

NEPENTHE

Newsletter on Drug and Alcohol Issues published by the University of Washington Alcoholism and Drug Abuse Institute and the Washington State University Alcoholism Training and Research Unit

ISSUE No. 17

DECEMBER 1977

DR. SCHUCKIT TO UCSD

Dr. Marc A. Schuckit, Director of the Alcoholism & Drug Abuse Institute since 1975, will leave July 1, 1978, to become Director of Alcoholism Research in the Department of Psychiatry at the University of California at San Diego.

Dr. Schuckit, who also is UW Associate Professor of Psychiatry & Behavioral Sciences, will organize the alcoholism research program in the department at UCSD.

"Dr. Schuckit has made very real contributions to the University of Washington," said Dr. J. Thomas Grayston, Vice President for Health Affairs.

Dr. Schuckit holds degrees from the University of Wisconsin and Washington University Medical School. He served his internship at Cedars-Sinai Medical Center in Los Angeles, California, and residencies at Washington University Medical School and the University of California at San Diego.

Before coming to Seattle, he was Assistant Professor of Psychiatry at the University of California in San Diego and Chief of the Psychiatric Liaison Service at the La Jolla Veterans Administration Hospital.

"THE ALCOHOLIC REPUBLIC:

THE UNITED STATES, 1790-1840"

Professor William J. Rorabaugh, a member of the University of Washington History Department faculty, will be giving a lecture with the above title on Tuesday, January 17, 1978, beginning at 3:30 p.m. Dr. Rorabaugh has recently published a book with the same titled based on his extensive research in this area. The lecture will be held in the Health Sciences Building, Room E205 (across from the snack bar).

"THE GOAL OF TREATMENT IN ALCOHOLISM:
ABSTINENCE OR CONTROLLED DRINKING?"

Mark Keller, the recently retired Editor of the Journal of Studies on Alcohol, will visit the University of Washington campus on January 31, 1978, and will be presenting a lecture with the above title. Mr. Keller's lecture will have two reactors: Dr. Marc Schuckit, Director of the Alcoholism & Drug Abuse Institute at the University of Washington, and Dr. Alan Marlatt, Professor of Psychology at the University of Washington. The lecture will begin at 3:30 p.m. on January 31 and will be held in Room E205 of the Health Sciences Building.

RECENT FINDINGS IN DRUG ABUSE
AND DRUG ABUSE TREATMENT -

A UW SHORT COURSE

The Alcoholism and Drug Abuse Institute will sponsor an 8-session short course beginning in January, 1978, and focusing on current knowledge pertaining to drugs other than alcohol. A series of distinguished lecturers will cover such subjects as: "Is treatment effective?", "Sexuality and Drug Taking", "Therapeutic Communities and the Treatment of Addictions", and "Coca and Cocaine."

Among the lecturers in this short course will be Marc Schuckit, Jennifer James, Al Carlin, Scott Chilton, Lance Sobel, and David Hawkins. Clark Elster, Commander of the Seattle Police Department Narcotics Squad, will head up a panel presentation dealing with the organization of narcotics law enforcement at the local, state, and federal level. Finally, Andrew T. Weil, a prominent drug researcher and the author of "The Natural Mind", will present a lecture in this short course focusing on coca and cocaine.

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Nepenthe (ni-pen-the), n. (L. Gr. *nepenthes*, removing sorrow; *ne-*, not + *penthos*, sorrow, grief) 1. a drug supposed by the ancient Greeks to cause forgetfulness of sorrow, 2. anything causing this state.

The fee for this 8-week course is \$65. Individuals wishing to earn extension credit will be required to pay an additional \$10 and to satisfactorily complete one or more quizzes and/or written paper assignments. Please see Page 2A of this issue of *NEPENTHE* for an advance registration form.

