

Japanese AD Neuroimaging Initiative (J-ADNI) updates and new data

July 15, 2011 Paris

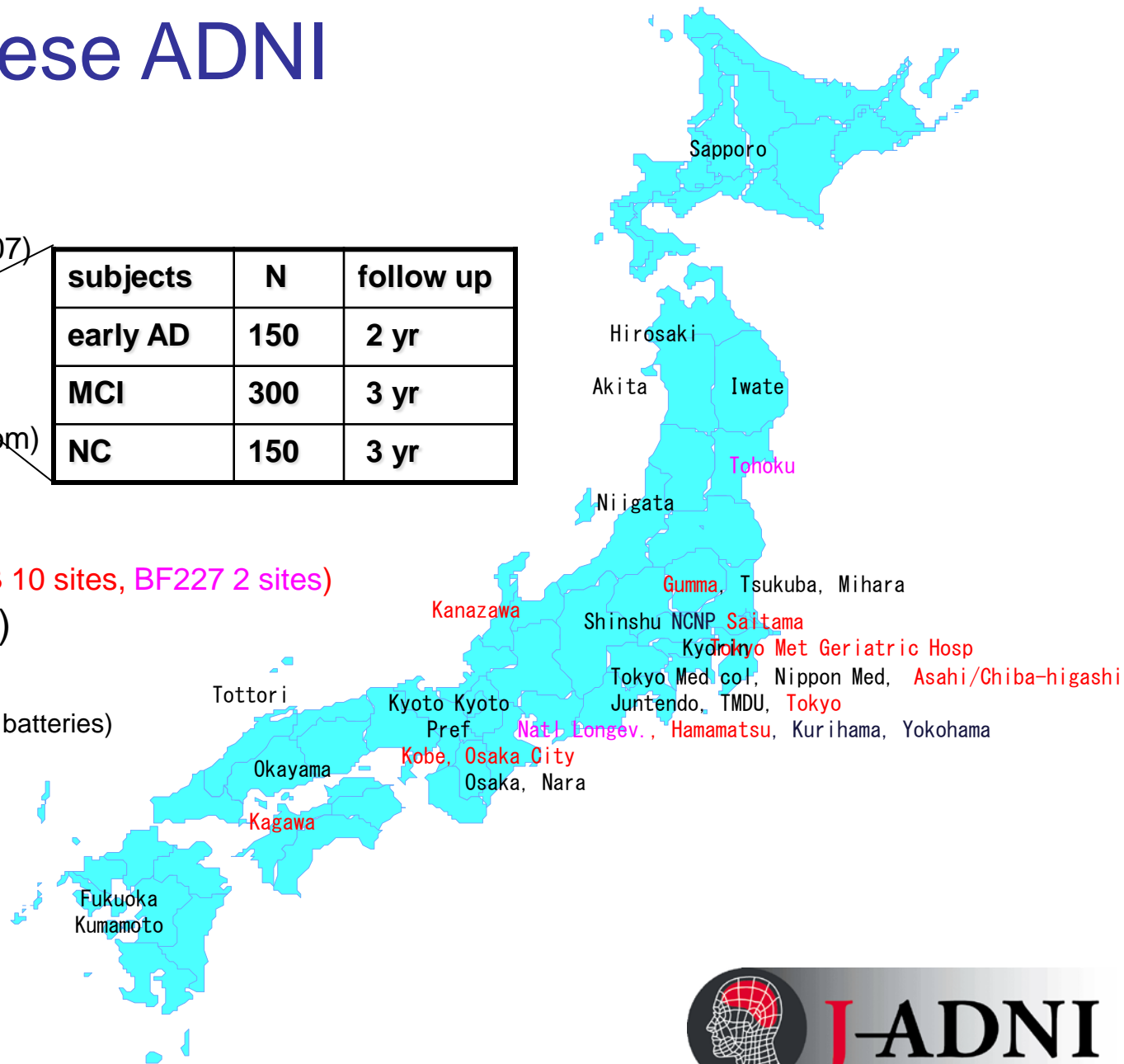
Departments of Neuropathology,
Graduate Schools of Medicine
University of Tokyo
Principal Investigator of J-ADNI

