

## Supplementary Data

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# MRI Signatures of Brain Macrostructural Atrophy and Microstructural Degradation in Frontotemporal Lobar Degeneration Subtypes

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Supplementary Table 1

Mean and standard deviations (Std) of the DTI values (FA, DA, and DR) in the fiber TOI of each FTLN subgroup, and the FDR-adjusted  $p$ -values of the paired-group differences between each FTLN subtype and the control (CN). The units of DA and DR are  $10^3 \text{ mm}^2/\text{s}$

Regions	Values	CN	bvFTD	SD	PNFA	bvFTD	SD	PNFA	bvFTD	bvFTD	SD
		Mean (Std)	Mean (Std)	Mean (Std)	Mean (Std)	vs. CN	vs. CN	vs. CN	vs. SD	vs. PNFA	vs. PNFA
a.CC	FA	0.57 (0.03)	0.50 (0.06)	0.53 (0.05)	0.55 (0.01)	<0.001	n.s.	n.s.	n.s.	0.01	n.s.
	DR	0.86 (0.12)	1.13 (0.22)	1.08 (0.22)	0.96 (0.07)	<0.001	0.008	n.s.	n.s.	0.006	n.s.
p.CC	DA	2.11 (0.14)	2.40 (0.21)	2.38 (0.23)	2.25 (0.12)	<0.001	0.003	n.s.	n.s.	0.02	n.s.
	FA	0.65 (0.03)	0.61 (0.04)	0.62 (0.03)	0.65 (0.04)	0.03	n.s.	n.s.	n.s.	n.s.	n.s.
L.a.Cg	DR	0.70 (0.07)	0.82 (0.15)	0.79 (0.10)	0.73 (0.08)	0.001	0.03	n.s.	n.s.	n.s.	n.s.
	DA	1.99 (0.13)	2.09 (0.18)	2.06 (0.20)	1.98 (0.16)	0.03	n.s.	n.s.	n.s.	n.s.	n.s.
R.a.Cg	FA	0.49 (0.03)	0.44 (0.05)	0.48 (0.02)	0.46 (0.02)	0.001	n.s.	n.s.	n.s.	n.s.	n.s.
	DR	0.57 (0.04)	0.67 (0.09)	0.60 (0.06)	0.61 (0.04)	<0.001	n.s.	n.s.	n.s.	n.s.	n.s.
L.pHP	DA	1.34 (0.06)	1.47 (0.12)	1.47 (0.05)	1.42 (0.07)	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
	FA	0.41 (0.03)	0.41 (0.04)	0.42 (0.03)	0.40 (0.03)	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
R.pHP	DR	0.67 (0.05)	0.72 (0.11)	0.66 (0.06)	0.64 (0.03)	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
	DA	1.34 (0.06)	1.41 (0.14)	1.36 (0.05)	1.28 (0.05)	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
L.Unc	FA	0.36 (0.02)	0.35 (0.03)	0.33 (0.02)	0.36 (0.02)	n.s.	0.03	n.s.	n.s.	n.s.	n.s.
	DR	0.82 (0.11)	0.94 (0.19)	1.14 (0.28)	0.82 (0.16)	0.04	<0.001	n.s.	n.s.	n.s.	0.04
R.Unc	DA	1.40 (0.14)	1.52 (0.20)	1.76 (0.30)	1.42 (0.21)	n.s.	<0.001	n.s.	n.s.	n.s.	0.05
	FA	0.37 (0.03)	0.36 (0.04)	0.34 (0.03)	0.38 (0.02)	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
L.Arc	DR	0.77 (0.11)	0.89 (0.19)	1.05 (0.42)	0.73 (0.08)	0.03	0.02	n.s.	n.s.	0.02	n.s.