THE "EMBOTTLED" WOMAN --
SOCIETY'S VICTIM

The Alcoholism & Drug Abuse Institute at the University of Washington will sponsor a two-day workshop on women alcoholics and prescription drug abusers. This workshop is scheduled to be held at the University of Washington HUB on February 9 and 10, 1978. The conference coordinator is Ms. Pat Stromberg, Director of the Southeast Community Alcoholism Center in Kent, Washington, and Secretary of the Washington State Council on Alcoholism. In commenting on this upcoming workshop, Ms. Stromberg said: "Women alcoholics and prescription drug abusers face a commonality of problems. Hidden (all but invisible), isolated and dependent, women's problems have gone ignored or unrecognized. Nationally and state-wide, through institutes and seminars, women's problems are being aired, and solutions are being sought. Women themselves must do the seeking. Too long have we been "embottled" and confined. Now we must become the essential elements of the solution."

The conference is being planned to include sessions on major physiological, psychological, and social aspects of chemical dependency problems among women. Psychological aspects of women and their use of alcohol, polydrug use patterns unique among women, genetic and pathophysiological factors that are important for women, and the very important subject of alcoholic mothers and their offspring will all be included in conference sessions. The needs that alcoholic women bring to treatment settings all the way from emergency room intervention to residential treatment will be discussed. Special population groups including women in the military, sexual minorities, women in prison, etc., will be discussed. A panel during the conference will address concerns unique to women of ethnic minorities. The rape victim, the battered woman, and the availability and use of women's shelters will also be presented and discussed.

The fee for this two-day workshop will be \$30. Please see Page 2A of this issue of *NEPENTHE* for an advance registration form.

TOBACCO:
INCONSISTENT DOLLARS

The *NEPENTHE* reader can draw his or her own conclusions from the following:

- The federal government annually spends in excess of \$78 million to subsidize tobacco cultivation in the United States.
- More than \$8 million a year is spent in the United States to warn the public of the consequences of smoking as well as to research the consequences of smoking in terms of health.
- The National Clearinghouse on Smoking and Health annually spends \$1.2 million to collect and disseminate information on the hazards of smoking.
- The National Cancer Institute is annually spending \$6.6 million for research, including research on a "safer" cigarette.
- The Federal Trade Commission is annually spending about \$312,000 for a variety of projects, one of which is the testing of cigarettes to report on their tar and nicotine content.
- State, local, and federal governments in the United States annually benefit to the tune of \$6 billion in taxes paid by tobacco consumers.
- In the United States more than 800,000 farmers derive part or all of their income from tobacco cultivation.

In reviewing some of the above statistics, one is not surprised to learn of the controversy at the federal government level concerning how tobacco should be classified as well as how policy concerning tobacco should be developed. Clearly, there are divided constituencies on this issue, with the profit motive and health concerns being at diametrically opposite positions. Joseph A. Califano, Jr., Secretary of Health, Education, and Welfare, has been championing the removal of subsidies for tobacco farmers. Agriculture Secretary Bergland counters with the belief that the health problems for tobacco should be attacked by health and social service agencies and not at the source of supply. Increasing pressure is being put on the Food and Drug Administration to re-examine the exclusion of tobacco from its domain. An anti-smoking group, Action on Smoking and Health, contends that the Food and Drug Administration reclassify cigarettes as drugs and then attach regulations as to their availability and use.

In the U.S. Congress this year several attempts have been made to remove the federal supports to tobacco farmers. As has been the case in years past, these efforts have failed, and observers of the national scene have little hope that such efforts will succeed in the future.

REGISTRATION FORM:

COMPLETE AND RETURN WITH APPROPRIATE FEES TO:

SHORT COURSES REGISTRATION
UNIVERSITY OF WASHINGTON
DW-50
SEATTLE, WASHINGTON 98195

NAME _____		DAYTIME PHONE _____		
HOME ADDRESS _____				
		CITY	STATE	ZIP
AFFILIATION _____		POSITION _____		
"Recent Findings About Drug Abuse and Drug Abuse Treatment (1/17/78-3/7/78) (Fee: \$65)		\$ _____		
Optional Extension Credit (for above) (Fee: \$10)		\$ _____		
"The Embottled Woman - Society's Victim" (2/9/78-2/10/78) (Fee: \$30)		\$ _____		
		TOTAL FEES: \$ _____		
<p>_____ My check in the amount of total fees is enclosed (Make check payable to the University of Washington)</p> <p>_____ Enclosed is a letter from my employer with billing instructions for the total amount of fees.</p>				

