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Neurologists develop software application to help identify subtle epileptic lesions

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Researchers from the Department of Neurology at NYU Langone Medical Center identified potential benefits of a new computer application that automatically detects subtle brain lesions in MRI scans in patients with epilepsy. In a study published in the February 2011 issue of *PLoS ONE*, the authors discuss the software's potential to assist radiologists in better identifying and locating visually undetectable, operable lesions.

"Our method automatically identified abnormal areas in MRI scans in 92 percent of the patients sampled, which were previously identified by expert radiologists reviewing multiple images," said first-author Thomas Thesen, PhD, assistant professor, Department of Neurology, NYU Langone Medical Center. "Based on these findings, we will focus on the ability of our application to detect the more subtle epileptic malformations that are not easily detectable by the human eye. We believe this could lead to new tools to greatly help radiologists provide more accurate and faster results with objective measures for standardizing readings."

The proof-of-concept study, entitled "Detection of epileptogenic cortical malformations with surface-based MRI morphometry," demonstrates that non-invasive and automated detection of known epileptogenic structural abnormalities in cortex is possible, and supports its potential use as a tool for diagnosis and planning of epilepsy surgery.

The researchers are encouraged by the initial results and have already

started evaluating the applications ability to determine undetected lesions in previously negative MRI scans, with findings to be published later this year.

More information: The article on *PLoS ONE* can be found at www.plosone.org/article/info %3Adoi%2F10.1371%2Fjournal.pone.0016430

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