

There are long-term effects of *in utero* epigenetic factors (i.e., environmental factors which lead to changes in phenotype without changing genotype) on health and development. Research supports sex differences in epigenetic effects of maternal health, particularly for placental hormones. Specifically, maternal prenatal obesity affects expression of placental leptin hormone genes, which play a unique role in metabolism and appetite. However, the effects of such expression on infant neurobehavioral development differ by offspring sex.

Therefore, we examined sex differences in the effects of maternal gestational weight on placental leptin gene methylation. Secondary data analysis was completed utilizing data ($n=155$) from the Behavior and Mood in Mothers and Behavior in Infants Study. Maternal pre-pregnancy weight was self-reported by participants, while delivery weight and infant sex were obtained by medical chart review. Leptin promoter methylation was assessed in placental samples by bisulfite pyrosequencing, leading to a percent DNA methylation at 12 CpG loci.

For female infants, there were positive associations between maternal GWG and CpG loci 5 percent methylation (Spearman's $\rho=.41$, $p=.01$), but not for male infants. Findings may aid in understanding epigenetic mechanisms accounting for sex differences in the effects of maternal health on offspring development.