Chemical Abuse Manual

CHEMICAL ABUSE PROGRAM
DRUG EDUCATION PROGRAM MANUAL

FEDERAL BUREAU OF PRISONS

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Revision

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This is the first edition of this education manual, which will be revised in the future. Please send comments to:

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CHEMICAL ABUSE EDUCATION MANUAL

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CHAPTER I

OVERVIEW OF CHEMICAL ABUSE PROGRAMS

OVERVIEW OF THE CHEMICAL ABUSE PROGRAM

TITLE:

An Overview of the Chemical Abuse Program: Emphasis on treating an Addiction

PURPOSE:

To provide an overview of the referral, screening, and basic level of programming in a sample Chemical Abuse Program

OBJECTIVES:

1. To understand how and why people become addicted to a chemical including the different dynamics of the a) primary addict, b) primary criminal, and c) cultural addict.

2. To understand the effects that continued abuse can have on one's health and life.

3. To understand how difficult and complicated it can be to treat an addiction.

4. To understand that treatment can be successful.

5. To convey the understanding that programs are available while incarcerated and in the community.

TIME FRAME:

2 one-hour sessions

EXERCISES/TEACHING TOOLS:

1) Use a "name game" to help introduce group members to one another.

A. Have each member pick a word that describes their personality that begins with the first letter of their first name, e.g. Gregarious George, "Jeffin" John, Action Allen, Energetic Emily.

Next, have each member repeat the "slang" names of those that have introduced themselves previously.

B. Have each member pick their favorite food and repeat it before their first name, e.g. Hamburger George, Pizza John, Fried Chicken Allen, Steak Emily.

Next, have each member repeat the "slang" names of those that have previously introduced themselves.

2) Value Clarification Exercises

A) Divide the group into smaller groups of 3 or 4 and have them order the following drugs from most dangerous to least dangerous and to explain their reasons for their choices: Marijuana, PCP, Cocaine, Alcohol, Caffeine, Heroin, Tobacco (provide pencils and paper).

B) Redivide the small groups and ask them to rank order the following from least offensive to most offensive and have each group discuss their reasons for their decisions: An alcoholic mother who physically abuses her only child; A heroin addict who stays high all of the time and must resort to burglary to support his habit; A married executive with 5 young children who loses everything because of his addiction to cocaine; A young teenager who smokes PCP daily and murders an elderly woman while high.

C) Ask each member of the group how they would think, feel and react if he or she found out that one of his or her children (age 15) was using marijuana.

D) Ask each group member how he/she would react in thoughts, feelings, and actions if he/she found out who the person was who sold one of his/her children some PCP which resulted in the psychiatric hospitalization of this child for one month.

THE PHILOSOPHY OF THE BOP CHEMICAL ABUSE PROGRAM

Question: What do you think is the most important element in the process of changing an inmate's behavior?

Answer: "In the long run, I think an offender's value system is the key element in determining his or her future life. While programs such as education and vocational training are important, they alone cannot succeed in changing values. A person's values are internal - they come from within."

Norman Carlson
Former Director, Bureau of Prisons

Overview

Chemical abuse programs can be designed to assist inmates in restructuring their values. This change in values can ultimately change how an inmate thinks, feels and views the world. The ultimate task of any program, be it educational or therapeutic, is to change and improve behavior. Chemical abuse programs can be effective in this change process. A key element in the change process is for an inmate to understand that there is a problem, that treatment is available for that problem, and that through a positive attitude and consistent motivation, success can be achieved.

No program can exist separate from the client. In our case, the client is the inmate. Based on our experience, three general categories of referrals to the program will be seen. These three types of inmates can be called the 1) Primary Addict, 2) Primary Criminal (secondary addict), and 3) Cultural Addict.

The Primary Addict might seem relieved to be in prison. Prison, might have saved this person from the terminal stages of addiction and death. The client might make statements like, "If I weren't locked up, I would be dead by now," or "When I committed my crime I didn't care about anything but getting high." These people had their lives destroyed by a compulsion to use drugs. They may be tearful and remorseful during their interview. They might also have had high social and financial position in the community. Basically, crime was a means for getting drugs. The Primary Addict can be a master of manipulation and staff should be careful to maintain professional demeanor at all times.

The next type of inmate, the Primary Criminal, is capable of acting the part of the true addict to gain special consideration. Care should be taken to evaluate the sincerity of the client. Primary Criminals may use their drug abuse to get more favorable treatment. They may project the blame for selfishness and criminal activities onto drugs when in reality they probably would have committed crimes even if they had never used drugs. For these inmates, drugs and crime were simply a means of satisfying their selfish pleasure-seeking and intense craving for excitement and stimulation. As correctional workers, we are well aware of this type of inmate. This type of client may try to "blame" drugs for his/her own selfish behavior. This person might use the excuse of drug abuse to try to avoid a stiffer sentence. Sometimes, they truthfully might admit that they never used drugs. More often, these inmates will falsely deny they ever had a drug problem as a means of avoiding treatment. Once their drug problem is treated, their selfish manner of thinking may still remain.

The Cultural Addict uses the excuse of poverty and environment to explain his or her behavior. These individuals may not be interested in change because any behavior change would involve learning a different way of life. Consequently, many have resigned themselves to continue using drugs because they do not want to change those who they associate with, their lifestyle and their environment. The cultural addict may argue that the "drug laws" are unjust, that drugs don't hurt anyone, that everyone they know uses drugs, etc. These inmates may not seek assistance unless they can be helped to expand their horizon and develop a more positive attitude toward their own life and value system.

Treatment Contacts

Initial contact with most new inmates comes during the formal screening process in Psychology Services. Here, an assessment is made of the severity of the addiction based on a clinical interview and in some cases a written instrument. Those identified as having a moderate or severe drug/alcohol abuse problem are then either referred to the Chemical Abuse Program Coordinator for further assessment, or placed on the waiting list for the next Drug Education group.

Treatment Format

The inmate is usually enrolled in a group composed of 8 to 12 participants which lasts from one to two hours each session. Introductions are made and the course overview is presented. Typically, concepts of addiction, as well as the effects of each type of drug are discussed. Films and other audiovisual aids help stimulate interest and involvement. It is important that each inmate be allowed to express what he or she would like to obtain from the group. It would also be useful for those inmates who are willing, to give a brief description of their experiences with drugs. These personal experiences can be elicited and further elaborated upon after each film/presentation in the sessions that follow.

The size of a group is usually based on the number of inmates that need to be served. Where possible, small groups are usually preferred over larger ones. Large groups of up to 30, where a formal "classroom" approach is used, can also be very effective in relaying the drug information, but are difficult to control except where minimum security inmates comprise the group. Structure is more important in these larger groups, and there is less opportunity for personal disclosure. A large class may necessitate the use of more exams to be sure that each individual has adequate knowledge concerning drugs and their effects. Those who fail to pass a certain criterion level, ie 80% may be given a review session and allowed to re-take the final exam, or possibly required to retake the class. In a large-class setting, it is also advisable to require a make-up paper for each class missed, so that each class member has spent equivalent time in meeting drug education course requirements. An inmate could write about a specific drug, or about their own involvement with drugs. If a large class is necessary, it is advisable to offer a follow-up therapy group for those who are assessed as having a severe problem with drugs. This therapy group would be available to those who have passed the education class, and would allow personal disclosure in a small-group setting.

Frequency of groups is another consideration. These type of groups usually work better if they are more frequent, even daily, as opposed to weekly or monthly since the participants retention is higher. Because of several considerations, most institutions hold weekly groups which still can be very effective.

Based on past experiences, daytime groups where inmates are placed on "call out," have a lower dropout rate than evening groups. Evening groups have the added advantage, however, of proving the degree of commitment that each participant has, since each participant is more likely to be responsible for his/her own attendance.

Treatment Goals

The goal of the Chemical Abuse Program is to help bring about a positive change in all inmates. Internal change is the key to success. Consequently, the motivation of an inmate and decisions made while in treatment are important elements of the change process. The first objective of treatment may be to understand how and why people become psychologically and physically addicted to drugs. A lecture/discussion presents the role of peer influence, chosen role models, the environment, the role of the familial link, the personality, and finally the role of drugs as a positive reinforcer (a desire to feel "high") and avoidance mechanism (to suppress negative feelings). Physical addiction can occur to certain drugs, and can be explained by the concept of an altered chemical equilibrium in the body. Personal examples of physical addiction can be elicited from group members to illustrate these reasons.

The second objective is to help each participant understand the effects drugs have on their psychological, social, and physical well being. Most group participants respond very well to a film presentation followed by a group discussion with personal examples. An overview film followed by films on specific drugs in subsequent sessions has worked very well.

The third objective of this first phase of treatment is to impart the idea that an addiction is not cured, but only arrested. This means that treatment must be a daily process in which a personal inventory needs to be made. Illogical reasons for not stopping can be brought up in discussion. Films such as Angel Death can be helpful in illustrating how sometimes an addict is his or her own worst enemy.

The final objective of treatment is to impart the message that help is available. Each participant needs to understand that relapse is common, but that help is always available, both in the institutions and in the community. A discussion of self-help groups such as NA or AA might be appropriate at this point and the film "Twelve Steps" could introduce participants to the philosophy of the self-help groups. A national directory of treatment resources (published by the National Institute of Drug Abuse and available at no cost) could be made available to the group. Sometimes group members return just prior to release to obtain specific names and phone numbers of community programs. Films like One Out of Ten, and Cocaine, Beyond the Looking Glass can also be helpful in illustrating relapse prevention.

Treatment Techniques

There are several treatment techniques that can be used effectively to increase the level of each participant's self-evaluation. Self-evaluation tasks may be given as homework assignments to help each person examine his/her past behavior and lifestyle. The first assignment is to have each client write an autobiography. This autobiography can be used, in or out of group, to help persons gain an overall sense of where they have been so that they can better determine their past errors and future goals. The second exercise which has proven to be helpful is to have each group participant list those things that have acted to "trigger" their craving, such as events, times and places where they commonly used drugs. Have each client rank order their most common "triggers" to help them evaluate their areas of vulnerability once back in the community and gain some insight into their addiction. Finally, have each person identify and examine the three most important things in their lives in rank order (for example God, country, family, health, education, self, money, children, crime, drugs). Ask each person whether or not their behavior in the community was consistent with the values they have now listed. Other exercises are described in the introductory page and in the Relapse Prevention chapter.

At the end of each education class or therapy group, inmates are given the original copy of a certificate of completion. A copy is kept for his or her Psychology File, and a copy is placed in the inmate's Central File. Be certain to type the name of the group and the number of hours completed on the certificate. Some programs also give incentives such as a graduation photograph, and t-shirts with slogans, for example "Just Say No to Drugs" or "Certified Dapper." Other social reinforcers to develop group pride include sponsoring a basketball team within the institution, or an art show related to drug abuse. Innovation and enthusiasm make the education and therapy groups much more fun for both inmates and staff, while still focusing on a serious problem.

In summary, a Drug Education group can provide valuable information about the process of addiction and the effects of drugs. This initial treatment phase can also begin a self-evaluation process and inform the group participants about the available treatment resources.

CHAPTER II

ADDICTION

ADDICTION

TITLE:

Addiction

PURPOSE:

To provide an understanding of the progressive nature of addictions and the accompanying denial system that hinders effective treatment.

OBJECTIVES:

1. To identify 3 reasons for drug abuse.
2. To understand the difference between psychological and physical addiction.
3. To understand that the body has a natural balance (homeostasis) and that drug abuse disrupts this balance.
4. To understand the disease concept of addiction including the effects on family.
5. To understand the progressive nature of addiction.

