

New finding may encourage the use of MRI in clinical decisions

18th May, 2016



Magnetic resonance imaging (MRI) is routinely used in Australian clinics for the diagnosis of MS in people showing signs of the disease, primarily through the identification of the lesions typical of MS.

MRI is also used during clinical trials and other research projects to track the overall loss of brain tissue in people and their response to different treatments. It is known that brain tissue loss occurs at a faster rate in people with MS than in people

who do not have the disease, however, tracking brain tissue loss in people with MS is not yet a routine part of clinical practice and treatment decision-making.

[Dr Heidi Beadnall](#), a clinician at the Brain and Mind Centre in Sydney, has been funded by MS Research Australia to undertake a PhD which will determine whether MRI measurements of brain atrophy, taken over time could routinely be used within a busy clinical practice to measure brain tissue loss in people with MS. If successful, MRI scans could then be used to provide a more holistic picture of a person's response to treatments over time, beyond the presence or absence of lesions and give valuable insight to inform treatment decisions in the clinic.

In a recent article, published in the [Journal of Neurology, Neurosurgery and Psychiatry](#) and also presented at the prestigious American Academy of Neurology (AAN) meeting in 2015, Dr Beadnall, her colleague Chenyu Wang from the Sydney Neuroimaging Analysis Centre and others, compared a number of ways to analyse whole brain volume using MRI. The researchers compared the method currently being used to assess whole brain volume loss in people with MS (called SIENAX) with two other methods. SIENAX is widely used in clinical trials, but is more resource intensive.

One of the reasons that MRI measures of brain atrophy has not been implemented into clinical practice is that the current best method requires specially trained personnel and specialised reading centres to perform accurate measurements. The two methods that they compared to SEINAX in this study can be run automatically as part of a routine scan and would be easier to use in a clinical setting.

The research team looked at MRIs taken of 61 people with MS and two people with clinically isolated syndrome, which is a precursor syndrome to MS. They have found that measurements using the automated analysis were comparable to SIENAX and this findings may encourage the use of these automated measurements of atrophy in the analysis of MRI in clinical decisions.

