

UNDERSTANDING PERSISTENT PELVIC AND PERINEAL PAIN

This information sheet consists of summary notes from the course *Healing the Nervous System: Central Pain Mechanisms in Persistent Pain*, attended by Sherin Jarvis (Pelvic Floor Physiotherapist, WHRIA) in Toronto, Canada, May 2014. The course was presented by Carolyn Vandyken and Sandy Hilton, physiotherapists. As co-authors of the book *Why Pelvic Pain Hurts*, with Adrian Louuw, they have applied the evidenced-based “*Explain Pain*” approach by David Butler and Lorimer Moseley to the pelvis. We have also included information from other helpful resources, and these are listed below for your reference.

Share this information with your family and friends, as it is important that your support network also understands the latest neuroscience on pain.

WHAT IS PAIN?

Pain is normal. It is a warning for you to do something about your situation! Eg. You've cut your hand slicing pumpkin. Ouch! Or you bend awkwardly and your back gives you a 'twinge' to say “don't keep doing that or you will eventually hurt yourself”.

The International Association for the Study of Pain (IASP) defines pain as: “An unpleasant **sensory** or **emotional** experience associated with actual or **potential** tissue damage or described in terms of such damage.”

This means pain has a **function** to let us know we are in or **might** be in danger.

PERSISTENT PAIN

Your brain has concluded that you are **threatened or in danger** and need **protecting**. Pain experiences are a response to something your **nervous system** ‘thinks’ could be a **threat**. The brain is responsible for our pain **experience** because it receives the information, evaluates it, interprets it and responds to it.

The brain decides whether something hurts or not, **100% of the time**.

PAIN RELIES ON CONTEXT

A pianist who cuts a finger cutting pumpkin may feel more pain than a singer – emotional and physical **cues** can “ignite” pain. The amount of pain **does not equate** to the amount of tissue damage. For example the amount of disc and nerve damage on images rarely relates to the amount pain. Or vice versa, if you bend your finger back, it hurts but you have not damaged tissues.

TISSUE INJURY USUALLY HEALS WITHIN THREE MONTHS

When our tissues are damaged, for example a muscle tear, our body has a process where inflammation is essential to heal. Our body then lays down new tissue and as we move about the tissue strengthens along the normal lines of mechanical stress. This process usually takes approximately three months.

When **pain persists**, the danger or alarm system becomes more sensitive. In other words the danger messenger neurones become more excitable and 'fire off' more readily. This is not your fault, but your body's way of coping. This is referred to as **Central sensitization**, or a **Sensitive Nervous system**, or **Central Pain Mechanisms** and is an adaptive response of our nervous system when we are in pain, the body and mind working as one. Again it's warning you to do something about your situation.

DO I TARGET MY TISSUES OR MY NERVOUS SYSTEM, OR BOTH?

The answer is usually both, but it is a very individual answer that will only apply to **you**. The concept of neuroplasticity and the brain network or neuromatrix provide us with the biological basis to address psychological factors.

WHAT IS NEUROPLASTICITY?

Plasticity means the 'ability to change' and you have the power to change the way your brain responds to pain. Modern management models incorporate current scientific knowledge of **pain neurobiology** (the neuromatrix) and do not focus solely on tissue treatment. Your neuromatrix can be modified. Recognise the importance of your alarm system, sensitivity, fears, attitudes, beliefs.

The image of a tree is useful to describe neuroplasticity.

We now think of our awareness of pain arising from a **brain network**, rather like a tree, with many interconnecting branches and twigs, this is a 'living' tree, and capable of changing (**neuroplasticity**). Pain is an **individual** experience because we all have our own little 'trees' that have grown with us and are the **sum of all our experiences**, learning, expectations and sensory experiences.

Our 'tree' represents our brain, and it's like our secret 'decision maker', deciding how **important** the pain signals coming in from our body or the 'root system'.ie. is there a real danger? This occurs automatically, and we are unaware of this occurring. The context of pain is calculated, the importance to you, and then according to your brain's 'decision' it will provide the **output signal** and we become **aware** of the sensation of pain; or **not** (and we don't feel pain). Lorimer Moseley explains this concept beautifully with his talk about walking in the Australian bush and the scratch from a twig gave him incredible pain as his brain 'decided' it could be another snake bite. See the Ted Talks below to watch this amusing talk.

