



# Yoga Outreach YO-CP - Teaching Methodology

## Yoga & Chronic Pain

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*I acknowledge that the land I live & work on as a guest is the unceded Indigenous homelands of the Coast Salish peoples, including the traditional territories of the Songhees and Esquimalt nations*

# Check in:

- Your name, pronouns (option to change on screen)
- Something you're bringing to today's session (either based on your experience or new learning thus far)
- Something you're hoping to take away from today's session
- Review agreements
- Facilitator bio (YO, Center for Trauma & Embodiment, Fine Balance Yoga, PHS. Paincare, restorative & TCTSY)
- Review pre-reading - anything that stood out?

# How do we define pain?

“Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.” (International Association for the Study of Pain)

“Pain is a multisystem output that motivates and assists the individual to get out of a situation that the brain concludes is dangerous.” (Lorimer Moseley, PhD, physical therapist researcher in Australia)

“Pain is what the person says it is, and it is where the person says it is.” (Ruth McCaffrey, Emeritus Professor at Florida Atlantic University, nursing)

*“Pain is.....a process that emerges or unfolds through a whole person who is inseparable from the world” (Stilwell & Harman)*

# Chronic or 'Persistent' Pain

- Prevalence: Millions of Canadians live with moderate to severe chronic pain. According to several large population-based surveys, an estimated one in five Canadians lives with chronic pain (Schopflocher et al., 2011; Reitsma et al., 2011; Steingrimsdottir et al., 2017). Two thirds of Canadians living with chronic pain report their pain is moderate (52%) to severe (14%), and 50% have lived with chronic pain for over ten years (Schopflocher et al., 2011). (Canadian Pain Task Force Report, 2019).
- Often begins with acute injury or illness, but then pain last longer than the 'normal' healing time (3-6 months). Chronic pain starts as a symptom then becomes a disease in & of itself.
- It is associated more with adaptations/changes in the nervous system than with ongoing tissue damage (one form of this is referred to as 'central sensitization').

# Central Sensitization

## Symptoms:

- Pain can feel more intense than expected, like it's getting worse or spreading
- Spontaneous pain, shock/electrical-like pain, numbness/tingling, unpleasant sensations (crawling, itchiness)
- Difficulty using muscles (decreased strength, giving out, poor coordination)
- Inflammation, redness or swelling without an acute injury

## Mechanism:

- Increased number of sensors and sensitivity of sensors on nerve endings
- Spinal cord neurons do not inhibit information coming from the body and release chemicals to increase sensor production and sensitivity
- Brain receives amplified information from the body, becomes more activated and reactive, releases chemicals that increase sensitivity and produces a stronger experience of pain.

# Chronic Pain Management

May include:

- Personal management/self management techniques/practices
- Pharmacologic
- Psychological
- Physical/Occupational Therapy
- Procedural/Surgical
- Complementary & Alternative Medicine

# Who is more likely to experience chronic pain?

Chronic pain affects people across all spheres but the Canadian Pain Task Force Report (June, 2019) reports that chronic pain is more common among:

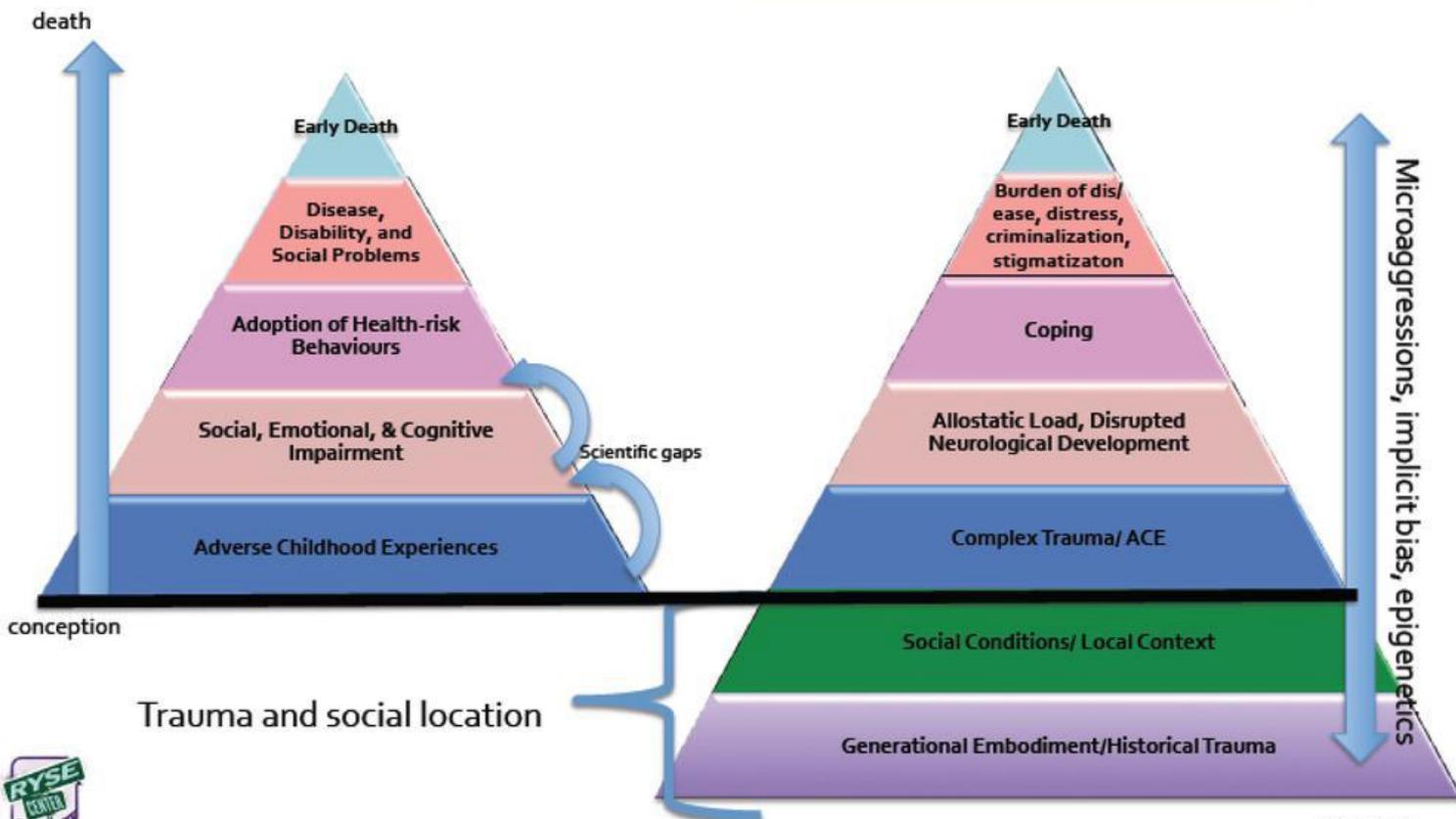
- Older adults
- Children & youth
- Females
- Indigenous Peoples
- Veterans
- Populations affected by social inequities & discrimination