TIME FRAME:

2 HOURS

EXERCISES AND TEACHING TOOLS:

1. Describe or draw a picture of an "addict." Most persons draw or describe the extreme although an addict could be anybody.
2. Review list of "triggers" of craving completed earlier.
3. Ask members for personal examples of withdrawal experiences.
4. Use films recommended for this section

   suggestions:

   I'll Quit Tomorrow

   Drug Dependency, The early Warning Signs

Chapter 2 Sample Test Questions

TRUE OR FALSE

1._____Most people who have an addiction tend to deny this problem to others.

2._____Psychological addictions are easier to break than physical ones.

3._____Drug and Alcohol abuse has a tendency to run in families.

4._____Illegal drugs can be safely used by the majority of people.

5._____If a person can completely stop using drugs for a year, they have proven that they have no drug problem.

6._____Treatment for drug abuse usually succeeds the first time a person gets help.

7._____Occasional use of any drug is safe once a physical addiction has been overcome.

8._____The first step in overcoming a psychological addiction is to acknowledge to oneself that there is a problem.

9._____One's addiction can be contagious since others may also be influenced to use drugs to fit in or be accepted.

10_____Irritability, craving, then looking for drugs is best described as a physical addiction.

ADDICTION

The word "addiction" comes from the Latin term ADDICTUS which means to be "given over" or "owned" as a slave might have been in ancient Rome. The dictionary defines addiction as a habitual or compulsive act. The central question is how do substances cause addiction.

Use the blackboard or write the following terms on newsprint:

"FEELINGS"
"BEHAVIORS"
"PERCEPTIONS"

LECTURE: PERCEPTION, THOUGHTS, FEELINGS, BEHAVIORS

State the following:

There are two general categories of drugs: Psychoactive and Non-psychoactive. Non-psychoactive drugs, like antibiotics and blood pressure medicines, for the most part do not affect the brain and behavior at normal dosages. Psychoactive Drugs are drugs that change thoughts, feelings, perceptions and behavior. Most of the drugs taken illegally are psychoactive drugs.

The pharmacological characteristics of these substances result in "pleasurable" changes in the user's state of mind and feelings. Drug users usually seek to change their feelings, moods, perceptions, and orientation to self and their environment. Consequently, drug use is an escape from self and surroundings. The use of psychoactive substances is only one of the many ways in which feelings can be changed. Unfortunately for these users, drugs can only temporarily produce a synthetic version of desirable moods. In the long run drug use is ineffective and produces additional problems. It has been said that an addict is in constant pursuit of that first "high" which can never again be found. Nevertheless, drug use has persisted throughout the ages and throughout all nations.

REASONS FOR GETTING "HIGH"

1. To reduce pain.
2. To reduce uncomfortable or unwanted levels of activity or feelings of anxiety or nervousness.
3. To increase level of activity, feelings of energy and power and correspondingly reduce feelings of fatigue, depression, and sleepiness.
4. To gain social acceptance and change one's perception of the physical and social environment.
5. To achieve pleasurable feelings.
6. To achieve various levels of intoxication in order to forget problems.
7. To relieve boredom.

State the following:

From the psychological perspective, there are seven reasons for abusing the psychoactive substances. All involve changes in thoughts, feeling, behavior, or perception. These changes include:

1. Relief of physical pain. Opiates like heroin, morphine, or methadone are still the preferred substances.

2. Reduction of uncomfortable or unwanted levels of activity or feelings such as anxiety, nervousness, hyperactivity, sleeplessness, too much stimulation, unwanted or unmanageable levels of basic drives such as sex or aggression. Any central nervous system depressant can serve this function for most people. Alcohol, barbiturates like Seconal, minor tranquilizers like Valium, and hypnotics like Quaaludes are all central nervous system depressants, also known as sedative/hypnotics.

Opiates, like heroin, dilaudid, demerol, tylox, talwin, and percodan, also have a sedating action in addition to their pain killing aspects.

3. To stay awake, feel stimulated or powerful. A reduction in feelings of fatigue, depression, sleepiness. To increase confidence levels. Any central nervous system stimulant such as caffeine, amphetamines, cocaine, or a variety of synthetic substances are used widely for these purposes.

4. To change social status and gain acceptance. Users have a normal desire to belong to a group. The drug culture offers acceptance and recognition from peers. Drugs offer a common language and topic of conversation. There are rituals surrounding use that involve social gatherings and traditions. Many users begin when a friend or relative offers and sometimes pressures them into trying a drug. Drug users want to be around other drug users, and there is pressure for everyone to use. This pressure to use usually begins during adolescence or even earlier. Users tend to discredit evidence about the damaging effects of drugs and generally feel capable of using their drug of choice safely. Many alcoholics claim they are more sociable when drunk.

5. To experience feelings of pleasure (euphoria). People sometimes describe being "high" as feeling full of energy, floating, sensuous, like sex, or being in a dream-like state. Any psychoactive drug can produce some form of "high" if taken in sufficient quantity. The type of high that is sought may depend on what's available, peer pressure, personality factors, and one's first experience on the drug.

6. Some people, who are disturbed by social or emotional problems, and use drugs to interfere with brain function to such a degree that memory is disrupted. Chronic alcoholics and those who use PCP often fit in this category. They actually try to "mess up" their brain to escape unpleasant memories. This is very dangerous, as large amounts of alcohol or other drugs are needed to induce this level of intoxication.

7. Boredom is a problem for many people, and is in part due to a lack of athletic, cultural, and goal-oriented stimulation. Young people often turn to drugs for something to do, in order to relieve the boredom of their lives. In some areas, there are few positive alternatives to drugs. Finding interesting things to do is essential in preventing drug abuse.

The Difference between Medical and Non-Medical Use of Drugs

Some medical drugs are nonpsychoactive, like antibiotics and heart pills and are used to repair or help the body. Medicine tries to restore the natural balance of the body. This normal balance is called homeostasis. The body can only survive within narrow limits. Temperature, blood pressure, sugar levels in the body have to fall within narrow limits or death results. Even the psychoactive drugs, like morphine, are given to restore a balance. Pain killers are given to help cancer patients and persons recovering from surgery feel normal. The proper use of drugs by a doctor is to help the patient reach homeostasis, most often in terms of pain relief, relieving excessive anxiety, and restoring energy level for those who are depressed.

A doctor gives the patient a drug to restore the body's natural balance, while a drug user tries to disrupt the body's natural balance.

Ask group members if they have any questions. If so, respond accordingly.

PSYCHOLOGICAL AND PHYSICAL ADDICTION

1. Physiological or Physical Dependence - A change in the body's balance such that the drug is needed to avoid withdrawal symptoms. Withdrawal, and hence physical dependence is present when seizures, convulsions, hallucinations, paranoia, pain, nausea, diarrhea or other physical symptoms develop after a drug is withdrawn.

2. Psychological Addiction - Irritability, craving and looking for drugs. Emotional discomfort when drugs are not available. Believing that one cannot function effectively unless under the influence. Placing drugs before family, job, and health. Cocaine is known to cause the intense craving of psychological addiction in over 1/3 of users when snorted, most users if they smoke it.

3. Psychological Dependence - Less intense than an addiction, this category fits the majority of drug users. A person who feels that he or she cannot have fun without a drug, would be considered psychologically dependent and in danger of progressing to an addiction.

4. Tolerance - The loss or reduction in effect from the same amount of drug used over period of time, or the increase in the amount of drug used over a period of time for the purpose of gaining a desired effect. An increase in dosage required to produce an effect. Sometimes tolerance is used to describe the dose of a drug able to be taken before a person cannot handle the effects.

- Because of the way that psychoactive drugs affect the body at the chemical level, repeated and frequent use of almost any drug will eventually not produce the same effects (high) produced originally by a similar dose. This phenomenon is known as tolerance, or a change in tolerance. Eventually, the body needs the drug to feel normal and to counteract pain, or depression. Users have to take more of the drug, in progressively higher doses to obtain the same effect. Eventually the drug may produce paranoia (cocaine) or simply a feeling of being normal again (heroin). Some alcoholics have claimed they have drunk themselves "sober." Eventually, alcohol had no positive effect on their mood.

- Certain substances, notably opiates (morphine), and their derivatives (heroin), the barbiturates, tranquilizers, alcohol and cocaine, when used in sufficient amounts and frequencies over a period of time, produce chemical changes in the user which prohibits them from functioning "normally" without the drug.

  The amount, frequency, and period of time required vary from substance to substance. Soon the drug is needed just to maintain a normal state. If the drug is withdrawn, physical pain, sweating, chills, diarrhea, hallucinations, paranoia, depression, stomach cramps, seizures, convulsions and even death can occur. The presence of these symptoms indicates that the person is physically addicted to these drugs.

  Psychological addiction is a compulsion to use the drug to feel better emotionally. A psychologically addicted person will feel irritable and uncomfortable without the drug, crave it intensely, and will do almost anything to obtain it.

Discuss the following:

DOSES

1. Legal versus Illegal Dose
2. Ineffective Dose
3. Effective Dose
4. Toxic Dose (Poisoning Dose)
5. Lethal Dose

LECTURE: DOSES

State the following:

- The effects of drugs used legally and for medical reasons are a function of dose. A physician uses drugs to restore a natural balance to the body. For each drug there is an ineffective dose, effective dose, a toxic dose and, for most, a lethal dose. The effects of drugs used illegally or for non-medical reasons are a function of dose. For each there is also an ineffective dose, an effective dose, a toxic dose, and for most, a lethal dose.

- Some drugs have multiple side effects beyond those for which they were taken or prescribed. The side effects of drugs used legally are often critically important and a physician's job is to weigh the potential benefits against the potential risks. The ultimate goal is, again as mentioned above is to recapture the body's natural balance (the word "disease" means "not at ease" or unbalanced).

- Most of the substances which are illegally sold are impure and are often not the substance they are supposed to be. They are contaminated with other substances, and there is seldom accurate information as to the purity (e.g., PCP is sold as THC or LSD; Rat poison has been used to "cut" drugs).

- Reports from laboratories set up for the analysis of street drugs verify the impurity of nonpharmaceutical "street" drugs. The imagination of the dealers of these drugs is apparently endless. At one time when mescaline was widely reported to be a popular drug, analysis of samples sold as "mescaline" indicated that many were predominantly lysergic acid diethylamide (LSD). Taking an unknown substance in an unknown amount (alone or in combination with another substance) increases the risks involved, especially when the individual has little knowledge or understanding of drug action. If you look at the descriptive terms of addict discussed earlier, there is no doubt that there is some confusion when people think of the terms drug addict, drug addiction, or addiction.

EXERCISE 1: Have group members draw a picture of an addict or discuss what an addict looks and acts like. Be sure to list those terms used to describe an addict on the board or newsprint.

PURPOSE: To and show that an addict could look and act like anyone. They do not need to be "laying in an alley" to be an addict.

EXERCISE 2: Have group members add up all the money that they have collectively spent on drugs and alcohol in their entire life. Add the total dollar amount on newsprint or a chalkboard.

PURPOSE: To show the amount of interest and commitment group members have had towards drugs and alcohol by using money as a measure.

EXERCISE 3: Have each group member list the specific impact drugs/alcohol have had on family, school, personal freedom, etc.

PURPOSE: To sensitize groups members as to the effects of drugs/alcohol on their daily lives.

THE PROGRESSIVE NATURE OF ADDICTION

State the following:

- When we use terms such as drug use, drug abuse, and drug addiction we need to keep in mind that using drugs is a progressive disorder. There are different stages of abuse which result in different levels of addiction. The majority of people who use drugs feel they are in control of their habits. In normal circumstances, addiction only becomes evident to the user when their life and feelings grow out of control. Even then, some still feel they can control their use. Some need to fail several times before they will accept their addiction as a fact.

