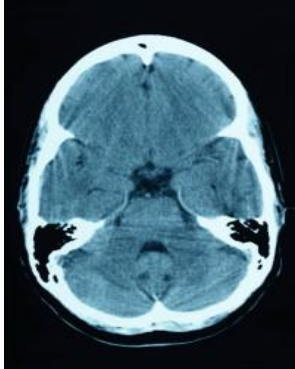


## Australian researchers develop new method for identifying lesions

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Researchers from the Royal Melbourne Hospital and the University of Melbourne this week published new findings that could change the way doctors identify MS lesions using brain scanning.

Led by senior author Dr Frank Gaillard, the researchers developed specialised software for analysing magnetic resonance imaging (MRI) scans that can be trained to identify MS lesions. This software will help doctors to identify and respond quickly to the earliest signs of a new lesion, even before they cause any symptoms.

By using specialised technology to assess a group of brain scans collected between 2009 and 2011, the researchers were able to develop a sophisticated software platform that can automatically identify new lesions and even highlight tiny changes in existing lesions, by comparing between MRI scans taken at different time points.

Currently, neuroradiologists and neurologists must spend a considerable amount of time carefully examining brain scans and manually comparing new scans against old scans to identify any changes. The new software substantially reduced this processing time - the mean processing time using the software was less than three minutes per case, compared to a much more extensive assessment time required for manual assessment. Crucially, the software showed high accuracy in identifying lesions, and was able to identify three times more new lesions than a neuroradiologist was able to detect through manual examination, with a high degree of reliability.

Published in the [American Journal of Neuroradiology](#), this development offers promise for detecting new lesions more quickly and at an earlier stage of development, and could also allow earlier detection and treatment of MS. The report showed that 1 in 5 people in the study had a previous report that was 'stable', but actually had sufficient change in lesion load that would have warranted a change in management, such as switching MS medications earlier than planned. This type of technology could also be useful for measuring treatment response over time.

This technology is still in an early stage of development, but has already been tested in real-time during MRI scans at Royal Melbourne Hospital. With further research and development, this software could become a vital tool for the assessment and management of MS and many other brain disorders.

MS Research Australia is currently funding a number of MRI-based research projects, including two PhD Scholarships, investigating [novel imaging methods for measuring nerve degeneration](#), and [the use of MRI in the clinic to measure brain volume loss over time](#).