Takeshi Iwatsubo

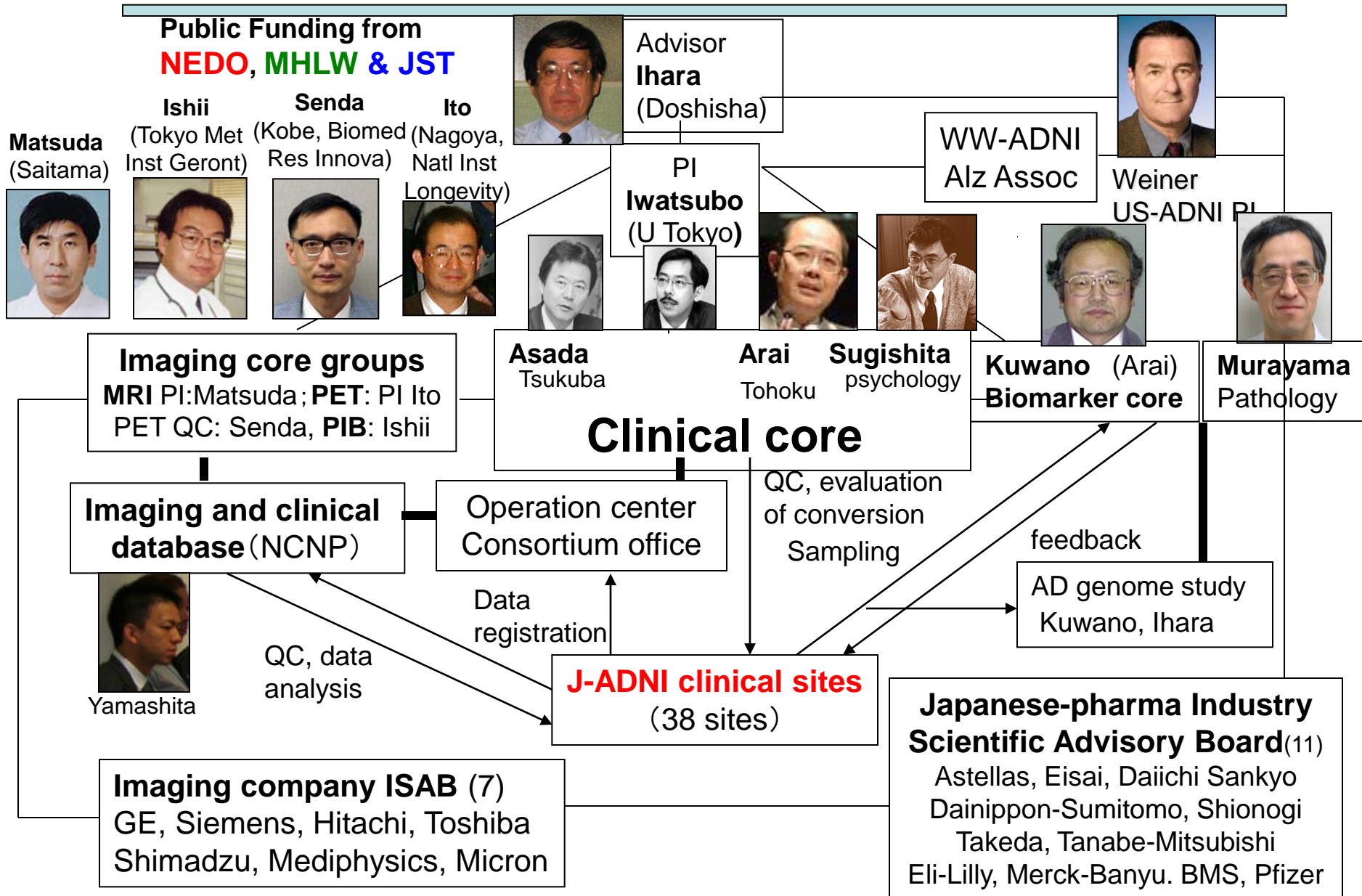
Japanese ADNI

- 7-year study (since 2007)
- 38 clinical sites
- 600 subjects
- 1.5T MRI (3D MPRAGE, ADNI phantom)
- PET
 - FDG ~66%
 - amyloid ~41% (PIB 10 sites, BF227 2 sites)
- Blood + apoE (100%)
- CSF ~38%
- Clinical (14 compatible test batteries)