DRUG USE OR ADDICTION

In the beginning, drug use may not seem to affect a person's way of life. The user does not see the dangers that lie ahead nor do they always see the legal problems they could face. Initially, users have an "it can't happen to me" mentality which seduces them into incorporating drugs into their lifestyle. This denial grows stronger as the drug satisfies needs for friendship, love, warmth, sex, and even food. In many cases their addiction gradually develops so that in the end, the users become slaves to their drug and the drug becomes their master. Some can last longer than others. Some realize what is happening and get out of the drug use cycle before it is too late. Just like "quick sand," the deeper a person gets into drugs the harder it is to "pull out." In the end, there are few who can resist the seduction of hard drugs.

When we use the term drug addict we need to keep in mind that we are observing a progressive state of dependence on a drug that will ultimately affect several major life areas. Addiction is ultimately a behavioral and physical syndrome that is characterized by an inability to function without the drug.

LECTURE: STAGES OF DEPENDENCE LEADING TO ADDICTION

State the following:

It is useful to look at addiction as a process in which a person withdraws from family, job, self and all those things that produce "natural high," and become dependent upon the artificial mood produced by a chemical.

DRUG USE VERSUS DRUG ADDICTION

State the following:

Addiction, which is the ultimate form of dependence and which may be considered an illness, is a syndrome showing four main features:

1. It is progressive, and usually gets worse if not treated.

2. There are stages which can be called mild, moderate, and severe or early, middle, and late.

3. It is often lethal, if not treated.

4. There is a familial link - children of alcoholics/drug users also tend to become alcoholics/drug users.

STAGES OF ADDICTION

State the following:

During the development of dependence several changes in characteristics of the developmental stages of drug use occur.

- In the earlier or mild phase of addiction, i.e., contact, experimentation, occasional use, we see more freedom from the drug and less risks and damage to the individual drug user, although overdose and death can occur. There is still the potential for possible abuse of the drug by the individual. A person makes a choice at this stage to use the drug. In other words, the drug is used only when available and is used only with others. Use is spontaneous rather than planned. The major reasons for continued use are primarily social, to fit in. Most people in the earlier phases do not go on to become regular users. Drug taking, for most, is not very important when compared to other experiences and activities in the person's life.

- The middle stages of addiction are where family, friends, and self are neglected at the expense of getting high. At least one major life area is affected like work, school, health, family, relationships, legal status, financial status, etc., because of drugs. Secretive and private use of alcohol and drugs is more frequent. Getting high alone is common. Guilt about use begins to develop as well as an irritation about any discussions about using drugs/alcohol. Physical addiction is beginning to set in as a person falls closer to the late stages of addiction, described by some as "hitting bottom," a zero state.

- The late stages of addiction have also been called the terminal stages because physical addiction and/or the deterioration of several major life areas where family begins to become seriously affected, financial and legal problems may develop, along with life threatening diseases or neglect of health. Nutrition is secondary to the "high." Often times, the drugs mask pain that is symptomatic of a serious illness like hepatitis or endocarditis (infections of the liver and heart).

- However, during the later phases, the severe level, (i.e., heavy use, addiction) there is a lack of individual freedom from the drug. More physical damage is done to the individual. Abuse is present. There is a state of illness. The person is engaged in a self defeating behavior that will cause loss of family, loved ones, money, health and self respect. Ultimately, the addict may die if not treated.

- In other words, the person probably devotes a lot of time, thought, and energy to getting the drug, taking the drug, discussing the effects of the drug, associating almost exclusively with others who use the drug. The person is considered psychologically dependent on the drug, or, as is increasingly the case, on several drugs (polydrug abuse) rather than one specific drug. Addiction is present.

FACTORS WHICH CAUSE DRUG ABUSE

A. The effects of the drug (the high).

We may roughly locate the various drugs on a scale. On one side are the drugs with a strong addictive action (e.g., cocaine, heroin, morphine); on the other are those to which an addictive power scarcely can be ascribed (e.g., aspirin, chlorpromazine, laxatives, or even petrol or vinegar). The addictive property of a drug depends on the bodily and psychic influences it exercises. The way in which these influences are connected with the chemical structure is largely unknown. All of the psychoactive drugs influence feeling and experience in the user.

For practical reasons we can classify all psychoactive drugs as depressants, stimulants, or hallucinogens.

In all cases the drug is taken for its desired action. What in a given case is regarded as desired depends on the person involved.

B. The personal factors of the user.

Personal factors, too, can make a difference. On one extreme are persons who have a strong disposition toward excessive use and addiction, while at the other extreme are those that can seemingly "take it or leave it."

The "addictive personality type" has an increased risk of using any drug, even prescribed or over the counter drugs. These persons commonly display specific personality features:

1. Persons with a high sensitivity to feelings of discomfort, tension, anxiety and displeasure.

2. Persons in physical pain or who are very sensitive to pain and try to self-medicate.

3. Excitement/Stimulation Seekers - People that get bored easily.

The risk factors can be stronger at certain times in a person's life than at others. Age, for example, is an important modifying factor; during puberty and adolescence the risk for drug abuse appears to be increased since our desire for change and excitement is higher during this age period, and peer pressure has more of an influence. Strong religious, philosophical, or political beliefs can also change a person.

Physical and psychiatric illnesses can also influence a person to use drugs. Many of these persons probably should be under the care of a physician, but use alcohol and/or street drugs as a way to self-medicate.

C. The social meaning and value of a drug and of drug taking.

Drug use is sometimes a means of joining a group and being accepted into a culture or peer group. Social meaning of abuse includes the ritualization of the use of a drug, the seeking, buying, and using drugs becomes a social event with rules, regulations, and procedures. A slang language and subculture may develop around drug use. Going to "cop" and going to "cocaine parties" may become part of the ritual. Drugs can take on a positive meaning for this subgroup. For example, the open smoking of marijuana was used as a political symbol during the 1960's. Cocaine use can be viewed as "elegant, cool, fast." Users may be viewed as ambitious, energetic and enlightened. Status may be derived from drug use, even among different drug subgroups. Alcoholics tend to alcohol as being a "drug", cocaine users sometimes see themselves at the top of the drug abuse pecking order, heroin users are sometimes seen as detached or passive, while PCP users are sometimes associated with a more impulsive type. Users feel that those that drink alcohol on a social basis are no better than they are. This may be an attempt to justify the drug subculture's use of illegal drugs by a comparison with the legal and social use of alcohol. Rationalizations are a common sign of addiction and dependency whether the user is taking legal or illegal substances.

THE ROAD TO ADDICTION

Mild	Moderate	Severe
social use	family neglected	health neglected
acceptance of drugs	secretive use	compulsive use
party mentality	financial pressures	work neglected

EFFECTS ON FAMILY MEMBERS

Addiction has an enormous impact on family members. The family is neglected more and more as addiction progresses. But family members often become part of the problem. Spouses often cover for each others' addiction by making excuses to friends, family, and employers. This "enabling" protects the user and allows abuse to continue for a longer time period.

"Enabling" is action by others which saves the abuser from the consequences of his or her abuse. A family member is rescued from problems with their boss or supervisor when the enabler calls in sick for them. The enabler saves the abuser from prison when they pay that fine, get them to leave a situation when they are out of line, buys them the best attorney, and even becomes a witness in Court about how responsible the abuser really is.

The family, and children are usually hurt the most when a person is addicted to drugs. The time and money that the addict would ordinarily have spent on his/her family and children, are instead spent in obtaining and using drugs. Child neglect often produces long-lasting effects, and can damage not only health but leave emotional scars. Children feel hurt when their father or mother prefers drugs to being with them. A child that feels unloved and abandoned will seek attention in extreme ways. Also, a child that grows up seeing constant drug use will learn this as a way of life, and has a much greater chance of drug problems in the future.

The family is often very important even to a person who is addicted and has been neglecting loved ones. A desire to improve the emotional and financial health of their families has motivated many men and women to change their destructive lifestyle. Those addicted must choose which is more important, their drug or their family.

CHAPTER III

A GENERAL OVERVIEW OF DRUGS AND DRUG ABUSE TERMINOLOGY

A GENERAL OVERVIEW OF DRUGS AND DRUG ABUSE TERMINOLOGY

TITLE:

A General Overview of Drug Classifications and Drug Abuse Terminology

PURPOSE:

To provide an overview of the drug classifications and to introduce some common terminology

OBJECTIVES:

To be able to identify five classes of drugs

To understand the basic differences between these drug classes.

To understand in general how drugs affect the brain.

To understand what is meant by "synergism, antagonism, and potentiation."

To identify at least two dangerous drug combinations.

Chapter 3 Sample Questions

TRUE OR FALSE

1._____There are two types of drugs, Psychoactive and Nonpsychoactive.

2._____Nonpsychoactive drugs do effect moods, behaviors, and perceptions.

3._____There are several different categories of Psychoactive Drugs including substances that have stimulant, depressant, and hallucinogenic properties.

4._____The Sedative/Hypnotics or General Depressants include the barbiturates, alcohol, and cocaine.

5._____Cocaine is classed in the same category as nicotine.

6._____Cocaine is second only to alcohol as the most abused drug.

7._____Tolerance refers to the users attitude about a drug.

8._____Synergism means that drugs combined or taken together have less of an effect than if taken separately.

9._____Valium is a stimulant.

10._____A placebo will work if the user believes it will.

A GENERAL OVERVIEW OF DRUGS AND DRUG ABUSE TERMINOLOGY

OVERVIEW

This section will specify the general category of drugs described earlier as "psychoactive." These drugs are substances that alter feelings, behavior and perceptions.

Generally speaking there are seven categories or classes of psychoactive drugs:

1. Sedative-Hypnotics or General Depressants
2. Narcotic Analgesics
3. Stimulants
4. Hallucinogens (including Marijuana)
5. Anesthetics
6. Clinical Antidepressants
7. Major Tranquilizers or Psychotropics

THE EXTENT OF USE

The most used or abused drugs in our country, (excluding tobacco) fall under the Sedative-Hypnotic group. These drugs include alcohol, minor tranquilizers such as Valium and Librium, barbiturates, and other sedatives. Alcohol is the most frequently abused drug in this category, with the minor tranquilizers, some of them prescribed, following second. Alcohol alone accounts for over 100,000 deaths a year. Illegal drugs account for over 5,000 deaths a year. Among these are those who have died from sniffing glue (toluene), gasoline, or other volatile solvents which act as sedative-hypnotics but are more toxic than alcohol and are inhaled.

More than 37% (71 million) of the American population has tried some type of illegal drug. Marijuana, which is sometimes classified under hallucinogens or in a class by itself, is one of the more frequently used or abused substances with over 10% of the American population (between 20 and 40 million) current users. Approximately 62 million are estimated to have tried it, including some 60% of young adults. About 28% of high school seniors have tried it. Far fewer people use PCP or LSD, the next most popular hallucinogens.

The third most frequently abused drugs are found in the stimulant class. Cocaine and "crack" have become a national epidemic as this drug is extremely addictive when smoked. About 22 million Americans are estimated to have tried it, and perhaps 5 million use it regularly. Amphetamines have a similar action but are

longer lasting. The two types dextro and methamphetamine are probably as powerful as cocaine although freebasing cocaine is probably more potent than injecting amphetamine (it takes less time for something smoked to get to the brain). Ritalin and Preludin are stimulants of mid-level strength. Mild stimulants like coffee and cigarettes also can generate compulsive use patterns. Cigarettes in particular have been found to be strongly addictive and related to serious health problems. If we add these more mild stimulants into the category of drugs of abuse, then stimulants would be the most abused substances. Cigarettes alone account for over 300,000 deaths a year.

A much smaller group of users prefer the narcotic analgesics. The word "analgesic" means pain killer. These are opiates like heroin and morphine, and a variety of synthetic narcotics. About one half million Americans use narcotics illegally.

