

Supporting Tables

Table S1 Patient characteristics

Patient	Sex	Age
1	M	48
2	F	32
3	F	20
4	F	52
5	F	18
6	F	38
7	F	26
8	M	26
9	F	24
10	M	26
11	F	52
12	M	37
13	M	15

Table S2 Detailed parameters for the diffusion sequence*Scanner: Philips 7 Tesla Achieva*

Field strength [T]	7
Maximal gradient amplitude [mT/m]	64
Maximal gradient slew rate [T/m/s]	100
Head-coil	2Tx/32Rx-channel ^a

Imaging parameters

Repetition time [ms]	3500
Echo time [ms]	89
Acquisition time [min:sec]	6:04
Parallel imaging factor (SENSE)	2
Partial Fourier	0.75
Bandwidth [Hz/pixel]	1933
Fat saturation	'strong'

Geometry

Matrix size	112×112
Number of slices	15
Voxel dimensions [mm ³]	2×2×4

Diffusion parameters

b_{Δ} -values	1 and 0 ^b
b -values [ms/ μm^2]	0,0.1,0.5,1.0,1.5,2.0 ^c
Number of directions / b -value	1,6,6,10,11,16 ^d
Number of samples	92
Maxwell compensation	No ^e
$\delta_1, \delta_2, \delta_P$ ($b_{\Delta} = 1$) [ms]	21.0, 21.0, 17.5
$\delta_1, \delta_2, \delta_P$ ($b_{\Delta} = 0$) [ms]	33.5, 25.5, 10.1

^aIn Patient 8, a 1Tx/32Rx-channel setup was used, without dielectric pads.

^bThe $b_{\Delta} = 0$ gradient waveform was optimized for minimal TE as in Sjölund et al¹.

^cAll b -values were acquired for both b_{Δ} -values.

^dFrom Jones et al² and Leemans et al³.

^eSee Szczepankiewicz et al⁴.

δ_1 and δ_2 and are the gradient waveform durations before and after the refocusing pulse with duration δ_P , respectively.

REFERENCES

1. Sjölund J, Szczepankiewicz F, Nilsson M, Topgaard D, Westin C-F, Knutsson H. Constrained optimization of gradient waveforms for generalized diffusion encoding. *J Magn Reson*. 2015;261:157-68.
2. Jones DK, Horsfield MA, Simmons A. Optimal strategies for measuring diffusion in anisotropic systems by magnetic resonance imaging. *Mag Reson Med*. 1999;42(3):515-25.
3. Leemans A, Jeurissen B, Sijbers J, Jones D. ExploreDTI: a graphical toolbox for processing, analyzing, and visualizing diffusion MR data. *Proc Intl Soc Mag Reson Med*. 2009.
4. Szczepankiewicz F, Westin CF, Nilsson M. Maxwell-compensated design of asymmetric gradient waveforms for tensor-valued diffusion encoding. *Magn Reson Med*. 2019;82(4):1424-37.