



HYPNOTHERAPY AND NEUROPATHIC PAIN

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He became involved with the University of Alberta as site director in Red Deer for a new rural stream family medicine program in the year 2000. Since then he has become increasingly involved with teaching family medicine at the post-graduate level. He became the "Rural Program Director" for the Department of Family Medicine in 2008 and more recently, in October 2011, took on a broader position as "Director of Rural and Regional Health" for the Faculty of Medicine. Although he is full time faculty his clinical work remains in Sylvan Lake.



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In August 2009 Sherry was appointed Clinical Lecturer in the Department of Family Medicine, University of Alberta. Her hypnotherapy course became a medical elective for post graduate residents from The University of Alberta in December 2010. Sherry was awarded "Educator of The Year" in 2011 by The International Medical and Dental Hypnotherapy Association. A pilot study through the University of Alberta was conducted using Sherry's smoking cessation intervention. Sherry continues to work to bring hypnotherapy forward within the medical community. In 2014, Sherry became an "Allied Health Professional" within the College of Family Physicians of Canada.

Neuropathic pain can be one of the most vexing painful experiences. The terms, neuropathic pain and neuropathy, are used to describe a discomfort induced by nerve irritation, inflammation, injury or even destruction. It is often characterized as stabbing (knife like), electric shock like or a burning lancinating pain. It can be caused by trauma including spinal cord injury and amputations, infections such as Herpes Zoster (shingles) and Guillain Barre Syndrome, nerve compression such as carpal tunnel syndrome, metabolic disturbances such as diabetic neuropathy or other nerve irritation such as Trigeminal Neuralgia. Cancer pain often manifests itself through neuropathic pain secondary to nerve involvement.

Traditional pharmaceutical approaches to neuropathic pain include analgesics (both non-opioid and opioid), anti-convulsants (such as gabapentin and pregabalin) and tricyclic antidepressants (such as amitriptyline and imipramine). Adjuvant medications include anxiolytics, muscle relaxants, topical treatments (anti-inflammatory gels) and Botox injections. Non-pharmacological approaches have included cognitive behavioural therapy and biofeedback. As well, neuromodulation such as TNS, spinal cord stimulation and deep brain stimulation are options for refractory pain. Sadly information resources often used by the medical profession make no mention of hypnotherapy as a treatment modality.

A literature search regarding the use of hypnosis for neuropathic pain has had to follow a variety of directions. There are some publications focusing on hypnosis and chronic pain in general but research studies are often

directed toward a specific condition such as spinal cord injury or post herpetic neuralgia. Much of the hypnotherapy literature regarding neuropathy is quite old, almost as if neuropathic pain has fallen off the radar of hypnotherapists or hypnotherapy has fallen off the radar of those conducting research in these conditions. This implies a huge potential for hypnotherapists to provide deeper experience and knowledge dissemination.

Recent advances in imaging technology have allowed a dramatic increase in understanding of the central neurophysiological correlates of pain. The experience of pain occurs through multiple integrated neurophysiological mechanisms with various brain sites playing a key role. Brain loci commonly linked with pain include the thalamus, the insula, the primary and secondary cortices, the anterior cingulate cortex and the prefrontal cortex.¹ Imaging studies related to hypnotic suggestion show changes in the same areas of the brain.² Woody and his colleagues have shown through imaging studies that hypnotherapy takes place in the same sites of the brain as real experiences, whereas imagined experiences take place in different areas.³ Elkins and co-authors provide a review of thirteen prospective studies of hypnosis for the treatment of chronic pain.⁴ The authors acknowledge lack of standardization of hypnotic interventions, low number of participants and lack of long term follow-up of patients as being a limitation of all of these studies. There have been only four randomized control trials of hypnotic analgesia for chronic pain published since 2005, all in 2008 and 2009.² The recent studies demonstrate that hypnosis was either as or more effective than

comparison treatments including standard care. Follow-up of participants in these studies showed that there could be a decrease in chronic daily pain that is maintained for up to a year or that self-hypnosis provided a skill that led to the provision of temporary relief even if permanent changes were not achieved. There seems to be so much potential for further study in this area.

Patterson and his group at the University of Washington have been working on rehabilitation using virtual reality hypnosis (VRH) for conditions including burn patients⁵ and trauma patients. They have published a case report using VRH in treating the chronic neuropathic pain in a patient with a five year history of treatment failure.⁶ This patient's pain ratings dropped by an average of 36% and she reported no pain for a daily average of almost 4 hours. The same group have also completed a randomized control trial of 21 hospitalized trauma patients to assess the effectiveness of VRH in recovery from physical trauma.⁷ Patients were randomized to one of three groups: those receiving VRH, those receiving virtual reality treatment without hypnosis and those receiving standard care. The small numbers in each group limit the power of this study. The group found no significant difference between the two control groups (that is virtual reality distraction and standard care). There was a significant decrease in pain intensity and pain experience in the VRH patients compared to the others. The group has shown the potential of VRH in the treatment of difficult and refractory chronic pain conditions and the difference that hypnotherapy makes to this overall process.