NIAAA ESTABLISHES RESEARCH CENTERS

Five major Alcohol Research Center grants totaling \$2 million to set up the search for more understanding of the complex health problem of alcoholism were recently announced by Ernest P. Noble, Ph.D., M.D., Director of HEW's National Institute on Alcohol Abuse and Alcoholism.

The designated Alcohol Research Centers, areas of research they will pursue, and amounts of awards in the first year, are:

- *University of California, Berkeley, School of Public Health - Social Epidemiology of Alcohol Problems - \$364,771*
- *University of Colorado, Boulder - Genetic Approaches to Neuropharmacology of Ethanol - \$386,285*
- *Mount Sinai School of Medicine of the City of New York - Pathologic and Toxic Effects of Alcohol - \$377,900*
- *The Salk Institute for Biological Studies, San Diego, California - Central Nervous System Effects of Alcohol: Cellular Neurobiology - \$497,668*
- *Washington University, School of Medicine, Department of Psychiatry, St. Louis, Missouri - Neurobiology, Genetics, Epidemiology, and Alcoholism - \$373,376*

The Alcohol Research Center grants program is designed to complement the regular research grants program of the NIAAA by providing long-term support for interdisciplinary research programs with a focus on a particular research theme relating to alcoholism and other alcohol problems.

The program is designed to attract the best scientists from the biomedical, behavioral, and social sciences disciplines and to provide a stable environment for such persons to develop and carry out coordinated and integrated research efforts.

"A Center is expected to be a source of excellence in research and to become a significant national resource for expanding the knowledge base leading toward effective treatment and prevention of alcohol problems," Dr. Noble said.

The grants were awarded under Section 504 of the Comprehensive Alcohol Abuse and Alcoholism Treatment and Rehabilitation Act of 1970 as amended (42 USC 4588) which authorizes Congress to appropriate up to \$6,000,000 annually for Fiscal Years 1977, 1978, and 1979. Congress appropriated \$2,000,000 for Fiscal Year 1977.

The Alcohol Research Center Program is planned as a five-year effort to be funded by annual appropriations. Centers may receive up to \$1,000,000 annually.

SECOND CHANCE:

A FACILITY TREATING

THE ADOLESCENT ALCOHOLIC

Two years ago no services existed that were primarily devoted to the alcoholic who was under 18 in the Seattle-King County area. If a youth with this problem entered treatment, it was in a program designed for adults. The young person was alone in the company of older patients and staff, and the consequent gap was difficult to overcome. Even if treatment was completed, community reentry was even more difficult because no services existed to facilitate the transition.

Attempts were begun to change this condition when Ms. Michelle McClung and others approached the King County Department of Youth Services with a proposal to study those who entered the Detention Center, to find out how many came there because their behavior was a result of an alcohol habit. The results of the study revealed that there were some alcoholic youth, and this indicated a need for differential treatment from those who entered the Center whose behavior was due to other factors.

As a result of this work, Second Chance was created. Currently located in a renovated wing of the Youth Center in the King County Juvenile Court Complex at 12th and East Alder in Seattle, Second Chance is a 90-day inpatient facility for adolescent alcoholics that is funded by King County's Division of Alcoholism Services. According to Mike O'Connell, the Director, "Second Chance wants to show the kid that, 'if you stop drinking, your life is going to change for the better'."

The Second Chance program is roughly divided into three stages: education about the nature of alcohol, fulfilling goals set out in a behavioral contract, and the transition back into the community.

