

Trigeminal Neuralgia and Myotherapy

How can we help people living with this disorder? Charlotte Bosson researches and reports.

| Charlotte Bosson



Introduction

Over the years I have come in contact with a few clients who are living with a condition called Trigeminal Neuralgia (TN). One such client who has regular treatment to help him manage his condition, recently asked me to talk to his local support group about the benefits of Remedial Massage and Myotherapy in assisting people living with this condition. I was prompted to research how what we do may benefit someone living with TN.

So what is it? Trigeminal Neuralgia (TN or *douloureux*) is a disorder of the fifth cranial nerve that causes episodes of intense, stabbing, electric-shock-like pain in the areas of the face where the branches of the nerve are distributed: lips, eyes, nose, scalp, forehead, upper and lower jaw.¹

Trigeminal Neuralgia affects about 100-200 people per 100,000 so you may not have come across it yet.¹ No matter what health condition a client is living with, it is almost impossible for anyone to truly understand how that person feels in their situation except others going through the same thing at the same time so support groups can be a great adjunct to treatment. As therapists, we should do our due diligence to truly understand the health condition our client faces by reading current research and learning as much as possible about the condition.

Pain

I've never experienced Trigeminal Neuralgia but I have suffered from intense dental pain leading to root canal surgeries and tooth extractions. I was in substantial dental pain at times in my life and I remember thinking that pain in your head seems to be the worst type of pain due to the short distance between the seeming source of the pain and the brain. Pain in the face can be truly debilitating and this seems to be a common report from people I have met living with TN – it can stop them in their tracks and affect their quality of life.

Pain and its causes and why it persists are very topical in our industry right now. A prominent researcher and physiotherapist based in Adelaide, Professor Lorimer Moseley, leads the Body in Mind Research Group that investigates the role of the brain and mind in chronic pain.² Lorimer's team looks at the role the brain plays in processing pain. I find his

layman term explanations about how pain is initiated and persists in the body fascinating and his book *Painful Yarns* is a great way to help not only yourself but also your clients to understand the complexities of pain.

Pain seems such a negative word but it is in fact our body's way of telling us there is potential danger to our tissues. In a way, it is our body's alarm system and the warning of pain helps us to prevent doing further damage. Therefore, pain is said to be a protective mechanism.³

Some pain that develops can then become chronic even long after an injury has healed. In chronic pain, our brain can over-react to the pain stimulus it is receiving from our body and involve more areas of the brain to process pain sensations.⁴

As Butler and Mosely write: 'All pain experiences are a normal response to what your brain thinks is a threat'. Remember, not all pain equals tissue damage.⁵

Pain is an alarm system that is controlled by the brain which calculates danger and draws on our past experiences. Our fear of pain due to any known pain triggers from our past (learned responses) can have a strong effect on the pain that we feel. We may feel pain just because we anticipate that we will.³

Interestingly research has shown that 'No Brain = No pain' so our brain is really what produces pain not necessarily a joint, muscle, tendon or any other body part we think is causing the problem.⁶

The people we treat who are living with chronic pain can help themselves greatly by educating themselves about pain research and understanding how pain is processed in their bodies. This understanding is key to recovery.

How can Myotherapy help reduce pain?

We have a map of our 'virtual' body in our brains which helps us with proprioception – parts we use the most are often more enlarged and more neurons are dedicated to those body parts. Think of how many people you have treated during your career. With all that use of your hands, how big must your hand body map be in your virtual body?⁷ Consider too, how the brain of a person in chronic pain may adapt to a prolonged painful episode – it will basically get better and better at being in pain with more

areas of the brain and virtual body being involved in processing it.

Butler and Mosely also write: 'When you massage skin, you are moving tissues and also sending useful impulses to the brain. So, movement and touch are useful ways to refresh your "virtual" and actual body'.⁵

Have you ever bumped your shin into a table and found it really hurt? What was your first reaction? Did you rub the site of where you hit your leg? What happened to your pain when you rubbed it? It's likely it decreased.

Myotherapy, Remedial Massage and any other treatment that involves touch can help reduce pain because of the way the sensations of touch and pain are transmitted to the central nervous system.

