LYSERGIC ACID (LSD)

Authored by

mohammad looti

October 11, 2025

LYSERGIC ACID DIETHYLAMIDE (LSD)

Primary Disciplinary Field(s): Pharmacology, Psychiatry, Experimental Psychology

1. Core Definition and Origin

Lysergic Acid Diethylamide, commonly known as **LSD-25**, is an immensely powerful synthetic hallucinogenic substance classified within the category of psychedelic, or "mind-expanding," drugs. Chemically, it is a derivative of **ergot**, a parasitic fungus that naturally grows on rye grain. LSD is renowned for its profound effects on perception, cognition, and emotional processes, producing experiences that can range from transcendent ecstasy to overwhelming horror. Due to its extreme potency, even microgram doses are sufficient to induce a full-blown psychedelic experience that typically lasts between eight and twelve hours.

The substance is fundamentally characterized by its ability to induce a temporary, yet intense, altered state of consciousness, often simulating features of psychotic conditions. Historically, its primary interest lay in both experimental psychiatric research--particularly concerning the potential chemical basis of schizophrenia--and, controversially, in limited therapeutic applications under controlled clinical settings. However, its unpredictable nature and capacity to trigger acute psychiatric episodes led to stringent legislation limiting its distribution and use globally.

2. Discovery and Early Research

LSD was first synthesized in 1938 by the Swiss chemist **Albert Hofmann** while working at Sandoz Laboratories in Basel, Switzerland. Hofmann's initial objective was to create a circulatory stimulant derived from ergot alkaloids. The substance, designated LSD-25, was initially set aside as it did not demonstrate the desired pharmaceutical activity. Its potent psychoactive properties were not uncovered until five years later, in 1943, when Hofmann unintentionally exposed himself to a minute quantity of the compound during laboratory research.

Hofmann reported experiencing a peculiar state involving "fantastic images of extraordinary plasticity," marking the first documented "trip." Subsequent investigation established that LSD is significantly more potent than other recognized hallucinogens, such as **psilocybin** and **mescaline**. The effective dose is remarkably low, requiring only a barely visible speck--approximately one 10,000th of a gram--to produce a complete psychedelic experience. This discovery immediately positioned LSD as a unique and powerful tool for examining the mechanisms of consciousness and mental illness.

3. The Phenomenology of the LSD Experience

The full LSD experience is complex and virtually indescribable, but it involves a constellation of

acute psychological and perceptual distortions. The experience is characterized by extreme sensory vividness, where sensations of sight and sound are magnified or dramatically altered. This heightened state can manifest as either profound spiritual transcendence or severe psychological distress, often referred to as a "bad trip."

Key characteristics of the experience often include **perceptual distortions**, where objects, the subject's body parts, or even people may appear contracted, expanded, or twisted out of shape. Extreme **time distortions** are common, particularly the unsettling sense that time is standing still and that only the present moment exists. A frequent and notable phenomenon is **synesthesia**, or "crossed perception," where sensory modalities merge--leading to experiences such as hearing colors, smelling music, or tasting textures. Furthermore, users often report an illusory feeling of surpassing understanding, coupled with speeded-up mental processes, and a feeling of complete **oneness with humanity and the universe**, reminiscent of a religious or mystical experience. These intense, "mystical" reactions have occasionally led to attempts to form cults centered on the drug's use, driven by individuals seeking expanded inner life or existential meaning, a search that often culminates in disappointment.

4. Psychotomimetic Effects and the Schizophrenia Hypothesis

Even in psychologically stable individuals, LSD produces marked **psychotomimetic effects**--symptoms that simulate acute psychiatric reactions, particularly those resembling paranoid schizophrenia. This parallel behavior led early researchers to hypothesize that actual schizophrenia might result from the endogenous release of a hallucinogenic chemical within the body. Other drugs categorized as psychotomimetic include mescaline, adrenochrome, and tetrahydrocannabinol.