Upon referral from the Juvenile Court, the adolescent begins the first stage of treatment which is a "time out" away from outside influences, such as school, friends, and family, that often aggravate the problem. Except for emergencies, no time is spent outside the facility. Those who want to visit must be screened first. This is a time for the adolescent to concentrate on learning what alcohol is and what its effects are.

Toward the end of this period of acquiring knowledge about their problem, young people are urged to think about what they will need to make it in the

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community. With assistance from the staff, specific goals, such as a GED diploma or finding a living situation (whether it is with parents or not), are stated and an agreement to reach these goals is drawn up.

Upon signing this behavioral contract, the young person begins the second stage of the treatment process. During this time, the person focuses on accomplishing tasks that will help him reach the necessary goals established in the contract. The youth must now show responsibility in order to get permission to begin spending more time outside the facility.

When the goals of the behavioral contract are met or if substantial progress is made towards them, the last stage begins. The adolescent goes into the community more often, actualizing the plans set out in the contract. The transition is facilitated with the help of youth Alcoholics Anonymous groups and peer counsellors (who previously went through the program) that have been present in the person's treatment process from its very outset. With their support the adolescent has a better chance of succeeding in the community.

Due to a lack of funds, Second Chance has not been able to do any follow-up studies on those who go through the program. What information they do receive is from juvenile probation and parole officers, and indications are that Second Chance is succeeding.

So that they can help more young alcoholics, Second Chance will be moving from their present location to the Firlands Campus in north Seattle, where they will be able to house twenty boys and eight girls. Presently there is only room for eight boys, and if any girls do enter the program, they would have to be housed in the detention section of the Youth Center. Another indication of their attempt to make their services more available is an upcoming application to the State to be a licensed child care institution. If the application is approved, Second Chance will no longer be limited to only accepting referrals from King County Juvenile Court because it would partially be state funded, as well as receiving King County support.

According to Mr. O'Connell, "No other similar programs exist elsewhere in the State of Washington." Consequently, the formal results of their study on the program's effectiveness, which will be undertaken after their move, will be looked at with great interest.

UW COURSES ON ALCOHOLISM, DRUG ABUSE

Winter Quarter, 1978:

N 489 (Nursing)*
"Alcohol Problems in Family & Society"
Instructor: Nada Estes

Spring Quarter, 1978

CONJ 475 (Medicine)
"Alcoholism"
Instructor: Marc A. Schuckit

SW 504 (Social Work)
"Social Problems & Social Welfare:
Drugs & Alcohol"
Instructor: Roger A. Roffman

SW 543 (Social Work)
"Psychotropic Drugs in Therapy &
in Recreation"
Instructor: Roger A. Roffman

SW 532 (Social Work)
"Counseling Alcoholics & Their
Families"
Instructor: Lorie Dwinell

N 488 (Nursing)*
"Effects of Alcohol in Health &
Disease"
Instructor: Edith Heinemann

PH 310 (Pharmacy)**
"Drugs in Our Society"
Instructor: E. Roy Hammarlund

CONJ 415 (Pharmacy)
"Drug Abuse"
Instructor: E. Roy Hammarlund

*Evening Course, also open to continuing education students.

**Also offered in Summer Quarter (first session).

"DECISIONS AND DRINKING":

NIAAA's NEW PREVENTION SERIES

The National Center for Alcohol Education has recently developed three specialized prevention courses to assist people in making constructive decisions related to drinking. These courses include:

1. *The Power of Positive Parenting*
A course for parents of young children.
2. *An Ounce of Prevention*
A course for Blacks.
3. *Reflections in a Glass*
A course for women.

