

Poster presentation

## A new method for studying developmental factors in cognitive and emotional behaviors in adult mice

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### Background

It is recognized that mental-emotional diseases can be caused by disturbances of cognitive processes of matching between the current and stored spatial information [1]. Cognitive matching processor is activated in rodents also during a stereotype upward behavior (rears) [2]. In the present study, we used a new method for studying the effects behavioral dissection of rears in developmental period (BDRD) on cognitive and emotional responses of adult mice.

### Materials and methods

This new method consists of that following the postnatal 21 days, male BABL/c mice were limited performing vertical pose for 8 weeks by housing in a transparent plastic cage with adjustable height. These animals could perform horizontal movements and contact each others with free access to water and food. In adult age, these animals were tested in the open field, elevated plus maze apparatus and short-term fear memory retrieval to the partial or whole contextual cues in the passive avoidance and Pavlovian fear conditioning apparatus were also evaluated.

### Results

BDRD mice did not show any alteration in the open field behaviors compared to control mice. In elevated plus maze, BDRD mice showed significant deficits in ethological types of exploratory behaviors ( $P < 0.01$ ) with an increase in the time spent in closed arms ( $P < 0.05$ ). These animals had deficit in fear retrieval to the partial contextual cues of the passive avoidance apparatus ( $P < 0.001$ )

but not to the whole contextual cues in the Pavlovian fear test.

### Conclusions

BDRD method can be used for investigation relationship between the activity of cognitive matching processor during developmental period and causes of cognitive and emotional disorders in adult age.

### References

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