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Short communication

# Disruption of latent inhibition by subchronic phencyclidine pretreatment in rats

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### Highlights

- Subchronic [phencyclidine](#), followed by withdrawal, models [schizophrenia](#) in rats.
- Behaviours related to negative and cognitive symptoms are known to be disrupted.
- [Latent inhibition](#), related to positive symptoms, is now also shown to be disrupted.
- Resulting behaviour changes resemble all three symptom domains of schizophrenia.

### Abstract

Repeated subchronic treatment with the NMDA-receptor antagonist, phencyclidine, causes behavioural changes in rats, which resemble cognitive and negative symptoms of schizophrenia. However, its effects on behaviours modelling positive symptoms are less clear. This study investigated whether subchronic phencyclidine pretreatment affected latent inhibition: impaired conditioning following repeated preexposure of the to-be-conditioned stimulus.

Female Lister-hooded rats were pretreated with phencyclidine or saline twice/day for 5 days, then remained drug-free for 10 days before latent inhibition testing. Saline pretreated animals

latent inhibition: the effect of preexposure was attenuated, with no change in basic learning.

Thus subchronic phencyclidine pretreatment does disrupt latent inhibition, and, importantly, this occurs after withdrawal from the drug, implicating changes in brain function enduring well beyond the time that the drug is present in the brain.

In a separate task, discrimination of a novel object was significantly impaired by phencyclidine pretreatment confirming that five days of subchronic pretreatment was sufficient to invoke behavioural impairment previously reported after seven days pretreatment.

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## Abbreviations

CER, conditioned emotional response; DI, discrimination index; LI, latent inhibition; NMDA, Nmethyl-D-aspartate; NOR, novel object recognition; NPE, non preexposed; PCP, phencyclidine; PE, preexposed; SI, suppression index

## Keywords

Latent inhibition; Schizophrenia; Phencyclidine

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