Phantom limb experience is seen after post traumatic and surgical amputations as well as spinal cord injury. These sensations can range from the feeling of movement, pressure, temperature change, to explicit pain. Phantom limb pain is a common and severe problem affecting an estimated 70-80% of amputees. David Oakley and co-investigators completed a literature review on using hypnotherapy for phantom limb pain and then added their own two case reports.⁸ Two main treatment strategies were identified as effective: an ipsative/ imagery-based approach and a movement/ imagery-based approach. Rosen did some interesting work at the University of Oslo showing why this might be the case. They used PET scan imaging to first assess the pain experienced by two different patients and then used the PET scan imaging to monitor the effect of hypnosis on pain management.⁹ They were not able to eliminate the experience of a phantom limb, however, worked to normalize the PET scan by using guided imagery to create "comfortable positions" and "comfortable movements" of the phantom limb. We do not all have PET scans at our disposal, however, the correlation between Oakley's findings and Rosen's findings suggests that it can be useful to have some degree of understanding of the neurophysiological correlates and use these to advantage when creating hypnotherapeutic approaches.

There are many different complementary therapies

available for pain management and it is far beyond the scope of this article to review them all. However another group at the University of Washington completed a randomized trial comparing hypnotherapy to EMG Biofeedback for the adjunct treatment of chronic pain in patients with spinal cord injury.¹⁰ Their findings underscore the effectiveness of hypnotherapy. While both groups experienced a decrease in pain intensity, only the group trained in self-hypnosis reported a significant difference in daily pre-post treatment pain, which was maintained at three-month follow-up.

Cancer patients experience neuropathic pain as a result of different mechanisms including nerve compression and nerve involvement by tumor growth. There can also be nerve damage related to surgery, chemotherapy and radiation treatment. "Integrative oncology" is a new term given to the combination of mainstream cancer care and evidence-based complementary therapies. Hypnosis has an important role to play in this area.¹¹ In an overview of cancer neuropathic pain, Hausheer and Foley state, "The relationship between mind and body to neuropathic pain is an important area that needs more study to identify approaches that are useful interventions for cancer patients with neuropathic pain."¹²

Various viral infections can cause nerve inflammation. Post herpetic neuralgia (PHN) is one of the better known such syndromes. Once an individual is infected with the chickenpox virus (Varicella zoster), the virus lies dormant in the nerve ganglia. A breakdown in immunity allows the virus to reactivate usually along one nerve region. The reactivation of the virus not only brings on the rash reminiscent of chickenpox (shingles) but also creates inflammation along the nerve, which is characterized by a burning lancinating pain and significant sensitivity in the affected area. In PHN the nerve pain continues long after the virus has again gone into remission. PHN can last from months to years. There are no robust trials comparing hypnotherapy to other treatment modalities. Dane and Rowlingson published three case reports using hypnosis in the treatment of PHN, however the true effectiveness of hypnotherapy was confounded with the concomitant use of other treatments.¹³ More study is needed to elucidate the potential of hypnotherapy.

Guillain-Barre Syndrome (GBS) is caused by different antecedent triggering events, often infections that are thought to create an immune response that cross reacts to different peripheral nerve components causing inflammation or dysfunction in the nerve. The syndrome is characterized by severe muscle weakness that can last for many months. Physiotherapy is used to maintain joint and muscle function but this is often quite painful. Fowler and Falkner, at the Royal Perth Hospital provide two case reports in which hypnotherapy provided "the only adequate non invasive form of pain relief" for the two patients described.¹⁴ They go on to say that their findings warrant serious consideration and investigation for the management of pain experienced

in GBS. That was 1992. It seems incredible that no one has followed through and published results in the last 20 plus years.

Unfortunately, there are no publications describing the use of hypnotherapy for diabetic neuropathy. This includes a "Medline" search using the mesh terms "hypnosis" AND "diabetic neuropathy" which was negative through 28,060 articles searched despite diabetic neuropathy being the most common polyneuropathy in the western world. A recent study to assess the prevalence of this condition followed 15,692 patients over 25 years and found that 50% of patients developed neuropathy.¹⁵ There is enormous potential for study on the possible effectiveness of hypnotherapy for this group of people.

For the hypnotherapist, there are several layers in working effectively with neuropathy clients as well as chronic pain clients in general.

