## **Supplementary Online Content**

Lo RY, Hubbard AE, Shaw LM, et al; for the Alzheimer's Disease Neuroimaging Initiative. Longitudinal Change of Biomarkers in Cognitive Decline. *Arch Neurol.* Published online June 13, 2011. doi:10.1001/archneurol.2011.123.

**eTable.** Sample-size matched inter-biomarker comparisons of goodness of fit in generalized estimating equations models.

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eTable. Sample-size matched inter-biomarker comparisons of goodness of fit in generalized estimating equations models

CSF vs. PET

	NC	MCI	AD
	(n = 17)	(n = 28)	(n = 8)
CSF model R <sup>2</sup>	0.23	0.02	0.28
Age	0.09	0.01	-0.07
Time	-0.06 <sup>*</sup>	0.04	0.49***
Baseline	-0.03 <sup>*</sup>	-0.01	0.02
Change	-0.02	-0.03	-0.01
PET model R <sup>2</sup>	0.30	0.14	0.66
Age	-0.02	0.01	0.19
Time	-0.07**	0.01	0.29***
Baseline	-15.67 <sup>**</sup>	-11.38 <sup>**</sup>	-39.57 <sup>*</sup>
Change	-17.35 <sup>*</sup>	-22.80 <sup>*</sup>	-35.27**
SF vs. MRI			
SF vs. MRI	NC	MCI	AD
SF vs. MRI	NC (n = 36)	MCI (n = 53)	AD (n = 16)
SF vs. MRI CSF model R <sup>2</sup>			
	(n = 36)	(n = 53)	(n = 16)
CSF model R <sup>2</sup>	(n = 36) 0.13	(n = 53) 0.10	(n = 16) 0.25
CSF model R <sup>2</sup>	(n = 36) 0.13 0.03	(n = 53) 0.10 -0.01	(n = 16) 0.25 -0.07
CSF model R <sup>2</sup> Age Time	(n = 36) 0.13 0.03 -0.02	(n = 53) 0.10 -0.01 0.06	(n = 16) 0.25 -0.07 0.37
CSF model R <sup>2</sup> Age  Time  Baseline	(n = 36) 0.13 0.03 -0.02 -0.018	(n = 53) 0.10 -0.01 0.06 -0.02	(n = 16) 0.25 -0.07 0.37** 0.08
CSF model R <sup>2</sup> Age  Time  Baseline  Change	(n = 36) 0.13 0.03 -0.02 -0.018** -0.01	(n = 53) 0.10 -0.01 0.06 -0.02 <sup>*</sup> -0.09 <sup>*</sup>	(n = 16) 0.25 -0.07 0.37 <sup>**</sup> 0.08 -0.26

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Baseline	-5.3×10 <sup>-4</sup>	-2.7×10 <sup>-3</sup>	-3.3×10 <sup>-3</sup>
Change	-3.1×10 <sup>-3</sup>	-0.01	-0.01
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PET vs. MRI			
	NC	MCI	AD
	(n = 102)	(n = 198)	(n = 94)
PET model R <sup>2</sup>	0.08	0.16	0.38
Age	0.01	0.02	0.15
Time	-0.03	0.07***	0.18***
Baseline	-6.47***	-14.80 <sup>***</sup>	-31.53 <sup>***</sup>
Change	-4.46	-11.20 <sup>**</sup>	-38.79***
MRI model R <sup>2</sup>	0.05	0.19	0.21
Age	0.07	-0.06	-0.25**
Time	-0.05**	0.04	0.22**
Baseline	1.8×10 <sup>-4</sup>	-4.3×10 <sup>-3***</sup>	-5.4×10 <sup>-3**</sup>
Change	-0.01	-0.01**	-0.01 <sup>*</sup>

Time-varying ADAS-cog scores were modeled by baseline age, time and baseline value and change of biomarker. R-square was the percentage of the outcome variance explained by the model. \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001.