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## Yoga as a Therapy for Persistent Pain With Anji Gopal

### About Anji Gopal

- Leads a “Persistent Low Back Pain Programme” in the NHS – the pilot was delivered at UCLH, London in 2017. The course continues at the Royal London Hospital for Integrated Medicine. This forms the basis of her 1:1 teaching sessions in Ealing and incorporates yoga, pain education, graded exposure and acceptance therapy – evidence-based modern theories of pain management and reduction.
- Acquired Osteopathic qualification with distinction from British School of Osteopathy. Have experience treating a wide variety of conditions and musculoskeletal problems, both in private and NHS setting.
- Have been practicing yoga since childhood and trained as a yoga teacher in 2007 – have used yoga to manage stress in her previous working life.
- Became a British Wheel of Yoga teacher and qualified with Triyoga in London.
- As a registered professional, she undertakes at least 30 hours of CPD a year for Osteopathy and 15 hours for yoga.

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### Yoga

- One of the definitions of yoga is the elimination of suffering. It has a range of techniques such as breathing, moving, meditating, and learning scripture (i.e. a spiritual aspect of yoga). The breathing technique in particular, had been looked at by cardiac surgeons, neurologists, and psychiatrists- for integration in their treatment processes.

- As a whole, yoga is a set of practices designed to calm the mind. This definition was essentially written down in 600 BC. Part of its goal is enabling people to meditate, achieve a supple body and calm mind. It also focuses on breathing practices.
- It is considered to be one of these practices now that is biopsychosocial spiritual – where it takes the whole person including their mental state and overall beliefs into consideration.
- Yoga comes from a tradition that has a spiritual element somewhere, not religious but spiritual. Pilates on the other hand, was developed with the specific object of strengthening the spinal muscles. These two practices are different from each other but can actually complement each other well.
- The moving and relaxation techniques in yoga have been explored in relation to a particular skeletal/muscular condition (e.g. back pain, hip arthritis).
- The first big body of research on yoga was in The Lancet in 1975. It was a fully blinded RCT of measuring heart rate variability in relation to breathing practices. Neuro-psychiatrists have later done smaller studies by picking up a particular yoga technique and used it in small directed ways with cohorts of patients with particular conditions.
- Ten percent of the population practice yoga on a general basis -more women than men. The range of people doing it is in their twenties all the way through to people in their eighties or older.
- *Asana* (posture) practice should be steady and comfortable, which is translated into the *asana* being strong and easeful.

### **Benefits**

- As stress is a major factor on life-threatening conditions such as cardiovascular disease, the spiritual side of yoga which is calming the mind, is extremely very important.
- Melded yoga (i.e. a mixed yoga including breathing and relaxation techniques along with some anatomy and pain education) practiced for 75 minutes each week yielded positive results in addressing lower back pain. As a result, the programme got funding through the NHS.
- Extension exercises are not particularly recommended for patients with persistent/chronic low back pain. Key is for them to learn to control that extension while maintaining their normal lumbar curve.

### **Injuries from doing yoga**

- Typically these are low back pain extension injuries, shoulder or rotator cuff injuries because, in some types of yoga, there is a lot of pressure being put through the shoulder. The knees and hips are also being tried into positions (e.g. twists) that the body resists going in.

- The body needs getting used to the different yoga positions (basic first) before doing the more complicated ones to avoid injuries.

### **Pranayama (breathing practices)**

- Yoga practice can be as simple as learning how to breathe in and breathe out. Yoga beginners start with learning how to do it properly – the diaphragm moving freely, lifting and dropping, pumping the low back and the lumbar spine through the connection with the roots of the diaphragm.
- From a physiological point of view, the pumping action brings nutrients to the tissues and removes toxins (waste materials). In terms of energy, it allows the body to freely express all the way through its vitality (i.e. the area of the body that is not breathing will be slightly closed).
- Since the body is an enclosed structure, increasing the volume of breath in there can direct the energetic breath and cause the expansion of the tissues.
- Breathing has musculoskeletal, physiological, and neurophysiological benefits.
- What to look out for in breathing dysfunction: upper chest breathing – a tendency to hold the breath. This means not using the full diaphragm on the rib cage to breathe. In the case of low back pain, one side of the rib may be a bit restricted, the QL muscle tightening on one side can hold the ribs down on that side.
- People with a habitual pattern of not breathing when they are thinking go into breath holding pattern every time they feel a spasm or twinge (i.e. common pattern among patients who have been in pain for several years).
- Yoga enables people to breathe efficiently through stretching, *asana*, and physical practice all for purposes of opening the QL, the neck muscles, and the front and anterior chest. It looks for that balance between strength and flexibility (i.e. people who are

Breathing practices are varied. There are ones for hot days to cool a person down and there are ones for cold days to heat up a person.

The most simple and most researched *pranayama* is called coherent or resonant breathing. It is basically breathing in to a count of 5 or 6, and breathing out to a count of 5 or 6.

#### **Breathing practice after a stressful day:**

- Sit on a couch.
- Close your eyes.
- Inhale through your nose.
- Exhale through your mouth (with an open, round mouth the longest and slowest exhale you can do).
- Do about 5.
- This is best done with hands on your abdomen and watch the breath coming in and out of your hands. This practice can be done while sitting, standing, or lying down.

The exhalation causes a decrease in chest pressure, affecting the baroreceptors in the carotid sinus activating the PNS. This is where the polyvagal tone comes out. This always brings a calming effect.

bendy need more muscle strengthening, while those who are too rigid need more muscle stretching).

