

# Yoga-A Treatment for Persistent Pain

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## Who the Heck am I and How did I end up here?

- 2001 – B.A. in Psychology & Philosophy
- 2007 – B.M.R. (PT)
- Private Clinic work (Nova Scotia)
- Concordia Hospital
- 2009 – Moksha Yoga Teacher Training (India)
- 30 days + year long distance learning
- Project – Therapeutic Yoga
  - Neil Pearson (PT)
  - Kelly McGonigal (PhD. Psych)
- 2009 - Prana Physiotherapy and Therapeutic Yoga
- 2010 - Founded PhysioLogic Yoga

## Outline

- Pain
  - Definitions
  - Acute Pain vs. Chronic/Persistent Pain
  - Pain is a Perception – new pain science
- Yoga
  - What is it?
  - Research
  - When is it therapeutic?
- PhysioLogic Yoga/Prana Physiotherapy
  - Ideal Candidate/When to refer
    - Yoga in Health Care
    - A little yoga practice
    - Resources/Reference

## What is Pain?

- Pain
- A warning sign designed to get you to stop and pay attention
- An unpleasant sensory and emotional experience associated with actual or potential tissue damage.
- A multi-system output that motivates the individual to get out of a situation that the brain perceives to threaten the body.
- Chronic Pain – Pain that has persisted for at least 3 months in the absence of any new injury.

## Pain Statistics

- 31% of Canadians live with chronic pain (Medical Research Council of Canada, 2005)
- Only 42% of people in pain believe their doctor understands how they feel (Gallop Pole in America, 2004)
- 85% of people will experience LBP at some point in their lives (Anderson 1999)
- 80% of people who suffer chronic LBP have some kind of anatomical pathology show up on diagnostic image. ..
- 80% of people who do NOT have LBP have some kind of anatomical pathology show up on diagnostic image!

This means there must be another system at work here...

## The Nervous System

Though we often think of pain as coming from an anatomical source, Persistent Pain can be contributed in large part to a malfunction of the pain system itself (the nervous system), not simply a malfunction in the tissues where the pain is perceived.

Persistent Pain Rehab is in large part Neurological Rehab - when we treat chronic pain we are actually hoping for Neuroplasticity.

## The Pain Pathway

- There are threat detectors in the body constantly waiting for input. When excited, they send messages to the SC.
- “Traffic light” situation in the SC
- Green light signals get distributed to many different parts of the brain that govern: sensation , stress, attention , emotion & behaviour
- Brain then comes up with a story, which may or may not include the perception of pain.

\*If the info is deemed worthy of our attention in order to protect us from danger, the brain creates the OUTPUT or the perception of pain.\*

## Acute Pain

- Acute pain is a good, reliable indicator of the severity of threat or injury that has occurred. The intensity of the pain will match the severity of the threat.
- When working properly, the Nervous System is designed to tell us only when there is new and important input to tend to
- E.g. : We get used to wearing a watch. If the watch suddenly starts to heat up or buzz, we notice it again.

## Chronic Pain – A Mistaken Brain

- In a chronic pain situation these functions have broken down:
- our brain continues to tell us an on-going pain story, even in the face of a decreasing or absent stimulus
- the amount or intensity of pain is not correlated with the severity of the threat
- The brain and spinal cord change - there are processes that can perpetuate the trend towards the output/perception of pain.
  - Hyperalgesia – an extreme, exaggerated pain perception during something that usually only hurts a bit
  - Wind Up - the perceived increase in pain intensity over time when a given painful stimulus is delivered repeatedly above a critical rate
  - Allodynia – Pain due to a stimulus that does not normally produce pain (E.g. a warm shower with a sunburn)
  - The parts of the brain that naturally decrease pain are inhibited
  - If the parts of the brain that are associated with pain are activated, the brain can create the perception of pain independently of any input from the body. (“Pain memory”)
  - The brain can prompt a protective pain response under psychological stress or during certain behaviours or emotions that were previously associated with pain

## Why does this happen???

Protection! The chronic pain response is an overprotective, learned response: in order to protect us from future threats, the mind and body amplify present pain and suffering

## Pain is a Perception of the Brain

- Chronic pain is more like vision than sensation...
- Your brain takes in data and comes up with it's best shot at what is going on...and it can be wrong!
- You have the power to change your perceptions...
- Good news: it goes both ways! We can modify and unlearn these overprotective pain patterns independent of the anatomical diagnosis!

## Enter Yoga

- “There’s this image of yoga as a trendy exercise that involves doing crazy things on a mat. That’s not what yoga is. Yoga can offer something for people in any type of pain. If you can breath, you can do yoga.” - Kelly McGonigal
- Yoga means “Union” and is a multifaceted practice:
  - Exercise/Movement (Asana)
  - Breathing/Breath Control (Pranayama)
  - Meditation - a focusing of concentration/energy of the brain
  - Relaxation – stress relieving techniques that aim to access the PNS to create a positive state in the body and mind
- Because pain is in the brain, “strictly body-based approaches will never provide full relief”
- Therapeutic Yoga is more than rehabilitative exercise – it allows for mindful, focused access to the MindBody connection

## Yoga and Chronic Pain

- Yoga accesses the mind and body’s natural pain suppressing systems via relaxation, breathing exercises & meditation (Yoga for Pain Relief, Kelly McGonigal)
- Stress is sited as both a cause and a consequence of pain - by accessing the PNS, yoga has a calming effect and can reduce the stress associated with chronic pain
- Yoga can allows us to mindfully break the habit and change the pattern of being in pain