HOW DO I KNOW HOW SENSITIVE MY NERVOUS SYSTEM IS?

Self-assessment tools:

Hurt Vs Harm

How long ago was your injury/onset of pain? _____ months/years

Has your injury or have the tissues **healed?** (circle one) YES NO MAYBE

What are the **threats (stressors)** to your body and potential for **recovery?**

During everyday tasks, continually ask yourself over and over "Is there credible evidence that my tissues are in danger?" i.e. **Hurt Vs Harm.**

How *dangerous* is this task? How *threatening* is it to me?

Identify threats: tick any that apply to you.

Tissue issues	Nervous System Sensitisation
Weak muscles	Pins and needles
Tight muscles (stiffness)	Burning pain, Night pain
Trigger points (sore muscles)	Boggy tissues (neurogenic swelling)
Connective tissue tightness	Increased pain by small movements
	Increased pain by sustained postures
	Increased pain for no particular reason
	Increased pain with stress/anxiety
	Trivial incident causes flare up for days
	Pain gradually spreads, including to the opposite side of body
	Pain may move around the body

The Pain Truth Test

Take the test and see where you sit. http://www.aptei.com/articles/pdf/The_Pain_Truth_TEST.pdf

Identify your stressors

Tick any stressors that apply to you in the table below

Internal stress	External stress
Fear of pain	Lack of job, fun, friendship
Fear of re-injury	Worried about test results
Fear of serious condition	Insurance stress/anger
Doing too much without pacing	Family stress/anger
Fear of not recovering	Withdrawal from hobbies/sports
Multiple medications, ineffective	Withdrawal from family
Sadness, depression, anxiety, catastrophizing	Legal battle/stress
Lack of specific diagnosis	Work stress/anger
Hopelessness about recovery	Financial stress, worries

See below for potential solutions.

WHAT ARE MY OPTIONS FOR MANAGING MY PAIN?

It takes the right set of circumstances or the **'perfect storm'** to create persistent pain, but it can happen to any one of us. On the other side of the coin we can find the other set of circumstances, the **'perfect calm'**, to find the road to recovery.

Everyone comes to pain with their own set of circumstances, or their own "tree". Everything you've learned you can unlearn, the **plasticity of your nervous system** is incredible, not fully understood and we are still discovering more every day. Remember **pain is an output of our brain 100% of the time**. Pain can be produced without tissue damage, or the potential threat of damage (e.g. bent back finger) so ask yourself, **how dangerous is this activity really?**

At WHRIA we are here to help you, and we can provide many options for your tissues, psychological support, education and more. **You** can help **enormously** by utilising the power of your own brain. Here are some **non-drug ways** to address your pain from a nervous system perspective. **DO NOT** stop any of your medications as these may also be helping to address the sensitive nervous system. Discuss these options with your WHRIA practitioner.

Active Coping

- Seek better understanding of your problem from a **neurobiology** of pain perspective.
- Explore different ways to move and do things.
- Ignite **new** pathways in your brain.
- Nudge the edge of pain, not break through.
- Stay positive.
- Make plans, set small attainable goals, be patient.

Identify your stressors and potential solutions

Type of stressor	Possible solutions
Negative thinking, internal stress	Assess your thoughts, replace negative thoughts, gratitude training, mindfulness meditation, yin yoga, affirmations, cognitive behavioural training (CBT)
Fears (Internal stress)	Pain education, reconceptualise pain, sensory and motor retraining, guided imagery, graded exposure, graded motor imagery, CBT
Unhelpful Beliefs	Pain education; CBT to increase coping skills; guided imagery
Adverse Emotions: Anger, depression, unhappiness, work dissatisfaction	Identify your emotional challenges and get help (CBT)

Deep breathing

This helps you stay calm in the face of pain. Learn to breathe calmly. Breathe in calm, breathe out tension. Reconnect with your breath to bring calmness and awareness to your body.

Consumer comparison (CC)

With a new task, take one to two minutes **before** and **after** each activity to **observe** yourself for tension and relaxation, this retrains your nervous system to become **less protective**.