An even smaller group, usually young persons, use volatile solvents or inhalants. These are substances like glue which contains toluene, lacquer thinner, amyl and butyl nitrate, and canned sprays. Overdose deaths are common because users put their heads in bags full of these substance and breath the toxic fumes. Fortunately, drug abusers usually seek this method of getting high usually as a last resort, as it is a true intoxication, that is a poisoning. Brain damage from excessive inhalation of fumes can easily result.

Most of the other drugs comprise only a small portion of the available illicit drugs. Anesthetics like ether and nitrous oxide are psychoactive because they alter consciousness and relieve pain. Their abuse potential is low because they do not produce euphoria.

For that same reason, the lack of a "high" is why the Clinical Antidepressants, drugs like Sinequan and Elavil, are not widely abused. These drugs elevate mood to a normal state but usually do not produce a "high." Some illicit users do report the availability of "street Elavil."

Major tranquilizers, drugs like Thorazine, Mellaril, and Haldol, also have had a low abuse potential. These drugs do produce sedation, but again there generally is no feeling of euphoria associated with use. Many people have a negative association to the mention of psychotropics.

IMPORTANT TERMS

Placebo Effect

When one takes something that they expect to work, it will work. This phenomenon is known as the "placebo effect." In years past, sugar pills had amazing effects on some patients, producing favorable results. The sugar pill effect may be a form of self-hypnosis where a person believes something so strongly that they produce an effect mentally, simply due to expectations.

Potentiation

Drugs in the same category or class (except alcohol and sedatives) usually have an additive effect. A valium and a librium add together their sedation to produce a higher level of sedation. A drink of wine and a can of beer will yield the combined effect of the alcohol on a person's system. This additive effect is known as potentiation, and most similar drugs potentiate one another.

Synergism

Some drugs produce dangerously strong combinations. They multiply in strength or produce new effects when combined. It is dangerous to use sedatives like Valium in combination with alcohol, because one drug "boosts" the effect of the other, but by a different process. The effect is greater than additive, it is a "multiplier effect." For example, MAO inhibitors (sometimes used as anti-depressants) may make stimulating drugs quite dangerous. Synergism is a more stronger interaction effect than potentiation. Alcohol and barbiturates multiply the effect one drug has on the other when these drugs are taken together.

Antagonism

Some drugs cancel or subtract the effects of other drugs. Most people believe that giving coffee to someone who is drunk will help them recover from the effects of alcohol. Caffeine may be a partial antagonist to alcohol, by helping stimulate a brain that is sedated by alcohol. However, the effects of alcohol are still present, such as poor coordination and impulsivity. Another example of antagonism is the use of major tranquilizers (e.g. Thorazine) to calm a bad reaction to a hallucinogen. The only true antagonists are those that have been developed to help narcotic overdose victims. Naltrexone and naloxone are drugs that almost completely neutralize the effect of narcotics. They are available at most emergency rooms, and have saved many lives.

Tolerance

As mentioned earlier, tolerance is defined as the effective dosage level in a given individual. Some people are born with a higher tolerance level than other people. Others develop a high tolerance level as they continue to use drugs.

Cross Tolerance

An alcoholic may require more pills to sedate him and more pain pills to eliminate pain. This is true because there is a corresponding rise in tolerance to other drugs which are not used because of the tolerance developed to a similarly acting drug. Cross tolerance usually develops to drugs within the same class. Heroin users also have a higher appetite for demerol and dilaudid and will need more if they are injured to reduce pain.

Cross Dependence

Cross dependence refers to the ability of a drug to be substituted for another, even though that drug has never been used before by the addict. For example, Valium, Librium or Xanax is used to detoxify alcoholics, even though they may never had these drugs, because they are cross dependent on them because of their alcohol abuse. These minor tranquilizers will serve the same purpose as alcohol would have. They satisfy the craving and ease withdrawal.

Use and Abuse

To some degree these terms are judgmental, and different people have different ideas of what they mean. Many people consider the use of any illegal drug as abuse. There are good reasons for this, as indulging in an illegal drug places a person at risk for arrest, and also means that the person is associating with criminals. However, even drugs legally obtained can be abused. For the purposes of this manual, abuse will be defined as use that is detrimental to the health or well-being of an individual, his associates, family, and work. Drugs can be abused by taking excessive doses, by a pattern of taking it too often, or by provoking damaging behavior. In general, a person knows if a drug has helped or been neutral in their life (use) or hurt their life (abuse).

A Simplified Model of How Drugs Affect the Brain

The workings of our brain can be described using an automobile as a simplified model. This is a very rough model, but may help some to visualize or understand how drugs affect the brain.

An automobile has a number of systems necessary to work together so that it can function correctly.

(1) The engine needs gasoline for the motivation or "go-power".

(2) The car needs brakes to slow it down.

(3) The car needs a clean windshield to have information brought in, such as how the road curves, or whether a light is green or red.

(4) The car needs to steer to go in the correct direction, and to avoid problems.

(5) The car needs shock absorbers to reduce reactions to bumps in the road.

In a similar manner, the brain needs equivalent systems in order to function correctly. Normally, the brain is homeostatic (self-regulating) and so all systems mesh together. Drugs can upset this balance.

(1) Equivalent to gasoline, motivation for the brain is arousal chemicals. The body is motivated for action by adrenaline. The brain is motivated for action by this and a related chemical called noradrenaline. Cocaine and amphetamines, and caffeine to a lesser degree, flood the brain with this "gasoline", making the engine race. Normally the brain will respond to a stressful situation by becoming aroused. After the stressor is removed or dealt with, the brain can "take the foot off the gas" and slow the engine, but with stimulant drugs in the system, the "gas pedal is held to the floor" and the person cannot relax. Sometimes this "speeding" is enjoyable, but it does wear out the engine. In an attempt to maintain homeostasis, the brain will use its "brakes" (the serotonin system described below), and the "brake pads" will tend to wear out. This "wearing out of brake pads" can become a permanent condition if stimulants are abused.

Depressant drugs such as alcohol, barbiturates, and to a lesser degree tranquilizers and marijuana, tend to choke off the "gasoline" supply, reducing mental power and alertness. Used in small amounts, it simply slows down the "engine" and reduces anxiety, but in high enough doses the "engine" will die. Alcohol and other sedatives will cause death if an overdose occurs.

(2) Equivalent to brakes, the brain system using the inhibitory neurotransmitter serotonin tends to slow down thoughts and reduce awareness. Serotonin is necessary for sleep and for relaxation. Damage to this system can be compared to "brake pads" wearing out or malfunctioning. LSD, mescaline, psilocybin, and to a lesser degree marijuana, tend to temporarily disable our "brakes" as if oil were put on the brake pads. When that occurs our normal "slowing down" of awareness of thoughts and perception is reduced. This results in an increase in conscious awareness and a feeling that things are novel and interesting. Some find this pleasurable, but others become fearful when they find it difficult to control a flood of perception. Fortunately, these hallucinogenic drugs have only a temporary effect. However, sometimes stimulant drugs "wear out the brake pads" and so ability to relax and sleep is impaired for longer times. Without our "brakes", paranoid thoughts can run wild.

(3) Equivalent to obtaining information about the road conditions through a clean windshield, our brain needs to take in accurate information. This is very complicated, but information exchange can in general be said to use the brain chemical called acetylcholine. This information chemical is disrupted by many drugs, especially general anesthetics such as ether, nitrous oxide, alcohol and PCP. PCP and other anesthetics produce a "numbness" and diminished awareness. Through a "dirty windshield" the brain tries to guess at the correct information, and so one's imagination is used to compensate for the missing or scrambled information. PCP use can result in not only diminished awareness but actual hallucinations. If a driver cannot know what the road is like accurately, the car will go wild and crash.

(4) Equivalent to steering, the brain has an emotional system to choose what is good (pleasurable) or bad (disliked). The person "steers" toward what is liked and avoids what is disliked. The brain's reward (pleasure) chemical is called dopamine. Normally a person keeps things in balance and makes accurate judgements. Drugs such as cocaine and amphetamines tend to overwhelm the pleasure system and to focus awareness in a compulsive manner on only part of the whole picture. For example people who are on amphetamines or cocaine may do one thing repetitiously for hours. This inability to choose among the whole range of possibilities can be described as one's "steering wheel getting locked" in one direction. That direction is toward compulsiveness and irritability over a short time, and toward paranoia at higher doses or if stimulant drugs are abused over a longer time.

(5) Equivalent to shock absorbers helping one to ignore bumps in the road, the brain has a system to ignore pains. New pains are focused on, but after a while it is better to ignore pains if there is nothing one can do to avoid it. Our natural chemical called endorphin helps to ignore distracting pain. Narcotics, such as morphine and heroin, act like endorphins and "smooth out the bumps" and let a person drift along without worrying or feeling any pain. This is pleasurable, but as with any imbalance, one must pay sooner or later. The body quickly becomes adapted to the higher level of pain killing chemicals, stops producing natural endorphins, and the person becomes physically addicted. That means that if the heroin supply is cut off, the body is aware of many aches and pains ordinarily ignored or kept in control. The body has gotten used to the "extra shock absorber" and relied on it instead of the natural system. It takes several days before the natural level of endorphins gets back to normal, and during this withdrawal period the body is overly sensitive to the normal bumps in the road of life. This period of time without endorphins accounts for the withdrawal period following habitual heroin use.

This all shows that like a car, our brain has a number of necessary systems that normally remain in balance, or homeostasis. Small changes to any one system will be corrected by other systems. However, large changes can go beyond the limit of being corrected, and a car or a person will get into major trouble. At that time an "overhaul" may be necessary, and outside help such as a mechanic or a drug program will be needed to restore the normal balance.

The Division of the Brain into Old and New Systems

The brain can be divided into several cooperating systems. The spinal cord sends information to and from the body. The "old brain" is shared by all higher animals, even fish and reptiles. First, there is an area which maintains basic functions such as breathing and arousal level. If this part is overly sedated, breathing stops. The next part of the "old brain" controls emotions, which can be thought of as motivations to approach or avoid things in the environment. For example, the "old brain" will look for food when hungry. Our basic impulses can be said to come from our "old brain."

Humans have a "new brain", the cortex, which normally controls the more primitive parts of the brain. The new brain is able to think in words as well as with feelings and images, and is what makes humans different from other animals.

This logical part (the cortex) has the job of saying "no" to the impulses and desires of our old brain, as people learn to wait for appropriate times to satisfy desires. For example, a person sees a candy bar in a store. The old brain might feel hungry and desire to grab and eat the candy bar, but the logical new brain will tell the old brain to wait and buy the candy bar before eating it. The new brain knows that there would be negative consequences for impulsively eating the candy. One of the problems with alcohol and other sedatives is that the new brain becomes less efficient than usual, and people will act emotionally and impulsively, without thinking first about the consequences. For this reason many fights involve alcohol.

This division into old and new brains is of course over-simplified, but has been found to be a very useful concept in education. This concept can be demonstrated using your hands. One hand is balled into a fist, and represents the old brain and its impulses. The new brain is represented by covering your fist with your other hand. By pushing back and forth the concept of primitive impulses from the old brain, and rational control by the new brain, can be demonstrated by body language while talking. Removing the covering hand demonstrates the disinhibiting effects of alcohol and other sedatives. More will be said about this concept in the Alcohol chapter.

Neurotransmitter Systems

I. Arousal - The ascending reticular activating system (the core of the old brain) controls overall arousal level. It is essential for alertness, concentration and motivation. Major neurotransmitter for the arousal system: noradrenaline.

A. Noradrenaline is made by our bodies from the amino acid "tyrosine" which is found in high concentrations in meat and dairy products.