Active Listening is an important component and requires the therapist to be fully engaged with the client, focused at such a deep level that nothing else exists during the time of consultation. Clients may have neuropathic pain without a clear diagnosis. It remains imperative that a hypnotherapist fully understands the client's pain experience. This requires an understanding of the client's physical symptoms as well as the overall illness experience including emotions and function.

Asking the right questions is important. Empathy can be garnered by imagining the person in front of you to be a loved one. The client's illness experience must be fully investigated.

Understanding the clients psychology leads to a better hypnotherapeutic approach. Possible questions might include:

How does the neuropathy affect you?
How has the neuropathy changed your life?
How does neuropathy make you feel physically?
How does neuropathy make you feel emotionally?
When did the neuropathy begin?
What was the first change that you noticed?
How did the neuropathy progress?
What do you believe about recovery?
What do you believe about managing symptoms?
What have you done so far to manage the neuropathy?
Using your creative imagination with no limitations, how would you work with the neuropathy?

Sharing creative ways to treat the problem is important. This includes using a client's own concept for healing and management of the condition. One of the authors commonly uses this method in practice. An example is a cancer client suggesting that "Rottweiler's" represented love and protection to her. In regular sessions, she was asked to imagine or visualize miniature Rottweiler's being sent into her system to patrol and devour any suspicious cancer cells. This imagery had meaning to her and therefore, it was very

powerful.

The hypnotherapist needs to understand the client's hypnotic assets and the way they process information. An experiential type of short session can be used to evaluate this. Direct and inferential statements can be used to understand the client in a deeper way. Using all of this information can create experiences in hypnosis that are personal and meaningful. Every client is unique and the way they experience an illness is just as unique. There are never one-size fits all protocol in managing any problem. Although there are many wonderful scripts, a script should be just a guideline. Scripts can give valuable ideas and techniques as a possible approach.

Understanding any disorder involves study. Using neuropathy as an example, learning about its pathophysiology and standard management helps to develop a complementary therapeutic approach. Investigation might include:

The prevalence of the disorder.
How the problem is diagnosed and monitored.
What standard treatment, including surgery and medications are available and their success rate.
What direction research is taking?
What evidence is available regarding unconventional treatments?
Have creative approaches using hypnotherapy been described?

A session can then be built around all of the information gathered, each piece of which is valuable. Enhancing standard treatment such as medication can be helpful. Giving suggestion that the benefits of that medication can increase and the side effects of the medication can decrease can do this. If the client is visual, one could use imagery around placing that medication into a device as they turn a dial to increase the positive affects and another dial to decrease the negative effects.

Auditory clients enjoy working with sound. A chromatic scale can be used in which the lower notes vibrate at a slower frequency and the higher notes vibrate much faster. These frequencies, or notes on a scale, can be correlated to the vibration in nerve endings. Movement down the chromatic scale to a slower more fine-tuned and lower frequency can be used to adjust the resonance within the physiology. There is a similar physical treatment known as a "Frequency Specific Micro- current (FSM) or Rife machine" and the hypnotherapist can adapt these techniques in a very creative way working within the client's mind.

Nerve blocks or deep nerve stimulators are used in refractory pain. In hypnosis suggestions can be given to a visual client to view the brain or spinal cord anatomy as a computer program. One could install a new program called "Nerve Sensitivity Reduction" or they might have a virtual experience of a nerve block procedure being performed hypnotically with excellent results. A "Virtual Gastric Band" has been used in a similar way to replace surgical

gastric banding.¹⁶ A hypnotherapist can explain some of the neurophysiological correlates regarding the site of pain stimulation in the brain. Using these explanations may help a client reinterpret pain signals. Any physical procedure that is used to treat a problem can be re-created within the mind. These techniques can also be used as an adjunct with actual treatment to create a positive experience that is free from anxiety or discomfort.

In hypnosis, a visual client might be instructed to see a color spectrum.

Suggestions can be given that as the client moves through the spectrum, the perception of pain / discomfort can adjust to a more manageable level, or even be eliminated entirely.

A client with high kinesthetic assets can feel physiological changes taking place. Some of the standard techniques in hypnotherapy involve changing temperature or texture of discomfort to something that is more pleasing. There is no limit to creativity and therefore, no limit to how this might be accomplished. Something as simple as an imaginary salve that instantly eliminates burning nerve pain to a comfortable cooling, or normal body temperature can be very soothing. Suggestions can be given that as the temperature is normalized, the condition is also improving. Imagining or visualizing the nerve endings being smoothed out or coated in a liquid gel might change texture. Areas of the body affected could be bathed in a special emulsion that changes the texture and therefore the comfort level.