These courses have the purpose of helping individuals make conscious personal decisions about drinking. The goal is to increase the likelihood that if people choose to drink at all, their decisions will be made in a constructive way. "The Power of Positive Parenting" is a course designed for use by groups of parents of pre-school children. "An Ounce of Prevention" is produced

particularly for groups of Blacks whether in urban, suburban, or rural settings. The third course, "Reflections in a Glass", is designed primarily for groups of adult women of all socioeconomic and ethnic backgrounds. These courses are designed to be delivered by a lay person and each is prepared for eight consecutive two-hour sessions. The materials that accompany the course descriptions include various scenerios for role playing, debates, games, and films. Additional information concerning these courses is available by writing to:

Field Services Division
National Center for Alcohol
Education
1601 North Kent Street
Arlington, VA 22209

THE SEATTLE-KING COUNTY DRUG TREATMENT SYSTEM

The 1977 assessment of drug abuse in King County estimated that 88,000 King County residents are currently using drugs, including marijuana, in a nonmedical (nonprescriptive) context. Six thousand four-hundred of these users can be categorized, by virtue of frequency of use, as heavy users of drugs other than marijuana, e.g., street drugs (narcotics, psychedelics and cocaine) and legal drugs (sedatives and stimulants).

In Seattle-King County, program resources have focused on the provision of services to the heavy users of drugs, those persons whose social, economic and personal stability have been affected by excessive drug use. The annual cost of providing treatment services has averaged \$3.7 million. Public funding has accounted for 43% of this cost. The primary source of revenue for the King County system is a \$1.2 million grant from the National Institute on Drug Abuse (NIDA). The NIDA grant is an 8-year grant, currently in its 6th year, which is predicated on the ability of local revenue sources to increase financial support in light of declining federal participation. Over the past three bienniums, State support to King County has represented approximately \$220,000. Other sources of revenue include County and City current expense funds (\$25,000), third party payments (\$230,000), client fees, contributions and donations.

The County system is administered at three levels. The Seattle-King County Drug Commission is a 14-person citizens board jointly appointed by the Mayor of Seattle and the King County Executive. The Drug Commission, in conjunction with the King County Division of Human Services, is responsible for overall planning and coordination and for assuring accountability over the expenditure of public funds. The Center for Addiction Services, a private nonprofit agency created by the NIDA grant, is the County's prime contractor and is responsible for providing certain centralized services, e.g., intake and screening, criminal justice

intake, methadone detoxification, and vocational rehabilitation. CAS is also responsible for the day-to-day oversight of 26 private nonprofit agencies, representing over 50% of the Statewide treatment capability. Services provided by these agencies include intake, methadone maintenance, outpatient counseling to youth and adults, prevention/education, and crisis intervention.

The 1977 Plan, as developed by the Commission and approved by the State, has called for the provision of a range of services to local residents and for increasing the overall efficiency and effectiveness of the treatment system in light of shrinking revenues. Particularly noteworthy accomplishments include: the implementation of a competitive request for proposal process; the consolidation of funding, contracting and reporting procedures; the implementation of a procedure for the centralized review of clients in methadone treatment over 2 years; the annual on-site review of the management, accounting and reporting processes of contracting agencies; and the implementation of a procedure for the centralized review of clients in methadone treatment for over 2 years; the annual on-site review of the management, accounting and reporting processes of contracting agencies; and the implementation of a systemwide client evaluation under the sponsorship of the CAS.

Over the forthcoming year the Commission hopes to continue and refine current efforts at service integration, coordination and accountability. In particular, 1978 will bring: in conjunction with the Mental Health Board, the coordination of planning and funding of emergency services for the County's drug abusing and mentally ill residents; the development of a demonstration project which would address the needs of prescription abusers; the development of a strategy for future funding; and, the examination of special population needs not currently met by the treatment system, i.e., youth, elderly and women.

**Testimony submitted to State of Washington, House of Representatives, Institutions Committee, Chairperson Ron Hanna, October 11, 1977, 3:00 p.m., Tacoma, Washington.*

"OPERATION TRIPWIRE"

In a recent speech, Dr. Robert DuPont, Director of the National Institute on Drug Abuse, proposed a mandatory urine screening program for all probationers and parolees. DuPont urged that required monthly or twice-monthly urine testing for parolees with a "demonstrated history of addiction" be implemented, with less frequent random testing of other parolees and probationers. In a speech before the Federal Bar Association in Washington, D.C., DuPont stated that such a close supervision and prompt intervention

effort was owed to the public who are frequently the victims of the necessary street crime for daily heroin addiction. DuPont estimated that, of the 1.7 million parolees and probationers, there are between 150,000 and 300,000 addict probationers and between 25,000 and 50,000 addict parolees.