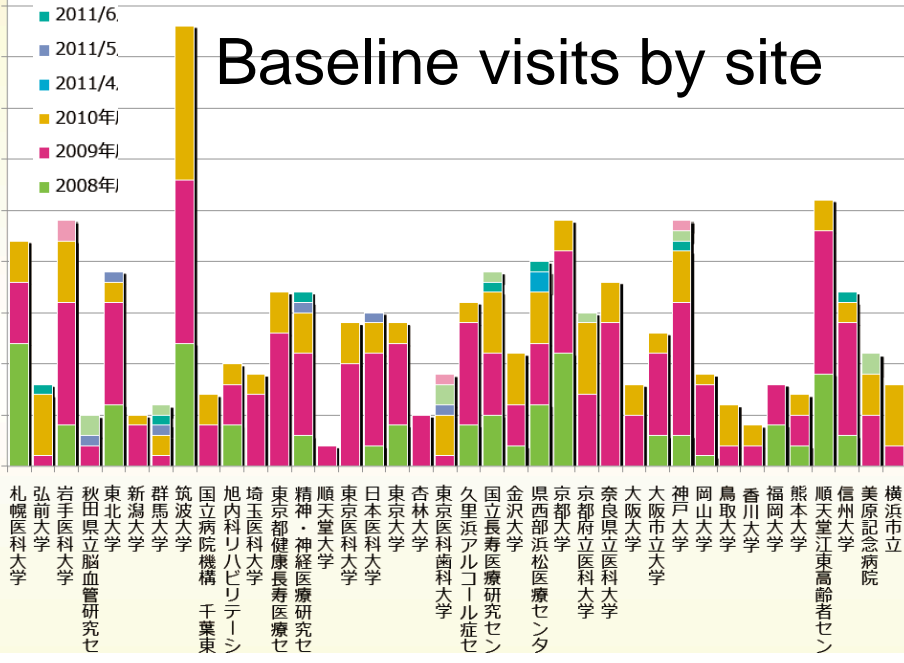
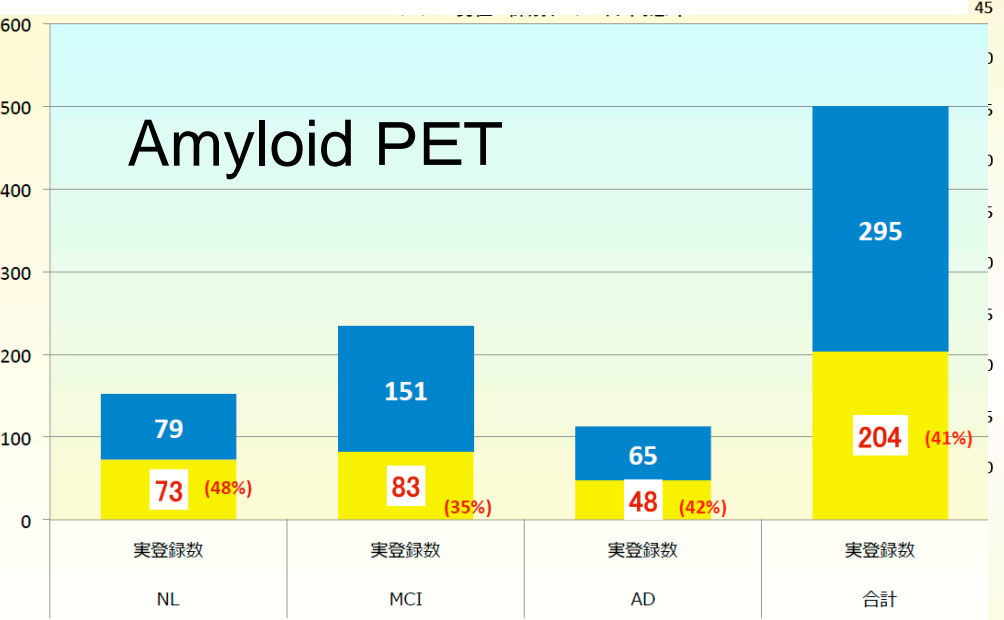
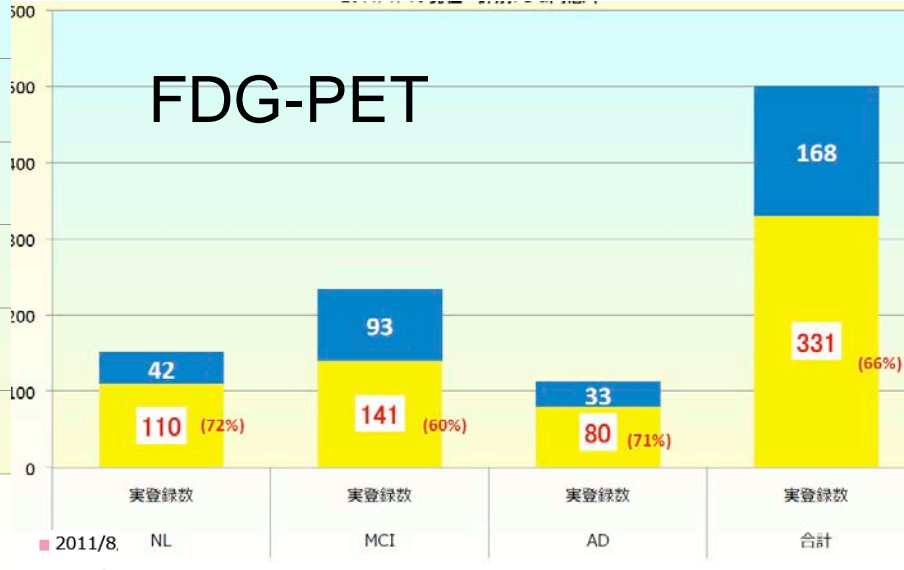
