

Effects of traumatic brain injury (TBI) & post traumatic stress disorder (PTSD) on Alzheimer's disease (AD) in Veterans using ADNI (DOD ADNI)

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A STUDY OF 
BRAIN AGING
IN VIETNAM WAR
VETERANS 

BACKGROUND

- Many studies show an epidemiological association of TBI with dementia of the Alzheimer's type
- Autopsy studies show an association of TBI with amyloid accumulation
- Mielke et al reported that TBI was associated with greater amyloid deposition in MCI, but not in normals
- There has been no prospective study of TBI and PTSD on AD using biomarkers.

DEPARTMENT OF DEFENSE ADNI

- Study of 200 normal veterans over age 65
 - History of TBI, PTSD, or controls; 1 yr F/U
- Study of 200 MCI veterans over age 65
 - Same groups: 1 yr F/U
- Study almost identical to ADNI
- Recently funded tau PET study of this cohort plus AD subjects from ADNI

METHODS

- Recruitment uses data-base provided by the Veterans Administration: **Big Challenge**
- Telephone screening before referral to sites
- Clinical/Cognitive assessment identical to ADNI. Additional assessment of PTSD
- LP/CSF identical to ADNI
- Imaging identical to ADNI: No FDG PET
 - DTI, resting state fMRI, no perfusion MRI

DOD ADNI Clinic Sites

Clinic Name	Principal Investigator	City, State
Banner Sun Health Research Institute	Marwan Sabbagh, MD	Sun City, Arizona
University of California, Irvine	Ruth Mulnard, D.N.Sc.	Irvine, CA
University of California, San Diego	James Brewer, MD, PhD	La Jolla, CA
University of Southern California	Lon Schneider, MD	Los Angeles, CA
Stanford University	Jerome Yesavage, MD	Palo Alto, CA
University of California, San Francisco	Howard Rosen, MD	San Francisco, CA
Georgetown University	Brigid Reynolds, RN, MSN, NP	Washington, DC
Howard University	Thomas Obisesan, MD	Washington, DC
Wien Center for Clinical Research	Ranjan Duara, MD	Miami Beach, FL
Premiere Research Institutes	Carl Sadowsky, MD	West Palm Beach, FL
Rush University	Debra Fleischman, PhD	Chicago, IL
Brigham and Women's Hospital	Gad Marshall, MD	Boston, MA
Duke University	P. Murali Doraiswamy, MD	Durham, NC
Columbia university	Yaakov Stern, PhD	New York, NY
Weill Cornell University	Norman Relkin, MD, PhD	New York, NY
University of Rochester Medical Center	Anton Porsteinsson, MD	Rochester, NY
Medical University of South Carolina	Jacobo Mintzer, MD	North Charleston, SC
University of Washington Medical Center	Elaine Peskind, MD	Seattle, WA
University of Wisconsin	Sterling Johnson, PhD	Madison, WI

