

New guideline: MRI better than CT scans at diagnosing stroke

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Doctors should use a diffusion MRI scan to diagnose stroke instead of a CT scan, according to a new guideline from the American Academy of Neurology. The guideline is published in the July 13, 2010, issue of *Neurology*.

"While CT scans are currently the standard test used to diagnose [stroke](#), the Academy's guideline found that MRI scans are better at detecting [ischemic stroke](#) damage compared to CT scans," said lead guideline author Peter Schellinger, MD, with the Johannes Wesling Clinical Center in Minden, Germany.

A majority of strokes are ischemic, caused by lack of blood flow in the brain, usually due to a blockage or a blood clot. The window for treatment to reverse the damage from an ischemic stroke is measured in hours.

CT scans are a specialized kind of X-ray taken of the brain while MRI uses magnets and radio waves that show clearer images of [brain tissue](#). Diffusion MRI measures molecular water motion in the tissue, showing where water diffusion is restricted and therefore [brain damage](#) has occurred.

According to the guideline, diffusion MRI should be considered more useful than a [CT scan](#) for diagnosing acute ischemic stroke within 12 hours of a person's first stroke symptom. In one large study, among others, that was reviewed for the guideline, stroke was accurately

detected 83 percent of the time by MRI versus 26 percent of the time by CT.

"Specific types of MRI scans can help reveal how severe some types of stroke are. These scans also may help find lesions early," Schellinger said. "This is important because the research suggests finding lesions early may lead to better health outcomes."

In addition, the guideline found MRI scans more accurately detected [lesions](#) from stroke and helped identify the severity of some types of stroke or diagnose other medical conditions with similar symptoms. Schellinger says studies have proven the importance of using MRI in emergency rooms but says doubts still exist surrounding the use of stroke MRI scans in clinical settings. "This guideline gives doctors clear direction in using MRI first, ultimately helping people get an acute stroke diagnosis and treatment faster. However, one situation in which CT may still be used first is when a person needs an emergency injection of drug therapy (also known as intravenous thrombolytic therapy) to break up blood clots, if MRI is not immediately available, to avoid delays in starting this treatment. MRI can be added later if more information is needed. Otherwise MRI should be used first."

Stroke is the third leading cause of death and the leading cause of permanent disability in the United States.

Provided by American Academy of Neurology

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