A history of trauma might make a person more prone to develop chronic pain once an injury occurs (McAllister, 2012) - accounted for by central sensitization.

# Trauma and Social Location

Adverse Childhood Experiences

Historical Trauma/Embodiment



# What does pain impact?

- Functioning on all levels
- Muscle tension increases - guarding (but also inhibition)
- Ability to feel body position, movement and physiological state is diminished - narrow focus on pain at the expense of interoception in a wider sense
- Body image adversely impacted - helplessness, sense of physical fragility etc
- Thinking patterns change - less hopeful/joyful
- Emotions can be impacted - sadness, lower frustration tolerance
- Relationships
- Focus
- Sleep
- Others?

# Biopsychosocial model of pain

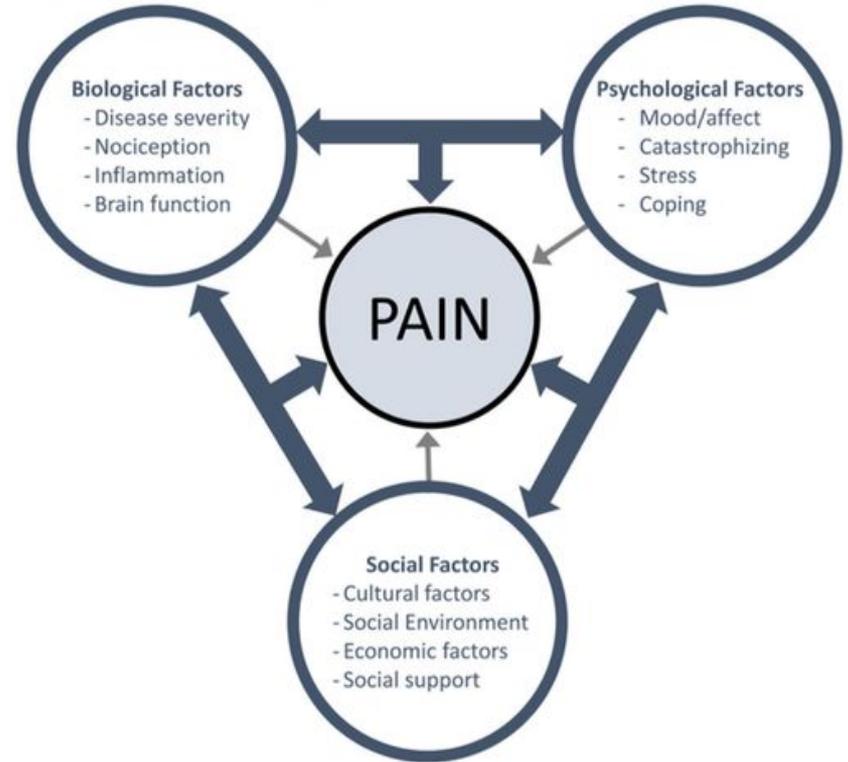
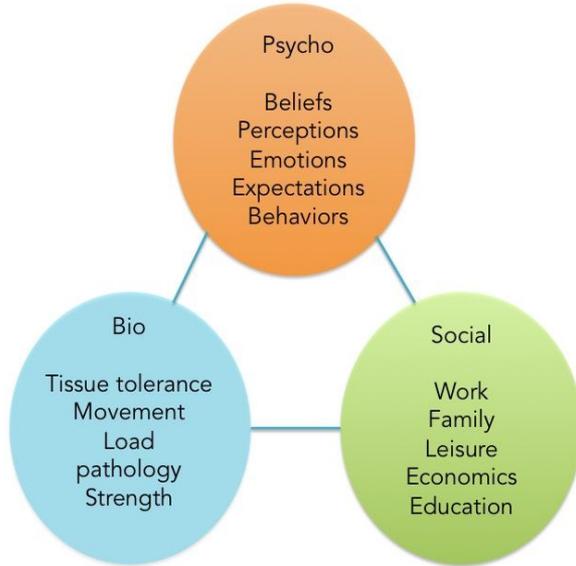
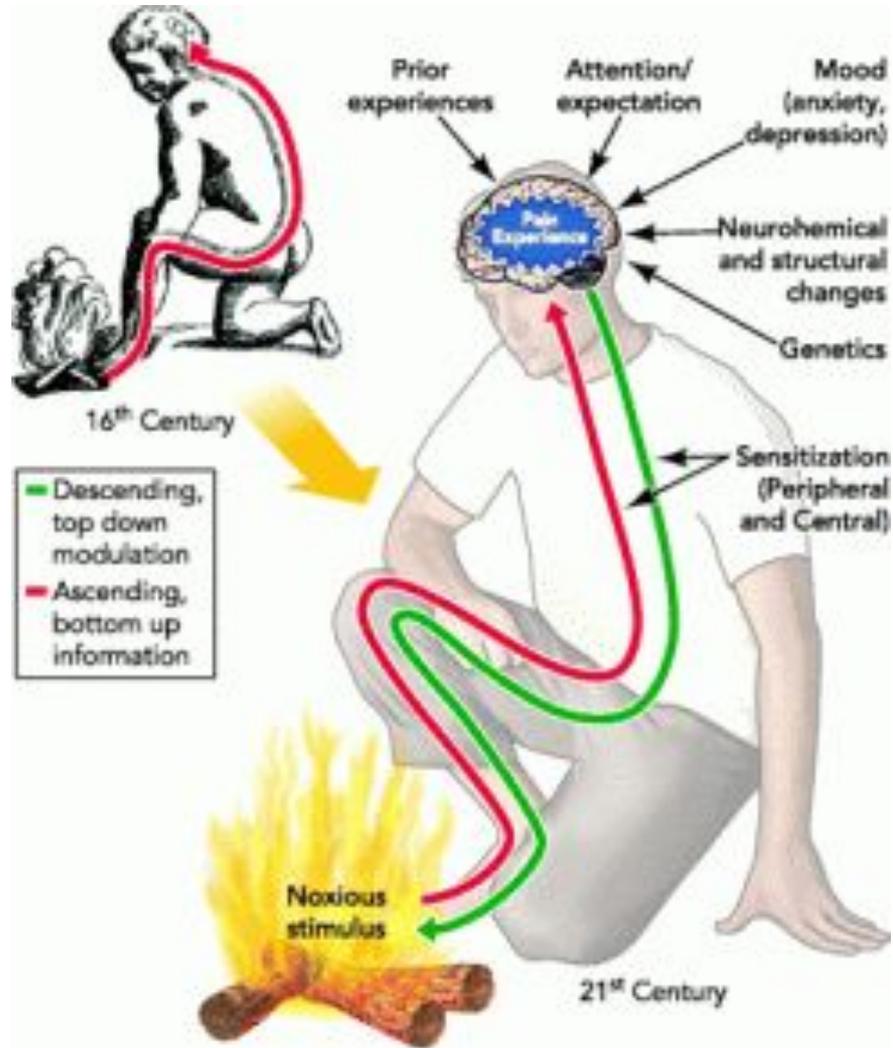