As we know everywhere in our body we have lots of receptors which are the nerve endings which specialise in picking up touch (mechanoreceptors), danger (nociceptors), temperature (thermoreceptors) and so on.

Fast pain is transmitted via A Delta fibres that transmit pain messages from the body part involved to the central nervous system, initially at the spinal cord level. An example of fast pain would be standing on a nail unexpectedly. Ouch!

Slow pain is transmitted via C fibres that transmit pain messages at a much slower speed than the A Delta fibres to the CNS.⁸ Slow pain can be pain that builds up over time and becomes chronic. Poor posture can activate C fibre nociceptor stimulation.

Touch is transmitted by mechanoreceptors via A Beta fibres at a faster speed than both A Delta and C fibres. The mechanoreceptors are also larger. It is thought that the transmission of touch takes priority over the pain transmission⁸ and may then explain why rubbing a sore leg after bumping it on the table can cause you to no longer feel pain just the rubbing sensation. Messages are sent to the brain via a pathway of neurons – first order neurons send messages to the spinal cord, second order neurons send messages to the lower level of the brain and third order neurons take the messages to higher levels of the brain.⁹

The pain gateway theorises what happens at the spinal cord where the neuron's receptor information is received. Messages of touch and pain go through the same pathway but it is thought that the touch receptors have priority

and are larger so it is thought that the gate on the pathway closes to pain receptors that can't get through. Therefore, it is thought pain is blocked at the spinal cord and never reaches higher levels of the brain.

The pain gateway theory is a theory but we think this is how massage and other touch modalities help to reduce pain.⁸

There are other control mechanisms our body has to manage pain. We have the inbuilt capacity to inhibit pain through naturally produced endorphins and opioids⁹. Our mind also plays a part in processing pain and how we think about pain can greatly affect how much pain we feel. Sometimes we can over-react to pain stimulus because of past experiences or to a constant low level pain stimulus that results in central pain sensitisation.¹⁰ Sometimes we have pain but not because of tissue damage.¹¹

TN can be sudden onset or it can happen as a result of a trauma or a health condition such as multiple sclerosis or a stroke.¹

How can Myotherapy help someone living with TN?

If we consider the pain gateway theory, we could say that by stimulating the touch receptors in the body of someone in chronic pain, we can possibly reduce the level of pain stimulus getting through to the brain. Also, a person in chronic pain often feels stressed, anxious and depressed. How might someone's posture be affected by feeling like this?

It's likely someone in pain may slouch, with a forward head posture and rounded shoulders. A human head can weigh approximately 3-4 kilograms.¹² If your head is forward on your body, you can experience neck pain, headaches and musculoskeletal disorders such as temporomandibular disorders.¹³

> Article by Charlotte Bosson, Myotherapist and owner of City Haven Massage Therapy, located in Mont Albert & Parkville, Victoria. www.cityhavenmassage.com.au email: info@cityhavenmassage.com.au

Here's how I think a Myotherapist can help

The upper Cervical vertebrae (C2) has a relationship with the Trigeminal nerve. Pain stimulus at the upper cervical level can activate pain along the distribution of the Trigeminal Nerve and vice versa. This is known as a convergence mechanism.¹⁴

It is for this reason that I think directly working to improve head posture, strengthening muscles and reducing tension in the upper neck, may help to reduce pain for people living with TN. A research report about a 43-year-old female patient with pain in the cervical neck and a typical TN demonstrated that with mobilisation, traction and manipulation techniques on her cervical vertebrae she was relieved of her TN symptoms.¹⁵ As Myotherapists, we have mobilisation tools such as muscle energy and mobilisation techniques that could be helpful for a client managing a condition like TN.

Therefore, we may be able to help someone improve their TN symptoms and quality of life complementing their mainstream medical interventions with these steps:

1. Assessment of posture: standing, sitting and at work (ergonomic review of work station)
2. Assessment of weak and over-used musculature: what muscles are doing more work? Which muscles are weak and need strengthening?
3. Treatment to address tension including myofascial dry needling and TENS if appropriate and suitable to the client
4. Exercise prescription to help strengthen weak structures and lengthen overused ones
5. Aim to reduce other factors like stress and anxiety
6. Client education: encouraging the person to understand how the brain processes pain
7. Follow up and management of condition
8. Realising that our clients may need to seek a range of healthcare services to help them manage their health condition. Be mindful that what works for one client may not for another.

