Hypnosis for Pain Control

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David R Patterson, PhD:
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Self assessment questions

1. Does brain processing during hypnosis show a distinct state or is it a series of neurophysiological events?
2. Hypnosis shows positive outcomes in randomized controlled trials for both acute and chronic pain. Which series of studies show stronger effects?
3. Immersive virtual reality for analgesia is almost totally limited to pain from medical procedures (true or false)
4. Psychological approaches to chronic pain should often focus on variables other than the pain itself (true or false)

Overview

• Science supporting hypnosis
• Immersive virtual reality
• Virtual reality hypnosis
• The type of pain as a consideration
Recent Reviews

Montgomery et al 2000
Patterson and Jensen 2003
Hammond 2006
Elkins et al 2007
Stoeb et al 2009
Jensen and Patterson 2014


• 18 studies reviewed using meta-analysis
• 75% of participants had substantial pain relief due to hypnosis
• Those with mid to high hypnotic suggestibility were more likely to have a larger benefit from hypnotically suggested analgesia than those with low hypnotic suggestibility


• 19 studies of acute pain reviewed
  - Bone marrow aspiration pain
• Hypnosis to control pain during invasive medical procedures was overall effective.
• Patients in hypnosis treatment groups to control their pain during burn care showed lower post treatment pain, and used less analgesic drugs.
• Women using hypnosis for labour pain showed shorter Stage I labour, and reported drugs to be more effective, as well as reporting a more pleasant birthing process
• Children undergoing bone marrow aspirations reacted well to hypnosis in regards to pain and anxiety when compared to no treatment.


• 12 studies of chronic pain reviewed
  - Including pain related to headaches, arthritis, fibromyalgia, and cancer
• Compared to no treatment / control groups, hypnosis significantly reduces intensity and frequency of pain, although compared to other treatment groups hypnosis is not more or less effective
• 7 of the total studies reviewed assessed the association between outcome and hypnotizability.
  - All but 1 show positive correlation between outcome and suggestibility, and in many of these studies, those patients with high suggestibility also responded well to other psychological treatments

- 12 studies reviewed
- Hypnosis effectively controls pain and frequency of migraines in adults as well as children.
- Headache pain and frequency was significantly reduced when using hypnosis compared to other treatments.
- Autogenic training was equally as effective as hypnosis at posttreatment, but at follow-ups the hypnosis proved to be more effective


- 13 studies reviewed
- The effects of hypnosis on cancer pain, low back pain, arthritis pain, pain from sickle cell disease, temporomandibular pain, fibromyalgia, disability-related pain, and mixed chronic-pain problems were investigated.
- Except for a study in low back pain, hypnosis significantly helped with chronic pain and anxiety.
- The studies with the longer-term benefits tend to have self-hypnosis training as part of the treatment program


- 14 studies reviewed
- Hypnosis is effective in controlling both acute and chronic pain when compared to no treatment / standard care and other non-hypnotic interventions
- Hypnosis is on par with other treatments that contain hypnotic elements
- Not all types of chronic pain were greatly responsive to hypnosis. The effectiveness of hypnosis on pain from IBS, non-cardiac chest pain, fibromyalgia, and MS were reviewed. Patients with IBS did not have a significant decrease in pain when using hypnosis compared to other supportive therapy.
**Hypnotizability**

- Stronger in experimental studies
- Stronger in acute pain studies
- Mixed in chronic pain studies
- If we do not think it is a factor at some level we are deluded.

**Somatosensory Cortex: Hypnosis**

Hypnotic suggestions for increased or decreased pain intensity altered perception of pain intensity (70/100 → 33/100) and activation in sensory cortex but not ACC.

**Insula: Hypnosis**


**ACC: Hypnosis**

The ACC is involved in processing of the affective component of pain; different suggestions impact different cortical areas.

\[ R = 0.42 \]
Cost Savings with Hypnosis

- Standard Sedation: $638
- Standard Sedation + Hypnosis: $300

Lang EV et al. Radiology 2002; 222:375-82

Hypnosis intervention effects on institutional costs (Montgomery, et al 2007)

- Hypnosis group
- Attention control group

Anecdotal Evidence

For almost two hundred years, almost every type of pain imaginable has been reported to be responsive to hypnosis in clinical case studies.

Slot here for hypnotherapy clip
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VR Pain Control originated at the University of Washington, Seattle
In VR during wound care


VR Pain Distraction Works
Patient 1 showed large reductions in pain, strong VR presence

VR Pain Distraction Works
Patient 2 showed less VR analgesia and lower presence in VR

VR during physical therapy for severe burns
Hunter to insert SnowWorld clip
VR Reduced Pain During Physical Therapy for Severe Burns

Hoffman, Patterson and Carrougher, 2000

Virtual Reality (n = 12 patients) error bars = SE

No distraction

One Two Three Four Five Six Seven

VR Reduced Pain During Multiple Physical Therapy Sessions (n=7)

Physical therapy treatment session number
Insert Gibran SciAm clip
Subjective pain rating (0 = low, 10 = excruciating)

- Pain dropped dramatically during water-friendly VR
- Magnet-friendly VR

VR significantly reduced pain-related brain activity during thermal pain (fMRI laboratory study)

Pain-related brain activity during No VR

During VR

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www.VRPAIN.com
Premise of VRH

The use of computer-generated stimuli to capture and guide the patient’s attention might be one way to make an induction less effortful.

Steps of VRH

• Relaxation and Instructions
• Float downward and see numbers (1-10)
• Appear over scenic lake
• Post-hypnotic suggestions
• Return up canyon
VRH and Burn Pain ($n = 13$)

Results

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What about the type of pain?
Acute vs Chronic

Evidence for Hypnosis with acute pain

- Childbirth
- Cancer
- Surgery
- Burn injuries
- Dentistry

What about Chronic Pain?

Treatment chronic pain varies widely based on etiology

- Headaches
- Musculoskeletal
- Neuropathic
- Central Pain Syndrome
- Fibromyalgia
- Cancer
Treating Pain
vs
Treating everything but pain

Suggestions for Pain Reduction

- Moving pain to background
- Dissociation
- Changing color or shape
- Dimming
- Putting in a box

People suffer and act as if they are in horrible pain long after the injury has healed.
Factors that maintain pain behavior after nociception

1. Psychological distress
2. Learning factors
3. Deactivation
4. Guarding
5. Illness focus and conviction

Neuroplasticity

Chronic pain alters nociception, such that it takes smaller stimulus to elicit higher levels of pain.
Chronic pain alters nociception, such that it takes smaller stimulus to elicit higher levels of pain.
Implications for outcome and treatment

Outcome data on multidisciplinary outcome programs

Multidisciplinary Pain Programs


Pain will often not be the expected treatment target or outcome measure
Multiple layered biopsychosocial approach

Layered Suggestions
- Pain reduction
- Enhanced coping
- Core value

Repeat 3x

Zen, Mindfulness and Buddhism

Bill Fordyce
Zen = Attaining enlightenment through direct intuitive insight

“There is nothing either good or bad but thinking makes it so.”
- Shakespeare

Mindfulness

Mindfulness = Bringing one’s complete attention to the present experience on a moment-to-moment basis
Monk Brain Functioning: Happiness ratio of prefrontal lobe cortices

Suffering = Pain x Resistance

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