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Long-lasting effects of social isolation and NMDA-antagonist treatment on thermoregulation and motor activity.

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Clinical studies have proved that schizophrenia can be accompanied by abnormal thermoregulation and motor activity. We induced schizophrenia-related alterations in rats to examine their effects on the motor activity and body temperature in awake, freely moving rats. Methods: Male Wistar rats (day 21 of age) were either housed individually and treated with ketamine for 4 weeks or grouped without any treatments. At the age between 4 and 6 month animals were implanted with Mini-Mitter biotelemeters, and after one week recovery period core body temperature and activity were recorded for six days (12 h LD cycle) in temperature controlled room. Results: Both groups showed circadian rhythm of body temperature and motor activity, however, body temperature of schizophrenic rats was significantly lower compared to control animals during the active period. As regards the locomotor activity, a trend for decreased activity was observed in the active phase in treated animals. In new environment both groups showed increased activity for about 30 min and an enhanced body temperature for about 1 hour. The treated group showed significantly decreased temperature at the first 10 min. Our results suggest that this treatment paradigm produced sustained alterations in these parameters, and highlight the importance of juvenile period in the development of thermoregulation and motor activity.

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