Overall Summary

10,061 Brochures Mailed

83% *No Response*

13% *Respond "Yes"*

4% *Opt Out*



6,478 Subjects Called

34% *Pending*

36% *Complete Screen*

30% *Decline*



2,361 Completed Screens

24% *Mailed Consents*

76% *Excluded*



575 Consents Sent

40% *Waiting*

47% *Received; OK for SCID*

13% *Exclude/Withdraw*



270 SCID Referrals

5% *Pending*

66% *Referred to Clinic*

29% *Exclude/Withdraw*



177 Clinic Referrals

29% *In Process*

48% *Baseline*

23% *Exclude/Withdraw*



85 Subjects at Baseline

29% *PTSD only*

13% *TBI only*

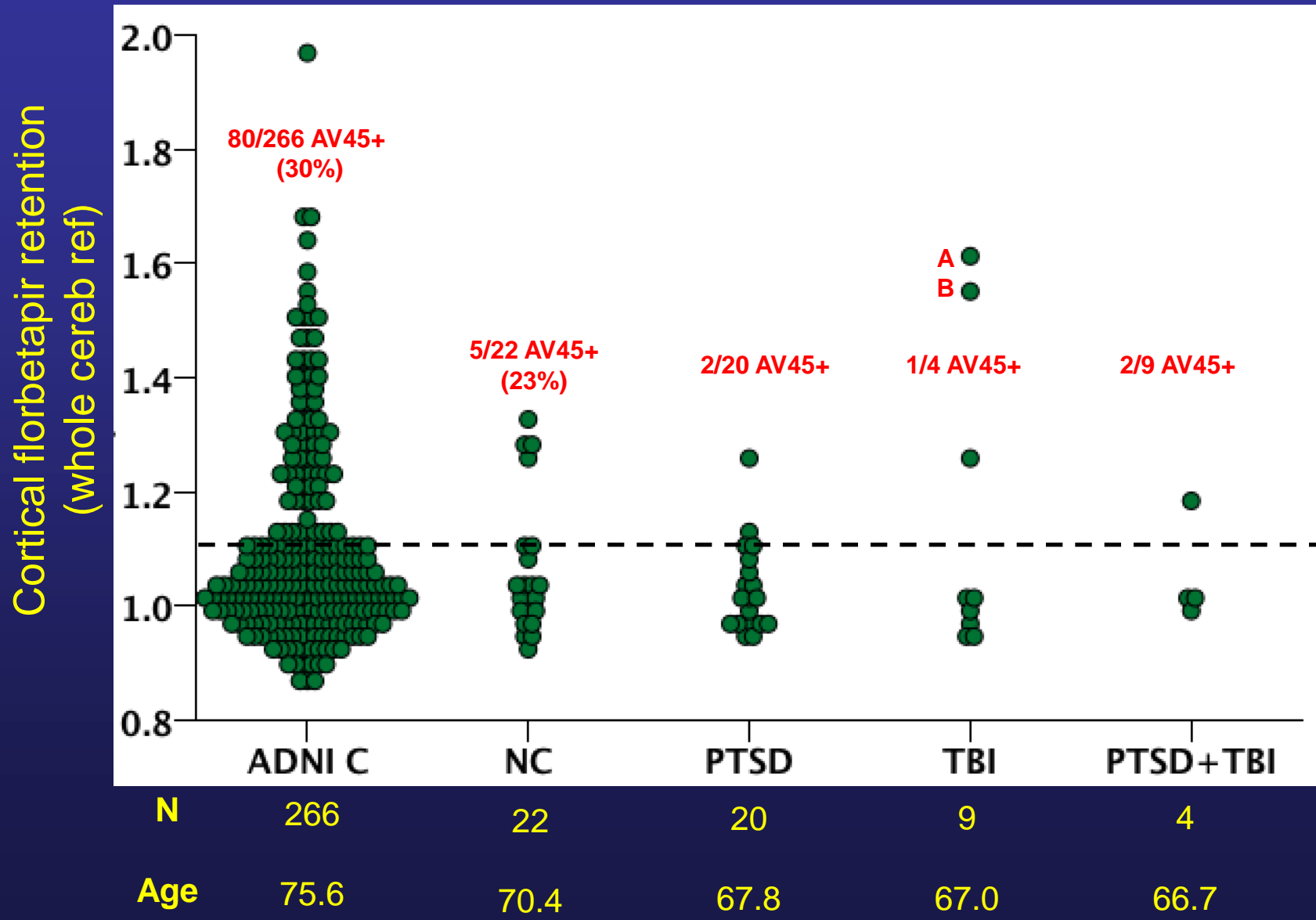
11% *Both*

