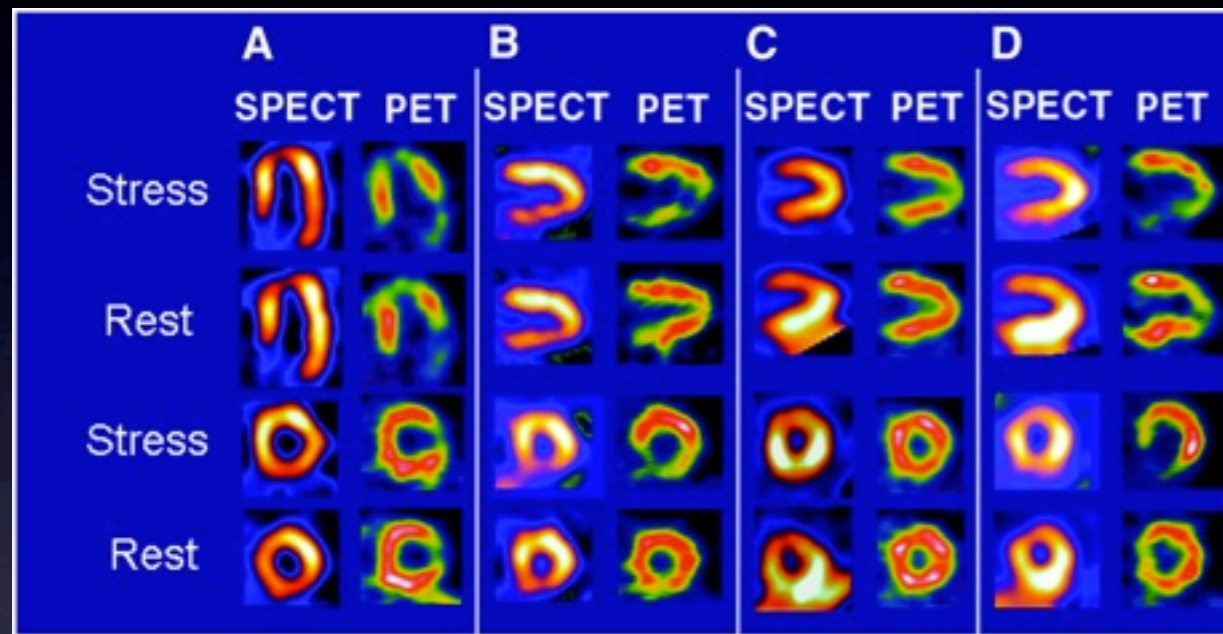


PET scan use: myocardium and brain examples

Myocardial perfusion w/ PET and Rb 82 vs SPECT

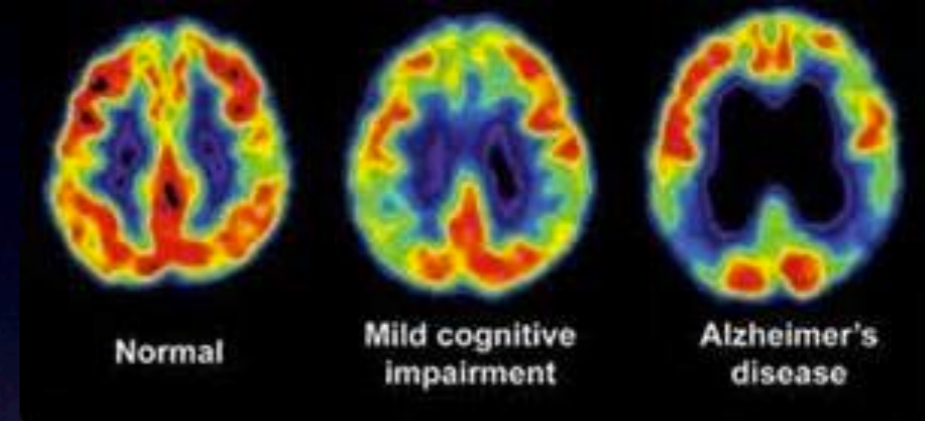


Examples of improved diagnostic reliability of PET vs. SPECT MPI in the same patients. (A) A 70-y-old man status post CABG with no history of MI. Exercise/rest SPECT images are normal but left ventricular ejection fraction was surprisingly reduced at 0.39. PET MPI within 2 wk discloses a clinically occult posterobasal MI. (B) A 53-y-old man with exertional left arm pain. SPECT images with dipyridamole stress are normal. PET MPI within 2 wk demonstrates a reversible inferoseptal perfusion defect. Ninety percent circumflex stenosis found on coronary arteriography. (C) A 46-y-old woman with chest pain. SPECT images are equivocal for reversible ischemia in inferolateral wall. PET images are normal. (D) A 59-y-old woman with chest pain. SPECT images are equivocal for reversible inferolateral ischemia as in C. PET images demonstrate reversible inferoseptal perfusion defect, treated with PTCA of 95% dominant right coronary artery stenosis.

UCLA Health Sciences study 2006



Ask Mish



Brain PET scans from a healthy volunteer (left), a subject with mild cognitive impairment (middle) and a subject with Alzheimer's disease (right). Red and yellow areas show the new chemical marker FDDNP binding to abnormal brain proteins or "plaques and tangles."

The study included 83 volunteers aged 49 to 84. Based on cognitive testing, 25 patients had Alzheimer's disease, 28 had mild cognitive impairment and 30 were normal controls.

Researchers performed PET brain scans after intravenously injecting the volunteers with the new chemical marker called FDDNP, the molecule that binds to the plaque and tangle deposits found in Alzheimer's disease.

Scientists found distinct differences among people with normal brain aging, patients with Alzheimer's disease and people with mild cognitive impairment.

"This is the first time this pattern of plaque and tangle accumulation has been tracked in living humans over time in a longitudinal study,"