

Supplementary Data

Possible Retrogenesis Observed with Fiber Tracking: An Anteroposterior Pattern of White Matter Disintegrality in Normal Aging and Alzheimer's Disease

Junling Gao^a, Raymond Tak-Fai Cheung^{a,b,*}, Tatia M.C. Lee^{c,d}, Leung-Wing Chu^{a,b,e}, Ying-Shing Chan^{b,f}, Henry Ka-Fung Mak^{b,e,g}, John X. Zhang^h, Deqiang Qiu^{g,i}, Germaine Fung^j and Charlton Cheung^j

^a*Department of Medicine, LKS Faculty of Medicine, the University of Hong Kong, Hong Kong SAR*

^b*Research Centre of Heart, Brain, Hormone and Healthy Aging, LKS Faculty of Medicine, The University of Hong Kong, Hong Kong SAR*

^c*Neuropsychology Laboratory, Department of Psychology, The University of Hong Kong, Hong Kong SAR*

^d*Institute of Clinical Neuropsychology, MacLehose Medical Rehabilitation Centre, Hong Kong SAR*

^e*HKU Alzheimer's Disease Research Network, SRT Healthy Aging, The University of Hong Kong, Hong Kong SAR*

^f*Department of Physiology, LKS Faculty of Medicine, The University of Hong Kong, Hong Kong SAR*

^g*Department of Radiology, LKS Faculty of Medicine, The University of Hong Kong, Hong Kong SAR*

^h*Department of Psychology, Chinese University of Hong Kong, Hong Kong SAR*

ⁱ*Lucas Center for MR Imaging, Department of Radiology, Stanford University, CA, USA*

^j*Department of Psychiatry, LKS Faculty of Medicine, The University of Hong Kong, Hong Kong SAR*

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*Correspondence to: Raymond Tak-Fai Cheung, Rm. 805, Administration Block, Department of Medicine, Queen Mary Hospital, Pokfulam Road, Hong Kong. Tel.: +852 22554049; Fax: +852 28186474; E-mail: rtcheung@hkucc.hku.hk.

Supplementary Table 1
Values of MD of fiber bundles for the three groups

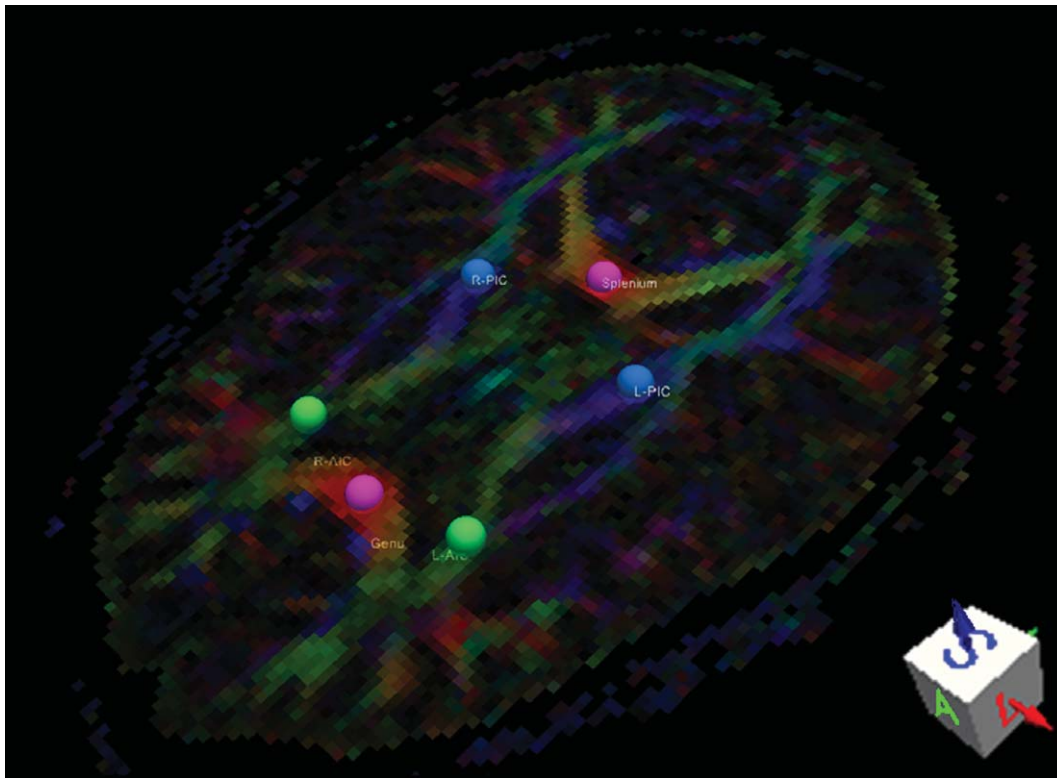
		YG	OL	AD	<i>p</i> -value		
		Mean \pm SD	Mean \pm SD	Mean \pm SD	YG-OL	YG-AD	OL-AD
MD (um/s)	Genu	0.795 \pm 0.023	0.864 \pm 0.065	0.901 \pm 0.051	0.001	0.000	0.093
	L-AIC	0.766 \pm 0.018	0.841 \pm 0.062	0.884 \pm 0.071	0.002	0.000	0.096
	R-AIC	0.780 \pm 0.025	0.848 \pm 0.047	0.882 \pm 0.052	0.000	0.000	0.072
	Splen	0.861 \pm 0.048	0.934 \pm 0.073	0.972 \pm 0.065	0.006	0.000	0.255
	L-PIC	0.740 \pm 0.026	0.775 \pm 0.043	0.789 \pm 0.035	0.024	0.001	0.735
	R-PIC	0.763 \pm 0.019	0.793 \pm 0.032	0.814 \pm 0.038	0.027	0.000	0.149

