurs, called Osteophytes, as the spine becomes more unstable, see diagram opposite for example of these conditions. In addition it may also lead to Spinal Stenosis and Spinal osteoarthritis.

These problems can occur in any disc in the spine.

Symptoms

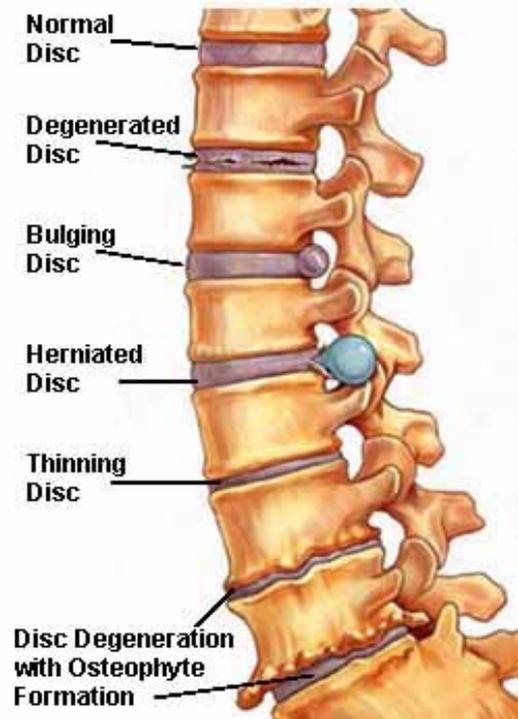
DDD is most common in the lumbar region as it is more flexible and under a lot more stress than other parts of the spine. Symptoms of DDD in the Lumbar region of the spine are:

- Chronic lower back pain which lasts more than 6 weeks.
- Pain is usually an aching pain rather than a sharp pain
- Pain is usually relieved by lying down with knees propped up with a pillow and is made worse by sitting. This is because the load on the lumbar spine discs is much higher when sitting than standing.
- Patient will also have a feeling that the lower back is "giving out" due to the weakness of the discs.
- Numbness, tingling and weakness can be seen in the legs, and patient may have difficulty walking. Usually pain is in the lower back and radiates to the hips and legs, with the pain not usually radiating below the knee.
- Twisting and forward bending can be difficult in these patients.
- Bending backwards slightly may alleviate pain.

DDD is also seen in cervical spine, common symptoms are:

- Neck pain
- Stiffness of the neck
- Tingling, numbness in shoulders, neck and arms.

Examples of Disc Problems



There are a number of "Red Flag" symptoms to be aware of, these are where the patient should be referred immediately for medical help:

- Saddle anaesthesia
- Bladder dysfunction
- Faecal incontinence
- Immediate onset of Back Pain after a fall
- Unexplained weight loss
- Night pain
- Severe neurological deficit in limbs

Back pain can be quite debilitating and therefore it is also common that patients may also suffer from depression.

Causes

It is thought to be a symptom of ageing and is common in people over 50 years of age.

However it can be seen in people as young as 20-30 and it's thought to have some hereditary link in these cases.

In addition smoking, a unhealthy lifestyle and obesity can lead to DDD. Smoking can reduce the water content of the discs making them less flexible and pliable. While being over weight or obese puts extra strain on the spine and decreases muscle tone due to lack of physical activity. This lack of general muscle tone in the body means that the spine is not supported.

People who undertake heavy physical work on a regular basis are also at risk.

Also, people who have had a sudden injury to their spine can also start then to exhibit DDD as a consequence of the injury.

In addition stress or anxiety can contribute and make the pain worse as the muscles and body tense up.

Diagnosis

An MRI scan should be carried out to reveal abnormalities in the discs of the spine. Degenerated discs usually show up darker as there is less water content in the disc.

An X-Ray can show the narrowing of the disc space.

However it should be known that people can have disc problems and not feel pain and therefore an accurate patient examination is usually carried out to investigate the source of the pain.

Treatment

In the first 24 to 72 hours active rest is essential to help calm down any immediate inflammatory response. The patient should not take complete bed rest as this will make symptoms worse.

After 3 days the patient can then start to building up physical activity again and gentle exercise such as walking, yoga and swimming are usually recommended. Sometimes patients are referred to

a physical therapist in order to prescribe and set out specific back strengthening exercises. In addition hamstring stretches are useful.

Patient usually encouraged to take on a healthy active lifestyle and to reduce weight, if currently over weight.

If pain is too great, sometimes medication is prescribed. Such as paracetamol, an anti-inflammatory, or an opioid such as codeine.

Heat and cold therapy may also provide relief. Heat helps to warm up joints and muscles to provide flexibility and cold will help calm down any inflammatory response.

Patient may find chiropractic or osteopathic treatment and manipulation helpful at relieving pain. However due to discs being in poor condition this could make condition of discs deteriorate.

In more severe circumstances steroid injections can be administered, and sometimes surgery can be undertaken. However this is only required in around 1% of back pain cases and should only be last port of call if no other treatment has worked.

Surgical procedures are usually involve taking out the disc and replacement with either a prosthetic disc or fusing the vertebrae bones. Choice of surgery is usually based on patients current health and current condition of the spine.

Yoga Therapy Sequence

The following yoga programme is prescribed for the particular patient described in the introduction of this paper, where she is suffering from severe DDD in the lumbar spine. The first sequence is for periods of acute pain and minimal mobility.

The programme should be carried out three times a day until acute pain subsides.

