

# Abstract Information

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<b>Participation :</b>	symposium
<b>Title of the Symposium :</b>	Early life stress, Sex differences, and Maternal influences: Insights into Brain and Behavioral Disorders
<b>Category :</b>	Invited Speakers
<b>Thematic Area :</b>	Emotion, Cognition, Behaviour
<b>Title :</b>	Sex-dependent differences in the effect of pre-weaning social isolation and enrichment
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**Abstract :** Early social stress (ESI) interferes with neurodevelopmental processes and can lead to long-lasting emotional, cognitive, and hormonal alterations in adulthood. Communal nesting (CN) is a form of alloparenting in which 2 or more lactating female conspecifics rear their offspring within a common nest while sharing caregiving behavior from birth to weaning, and provides a socially stimulating environment, which was shown to affect social and anxiety-like behaviors. This study investigated whether pre-weaning ESI affects reward-related processing for natural rewards, compulsive tendencies, sensorimotor gating, and basal stress levels in adolescence and adulthood, and whether CN could reverse the impact of ESI on behavior and corticosterone plasma levels. Both male and female rats were used to detect potential sex-dependent differences. In a food self-administration paradigm, both adolescent and adult rats reared in CN conditions showed a significantly slower acquisition and lower active responding than standard housed (SH) animals, while ESI led to a steeper curve in adulthood. During the maintenance period of the training, CN led to a general decrease in active responding in adolescence, while ESI increased responding in adolescent and adult females, an effect that was reversed by CN in adult females. Under a progressive ratio protocol, non-stressed CN animals showed lower breakpoints than SH animals, and ESI increased the breakpoint in all groups, although to a greater extent in females than in males. Notably, ESI-induced effect was reverted by CN. The Marble Burying test revealed an obsessive-compulsive trait in ESI adolescent males, but also this effect was fully prevented by the CN condition. The Prepulse Inhibition (PPI) test showed lowered the PPI in ESI adolescent animals, an effect that was long-lasting in males and reverted by CN. Finally, female rats

showed higher plasma corticosterone levels, independently from housing and stress conditions. Altogether, our findings indicate that social isolation and communal nesting have long-lasting effects on sensorimotor gating, reward-seeking, and compulsive-like behaviors, with males and females showing different vulnerabilities in these domains.