

Abstract Information

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Participation :	symposium
Title of the Symposium :	Early life stress, Sex differences, and Maternal influences: Insights into Brain and Behavioral Disorders
Category :	Academic/Researcher
Thematic Area :	Neuroendocrine Systems, Biological Rhythms and sleep
Title :	Sex specific differences in developmental programming of metabolism
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Abstract : The early life environment, particularly during fetal development and the neonatal period, plays a crucial role in shaping an individual's susceptibility to metabolic diseases later in life, including obesity. Interestingly, the incidence of metabolic disorders differs between males and females, raising the need to investigate how early life experiences contribute to these sex-specific differences. There is general recognition that the developing brain is more susceptible to environmental insults than the adult brain. In particular there is growing appreciation that the developmental programming of hypothalamic neuroendocrine systems by the perinatal environment represents a possible cause for metabolic diseases. This presentation will summarize the major stages of hypothalamic development and provide an overview of evidence concerning the sex-specific action of perinatal hormones, neurohormones (such as oxytocin) and maternal nutrition in programming the development and organization of hypothalamic circuits involved in feeding and energy balance regulation. It will also discuss possible mechanisms responsible for mediating these sexually dimorphic effects on hypothalamic development and metabolic programming. Further investigation on how early life environmental changes differently impact long-term health in males and females will be crucial for developing sex-specific strategies for metabolic risk monitoring and control, particularly during critical periods of life.