

depression has been discussed. Treatment with ECT in all patients and with imipramine in most was associated with improved calcium retention manifested by a shift toward positive balance. In most of these cases this resulted from increase in net absorption from the gut and decreased urinary calcium excretion. Calcium kinetic studies indicated that the increased retention due to electric convulsive therapy was caused by decreased bone resorption. In 3 out of 4 patients treated with imipramine, the increased calcium retention was associated with increased bone formation, which was marked in 2 patients and less marked in 1. The possible use of imipramine for treating osteopenia of unknown origin where bone formation is low has been suggested. 28 references. (Author abstract)

## 12 PSYCHOTOMIMETIC EVALUATION STUDIES

073852 Kurland, Albert A. Department of Mental Hygiene, State of Maryland The therapeutic potential of LSD: its adjunctive use in psychotherapy. *Medical Tribune*. 11(37):15, 1970.

The unique potency and dramatic psychotropic effects of LSD have resulted in numerous investigations attempting to delineate their specific characteristics and possible application in treatment. Investigative endeavors seeking to apply these in the psychotherapeutic setting have resulted in the structuring of 3 different techniques: psycholyptic psychotherapy, uncovering the unconscious material that can be psychodynamically analyzed with much time devoted to psychotherapy before, during, and after actual drug sessions; psychedelic chemotherapy, placing its major emphasis on the drug sessions itself during which psychotherapy may or may not be carried out; and psychedelic-peak therapy, achieving of a peak or transcendental experience after which careful attention is paid to integrating the experiences gleaned from emerging insights. The latter technique has been under intensive scrutiny in clinical studies being conducted with alcoholics, neurotics, character disorders, narcotic addicts, and in terminal cancer patients. Future research might produce new substances having brief or longer periods of activity as compared to LSD as well as yielding psychotropic effects. These substances and the intense emotional states they elicit may be useful in resolving depression, overcoming a sense of in-

tia or apathy, or providing aging individuals with increased sense of comfort, zest, or fulfillment.

074782 Rodin, Ernst A.; Domino, Edward F.; Porzak, James P. 951 E. Lafayette, Detroit, Michigan 48207 The marijuana-induced 'social high': neurological and electroencephalographic concomitants. *Journal of the American Medical Association*. 213(8):1300-1302, 1970.

Ten healthy, male freshman medical students who admitted to long term marijuana use are studied after attaining their usual 'high' by inhaling marijuana in the laboratory. Baseline histories were obtained 3 weeks before the experiment. Electroencephalograms (EEGs) were monitored continuously as each subject smoked, an interview was taped, mental status assessed, and neurological examination, vibratory sense determination, and Bender-Gestalt tests were repeated. Few changes were noted, although a slight but significant shift toward slower alpha frequencies on the EEG was observed. No evidence of illusions, hallucinations, or paranoid thinking was found, but thinking was subtly changed. The Bender-Gestalt test scores worsened, falling into an abnormal range after marijuana smoking. Vibratory sense showed some improvement. Pleasure derived from the drug is thought to be a result of a decrease in critical judgment and loosening of inhibition. 4 references.

074858 Gilder, S. S. B. author address not given Tread softly on my LSD. *Canadian Medical Association Journal (Toronto)*. 103(13):1347, 1970.

Arguments over the merits and demerits of LSD are summed up. Several psychiatrists report cases of delayed psychotic episodes due to the drug, suggest that its long-term use may contribute to psychiatric morbidity, and hold that it should not be used in psychiatric treatment. Other psychiatrists think the connection between the drug and the psychosis is tenuous and that one should hesitate to discard any promising psychiatric drug on anecdotal evidence.

075191 Gaston, E. Thayer; Eagle, Charles T., Jr. University of Kansas, Lawrence, Kansas The function of music in LSD therapy for alcoholic patients. *Journal of Music Therapy*. 7(1):3-19, 1970.

In the laboratory, controlled use of lysergic acid diethylamide (LSD) can induce mental distortions resembling natural psychosis. This study obtained quantitative data concerning the function of

music in LSD therapy and of alcoholics. Since musical structure is not distorted, it affords a link to reality. Types of music most beneficial to each patient is determined by his past experience. 20 references.