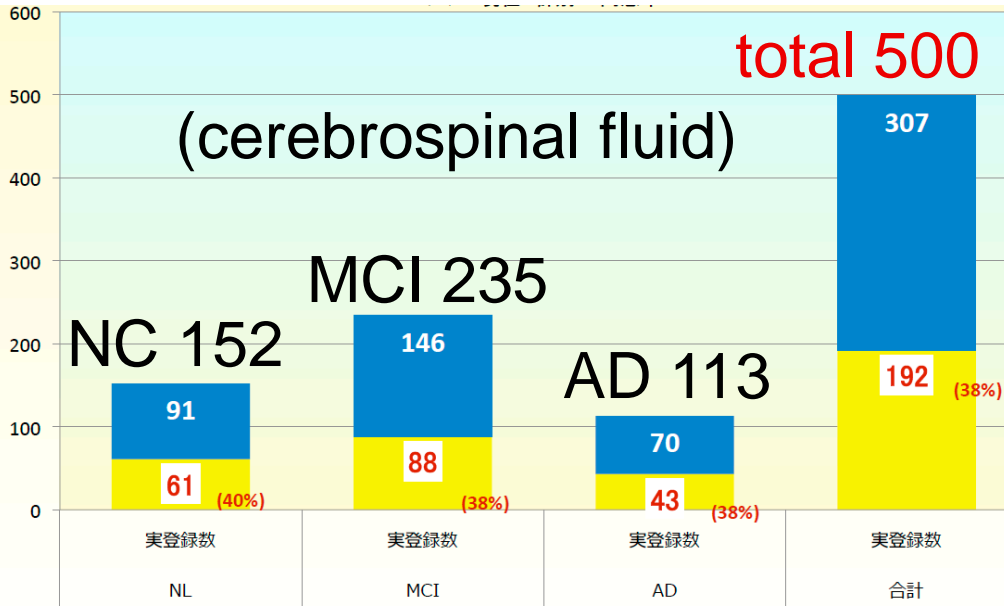
subjects	N	follow up
early AD	150	2 yr
MCI	300	3 yr
NC	150	3 yr



