Supplement to Rey's Auditory Verbal Learning Test scores can be predicted from whole brain MRI in Alzheimer's disease

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October 6, 2016

1   Estimation of delayed recall

We estimated the delayed recall score form gray matter density using proposed approach (elastic net linear regression) with the full dataset (AD,MCI, NC). The average correlation score among 100 different computation times was $R = 0.44$, the average Q^2 was 0.19 and the average MAE was 2.83. The scatter plot of the estimated and observed RAVLT scores of the CV run with the median R within 100 computation time is illustrated in Fig. 1

2   Scatter plots for RAVLT Immediate and RAVLT Percent Forgetting

The scatter plots of the estimated and observed RAVLT scores of the CV run with the median R within 100 computation time based on KRVR and RVR are illustrated here. The scatter plots for the experiments with all available subjects (AD, MCI and NC subjects) are illustrated in Fig. 2, for the experiments with only AD and NC subjects are illustrated in Fig. 3, for the experiments with only AD and MCI subjects are illustrated in Fig. 4 and for the experiments with only MCI and NC subjects are illustrated in Fig. 5.
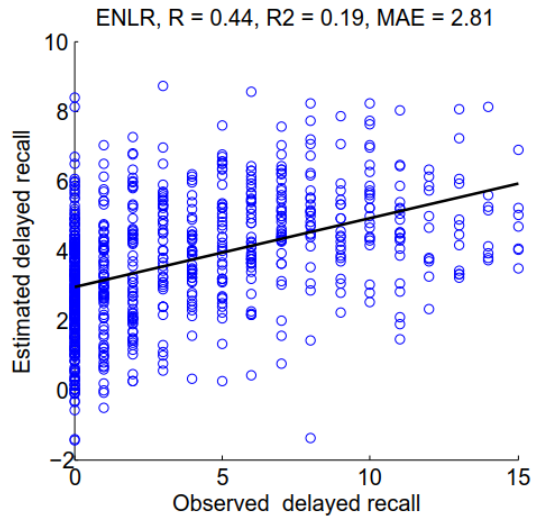
Figure 1: Scatter plot for estimation of delayed recall score using ENLR in all subjects (AD, MCI and NC).
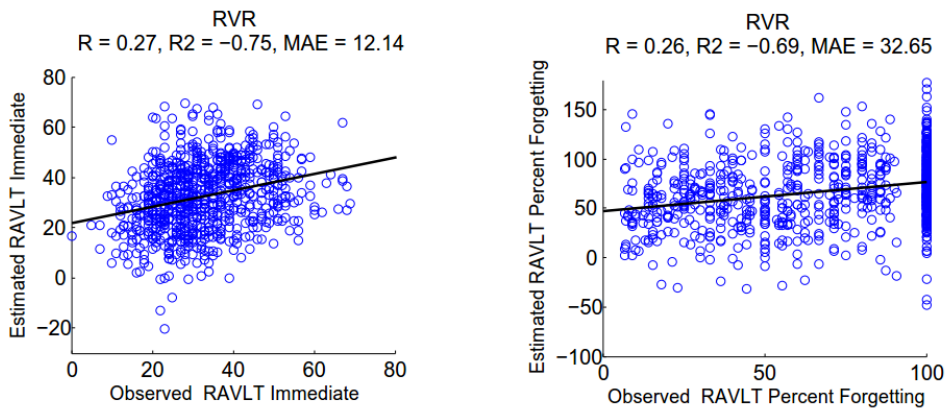

