TCS/17/14 – Delineating the neural mediators of rheumatoid arthritis related fatigue

We seek to tackle the highly impactful problem of fatigue – an issue which is pervasive across the chronic disease spectrum. The causes of fatigue are poorly understood and as a consequence treatment options are limited and patients are left feeling ignored.

In rheumatoid arthritis (RA), a common disorder where fatigue is considered to be especially burdensome, we have recently identified several regions of the brain that may be important in the generation and/or maintenance of fatigue. In the future we wish to alleviate fatigue by targeting such regions using non-invasive devices which can modulate relevant areas of the brain using magnetic fields or very low levels of electrical current. These devices have been successfully tested for other conditions, such as depression, where they have been found to be both safe and effective. Our current knowledge however is not yet sufficiently precise to undertake trials of these interventions for the treatment of fatigue. We therefore propose a study - embedded within an already funded clinical trial - which will apply cutting edge MRI brain scanning methods to select out those candidate brain regions which are most likely to be relevant and most suitable for future targeted interventions.