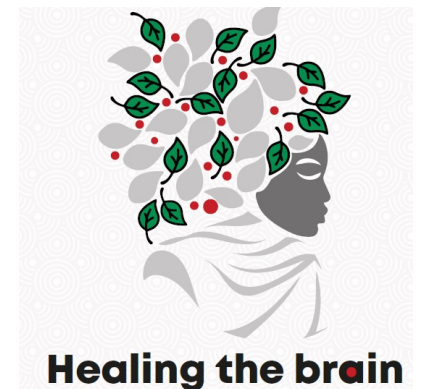


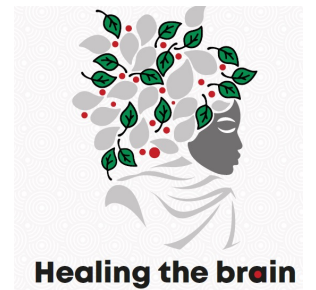
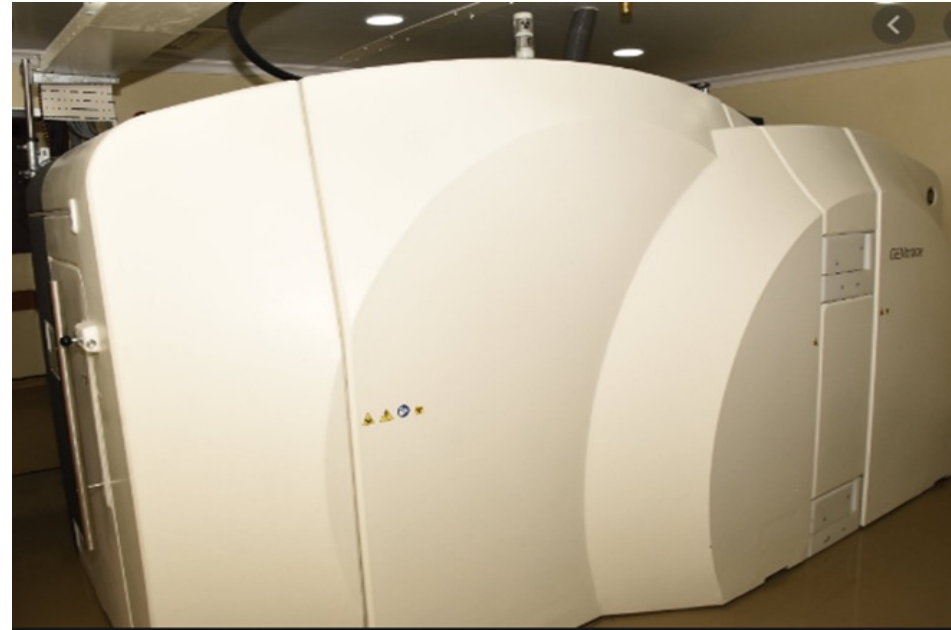
# Innovations in Neuroimaging