B. Amphetamines and cocaine stimulate this system by preventing the re-uptake of noradrenaline back into the sending neuron. This "loose" noradrenaline continues to stimulate the receiving neurons, producing excitement. However, the loose noradrenaline is destroyed by enzymes, and is then not available.

C. Barbiturates, alcohol, other sedatives, and narcotics will decrease effectiveness of the arousal system.

D. Marijuana appears to decrease (to a mild degree) the release of noradrenaline, which may account for the "amotivational syndrome" and attentional problems while "stoned".

II. Sensory inhibition system - awareness of sensation, perception, and thoughts are controlled or filtered by this system, which usually works in balance with the arousal system to focus attention. Sleep is not possible without activity in the inhibitory system. The major neurotransmitter is serotonin (5-hydroxy-tryptamine).

A. Serotonin is made by our bodies from the amino acid "tryptophan" which is sometimes used as a vitamin supplement, and is found in many foods, especially bananas and milk.

B. LSD and other serotonergic hallucinogens (psilocybin, mescaline, DMT) decrease the functioning of this filtering system, thus preventing sleep and expanding awareness of perceptions ordinarily inhibited. It appears that these chemicals either fit into the "receptor sites" for serotonin but do not stimulate the receiving neuron, or they decrease the creation of this inhibitory neurotransmitter.

C. Marijuana also decreases the effectiveness of the serotonin system, increasing awareness of bodily sensation. It probably does so by reducing the amount of serotonin released from the "synaptic vesicles" when the brain cell fires. Marijuana appears to first affect the serotonin system producing the "hallucinogenic" increase in sensory awareness, then the noradrenaline system is affected, causing relaxation and even laziness.

III. Limbic system - this is the midbrain emotion control center, and helps produce happiness, sadness, fear, and anger. Major neurotransmitters: dopamine, norepinephrine and GABA. Dopamine appears to be the reward or pleasure neurotransmitter, and motivates the initiation or repetition of thoughts or behaviors. A lack of dopamine results in apathy, depression and Parkinson's disease (tremors and inability to initiate movement). Too much activity in the dopamine system is associated with schizophrenia, especially of the paranoid type. Noradrenaline appears to the main chemical involved in arousal, fear, anxiety and avoidance behavior. GABA (gamma amino butyric acid) appears to calm neurons.

A. Minor tranquilizers (Valium, Librium) appear to make nerves more sensitive to the calming effect of GABA. However, the nerves become habituated to this artificial calming and so withdrawal may lead to seizures.

B. Major tranquilizers (Thorazine, Haldol, etc.) decrease the strength of the dopamine system, preventing thoughts that are "wild" or self-reinforcing.

C. Cocaine is the only drug that appears to directly stimulate the dopamine (reward or pleasure) system, producing pleasure directly. Cocaine and amphetamines both stimulate the noradrenaline system. These stimulating effects are due to preventing the normal re-uptake of these neurotransmitters back into the sending cell, continuing the stimulation but also allowing the body's enzymes to destroy the natural supply of these neurotransmitters. The result of a "run" on cocaine or amphetamines is to drain the body of these chemicals, leading to exhaustion, and even clinical depression.

D. Amphetamines are like cocaine, but are longer lasting and have most of their effect on the noradrenaline system, producing more nervous arousal than euphoria. Lengthy periods of stress may damage the body's ability to relax.

IV. The major system for transferring information involves the neurotransmitter acetylcholine. Our bodies make this from the amino acid "choline". The nerves that control our muscles use this chemical, and most of the brain information transmitted appears to use acetylcholine.

A. Anesthetics decrease the effectiveness of acetylcholine, and depressant/sedatives such as alcohol have this same effect.

B. PCP (phencyclidine) is called a "cholinergic hallucinogen", because it disrupts awareness and information processing. At low doses it can "disinhibit" and produce excitement in a similar manner as alcohol; at medium doses can produce hallucinations as perceptual ability is reduced and the mind tries to make sense of a disjointed awareness. Pain is absent, and extremely violent behavior sometimes occurs. Because the sense of pain is dulled, users may strain themselves and tear muscles without realizing it. At high doses PCP can produce convulsions and unconsciousness. The confusion of PCP has been part of many violent crimes, and PCP users are unpredictable.

V. Endorphins are our body's natural opiates. They reduce awareness of pain, allowing one to concentrate on adaptive behaviors or on relaxing.

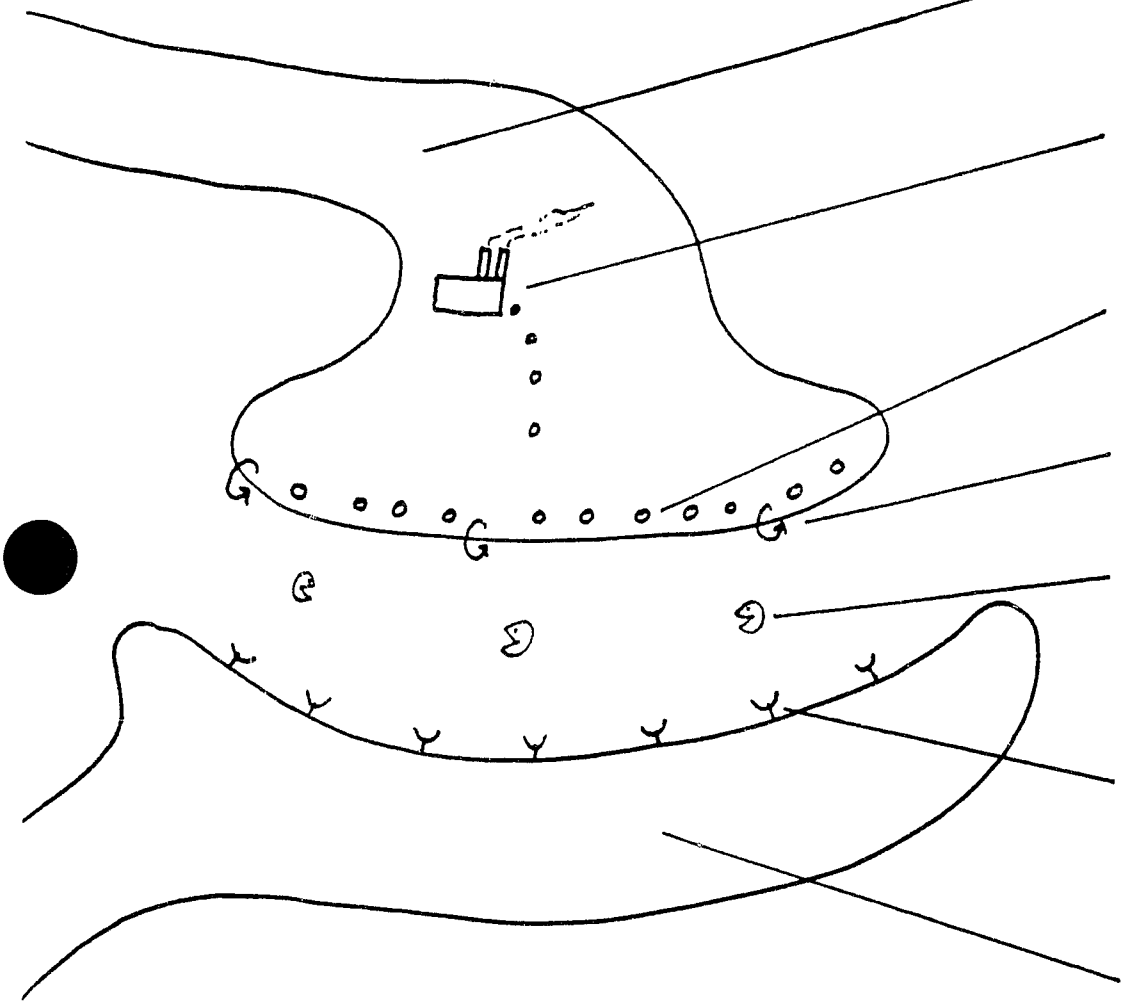
A. Narcotics mimic the endorphins, putting a person in a state where they are dissociated from pain and worries. However, because the body tries to regain its "homeostasis" or balance, more narcotics are required, and the body also stops producing natural endorphins. When narcotics are discontinued, physical addiction is seen as withdrawal symptoms occur until the body again begins to produce its own endorphins.

All of these neurotransmitters have their effect when they are sent from one brain cell to another. Some neurotransmitters excite the receiving cell, some inhibit excitation. The place where one brain cell sends neurotransmitter chemicals to another brain cell is called the synapse. The following drawing illustrates how the synapse works.

MODEL OF SYNAPSE

The connection between brain cells

where information is transmitted from one cell to another



1. Heroin and other narcotics are chemicals which stimulate our opiate receptors, but also shut off our "factories" so that an addict becomes dependent on an artificial supply. Narcotic antagonists occupy opiate receptor sites without causing action.

2. Cocaine and amphetamines de-activate the retrieval pump for the neurotransitters dopamine and noradrenaline. These stimulating neurotransmitters remain in the synapse, continuing to stimulate the receiving cell to an unusual degree. However the "trapped" neurotransmitters are destroyed by enzymes, and the brain runs out of its supply.

3. Hallucinogens such as LSD turn off the production of serotonin, a neurotransmitter that inhibits awareness of unnecessary perceptions and thoughts, as during sleep.

4. THC (marijuana) increases the surface tension of the fatty neurotransmitter vesicles for serotonin and noradrenaline, allowing less to be released when the cell fires.

5. Alcohol and other sedatives make the cells less responsive, so that they cannot fire as easily. Most sedatives also reduce hormone production.

The Effects of Drugs on Driving Skill

Safe driving requires good vision, alertness to traffic and road conditions, quick reactions to unexpected problems, and the ability to make good judgements. Any physical condition that impairs these abilities, or any drug that does so, creates conditions for serious injury or death. A driver will be legally responsible for his or her actions. Being under the influence of any drug is not only an unacceptable excuse, it is also grounds for increased punishment as one is expected to know that driving under the influence of any drug, including alcohol, is dangerous.

Alcohol

Alcohol is the prime offender for unnecessary deaths on the highway. About half of all traffic deaths are alcohol related. Nationwide, about 450 lives are lost each week due to drunk drivers.

There are several important things to know concerning alcohol and driving. The cut-off for being legally drunk in most states is a blood alcohol content of one tenth of one percent. At this level, people are obviously uncoordinated and will usually fail field sobriety tests such as walking a straight line, standing on one leg, and touching the nose with eyes closed. A person who is legally drunk may fall asleep at the wheel, and have double or blurred vision. For a 160 pound man, five drinks in a two-hour period will result in being legally drunk.

If a person has enough alcohol to be halfway to being legally drunk, there is still impairment of driving ability. Studies have shown that even at this blood alcohol level, there is slowed reaction time, variability in lane position, and loss of concentration related to decreased alertness. Alcohol is a depressant, lessening the functioning of all nerves, especially the parts of the brain that make rational judgements. A person under the influence of alcohol is prone to get angry quicker, and to make foolish decisions.

Barbiturates

Phenobarbitol, methaqualone (quaalude) and similar barbiturates can be thought of as "alcohol in pill form". At both low and high medical doses, barbiturates have larger effects on driving skills than alcohol. The combination of alcohol and barbiturates is especially deadly.

Valium, Librium and other minor tranquilizers

Diazepam, the chemical name for Valium, has been shown to decrease driving ability at both low and high doses. The minor tranquilizers, chemically known as benzodiazapines, have less of an overall sedating effect than alcohol or barbiturates, with most of the sedation related to anti-anxiety effects. Although a person feels fairly alert, there is a decrease in reaction time which can be deceptive as it is not felt by the user who is tranquilized. The combination of benzodiazapines and alcohol is quite dangerous, as they sedate in different ways and so the effects of the combination can be stronger than what would be expected from simple addition of the effects. Warnings about operating vehicles or heavy equipment are on the bottles of all sedating medicines and should be taken very seriously.

