Leading Drug Rehab

Deep Brain Stimulation Reduces Chronic Pain

* By J J. Hall

The use of pain-relieving drugs to treat chronic pain is being reviewed in light of growing evidence that these medications have significant complications.

An alternative therapy is to remove electrical stimulation of a deep, intractable source of pain signals to the brain, a technique known as deep brain stimulation. The approach, studied by a University of Texas at Arlington research team, appears promising.

"This is the first study to use an wireless electrical device to elevate pain by directly stimulating the ventral tegmental area of the brain," said Dr. Byung Ho Park, University of Texas psychology professor.

"We'll do further laboratory testing, the next big step. Then provide classic pain in a human that in future we'll be able to do wireless pain relief without the side effects of medications."

Park and J. C. Chen, an electrical engineering professor, detail their discoveries in a new paper published in the journal Experimental Brain Research. They say the findings could be useful in the treatment of chronic pain, which affects millions of people in the U.S.

In their experiments, Park and Chen used implanted custom-designed devices to determine that stimulation of the ventral tegmental area reduced the pain sensation. They also confirmed that the stimulation reduced pain in the cell, effectively blocking the release of pain-related chemicals.

Chen, a researcher at the University of Texas at Arlington, coordinated the research on this important work.

"We hope that this research will provide insights into the treatment of chronic pain," Park said. "It's our belief that this technique has potential for the treatment of chronic pain, which affects millions of people in the U.S."

Due to difficult personal experiences with chronic pain, Park and Chen have worked for decades to find a solution for chronic pain. Their studies of brain functions and the development of relatively new technologies have allowed them to explore new treatment options.

Park has spent decades in pain research with Kumar. He was a medical doctor and a doctorate in neuroscience from University of Texas Southwestern Medical Center in Dallas. He has held professorships at Duke University and the University of Texas at Arlington, the National Institutes of Health and the National Institute of Neurological Disorders and Stroke.

"Both the clusters, the ventral tegmental area and the substantia nigra, are involved in the regulation of pain," Park said. "We also found that the stimulation of the area of the brain can be used to reduce pain levels."

Source: University of Texas, Arlington

Knee Pain

Treatment Info

Get info on Knee Pain. Visit Or Outpatient Facility in Deerfield. It's easy to better understand and manage Knee Pain.

About Dr. Hall

Dr. J. Hall joined the UC in 2011 and specializes in knee pain. He is a member of the American Association for the Study of Knee Pain. His research focuses on evaluating the effectiveness of novel treatments for knee pain.

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