Figure 2: Scatter plot for estimation of RAVLT Immediate (left) and RAVLT Percent Forgetting (right) using RVR method in all subjects (AD, MCI and NC).
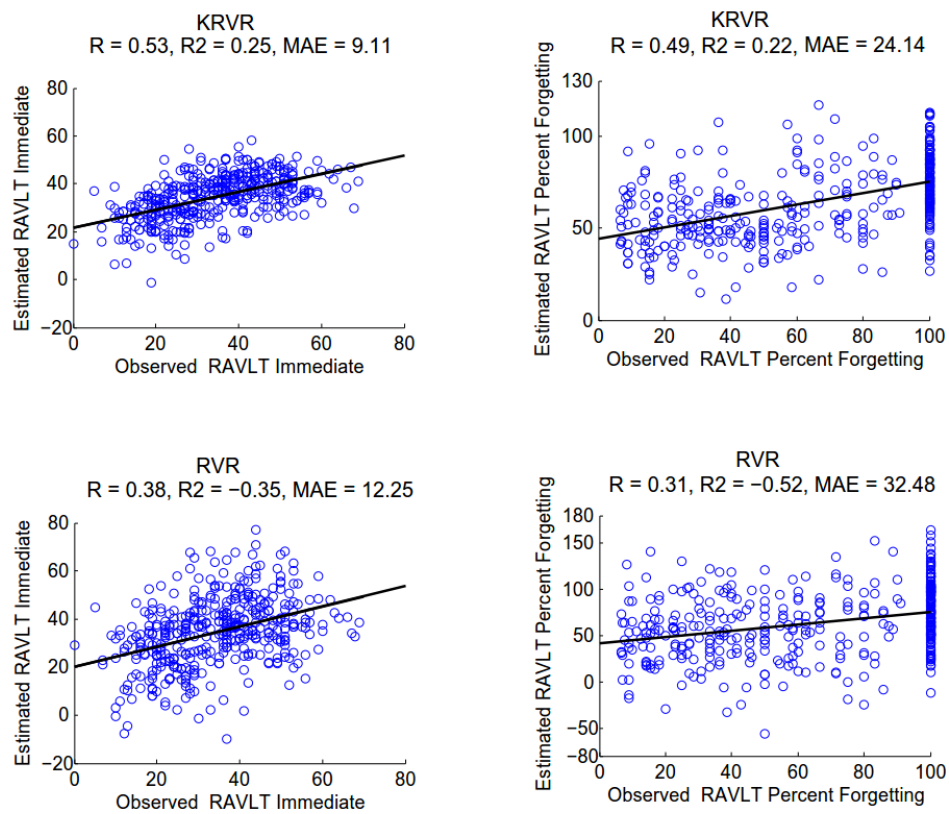
Figure 3: Scatter plot for estimation of RAVLT Immediate (left) and RAVLT Percent Forgetting (right) based on KRVR and RVR methods using only AD and NC subjects.
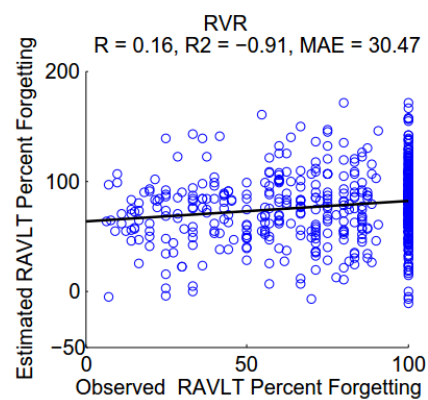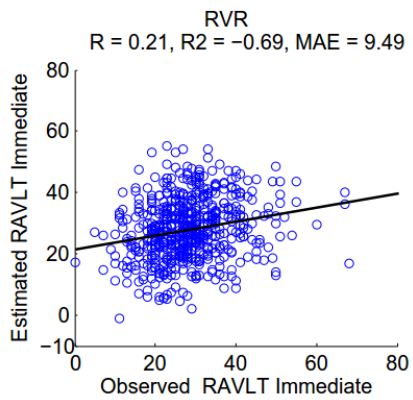