DuPont called this new plan "Operation Tripwire." He stated, "we must provide probation and parole authorities with a means to identify releasees who have used heroin every day--that is, those who have been physically addicted to heroin--and insist that these releasees either stop regular heroin use or be returned to prison to serve their sentences. Those who want treatment in the community should get it. In fact, referral to drug abuse treatment should be the first-line intervention. But with or without treatment, the condition of their continued freedom must remain the same: they must not remain addicted to heroin while on probation or parole."

DuPont suggested that for those probationers or parolees who repeatedly demonstrate continued addiction through "dirty" urines, a mandatory referral to drug abuse treatment should ensue. And then, if treatment is refused or if it fails to halt an ongoing heroin use pattern, the individual should be reincarcerated. DuPont gave acknowledgement while delivering his speech that the proposed mandatory screening program would be controversial but urged its adoption as a responsible means of diminishing addiction among parolee and probationer populations in the United States.

DR. PETER BOURNE ON
THERAPEUTIC POTENTIAL OF
HEROIN AND MARIJUANA

President Carter's principal advisor on drug abuse recently has urged that the therapeutic potential of heroin and marijuana be more fully examined by federal agencies. "There has been much recent debate over the potential usefulness of abuseable drugs, such as cannabis and heroin", Bourne said. "At the federal level, we have firmly supported and encouraged

the undertaking of scientific evaluations of the legitimate benefits which could be derived from such drugs. Cannabis may help patients having glaucoma, where it apparently reduces interocular pressure, and those having cancer, where it may serve as an antiemetic in chemotherapy. Likewise, heroin may be useful for the treatment of pain in terminal cancer and for other carefully circumscribed medical conditions."

"I feel strongly that, to the fullest extent possible, research into the potential therapeutic usefulness of marijuana and heroin should be dealt with exclusively as a medical issue, with a completely objective assessment of the available scientific data, without being biased by historical precedent, legal status of the drug or public prejudice. I would hope that bodies such as the National Cancer Institute would take the lead in evaluating the therapeutic potential of these drugs. Again, this is a question of appropriate drug use and not drug abuse." Bourne presented this testimony in recent hearings before the House Select Committee on Narcotics Abuse and Control.

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For information, suggestions, etc., please write to NEPENTHE, 3937 15th Ave. N.E., Mailstop NL-15, Seattle, Wash. 98105, or call (206) 543-0937, the Alcoholism and Drug Abuse Institute.

The following summarizes the findings reported in the most recent HEW Report to the Congress: Marijuana and Health, Sixth Annual Report to the Congress by the Secretary of Health, Education & Welfare, 1976 (published in 1977):