Image credit: <https://cor-kinetic.com>



(from <https://rehabpracticesolutions.com/biopsychosocial/>)

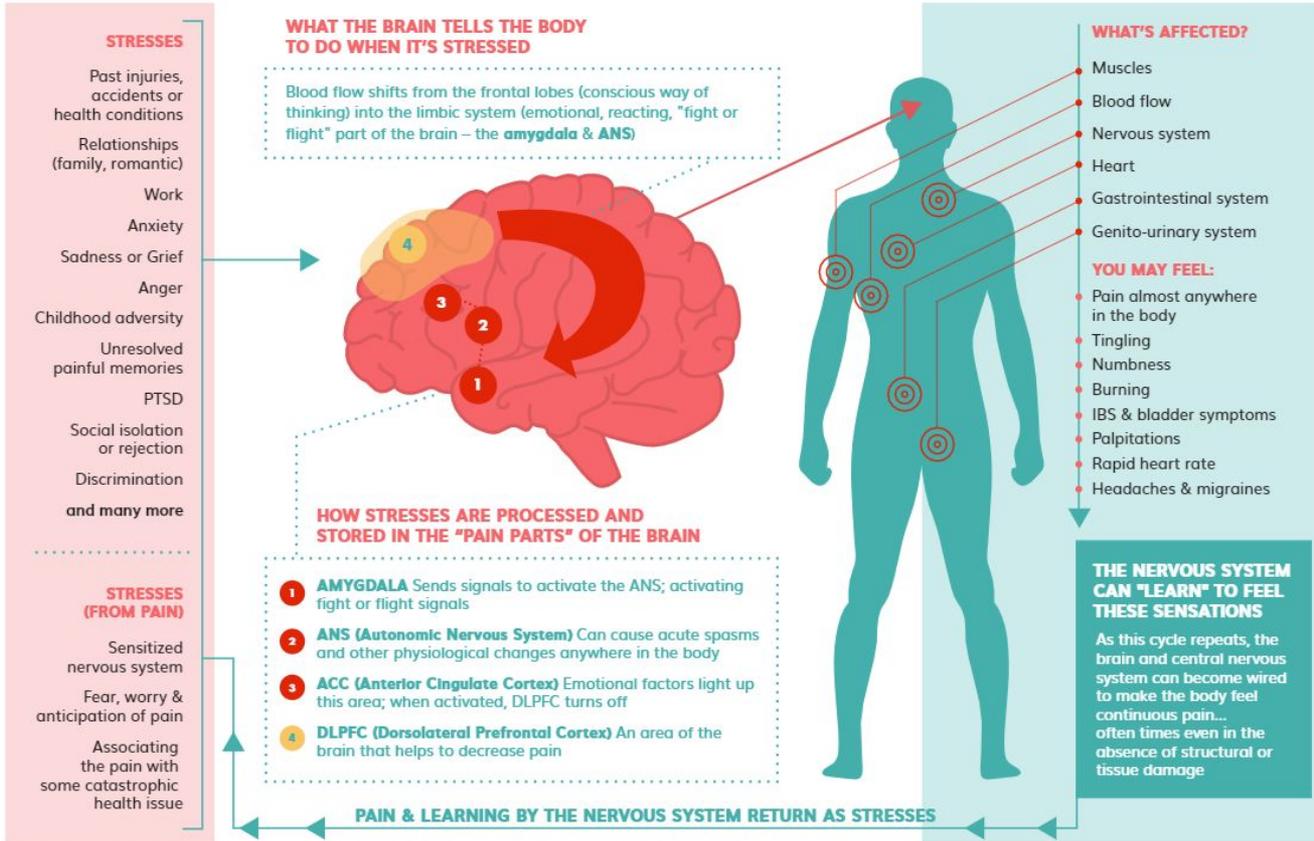
# Recap: Chronic Pain Vs. Acute Pain

Chronic pain differs from acute pain in three important ways:

- 1) First, the body can become more sensitive to threat, sending threat signals to the brain even when the threat is minor or non-existent.
- 2) Second, the brain can become more likely to interpret situations as threatening and sensations as painful, producing pain responses that are out of proportion to any real danger.
- 3) Finally, with repeated pain experiences, the boundaries between the many aspects of the pain response—sensation, suffering, and stress—get blurred. In most cases of chronic pain, the mind and body have learned all too well how to detect the slightest hint of a threat and ‘mount a full protective response in all its glory:

# CHRONIC PAIN: A CYCLE OF STRESS AND PAIN

NEUROSCIENCE EXPLAINS HOW STRESS CAN FUEL PERSISTENT PAIN



LEARN HOW TO BREAK THE PAIN CYCLE WITH THE **CURABLE APP**

# Pancha Maya Kosha system model & pain

## **Interdisciplinary chronic pain rehabilitation programs (CPRPs)**

To be effective for managing chronic pain, a strategy needs to involve the physical body, physiology, mental assessment, emotional response and overall outlook on life. In the field of chronic pain management, it's often called the interdisciplinary chronic pain rehabilitation program (CPRP).

This approach to healing chronic pain may include physical therapy to address the physical sources of pain, cognitive behavioral therapy to change patient's response to pain, and medication to help overcome emotional reactions to pain.

The common denominator of all the therapies in a CPRP is that they target the central nervous system, reducing its sensitivity, but also the cognitive, emotional and motoric aspects of pain, among others. They do so by changing how patients make sense of pain and by changing their degree of emotional alarm about it, and by reassuringly showing them how to move and engage in activities despite the pain.