YG, Normal young adults; OL, normal old adults; AD, AD patients. L, Leftside; R, rightside; Genu, fibers originating from the genu of corpus callosum. L-AIC, fibers originating from the left anterior internal capsule and external capsule. L-PIC, fibers originating from the left posterior internal capsule; Splen, fibers originating from the splenium of corpus callosum. The *p*-value is shown for the difference among three groups, and it is in boldface when the difference reaches significant level, $p < 0.05$, Bonferroni correction.

Supplementary Table 2
Significance in post-hoc (Bonferroni correction) comparisons of DA and DR for all six fiber bundles in the three groups

	YG-OL	YG-AD	OL-AD
DA Genu	0.315	0.276	1.000
DA L-AIC	0.076	0.000	0.147
DA R-AIC	0.012	0.000	0.179
DA Splen	0.000	0.000	1.000
DA L-PIC	0.101	0.001	0.292
DA R-PIC	0.301	0.004	0.266
DR Genu	0.016	0.000	0.449
DR L-AIC	0.001	0.000	1.000
DR R-AIC	0.000	0.000	0.428
DR Splen	0.205	0.001	0.168
DR L-PIC	0.048	0.016	1.000
DR R-PIC	0.046	0.000	0.341

DA, Axial diffusion; DR, radial diffusion; YG, normal young adults; OL, normal old adults; AD, AD patients. L, leftside; R, rightside; Genu, fibers originating from the genu of corpus callosum. L-AIC, fibers originating from the left anterior internal capsule and external capsule. L-PIC, fibers originating from the left posterior internal capsule; Splen, fibers originating from the splenium of corpus callosum. The *p*-value is in boldface when the difference reaches significant level, $p < 0.05$, Bonferroni correction.



Supplementary Figure 1. Six ROIs shown for a normal elderly in tractography study. Six 2-mm balls in FA map represent the seed areas from where six fiber bundles originated. ROI in genu of CC was drawn in the most central position of genu among transverse/sagittal/coronal sections; ROI in splenium of CC was drawn in the most central position of splenium among transverse/sagittal/coronal sections. Fiber bundles seeding from red balls mainly run transversely. ROI of left and right AIC was drawn in the same transverse plane with ROI of genu, and the position was selected to cover the biggest number to fiber bundles generated from AIC and EC. Fiber bundles seeding from green balls mainly run longitudinally. ROI of left and right PIC was drawn in the same transverse plane with ROI of splenium, and the position was ensured to cover the biggest number to fiber bundles generated from corticospinal tract. Fiber bundles seeding from blue balls mainly run perpendicularly. The overall Pearson correlation of test-retest scores was 0.96 ($p < 0.01$). A, Anterior; L, leftside; S, superior.