075290 Faillace, Louis A.; Vourlekis, Alkinoos; Szara, Stephen. Department of Psychiatry, Johns Hopkins University School of Medicine, Baltimore, Maryland Hallucinogenic drugs in the treatment of alcoholism: a two-year follow-up. *Comprehensive Psychiatry*. 11(1):51-56, 1970.

Twelve chronic alcoholic patients who were treated with hallucinogenic drugs were evaluated 2 years after drug treatment. Of the 12 subjects, three were relatively stable, 8 were drinking or hospitalized at the time of followup, and 1 subject was lost to followup. Of the 3 improved, only 2 could be considered to have benefited from the drug. From our data, the use of hallucinogenic drugs in the treatment of alcoholism appears to be of limited value. 17 references. (Author abstract)

075841 Hollister, Leo E.; Moore, Frances; Kanter, Saul; Noble, Ernest. Veterans Administration Hospital, 3801 Miranda Avenue, Palo Alto, California 94304 Delta 1-tetrahydrocannabinol, synhexyl and marijuana extract administered orally in man: catecholamine excretion, plasma cortisol levels and platelet serotonin content. *Psychopharmacologia (Berlin)*. 17:354-360, 1970.

Measurements of catecholamine excretion, plasma cortisol and platelet serotonin concentration were done in the course of experiments in which human volunteers were given sizable oral doses of delta 1-tetrahydrocannabinol (THC), synhexyl or marijuana extracts. A transient rise in epinephrine excretion was observed following THC but seemed best explained by the anticipatory stress of the experiment or the rapid onset of unfamiliar symptoms. A decreased turnover of catecholamines or a shift in the degradative pathways of catecholamines from the oxidative to the reductive route was suggested by the decrease in vanilmandelic acid excretion following synhexyl. Plasma cortisol was unchanged except in the presence of clinically obvious psychological distress on the part of the patient. Platelet serotonin was unchanged. The lack of major effects of marijuana like drugs on these and other clinical measurement of stress corroborates the clinical observation that drugs of this type seem to be less stressful than the usual psychotomimetics. The

pronounced euphoriant and sedative effect of marijuana may ameliorate the stress of the psychotomimetic experience. 9 references. (Author abstract)

### 13 MECHANISM OF ACTION - PHYSIOLOGICAL, BIOCHEMICAL AND PHARMACOLOGICAL

072587 Steidinger, J.; Schmid, E. I. Medizinische Klinik der Medizinischen Akademie, 2400 Lubeck, Kronsfordter Allee 71/73, Germany /Studies on the metabolism of 7-chloro-1,3-dihydro-3-hydroxy-5-phenyl-2H-1,4-benzodiazepin-2-one./ Untersuchungen über den Stoffwechsel von 7-Chlor-1,3-dihydro-3-hydroxy-5-phenyl-2H-1,4-benzodiazepin-2-on. *Arzneimittel-Forschung (Aulendorf)*. 20(9):1232-1235, 1970.

For 7-chloro-1,3-dihydro-3-hydroxy-5-phenyl-2H-1,4-benzodiazepin-2-one (oxazepam, Adumbran) a new quantitative determination within thin layer chromatographic isolation and measurement of fluorescence on the sorption layer is described. In patients with cirrhosis, the oxazepam recovery of 21% of the dose applied within 48 hr is lower than that of 36% in subjects with normal liver function. The glucuronide-bound part of oxazepam in the urine of normal persons amounts to a mean of 90.8%, that in cirrhosis patients to 85.4%, on the average. The small difference in the rates of glucuronidation was statistically secured. 52 references. (author abstract)

073710 Heinemann, L. G.; Itil, T. M. Missouri Institute of Psychiatry, 5400 Arsenal Street, St. Louis, Missouri 63139 Quantitative EEG changes during high and low dosage fluphenazine hydrochloride treatment. *International Pharmacopsychiatry*. 4(1-2):43-52, 1970.

During a treatment program for 19 chronic schizophrenic patients with 2 dosage levels of fluphenazine (average low dosage of 17.4mg and high dosage of 60 mg) in the course of 5 months, after a 2 month placebo period, EEG's and clinical evaluations using 2 rating scales were obtained at regular intervals. Three methods of EEG evaluation were applied and compared: spectral density analysis, using an analog frequency analyzer; a digital computer program for period analysis and average amplitude, and visual rating of 10 items on a 5 point scale. Alpha activity increased from placebo to low dosage and high dosage periods, the difference reaching statistical