## Research Supporting Yoga in Pain Relief - LBP

- 101 adults with chronic lower back pain compared the benefits of yoga, conventional therapeutic exercise, and the information contained in a popular back pain book. Those who took weekly yoga classes for 12 weeks experienced the most increase in function and the biggest decrease in the need for pain medication.(Karen Sherman, Group Health Cooperative in Seattle, 2005)
- 90 people with chronic low-back pain participated in a 24-week trial. The yoga group and attended two 90-minute yoga classes per week. The control group received standard medical care. The yoga group had significantly greater reductions in functional disability, pain, and depression at weeks 12 and 24 and at the 6-month follow-up. (Williams K. et al. 2009)
- Gerson D. da Silva et al. showed that yogic techniques including stretching, breathing and relaxation are valid therapeutic methods for FMS.
- A six week daily Pranayama (breathing) practice lead to significant improvements in depression, anxiety, optimism and stress (common comorbidities in chronic pain). (Neil Pearson, Yoga Therapy in Practice).
- Exercise can stimulate the release of the brain’s natural pain suppressing chemicals (Dietrich and McDaniel 2004)
- Meditation can decrease the brain’s sensitivity to incoming noxious stimuli (Orme-Johnson et al. 2006)

- Mindfulness-Based Stress Reduction (MBSR) - a structured complementary medicine program that uses breath and body awareness, hatha yoga and mindfulness in an approach that focuses on alleviating pain and on improving physical and emotional well-being for individuals suffering from a variety of diseases and disorders.
  - People with chronic pain such as headaches, back pain, neck pain and fibromyalgia who participated in the MBSR Clinic reported a dramatic reduction in the average level of pain during the eight-week training period and for at least four years following the treatment. Researchers correlated this with a decrease in the activity of the thalamus on MRI (part of the pain processing center).

### Other Benefits of Yoga

- Release of muscle tension
- Alignment: Increase body awareness and learn how to move safely
- Regulates Sleep Patterns
- Increases flexibility/mobility
- Increases strength (physical and mental)
- Increases energy/vitality
- Fosters Community and Compassion (BioPsychoSocial Approach to pain)

### Not All Yoga was Created Equally!

- Some styles of yoga can perpetuate the trend towards pain
- Yoga for Pain relief requires
  - Gentle Repetitive Movement, connected to rhythmical breath
  - A knowledgeable teacher providing appropriate instruction
  - A calm, relaxing environment (to support the PNS)
  - Education on when and how the student should modify or stop
  - May involve visualization and other neuro-behavioural techniques
- Restorative Yoga – Relaxation and positioning techniques such as to provide a complete lack of sensation

### Therapeutic Yoga for Pain Relief

- A treatment that is both gentle enough to be safe and that will challenge the persistent pain pathways
- Should strive to:
- re-educate the NS (neuroplasticity)
  - provide a safe environment to explore movement
  - unite therapeutic movement within a calm NS, awareness, focus and knowledge
  - provide therapeutic input (calm thoughts and safe movements) so that pain is not the output
  - decrease nervous system hypersensitivity and wind-up

- create lasting adaptive changes and coping strategies in body and mind
- restore imbalances in flexibility, strength, motor control, balance, breath control, body tension and perceptions

PhysioLogic Yoga: A therapeutic yoga method designed to reduce chronic pain based on a fusion of modern pain science and yogic practices.

- Group-based rehabilitation in workshop or yoga class settings:
  - Yoga for Chronic Pain/FMS
  - Yoga for Low Back Pain
  - Yoga for Neck and Shoulder Tension

\*Take place in various locations/yoga studios in Winnipeg

\*Cost effective

The Ideal Candidate:

- Able to transfer on and off the floor independently
- Mild to moderate pain
- Not likely to carry out a home program
- Would benefit from group dynamic

Benefits of a exercising in a group (ACSM):

- consistent exercise schedule/accountability factor for participating in exercise (compliance)
- People who exercise in a group setting experience more enjoyment, higher performance and outcomes than people who exercise alone
- group exercise can provide exposure to a social environment & a built in support group
- physical pain and emotional pain (loneliness, isolation, rejection) are detected by the same part of the brain (Eisenberger et al. 2006)

Prana Physiotherapy and Therapeutic Yoga: One-on-one physiotherapy sessions using the many facets of yoga as a treatment technique due to its effectiveness as a therapeutic tool in treating chronic pain.

- Located on Waverley in Winnipeg
- Receipts for private health care insurance provided
- Help to develop the potential/confidence to transition into the PhysioLogic Yoga classes

Yoga in Health Care

I've been trying to bring health care into yoga but it may work better to introduce yoga into health care!

### Examples of Yoga in Health Care:

- Stanford University's Health Improvement Program provides yoga for chronic pain: back injuries, shoulder injuries, hip pain, knee replacements and carpal tunnel syndrome
- Yoga Thrive Project: a research-based, therapeutic yoga program for cancer survivors (addresses pain associated with cancer and its treatment). Originated in Calgary.
- The Urban Zen Project: UCLA's Ronald Reagan Medical Center has signed up to train 300 of its doctors and nurses in "hospital based yoga" (adapted yoga poses to be done in a hospital bed along with breath and relaxation work).

### **A little yoga practice...**

#### Resources

- Neil Pearson, PT & Yoga Instructor
- [www.lifeisnow.ca](http://www.lifeisnow.ca) :includes pod casts about pain and access to other resources
- "Yoga for Chronic Pain" by Kelly McGonagall
- International Assoc. of Yoga Therapists: [www.iayt.org](http://www.iayt.org)
- National Centre for Alternative and Complementary Medicine  
(<http://nccam.nih.gov/>)
- [www.physiyoga.ca](http://www.physiyoga.ca) / [info@physiyoga.ca](mailto:info@physiyoga.ca)

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