Light could be used for visual or kinesthetic clients suggesting a warm healing light to shine on the affected area. The individual can then feel the positive changes taking place within his/her body.

Release work to remove the emotional factors associated with pain such as depression and anxiety is a very important component of this treatment. Depression and anxiety both work to amplify the pain experienced by a client. Release work can take countless forms and can be as creative as one dares to be. Release can be as simple as having the client imagine writing a letter of goodbye to anxiety or depression. Another example is imagining fireworks that are labeled with the clients problems and symptoms. As each firework is lit, it can explode into a beautiful transformative array of color, light and sound. Weeds that represent the condition can be pulled from a garden and replaced with plants and flowers that are placed in rich dark soil. The possibilities are endless when using release techniques.

Guiding a client to take control of their health by cultivating inner resources, building confidence and self-esteem, empowerment and a state of expectancy are the benefits of hypnotherapy that can complement standard treatments. Suggestions to increase exercise and activity can help a client increase energy and promote better sleep. Sleep and rest are likely affected with neuropathy clients and dysfunctional sleep can become a habitual cycle that adds to pain. Hypnotherapy can be used to break the cycle and build new neural pathways for excellent sleep and rest.

Hypnotherapy overall has huge potential in managing painful conditions such as neuropathy.

References

- 1) Apkarian AV et al. Human Brain Mechanisms of Pain Perception and Regulation in Health and Disease. *Eur J Pain* 2005; 9:463-84.
- 2) Jensen MP. Hypnosis for Chronic Pain Management: A New Hope. *Pain* 2009; 6:235-37.
- 3) Szechtman H et al. Where the imaginal appears real: A positron emission tomography study of auditory hallucinations. *Proc Natl Acad Sci USA*; 1998(95): 1956-60.
- 4) Elkins G, et al. Hypnotherapy for the Management of Chronic Pain. *Intl J Clin Exp Hypnosis* 2007; 55(3): 275-87.
- 5) Rojas-Burke J, In a virtual world, Oregon Burn Center patients escape real-world pain. *Oregon-Live, The Oregonian* [Internet] 2011; Dec 13 (updated 2012; Mar 9). [Cited 2013; June 12]. Available at http://www.oregonlive.com/health/index.ssf/2011/12/in_an_imaginary_world_oregon_b.html
- 6) Oneal BJ et al. Virtual Reality Hypnosis in the Treatment of Chronic Neuropathic Pain, A Case Report. *Intl J Clin Exp Hypnosis* 2008; 56(4): 451-62.
- 7) Patterson DR et al. Virtual Reality Hypnosis for Pain Associated with Recovery from Physical Trauma. *Intl J Clin Exp Hypnosis* 2010; 58(3): 288-300.
- 8) Oakley DA et al. Hypnotic Imagery as a Treatment for Phantom Limb Pain: Two Case Reports and a Review. *Clin Rehabil* 2002; 16: 368-77.
- 9) Rosen G et al. Neurophysiological Processes Underlying the Phantom Limb Pain Experience and the use of Hypnosis in its Clinical Management: An Intensive Examination of Two Patients. *Intl J Clin Exp Hypnosis* 2001; 49(1): 38-55.
- 10) Jensen MP et al. Effects of Self-Hypnosis Training and EMG Biofeedback Relaxation Training on Chronic Pain in Persons with Spinal Cord Injury. *Intl J Clin Exp Hypnosis* 2009; 57(3): 239-68.
- 11) Cassileth BR and Keefe FJ. Integrative and Behavioural Approaches to the Treatment of Cancer-Related Neuropathic Pain. *Oncologist* 2010; 15(suppl 2): 19-23.
- 12) Hausheer FH and Foley KM. Cancer Neuropathic Pain: Overview of Current Status and Future Objectives. *Oncologist* 2010; 15(suppl 2): 1-2.
- 13) Dane JR and Rowlingson JC. Hypnosis in the Management of Postherpetic Neuralgia: Three Case Studies. *Am J Clin Hypnosis* 1988; 31(2): 107-13.
- 14) Fowler R and Falkner T. The use of Hypnosis for Pain Relief for Patients with Polyradiculoneuritis. *Australian J Physiotherapy* 1992; 38(3): 217-21.
- 15) Abbott CA et al. Prevalence and characteristics of painful diabetic neuropathy in a large community-based diabetic population in the U.K. *Diabetes Care* 2011;34(10):2220-4. Epub 2011 Aug 18.
- 16) Virtual gastric band. Wikipedia, the free encyclopedia [Internet][place unknown] [updated January 17, 2014; cited February 27, 2014] available at http://en.wikipedia.org/wiki/Virtual_gastric_band