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## **QUASAR, INC. ANNOUNCES STUDY OF NONPHARMACOLOGICAL TREATMENT FOR BACK PAIN**

SAN DIEGO, January 22, 2021– Quantum Applied Science & Research (QUASAR), Inc., a San Diego based high tech company, is working with UC San Diego Health on a study funded by the NIH’s HEAL Initiative investigating the potential of a combination of Virtual Reality (VR) and guided neurofeedback to lessen chronic back pain.

Over 80% of the population will experience an episode of low back pain during their lifetime. The global lower back pain market was valued at \$7.28 billion in 2019. Treatment of back pain often involves use of pain-relieving drugs, but the US is experiencing a crisis of opioid addiction. In response to this national public health crisis, the National Institutes of Health has initiated the Helping to End Addiction Long-term (or HEAL) Initiative, an aggressive, trans-agency effort to speed scientific solutions to this problem. The HEAL Initiative is funding QUASAR’s research into a nonpharmacological pain treatment through a grant.

The research project is entitled “Neurofeedback-EEG-VR (NEVR) System for Non-opioid Pain Therapy”. In this study, QUASAR’s dry electrodes will be used to measure the brain’s electric signals and enable a guided brain self-regulation training procedure known as neurofeedback. Studies have shown that neurofeedback training can be used to reduce the pain perception of low back pain patients. Effective neurofeedback practice needs multiple sessions for training.

QUASAR’s innovation is to combine neurofeedback with Virtual Reality, which has also been investigated as a pain management technique. VR offers the benefit of providing immediate distraction from pain through immersion in a virtual world. The project’s goal is to investigate whether the use of the two techniques together can provide more efficient and longer lasting pain management than the use of either of them alone. For the initial phase of this study, we are using Healium’s immersive videos that visualize relaxing worlds, and a custom VR version of Zukor’s “Air” neurofeedback game. The combined VR and neurofeedback aim to get the users’ brain activity into patterns that reduce pain perception.

QUASAR is testing this NEVR system with Krishnan Chakravarthy, MD, PhD, assistant professor of anesthesiology at UC San Diego School of Medicine and head of a pain care lab at UC San Diego Altman Clinical and Translational Research Institute. Dr. Chakravarthy is overseeing the investigation on patients suffering from chronic back pain. Study subjects will be asked to wear the device, which is in a headset form with a VR device attached and will watch selected videos on the VR device and do neurofeedback training. QUASAR’s dry electrodes do not require any skin treatment, gels, or sticky pads and the procedure is noninvasive and sedentary.

QUASAR is excited about the potential of this device to enable non-pharmaceutical management of pain and looking forward to the study results. Anyone seeking information about the study can contact QUASAR or look it up on [clinicaltrials.gov](https://clinicaltrials.gov) under “NEVR”.



### **About QUASAR**

QUASAR, Inc. ([www.quasarusa.com](http://www.quasarusa.com)) was founded in 1998. The company is known for high-fidelity dry sensors for noninvasive physiological monitoring. QUASAR's focus is the creation of high performance systems for measurement of electroencephalogram (EEG) and electrocardiogram (ECG). QUASAR also develops specialized algorithms to interpret these signals for real-world applications such as optimizing education programs and enhancing athletic performance.

### **About UC San Diego Health**

UC San Diego Health is one of five academic medical centers within the 10-campus University of California system. Collectively known as UC Health, these medical centers comprise the fourth largest health care delivery system in California and train nearly 50 percent of the state's medical students and medical residents.

UC San Diego Health currently integrates research, teaching and clinical care at locations in Hillcrest and La Jolla. Each medical complex supports acute in-patient care and a spectrum of outpatient primary and specialty medical and surgical services, including emergency patient care. Ambulatory clinics located throughout the county further help UC San Diego Health to deliver care to the entire region.

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