# **Original Research Paper**



# Anaesthesiology

## THE USE OF HYPNOSIS AS A TOOL FOR RELIEVING PAIN

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ABSTRACT Chronic pain is best understood as a disease process rather than a symptom. Underlying mechanisms for chronic pain are, nociceptive- tissue damage, neuropathic - sensory, nervous system damage, central heightened pain sensitivity in the central nervous system. Chronic pain has significant cognitive, affective, and interpersonal components. Effective chronic pain management is focused on maximizing function and limiting disability, not just on reducing pain. Non-pharmacological pain management is method utilizes ways to alter thoughts and focus concentration to better manage and reduce pain. Hypnosis is an effective method for acute and chronic pain, but there are also a few limitations. It is only effective in patients with high hypnotic susceptibility. The anticipated analgesic effect is not achieved in low to moderately hypnotizable patients. The cognitive behavioral approach can be used in patients who do not practice self-hypnosis. There are cases where patients with chronic pain have psychological problems. These patients require psychodynamic therapy, which is not in the range of pain medicine. Hypnosis may be a helpful nondrug therapy to reduce pain in chronic conditions.

# **KEYWORDS**: Hypnosis; analgesia; therapy; cognitive; relaxation

### INTRODUCTION

Chronic pain is a complicated issue that can be hard to treat. Often, a variety of approaches are needed to help lessen pain and improve independence. Hypnosis focus on relaxation, specific suggestions and goals, such as lowering pain and distract thoughts. Studies show that medical hypnosis can help with acute and chronic pain from cancer, burns, and rheumatoid arthritis. Clinical Hypnosis can serve as a powerful adjunctive and complementary method to ongoing medical care. Cognitive behavioural therapy is a well-known psychological treatment for chronic pain, it has been shown to work in multiple studies for a variety of chronic pain conditions. Hypnosis has also been shown to reduce pain intensity for those experiencing chronic pain. The addition of cognitive behavioural therapy and hypnosis, termed Hypnotic Cognitive Therapy, may improve outcomes, and have an additive effect. This may reduce the pain intensity and improve the pain related outcomes such as improving your quality of life. Hypnosis is a natural state of mental and physical relaxation where someone's conscious mind is bypassed and a person becomes more open to positive suggestions for change. In this highly suggestible state, it is also possible to alter perceptions of pain, create natural anesthesia, and manage chronic pain symptoms. The pain relief effect of hypnosis can be largely divided into two mechanisms; physical relaxation and perceptual alteration, cognitive distraction. There is an absorption in images that arouse physical relaxation, such as 'floating' or 'lightness', the muscles become relaxed and the pain is reduced. People with low hypnotic susceptibility respond better to distraction techniques, which concentrate on competing sensations in other body regions which do not feel pain. Imaginative suggestions can be used on those who are not induced into hypnosis due to low hypnotic susceptibility. In patients with high hypnotic susceptibility, suggestions of numbness in the painful region can be used. To relieve habitual pain through suggestions and imagination in chronic pain, the hypnotic state must be frequently induced to extend the pain reduction during everyday life. Time-out relaxation is technique that requires a specific schedule of exercise and meditation. It involves directing the mind in a passive and non-effortful manner to particular objects, physical or mental, which are conducive to deep relaxation. Self-hypnosis modifies biochemical and physiological processes. Self-hypnosis is an internal or inner method for communicating with the unconscious or subconscious mind, which is the part of the mind that controls all the biochemical and physiological processes. Self-regulation, Biofeedback is another important and successful technique of relaxation for the management of chronic pain. Functional relaxation programmes are also available [1-9].

