

Immersive Virtual Reality To Manage Pain

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SUMMARY

Researchers led by Mark Cohen from the Department of Psychiatry at UCLA have developed a virtual reality-based therapy to manage chronic pain.

BACKGROUND

Chronic pain affects 100 million people and costs the U.S. roughly 650 billion dollars in healthcare and lost productivity costs. Roughly 30 million people with chronic pain use prescription opiates to manage it. However, patients can build a tolerance to opiates, and opiates have many harmful side effects along with having a high abuse potential. Prescription opiates also do not address the psychological opponents to pain. Recent studies have demonstrated the efficacy of virtual reality in pain control, but this finding has yet to be commercialized due to high cost of production and the lack of portability to be used in a home setting.

INNOVATION

Researchers led by Mark Cohen from the Department of Psychiatry at UCLA have developed a virtual reality-based therapy to manage chronic pain. They have created a stand-alone unit that comprises high-quality immersive VR goggles, a high-performance computing platform that delivers a smooth virtual reality experience, and processing support to track patient physiological and behavioral processes and update “game” play dynamically in response to varying inputs and the immediate needs of medical procedures.

This unit will deliver video treatment and immersive, interactive gaming to take the patient’s mind away from pain while also monitoring, recording, and transmitting subjective physiological measurements in response to a defined duration of intervention. Through this setup, researchers will identify patient-specific physiological markers for pain to tune the treatment as needed and provide the physician with information on efficacy and compliance. This platform will also allow developers to create experiences made for specific types of pain treatment. In clinical practice, this will be used in conjunction with other treatments.

APPLICATIONS

- ▶ Chronic pain management
- ▶ Acute pain management
- ▶ Treatment of psychological disorders
- ▶ Treatment of cognitive disorders

ADVANTAGES

- ▶ No side effects of pharmacology
- ▶ Cheap packaging using commercially available products
- ▶ Portable
- ▶ Adaptive and flexible

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- ▶ [A Method For Measuring Cardiac Timing From A Ballistocardiogram](#)
- ▶ [Fully Automated Localization Of EEG Electrodes](#)

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INVENTORS

- ▶ Cohen, Mark S.

OTHER INFORMATION

KEYWORDS

virtual reality, gaming, pain, pain management, chronic pain, VR-based therapy, precision medicine

CATEGORIZED AS

- ▶ **Biotechnology**
 - ▶ Other
- ▶ **Computer**
 - ▶ Other
- ▶ **Medical**
 - ▶ Devices
 - ▶ Other
 - ▶ Rehabilitation
 - ▶ Software

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