

## Phencyclidine (PCP)

Clinical name: 1-(1-phenylcyclohexyl)-piperidine (abb. Phencyclidine; acronym PCP)

Brand name: none

Street name(s): angel dust, PeaCe Pill, wack, hog

### **Miscellaneous:**

- Previously used therapeutically as an analgesic and anesthetic.
- Though PCP is now categorized as a Schedule I drug in the United States, it was once patented for medical use in Britain (Sernyl<sup>®</sup>) and the U.S.
- The hydrochloride salt of PCP is soluble in both alcohol and water and was commercially available in aqueous form for veterinary use as Sernylan<sup>®</sup> until 1978.
- Some drug users are fully aware of PCP's unpredictable and detrimental side effects and, thus, do not purposefully purchase this agent. Often, buyers are duped into unknowingly exposing themselves to PCP by distributors who sell it under the names "THC" (one of marijuana's active constituents) or "Ketamine" (a dissociative anesthetic that is often used in veterinary medicine). Users who may be expecting marijuana or ketamine, therefore, are occasionally exposed to PCP purposefully by the dealer. Dealers commonly rationalize PCP as a suitable alternative for the unbeknownst buyer when availability/cost conflicts prevent the sale of another drug in its authentic form.
- Currently, PCP is being utilized in researching schizophrenia. Healthy patients develop schizophrenic-like symptoms when exposed to PCP. Hence, this drug is often used specifically for schizophrenic-induction purposes on animals that are then treated with investigational drugs. PCP's ability to block the N-methyl-D-aspartate (NMDA) receptor and the consequent suppression of glutamate is thought to be the mechanism by which this induction process is achieved.<sup>1</sup>

### **Pharmaceutical properties:**

Pure PCP exists as a white, crystalline powder that carries a distinctively bitter taste.

### **Uses:**

Central nervous system (CNS) depressant. Commonly used for its side effects of excitement, delirium and a manifestation of increased strength and power.

### **Administration:**

Insufflation, inhalation, oral ingestion, IV/IM injection, "sherming."

White, crystalline PCP powder is often insufflated. Generally, however, phencyclidine is used as an adulterating agent and added to another drug before it is smoked or inhaled.

Marijuana is frequently the accompanying agent of choice for inhalation purposes.

Another method of inhalation that has recently gained popularity is called “sherms” and is defined by applying liquid PCP solution onto a cigarette, letting the solution soak in, dry, and then inhaling the tobacco/PCP combination.<sup>2</sup>

\* It should be noted that PCP is synergistic with other CNS depressants (alcohol, barbiturates, benzodiazepines, etc.) and potentiation of its effects may cause an accidental overdose.

**Mechanism/Pharmacology:**

PCP’s suspected mechanism of action involves the blockage of the N-methyl-D-aspartate (NMDA) receptor and the consequent suppression of glutamate.

Pharmacologically, inhaled PCP has an onset time of one to five minutes and peaks within fifteen to thirty minutes. Snorted PCP has a noticeably quicker onset of thirty to sixty seconds. Effects persist for six to eight hours.<sup>3</sup>

\*The “coming down” period following the end of the drug’s primary effects is defined by the body’s attempt to return to homeostasis and individuals may require one to two days to fully adjust. It is during this time when users are particularly susceptible to depressive suicide.

**Side effects:**

Psychological: Hallucinations, manifested strength/power.

Physical: Small dose (3-8 mg): Increased breathing rate, hypertension and palpitations.

High dose (8-12 mg): Hypotension, bradycardia, apnea, nausea/vomiting, horizontal/vertical nystagmus and vertigo.<sup>4</sup>

Chronic exposure: May result in anorexia, short-term memory loss, depression, schizophreniform and the impairment of motor skills.

**Testing:**

Current testing is performed through hair, urine, or blood analysis.

**Treatment:**

Presently primarily symptomatic and may include the use of skeletal muscle relaxants and/or barbiturates/benzodiazepines if user’s state resembles rage.

\*An antibody fragment created by researchers at the University of Arkansas-Little Rock is currently under investigation as a treatment for people under the influence of PCP. Recent trials have provided data that show complete elimination of effects within minutes following administration of the antibody.<sup>5</sup>

**Synthesis:**

The illegal synthesis of PCP, as with all other street drugs, often results in a number of chemical analogs. Without meticulous procedure and/or proper filtering of undesired analogs, PCP synthesis can result in the intermediate, PCC. PCC contains a cyano group that could possibly produce cyanide poisoning.<sup>6</sup>

**User Identification:**

Physical: Mydriasis, red/inflamed eyes, anxious/nervous, anorexia.

Users of PCP will be more easily identified by the aforementioned psychological side effects than the given physical attributes.

**Citation References:**

1. Wickelgren I. A new route to treating schizophrenia. *Science* 1998;281(5381):1264-5.
2. Michael GW, Hall JN. Phencyclidine. *Addiction Letters* 1994;10(3):3.
3. Narcotic Education Foundation of America. Phencyclidine = pcp = peace pill. 1995.
4. National Institute on Drug Abuse. Phencyclidine abuse. NIDA Capsules: PCP (Phencyclidine). (1995). Retrieved November 4, 2002, from <http://www.nida.nih.gov/Infobox/pcp.html>
5. ...an antidote to angel dust. *Brown University Child & Adolescent Behavior Letter* 1998;14(4):4.
6. Koda-Kimble MA, Young LY. *Applied Therapeutics: The Clinical Use of Drugs*. 1992. p. 16.

**General References:**

1. Wickelgren I. A new route to treating schizophrenia. *Science* 1998;281(5381):1264-5.
2. Michael GW, Hall JN. Phencyclidine. *Addiction Letters* 1994;10(3):3.
3. Narcotic Education Foundation of America. Phencyclidine = pcp = peace pill. 1995.
4. National Institute on Drug Abuse. Phencyclidine abuse. NIDA Capsules: PCP (Phencyclidine). (1995). Retrieved November 4, 2002, from <http://www.nida.nih.gov/Infobox/pcp.html>
5. ...an antidote to angel dust. *Brown University Child & Adolescent Behavior Letter* 1998;14(4):4.
6. Koda-Kimble MA, Young LY. *Applied Therapeutics: The Clinical Use of Drugs*. 1992. p. 16.
7. Turney L. Angel dust: new facts about pcp. *Do It Now Foundation*. 2000;1:123.