Samuel Nguku and Dilraj Sokhi

AKUH, N



# Cyclotron and Fast lab



# PET CT and SPECT CT scanner

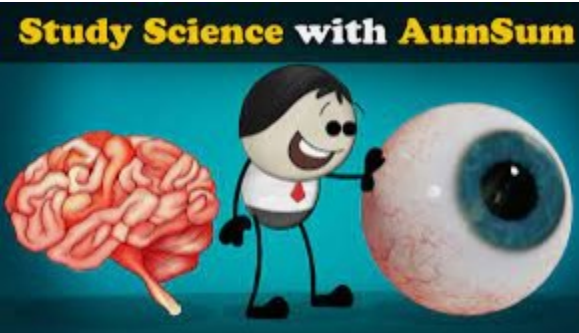


# Local experience

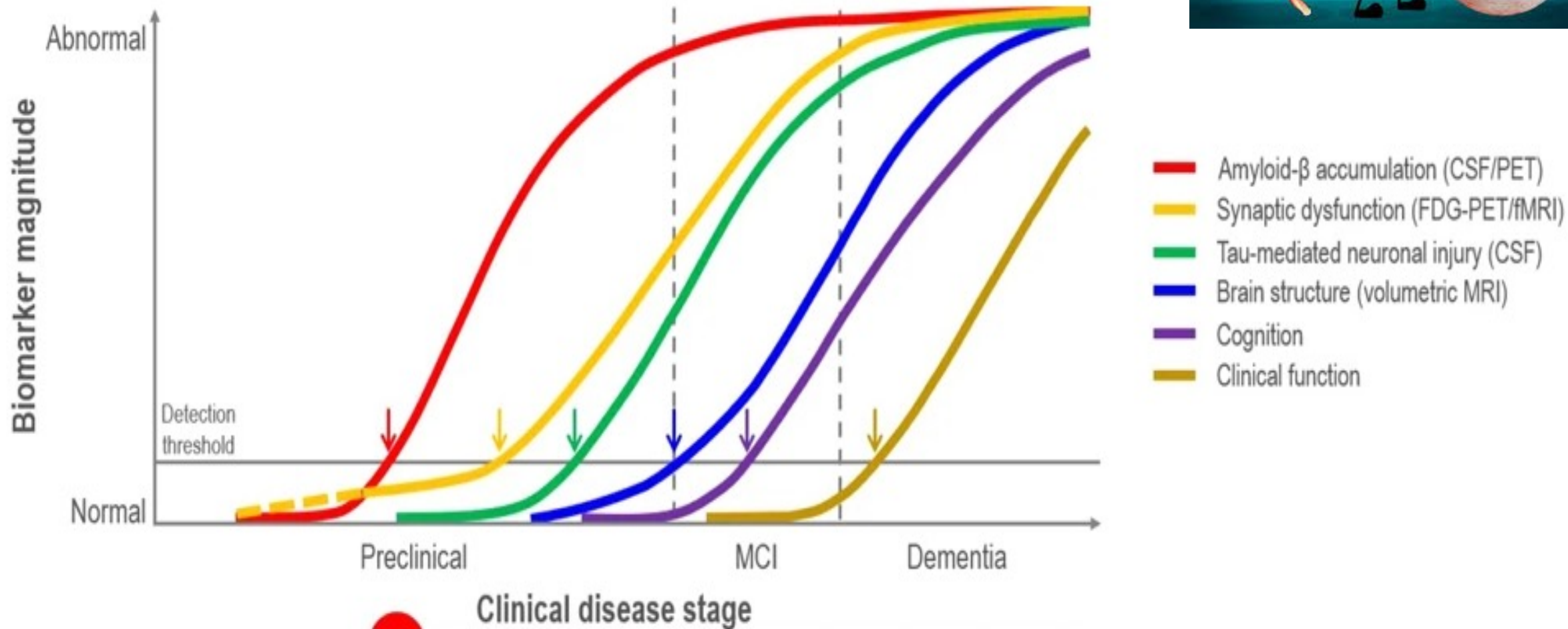


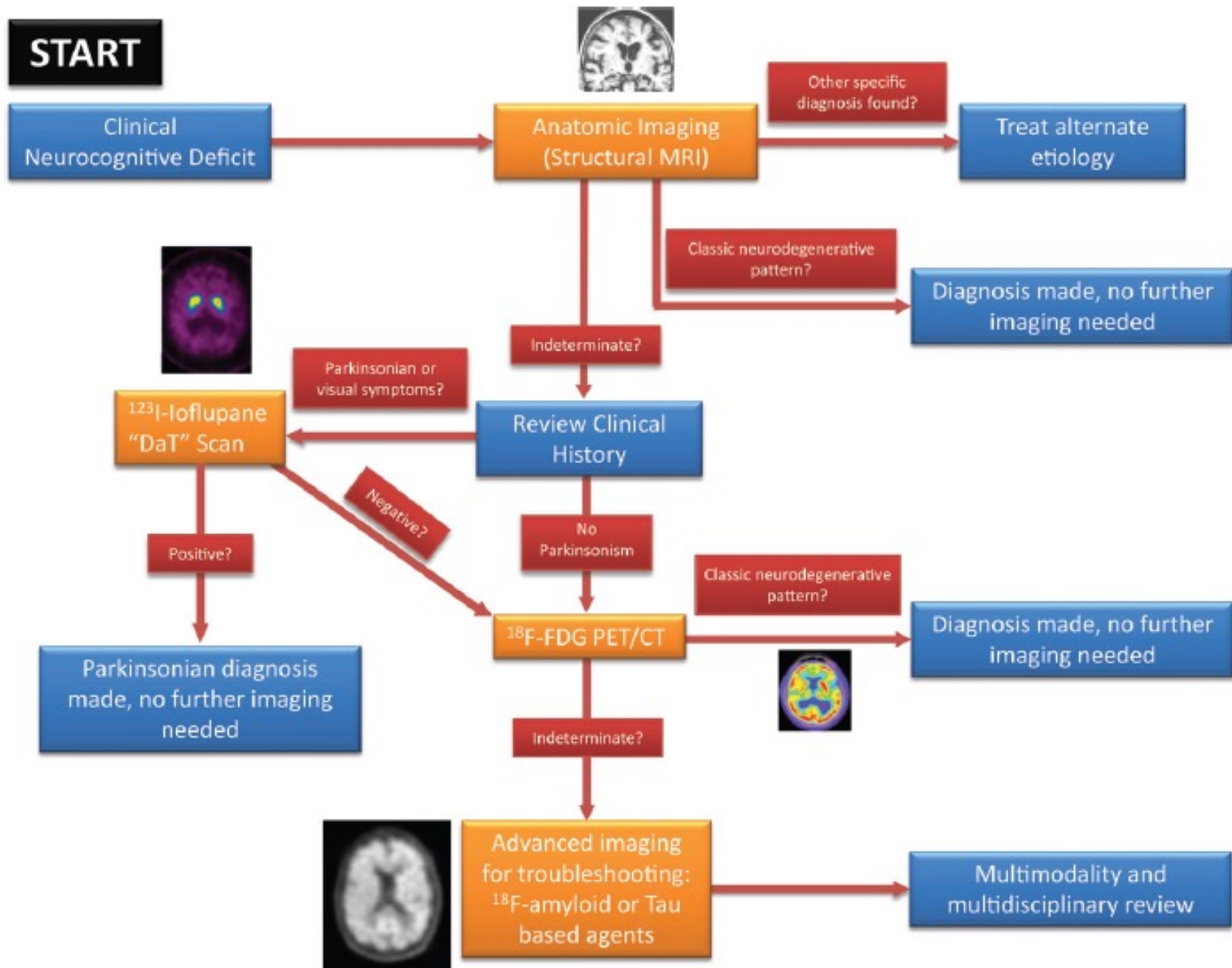
- Started performing brain FDG PET in 2019
  - Over 200 cases (~2 per week now)
  - Mainly for neurodegenerative diseases
  - Others-epilepsy focus, tumor characterization
- TRODAT (DaT scan) SPECT started in 2021
  - ~60 cases





# What if these innovations disappeared?





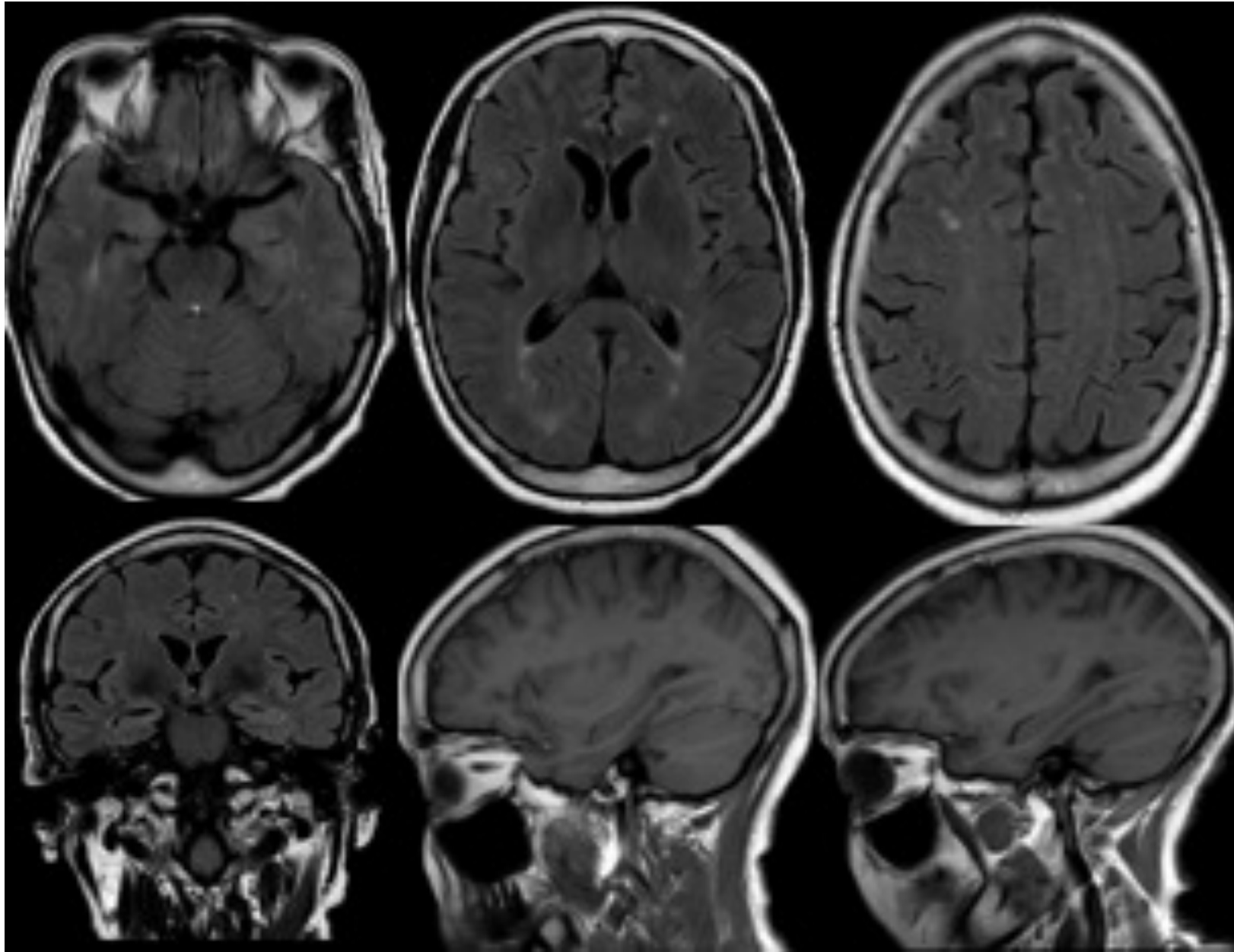
CASES