	DA	1.32 (0.13)	1.47 (0.22)	1.64 (0.54)	1.29 (0.10)	0.05	0.04	n.s.	n.s.	n.s.	n.s.
R.Arc	FA	0.38 (0.02)	0.36 (0.03)	0.33 (0.02)	0.37 (0.01)	0.005	<0.001	n.s.	n.s.	n.s.	n.s.
	DR	0.72 (0.04)	0.83 (0.10)	1.05 (0.38)	0.76 (0.03)	<0.001	0.002	n.s.	n.s.	n.s.	n.s.
L.pHP	DA	1.35 (0.05)	1.44 (0.09)	1.68 (0.43)	1.37 (0.05)	<0.001	0.008	n.s.	n.s.	n.s.	n.s.
	FA	0.39 (0.03)	0.34 (0.04)	0.34 (0.03)	0.39 (0.01)	0.002	0.008	n.s.	n.s.	n.s.	n.s.
R.pHP	DR	0.70 (0.06)	0.96 (0.22)	1.23 (0.60)	0.74 (0.04)	<0.001	0.002	n.s.	n.s.	0.05	n.s.
	DA	1.32 (0.06)	1.59 (0.24)	1.89 (0.69)	1.37 (0.07)	<0.001	0.003	n.s.	n.s.	0.04	n.s.
L.Unc	FA	0.48 (0.03)	0.46 (0.04)	0.46 (0.04)	0.46 (0.03)	n.s.	n.s.	0.03	n.s.	n.s.	n.s.
	DR	0.58 (0.04)	0.61 (0.05)	0.61 (0.06)	0.61 (0.04)	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
R.Unc	DA	1.30 (0.05)	1.30 (0.05)	1.32 (0.05)	1.29 (0.07)	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
	FA	0.48 (0.03)	0.48 (0.04)	0.50 (0.03)	0.48 (0.02)	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
L.Arc	DR	0.59 (0.05)	0.60 (0.06)	0.56 (0.04)	0.59 (0.03)	n.s.	n.s.	n.s.	0.03	n.s.	n.s.
	DA	1.30 (0.05)	1.33 (0.07)	1.30 (0.05)	1.32 (0.06)	n.s.	n.s.	n.s.	0.04	n.s.	n.s.
Formix	FA	0.35 (0.02)	0.32 (0.02)	0.31 (0.04)	0.33 (0.02)	<0.001	<0.001	n.s.	n.s.	n.s.	n.s.
	DR	1.91 (0.28)	2.47 (0.25)	2.47 (0.30)	2.30 (0.29)	<0.001	<0.001	0.006	n.s.	n.s.	n.s.
	DA	3.05 (0.33)	3.66 (0.29)	3.66 (0.34)	3.52 (0.34)	<0.001	0.001	0.008	n.s.	n.s.	n.s.

a.CC/p.CC, anterior/posterior corpus callosum; L.a.Cg/R.a.Cg, left/right anterior cingulum; L.pHP/R.pHP, left/right parahippocampal cingulum; L.Unc/R.Unc, left/right uncinate fasciculus; L.Arc/R.Arc, left/right arcuate fasciculus.

Supplementary Table 2

Classification of FTLN and controls based on FA, DR, and DA measures from composite TOIs using logistic regression with cross-validated sensitivity, specificity, accuracy and area under a receiver operator characteristic curve (AUC)

Measures	Sensitivity (%)	Specificity (%)	Accuracy (%)	AUC
FA	76.3 ± 3.4	44.9 ± 4.8	62.2 ± 1.8	0.679
DR	74.3 ± 3.6	59.0 ± 5.4	<b>67.3 ± 2.0<sup>a,b</sup></b>	0.722
DA	74.4 ± 4.1	51.3 ± 4.1	64.0 ± 2.2	0.691

**Bold:** differences in classification accuracy between DTI indices were significant by Wilcoxon signed rank tests.

<sup>a</sup>DR was better than FA ( $p < 0.001$ ).

<sup>b</sup>DR was better than DA ( $p < 0.01$ ).