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Title	Effects of non-invasive brain stimulation on neural and behavioural changes following stroke
Abstract (max 300w)	<p>Stroke is a major cause of long term disability worldwide, however, current therapeutics are limited. Previous research in mice has demonstrated that optogenetic stimulation in the gamma frequency range, specifically at 40Hz, is beneficial for recovery post-stroke. However, this treatment option is highly invasive and not able to be easily translated to human patients. Thus, our project is investigating whether delivering non-invasive brain stimulation at 40Hz could be a potential therapeutic to restore neuronal dynamics and improve behaviour. In this study we investigated the long-term neural and behavioural changes in mice following stroke. Baseline imaging was performed on awake mice over a period of three weeks, before inducing a photothrombotic stroke in the area between the primary motor cortex and somatosensory cortex. Behaviour was assessed for three days prior to stroke, and seven days following stroke using the neurodeficit score. Mice were imaged for 13 sessions over a 30-day period following stroke. Following stroke, our results show changes to both neuronal activity and connectivity, as well as behaviour. We also show that following brain stimulation there are altered patterns of neuronal activity and connectivity. These results suggest that non-invasive brain stimulation may be a potential therapeutic.</p>

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