Database: Projects in Progress

Add Your Project Study: Both

Primary Author Name: Chloe Myers

Working Title: Evaluating brain-derived neurotrophic factor (BDNF)-cognition associations via BMI and physical activity pathways: A Behavior Genetic Approach

Potential Co Author(s) (enter none if not applicable): Andrew Smolen, Luke M. Evans, Jarrod Ellingson, Naomi P. Friedman, Robin P. Corley, John C. DeFries, Sally J. Wadsworth, Chandra A. Reynolds

Description (4-5 sentences): The proposed research aims to investigate serum Brain-derived neurotrophic factor or BDNF, and its association to cognitive performance, BMI, and physical activity, as well as its genetic architecture. This research consists of 3 parts: 1) a short report evaluating the environmental and genetic contributions to serum BDNF levels using ADCE biometrical modeling, 2) a continuation of the short report leveraging a larger sample size as well as additional methods aiming to identify local heritability as well as broader heritability and 3) a paper using mediation models to investigate BDNF-cognition associations through physical activity and BMI pathways, including polygenic scores for all variables, utilizing an understudied pre-midlife sample. The latter paper will also include evaluation of potential complex, non-linear relationships between BDNF and BMI and BDNF and physical activity. Further information for parts 2 and 3 can be found under pre-registrations on the Open Science Framework database.

Part 2: https://osf.io/6bkmy

Part 3: https://osf.io/9czkx

Sample(s): CATSLife, LTS, CAP

Process Stage: Data analysis

Start Date (YYYY-MO): 2020 March

Last Update (YYYY-MO): 2021 May