# Case 1

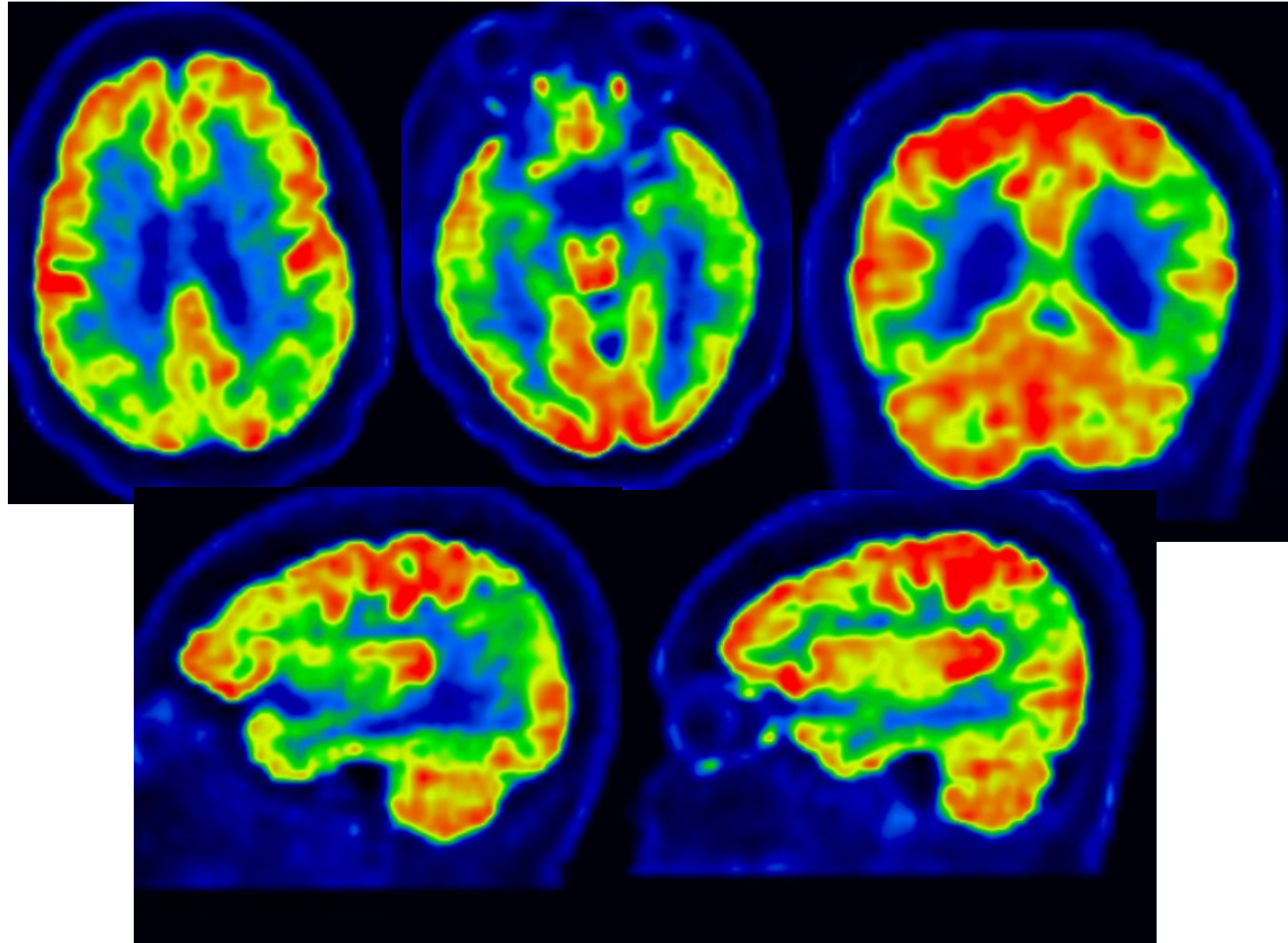
- Brought by husband; forgetful for 3 years, progressing
- Misplaces items in house, forgets names of familiar people, forgets conversations.
- Still able to manage her finances
- Her mood is a 'problem', has become argumentative.
- Very emotional when asked about her family: extremely difficult childhood,
- Sexually abused age 12, 2 teenage pregnancies
- Had a partner who cheated on her before she got married to current husband.
- Her mother was emotional abusive. She was not able to complete her schooling.
- PHQ9 SCORE 26, GAD 7 SCORE 21, MOCA 13/30

