Smith-Magenis syndrome (SMS;OMIM# 182290) is a multiple congenital anomalies and mental retardation syndrome caused by a 3.7- Mb deletion on chromosome 17p11.2 or a mutation in the *RAI1* gene. Although the majority of the SMS phenotype has been well described, limited studies are available describing growth patterns in SMS. There is some evidence that individuals with SMS develop obesity. Thus, this study aims to characterize the growth and potential influence of hyperphagia in a cohort of individuals with SMS. A retrospective chart review was conducted of 78 individuals with SMS through Baylor College of Medicine (BCM) at Texas Children’s Hospital (TCH). All documented height and weight measurements were abstracted and Z-scores (SD units) for height-for-age, length-for-age and BMI-for-age were calculated. Mail-out questionnaires were provided to the corresponding parents of the cohort to assess for the presence of hyperphagia through a validated hyperphagia questionnaire (HQ). Analysis of this data demonstrates that by the age ≥20 years males with SMS have mean BMI’s in the 85th-90th percentile corresponding to an overweight BMI, and females with SMS had mean BMI’s in the 95th -97th percentile corresponding to an obese BMI. Parents indicated that hyperphagia is present in individuals with SMS as 76% of parent’s report having to lock food away from their child. Females’ age ≥20 years of age had the highest mean behavior, drive and severity scores as well as the highest BMI. Thus, this study concludes that it appears overweight and obesity, as well as
hyperphagia, are present in this cohort of SMS individuals. The results of this study will hopefully enable parents and caregivers of children with SMS to take preventative measures in order to control food related behaviors present in their children as well as to prevent overweight and obesity and the associated negative health consequences.