47% *Controls*

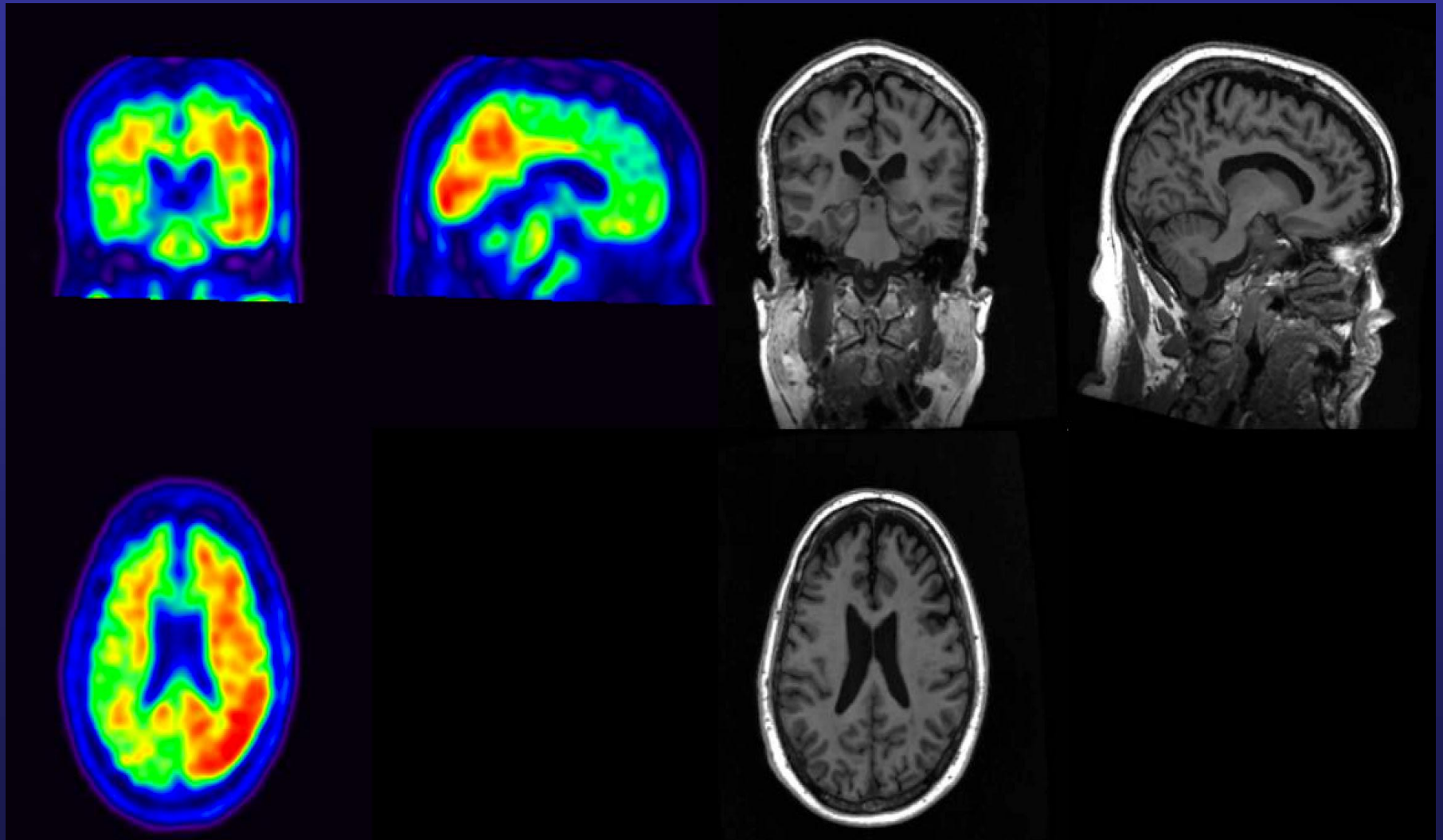
Race & Ethnicity

<i>Totals</i>	Caucasian	African American	“Other” Race	Missing from VA C&P	<i>Latino / Hispanic</i>	<i>Not Latino / Hispanic</i>	<i>Missing from VA C&P</i>
<i>USA Census Population (2012 estimate)</i> 313,873,685	77.9%	13.1%	9.0%	N/A	16.9%	83.1%	N/A
<i>Sample of Vietnam Veterans (VA Comp. & Pension)</i> 67, 925	61.7%	17.8%	3.0%	17.5%	3.8%	78.4%	17.8%
<i>Mailed Brochures</i> 10,062	40.3%	16.2%	3.1%	40.4%	4.5%	54.3%	41.1%
<i>Calls</i> 6,479	39.1%	18.3%	2.9%	39.7%	4.0%	56.0%	40.0%
<i>Baseline</i> 85	78.8%	7.1%	14.1%	N/A	11.8%	88.2%	N/A

