

# Virtual reality experiences may help treat severe pain

14 August 2019



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Therapeutic virtual reality can be used to reduce severe pain in hospitalized patients, according to a study published August 14, 2019 in the open-access journal *PLOS ONE* by Brennan Spiegel of Cedars-Sinai Health System, USA, and colleagues.

Therapeutic virtual reality (VR) is emerging as an effective, non-pharmacological treatment modality for pain. VR sessions have been used to help treat anxiety disorders, support physical rehabilitation and distract patients during wound care. Previous studies testing the intervention in hospitalized patients have been limited by short intervention times and lack of randomization.

In the new trial, researchers randomized 120 people who were inpatients at Cedars-Sinai Medical Center in Los Angeles between November 2016 and July 2017. Patients were eligible if they had a pain score of more than 3 out of 10 during the 24 hours preceding inclusion. 61 people randomized to the [intervention group](#) received a library of 21 immersive virtual reality experiences—including a guided relaxation in

natural environments, a simulated flight, and animated games—on a Samsung Gear Oculus headset. They were advised to use the headset for three ten-minute sessions over the subsequent 48 hours. 59 people in the [control group](#) were instead instructed to tune their television set to a health and wellness channel that included guided relaxations and poetry readings. (The authors note that VR exposure times of over ten minutes had a higher risk of cybersickness.)

On average, self-reported pain scores went down by 0.46 points (SD 3.01) in the control group and dropped by 1.72 points (SD 3.56) among people who used VR. Among patients with baseline pain above 7 out of 10, this difference was more pronounced, with a reduction of 0.93 points (SD 2.16) in the control group and of 3.04 (SD 3.75) in the VR group ( $p=0.02$ ). Effects of the VR intervention on pain were significant both initially and after 48 to 72 hours of use, and patients reported higher satisfaction with the VR experience than with watching television. There was no difference in opioid prescribing between the study groups.

While it's still not clear whether different forms of VR have varying efficacy, the current study does support the effectiveness of VR for managing inpatient pain. This effectiveness also prompts many questions deserving future study, especially around the possibility of therapeutic VR's ability to potentially reduce opioid requirements.

Spiegel adds: "Evidence reveals that virtual reality therapy can tamp down pain signals through a variety of mechanisms. In this study, the largest of its kind to date, hospitalized patients with [pain](#) were randomized between VR or a relaxation program on TV. The VR outperformed the control condition and demonstrated benefits over several days of use."

**More information:** Spiegel B, Fuller G, Lopez M,

Dupuy T, Noah B, Howard A, et al. (2019) Virtual reality for management of pain in hospitalized patients: A randomized comparative effectiveness trial. *PLoS ONE* 14(8): e0219115.  
[doi.org/10.1371/journal.pone.0219115](https://doi.org/10.1371/journal.pone.0219115)

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APA citation: Virtual reality experiences may help treat severe pain (2019, August 14) retrieved 21 September 2019 from <https://medicalxpress.com/news/2019-08-virtual-reality-severe-pain.html>

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