- 1 Trigeminal Neuralgia Association Australia. 2016. *Trigeminal Neuralgia Association Australia*.
- 2 Lorimer Moseley Home Page, University of South Australia. 2016. *Lorimer Moseley Home Page, University of South Australia*. [ONLINE] Available at: <http://people.unisa.edu.au/lorimer.moseley/#About-me>. [Accessed 27 June 2016].
- 3 Butler, Moseley, David S.G. Lorimer. 2007. *Explain Pain*. 3rd ed. Adelaide, South Australia: Noigroup publications for NOI Australasia, Pty Ltd.
- 4 Clifford J Woolf. 2010. *Central sensitization: Implications for the diagnosis and treatment of pain*. [ONLINE] Available at: www.ncbi.nlm.nih.gov/pmc/articles/PMC3268359/. [Accessed 3 July 2016].
- 5 Butler & Moseley, DS & GL, 2003. *Explain Pain*. 3rd ed. Adelaide: Noigroup publications. Section 1, Page 12
- 6 Lorimer Moseley. 2015. *No brain, no pain: it is in the mind, so test results can make it worse*. [ONLINE] Available at: www.bodyinmind.org/no-brain-no-pain/. [Accessed 3 July 2016].
- 7 Todd Hargrove. 2008. *How to Improve Proprioception*. [ONLINE] Available at: www.bettermovement.org/blog/2008/proprioception-the-3-d-map-of-the-body. [Accessed 3 July 2016].
- 8 British Medical Journal. 1978. *The Gate Control Theory of Pain*. [ONLINE] Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1607474/pdf/brmedj00141-0006b.pdf>. [Accessed 3 July 2016].
- 9 Maria A. Pateostas and Leslie P. Gartner. 2016. *Ascending Sensory Pathways - Chapter 10*. [ONLINE] Available at: <http://www.blackwellpublishing.com/pateostas/chapters/10.pdf>. [Accessed 3 July 2016].
- 10 Casey Unverzagt, Kathy Berglund, and J.J. Thomas. 2015. *Dry Needling For Myofascial Trigger Point Pain: A Clinical Commentary*. [Online] Available at: www.ncbi.nlm.nih.gov/pmc/articles/PMC4458928/. [Accessed 3 July 2016].
- 11 Lorimer Moseley. 2015. *Explainer: what is pain and what is happening when we feel it?*. [ONLINE] Available at: <https://theconversation.com/explainer-what-is-pain-and-what-is-happening-when-we-feel-it-49040>. [Accessed 3 July 2016].
- 12 Randal P. Ching, Ph.D. 2007. *Relationship Between Head Mass and Circumference in Human Adults*. [ONLINE] Available at: www.smf.org/docs/articles/pdf/chingtechbrief.pdf. [Accessed 3 July 2016].
- 13 Kyeong-Jin Lee, Hee-Young Han, Song-Hee Cheon, PT, PhD, So-Hyun Park, PT, PhD, and Min-Sik Yong, PT, PhD. 2015. *The effect of forward head posture on muscle activity during neck protraction and retraction*. [ONLINE] Available at: www.ncbi.nlm.nih.gov/pmc/articles/PMC4395757/. [Accessed 3 July 2016].
- 14 Elcio J. Piovesan, Pedro A. Kowacs, Michael L. Oshinsky. 2003. *Convergence of cervical and trigeminal sensory afferents*. [ONLINE] Available at: <http://link.springer.com/article/10.1007%2Fs11916-003-0037-x>. [Accessed 3 July 2016].
- 15 Grgić V. 2010. *Influence of manual therapy of cervical spine on typical trigeminal neuralgia: a case report*. [ONLINE] Available at: www.ncbi.nlm.nih.gov/pubmed/20359155. [Accessed 3 July 2016].