In other words, CPRPs are a top-down intervention: by changing the neuromatrix of the central nervous system one can change the peripheral nervous system and the pain of the associated body parts.” (from the Institute for Chronic Pain, an educational and public policy think tank in the US)

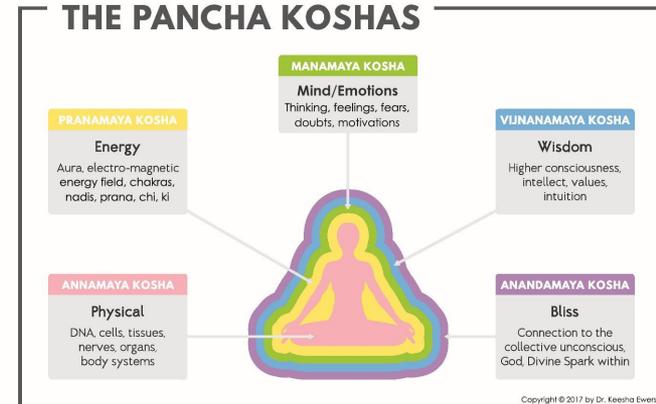
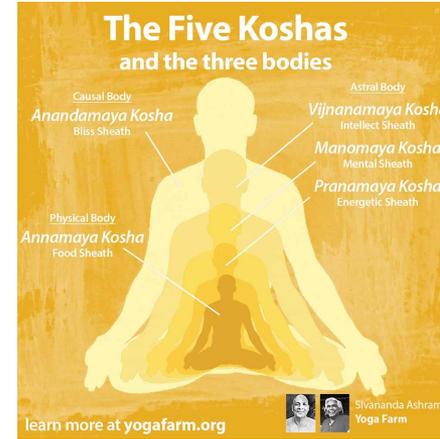
# The Five Koshas

The five sheaths (pancha-kosas) are described in the Taittirīya Upanishad, a Vedic era Sanskrit text, likely composed around 6th century BC.

The panchamaya kosha model (also called five koshas) proposes five main layers of our systems: physical structure, physiological & energetic processes, the content of our minds, our discernment, ideas and attitudes toward our surroundings and our sense of connection to other people, society, and the Universe.

The panchamaya kosha model is useful when it comes to managing chronic pain, since chronic pain affects us in each one of those dimensions & the yoga tradition has developed tools to bring balance and healing to each of those layers (yogasana (yoga forms), pranyama (breath practices), meditation, reflection & study, contemplation of ethical principles, mantra, etc).

**Reflection: How do you see pain impacting a person within one or more of these domains?**



# WORKING AROUND PAIN ON THE ANNAMAYA LEVEL



BRING AWARENESS  
INTO THE BODY



IDENTIFY PAIN-INDUCING  
MOVEMENTS



LEARN TO DIFFERENTIATE  
BETWEEN PAIN AND SENSATION



IDENTIFY BEHAVIORS  
THAT CONTRIBUTE TO PAIN



DISCOVER POSITIONS  
THAT ARE PAIN-FREE



INVESTIGATE MOVEMENTS  
THAT DO NOT CAUSE PAIN

# Pain as protection

- Can you think of an example where the amount of pain was not proportionate with tissue damage?
- What elements of our physical system (annamaya kosha) are involved in that protective response?

