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“Exploring the biology of childhood brain tumours using advancing magnetic resonance imaging”

**Abstract:**

Brain tumours represent the most common solid tumour of childhood, and the highest cause of paediatric cancer-related mortality. An individual patient’s prognosis is highly dependent on the location and biology of their tumour, and as such, non-invasive diagnostic imaging forms an essential part of a patient’s clinical management. Magnetic resonance imaging (MRI) is the preferred modality for diagnosing brain tumours and monitoring a patient’s response to treatment. However, although conventional MRI techniques are highly effective at identifying the size and location of a tumour, they leave many questions un-answered regarding its biology and microstructure. In this talk, I will describe how we can utilise advanced MRI techniques to explore the cellular and vascular properties of childhood brain tumours in more detail. In particular, I will focus on the use of diffusion-weighted imaging for delineating tumour-induced disruption of white matter pathways, and perfusion-weighted imaging for investigating the differences in vascular structure across brain tumour subtypes. I will also address some of the unique challenges faced in applying these techniques in paediatric cancer.

*All welcome to attend.*