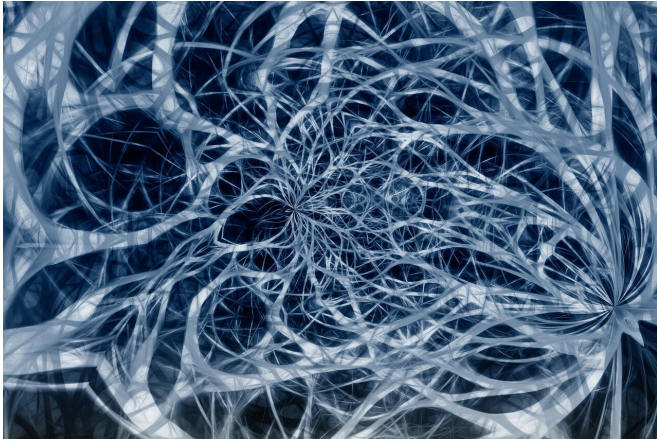


# Virtual reality could help to reduce pain for people with nerve injuries

19 March 2021, by Amy King



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We all feel physical pain in different ways, but people with nerve injuries often have a dysfunctional pain suppression system, making them particularly prone to discomfort.

Now researchers have uncovered that [virtual reality](#) (VR) can reduce types of pain typically seen in patients with [nerve injuries](#)—and that VR can boost the dysfunctional pain suppression system, giving people with [chronic pain](#) a possible game-changing hope.

Dr. Sam Hughes, Lecturer in Psychology at the University of Plymouth, led the study focusing on conditioned pain modulation (CPM) – a pain inhibitory pathway in humans. He and colleagues at Imperial College London had previously published work showing that watching soothing 360-degree scenes of the Arctic in virtual reality can help to ease pain symptoms similar to those experienced during sunburn.

In the current study they showed that VR can also reduce pain symptoms such as prickling and pain following touch, that are often seen in patients with

nerve injury. They have also gone one step further and measured VR's direct effects on CPM. CPM is dysfunctional in patients with [nerve](#) injury, so by knowing what can enhance its action, scientists can help to stimulate the body's natural pain inhibiting process.

The study, published in *The Journal of Pain*, showed that 360-degree scenes of the Arctic in virtual reality had an effect on the CPM efficiency, while the 2D versions of the same scenes (described as 'sham VR') reduced CPM efficiency.

Dr. Hughes said:

"It's brilliant that we've seen these results as it shows more evidence that virtual reality can not only reduce pain perception in human models of chronic pain, but also gives us insight into the mechanisms behind this effect. The next step of course is to conduct the study with people who experience chronic pain to see if it works for them. If it does work, it could be a really helpful in forming part of ongoing pain management by helping to target the dysfunctions in the brain that underpin chronic [pain](#)."

**More information:** Erzsebet Mehesz et al. Exposure to an Immersive Virtual Reality Environment can Modulate Perceptual Correlates of Endogenous Analgesia and Central Sensitization in Healthy Volunteers, *The Journal of Pain* (2021). [DOI: 10.1016/j.jpain.2020.12.007](https://doi.org/10.1016/j.jpain.2020.12.007)

Provided by University of Plymouth

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