

Acute Stroke: *What the Radiologist Provides*

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Stroke is a leading cause of death and disability worldwide. Imaging plays a critical role in evaluating patients suspected of acute stroke and transient ischemic attack (TIA), especially prior to initiating treatment. Over the past few decades, major advances have occurred in stroke imaging and treatment, including Food and Drug Administration (FDA) approval of recanalization therapies for treatment of acute ischemic stroke. The primary goal of imaging patients with acute stroke symptoms is to distinguish between hemorrhagic and ischemic stroke. In ischemic stroke patients, secondary goals of imaging prior to initiating revascularization interventions with intravenous (IV) thrombolysis or endovascular therapies include identification of the location and extent of intravascular clot as well as the presence and extent of “*ischemic core*” (irreversibly damaged tissue) and “*penumbra*” (hypoperfused tissue at risk for infarction). In addition, early identification of the stroke etiology or mechanism (e.g., carotid atherosclerotic disease, vascular dissection or other treatable structural causes) is critical to treatment decisions and long-term management.