Organization of J-ADNI




Current status of J-ADNI recruitment (2011.7.15)



J-ADNI Demographics (2011. July)



Clinical core PI Takashi Asada, Hiroyuki Arai

	Total (n=494)	Normal (n=152)	MCI (n=230)	AD (n=112)
Age (USA)	71.4	67.9 (76.4)	72.7 (75.3)	73.4 (75.8)
Sex (female) (USA)	53.8%	52.0% (48%)	52.6% (35.4%)	58.9% (47.4%)
education (USA)	13.0	13.8 (15.6)	12.9 (16.0)	12.1 (14.7)
% apoEϵ4(+) in 359 cases (USA)	 Biomarker core PI Ryoza Kuwano	24.7% (26.6%)	52.7% (53.5%)	63.7% (65.6%)

19.1% in 3152 NL Japanese (JGSCAD)

Exclusion (fail) upon screening


group	Exclusion/total	%excluded
NL	16/168	9.5%
MCI	93/328	28.4%
AD	33/146	22.6%
total	142/640 (596/1387 in US)	22.1% (43.0% in US)

Discontinuation: 34 /500 (mean 1.16y follow up)= ~5.9% / year

Longitudinal follow-up

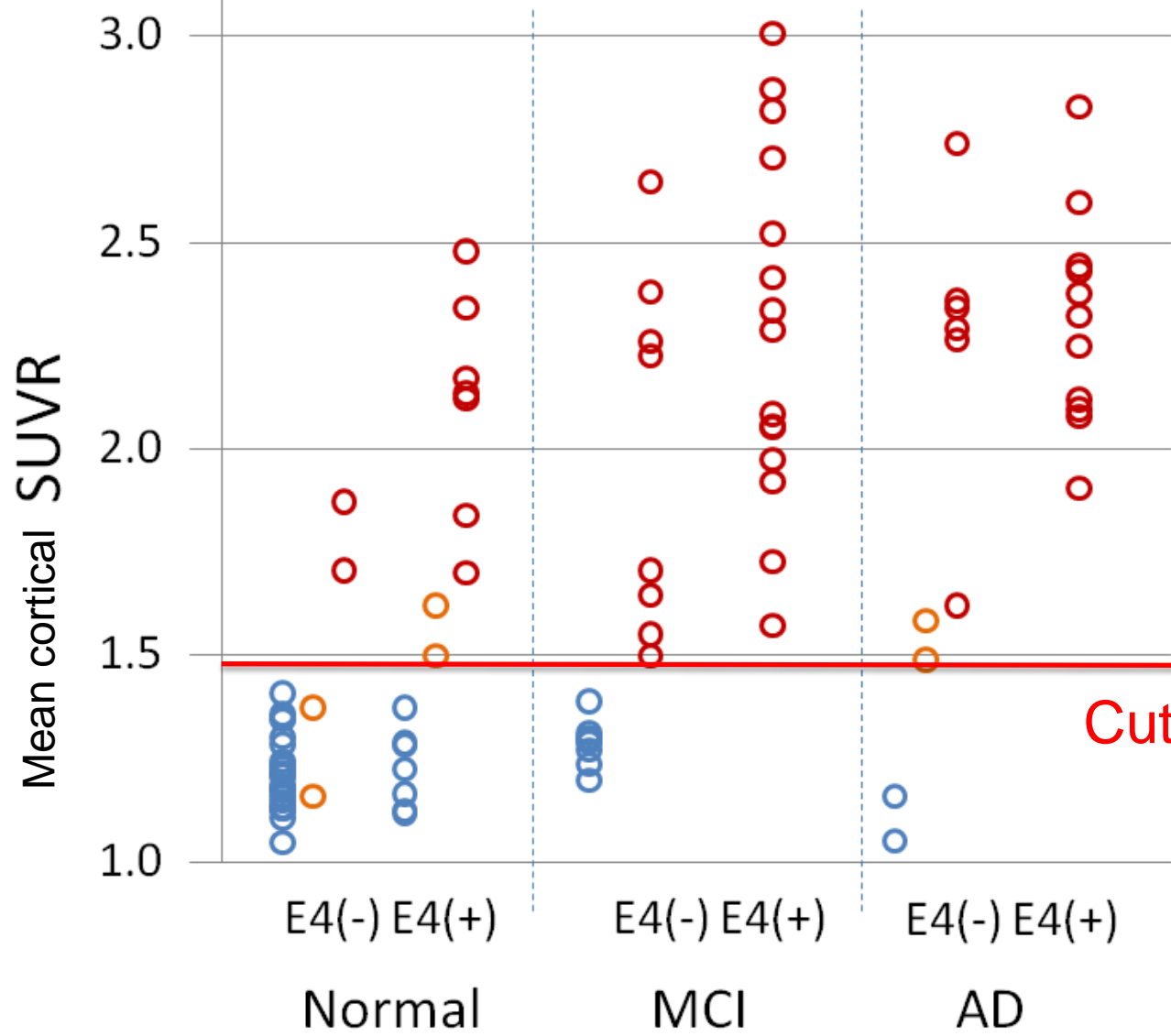
	baseline	6M	12M	18M	24M	30M
NL	5	15	29	40	45	18
MCI	34	52	57	59	30	3
AD	32	14	21	25	21	