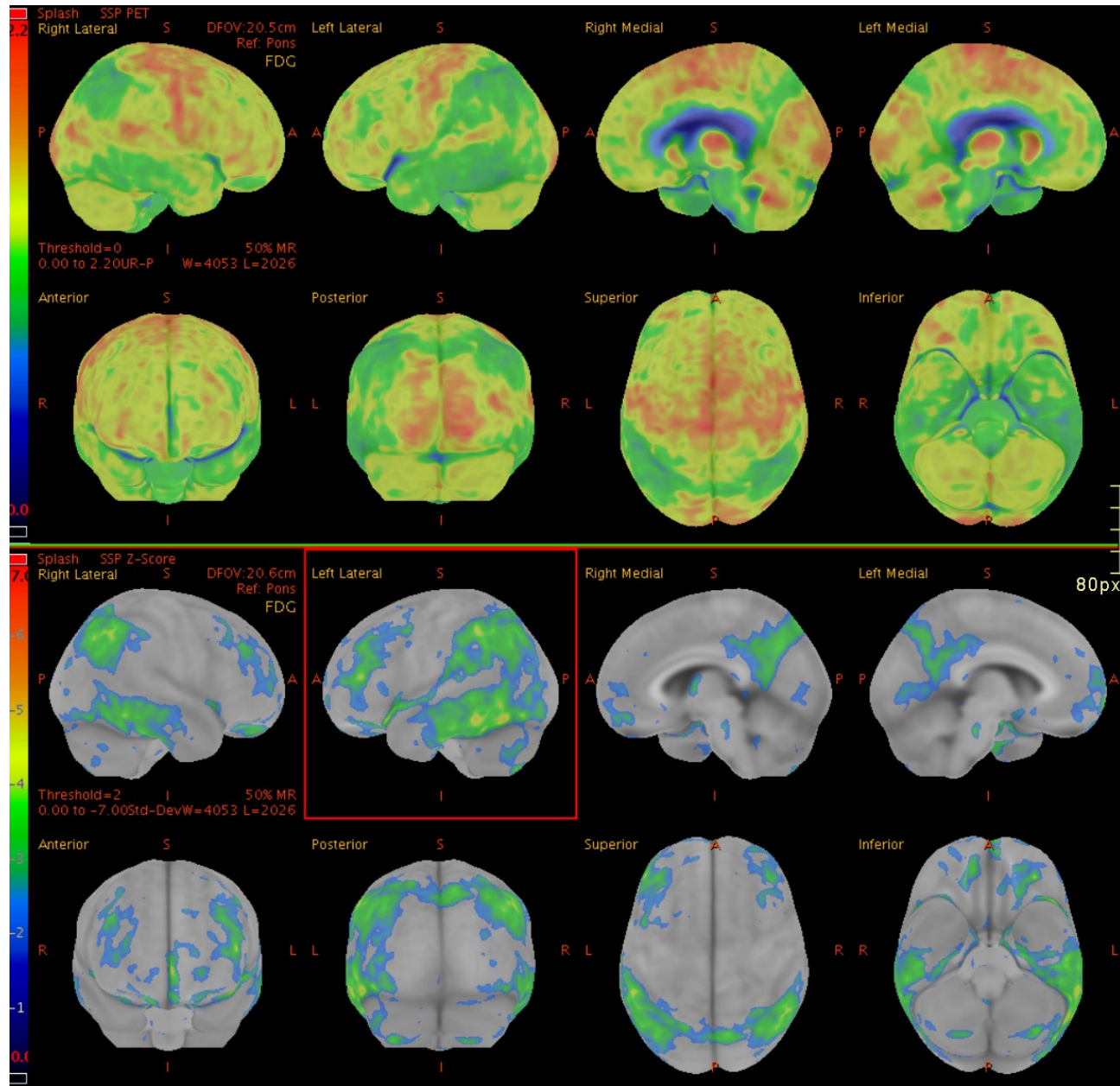


# MRI brain



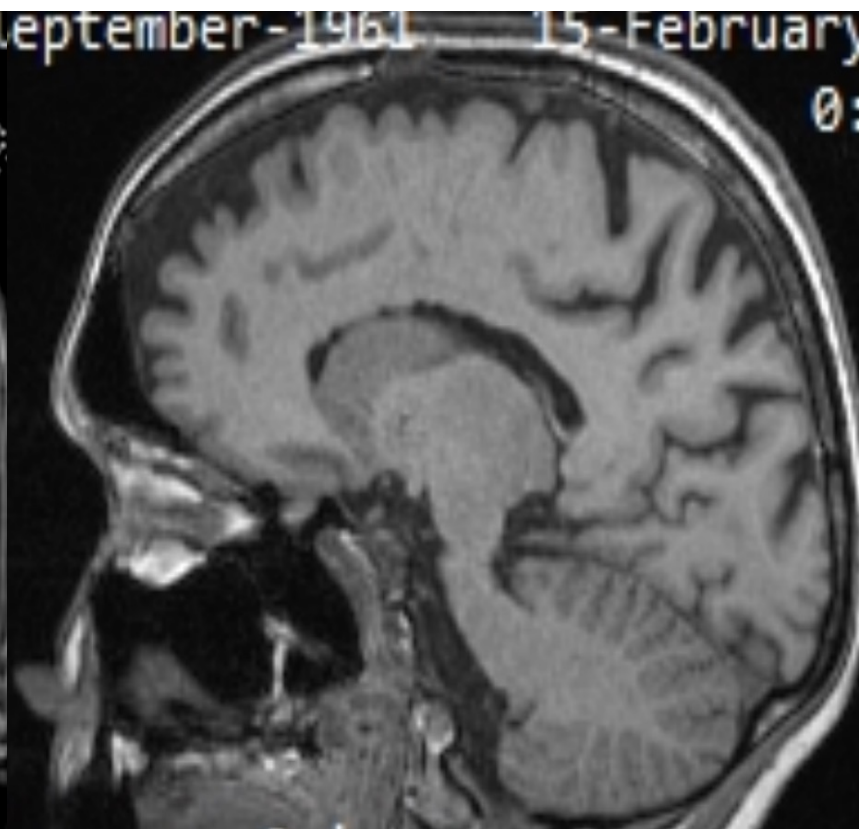
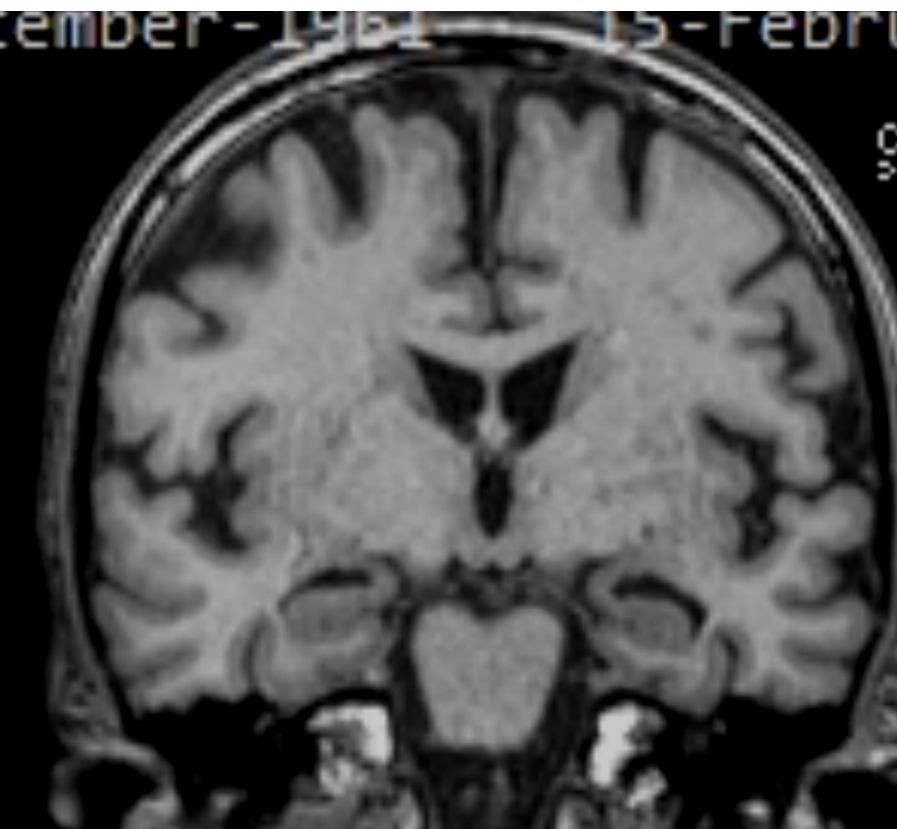
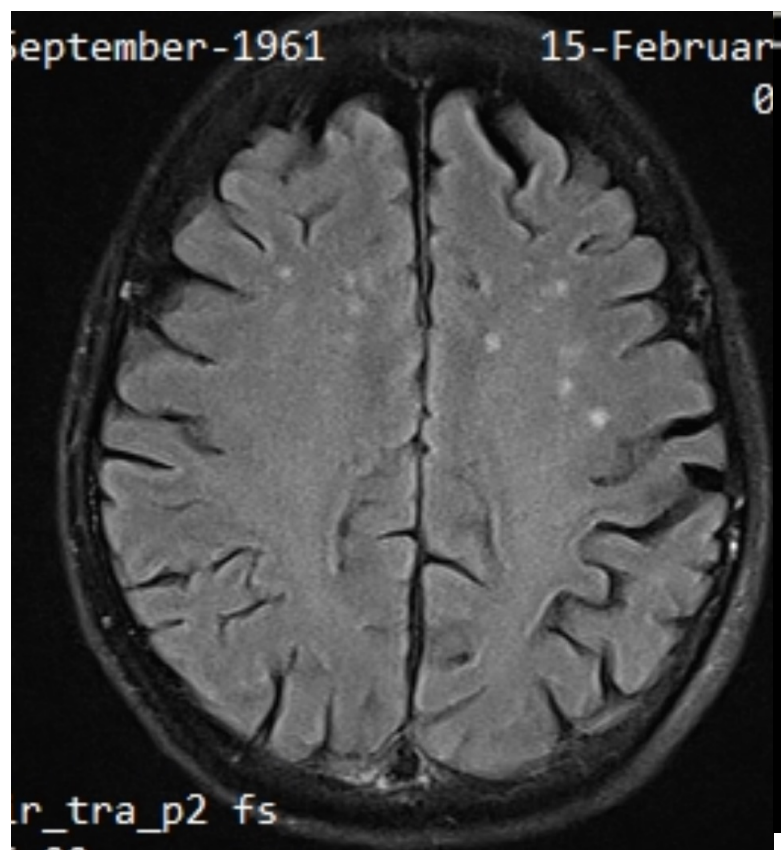
# FDG PET

