When pleasure is pain: Understanding pain circuitry to help those in chronic pain

Dr Saad Nagi, Research Fellow in the School of Medicine has been awarded funding from the International Association for the Study of Pain (IASP) to conduct research into the role that touch and cooling sensitive fibres, known as C-tactile fibres (CTs), play in generating tactile and cold allodynia. Allodynia is a condition whereby an otherwise pleasant or neutral stimulus (such as gentle stroking or thermal stimuli) is perceived as pain or a burning sensation.

For Dr Nagi, allodynia is a serious problem warranting greater study. He says that, ‘in everyday life, we recognise, with relative ease, the boundary between touch, cold and pain, however for those suffering with allodynia the boundary between normal non-painful touch, cold and pain is blurred. In this project, the first of its kind, we aim to explore the role of CTs in allodynia and to understand the mechanisms that underlie therapeutically intractable pain conditions, which may lead to the development of novel therapies to treat the actual sources of pain, rather than merely the symptoms of pain.’

The research project has two key stages. The first is to determine whether these fibres contribute to cold allodynia. 40 healthy people will be recruited and tested with a range of warm and cold thermal stimuli prior to and following selective intradermal protein channel blockers. Their responses will be carefully analysed as to whether the onset of allodynia is immediate or delayed, whether the duration of the allodynia is only present during the stimulus, or it tends to outlast the application of the stimuli. The second stage is to determine whether these fibres contribute to ongoing and evoked pain in 40 patients with chronic pain conditions.

Allodynia is frequently noted in patients with diabetes, and those who have had chemotherapy. This research will provide a better understanding of pain circuitry, and could lead to new forms of pain therapy, improving the quality of life for those with chronic pain.

Project Title: Role of C-tactile Fibres in Pain Processing: Experimental and Clinical Investigations
Funding has been set at: $21,471
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