

Gestational stress, placental norepinephrine transporter and offspring fertility

Piquer, Beatriz

Fonseca, Jose L.

Lara, Hernán E.

© 2017 Society for Reproduction and Fertility. Chronic cold stress produces adrenergic overload that can affect fetal development. The placental norepinephrine transporter (NET) clears norepinephrine (NE) from both maternal circulation and the fetus during gestation. If this system fails, NE clearance can be reduced, leading to high fetal exposure to NE. The main aim of this study was to determine the changes in NET expression during gestation and their relationship with the functional capacity of NET to transport NE under stressful conditions. Additionally, this study correlated these findings with the reproductive capacity of 2nd-generation progeny. Pregnant rats were subjected to chronic cold stress at 4°C for 3 h each day throughout their pregnancies. We found that exposure of pregnant rats to sympathetic stress caused the following effects: increased NE and corticosterone levels throughout pregnancy, decreased capacity of the placenta to clear NE from the fetus to the mother's circ