## **Pain involves:**

- Nerve cells
- Peripheral nerve bundles
- Nerve connections
- The spinal cord
- The autonomic systems
- The brain

# Video on pain:

[https://www.youtube.com/watch?v=C\\_3phB93rvI](https://www.youtube.com/watch?v=C_3phB93rvI)

## Reflections:

- What's the relevance for yoga here?
- Any 'issues'/concerns you might have about this video?
- Anything you can put into practice in your own life/teaching?

# Different types of pain

- Nociceptive (“issues in the tissues”):
  - Reported to the brain by the nervous system
  - E.g., burns, bee stings, toe stubs, inflammatory conditions etc)
- Neuropathic
  - Arises from damage to the nervous system itself, either central or peripheral
  - May be as a result of disease, injury or pinching
- Nociplastic
  - Arises from a change in the way sensory neurons function, rather than from direct damage to the nervous system
  - Sensory neurons may become more responsive (‘sensitization’)
  - Both neuropathic & nociplastic pain may take many different forms including burning or shooting pain, numbness or tingling.

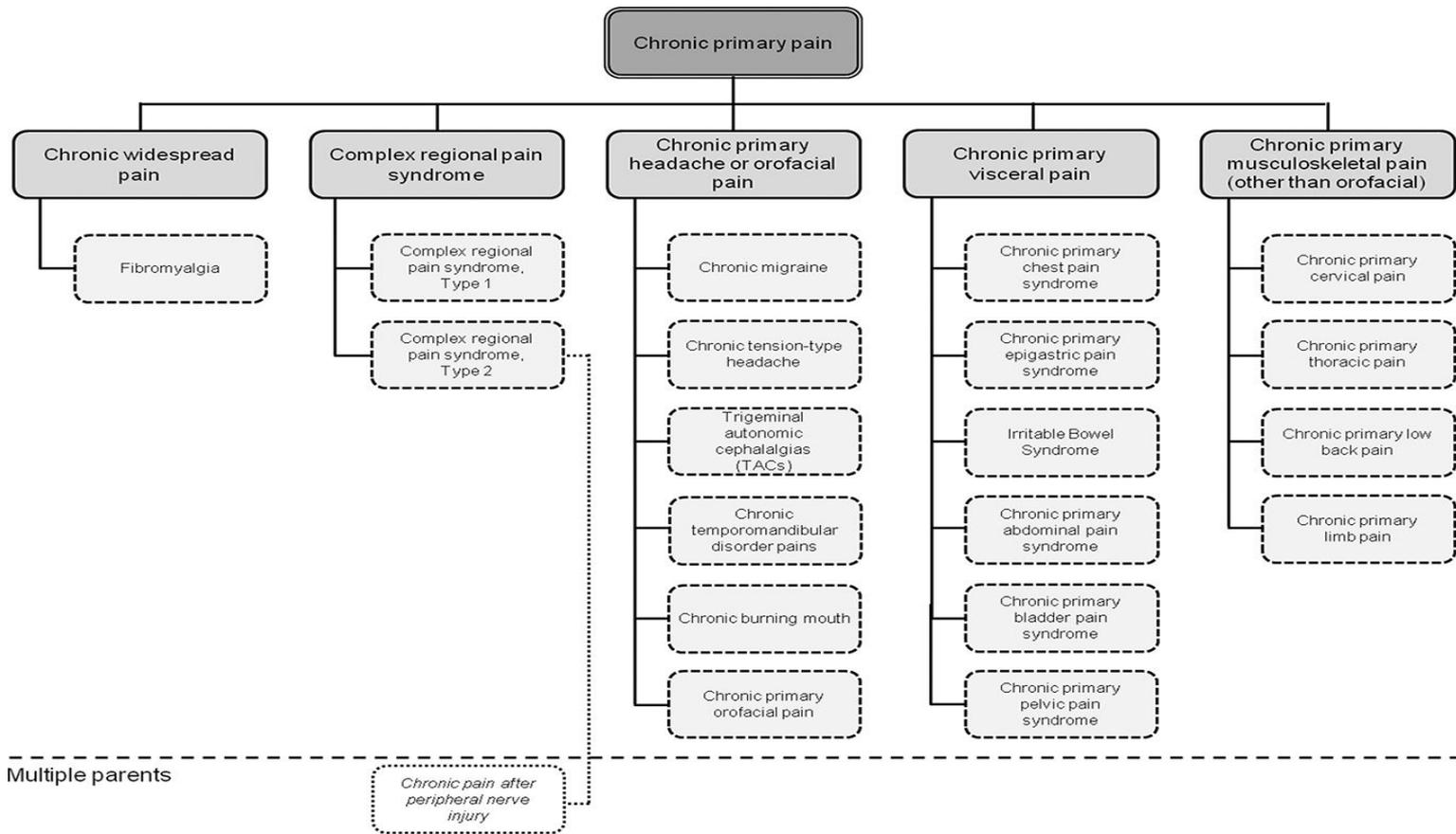
# Chronic pain - primary & secondary

The WHO (World Health Organization) recently recognized chronic pain as a disease in its own right, resulting in revisions to the 11th version of the International Classification of diseases (ICD-11). Chronic pain is divided into primary & secondary:

**Chronic primary pain** is pain in one or more anatomical regions that:

1. Persists or recurs for longer than 3 months; and,
2. Is associated with significant emotional distress (e.g., anxiety, anger, frustration, depressed mood) and/or significant functional disability (interference in activities of daily life and participation in social roles); and,
3. The symptoms are not better accounted for by another diagnosis (Nicholas et. al, 2019).