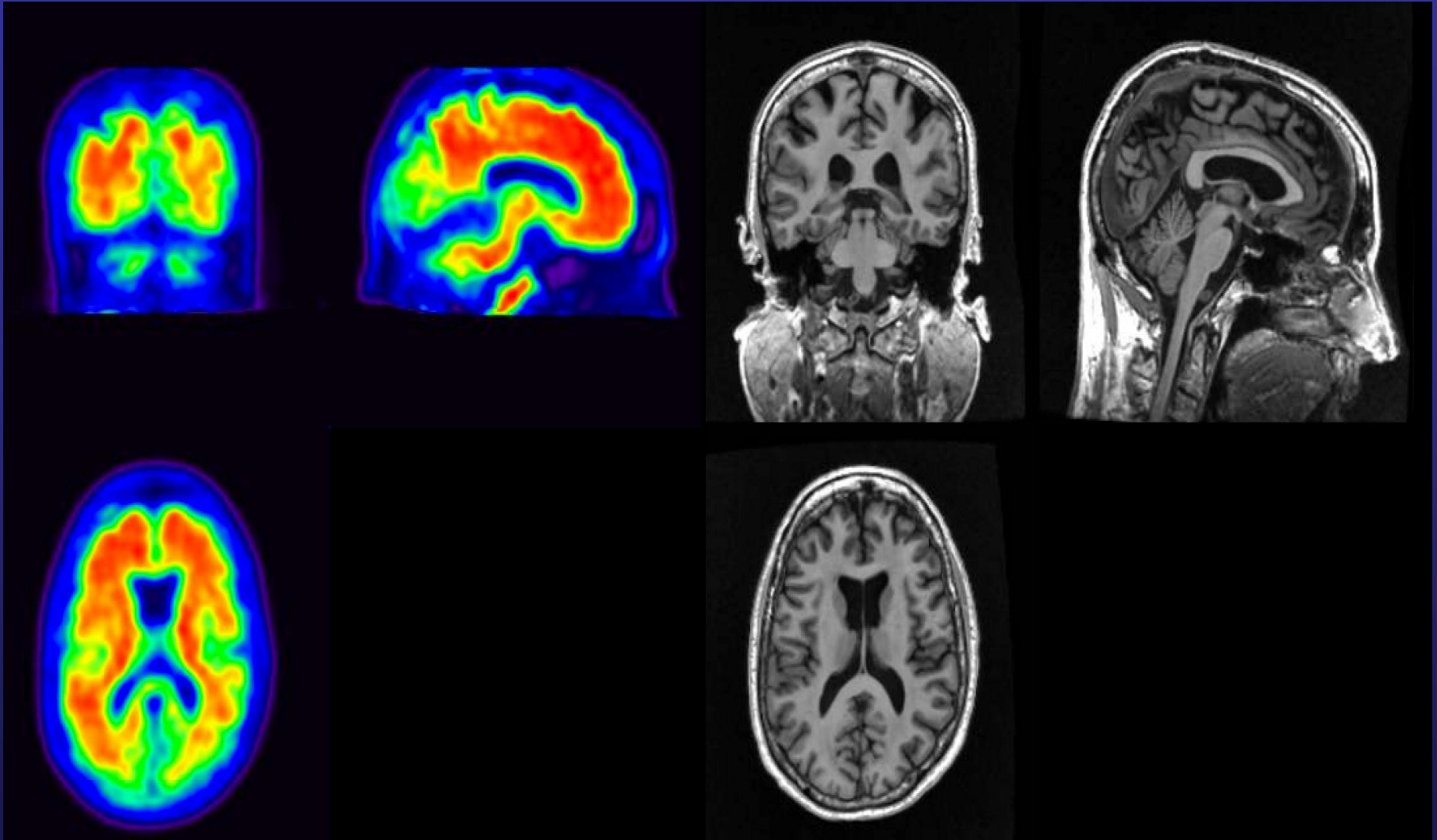
DOD ADNI florbetapir summary N=55



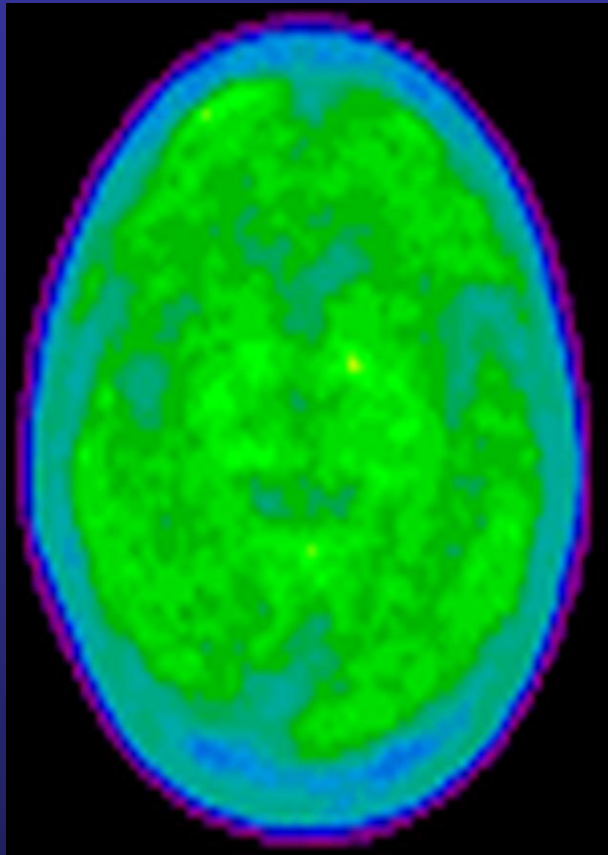
A: 66 yrs. male TBI patient



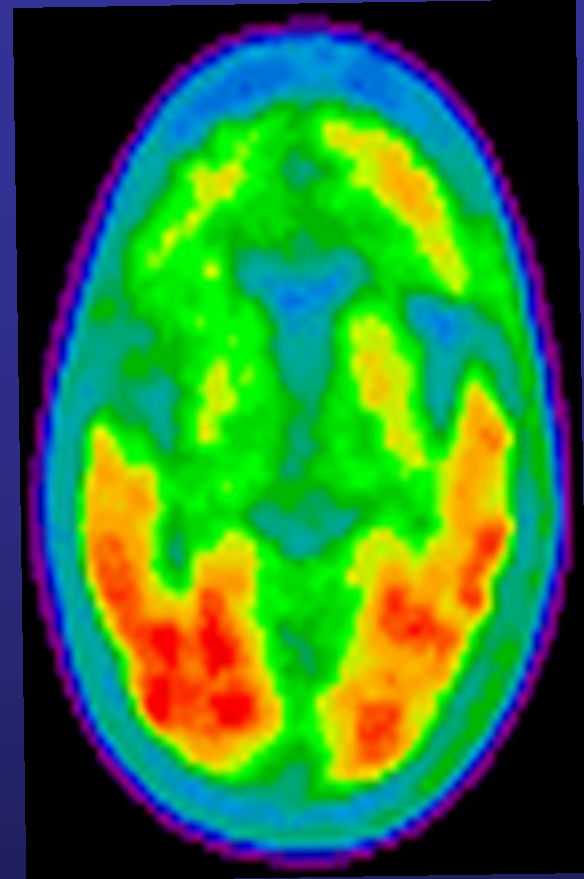
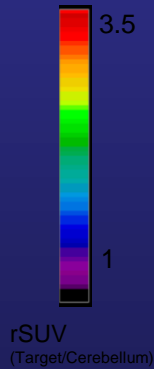
B: 68 yrs. male TBI patient



[18F]-T807 PET (80-100 min p.i.)



Healthy Control
(58 years old)



Alzheimer's Disease Subject
(72 years old, MMSE = 7)