Narcotics

Although little research has been done regarding heroin, morphine, or other narcotics on driving ability, the warnings about driving that come with this medication certainly make sense as all narcotics have some sedative effects. If a person is "nodding out" or even slightly sleepy, driving would logically be more dangerous than if the person is alert.

Marijuana

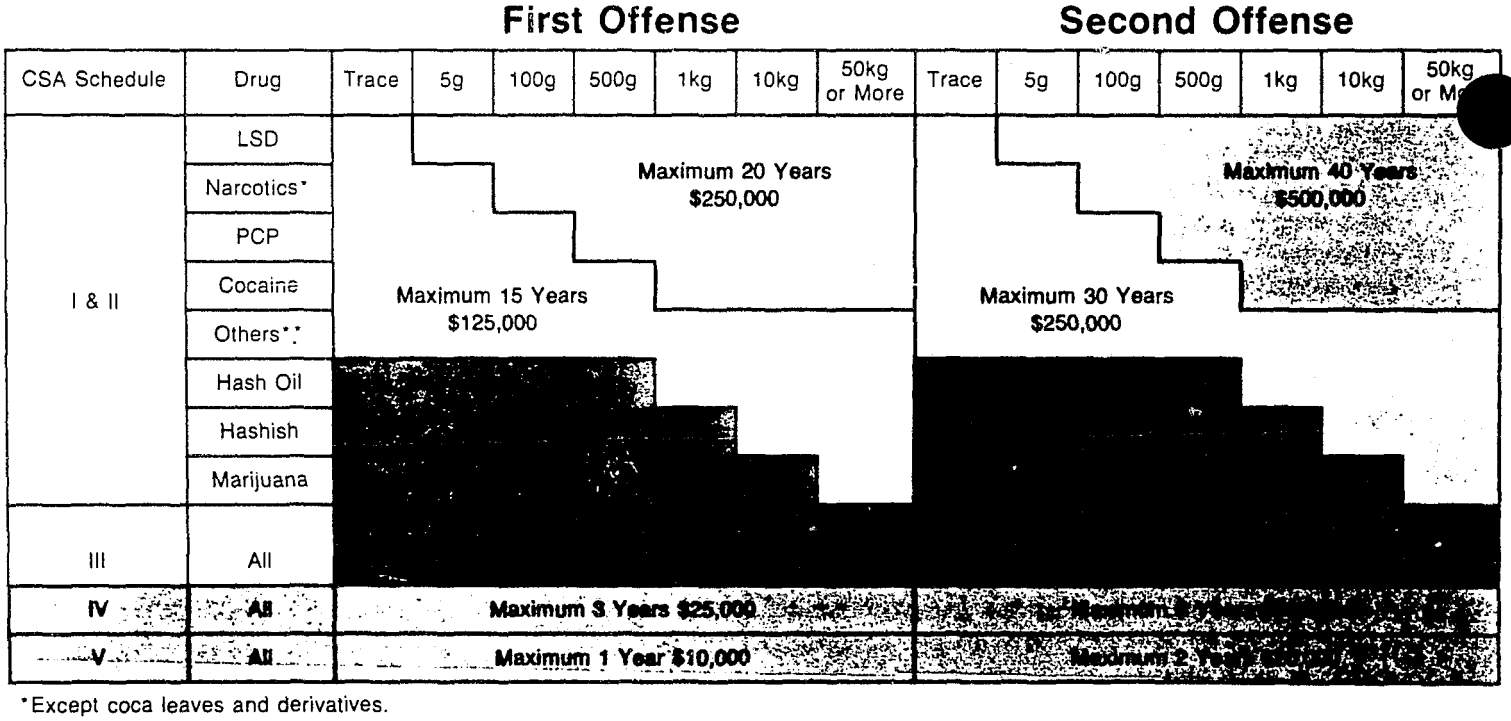
Marijuana has been shown to reduce driving ability, especially at higher doses. A person who smokes two joints of medium grade marijuana shows about half of the driving problems that a person legally drunk on alcohol will show. One joint of marijuana also has an effect on lane position when following curves, and in making correct turnoffs. There appears to be three major problems aggravated by marijuana, that of decreased ability to track a moving object, trouble adjusting to the glare of oncoming headlights, and memory problems which could lead to forgetting where to go and making sudden changes. The effects of marijuana may last several hours after the "high" is gone. It should be noted that in these studies, the marijuana used was relatively low grade, and so a smaller amount of high grade marijuana could produce the same effects on driving ability.

Legal Consequences of Drug Possession or Distribution

During the years 1965 through 1986, over 11 million Americans have been arrested for possession or distribution of drugs. Nearly 7 million of these arrests have been for marijuana. State and Federal laws treat drug distribution as a very serious offense, and the punishments can be severe. This also reflects the general attitude of the non-drug using population, who are very much concerned that drugs are a danger to society and our youth.

The following information, taken with permission from a Drug Enforcement Agency publication, illustrate the criteria by which drugs are classified legally, and the Federal penalties for trafficking.

Federal Trafficking Penalties



*Except coca leaves and derivatives.

**Others—some stimulants, some depressants and some hallucinogens.

Regulatory Requirements

Schedule	Registration	Recordkeeping	Distribution Restrictions	Dispensing Limits	Manufacturing Security	Manufacturing Quotas	Import/Export		Manufacturer/Distributor Reports to DEA	
							Narcotic	Non-Narcotic	Narcotic	Non-Narcotic
I	required	separate	order forms	research use only	vault/ safe	yes	permit	permit	yes	yes
II	required	separate	order forms	Rx: written; no refills	vault/ safe	yes	permit	permit	yes	yes
III	required	readily retrievable	records required	Rx: written or oral; with medical authorization, refills up to 5 in 6 months	secure storage area	NO but some drugs limited by Schedule II	permit	*	**	**
IV	required	readily retrievable	records required	Rx: written or oral; with medical authorization, refills up to 5 in 6 months	secure storage area	NO but some drugs limited by Schedule II	permit	declaration	Manufacturer only	**
V	required	readily retrievable	records required	OTC (Rx drugs limited to M.D.'s order)	secure storage area	NO but some drugs limited by Schedule II	permit	declaration	Manufacturer only	no

* *Permit for some drugs, declaration for others*
** *Manufacturer reports required for specific drugs*

A GENERAL OVERVIEW OF DRUGS AND DRUG ABUSE TERMINOLOGY

OUTLINE

I. PSYCHOACTIVE DRUGS

A. Sedative/Hypnotics or General Depressants

1. Alcohol
2. Minor Tranquilizers
   a. benzodiazapines (valium, librium, ativan, xanax)
   b. Meprobamate (equanil)
3. Barbiturates (most drugs that end in "al")
4. Qualludes
5. Volatile solvents (gasoline, toluene, glue)

B. Narcotic Analgesics

1. Natural opiates (morphine, codeine, thebaine)
2. Semisynthetics (heroin, dilaudid, Percodan)
3. Synthetics (methadone, demerol, LAAM)

C. Stimulants

1. Cocaine
2. Amphetamines (dextro and meth)
3. Stimulants of moderate strength (ritalin and Preludin)
4. Anorectics (diet pills like ephedrine)
5. Coffee, tea, and tobacco

D. Hallucinogens

1. LSD
2. Mescaline
3. Psilocybin
4. PCP (is also an anesthetic)
5. Designer Stimulant/hallucinogens (DOM, MDMA, STP)
6. Cannabis (marijuana, hashish, sinsemilla, hash oil, THC) acts as both a hallucinogen and a tranquilizer

E. Anesthetics

1. Ether
2. Nitrous Oxide

F. Clinical Antidepressants

1. Tri-cyclics (Elavil, Sinequan)
2. MAO Inhibitors (Nardil)

G. Major Tranquilizers or Psychotropics

1. Thorazine
2. Haldol
3. Mellaril

II. IMPORTANT TERMS

A. Drug Interaction

1. potentiation (additive effect)
   a. Cocaine and heroin
2. Synergism (Multiplicative effect)
   a. Valium and alcohol
3. Antagonism (subtractive effect)
   a. Naltrexone and narcotics

B. Terminology

1. Placebo Effect
2. Tolerance
3. Cross Tolerance
4. Cross Dependance

III. Car Model of Brain Function

A. "Gasoline" as motivation power

1. Stimulants "push gas pedel to floor"
2. Sedatives "choke off gas supply"

B. "Brake Pads" to slow thoughts

1. Hallucinogens "oil the brake pads"
2. Stimulants can permantly damage the "brake pads"

C. "Clean Windshield" for accurate information

1. Sedatives and anesthetics (PCP) cloud "windshield"

D. "Steering Wheel" toward likes, avoid dislikes

1. cocaine and amphetamines "lock steering wheel", produce repetitious behavior

E. "Shock Absorbers" to reduce "life's bumps"

1. narcotics mimic natural endorphins
2. physical addiction due to body stopping production of endorphins

IV. Neurotransmitters

A. Arousal system

1. maintains proper level of alertness for task
2. uses noradrenaline as neurotransmitter
3. cocaine and amphetamines block re-uptake, producing increased stimulation but depleting neurotransmitters
4. sedatives reduce arousal level

B. Sensory inhibition system

1. reduces awareness of unimportant perceptions
2. is necessary for sleep
3. uses serotonin as neurotransmitter
4. LSD and other serotonergic hallucinogens reduces effectiveness of this system, thereby increasing conscious awareness
5. THC has a similar but much milder effect

C. Limbic (emotional) system

1. reward system uses dopamine as neurotransmitter
2. fear is stimulated by noradrenaline
3. relaxation after stress uses GABA
4. cocaine and amphetamines stimulate dopamine and noradrenaline systems, deplete supply of these neurotransmitters
6. benzodiazepines (valium) enhances GABA, physical changes produce dependency, withdrawal

D. Information processing system

1. uses acetylcholine as neurotransmitter
2. anesthetics and PCP will disrupt this system

E. Pain system

1. pain alerts the body to deal with damage
2. pain can be ignored using natural endorphins
3. narcotics mimic natural endorphins, suppress emotional reaction to pain, body stops producing endorphins and person is dependent upon artificial supply

F. Synapse as place where neurotransmitters work

1. "factory" makes neurotransmitters, has limited capacity
2. most neurotransmitters are stored in vesicles (bubbles) until used
3. when a brain cell "fires," neurotransmitter is released to receiving brain cell, will stimulate receptor sites and the receiving brain cell
4. extra neurotransmitter is retrieved for further use
5. enzymes destroy extra neurotransmitter
6. psychoactive drugs have their effect at synapse
   a. heroin and other narcotics mimic endorphins, but also shut off cellular "factories" where endorphins are produced, the addict is dependent upon artificial supply
   b. cocaine and amphetamines prevent re-uptake of dopamine and noradrenaline, increasing stimulation of receiving brain cells, but also allowing enzymes to destroy neurotransmitters
   c. hallucinogens such as LSD temporarily shut off supply of serotonin, our awareness-dulling neurotransmitter
   d. THC increases surface tension of fatty neurotransmitter vesicles for serotonin and noradrenaline, allowing less to be released when cell fires
   e. alcohol and other sedatives prevent brain cells from firing as easily

V. Drugs and Driving

A. Responsibility to drive carefully

B. Alcohol as leading cause of accidents

C. Effects of other drugs

IV. Legal Consequences

A. Over 11 million drug arrests between '65 and '86

B. 7 million of these for marijuana

C. Penalties for possession and distribution

CHAPTER IV

ALCOHOL AND OTHER SEDATIVES

ALCOHOL AND OTHER SEDATIVES

TITLE:

Alcohol and Other Sedatives

PURPOSE:

To present the effects of alcohol and other sedatives on the physical, psychological, and social well being on persons who use these substances.