Chronic primary pain includes the following sub-diagnoses: chronic widespread pain, complex regional pain syndrome, chronic primary headache or orofacial pain, chronic primary visceral pain, and chronic primary musculoskeletal pain.



Multiple parents

**Legend**

Top (1<sup>st</sup>) level diagnosis

2<sup>nd</sup> level diagnosis

3<sup>rd</sup> level diagnosis

Additional parent of the diagnosis

Directly subordinate  
Additional parent

**Chronic secondary pain** is diagnosed when pain originally emerges as a symptom of another underlying health condition. It may persist even after the condition has been treated, in which case it is also considered a disease in its own right.

Common examples of chronic secondary pain include:

- chronic cancer pain
- chronic post-surgical or post traumatic pain
- chronic neuropathic pain
- chronic secondary headache
- chronic secondary visceral pain, and
- chronic secondary musculoskeletal pain

# Video on pain: 'Tame the Beast'

<https://www.youtube.com/watch?v=ikUzvSph7Z4>

Reflections:

- What's the relevance for yoga here?
- How does this connect to the 'panchamaya kosha' model?
- Anything here you can put into practice in your own life/teaching?

# Movement & Chronic Pain

- (manual p. 33)
- Human body depends on movement
  - helps produce synovial fluid & keep cartilage healthy
  - Assists with blood circulation & waste removal from muscles
- If we neglect to move body parts for a while (e.g., wrist in cast) or when our body is permanently changed (e.g., amputation), there can be maladaptations and sensory changes including pain can arise
- Brain's perception of body can be changed by paying attention to, and practising, neglected movements (Lennox Thompson, 2016)
- 'Smudging' can occur in the outer cortex of brain which results in overlapping of the brain areas devoted to certain areas of body - pain can 'spread'
- Re-sensing 'normal' sensation can assist with this - disinhibition of cells
- Providing 'novel input' avoiding excessive repetition of any single input helpful

# A caution around movement for pain

- Exercise activates endogenous analgesia in 'healthy' individuals
- Increase in pain threshold is due to release of endogenous opioids and activation of (supra)spinal nociceptive inhibitory mechanisms orchestrated by the brain.
- HOWEVER - several groups have shown dysfunctioning of endogenous analgesia in response to exercise in patients with chronic pain - muscle contractions activate generalized endogenous analgesia in healthy, pain-free humans and patients with either osteoarthritis or rheumatoid arthritis, but result in increased generalized pain sensitivity in people with fibromyalgia (Nijs et al., 2012)
- I.e., we can't assume ALL movement is 'good' - tailor to prevent flare-ups, listen to & centre the experience of the participants in your classes

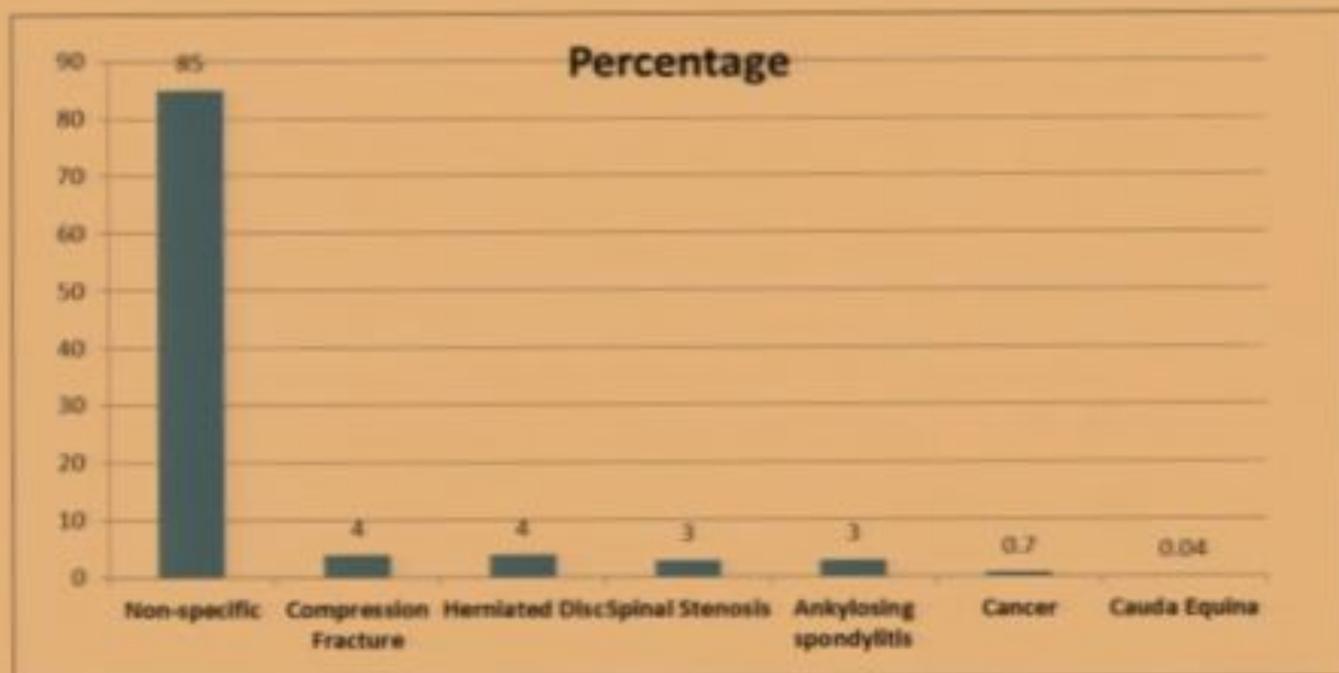
# Chronic Pain & Managing flare-ups (Stewart, 2016)

