

This talk is aimed at clinicians and researchers interested in whether MRI triage approaches to acute stroke are valid in individual subjects (as opposed to large groups). Diffusion-weighted imaging (DWI) appears to identify infarcted tissue in single subjects with high reliability. As a marker of vascular injury, it has been adopted by the American Association of Neurology as a biomarker for infarction in patients with transient ischemic symptoms. Perfusion-weighted imaging (PWI) has also been applied to manage acute stroke patients. Several trials have shown that a mismatch pattern between DWI and PWI can be identified that predicts improved outcome with successful endovascular therapy. However, other trials have failed to show such effects. Due to this, there remains much controversy as to how specific perfusion imaging may be for guiding management of a single subject. This is in part because it is a “snapshot” in time, and perfusion levels can vary with many factors, including hydration, head position, and the development or failure of collateral networks. After this talk, learners will be aware of the relative value and reliability of the commonly-used MR imaging sequences in acute stroke, which will allow them to better interpret such images in single stroke subjects.