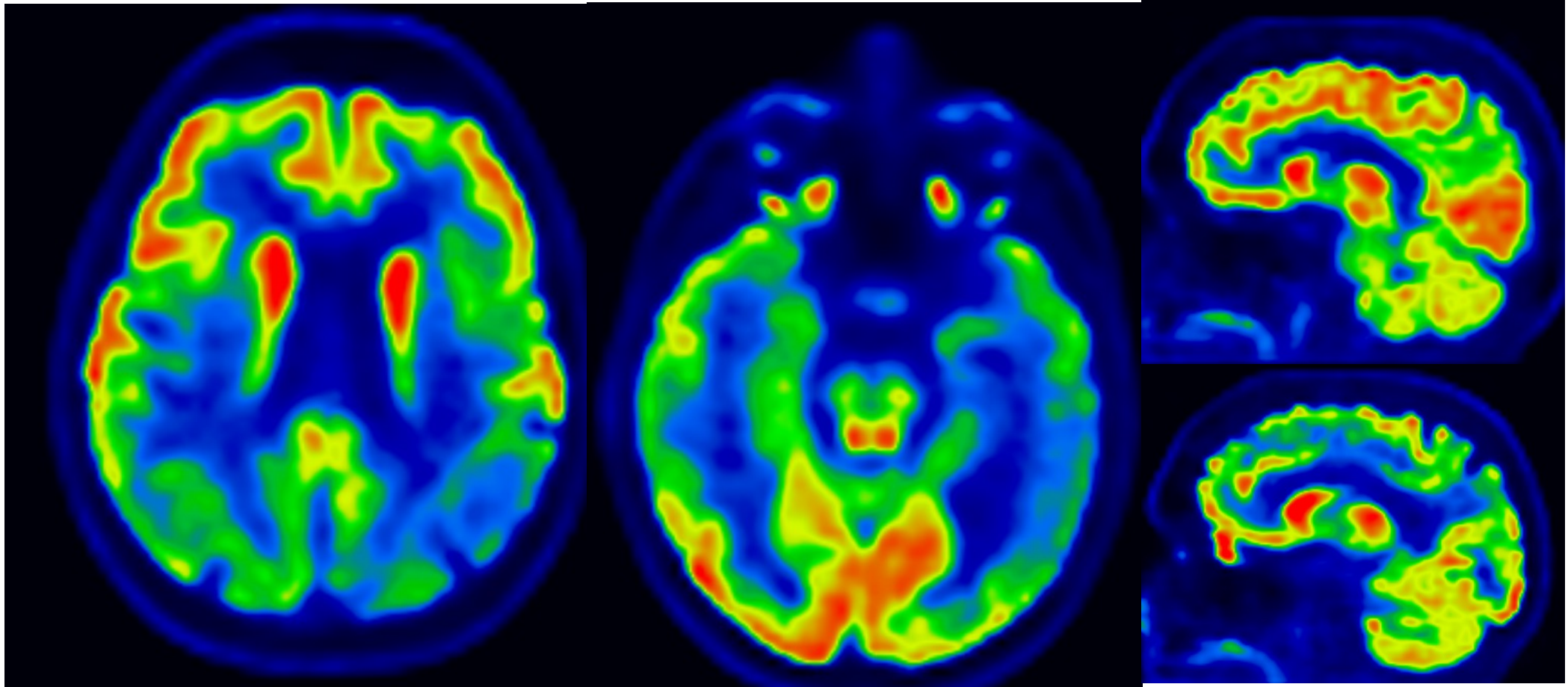


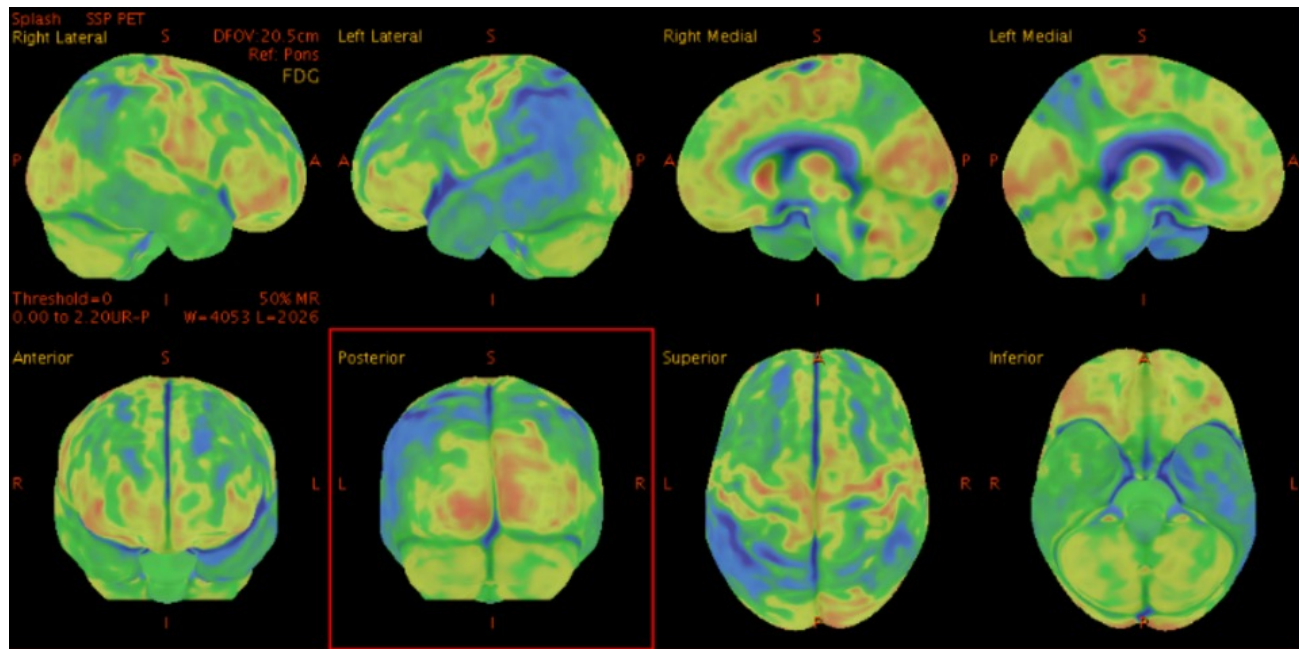


## Case 2

- 60y female with 8 years of progressive memory problems
- Seen by doctors elsewhere and diagnosed with dementia
- Put on rivastigmine
- Concerned that getting worse – speech is dysarthric
- Also quite anxious and tearful

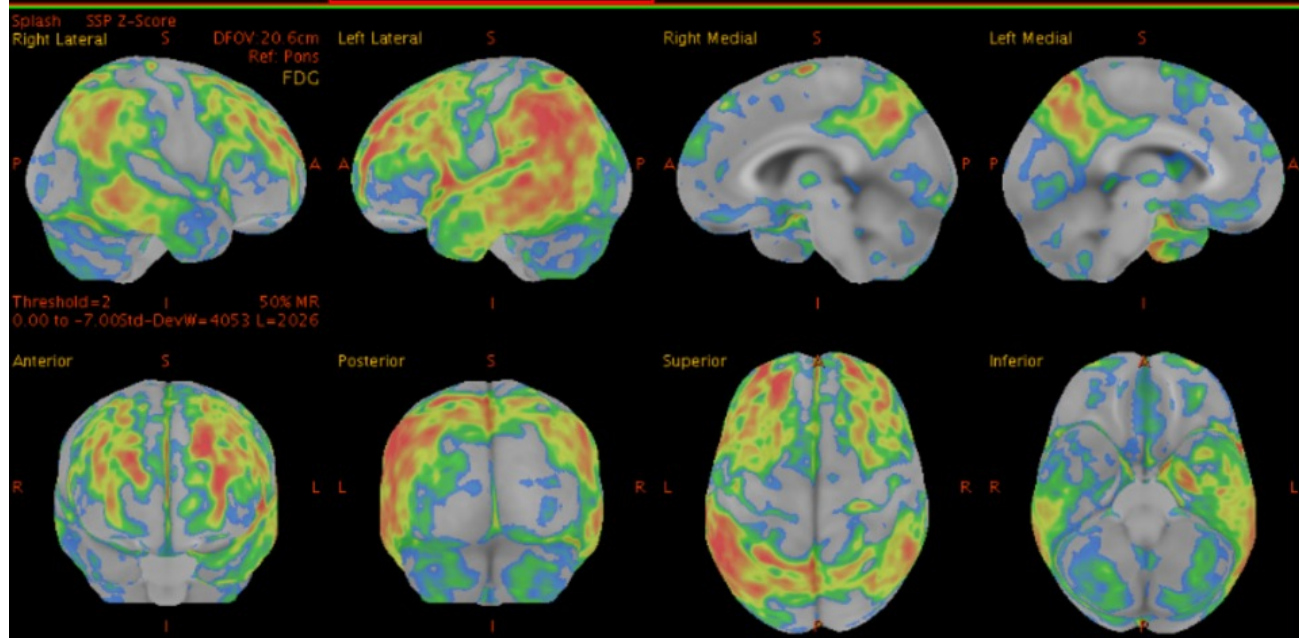






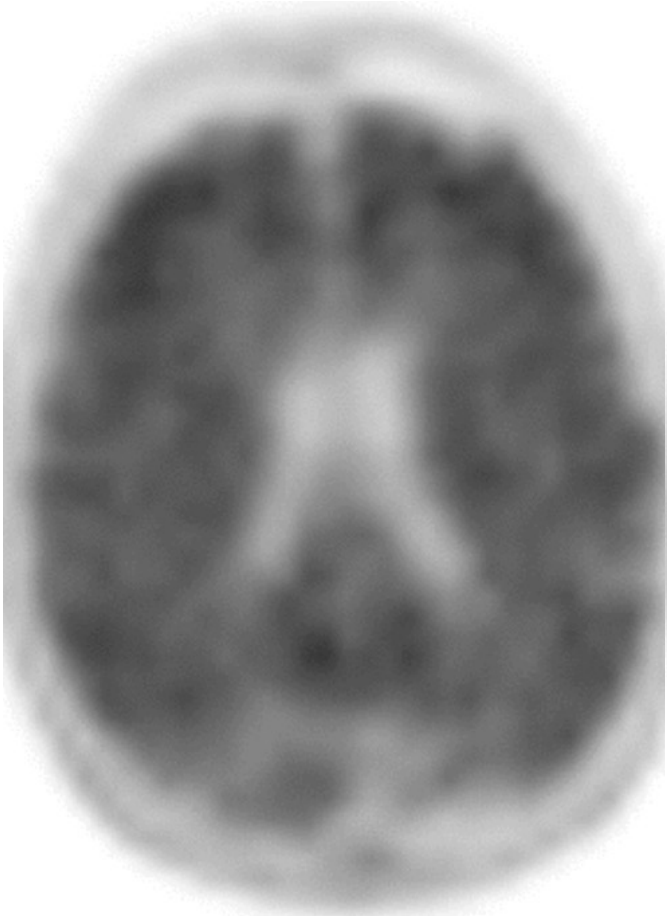
Regions Table

Reference Region: Pons	
Cortical Region	Patient Z-Score
Prefrontal Lateral R	1.05 -5.07
Prefrontal Lateral L	0.94 -5.81
Prefrontal Medial R	1.03 -4.03
Prefrontal Medial L	1.05 -3.68
Sensorimotor R	1.19 -2.82
Sensorimotor L	1.03 -4.00
Anterior Cingulate R	1.11 -2.19
Anterior Cingulate L	1.09 -2.18
Posterior Cingulate R	1.02 -4.24
Posterior Cingulate L	0.99 -4.25
Precuneus R	1.12 -4.37
Precuneus L	0.88 -5.29
Parietal Superior R	0.93 -4.03
Parietal Superior L	0.79 -4.93
Parietal Inferior R	0.91 -5.62
Parietal Inferior L	0.67 -7.17
Occipital Lateral R	1.23 -3.20
Occipital Lateral L	1.06 -4.43
Primary Visual R	1.29 -3.36
Primary Visual L	1.43 -2.31
Temporal Lateral R	0.95 -4.90
Temporal Lateral L	0.73 -6.55
Temporal Medial R	0.83 -3.84
Temporal Medial L	0.69 -6.04
Cerebellum Whole	1.07 -2.94
Pons	1.00 0.00



