

## ABSTRACT

THESIS: Maternal and Infant Factors Associated with Body Mass Index among Children in a Pediatric Over Weight Education Program

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The purpose of this study was to examine maternal and infant factors associated with body mass index (e.g., maternal weight gain, infant birth weight, infant feeding methods, and motor coordination) among obese pre-adolescents and adolescents aged 8-18 years enrolled in the Pediatric OverWeight Education and Research (POWER) program operated by Riley Hospital for Children in Indianapolis, IN, between October 2008 and September 2011. POWER, a three-phase, 12-month multi-disciplinary program to reduce childhood obesity funded by Indiana University Health, enrolls obese children (Body Mass Index [BMI] greater than the 95<sup>th</sup> percentile for age and gender) through referrals from pediatricians throughout Indiana. Prior to the child's initial visit, each family completes a comprehensive background and family history profile, approved by the Indiana University-Purdue University (IUPUI) Institutional Review Board, that includes questions related to the obese child's motor skill development, infant feeding methods, maternal prenatal weight gain, and infant birth weight. Data related to these four categories collected during Phase 1 (12 weeks) was examined using data from 253 pre-adolescents (8-12 years of age), and 285 adolescents (13-18 years of age), to determine their impact on the subjects' BMI. No relationship between a mother's prenatal weight gain and the child's BMI was seen. There was a significant correlation between infant birth weight and BMI

in the pre-adolescent group. Breastfed subjects entered the POWER program at a lower BMI than non-breast fed subjects and had consistently lower BMIs throughout the program compared to the non-breastfed subjects. Differences in physical activity were observed between adolescents and pre-adolescents. Paired analysis indicated the POWER program was associated with a significant reduction in BMI overall, and among both age groups throughout Phase 1 of the program. Adolescents were especially successful in reducing their BMI compared to preadolescents. Further research is needed to identify the association of maternal and infant factors and BMI among obese children.