- Increase the number of rests you take
- Increase the number of relaxation sessions
- Remember tension makes things more sensitive
- Set simple goals (short walks, gentle stretches/breathing exercises etc)
- Resume gentle exercises (start easy, build slowly)
- With gentle exercise, start with the parts of your body that move well
- Stop activities that aggravate/cause tension for a while
- Wear comfortable clothes (easy to put on)
- Monitor medication
- Rest, but only as long as you need to - may be a day or 2
- Stay positive - when low you hurt more easily
- Build yourself back up again gradually as soon as possible

# Chronic Low Back Pain

- Lifetime prevalence of low back pain in US is 80% (Stanford Pain Management Center).
- Almost 28% of Americans have some form of back pain in any 3-month period.
- 80% is resolved within a month, 90% within 3 months & the other 10% goes on to become chronic.
- Predictors of chronic low back pain - what you bring to that injury is more significant than the severity of the injury (e.g., level of fear/anxiety about pain, your working conditions, stress levels etc.)
- Brain changes found in executive functioning areas with chronic low back pain
- Almost 90% of low back pain is 'mechanical, non-specific', where physicians can't specifically identify a structure that's at fault.

## Causes of Low Back Pain and Relative Proportions



# Chronic low back pain, cont'd

- On assessment of back pain, physicians must rule out 'red flags' including cancer, infection, Cauda-equina syndrome, compression fractures etc)
- Pain may be axial (wide, doesn't radiate below knee) or radicular (narrow, often radiates down to foot, stemming from nerve root)
- Most people over 35 with no back pain will have an 'abnormal' finding of the spine on an MRI
- Previous problems with the 'rest & recuperate' model (Hugh Owen Thomas 1874, related to tuberculosis - unverified with back pain) - rest often debilitates and forces more aggressive interventions when activity tolerance decreases

# Some suggestions for yoga with people in pain

- Simple forms with an emphasis on activating the parasympathetic nervous system
- Simple body awareness & breath awareness practices - sensing subtle 'non-pain' sensations (Pearson, 2019)
- An emphasis on the person being in control of their movement & the choices they make in their body (agency! Vs. loss of control).
- Finding movement that is within their own useful range, where they might be less likely to override their body's pain alarm system.
- Inviting people to experiment with moving in a way that allows them to maintain a calm/relaxed breath (Pearson, 2007)
- Offering more opportunities for resting forms before/after movements/forms that involve more muscle engagement - a return to 'baseline'

# Suggestions - cont'd

- Listen & really hear what participants report both during sessions & from their discoveries at home (Taylor, 2018)
- Follow the person's interests & values, not your agenda
- 'Be with' rather than 'do to' (Taylor, 2018)
- Emphasize a graded approach to activity - might start with thinking about a movement & gradually progress to gently trying a movement
- As far as possible support the person in feeling safe and in control
- Keep in mind that the yoga & nervous system engagement begins long before the yoga forms begin - intake process, arriving, etc, etc,

# Possible Practices

- Body scans
- Breathing practices (Pranyama)
- Gentle yoga forms & repetitive movements
- Intention-setting (Sankalpa - large & smaller) - finding/affirming meaning
- Relaxation practices
- Social interaction - check-ins (with option to opt-out)

# Breath & pain

*"We may not be able to make the pain go away, but we can learn to work with it and to start to reduce our stress signals. Fighting pain is so much worse. We tense up more and go into a stress feedback loop, which increases pain signals. Working with the breath is a way to bring us out of that stress response so we can build new patterns of function and gain a sense of agency back."*

- Shailla Vaidya, MD, CCFP, C-IAYT, emergency medicine physician and certified yoga therapist who practices mind-body medicine for stress resilience in Toronto.

*"You have the pain, but you also have all the muscular tension that results from the pain and all the anxiety and fear and frustration. Breath practices can help alleviate those other pieces to bring more ease to the pain or diminish it."*

- Marlysa Sullivan, PT, C-IAYT, physiotherapist, co-editor of *Yoga and Science in Pain Care*, & assistant professor in integrative health sciences at Maryland University of Integrative Health in Laurel, Maryland.

## Some Breath Practices

**Breath awareness:** start by paying attention to your breath. Notice how your body moves when you inhale and how it moves when you exhale. When your mind starts to wander, acknowledge what you're thinking but bring your focus back to the breath. Start with one minute and build up to more if you have time.

**Variations:** You could also try lying down and placing a hand (or just awareness) at your abdomen. As you breathe, notice if your abdomen rises on the inhale and falls on the exhale. After a few breaths, option to place your hands on the side of your ribs and notice if you feel the breath there.

**Lengthening exhales:** Begin with breath awareness and then focus on gently elongating your exhale without forcing it.

**Back breathing:** If your chest feels tight or constricted, try breathing into your back. "Many of us tense up in the front when we're stressed as an evolutionary response to protect our big organs. Send your breath to wherever there is room," (Shailla Vaidya). .

**Bee Breath variation,** (bhramari pranayama), creates a sound that may help you relax or ease anxiety (according to a 2018 study published in the Journal of Traditional and Complementary Medicine). It's another tool to help elongate your exhale. Take a breath or two to settle in and notice the state of your mind. When you're ready, inhale and then, for the entire length of your exhalation, make a low- to medium-pitched humming sound in the throat. Notice how the sound waves gently vibrate areas of your head (maybe tongue, teeth, sinuses).

## **Self-Management Techniques** for people in pain (from Ottawa Hospital Pain Clinic)

- Breathing
- Body Awareness
- Exercise
- Repetitive Movement
- Meaningful Activity
- Positive Distraction
- Creative Activity
- Mindfulness
- Pacing and Planning
- Setting Goals

How are some of these embedded within our yoga classes?