150px

# Amyloid PET

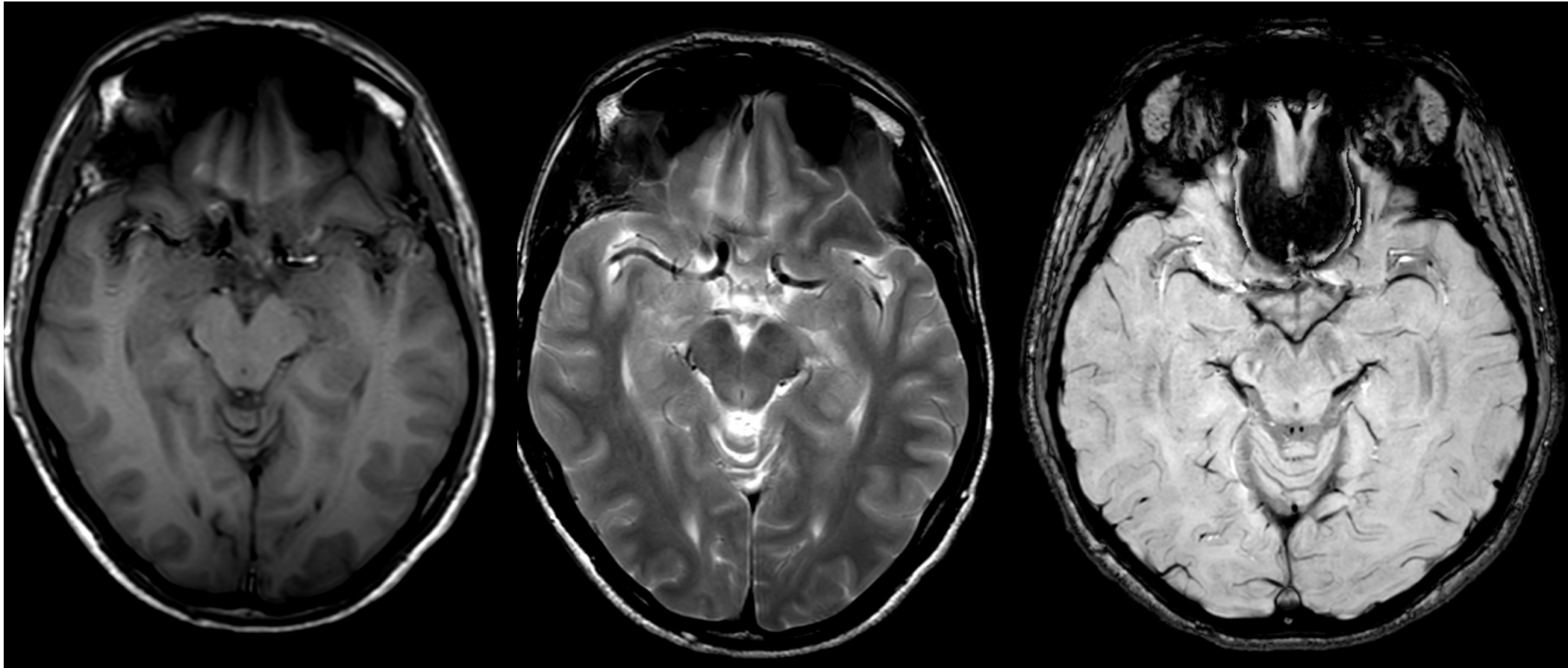


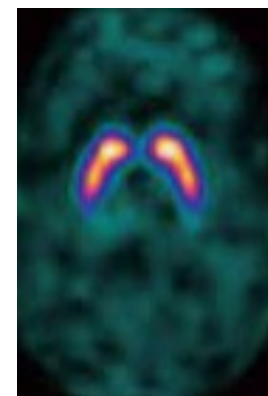
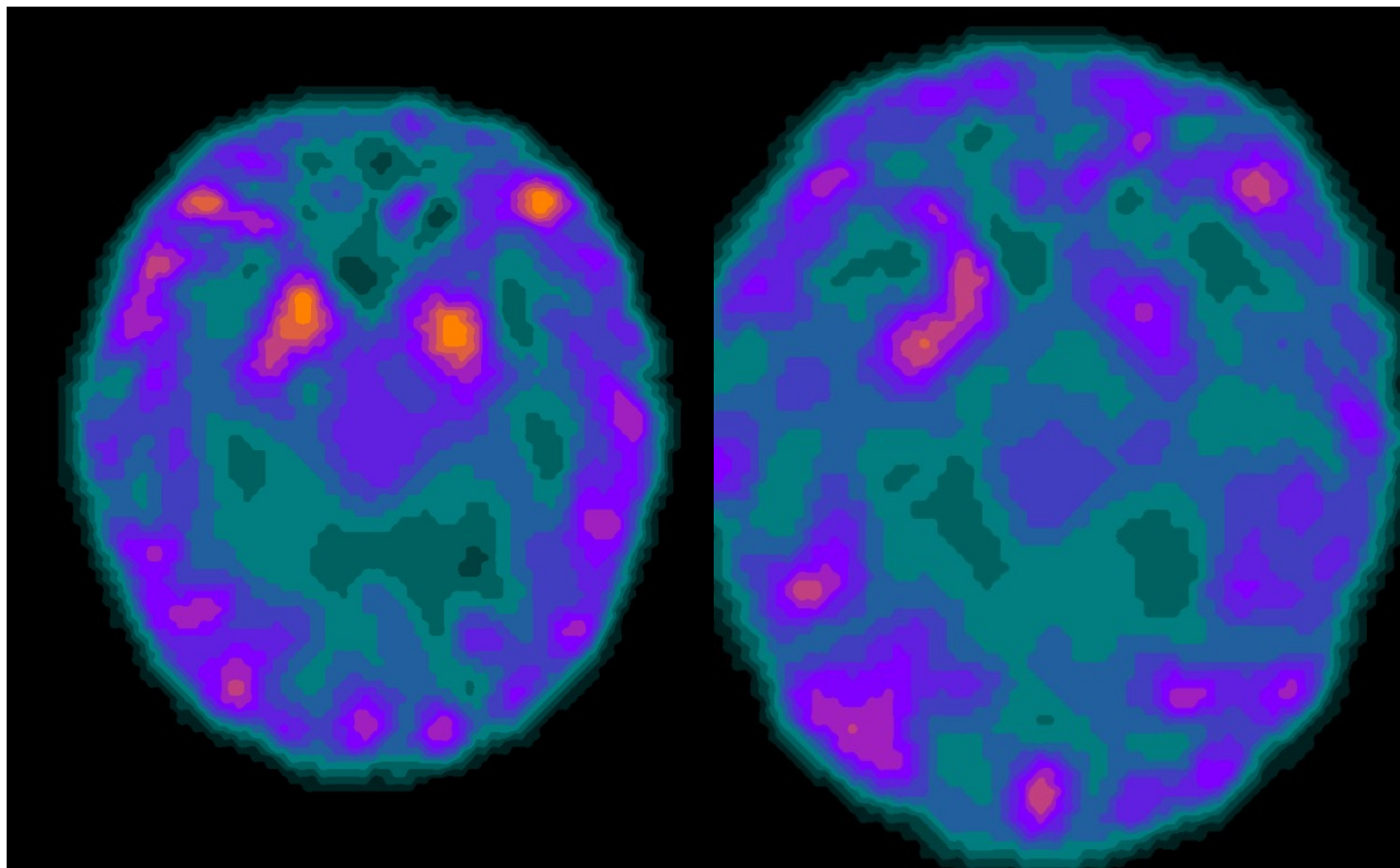


# Case 3

- 35 yo nurse from Somalia
- 2 years of slowness in walking then hand tremors
- No clear diagnosis given locally
- Came for second opinion
- Clinically – signs of Parkinsons disease but unclear if idiopathic
- (symmetrical tremors, lower limb>upper limb rigidity)