Dynamic Range of Motion (DROM)

These are **Pain-free exercises** for each morning to warm up the body. They provide movements that wake up the **sensorimotor cortex**, the part of the brain that **connects** how you **feel** to how you **move**. Doing pain-free movements help your brain to dampen down the movement = pain association. Try: "I surrender breathing"; swinging your leg back to front, side to side; bending and straightening knees, one leg ankle circles etc. It introduces your body to gentle dynamic movement that is pain-free and wakes up the sensori-motor cortex.

Constructive rest position (CRP)

Start and finish with a **CC**. Lie on your back on the floor, small pillow under your back if needed, hips and knees bent at 90°, and your lower legs resting up on the couch. Deep breathe into your pelvic floor to let muscle tension go. The CRP is designed to help your brain connect to your body with slow relaxed breathing. Allow yourself to 'sink' into the floor, letting go of all tension. This is also called the 'astronaut position'.

Education

Watch 'Understanding Pain- What to do about it in less than five minutes' ([You Tube, also in our Video Gallery](#)), then take the Pain Truth Test again.

Adverse childhood experiences

If past trauma is acknowledged and asked about by health care workers and a patient's story listened to, there can be profound implications on their health and subsequent need for medical treatment. Our life stories have deep connections with our physical health. Chronic unrelieved stress has enormous effect on the body and on the brain and its ability to help you. Consider seeking help for unresolved past trauma.

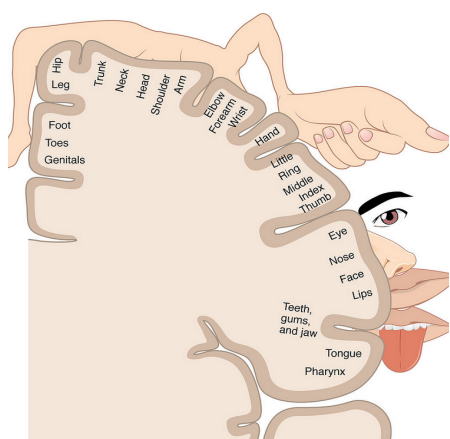
Mindfulness meditation

This is **NOT** a religion, but a form of mental training, like going to the gym for your brain. It boosts mental and physical resilience and creates a form of mental clarity that helps you enjoy your day. There are thousands of peer-reviewed scientific papers that prove mindfulness **reduces pain**, enhances mental and physical well being and helps people deal with stress.

Mindful movement

If you know where you are in space you can move well, reconnect your mind to your body when you move to reclaim your territory.

Utilising our Body maps



A cortical homunculus is a pictorial representation of the anatomical divisions of the **primary motor cortex** (portion of the human brain responsible for the **processing** and **integration** of motor/movement information);

and the **primary somatosensory cortex** (portion of the human brain responsible for the processing and integration of tactile/touch information). *Picture source: Wikipedia*

These are the areas we are targeting with self-management.

This area of our brain processes everything to do with sensory, visual, taste, smell, peri-personal space, and voluntary movements. For example kittens are born blind, and they develop a movement map in their brain before can see. They then use this as their reference point for movement and sensation, like a body map.

Body map training can be used to address your neuromatrix by modifying any fear of movement, teaching your body neutral alignment, and changing your awareness of your body parts. Your WHRIA health practitioners can help you with this. For example, there are simple exercises starting with your feet or low back that can change your sensory and motor awareness to help modify your pain perception.

Threats

Identify threats to identify why your brain is turning on the pain in response to potential damage.

Hurt versus Harm

Your hurts won't necessarily harm you – understand why (remember that tissues heal after approximately 3 months.) Use smart activities to gradually increase your activity level. New and smart activities ignite different areas of your brain and stimulate new pathways because your brain has to find a way to do new things. Old habits = old pathways = old areas of the brain being used.

A sensitised nervous system

Due to stress, anxiety, fear and catastrophizing, the heightened nervous system is in constant 'flight or fight' mode and can continue to drive your pain in the absence of any tissue problems.

