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## Preliminary Results of Cognitive Ability Trajectories from Infancy through Middle-Age in the Louisville Twin Study

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### ABSTRACT:

After a 20-year study hiatus, data collection in the Louisville Twin Study is again underway. As many of the twins are now middle-aged (>40 years), current study of the LTS twins focuses on physical and cognitive aging, with a special focus on childhood and midlife risk factors of preclinical symptoms of Alzheimer's disease. Chief among these is clarifying the genetic and environmental processes through which childhood and adolescent cognitive development contributes to midlife cognitive functioning. In 2020, the data collection of the middle life phase of the Louisville Twin Study began in earnest, despite a hindered start due to the COVID-19 pandemic. To date, we have collected data on 43 twins (14 complete pairs) out of the proposed target sample of 750 individual twins. We expect study visits to increase as COVID-19 quarantine and social distancing restrictions are eased in 2021 and 2022. The purpose of this talk is to present preliminary results on the correlations between Full Scale IQ (FSIQ) scores at ages 6, 7, 8, 9, 12, and 15 with scores at midlife. Mean age at study visit was 55.21 ( $SD = 3.64$ ) and midlife age standardized FSIQ is 107.37 ( $SD = 16.11$ ). Medium ( $r = .53$ ) to large ( $r = .83$ ) correlations were observed between childhood and midlife FSIQ scores, with age 8, age 9 and age 15 FSIQ scores correlating with midlife IQ > .75. As additional data are collected, we will estimate the genetic and environmental factors that mediate these correlations, as well as fit models that explain hypothesized increases in heritability from childhood through middle age.

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