

## Lysergic Acid Diethylamide (LSD)

Clinical name: lysergic acid diethylamide

Brand name: none

Street name(s): LSD, acid

### **Miscellaneous:**

- With a twelve-hour effect produced by a 30 mcg dose, LSD is perhaps the most potent hallucinogen known to man.
- Discovered in 1938, LSD was temporarily used to treat terminally ill patients and research the mechanism of psychotic diseases.<sup>1</sup>
- In 1965, LSD was banned in the United States under the Drug Abuse Control Amendments. As a result, LSD is now listed as a Schedule I drug.

### **Pharmaceutical Properties:**

Colorless and odorless chemical that is commonly found as a solution or powder and has a bitter taste.<sup>1-3</sup>

### **Uses:**

Hallucinogen/psychostimulant.

\*Psychological and physical effects are similar to those of psilocybin and mescaline.

### **Administration:**

Oral ingestion, sublingual/buccal dissolution.

### **Mechanism/Pharmacology:**

Disrupts serotonin and adversely affects the locus ceruleus and cerebral cortex.

Absorption occurs in the gastrointestinal tract.<sup>1-3</sup> Once ingested, effects are seen within thirty minutes to one hour and persist for ten to fourteen hours. Metabolism of LSD occurs in the liver and the drug is then excreted via the urine.<sup>1-3</sup>

### **Side effects:**

Psychological: Synesthesia, simultaneously intensified emotions, extremely distorted temporal/visual perceptions, "bad trips", prolonged anxiety, panic attacks and hallucinogen persisting perception disorder (HPPD a.k.a. "flashbacks").<sup>1-4</sup>

Physical: Anorexia, tachycardia, hypertension, palpitations, anxiety, blurred vision and insomnia.<sup>1-3</sup>

\*Generally, the side effects of LSD are dose dependent. With the small amount of drug required to produce an effect, however, doses required to produce significant side effects may be reached rapidly.

\*Negative experiences may be severe enough to cause the patient to intentionally or unintentionally harm themselves. Suicide (intentional or unintentional), not overdose, is the primary cause of death related to the use of LSD.

\*HPPD has a broad spectrum of indications, ranging from negative effects on mood and cognition to the perception of vapor trails and halos. Incidences may be generated and exacerbated by selective serotonin reuptake inhibitors (SSRIs) and other hallucinogens.<sup>1-4</sup>

### **Testing:**

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

### **Treatment:**

Symptomatic. There is no specified treatment guideline for LSD users.<sup>5</sup>

### **Synthesis:**

Naturally synthesized via a fungus that grows on rye. Pieces of paper and other absorbing materials are often placed in tubs containing solutions of dissolved LSD. Small strips of the material are then ingested individually as a dosage form.<sup>1-2,4-6</sup>

### **User Identification:**

Physical: Tachycardia, palpitations, mydriasis.<sup>1-3,5</sup> Numerous traits depend on whether or not the individual's experience is pleasurable or terrifying, and the physical characteristics will vary accordingly.

### **Citation References:**

1. Olendorf D, Jeryan C, Boyden K. The Gale Encyclopedia of Medicine. 2<sup>nd</sup> Edition. Detroit (MI): Gale Research;2002. p. 2073-74.
2. Office of National Drug Control Policy. Drug facts: heroin. (Updated 11/4/2002). Retrieved November 4, 2002, from [http://www.whitehousedrugpolicy.gov/drugfact/lsd/lsd\\_b.html](http://www.whitehousedrugpolicy.gov/drugfact/lsd/lsd_b.html)
3. U.S. Department of Justice. Drug Enforcement Administration. LSD in the united states: use and effects. (1999). Retrieved November 4, 2002, from <http://www.usdoj.gov/dea/pubs/lsd/lsd-7.htm>
4. Lerner AG, Gelkopf M, Skladman I, Oyffe I, Finkel B, Sigal M, Weizman A. Flashback and hallucinogen persisting perception disorder: clinical aspects and pharmacological treatment approach. *Isr J Psychiatry Relat Sci* 2002;39(2):92-9.
5. Katzung BG. Basic & Clinical Pharmacology. 8<sup>th</sup> ed. New York (NY): McGraw Hill;2001. p.539-42.
6. U.S. Department of Justice. Drug Enforcement Administration. LSD in the united states: manufacture. (1999). Retrieved November 4, 2002, from <http://www.usdoj.gov/dea/pubs/lsd/lsd-5.htm>

### **General References:**

1. Olendorf D, Jeryan C, Boyden K. The Gale Encyclopedia of Medicine. 2<sup>nd</sup> Edition. Detroit (MI): Gale Research;2002. p. 2073-74.
2. Office of National Drug Control Policy. Drug facts: heroin. (Updated 11/4/2002). Retrieved November 4, 2002, from [http://www.whitehousedrugpolicy.gov/drugfact/lsd/lsd\\_b.html](http://www.whitehousedrugpolicy.gov/drugfact/lsd/lsd_b.html)
3. U.S. Department of Justice. Drug Enforcement Administration. LSD in the united states: use and effects. (1999). Retrieved November 4, 2002, from <http://www.usdoj.gov/dea/pubs/lsd/lsd-7.htm>
4. Lerner AG, Gelkopf M, Skladman I, Oyffe I, Finkel B, Sigal M, Weizman A. Flashback and hallucinogen persisting perception disorder: clinical aspects and pharmacological treatment approach. *Isr J Psychiatry Relat Sci* 2002;39(2):92-9.

5. Katzung BG. Basic & Clinical Pharmacology. 8<sup>th</sup> ed. New York (NY): McGraw Hill;2001. p.539-42.
6. U.S. Department of Justice. Drug Enforcement Administration. LSD in the united states: manufacture. (1999). Retrieved November 4, 2002, from <http://www.usdoj.gov/dea/pubs/lsd/lsd-5.htm>
7. Peroutka SJ. 5-hydroxytryptamine receptor interactions of d-lysergic acid diethylamide. In: Pletscher A, Ladewig D. 50 years of LSD. New York (NY): Parthenon Publishing;1994. p. 19-26.