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REPEATED PRENATAL STRESS SESSIONS PRODUCE CHANGES IN EXPLORATION AND DESPAIR DETECTABLE AT WEANLING IN WISTAR RATS

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Introduction: During gestation and maternal behavior, some physiological events can protect the dam and offspring, but explanations for such phenomena are partially unknown. The effects of stress during prenatal development and infancy can be studied in controlled laboratory conditions.

Objective: To determine the pre- and postnatal effects of stress on coping strategies in weanling rats subjected to the open field and forced swim tests after their dams are subjected to stress during gestation.

Method: Rats aged 21 postnatal days (PND) were assigned to either a Control group (n = 36; offspring from intact dams during gestation) or a Prenatal stress group (n = 36; offspring from dams forced to swim during 5 min sessions on gestational days 1, 7, 14, and 19). Both groups were tested in the open field to evaluate locomotor activity and rearing. In another experiment, PND21 intact rats assigned to a Control group (n = 26) or Postnatal stress group (n = 35) were subjected to restraint stress for 6 min prior to the tests and were later evaluated in the forced swim test.

Results: Locomotor activity ($p < 0.026$) and rearing ($p < 0.001$) were lower in the Prenatal stress group compared with the Control group. The latency to first immobility was shorter ($p < 0.008$), and the total immobility time was longer ($p < 0.005$) in the Postnatal stress group than Control group.

Conclusion: Stress exposure during gestation produces detectable changes during weanling, consisting of reduced exploratory activity and susceptibility to despair.