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### **“HIV and Lifestyle: Investigating Physiological Signals of Metabolic Dysregulation in Persons Living with HIV”**

Persons living with HIV (PLWH) encounter many stressors in addition to the effects of HIV and antiretroviral therapy (ART). Metabolic dysregulation is associated with increasing lifespan and ART in PLWH, however, the biological mechanisms regulating metabolic dysregulation are not well understood in this population. Because numerous sociological factors affect metabolic function, using a biological indicator to monitor how diet, exercise, and cognitive functioning influence the metabolic profile of PLWH would be beneficial. Brain-derived neurotrophic factor (BDNF) is a neurotrophic factor associated with enhanced cognition and increased with physical activity. Circulating levels of BDNF in plasma may be a measurement that allows an assessment of the physiology behind metabolic dysregulation in PLWH. PLWH enrolled in the New Orleans Alcohol and HIV (NOAH) longitudinal study have been monitored for multiple biological and sociological factors and will be evaluated in this study. Circulating BDNF levels will be correlated to hand grip strength, 6-minute walk, and IPAQ baseline values. Additionally, BDNF will be examined as a predictive measurement for cognitive function, diet, and activity levels by correlating data collected at the 30 month visit with BDNF levels. Finally, it is of interest to know if circulating BDNF levels may have a relationship with at-risk alcohol use. Peth and lifetime drinking history will be examined as factors that may or may not correlate with circulating BDNF levels. By investigating a potential marker for metabolic dysfunction in PLWH, a further step is taken for developing a robust system of monitoring metabolic influences on PLWH.