# Some resources for people in pain:

- Pain Support Line (formerly Connect for health: staffed by trained volunteers at 1-844-880-PAIN. <https://painbc.ca/about/programs/pain-support-line>
- Pain BC Support groups: <https://painbc.ca/about/programs/pain-support-wellness-groups>
- For youth: MyCarePath.ca is a free online tool designed for kids and teens aged 12-17 living with chronic pain. <https://www.mycarepath.ca/>
- Pain Waves podcast: <https://www.spreaker.com/show/pain-waves>

## Common medical conditions in YO Classes - Asana Contraindications & Recommendations

### Arthritis

There are two major types of arthritis: Osteoarthritis (most common) leading to breakdown of cartilage and Rheumatoid Arthritis, a chronic disorder leading to inflammation of the peripheral joints.

#### Recommendations:

- include plenty of fluid movements
- it may be necessary to avoid prolonged holds of postures that can exacerbate pain
- in a 'flare up' adapt to a more gentle sequence, emphasizing working within a comfortable range
- although there are no specific yoga forms that are contraindicated for people with arthritis, vigorous practice may compromise already damaged joints
- remember that fingers and toes may be affected making getting up or getting down, or spreading difficult
- modify postures to increase joint space (e.g., supporting with height under the sitting bones in child's form/Balasana)

## **Back Issues**

- Back problems have many causes & contributing factors, including tight or weak muscles, poor posture, disc degeneration, injuries, obesity, and emotional stress.
- If you lay on your back and stretch one leg straight up and you can't get the leg to go vertical, this indicates that your pelvis will be posteriorly tilted in a sitting forward bend, and it's possible that you would strain your back muscles or injure a disc if you reached for your toes. Those with back problems should avoid sitting forward bends until they can stretch their leg straight up to 90 degrees or more, especially if there is a history of lower back pain or injury.

## **Disc problems** (e.g., herniated disc)

- Avoid spinal flexion; keep back straight in forward bends, bending knees as needed to make this possible.
- If a form causes any sharp pain, tingling, or numbness – stop immediately!

## **Degenerative disc disease**

- Avoid deep spinal extension and extension with rotation.
- Focus on maintaining the natural curves of the spine within each posture and on practicing slowly and carefully.

## **Neck problems**

- Avoid shoulderstand, headstand, and plough.

## **Recommendations:**

- invite clients to ease back from any movement that causes sharp pain, or any variation of a form that feels unsafe
- emphasize reclining hamstring stretches (e.g., supta padangusthasana/reclining big toe form or supta baddha konasana/reclining bound angle form) over seated forward folds

# Chronic obstructive pulmonary disease (COPD)

COPD is a long-term lung disease often caused by smoking. COPD includes chronic bronchitis and emphysema. Many people with COPD have both bronchitis and emphysema.

## Recommendations:

- yoga forms that restrict breathing by putting pressure on the diaphragm, such as child's form or plough are contraindicated
- when practicing yoga, or any form of exercise, clients should have inhalers or oxygen supply close by, if applicable
- if, at any time during the class, clients experience shortness of breath they should stop exercising immediately, use medication and rest fully until they feel well enough to begin again
- practicing belly breath and slowing the breath down are both helpful practices for clients with COPD **when practiced within a comfortable range**

# Heart problems and high blood pressure

IMPORTANT – The heart works harder when arms are overhead! Lower arms if heart and respiratory rate increases in postures such as warriors I and II, chair form, etc.

## Recommendations:

- keep to a lower level of exertion
- rest when needed
- breath retention is contraindicated
- head below heart increases blood pressure
- avoid shoulderstand and possibly bridge
- use caution and / or consider avoiding, or modify the following by using a chair or wall:
  - standing forward bend
  - downward dog

# Yoga for stroke survivors

There are several different types of stroke. Since you may not have this information about your students, assume that they could have had the type that is a result of plaque that develops in the carotid artery, and modify twists by keeping the head in a neutral position—that is, don't take the twist all the way into the neck. Focus on lengthening the back of the neck and keeping the front of the throat soft.

**Recommendations:** IMPORTANT – Make certain that the client has clearance from their physician to participate in yoga.

- work at a slow pace
- two common problems that arise after a stroke are difficulty with balance, and one-sided weakness affecting an arm, leg, or both
- consider chair yoga for clients – working with seated postures or if clients are able to comfortably stand, using the chair or wall for additional support with standing postures
- stroke patients will likely have serious underlying medical problems, such as high blood pressure, heart disease, or glaucoma, so any variation of an inversion may be contraindicated
- avoid all forms where the head drops below the waist. Modify standing forward bends by having students come no further than parallel to the floor, and practice ardha adho mukha svanasana (half downward-facing dog) at the wall or using a chair

# Osteoporosis

A progressive decrease in bone mass leading to weakness characterized by bone fractures, especially wrist, vertebrae, hip.

**Recommendations:** Weight bearing exercises, including yoga, are good with the following precautions:

- do not hold postures too long
- forward bending as well as any deeper lateral bending are contraindicated in osteoporosis.
- twists have historically been contraindicated, however more recent evidence suggests that gentle supported/modified twisting may be helpful for clients with osteoporosis and not lead to risk of fracture
- with students with osteoporosis it's helpful to have the client check in with their physician, as there may be varying levels of safety with movements such as hip abduction/adduction.
- careful focus on safe alignment for joints is essential when working with clients with osteoporosis.

## **Glaucoma and detached retina**

### **Recommendations:**

- No inversions other than viparita karani (legs up the wall, which can help to lower pressure in the eyes) head down postures.

# Contact info

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