Optimal harmonization in major clinical batteries between US- and J-ADNI

 Neuropsychology PI Morihiro Sugishita	total (n=494)	NC (n=152)	MCI (n=230)	AD (n=112)
MMSE mean (US)	26.3 (26.7)	29.1 (29.1)	26.4 (27.0)	22.3 (23.3)
CDR sum of Boxes mean (US)	1.59 (-)	0.06 (0.03)	1.58 (1.62)	3.68 (4.35)
ADAS-Cog11 mean (US)	10.1	4.6 (6.2)	11.0 (11.6)	16.2 (18.6)

¹¹C-PiB mcSUVr by Group, Visual Diagnosis and ApoE ε4

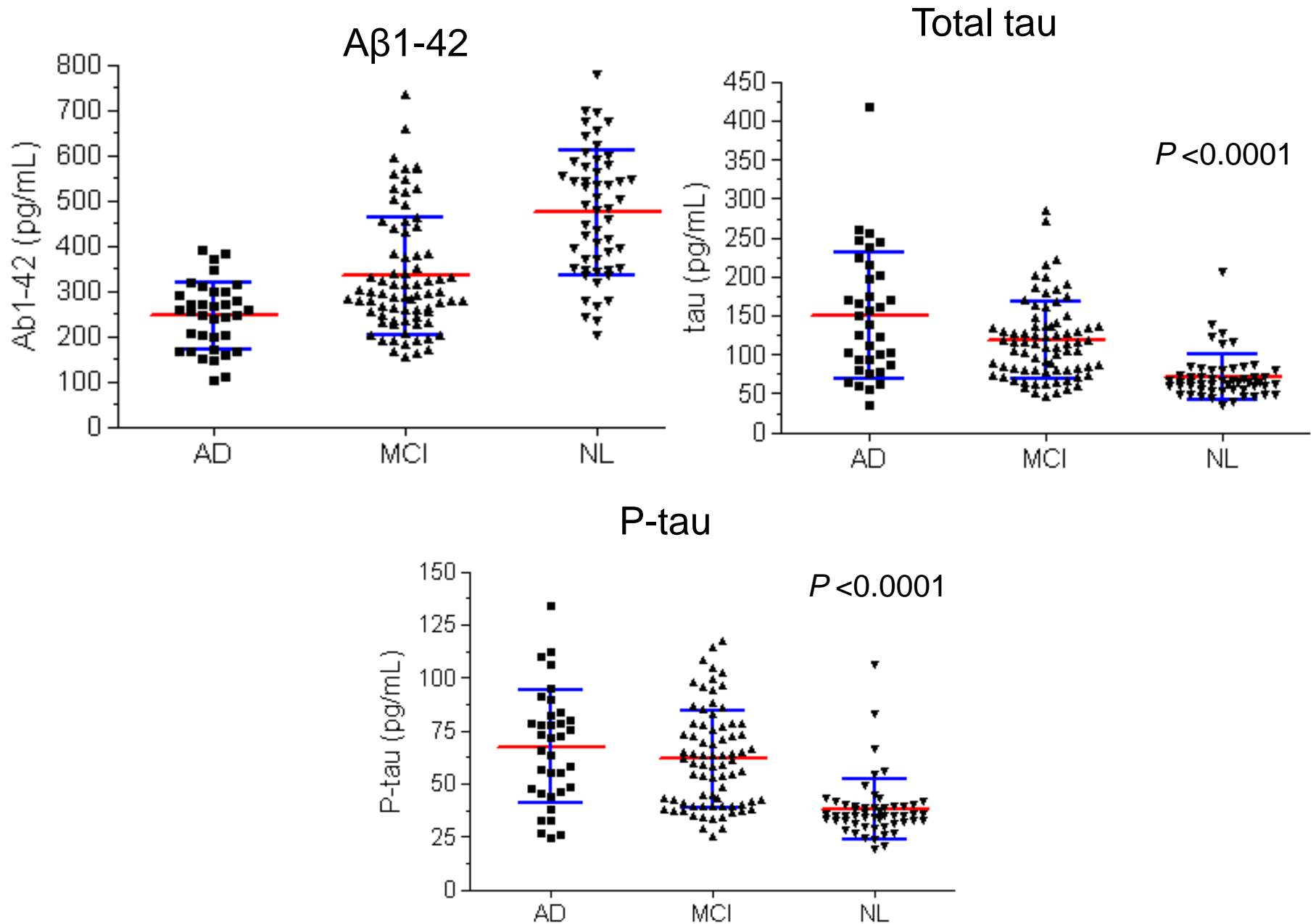
positive rate $\epsilon 4^-$ $\epsilon 4^+$ $\epsilon 4^-$ $\epsilon 4^+$ $\epsilon 4^-$ $\epsilon 4^+$
 7% 60% 50% 100% 80% 100%



