

Hallucinogen persisting perception disorder

Synonyms: HPPD, 'flashbacks'

What is hallucinogen persisting perception disorder?^[1]

Hallucinogen persisting perception disorder (HPPD) is the recurrence of perceptive disturbances that firstly develop during hallucinogenic drug intoxication. The prevalence is low and it is more often diagnosed in those with a history of previous psychological issues or substance misuse, but it can arise in anyone, even after a single exposure to triggering drugs.

The nature of the perception and visual imagery vary considerably. The main group of symptoms reported are visual disturbances, which are more common than auditory disturbances. However, any perceptual symptom experienced during intoxication may re-occur following hallucinogen withdrawal.

The symptoms should not be due to another mental disorder such as [dementia](#), [delirium](#) or [schizophrenia](#) and not be associated with waking or falling to sleep when hypnompic or [hypnagogic hallucinations](#) are a more likely cause.

HPPD can be differentiated into:^[2]

- HPPD 1: generally short-term, non-distressing, benign and reversible state accompanied by a pleasant affect.
- HPPD 2: generally long-term, distressing, pervasive, either slowly reversible or irreversible, non-benign state accompanied by an unpleasant affect.

How common is HPPD? (Epidemiology)

It is very uncommon on a population basis and probably still extremely rare in the population that has taken hallucinogenic drugs. No reliable prevalence data are available. However, a vast list of psychoactive substances has been identified and linked with the development of HPPD, including magic mushrooms, ketamine, dextromethorphan, MDMA and MDA, and cannabis and synthetic cannabinoids.^[1]

Risk factors^[3]

There are no known risk factors for HPPD.

Lysergic acid diethylamide (LSD) is the hallucinogen most frequently associated with HPPD.

Presentation of HPPD^[4]

Symptoms

- Visual hallucinations in the form of trailing colours.
- The sensation that something is moving in the peripheral field of vision although there is nothing there.
- Trailing phenomena - moving objects leave trails or after-images.
- Positive after-images (an image that retains the original colour).
- Colour flashes when lighting is low.
- Colours of increased intensity.
- Haloes surrounding objects.
- Macropsia and micropsia (objects appear respectively larger or smaller than normal).

Differential diagnosis^[5] ^[6]

- Persisting intoxication with hallucinogen (do not diagnose until an appreciable period has passed and acute effects are definitely curtailed).
- Functional brain disorder, eg, schizophrenia.

- Organic brain disorder, eg, [brain tumour](#), delirium, dementia, visual hallucination due to [epileptic activity](#).
 - Visual hallucinations due to another drug and/or associated medical condition, eg, [Parkinson's disease](#) and L-dopa.
 - Factitious illness.
 - Acute withdrawal from alcohol or drugs (take full substance use history).
 - Ocular disease causing perceptual disturbance.
 - [Hypnagogic or hypnopompic hallucinations](#).
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Investigations

There are no useful confirmatory tests. Screening blood tests, cerebral imaging and electroencephalography (EEG) may be used to exclude other causes of the symptoms.

Management of HPPD^[1] ^[3]

- Refer to a specialist centre experienced in dealing with substance abuse.
- Treatment options include clonazepam, benzodiazepines, antipsychotics, anticonvulsants and opioid antagonists.
- However, these treatments have demonstrated only limited success in treating HPPD.
- Antidepressants may help in the management of coexisting anxiety and depressive disorders.

Prognosis^[2]

The prognosis is variable, with a short term favourable prognosis for HPPD 1 and a more protracted, less favourable outcome for HPPD 2.

Prevention of HPPD^[6]

Avoidance of hallucinogenic and other recreational drugs associated with the condition. Failing that, avoidance of excessive or frequently repeated use of these drugs.

References

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6. [HPPD FAQ](#); erowid.org 2009

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