CLAIMS

1. A medical system for predicting a disease pathology in a subject having an uncertain cognitive status, the system comprising:

a computer system (100) arranged to receive first medical data for the subject and configured at least in part as a trained learning machine trained on second medical data, the computer system (100) being adapted to use the trained learning machine to provide a prediction of the disease pathology, wherein the second medical data used to train the trained learning machine comprises an amyloid positron emission tomography, PET, scan for each of a plurality of subjects, wherein a subset of the plurality of subjects are amyloid beta, Aβ, positive; and

a display (190) for displaying an indication of the prediction,

wherein the first medical data does not comprise data obtained from a molecular imaging procedure on the subject;

wherein the disease pathology is Aβ positivity in the subject's brain.

2. A medical system as claimed in claim 1 wherein the first medical data comprises Activities of daily living (ADL) baseline, digit span backwards, logical memory II 30min after story baseline, trail making part A-time (sec), education, male gender, left caudate volume, right amygdala volume, and right caudate volume.

3. A medical system as defined in claim 1 wherein the first medical data comprises age, gender, mini mental score (MMSE), clinical dementia rating (CDR), clinical dementia rating sum of boxes (CDR-SB), ApoE genetic testing status, regional left and

right brain volumes of hippocampus, parahippocampus, amygdala, entorhinal cortex, medial temporal lobe, gyrus rectus, ventricles and angular gyrus.

4. A medical system as claimed in claim 1 wherein a clinical outcome predicted by the trained learning machine is fast progression of MCI.

5. A medical system as claimed in claim 4 wherein the first medical data comprises ADL baseline, Mini Mental State examination (MMSE) baseline, Category Fluency test - Animal category, Composite amyloid Standardized uptake value ratio (SUVR) (pons), and Hippocampal volume.

6. A medical system as claimed in claim 1 wherein the first medical data includes results of cognitive testing of the subject.

7. A medical system as claimed in claim 1 wherein the first medical data includes an age of the subject.

8. A medical system as claimed in claim 1 wherein the first medical data includes a number of years of education of the subject.

9. A medical system as claimed in claim 1 wherein the first medical data includes results of ApoE genetic testing

10. A medical system as defined in claim 1 for use in a method to predict a disease pathology in a subject having uncertain cognitive status.

11. A medical system as defined in claim 1 for use in a method to predict a clinical outcome in a subject having uncertain cognitive status.

12. A medical system as claimed in claim 1 wherein the subject is a Subjective Memory Complainer (SMC) or suffering from Mild Cognitive Impairment (MCI) and is being investigated for possible onset of Alzheimer's Disease (AD).

13. A medical system as claimed in claim 1 wherein the subject is cognitively normal.