Amyloid PET core PI Kenji Ishii

Visual Dx
 ● Negative
 ● Equivocal
 ● Positive
 Cut off = 1.47

CSF analyses (X-MAP technology)



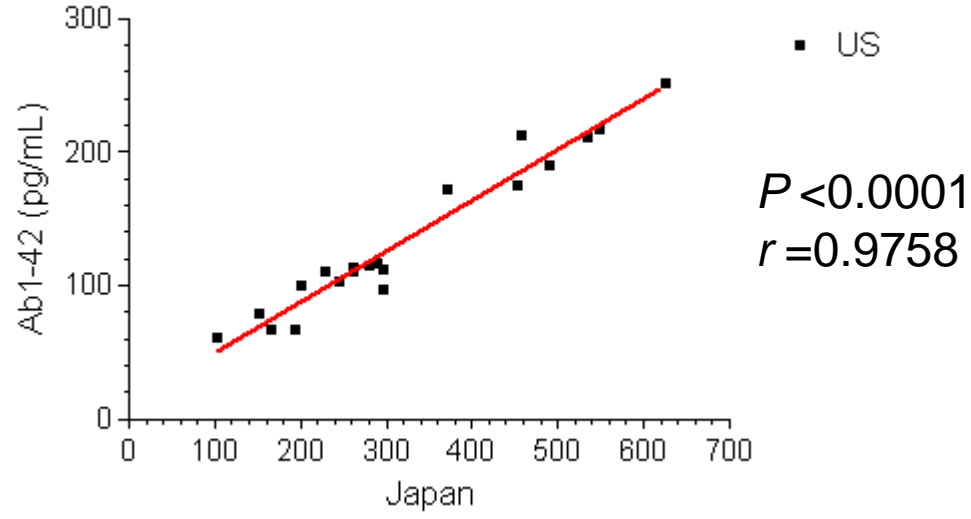
J-ADNI Baseline CSF Biomarker

Characteristics	tau (pg/mL)	A β 1-42 (pg/mL)	p-tau (pg/mL)	tau/A β 1-42 ratio	p-tau/A β 1-42 ratio
AD (n = 35)					
Mean \pm SD	149.7 \pm 80.3	244.8 \pm 74.3	67.3 \pm 26.6	0.65 \pm 0.39	0.30 \pm 0.14
MCI (n = 76)					
Mean \pm SD	118.1 \pm 50.1	334.1 \pm 130.1	61.9 \pm 22.9	0.41 \pm 0.22	0.22 \pm 0.12
NL (n = 53)					
Mean \pm SD	71.5 \pm 28.8	472.8 \pm 137.4	38.1 \pm 14.2	0.17 \pm 0.11	0.09 \pm 0.07
MCI \rightarrow AD (n = 10)					
Mean \pm SD	127.4 \pm 58.2	287.2 \pm 96.3	72.6 \pm 27.7	0.47 \pm 0.23	0.28 \pm 0.13
MCI \rightarrow NL (n = 1)					
Observed value	80.5	453.8	37.5	0.18	0.08
NL \rightarrow MCI (n = 1)					
Observed value	72.7	344.0	38.3	0.21	0.11

