

# Virtual reality and the touch factor: New fields of study

18 September 2017, by Nancy Owano



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(Tech Xplore)—Is virtual reality for pain relief just a headline-grabber or a new frontier? For those who are unaware of the linkage, there are studies now that examine its potential use to augment pain relief.

A paper published in *Pain Medicine* reviews VR studies as used in [pain management](#) and shows distraction as only one of the ways in which [virtual reality](#) can play a role.

Lisa Rapaport in Reuters said, "Distraction may indeed play a role in [pain relief](#), the review of six small studies suggests. But it's also possible that the technology could help produce changes in the nervous system when it's used to help reprogram how a person responds to [pain](#)."

Authors of the study are Anita Gupta, Kevin Scott and Matthew Dukewich. Author affiliations include Princeton and Drexel University College of Medicine. They described their effort as a "selective review focused on studies that gave evidence to the distraction or nondistraction mechanisms by which VR leads to the treatment of

pain."

The authors had identified six studies: four small randomized controlled studies and two prospective/pilot studies. The authors said more large randomized control studies were needed.

Reuters said the articles under their review had been published from 2000 to 2016. Topics involved different ways virtual reality might augment pain relief. Rapaport in Reuters summed up the significance of what this review suggests.

"Virtual reality games might help ease pain not just by distracting players from what ails them, but also by triggering changes in the [brain](#)."

"In addition to distraction, there are novel mechanisms for VR treatment in pain, such as producing neurophysiologic changes related to conditioning and exposure therapies," said the authors.

This would be very good news for [health policy makers](#) who are concerned about [opioid abuse](#).

"Over 100 million Americans suffer long-term pain," wrote Jo Marchant in *Quartz* earlier this year. "Now they find themselves at the epicentre of [two](#) colliding health catastrophes in the USA: [chronic pain](#) and opioid abuse."

(One example of researchers taking an interest in virtual reality in this manner is an interdisciplinary team of researchers for a University of Washington [VR pain distraction](#) project. The team includes VR experts, pain experts, clinical doctors/nurses, physical therapists, occupational therapists, research coordinators and brain scan experts.)

As for this review in *Pain Medicine*, Reuters quoted one of the study authors, who mentioned something called guided imagery. Princeton's Gupta: "Guided imagery has long been a treatment

for psychological disorders, and virtual reality is a more immersive way to provide guided imagery."

Nonetheless, Gupta said in an email to Reuters that more research was needed to tell if virtual reality is truly effective.

*Pain Medicine* is a multi-disciplinary journal dedicated to pain clinicians, educators and researchers with an interest in pain. The publication date was August 31. The title is "Innovative Technology Using Virtual Reality in the Treatment of Pain: Does It Reduce Pain via Distraction, or Is There More to It?"

**More information:** Anita Gupta et al. Innovative Technology Using Virtual Reality in the Treatment of Pain: Does It Reduce Pain via Distraction, or Is There More to It?, *Pain Medicine* (2017). DOI: [10.1093/pm/pnx109](https://doi.org/10.1093/pm/pnx109)

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