# MRI brain

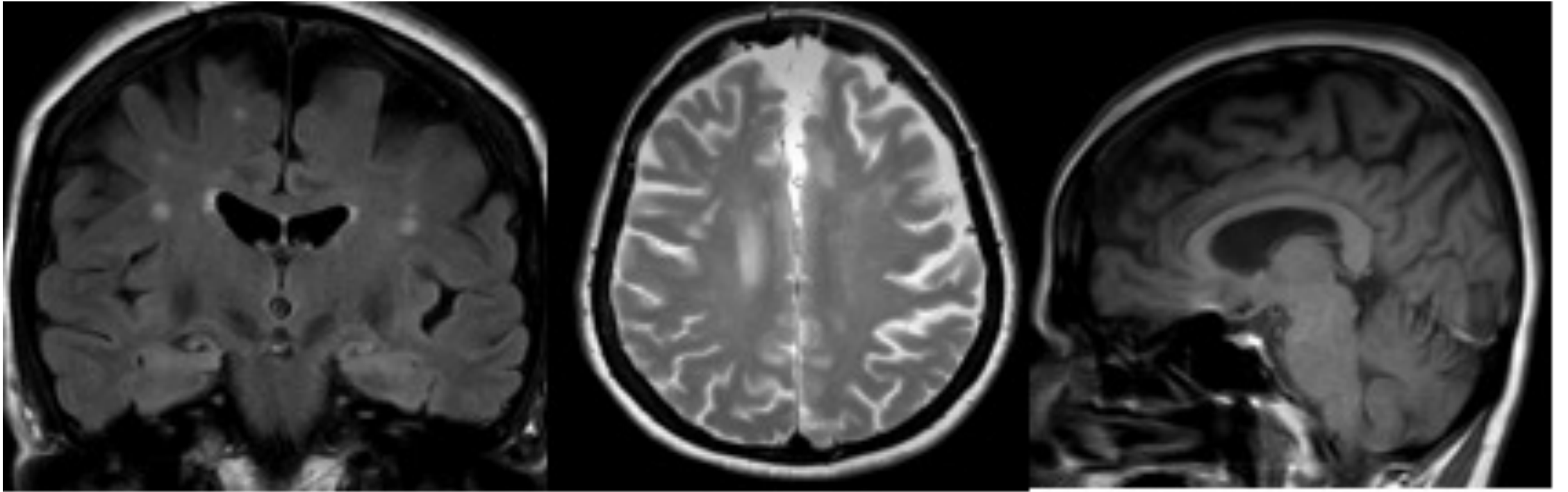


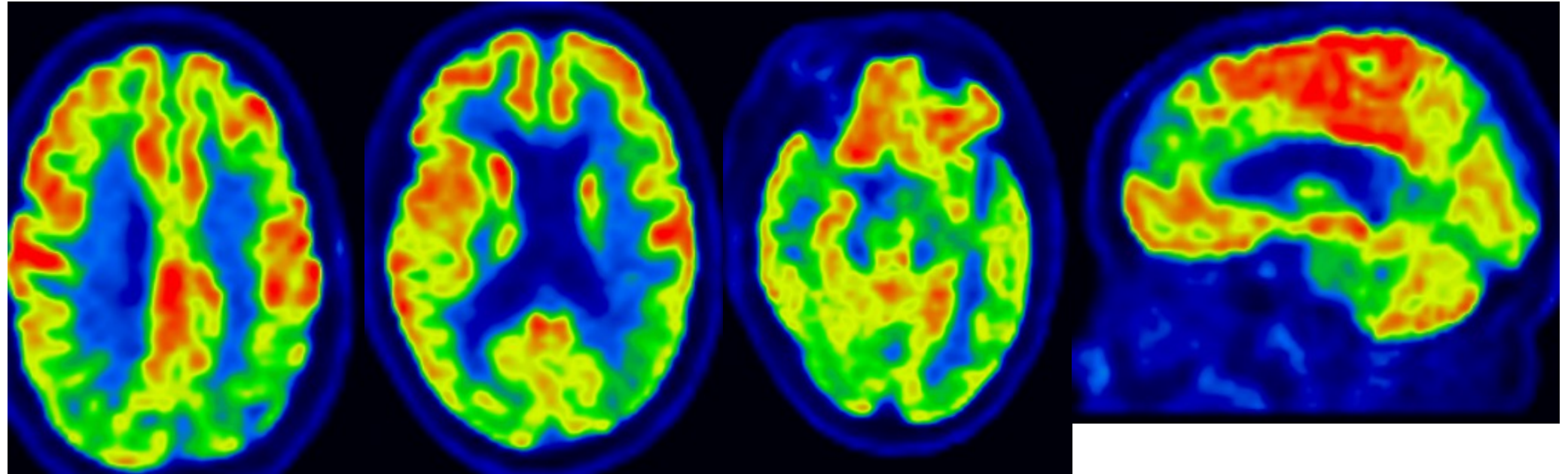


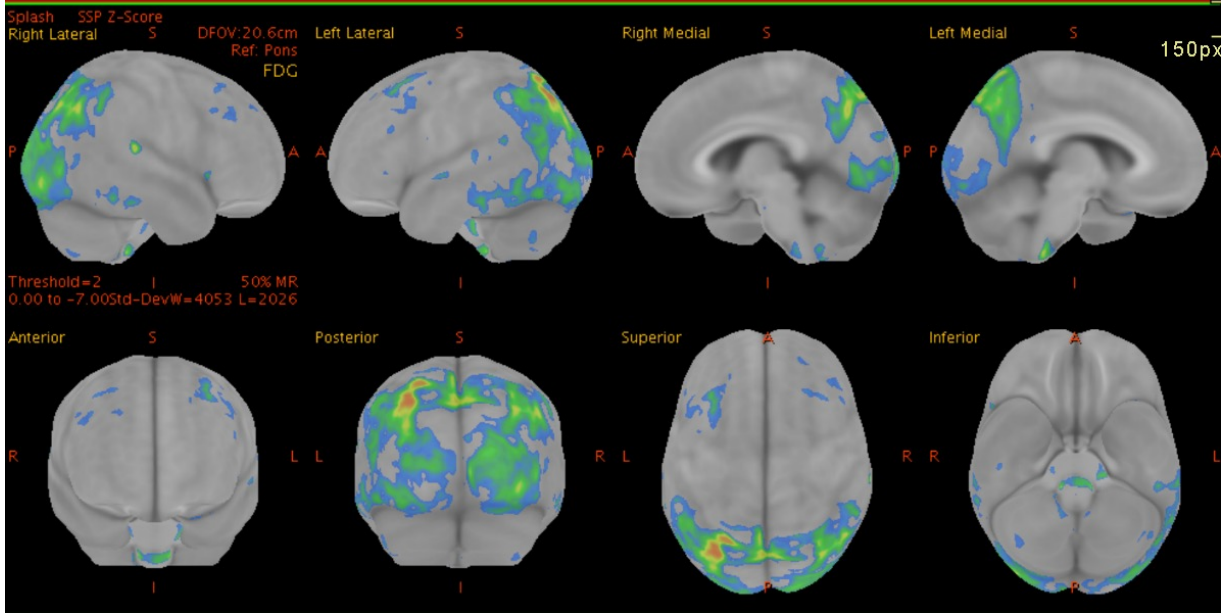
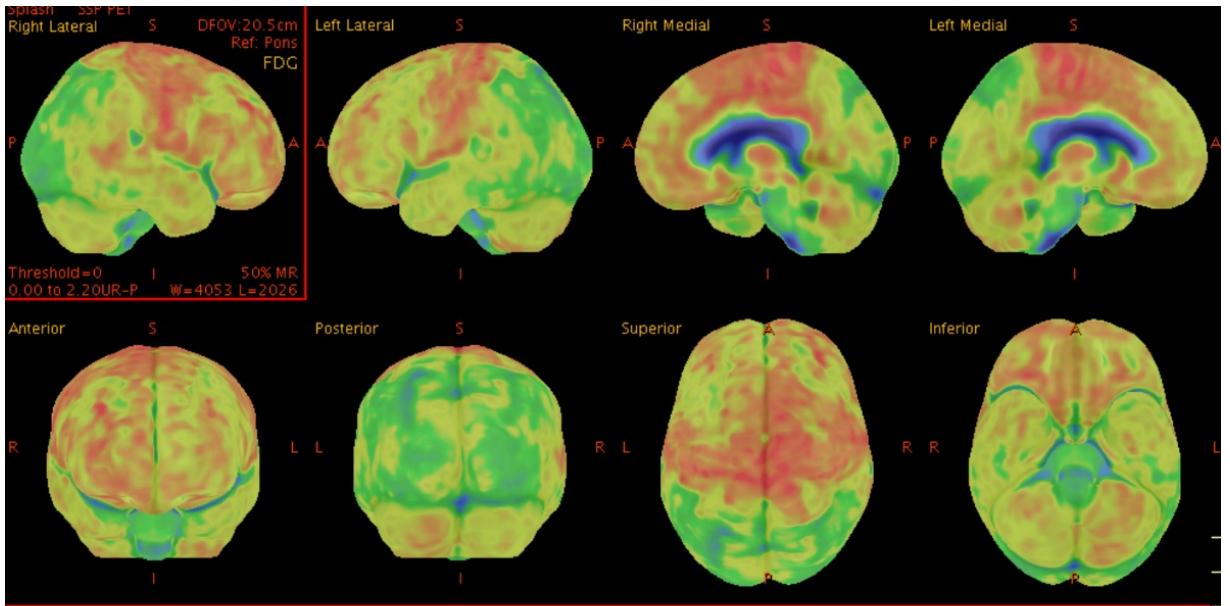
# Case 4:

- 77 yo female with ?dementia
- .....
- .....
- .....

