PROJECT SUMMARY

Bulimia Nervosa (BN) is defined by the frequent occurrence of binge-eating episodes that are associated with a severe sense of loss of control, followed by compensatory behaviors to avoid weight gain. Our preliminary data suggest that anatomical and functional abnormalities in frontostriatal neural systems are associated with binge-eating and other impulsive behaviors in adults and adolescents with BN. However, the peak onset of BN in adolescence suggests that understanding the development and progression of frontostriatal abnormalities during this period is necessary to understand the biology of BN and design novel treatments and prevention strategies. This multimodal imaging study will use functional MRI, anatomical MRI, and diffusion tensor imaging measures to assess longitudinal changes (over 3 years) in the function, anatomical characteristics, and organization of frontostriatal systems in 50 adolescents who meet the proposed DSM-5 criteria for BN compared with 50 matched controls, 13-18 years of age. We will determine how the trajectories of frontostriatal disturbances diverge from normal in the adolescents with BN whose symptoms worsen compared to those whose symptoms remit, and whether our brain imaging measures at baseline can predict the severity of symptoms at follow-up. This will be the first longitudinal imaging study of adolescents with BN, the first multimodal imaging study of any individuals with eating disorders, and the first longitudinal, multimodal imaging study of frontostriatal systems in the same sample of healthy adolescents. Thus, findings from this study may point to a useful biomarker (frontostriatal disturbances) for the early intervention of BN, and further our understanding of the normal maturation of these systems.