Specific exercises

Exercises designed to stretch and strengthen are required if your tissues are tight or weak. Fun and relaxation-inducing exercises, thought reshaping exercises, dietary changes and counselling may make your nervous system healthy again.

The combination of tissue 'issues' and sensitised nervous system

These exist in all persistent pain conditions. As the body becomes healthier there is less tissue tightness and weakness and the brain is less concerned that the 'problem' will return again (i.e. less sensitive nervous system).

Patience and persistence

Be an active participant. It's not in your head and you're not at fault.

Human "Beings"

The 'being mode' = observing, taking time to be present with the task.

The 'doing mode' = not observing, just doing.

Doing and being are both important but if you over-focus on doing you become less balanced. In our modern lives we tend to be more in the 'doing mode' all the time. The 'being mode can be cultivated through practicing mindfulness meditation.

Sleep

Is the most effective method the body has for restoring the nervous system's balance, and reducing sensitivity. There are many ways to ensure you are having restful and restorative sleep.

Pacing program

Managing your energy in a balanced way helps gradually build your daily activities, while staying below your radar of pain. Pacing means graded exposure to activities. Set yourself functional goals such as cooking dinner, walking to the shops etc. It may be slow, but it is the proven way to get up that mountain.

Recording your activity (include daily activities, commitments and exercise) and the time spent on each in a diary will help you gradually increase your activity without pain flare-ups.

- '0' = no change in pain,
- '+' = increase in pain,
- '-' = decrease in pain.

Pacing helps you avoid the classic **BOOM - BUST** cycle of over and under-activity.

This can occur when we start to feel better you do more to 'catch up' on all the work that has built up. This leads to a sudden increase in activity (**BOOM**), and our brain **perceives** it as overactivity/danger, leading to the output signal of **pain, or a flare-up**. Because of pain we move towards underactivity (**BUST**) until we start to feel better. We then try to catch up again until **BOOM** and the whole cycle starts again.

Be aware of not trying to take on too much all at once or pushing yourself to over-achieving. Allow time and have patience to achieve a task.

Try the **"2/10 pain is okay"** as a guide to finding your baseline starting point for activities and exercise.

We can use the numerical pain scale, where 0/10 is no pain and 10/10 is the worst pain imaginable. If you feel 2/10 levels of pain, this is your guide that you are ok to continue your level of exercise or activity.

"Motion is Lotion", nudge your pain, if you flare, don't stop exercising, back up, and do your pain calming strategies that work for you. Establish your list of pain control strategies that work for you to have handy.

Breaking up your day with different activities that use different parts of your body is also a good way to stay under your radar of pain.

Guided imagery

Guided imagery allows you to explore beliefs and movement patterns that may be hindering your goal of returning to normal movement and function. Visualisation, imagined movement or mentally rehearsing a movement activates the same sensory and motor patterns in the brain as the actual movement. This has been used for many years as a therapy for stroke rehabilitation and is now a proven method for reducing pain.

Graded exposure to guided imagery

- *Thinking*: do you have negative or positive thoughts about the part? Eg "my pudendal nerve is flexible and **slides and glides** between the ligaments and muscles of my pelvis with ease". This teaches the part of the brain that is **hyper-vigilant** to let go of some of the protection and 'send the soldiers home'. Use soothing words to yourself lying in the constructive rest position.
- *Looking*: observe the area that hurts.
- *Watching*: movement or activities in **other** people or the **other side** of or **other parts** of your body.
- *Mapping*: hold your finger close to the area that is sore but not touching. Outline the area of discomfort with your finger in the air close to the area.
- *Indirect contact*: allow pressure against or close to the area. e.g. sit on bouncy ball and roll pelvis back and forth, side to side; or bouncing up and down on therapy ball or soft cushion.
- *Touching*: can you touch the area that is painful?
- *Moving and Doing*: picture yourself doing the activity.