OBJECTIVES:

To identify at least three physical problems that can develop with the use of alcohol and other sedatives.

To state three areas of psychological functioning that are affected by alcohol and other sedatives.

To be able to explain the family disease concept.

To understand the legal implications relating to the use and abuse of alcohol and other sedatives.

TIME FRAME:

Overview/Statistics	15 minutes
Physical Effects	60 minutes
Psychological Effects	30 minutes
Family Disease Concept	15 minutes
Legal Responses	10 minutes

EXERCISES/TEACHING TOOLS

Two different size glasses/jars of water can be used to illustrate why larger people can often times drink more. One drop of food coloring in the big jar won't color the water as much as one drop in the small jar. The drops show how one drink is dispersed through the blood system. Blood-Alcohol content (BAC) therefore takes into account body size.

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Chapter 4 Sample Questions

1._____Methanol (wood alcohol) is drinkable alcohol.

2._____Ethanol, used as a gasoline additive, is drinkable alcohol.

3._____Most Alcohol is eliminated through the kidneys.

4._____Alcohol is a waste product, or excretion, of yeast.

5._____Alcohol is a liquid and therefore very low in calories.

6._____Sedatives and alcohol can safely be used together since one drug has no effect on the other.

7._____Withdrawal from alcohol is more dangerous than withdrawal from heroin.

8._____One beer has less alcohol than a shot of whiskey.

9._____Cirrhosis is usually reversible once drinking stops.

10._____Over half of all murders involve the use of alcohol.

What would you say about a disease
A disease that takes thousands of lives each year
Causes more deaths in youth
Costs billions of dollars a year to treat
Results in billions of dollars in lost productivity
Splits more families
Ruins more marriages
Kills more police than anything else,
and there is treatment available which most persons
afflicted fail to use?

ALCOHOL

OVERVIEW

History and Origin

Alcohol has been known to man for over 5000 years. An ancient Egyptian papyrus (writing) describes the operation of a brewery where wine was probably made in 3500 B. C. Fermentation or rotting, is a natural process. Partially rotted berries could have been eaten by animals who were observed by man as intoxicated, or man could have eaten these partially rotted berries/grapes, directly experiencing the effects of alcohol. Over 4000 years ago, wine was taxed as a source of income for the government, on the Greek island of Crete. Plato, an ancient philosopher, warned about the effects of alcohol, and suggested that youths not be allowed to drink.

Confucius, a Chinese philosopher also warned about the effect of alcohol around 500 A.D. There had been several laws passed and repealed making alcohol legal, then illegal in China. In most of the world other than Moslem countries, alcohol has become an accepted and legal intoxicant. The European culture brought alcohol to the Americas.

Several laws were passed in early Virginia settlements making the first offense for public drunkenness punishable by a private "tongue lashing" by a minister, second offense was a public admonishment, and third offense resulted in a fine and having to "lie in halter" for 12 hours. There was no treatment for alcoholism. Later, alcoholics were placed in Sanitariums along with mental patients.

The prohibitionist movements have a fairly long history in this country. In 1853, Mrs. Margaret Freelander of Syracuse, New York, developed a famous prohibitionist tactic by entering a saloon and breaking up the bottles of alcohol with a wooden staff. In 1862, a Federal Tax was levied on alcohol making it an important source of government income in view of the tremendous financial need of the Country because of the Civil War.

By 1880, eight states had prohibited the use of alcohol. Alcohol again became legal in most of these states by 1904. In the later part of the 1900's, opium and morphine were seen as legitimate treatments for alcoholism. In 1914, the Harrison Act prohibited physicians from treating addictions by using narcotics. In 1919, the 18th Amendment to the Constitution took effect, making the sale of alcohol illegal. In New York city, and other cities, it became popular to smoke marijuana, since drinking was illegal. By 1930, there were around 500 "Tea Pads" where a person could smoke all the marijuana they wanted for about a quarter.

Alcohol remained fairly available all during prohibition, because a sizable minority of the population were willing to break the law. Some people made alcohol at home, while most did their drinking at fashionable private clubs called "speakeasies." In many areas of the country there was little enforcement, or strong demand, and organized crime flourished. Battles between criminal organizations, and between them and police were common. Prohibition was said to be, in part, an attempt by the religiously oriented country people to control the wayward ways of city people.

Eventually, a political alliance developed including people who wanted to drink, and people who saw prohibition as causing more problems than drinking itself. They elected representatives who had pledged to abolish prohibition, and a majority consensus formed. On December 5, 1933, prohibition officially ended, returning the power to restrict alcohol consumption to each State. Two years later, in 1935, the first Alcoholics Anonymous (AA) group met in Akron, Ohio, organized by two "hopeless drunks," a physician and a business man. AA was essentially the only treatment program for alcoholism for many years. The professional community viewed alcoholism as a weakness of character while AA advocated that this addiction was a curable disease. The AA philosophy (twelve steps) has slowly gained respectability and has become the basis of many private treatment programs today. The acceptance of ones powerlessness over alcohol, a spiritual awakening, and self-disclosure in a non-threatening setting are the bases for this treatment.

Basic Facts and Composition

Alcohol is actually a poison or toxin. It comes from the action of yeast on starch or sugar. Yeast eat this starch and sugar and produce alcohol as a waste product. When the alcohol content of a fermenting liquid reaches 14%, the yeast die in the toxic environment, their own waste. Alcohol cannot be found in greater concentrations than 14% in nature. In order to get stronger concentrations of alcohol, man creatively invented distillation. Alcohol evaporates at a lower temperature than water so it can be separated from the liquid through a heating and condensing process.

Blood Alcohol Content

Drinking a can of beer, cup of wine, or shot of hard liquor will surprisingly result in the same amount of alcohol in your blood (Blood-Alcohol content). Let's see:

12 oz. can of beer	4 oz. cup of wine	1 oz. shot of liquor
4% alcohol	12% alcohol	48% alcohol (96 proof)
.48 oz. alcohol	.48 oz. alcohol	.48 oz. of alcohol

A can of beer, cup of wine, or shot of hard liquor all contain about one half of a fluid ounce of pure alcohol. It takes your liver an hour to change this one drink into acetaldehyde, then acetic acid, then finally into carbon dioxide and water. Your liver gets rid of 95% of the alcohol through this breakdown. Sweating, breathing, and urinating get rid of only 5%. You cannot get rid of most alcohol unless it first passes through your liver, as most drugs do. The reason you urinate so much after heavy drinking is the "diuretic" effect of alcohol. The alcohol stimulates the brain to stimulate the kidneys to eliminate fluids through the urine.

If more than one drink is consumed per hour, that drink has to stay in a holding pattern, until the liver has been able to get free again. The added alcohol is called your Blood-Alcohol Content or BAC for short.

Examples of drinks and Blood-Alcohol Content level in a 160 pound male for the first hour of drinking:

1 drink = .02% BAC
2 drinks = .04
3 drinks = .06
4 drinks = .08
5 drinks = .10 You are now legally drunk in most States.

Ten drinks result in one being legally drunk for six hours.

Legal intoxication could also be reached by steady drinking. For example, since the liver can only metabolize between one and two drinks per hour, drinking two or more alcoholic beverages per hour will allow alcohol to accumulate, eventually resulting in legal intoxication.

Women will generally have a higher BAC, all things being equal, because women have proportionately more fat but less water then men of the same weight. Alcohol will mix with the bodies's water and since women have less water the concentration of alcohol in their blood will be higher. Women will also have an even higher BAC level during menstruation, as possibly even less water is available for the alcohol to mix.

Many people smoke while they drink. Nicotine is a stimulant that, like other stimulants, acts as a vasoconstrictor or an agent that narrows your blood vessels so less blood can get through. One possibility for why so many drinkers like to smoke while drinking is to even out the "high" by delaying the transfer of alcohol from their stomach and intestines to their blood because of this narrowing of the vessels. Another possibility may be that the mild stimulation of alcohol keeps them more awake. Whatever the reason, many drinkers report that they enjoy alcohol more when they smoke.

Individual differences also play a role. Why one person can drink so much and another can't may be due to family history or to one's physical makeup. Critical enzymes which help break alcohol down may be less available in some people than in others. Whether learned, cultural, or genetic these differences in alcohol tolerance are real, as are those that seem to have more of an addictive personality as discussed in an earlier chapter.

BASIC FACTS AND STATISTICS

About 70% of our adult population drinks alcohol. It is estimated that 1 of 7 drinkers are problem drinkers. This amounts to about 18 million persons afflicted with alcohol abuse. This group of problem drinkers consumes half of all the alcohol sold. Half of all men and about a third of all women are moderate to heavy drinkers. The abuse of alcohol does have a significant impact on our society. Alcohol is linked to over 100,000 deaths a year as compared to 5,000 deaths a year due to illegal drugs. For example, alcohol is involved in:

70% of all homicides
65% of all suicide attempts
35% of all suicides
50% of all fatal car accidents
45% of all fatal motorcycle accidents
40% of all fatal industrial accidents
52% of all fires
80% of all deaths due to fire
60% of all drownings
50% of all spinal cord injuries

This amounts to about 170 deaths per day, excluding those that die of diseases associated with alcoholism.

Additionally, alcohol is the number one killer of youth because of car accidents caused under the influence of alcohol. Most police that are killed are assaulted during a family argument, or spouse abuse incident in which one or both of the family members are intoxicated.

Does alcohol pay for this damage? In terms of human life, never.

In terms of dollars, a 1975 study indicated:

	Costs of Alcohol in Billions of Dollars	
Lost Production	19.64	
Health and Medical Costs	12.74	
Motor-Vehicle Accidents	5.15	
Violent Crime	2.86	
Social Responses (Treatment)	1.94	
Fire Losses	0.43	
	42.75	billion
Profit from alcohol tax revenue	- 10.00	billion
Society's loss because of alcohol:	32.75	billion

From: Kinney, J. and Leaton, G. Eds. Loosening the Grip: A Handbook of Alcohol Education. St. Louis: C.V. Mosby Company, 1983.

This 1975 study shows that alcohol abuse, in addition to the loss of human life, accounts for a net loss to society of $32.75 billion dollars.

In 1981, the Research Triangle Institute published a study on the economic costs to society of alcohol. Their report indicates that this figure was over $100 billion dollars a year surpassing the 1975 estimate mentioned above.

In 1986, this dollar loss was undoubtedly higher. A more recent study places the dollar value of lost production alone at $30.8 billion dollars. This same study indicates that as many as 40% of industrial accidents are alcohol related, and that problem drinkers have 3.8 times as many sick days as non alcoholics.

Alcohol abuse is also responsible for 22,300 highway deaths each year which is actually over half of our highway death toll. The driver who drinks tends to have:

Twice as many car accidents involving other operators or property
Twelve time the number of fatal crashes
Five times the number of accidents where someone is injured
Twice the number of traffic tickets
Three times the number of license suspensions

Drinking and driving is one of the principal reasons that the life expectancy of 15 to 24 year olds has not changed while for other age groups there has been an increase in the average number of years that one expects to live.

PHYSICAL EFFECTS

Effective Dose to Lethal Dose level

The lethal blood alcohol level is approximately .4% for those who have not developed tolerance, and about .6% for those who have developed a tolerance. Assuming that the legal definition of .1% is used as the effective dose level, this makes the effective dose to lethal dose level approximately one to four, about the same as for heroin. There are approximately 1000 cases per year of death due to poisoning by alcohol. A recent example was of a teenage girl who consumed one fifth of vodka, went into a coma, and died. Chronic alcoholics tend to maintain a .2% blood alcohol level. Judging from this, you could say that alcoholics prefer to remain one third of the way toward death.