# Elements In Hypnosis And Activation Of Brain Areas

Hypnosis is an altered state of consciousness that comprises of heightened absorption in focal attention, dissociation of peripheral awareness, and enhanced responsiveness to social cues. Hypnosis has a long tradition of effectiveness in controlling somatic symptoms, such as pain. There is a growing recognition for hypnosis and related techniques in pain management. Psychological approaches to pain control, such as hypnosis, can be highly effective analgesics. After induction by the therapist, it is a process of changing the perception,

sensation, thought, and behavior of the patient or subject through suggestions. Hypnosis is one of the oldest methods used for pain treatment, but had not received much interest or wide use. There are three elements in hypnosis; absorption, dissociation, and suggestibility. Absorption is immersing deeply into perception, imagination, or an abstract experience. Dissociation is the separating of the elements of the mind and behavior. Suggestibility is that the subject easily conforms to the therapist's directions during hypnosis. Hypnosis only makes it easier for the subject to accept suggestions and approach a memory, which is not achieved by force. In neuroimaging techniques was revealed that various parts of the brain were important for the experience and control of pain. The brain areas that are activated when pain is experienced are the thalamus, primary somatosensory cortex (SI), secondary somatosensory cortex (SII), insula, forebrain (eg. I prefrontal cortex), amygdale, and anterior cingulated cortex (ACC). These brain areas are called the neuromatrix. Each brain area has different functions, the thalamus, SI, SII, and the posterior parts of the insula are responsible for the sensorydiscriminatory experience, the amygdale, ACC, and anterior parts of the insula are responsible for the affective-motivational components of pain, and the PFC is responsible for the cognitive-evaluative aspects of pain. These brain areas are also closely related to the functions of emotional processing and thinking in humans [10-21].

Studies suggest that making meditation a habit may help people manage their pain and self-esteem and lower their anxiety, depression and stress. Autogenic training is technique, that uses visual imagery and body awareness for relaxation. The person imagines being in a peaceful place and then focuses on different physical sensations, such as heaviness of the limbs or a calm heartbeat. Tai Chi and Qi Gong are both mind-body practices that have been around for centuries. They use postures, gentle movements, breathing techniques, and mental focus. Biofeedback uses sensors attached to the body to practice relaxation. Specifically, biofeedback teaches how to control involuntary responses, like heartbeat or blood pressure.

## DISCUSSION

Hypnosis is not induced or effective in all people. The subject's response to hypnosis and suggestions after hypnosis are different for each individual, and there are temperamental characteristics to a certain degree, which can be termed hypnotic susceptibility or hypnotizability. According to the literature, terms such as hypnotic responsiveness and hypnotic suggestibility are also used. In patients with chronic pain, those with higher hypnotic susceptibility had a larger reduction in pain after acupuncture. When hypnosis was induced in fibromyalgia patients and relaxation was ordered, the degree of pain was reduced compared to the awakened state, and the cerebral blood flow of the bilateral orbitofrontal, right thalamus, and left inferior parietal cortex increased, while the cerebral blood flow of the bilateral cingulated cortex decreased. Hypnosis not only affects pain intensity, but it also affects the emotional responses to pain. In the brain, ACC is responsible for processing emotion. During hypnosis, when an unpleasantness due to pain is suggested to increase or decrease, the

unpleasantness changed in accordance to the suggestions, and the ACC activity also changed accordingly. The cortical modulation is involved in the pain control effect of hypnosis. Hypnosis not only has analgesic effects in acute pain, but it also serves to relieve chronic pain such as fibromyalgia, cancer pains, and headaches.

### CONCLUSION

Clinical hypnosis offers a unique and holistic therapeutic avenue that goes beyond traditional medical interventions. Hypnosis include: imagery guiding, distraction, relaxation; guided imagery. Hypnotherapy is a psychological technique of relaxation used for medical and other therapeutic purposes. The main role of hypnotherapy in pain management is to induce deep relaxation for the reduction of fear, tension and anxiety, which is concomitant with pain. There is significant evidence that a change in brain activity that mitigates pain sensations takes place in the process.

