

## **Supplemental Text:**

Data pre-processing: Data was pre-processed to remove time points when baseline measurements contained zero velocities bringing the number of time points to 1971. Furthermore, we removed data points contains only missing or zero velocities, resulting in  $n = 262$  for participants and  $n = 1729$  for time points. Then, we used whenever the first visit contains no missing velocities as the initial enrollment time point, excluded measurements taken after age of 10 years, and excluded participants with only one follow-up visit within 2 years of baseline yielding  $n = 255$  participants with 1388 time points.

More details on model fitting: A grid-based initialization was used in a parallel framework. The four-cluster model did not converge fully in the primary analysis after 10,000 iterations; however, it did converge successfully in 8 out of 10 training-test splits (in other 2, it did not converge fully), and was never selected as the most superior fit. Typically, the BIC of the 2-component and 3-cluster models tended to be closer as compared to the 3- and 4-cluster models. Inspection of the residual plot and residual quantile-quantile plot indicated that the model fit the data reasonably well although with heavy tails.

Statistical software used: software *R* version 4.0.2; package *lcmm* version 1.9.3.