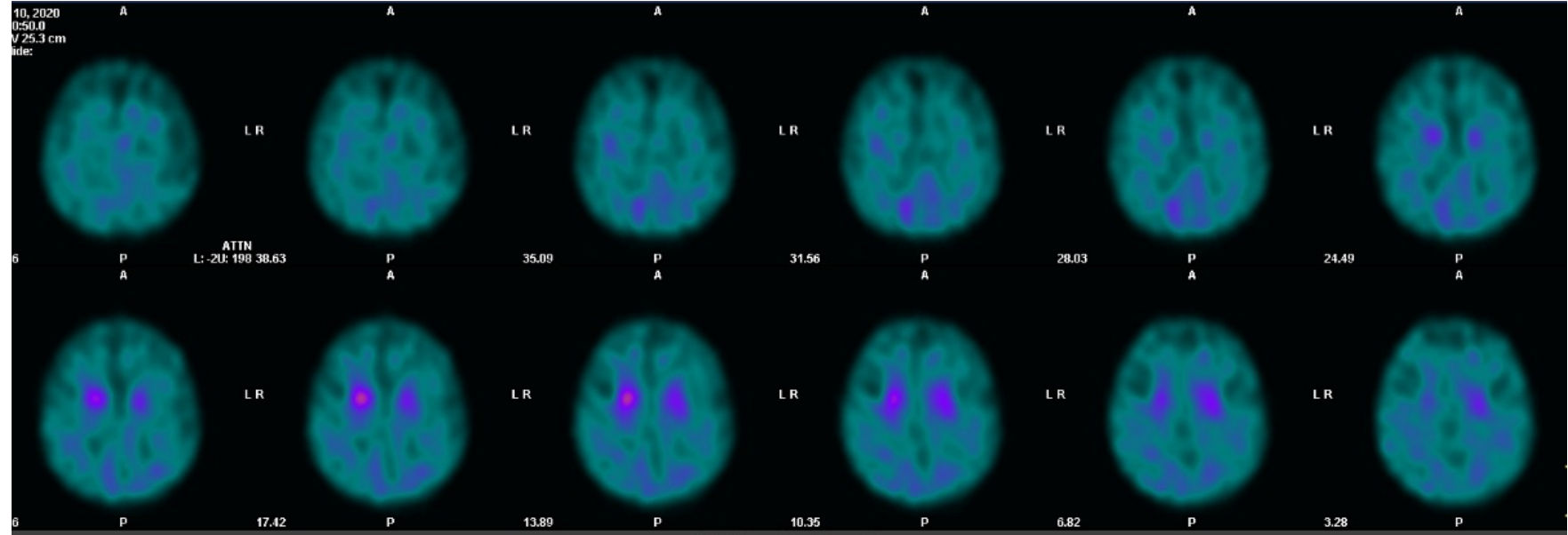
# Case 4:





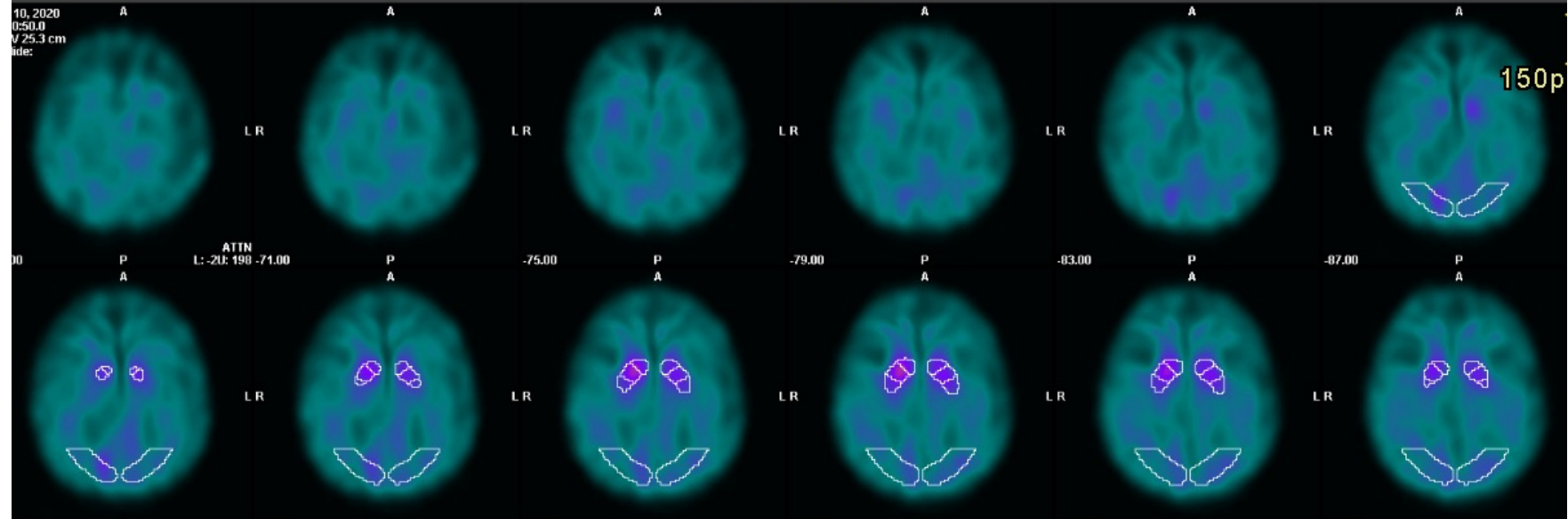


10\_2020  
0:50.0  
V 25.3 cm  
side:



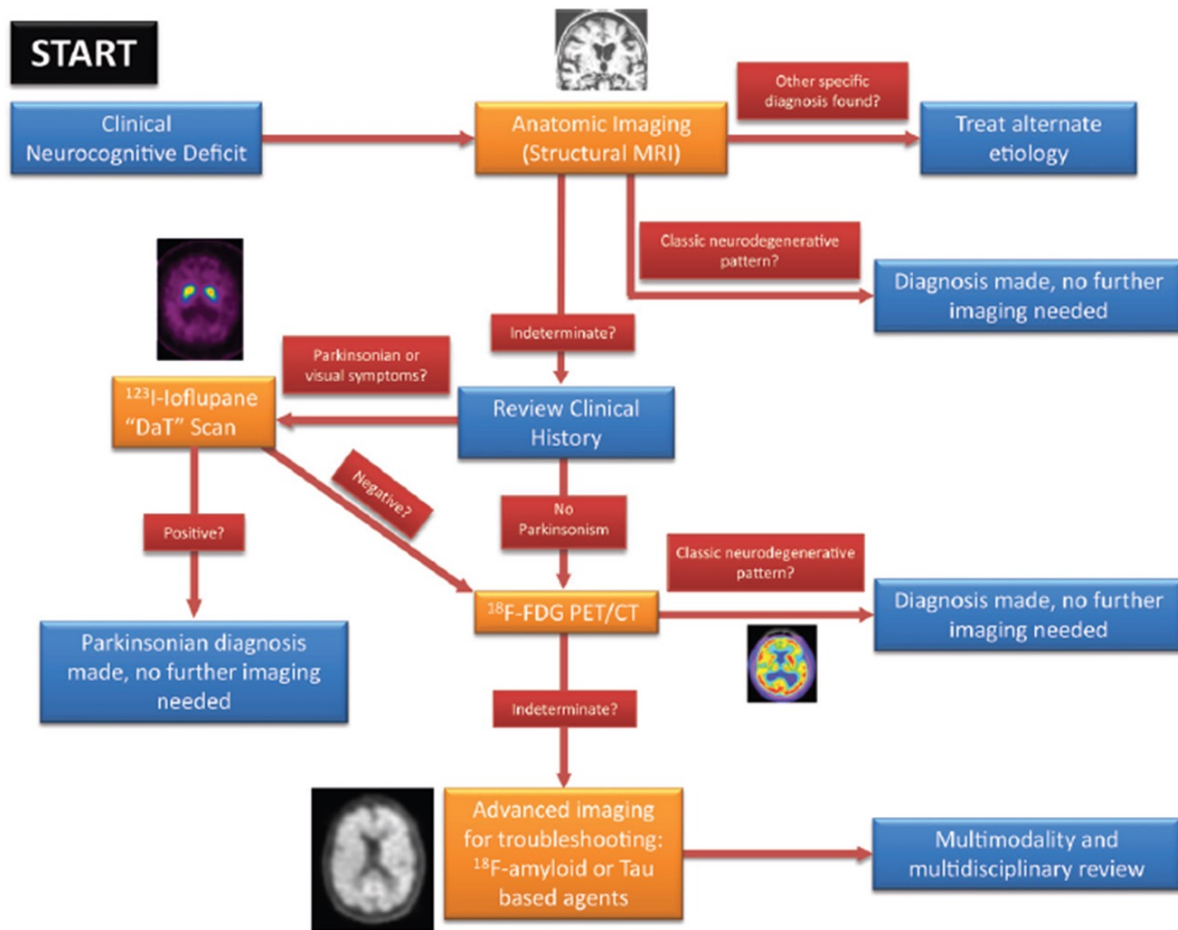
IRACRR Unregistered Transaxials

10\_2020  
0:50.0  
V 25.3 cm  
side:





# Summary



Multidisciplinary approach

