

Supplementary Table S1 Additional imaging sequences are warranted for specific intracranial sites (orbits) and NF imaging protocol

MRI sequence	Slice thickness/parameters	Imaging plane	Comments
Optic pathway lesions			
T2w fat saturated or STIR	Slice thickness \leq 3 mm and slice gap \leq 1 mm	Coronal	Front of globe to end of optic tracts
T1W TSE/FSE	Slice thickness \leq 3 mm and slice gap \leq 1 mm	Coronal	Front of globe to end of optic tracts
T2W fat saturated or STIR	Slice thickness \leq 3 mm and slice gap \leq 1 mm	Axial	Limited sections covering the orbits and optic tracts
Postcontrast			
T1W fat saturated	Slice thickness \leq 3 mm and slice gap \leq 1 mm	Coronal	Front of globe to end of optic tracts
T1W fat saturated	Slice thickness \leq 3 mm and slice gap \leq 1 mm	Axial	Limited sections covering the orbits and optic tracts
NF1: Orbital sequences plus			
FLAIR	Slice thickness \leq 4 mm and slice gap \leq 1 mm	Coronal or axial	Whole brain
T2W	Slice thickness \leq 4 mm and slice gap \leq 1 mm	Axial	Whole brain
T1W TSE/FSE or b. 3D T1W	a. Slice thickness \leq 4 mm and slice gap \leq 1 mm or b. Slice thickness $<$ 1 mm and no slice gap	Axial or Sagittal	Whole brain
DWI/ADC	Slice thickness \leq 4 mm and slice gap \leq 1 mm	Axial	If glioma suspected
Postcontrast a. T1W TSE/FSE or b. 3D T1W	a. Slice thickness \leq 4 mm and slice gap \leq 1 mm or b. Slice thickness $<$ 1 mm and no slice gap	a. Axial, sagittal and coronal or b. Sagittal	If glioma suspected
MR spectroscopy	Single voxel or multivoxel	Basal ganglia	Voxel placed on lesion if glioma suspected
NF2: Routine brain and spine protocol with contrast			

Abbreviations: 3D, three-dimensional; ADC, apparent diffusion coefficient; DWI, diffusion-weighted imaging; FLAIR, fluid-attenuated inversion recovery; FSE, fast spin echo; MRI, magnetic resonance imaging; NF2, neurofibromatosis type 2; STIR, short tau inversion recovery; T1W, T1-weighted; TSE, turbo spin echo.

Supplementary Table S2 RAPNO response criteria definitions for assessment of pediatric LGG

RAPNO response criteria	Imaging sequence	Definition (comparison is always with the baseline scan)
Complete response	T2W, FLAIR and postcontrast T1W ^a	Complete disappearance of target lesion and metastatic disease
Major response	T2W and FLAIR ^{a,b}	Reduction in size of the target lesion by \geq 50% but not sufficient enough to call complete response
Partial response	T2W and FLAIR ^{a,b}	Reduction in size of the target lesion by \geq 50% with variable enhancement
Minor response	T2W and FLAIR ^{a,b}	Reduction in size of the target lesion by 25–49% with variable enhancement
Stable disease	T2W and FLAIR ^{a,b}	Minor changes in size of the target lesion not sufficient to call progressive disease or response
Progressive disease	T2W and FLAIR ^{b,c}	Increase in size of the target lesion by $>$ 25%; development of new or $>$ 25% increase in size of the metastatic lesion

Abbreviations: FLAIR, fluid-attenuated inversion recovery; LGG, low-grade gliomas; RAPNO, Response Assessment in Pediatric Neuro-Oncology; T1W, T1-weighted.

^aStable clinically or have improved on physical/functional/neurological assessment.

^bPostcontrast enhancement does not contribute to assessment.

^cClinically worse or has worsened on physical/functional/neurological assessment, likely directly related to tumor progression.

Supplementary Table S3 RAPNO response criteria definitions for assessment of pediatric HGG

RAPNO response criteria	Imaging sequence	Definition (comparison is always with the baseline scan except for PD)	Antiangiogenics or corticosteroids
CR ^a	T2W, FLAIR and postcontrast T1W	Complete disappearance of target and nontarget lesions	Off antiangiogenics and off corticosteroids
	DWI	Complete disappearance of abnormal restricted diffusion	
PR ^a	T2W, FLAIR and postcontrast T1W	Reduction in the sum of the products of the two perpendicular diameters of the target lesions by $\geq 50\%$	Off antiangiogenics and stable or reduced dose of corticosteroids
	DWI	Reduced size of abnormal restricted diffusion	
MiR ^a	T2W, FLAIR and postcontrast T1W	Reduction in the sum of the products of the two perpendicular diameters of the target lesions by 25–50%	Off antiangiogenics and stable or reduced dose of corticosteroids
	DWI	Reduced size of abnormal restricted diffusion	
Stable disease ^a	T2W, FLAIR and postcontrast T1W	Does not meet criteria for CR, PR, MiR, or PD	Off antiangiogenics and stable or reduced dose of corticosteroids
	DWI	Does not meet criteria for CR, PR, MiR, or PD	
PD ^b	T2W, FLAIR and postcontrast T1W	Increase in the sum of the products of the two perpendicular diameters of the target lesions by $\geq 25\%$ compared to baseline scan or best response; or an increase in size of nonmeasurable disease or nontarget lesions	–
	DWI	Increase in abnormal diffusion or new diffusion changes not attributable to treatment	

Abbreviations: CR, complete response; DWI, diffusion-weighted imaging; FLAIR, fluid-attenuated inversion recovery; FSE, fast spin echo; HGG, high-grade gliomas; MiR, minor response; PD, progressive disease; PR, partial response; RAPNO, Response Assessment in Pediatric Neuro-Oncology; T1W, T1-weighted.

^aStable clinically or have improved on physical/functional/neurological assessment.

^bClinically worse or has worsened on physical/functional/neurological assessment, likely directly related to tumor progression.