QUESTION OF POSSIBLE EFFECTS (SEE NOTE 1)	BODY SYSTEM / FUNCTION INVOLVED	EXPERIMENTAL HUMAN LABORATORY AND/OR (ANIMAL) STUDIES (SEE NOTE 2)	FINDINGS IN CONDITIONS OF, OR APPROXIMATING TO NORMAL HUMAN USE (SEE NOTE 3)
PHYSICAL			
Does it damage the brain?	Central Nervous System	Small changes in brain wave patterns comparable to those caused by other CNS-active drugs, e.g., alcohol. Changes in sleep patterns.	No reliable evidence on brain damage. +/- scholastic performance not impaired in students.
Does it damage the heart?	Cardiovascular System	Increases heart rate. Decreases exercise tolerance of angina suffers.	Possibly dangerous to those with pre-existing heart disease.
Does it damage the lungs?	Respiratory Function	Prolonged heavy use may impair lung functioning. (Carcinogenic like tobacco, but +/- more or less so). May relieve asthma attacks.	Throat and lung irritation comparable to tobacco smoking. Heavy prolonged use could lead to similar problems.
Does it affect the hormones?	Endocrine System	+/- Reduced male sex hormone levels. +/- Reduced sperm counts.	Isolated reports of breast development in heavy, chronic male users. Fertility not affected.
Does it cause genetic abnormalities?	Chromosomes	+/- Chromosomal aberrations produced.	No reliable evidence of inherited abnormalities.
Does it reduce resistance to disease?	Immune System	+/- Drop in numbers of disease-combating cells (Lymphocytes). (Suppressed immune response after high doses).	No reliable evidence of increased susceptibility to disease.
SOCIO-BEHAVIORAL			
Does it cause antisocial behavior (aggression criminality, non-conformity, etc.)?		+/- (aggressive behavior reduced normally, but increased under stress).	Aggression reduced. No relation to criminality.
Does it lead to apathy and/or social withdrawal? ("amotivational syndrome")	Motivation	(Activity and social interaction decreased).	No amotivational syndrome unequivocally attributed to drug use.
Does it impair learning, memory, attention?	Intellectual Skills	Some temporary disruption of memory and performance in learning tests. Susceptibility to hypnotic suggestion not increased.	No permanent effects of intellectual performance or attainment.
Does it cause panic, anxiety, psychosis?	Psycho-pathology.		Temporary panic, paranoia or confusion may occur in inexperienced users or those consuming unexpectedly potent material. No permanent effects due solely to drug use.
Does it cause impotence?	Sexual Performance.	No Effect.	May reduce inhibitions in moderate doses. No evidence on effects of heavy, prolonged use.
Does it affect driving/flying, etc., skills?	Psychomotor Co-ordination	Ability to detect peripheral visual stimuli impaired. Reaction time, signal detection attention & co-ordination affected.	Definite impairment of driving/flying performance. No simple test for intoxication (like breathalyser" for alcohol) available.
Is it addictive?	Dependence	Some physical withdrawal symptoms after heavy prolonged doses. No drug-seeking behavior (craving) associated. Tolerance (diminished response to a given dose) develops after prolonged use.	Physical dependence not reported. For those who find cannabis use a rewarding experience, psychological dependence is possible in susceptible individuals.

HEW Report to the Congress
Continued

QUESTION OF POSSIBLE EFFECTS (See Note 1)	BODY SYSTEM/ FUNCTION INVLD.	EXPERIMENTAL HUMAN LAB AND/OR (ANIMAL) STUDIES (See Note 2)	FINDINGS IN CONDITIONS OF, APPROXIMATING TO NORMAL HUMAN USE (See Note 3)
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What are the long-term effects of heavy, prolonged use?

Effects of chronic administration on mental, behavioral and physiological functions disappear rapidly after drug intake stopped.

Studies in cultures where prolonged use of potent material is common have, so far, not shown any significant or lasting psychological or physiological effects. No large-scale surveys of long-term use in conditions approximating to those in Western industrialized countries yet available.

Notes to Table:

1. *The association of any given condition with cannabis does not always mean that the condition is caused by the drug. Any effect found in real life will have been the result of a complex interaction between the drug, the user and the environment. Most psychological "effects" are consequences of the total emotional, social and interpersonal circumstances of the drugtaker and are not attributable solely to the use of cannabis.*
2. *Many of the findings given in this column have been obtained by the intensive administration of large amounts of cannabis or its active principles by mouth or injection, and are consequently not necessarily indicative of the outcome of ordinary social smoking of cannabis. +/- preceding statements means that the evidence from experimental studies is conflicting. Statements in brackets are derived from studies on animals only, and are unconfirmed in humans.*
3. *In some important areas not enough research has been done to provide reliable evidence that cannabis does or does not represent a significant health hazard in conditions of normal human use. Where this is the case, the phrase, "No reliable evidence..." is used. Studies of normal social use are rare and no large scale surveys of prolonged cannabis use in conditions approximating to those in Western industrialized societies have yet been carried out.*