Exercise

Exercise triggers waves of grow and repair throughout the body, and it **engages your body and your physical brain**. Research shows exercise is better if it is new, interesting, fun and you do it with fun people. The challenge for the body is to regulate inflammation, to keep decay and growth balanced. In persistent pain this balance is lost. Exercise and the right amount of it will restore this balance. Exercise helps depression, anxiety and insomnia. Exercise at 65% of your recommended max heart rate. Start slowly, even 30sec to 1 minute, then build slowly, use a timer to add 30 sec- 1 minute every day, until you are at 30 minutes a day. Do new things you never thought you would or could do. Challenge your brain to learn something new e.g. "Lumosity" to wake up your brain before you exercise; dancing or Tai Chi etc

Qi Gong

Qi Gong increases body awareness, is fun, and helps with improving our body mapping (remaps our sensori-motor cortex), loosens thoracic spine, facilitates deep breathing, helps you move with less tension. Routines include: upper, lower, organ and breathing Qi gong.

Biology of connection and caring

Care about exercise, yourself, others, and nutrition (important in a sensitive nervous system). Think about food intolerances and allergies. Connect and commit to family, friends, companions, and work colleagues.

Try to train your thoughts into more positive patterns (glass half full). Start a "Positives List". Seek out support, don't cut yourself off. Pain isolates us which makes us sicker. Social isolation is strongly associated with persistent pain. Aim to do something for others, compliment others in person, social media etc, even when you are in pain (pass it forwards), and studies have shown just how much this can help.

Positivity

Elders of the Cherokee nation talk about two wolves inside of each of us - white wolf (love, peace, hope, courage, humility, compassion and faith) and the grey wolf (anger, fear, bitterness, envy, jealousy, greed arrogance). Which wolf is easiest for you to turn to? Can you change this?

Mindfulness survival kit

- Connect with your breath often during the day
- Thoughts are **not** facts
- Take a break **before** you need it
- Pace yourself, use the 2/10 guide for flares
- Notice the pleasant things
- Move slowly
- Do mindful movement, even if only for a minute
- Relax tension

- Don't become trapped in past or future, all thoughts are transient, let them pass
- Act, not react
- Random act of kindness- think of others, even when you are in pain
- Find purpose

More Information and Resources

See our News and Resources > Useful Information and Links and our Video Gallery for full details and live links to the following:

TED talks

- [Daniel Wolpert](#): The real reason for brains (= movement)
- [Kelly McGonigal](#): How to make stress your friend
- [Shawn Achor](#): The happiness advantage. The happy secret to better work. Work Happier.
- [Amy Cuddy](#): Your body language shapes who you are.
- [Brene Brown](#): The power of vulnerability. Listening to shame.
- [Russell Foster](#): Why do we sleep?
- [Dan Buettner](#): How to live to 100+. TEDX Adelaide on You Tube
- [Lorimer Moseley](#): Why Things Hurt

Books

- Explain Pain - David Butler and Prof Lorimer Moseley (2nd Ed)
- Mindfulness for Health: A practical guide to relieving pain, reducing stress and restoring wellbeing. - Vidyamala Burch and Danny Penman.
- Why Pelvic Pain Hurts: Neuroscience Education for Patients with Pelvic Pain. By Adrian Louuw, Sandy Hilton and Caroline VanDyken.
- Teach Us to Sit Still: A Skeptic's Search for Health and Healing. By Tim Parks, Literary professor, addresses hyper vigilance.

Videos

'Brainman' Understanding Pain Series see WHRIA Video Gallery

- Understanding Pain: What to do about it in Less Than Five Minutes?
- Brainman Stops His Opioids
- Brainman Chooses

Websites

- Body in Mind Pain Blog. Lorimer Moseley and his colleagues' blog about new research in pain management.
- NOI group. David Butler, Lorimer Moseley and the Neuro Orthopaedic Institute. Explain Pain books and posters, Graded Motor Imagery information, apps and more.
- Yoga for chronic pelvic pain www.yourpaceyoga.com
- Guided imagery www.healthjourneys.com, www.bettermovement.org
- Understand Pain: Live Well Again, Neil Pearson. <http://www.lifeisnow.ca/>

Media

- Afraid? You really have nothing to fear. Story in Good Weekend magazine by Journalist and ABC 702 broadcaster Richard Glover, July 2014 <http://www.smh.com.au/comment/-zsryo.html>
- **BBC2 Horizon:** Is Seeing Believing (Far vs Bar) <http://www.bbc.co.uk/programmes/b006mgxf/episodes/guide>