Magnetic Resonance Imaging (MRI)

Abnormal Magnetic Resonance Imaging (MRI) +/- serial cranial ultrasound (CUS) in pre-term infants, with neuroanatomical abnormalities predictive of cerebral palsy.

The most predictive MRI patterns are:

- Predominant white matter injury [cystic periventricular leukomalacia (PVL) or periventricular haemorrhagic infarctions] (56%)
- Cortical and deep grey matter lesions [basal ganglia/thalamus lesions, watershed injury (parasagittal injury), multicystic encephalomalacia, stroke] (18%)
- Brain maldevelopments [lissencephaly, pachygyria, cortical dysplasia, polymicrogyria, and schizencephaly] (9%)

Cranial ultrasound

The most predictive cranial ultrasound patterns are:

- Cystic PVL (periventricular cystic lesions and/or tissue loss)
- IVH Grade III-IV (PVHI)
- Persistent ventricular dilatation/abnormal shape of ventricle at term age.

Images 1, 2 and 3 provided by Associate Professor Andrea Guzzetta and/or Simona Fiori from the University of Pisa. Image 3 provided by Dr Cathy Morgan, Cerebral Palsy Alliance Research Institute.