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**BACKGROUND**
- Distinguishing mild cognitive changes seen in normal aging from changes seen in the early stages of Alzheimer’s Disease (AD) or other dementing disorders is a considerable challenge for neuropsychological assessment.
- Performance at a single point in time may fall within normal population limits, yet reflect a significant decrement in an individual’s cognitive status.
- Serial assessments are being increasingly used to document abnormal rates of decline.
- However, practice effects and normal age-related decline complicate interpretation of absolute change scores in serial assessments.

**METHODS**
- **Subjects:** 210 healthy adults from the MOANS study ages 59-98:
  - Mean age: 79.4 ± 6.6 (SD)
  - Education: 13.2 ± 3.0
  - Sex (%Female): 70.4%
  - Time 1 to Time 2 (T1-T2): 2.6 yrs ± 1.6
  - Time 2 to Time 3 (T1-T3): 1.5 yrs ± 0.6
  - Time 1 to Time 3 (T1-T3): 4.1 yrs ± 1.6
- **Procedure:** Subjects were administered the Rey Auditory Verbal Learning Test (AVLT), a 5-trial list learning test at each of 3 time points. The Trials 1-5 total at each time point was the dependent measure.

**RESULTS**
- Figure 1 depicts normal age-related decline in AVLT performance for the sample divided into 6 age groups.
- Figure 2 depicts AVLT scores at each time interval. Practice effects interact with increasing age.
- SRB methods were used to predict AVLT T3 scores using demographic variables, test-retest intervals, and T1 and T2 scores.
- Figure 3 depicts Observed vs. Predicted scores from the final regression equation where R = .775, R^2 = .601, and SE_{reg} = 6.3.
- To determine whether the trajectory of an individual’s score deviates from expectation: z = (Observed – Predicted) / SE_{reg} and reflects how far a score is from expectation.

**CONCLUSIONS**
- SRB methods can be used with older adults to predict test performances across multiple time points while controlling for practice effects and normal age-related decline.
- Applying the SRB method to individual patients can potentially identify abnormal rates of decline even when absolute test scores are still within normal limits.
- The SRB approach may prove useful in clinical trials and outcome studies of early identification and treatment of AD.