Researchers attempted to use LSD as an investigative tool to study this theory. One suggestion posited that the substance might interfere with the chemistry of **adrenal hormones**, potentially releasing a noxious substance (perhaps adrenoxin) that mimics psychotic symptoms. Since the adrenal gland is known to mobilize the body's energy during stress, and many researchers view schizophrenia as a stress disease, countering this hypothesized noxious substance became a theoretical next step in treatment development. However, despite intense research efforts, clear-cut evidence for this theory remains elusive, and the crucial endogenous chemical, if it exists, has yet to be decisively discovered.

5. Experimental and Therapeutic Applications

In controlled, experimental settings, LSD demonstrated promising value in psychotherapy, particularly during the 1950s and 1960s. Various investigators reported that the drug could significantly enhance the therapeutic process in several ways. It was observed to help **establish**

rapport between the patient and therapist, facilitate the uncovering and reliving of deeply **repressed memories**, and increase the patient's overall ability to communicate thoughts and feelings.

LSD application was also found to enable patients to view themselves and their psychological problems in a more detached manner, helping to free them from internal conflicts and attain clearer visions of their personal goals. MacLean et al. (1961) found it particularly effective in treating cases of **chronic alcoholism and character disorders** that had previously resisted ordinary psychotherapy. For instance, Godfrey (1967) reported on 350 alcoholic patients treated with LSD at the Topeka VA Hospital, noting that 25% became abstinent and much improved, and another 25% were much improved. Furthermore, psychiatrists like D. M. Ling concluded, based on twelve years of experience, that the drug could significantly shorten the **psychoanalytic process** by many months, with similar results reported by researchers on the European continent (Leaner). Abramson (1960) found that some patients were able to release and resolve powerful conflicts stemming from childhood experiences that were otherwise inaccessible without the drug.

6. Risks, Dangers, and Legal Limitations

While LSD is **nonaddictive** and rarely produces lasting aftereffects when administered in carefully controlled doses to selected patients under medical supervision, it is highly unpredictable and carries significant risks when used promiscuously or without professional guidance. For this reason, legislation was enacted to severely limit its distribution.

LSD is considered extremely dangerous in the hands of thrill seekers or cultists because it can precipitate terrifying reactions and even outright **psychoses in unstable individuals**. Louria (1967), then president of the New York State Council on Drug Addiction, provided alarming statistics from a study of 114 cases treated at Bellevue over an eighteen-month period: 13% presented with overwhelming panic, 12% displayed uncontrolled violence, and nearly 9% had attempted either homicide or suicide. Crucially, 1 out of 7 required long-term mental hospitalization, and half of those requiring hospitalization had **no prior history of underlying psychiatric disorder**. Louria concluded flatly that no other drug used promiscuously under uncontrolled circumstances is as dangerous as LSD. Furthermore, there has been some indication--though requiring further investigation--that the drug may potentially break down cell chromosomes and produce congenital defects in children born to LSD users.

7. Contraindications and Supervision

The therapeutic uses of LSD are strictly limited to neuroses and personality disorders. The drug is typically **contraindicated** in the treatment of psychotics, as well as persons exhibiting marginal adjustment, primarily due to the significant risk of releasing latent psychotic tendencies (Dahlberg,

1963).

Experts emphasize that the drug must always be taken under **direct psychiatric supervision**. Godfrey (1967) issued a strong warning, stating that this powerful substance is a great threat to the psychological life of a person when taken without adequate professional guidance, noting that it can be completely overwhelming, especially for adolescents. He stressed that LSD should be restricted solely to research and treatment conducted by highly responsible scientists who are specially trained in psychodynamics, psychotherapy, and have significant experience in actual LSD treatment of patients.

Further Reading

Lysergic Acid Diethylamide (LSD) - Wikipedia
Albert Hofmann and the Discovery of LSD - Britannica
Goldenson, R. M. (1954). The dynamics of LSD reaction.
Katz, P. (1953). A Canadian journalist's firsthand account of LSD effects.
Louria, D. B. (1967). Testimony on drug addiction and LSD danger statistics.