#### REFERENCES

- Spiegel D. Neurophysiological correlates of hypnosis and dissociation. J Neuropsychiatry Clin Neurosci. 1991;3:440–445. Kupers R, Faymonville ME, Laureys S. The cognitive modulation of pain: hypnosis-
- and placebo-induced analgesia. Prog Brain Res. 2005;150:251–269
- Gur RC. Measuring hypnotic susceptibility: a guest editorial. Am J Clin Hypn. 1978;21:64-67. 3.
- Spiegel H. The hypnotic induction profile (HIP): a review of its development. Ann NY Acad Sci. 1977;296:129-142.
- Kao TM, Chen CN, Chu FC. Editorial: Acupuncture. Med Ann Dist Columbia. 1974:43:1-8.
- Moore ME, Berk SN. Acupuncture for chronic shoulder pain. An experimental study with attention to the role of placebo and hypnotic susceptibility. Ann Intern Med. 1976;84:381-384.
- Faymonville ME, Mambourg PH, Joris J, Vrijens B, Fissette J, Albert A, et al. Psychological approaches during conscious sedation. Hypnosis versus stress reducing strategies: a prospective randomized study. Pain. 1997;73:361–367.
- Drummond PD, Knudsen L. Central pain modulation and scalp tenderness in frequent episodic tension-type headache. Headache. 2011;51:375–383.
- Melzack R. Evolution of the neuromatrix theory of pain. The Prithvi Raj Lecture: presented at the third World Congress of World Institute of Pain, Barcelona 2004. Pain 9. Pract. 2005:5:85-94
- Knudsen L. Petersen GL, Nørskov KN, Vase L, Finnerup N, Jensen TS, et al. Review of 10.
- Rindage B, Telegrand H, Noshov NA, Vas. L, Hinkuthy A, Stale H, St. da. Review of neuroimaging studies related to pain modulation. Scand J Pain. 2011;2:108–120. Maquet P, Faymonville ME, Degueldre C, Delfiore G, Franck G, Luxen A, et al. Functional neuroanatomy of hypnotic state. Biol Psychiatry. 1999;45:327–333. 11.
- Derbyshire SW, Whalley MG, Stenger VA, Oakley DA. Cerebral activation during hypnotically induced and imagined pain. Neuroimage. 2004;23:392–401.
- Derbyshire SW, Whalley MG, Oakley DA. Fibromyalgia pain and its modulation by hypnotic and non-hypnotic suggestion: an fMRI analysis. Eur J Pain. 2009;13:542–550. Rainville P, Duncan GH, Price DD, Carrier B, Bushnell MC. Pain affect encoded in
- human anterior cingulate but not somatosensory cortex. Science. 1997;277:968–971. Wik G, Fischer H, Bragée B, Finer B, Fredrikson M. Functional anatomy of hypnotic
- analgesia: a PET study of patients with fibromyalgia. Eur J Pain. 1999;3:7–12. Kosslyn SM, Thompson WL, Costantini-Ferrando MF, Alpert NM, Spiegel D. Hypnotic visual illusion alters color processing in the brain. Am J Psychiatry. 2000;157:1279-1284.
- Lang EV, Benotsch EG, Fick LJ, Lutgendorf S, Berbaum ML, Berbaum KS, et al. Adjunctive non-pharmacological analgesia for invasive medical procedures: a randomised trial. Lancet. 2000;355:1486–1490.
- Lang EV, Joyce JS, Spiegel D, Hamilton D, Lee KK. Self-hypnotic relaxation during interventional radiological procedures: effects on pain perception and intravenous drug use. Int J Clin Exp Hypn. 1996;44:106–119.
- use: int Clin Exp rayn. 1996;44:100–119. Lang EV, Rosen MP. Cost analysis of adjunct hypnosis with sedation during outpatient interventional radiologic procedures. Radiology. 2002;222:375–382. Montgomery GH, DuHamel KN, Redd WH. A meta-analysis of hypnotically induced analgesia: how effective is hypnosis? Int J Clin Exp Hypn. 2000;48:138–153. 19.
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- Patterson DR, Jensen MP. Hypnosis and clinical pain. Psychol Bull. 2003;129:495-521.