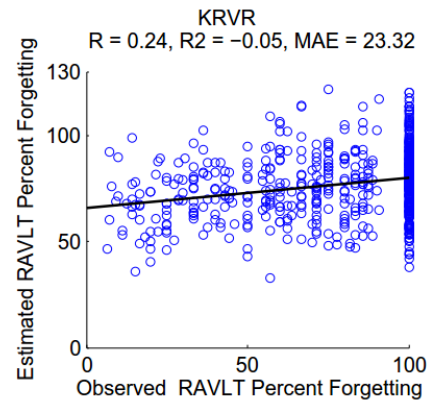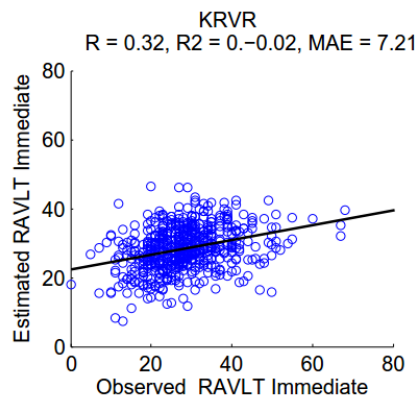
Figure 4: Scatter plot for estimation of RAVLT Immediate (left) and RAVLT Percent Forgetting (right) based on KRVR and RVR methods using only AD and MCI subjects.
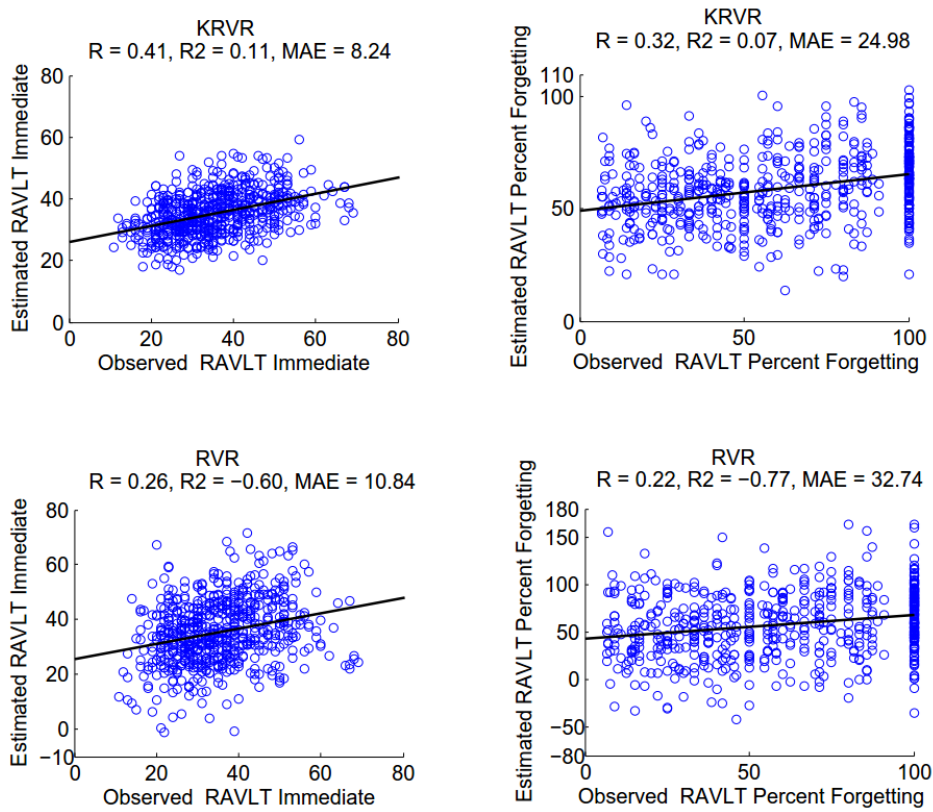
Figure 5: Scatter plot for estimation of RAVLT Immediate (left) and RAVLT Percent Forgetting (right) based on KRVR and RVR methods using only MCI and NC subjects.