Sequence Categories		Parameters Adopted			Applications & Features
		Repetition Time (TR)	Echo Time (TE)	Flip Angle /º	
T1-Weighted Imaging	Spin Echo (e.g., MSME)	Short, typically 300~600 ms e.g., 500 ms	Short, typically 10~20 ms e.g., 15.8 ms	180	Slow; Good T1 contrast; T1 can be directly calculated. T1 is suitable for detecting grey/white matter.
	Gradient Echo (e.g., FLASH, SNAP)	Short, typically 20~100 ms	Short, typically 2~6 ms	Small, ≤30	Allowing reduced acquisition times for T1-weighted imaging
T2- & T2*-Weighted Imaging	Spin Echo (e.g., MSME)	Long TR, typically >1600 ms	Long TE, typically 60~120 ms	180	Slow; Good T2 contrast. T2 is suitable for illuminating CSF/brain tissue.
	Fast Spin Echo (e.g., RARE)	Long, typically 2000~2400 ms e.g., 2000 ms	Long, e.g. 37.7 ms	180	Allowing reduced acquisition times for T2-weighted imaging.
Diffusion-Weighted imaging (DWI) & Diffusion Tensor Imaging (DTI)	Spin Echo (with a typical b-value of 1000 s/mm^2)	Typically around 2000 ms	Around 50 ms	180	Capable of detecting certain illnesses that show restrictions of water diffusion, e.g., demylinisation and cytotoxic edema; fast scanning can be achieved with enhanced gradients; A more sophisticated form of DWI, DTI, enables the determination of directionality and the magnitude of water diffusion, the visualisation of white matter fibres in the brain and mapping of subtle changes in the diseased white matter.

Abbreviations

T1	The characteristic time for longitudinal relaxation
T2	The characteristic time for transverse relaxation (transverse magnetization decay from spin-spin interactions)
T2*	The characteristic time for transverse relaxation (transverse magnetization decay from local magnetic field variations)
MSME	Multiple Slices Multiple Echoes: the number of slices and the number of echoes can be selected within one sequence.
RARE	Rapid Acquisition with Refocused Echoes: The image lines from multiple echoes are used for the same image.
FLASH	Fast Low Angle Shot: A fast sequence producing signals called gradient echo with low flip angles. FLASH uses a semi-random spoiler gradient after each echo to spoil the steady state (to destroy any remaining transverse magnetization) by causing a spatially dependent phase shift.
TR	Repetiton time: the period between the beginning of a pulse sequence and the beginning of the succeeding and identical pulse sequence.
TE	Echo time: time interval between the middle of the excitation pulse and the middle of the echo signal.
CSF:	Cerebro-spinal fluid that occupies the subarachnoid space and ventricular system around and inside the brain.