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### Brain MRI Protocol for ECST-2

**Timing of baseline MRI:** Ideally MRI should be performed before randomisation, in the time window laid down in the protocol.

However, we can accept a window for MRI *after* randomisation of 2 weeks for symptomatic patients and 4 weeks for asymptomatic patients **so long as done before surgery if so randomised**, in line with our targets for planned revascularization. In this case a CT must be done before randomisation.

Brain MRI sequences should include (volumetric imaging to be performed if possible):

- **Axial Diffusion-Weighted MRI (DWI)** is required to detect acute ischaemic lesion, with **Apparent Diffusion Coefficient (ADC)**
- **Coronal T1-weighted sequence** [3mm or isotropic volumetric (1-1.5mm<sup>3</sup>)]
- **Axial T2-weighted MRI**
- **Fluid attenuated inversion recovery (FLAIR) sequence** [thin section (3mm) or isotropic volumetric (1-1.5mm<sup>3</sup>)]\*
- **Axial gradient-recalled echo (GRE) T2\* MRI or Susceptibility-weighted Imaging (SWI)**

\*Ideally the centres should perform a 3D FLAIR sequence, which is usually acquired in the sagittal plane in isotropic voxels and can be reformatted in coronal and axial planes. If the centre cannot perform a 3D FLAIR and only a 2D FLAIR, then the preference would be to acquire the 2D FLAIR in the coronal plane

- **Contrast enhanced MRA (CEMRA)** is optional as a method of arterial imaging (patients are required to have two modalities of carotid artery imaging to confirm degree and location of stenosis).