

## Scan protocol THIN Study

Scanner: Philips Achieva 3.0 T, software version 3.2.3.1

Parameter	DTI	DWI	3D T1	T1 IR	T2	SWI
b-value	b = 0 and b = 600 s/mm <sup>2</sup>	b = 0 and b = 700 s/mm <sup>2</sup>	n/a	n/a	n/a	n/a
Orientation	Axial	Axial	Sagittal	Axial	Axial	Axial
Fold-over Direction	AP	AP	AP	RL	RL	RL
TR	Shortest (3670 ms)	2400 ms	Shortest (9.9 ms)	5000 ms	7700 ms	shortest (16 ms)
TE	Shortest (52 ms)	Shortest (105 ms)	4.6 ms	15 ms	140 ms	shortest (23 ms)
TI	n/a	n/a	n/a	900 ms	n/a	n/a
No. of Slices	45	35	120	35	35	110
Slice Thickness	2.5 mm	3.0 mm	1.0 mm	3.0 mm	3.0 mm	1.0 mm
Slice Gap	0 mm	0 mm	0 mm	0 mm	0 mm	0 mm
FOV	200x200 mm	180x180 mm	192x192 mm	170x170 mm	170x170 mm	180x180 mm
Matrix (resolution)	80x80	192x192	192x192	256x256	256x256	448x448
Voxel Size	2.5x2.5x2.5	1.0x1.0x3.0	1.0x1.0x1.0	0.7x0.7x3.0	0.7x0.7x3.0	0.4x0.4x1.0
k-space Coverage	halfscan, factor 0.68	halfscan, factor 0.72	full	full	full	elliptical
Parallel Imaging	SENSE (p = 2)	SENSE (p = 1.5)	SENSE (p = 1)	SENSE (p = 1.4)	no	SENSE (p = 2.4)
Flip Angle	90°	90°	8°	90°	90° (120° refocusing)	15°
Scan Technique	DTI. SS-EPI SPIR fat sat	DWI. SS-EPI SPIR fat sat	3D T1 TFE	TSE IR	TSE	T1 FFE
Scan Duration	03:26	01:26	03:07	04:20	03:35	02:30
Turbo Factor (ETL)	n/a	n/a	n/a	5	11	n/a
Diffusion Tensor Directions	high (32)	3	n/a	n/a	n/a	n/a

### MRS: Multivoxel spectroscopy

TE: 144 ms (optimized for lactate detection)

TR: long (2000 ms)

Multi voxel (25 voxels covers basal ganglia (image))