Guidance should be given on carrying out the programme mindfully, being fully present through each asana and adjustment and having the pelvic floor and core engaged in order to provide protection to the spine. In addition guidance should be given on breath and the movements should be synchronised with the breathing.

It should be noted that for back pain where the discs are the source of the pain, back bends can help strengthen the core and back muscles and help relieve pressure on the discs. It is important to know the source of back pain when carrying out a yoga therapy plan. In other types of back pain this may aggravate the condition.

Technique	Benefits	Method
Introduction of Ujjayi breathing.	Creates heat in the body and builds up breath awareness.	Practice for 5 minutes. Make sure sitting comfortably. Which may be difficult with lower back pain, can use a wall for support.
Vagra swasi	Creating good breath awareness and flexibility in spine.	Practice for one minute.
Shashankasana	Helps stretch lower back.	Hold for 5 to 10 breaths.
Bhujangasana breathing	Strengthens spine and helps creat flexibility. Helps relieve back pain.	Start with half lift and do ten rounds.
Makrasana	Resting pose. Helps relieve tension in back muscles.	Hold for 5 to 10 breaths.
Shalambasana breathing with single leg raising	Strengthens spine and nervous system, increases circulation in spine and legs. Strengthens gluteus muscles and helps to support lower back.	Ten rounds.
Setu Bhandasana breathing	Strengthens back	Practice for one minute.
Pavanamuktasana	Massages back muscles	Ten rounds.
Jatara parivartanasana	Increases flexibility in spine and releases tension.	Hold for 5 to 10 breaths each side.
Nadi sodhana Pranayama	Helps calm mind.	Ten rounds.
Shavasana variation		Carry out modified version, with support under knees or, knees in bent position. Or lying on front in Makrasana position

Once the acute pain phase has passed then additional asana can be introduced.
Practice should be two times a day.

Technique	Benefits	Method
Surya namaskar classical version	Reduce stress, improves overall flexibility and unites body , breath and mind.	Start with two rounds, building up to six.
Tadasana	To create good body awareness and activate core.	Hold for 5 breaths
Parvatasana	To create good body awareness and activate core.	Hold for 5 breaths
Ardha kati Chakrasana	Improves circulation to spinal cord and strengthens back and sides of the body	Hold for 5 breaths, each side.
Vagra swasi	Creating good breath awareness and flexibility in spine.	Continue for 2 minutes
Shasankasana	Helps stretch lower back.	Hold for 5 breaths
Bhujangasana	Strengthens spine and helps creat flexibility. Helps relieve back pain.	Carry out bhujangasana breathing and on last set hold position for 5 breaths
Shalambasana	Strengthens spine and nervous system, increases circulation in spine and legs. Strengthens gluteus muscles and helps to support lower back.	Carry out shalambasana breathing and on last set hold position for 5 breaths
Makrasana	Resting pose. Helps relieve tension in back muscles.	Hold for 5 breaths
Parigasana	Activates and works the back muscles and strengthens and increases circulation to the spinal cord.	Hold for 5 breaths, each side.
Setu bandasana	Strengthens back	Carry out setu bhandasana breathing and on last set hold position for 5 breaths
Rocking	Massages back muscles	As many times as required.
Jatara parivartanasana	Increases flexibility in spine and releases tension.	Hold for 5 breaths, each side.
Leg raising	Strengthens abdominals	Ten rounds.
Pavanamuktasana	Massages back muscles	Ten rounds.
Dandasana	Strengthens the spine	Hold for 5 breaths

Technique	Benefits	Method
Purvotanasana	Gives strength and relief to back ,muscles.	Hold for 5 breaths
Gomukasana	Helps open up back muscles.	Hold for 5 breaths, each side.
Bharadvajasana	Works spinal cord. Release back tension, and helps increase flexibility	Hold for 5 breaths, each side.
Nadi sodhana Pranayama	Helps calm mind.	Ten rounds, with ratio 4 puraka, 16 kumbaka, 8 rechaka
Shavasana		Carry out modified version, with support under knees or, knees in bent position. Or lying on front in Makrasana position

Student should be assessed after one month of practice. If improvement has been seen and no acute pain when carrying out exercises and condition of student is good then additional practice can be given.

Practice can be reduced to once a day.

Slow Introduction of the Indea Yoga Foundation series of postures can be practiced building up to full series with variations if required.

If acute pain returns then return to exercises above.

As above, asana should be carried out slowly and mindfully moving with breath.

Student's condition should be assessed when introducing new asana and adjusted.

Asana to be avoided:

Ustrasana

Urdhva Dhanurasana

Utkatasana

Bhekasana

Navasana

Marichyasana A and C

Mayurasana

Full version of upavistha and baddha konasana

Asana where care should be taken:

Care should be taken with seated forward bending asana: spine should be kept lifted and straight with core and pelvic floor engaged.

Great care should be taken in paryankasana, uttana padasana and supta virasana so that no stress or discomfort is felt on the lower back, if any pain is felt then proceed with caution recheck alignment and breath and if still pain felt than asana should be avoided.

Standing forward bends, such as uttanasana and prasarita padottanasana, may aggravate pain and therefore it is imperative that movements are done mindfully with breath and the core and pelvic floor engaged with spine lifted. In prasarita padottanasana do not fold forward all the way, only half way so body is parallel to floor.

Seated forward bending asanas such as Paschimottanasana, janu sirsasana, trianga mukhahiakpada paschimotanasana may aggravate sciatic nerve pain and discogenic pain so should proceed with care or avoid.

References

www.spineuniverse.com

www.spine-health.com

www.nhs.uk

www.patient.co.uk