

# Investigations on salvageable brain tissue: When and How?

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# Disclosures

- No financial disclosures
- Off-label use of alteplase beyond 3h after stroke onset
- Off-label use of tenecteplase in ischemic stroke

# Learning objectives

- Understand the pros and cons of each CT and MR modality for identification of irreversibly injured ischemic core vs potentially salvageable penumbra
- Understand the evidence for treatment selection based on imaging evidence of “salvageable brain” for IVT and EVT in standard and extended time windows
- Understand practical considerations in implementing advanced imaging in a streamlined acute stroke workflow

# Key messages

- Integrating all available information from different imaging modalities and clinical examination provides the best estimate of salvageable brain
- Non-contrast CT hypodensity is specific but not sensitive for irreversible injury early after stroke, has limited inter-rater reliability and can only infer salvageability through clinical-imaging mismatch
- CT angiography collaterals and CBF-weighted source image provide some indication of tissue at risk
- CT perfusion provides a spatially resolved estimate of irreversibly injured ischemic core and salvageable penumbra and underpins the evidence-based treatment of patients with EVT and IVT beyond standard time windows
- MRI has greater accuracy but less availability/practicality