Correlation of quantitation between J-ADNI and US-ADNI

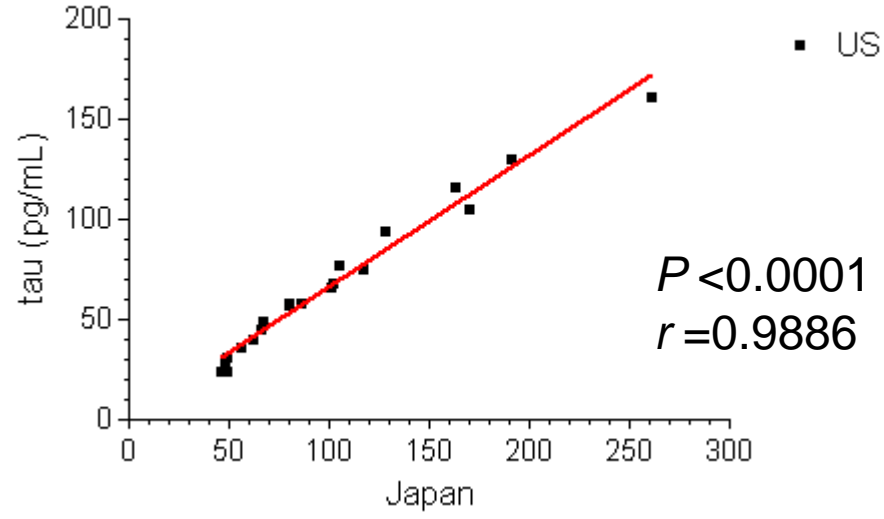
(Ryozo Kuwano and Les Shaw)

Ab1-42_J vs US

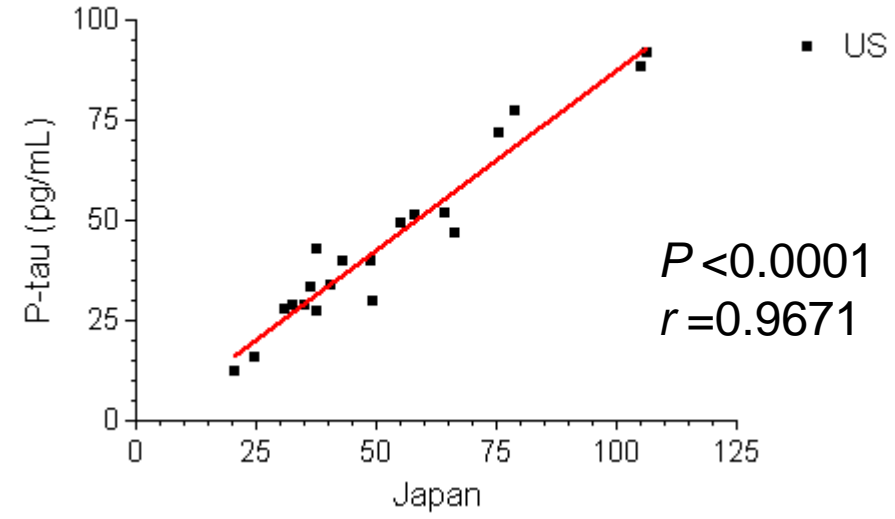


X-axis: J-ADNI
Y-axis: US-ADNI
Identical J-ADNI samples were measured at Niigata and Penn

tau_J vs US



P-tau_J vs US



Future perspective of J-ADNI

- Last entry of MCI (Sep 2011), AD (March 2012)
- 2011, 5th yr; follow-up to be completed in 2014
- Database construction 2011-2013 (in collaboration with Japan Science and Technology agency); data publicization, collaboration with WW-ADNI
- J-ADNI2, still being planned
- Clinical trials of disease modifying drugs at early stages based on J-ADNI