

TCS/19/31 - Clinical translation of an automated brain MRI health index to predict dementia

One in three people born in the UK today will develop dementia. Predicting who will develop dementia is challenging. MRI scans can detect markers of small vessel disease and brain shrinkage which may herald the earliest signs of dementia. However, these markers on their own have only a limited ability to identify who will develop dementia. We have therefore created a method for capturing all of these markers in a single measure – the ‘brain health index’ (BHI). Initial work suggests that BHI is a better measure of dementia risk than individual brain MRI markers. We have tested BHI in small numbers of people with stroke; we now want to see if the approach works in wider patient groups. We will use scans obtained from people with varying degrees of memory problems that attended research studies, clinics and hospitals in the UK and Europe. We believe that using existing scans is the most cost-effective and efficient way to thoroughly test BHI. We will involve clinicians and the public at all stages of our project. Our goal is to assess whether BHI provides useful information on risk of dementia for clinicians, patients, and researchers designing studies of potential treatments.