

# Chronic $\Delta^9$ -Tetrahydrocannabinol Treatment Impairs Prepulse Inhibition in Mice

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**Abstract :** There is evidence from studies in humans and animals that a vulnerable period for chronic cannabinoid administration exists during certain phases of development. In the present study, we investigated whether the chronic administration of  $\Delta^9$ -tetrahydrocannabinol (THC), the major psychoactive component of cannabis, during development impairs the prepulse inhibition (PPI) of the startle reflex in adult mice. The male ddY mice at 8 weeks of age received 21 injections subcutaneous (s.c.) daily. As a result, the PPI was significantly disrupted by chronic pubertal THC treatment at 21 days after chronic injection, and these deficits continued until 56 days after chronic injection. We therefore conclude that development in mice is a vulnerable period with respect to the adverse effects of THC treatment. Since PPI deficits are among the endophenotypes of schizophrenia, we thus propose the chronic administration of THC during development as an animal model for some aspects of the etiology of schizophrenia.

**Key words :**  $\Delta^9$ -Tetrahydrocannabinol ; CB<sub>1</sub> cannabinoid receptor ; prepulse inhibition ; schizophrenia