

Trial starts for phone app that uses light, sound and brainwaves to treat pain

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Scientists at The University of Manchester are developing a smart phone application connected to goggles which flash light at a special frequency to tune patients' brains in a ground-breaking treatment for chronic pain.

The phone app being developed by the team will eventually allow patients to choose between light, audio, or 'neurofeedback' treatments for [pain](#).

The team are on the hunt for volunteers with any chronic pain condition—except cancer—to test the three revolutionary technologies in a clinical setting.

The light therapy makes use of the team's research demonstrating that pain can be alleviated by tuning the [brain](#) to a particular frequency of 10 cycles per second—known as alpha frequency.

The audio therapy uses two "binaural" tones—close in pitch but not identical—which the user can use to focus on to tune their brain to the alpha frequency.

The team are also testing a "neurofeedback" system which measures the user's brain activity in real-time with an EEG cap, teaching him or her to increase activity in relevant brain regions.

Neurofeedback aims to gain control over brain activity in brain regions associated with increased pain resilience, enabling patients to manage their own chronic pain better.

The user's increased pain resilience levels will be tested by asking them to submerge their hand in cold water, known as the Cold Pressor Test.

The group's study, published in 2016, examined pain-free volunteers, giving them short bursts of pain. The volunteers reported feeling less pain when they were exposed to light pulses or sounds at alpha frequency.

Professor Anthony Jones from The University of Manchester is the

Director of the Human Pain Research Group (HPRG), which is based at Salford Royal NHS Foundation Trust, part of the Northern Care Alliance NHS Group.

He said: "We hope this work will be good news for up to 40 % of the UK's population—rising to 62% in the over 75s—who suffer from chronic pain.

"These exciting technologies are a simple, safe and harmless and have exciting potential to allow patients with chronic pain to treat themselves in the comfort of their own homes.

"For many, it will for the first time they are given control of their condition. We think these technologies could be used either in addition or instead of their current pain therapies.

"But to allow us to move on to the next stage, we need volunteers who are willing to work with us to try the technology so we can develop it further."

Dr. Manoj Sivan is a consultant in NW CATS and senior lecturer at The University of Manchester.

He said: "This treatment not only helps reduce pain but could influence other associated symptoms such as sleep problems, fatigue and mood.

"Our ongoing studies could not only help chronic pain patients with their symptoms but also contribute to develop this research idea that could benefit millions of [chronic pain](#) sufferers worldwide"

Dr. James Henshaw from The University of Manchester said: "We are very excited about this work and about how much control the Smart Neuro-therapies Platform can give back to the patient.

"We are currently looking for volunteers aged 40 or over to test the neurofeedback system and volunteers aged 18 or over to test the visual and auditory app, so if you are interested please get in touch."

Heather Wallace, General Manager of Pain Concern said: "Chronic pain affects so many people in the UK and makes it difficult for them to function.

"There is no one-size fits all approach to managing pain. That's why it is vital that we look at new ways of helping people living with pain to understand and manage their own condition.

"We welcome the new University of Manchester research into this exciting technology and the potential it offers as an additional or replacement way of managing pain."

More information: Pain Research at Manchester:
research.bmh.manchester.ac.uk/pain

If you want to take part in the neurofeedback trial, email James Henshaw (james.henshaw-2@manchester.ac.uk) or Tim Rainey on 0161 206 0205

If you want to take part in the visual and auditory trial email Helen Locke (helen.locke@manchester.ac.uk) or Sarah Martin (sarah.martin-2@manchester.ac.uk).

Provided by University of Manchester

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