- *Viloma pranayama* is an interrupted breathing technique (holding the inhalation and doing it in stages) -introduces the concept of expanding the breadth and lung capacity through controlling the breath.
- Joining the community choir is also useful as it emphasises breathing techniques and using the diaphragm. Similarly, there are several yoga practices around chanting.

### **NICE guidelines on yoga**

- Yoga interventions are recently being incorporated in the NICE guidelines (i.e. NG-59) for low back pain and sciatica.
- The first stage of intervention is to encourage people to get active, recognising that some of the active approaches can help address pain. Those active approaches can be anything from aerobic activity to mind-body exercise (i.e. yoga) in a group setting.
- Yoga as a therapy fitted very well within the NHS 5-point plan on a) prevention (yoga helps prevent people from getting ill); and b) social inclusion (interaction during group settings for mind-body exercise).

## **Movement**

- Any movement is better than no movement. The chronic pain patients should be doing something small every day (E.g. sitting and breathing).
- From a mechanical point of view, patients who are not used to doing yoga poses should refrain from doing them to avoid straining themselves.
- Headstand and handstand teach people balance, control, and how to make the body work as a unit.
- Quieter and slower approaches work at that boundary between body and mind and once chronic pain patients are reassured, they will find that they can do more.

## **Yoga for patients with facet-based low back pain**

*(from 42:02 to 1:06:38 in the broadcast recording)*

**Note:** None of the following yoga poses are going to produce issues on patients with an abdominal hernia.

- Yoga for persistent back pain is more into mindful movement – not a lot of movement especially for those new in the process.
- Patients are varied – some have more of lordosis and others would have lost it. Others have a more kyphotic, thoracic spine.
- With work for multifidus, those postural muscles take a lot longer to properly engage and to strengthen than movement muscles.
- For patients with chronic rotator cuffs tendinopathy, avoid *Chaturanga* until their shoulders have completely healed. Focus on stabilising rather than mobilising the scapula through wall press ups without any load.
- The object of the initial range of movement for patients in pain is confidence building because chronic and persistent pain changes the emotional and the actual behavioural capacity of the person. They try to move anything but they are rigid. There is a need to start by allowing their system to move just a little bit. Then gradually expand the range later.



- The first step would be just to see if the patients can hold the following position and what it would feel like. Look for a neutral curve that is comfortable for them.
- Let the patients imagine that there is a pencil in their belly button and that they are going to draw a circle on the floor. This is about taking their whole body to go clockwise and counterclockwise. 5 times each, at least once a day. Stop when there is an increase in pain.
- Let them start to work in a small range of gentle movement that does not take them into the range of pain.
- Part of the work here is to get the patients to engage their abdominal muscles. Let them learn how to stop the hyperextension and the facet irritation from happening.
- Take them to breathe in on all fours and then breathe out, taking the bottom back towards their heel.

- With chronic pain patients, some days are always going to be better than others. It is important to educate them that the road back to health with no pain is rarely going to be a straight line. It is a slow process.

- The cobra position (shown on the right photo) should not be prescribed to a patient with back pain. It is taught with a lot of extension in the thoracic spine, with the hands right underneath the shoulders. The sphinx position is rather recommended.



- Patients with facet type irritation who come for yoga therapy are prescribed with a position that is static but completely supported. As shown on the right photo, essentially allow the back to open, but without any muscular holding (bent over cushions, forehead on the hands, head turned to one side, knees bent). Let the patient stay in that position for 10 minutes to generate a useful effect.



### **Poses for patients with sciatica**

- For patients with raging pain, the pose shown on the right photo is prescribed and see whether it helps diminish the pain levels.
- Any sort of chair can be used. Let the patient lie on the floor, shins on the chair, the head is supported with a pillow (cushions/pads are placed under the pelvis- do not ask the patient to lift their pelvis up, manoeuvre it gently).
- Use yoga belts to tie the legs and the shins. Those are used to support the knees together, allow the muscles to relax completely because at some point there is a level of holding that is happening in the muscles to keep the legs on the chair. The body should be in the state of quietness.
- Ask the patient to put their hands on their tummy, feel their breath happening. If they cannot concentrate, play music.
- Patients should stop when they are no longer comfortable with the pose. To come out, they should put their feet onto the edge of the chair and push the chair away. Then rest. Take a breath and then they should roll over onto their side, press themselves up and come up to sitting.



### **Poses to help psoas**

- Slow and controlled lunges with the back knee on the ground. It is called constructive or effortless rest.
- It is essentially lying back on the back, knees together, heels out, toes in, and just allowing the psoas (with a bit of internal adduction at the knees) to release and open.

### **Corpse pose**

- The final pose of any yoga class is *savasana* or corpse pose, also sometimes called final relaxation pose.
- This is done by lying flat on the floor with the arms and legs out in an anatomical position essentially, just allowing the body to take a breather. Another variation is doing it with shins on a chair.

### **Yoga schools**

- There are schools of yoga that offer very deep anatomy and physiology training with teachers that are very sensible and well trained (E.g. Iyengar school of yoga).
- For people with health care problems, it is best to start in smaller classes because the emphasis is more on getting fit and proceeding to the next level gradually.
- Some of the yoga therapists are registered with the HCPC. A yoga therapist is not a protected title.
- There are yoga teachers who put together a 12-week patient yoga course for low back pain which is well researched – there is a book that accompanies it called “Yoga for Healthy Low Back”.

### **Research on yoga**

- A study on yoga and Parkinson’s was completed that yielded positive results – yoga increased strength in all groups that tried it.
- Another well-researched study cited 12 yoga postures for osteoporosis. Caution should be taken when prescribing yoga poses for women with osteoporosis in the hips and lumbar areas. They should not be sent to general yoga class as they should avoid these extension-flexion patterns and aggressive hip mobility type exercises.