Digestive System

Alcohol is an irritant. Most people don't realize that pure alcohol (200 proof) or "ethanol" is a fuel additive that helps boost the octane of gasoline. Pure alcohol is used to run race cars and can be used instead of gasoline as a fuel to burn. No wonder alcohol irritates the digestive system. It is a solvent and can irritate any tissue that it comes in contact with.

To begin with, the tissues of the esophagus (tube to your stomach), stomach and small intestines can be reddened or even opened so that bleeding occurs. This painful internal reddening and bleeding of the esophagus is called esophagitis, while in the stomach this condition is known as gastritis. Since alcohol stimulates the production of hydrochloric acid (a digestive juice) in the stomach, ulcers can appear. Ulcers are holes that appear when the stomach digests itself. The pain from these holes can be masked by the alcohol, which has anesthetic properties (remember the old cowboy movies where they used a stiff drink to deaden pain?). Fairly large veins and arteries are located around the stomach area to help absorb nutrients from food into the blood stream. When there is no pain from these ulcers and drinking continues, the alcohol along with the hydrochloric acid burn deeper holes often cutting open veins or arteries. The effect is similar to being stabbed in the stomach. You eventually die, often times suddenly, from internal bleeding.

Another digestive tract disease that occurs more frequently in drinkers is cancer of the digestive tract. These cancers, which are grayish-white in appearance, often go undetected. One type of cancer causes a blockage in the esophagus, producing painful swallowing and heartburn. At this late stage, the cancer might not be operable and hence fatal. Cancer of the mouth and stomach are also more common in alcohol abusers. These cancers can be just as serious if not detected early enough.

Other digestive organs are also vulnerable. Acute pancreatitis, an often times fatal disease occurs when because of alcohol, the pancreas, an organ that secretes digestive juices into the stomach, becomes inflamed. Alcoholic hepatitis where the liver becomes inflamed can also be fatal, but more frequently precedes alcoholic cirrhosis, where liver cells die and are replaced by scar tissue. Cirrhosis is not reversible. A fatty liver caused by excessive amounts of fat stored in the liver cells also can precede cirrhosis. Cirrhosis is usually fatal even if drinking stops. Eventually the brain is poisoned by waste in the blood that the liver cannot remove. Cancer of the liver can also eventually develop because of cirrhosis.

Effects on the Cardiovascular System

These diseases of the heart and circulatory system are less common but potentially as serious as the previously mentioned digestive diseases. Alcohol cardiomyopathy in which the heart enlarges and weakens can result from long term alcohol ingestion. Beri-beri heart disease and cardiac arrhythmias caused by alcohol can result in heart failure and death. Elevations in blood fat levels and blood pressure are also associated with heavy drinking.

Alcoholics have less immunity against disease because of alcohol's toxic effects on the white cells (disease fighting cells) of the body. Alcohol abusers bruise easily and heal at a slower rate because of alcohol's effect of reducing the blood platelet level.

Effects on the Reproductive System

Alcohol, like many drugs, is viewed by some as a sexual stimulant. This is true only if it serves to relax or disinhibit the user since anxiety is a principal cause of sexual dysfunction. Like most drugs, however, the sex drive eventually diminishes as alcohol causes an imbalance in our sex hormones.

Alcohol affects the levels of sex hormones present in men and women. Men may become more "effeminate" as the male sex hormone testosterone, drops. Testicles might shrink, hair might thin, and sex drive diminishes. In women, the menstrual cycle is disturbed, often resulting in skipped periods and infertility.

Fetal Alcohol Syndrome

Even unborn babies are effected as evidenced from malformations present at birth. As little as two drinks a day can increase the risk of the Fetal Alcohol Syndrome (FAS). This syndrome which is one of the leading causes of mental retardation actually results in a deformed appearance in infants. Infants are described as having small heads, narrow eye slits, underdeveloped facial features, low set ears, and in some cases, hair on the face at birth. The hands may have unusual creases in the palms, fingers might be joined together, or unusual bending of the fingers might be present. Heart valve defects can occur as well as damage to the infant's brain which results in an average I.Q. of 64 compared to an I.Q. of 100 in normal infants. The risk of having an FAS child increases as the amount of alcohol consumed increases. There is about a 10% risk (1 out of 10) of having a FAS baby when the mother has 2 or more drinks a day during pregnancy. This increases to a 50% chance (5 out of 10) of having a FAS baby at 10 drinks a day.

Physical Dependence

Alcohol is physically addictive just as other sedative/hypnotic drugs (valium, librium, the barbiturates) and the opiates (heroin, morphine, dilaudid, demerol) are. Physical addiction means that actual physical discomfort and symptoms appear after the substance is withdrawn following repeated use. Addiction can occur in a short a period as two weeks. Tolerance, or the ability to withstand higher doses without effect, develops to alcohol and the sedative/hypnotics.

In the medical community it is generally agreed that withdrawal from alcohol is far more dangerous than withdrawal from heroin. Alcohol withdrawal can lead to death while it is rare for a heroin addict to die during withdrawal. Consequently, minor tranquilizers are used to help withdrawing alcoholic avoid life-threatening convulsions. Drugs like librium, valium and xanax are given to cushion the transition the body must go through to restore the natural balance that alcohol has disrupted. The journey back to sanity may be a difficult one and in some cases, nausea, convulsions, seizures, hallucinations, and death can occur. Brain damage, called Wernicke-Korsakoff's syndrome can result from poor nutrition associated with alcoholism, in some cases leaving the victim in need of long term institutional care.

PSYCHOLOGICAL EFFECTS

Effects on the Central Nervous System

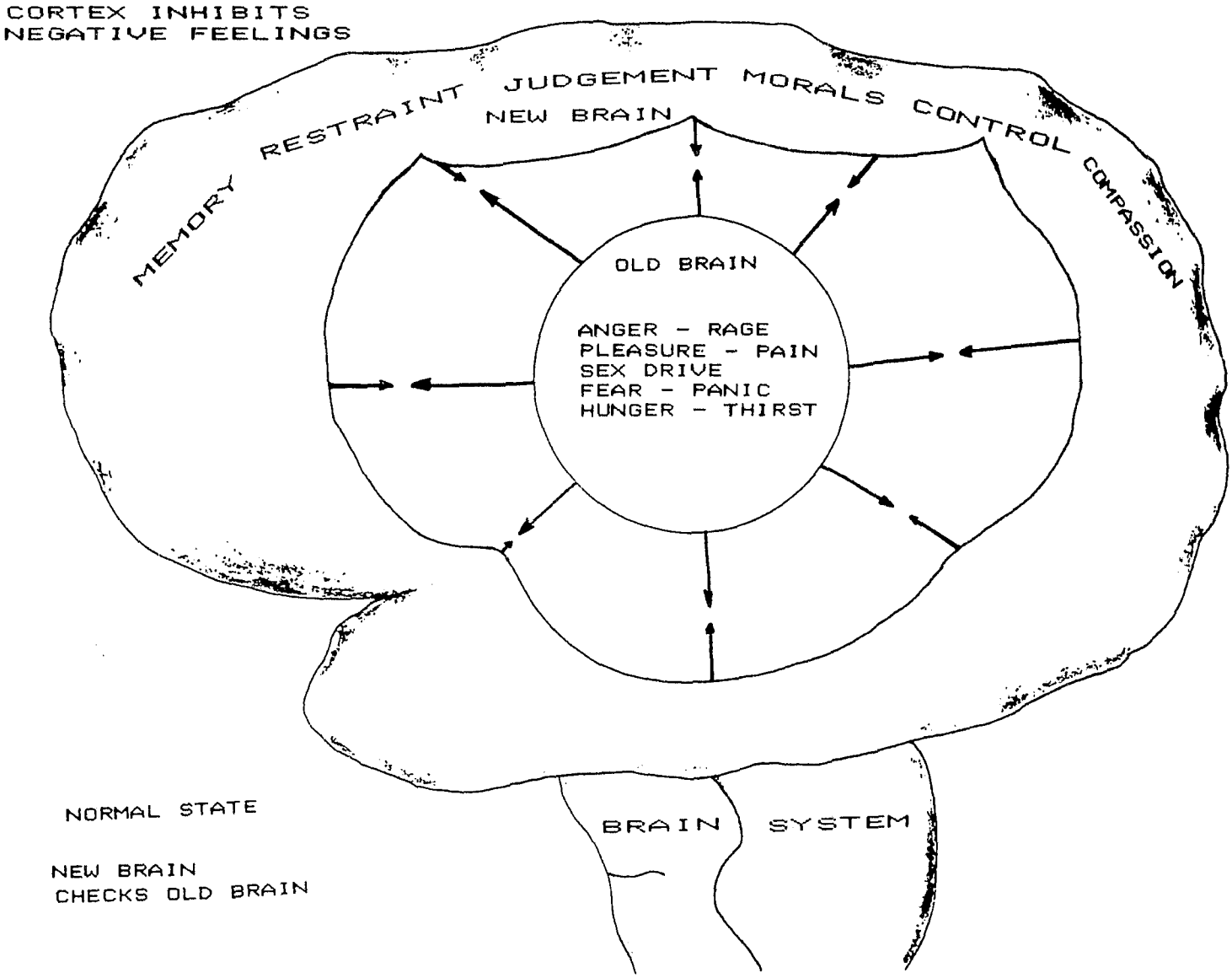
Alcohol is a central nervous system (CNS) depressant, as are the sedatives, barbiturates and hypnotics (sleeping pills). These drugs act to relax the body and mind by slowing the workings of all nerve cells. Senses are dulled, coordination is impaired, and reaction time is longer. Also, the normal rational controls and restraints are impaired, in some cases almost completely. This is called "disinhibition."

A mildly intoxicated person may seem more lively and active because these normal restraints/controls have been dulled, and his or her impulses are disinhibited. It was previously mentioned that alcohol is involved in over half of all murders which are committed. The reasons for this higher level of aggression relate to alcohol's disinhibiting effect. Alcohol suppresses or weakens our controls over those emotions that are normally suppressed. These "primitive" feelings arise unchecked once a certain level of alcohol is ingested.

The Old and New Brain

The brain can be divided into two distinct sections. One section located in the center of the brain, can be called the "old brain." The old brain is the center of our feelings and drives. Also housed there are the centers responsible for the maintenance of automatic functions of the body like respiration, heartbeat, digestion etc. Some of the areas of the old brain store emotions such as hunger, thirst, sex, and anger. Others have described this old brain as the "limbic system, the libido, reflex center etc." These emotions seem to be "triggered" by stimuli outside and inside the body. Things like the smell of our favorite foods, an attractive sexual partner, or a threat to our safety might normally cause these emotions to be aroused. As we move further from the center to the surface and near-surface areas of the brain (the cortex), we find a higher level of rational functioning.

Humans are more sophisticated because of the "new brain." The new brain houses the areas of thought, control, compassion, morality, and judgement that normally help us show restraint and control over our emotions. Emotional maturity basically is our ability to delay gratification to these inner level feelings. We therefore don't normally act before we think. For example, we normally don't assault someone who annoys us, even though we may feel like doing this. Our new brain basically tells us that these behaviors would not be appropriate or acceptable.


CORTEX INHIBITS
NEGATIVE FEELINGS
MEMORY RESTRAINT JUDGEMENT MORALS CONTROL COMPASSION
NEW BRAIN
OLD BRAIN
ANGER - RAGE
PLEASURE - PAIN
SEX DRIVE
FEAR - PANIC
HUNGER - THIRST
BRAIN SYSTEM
NORMAL STATE
NEW BRAIN
CHECKS OLD BRAIN

Effects of Alcohol on the Old and New Brain

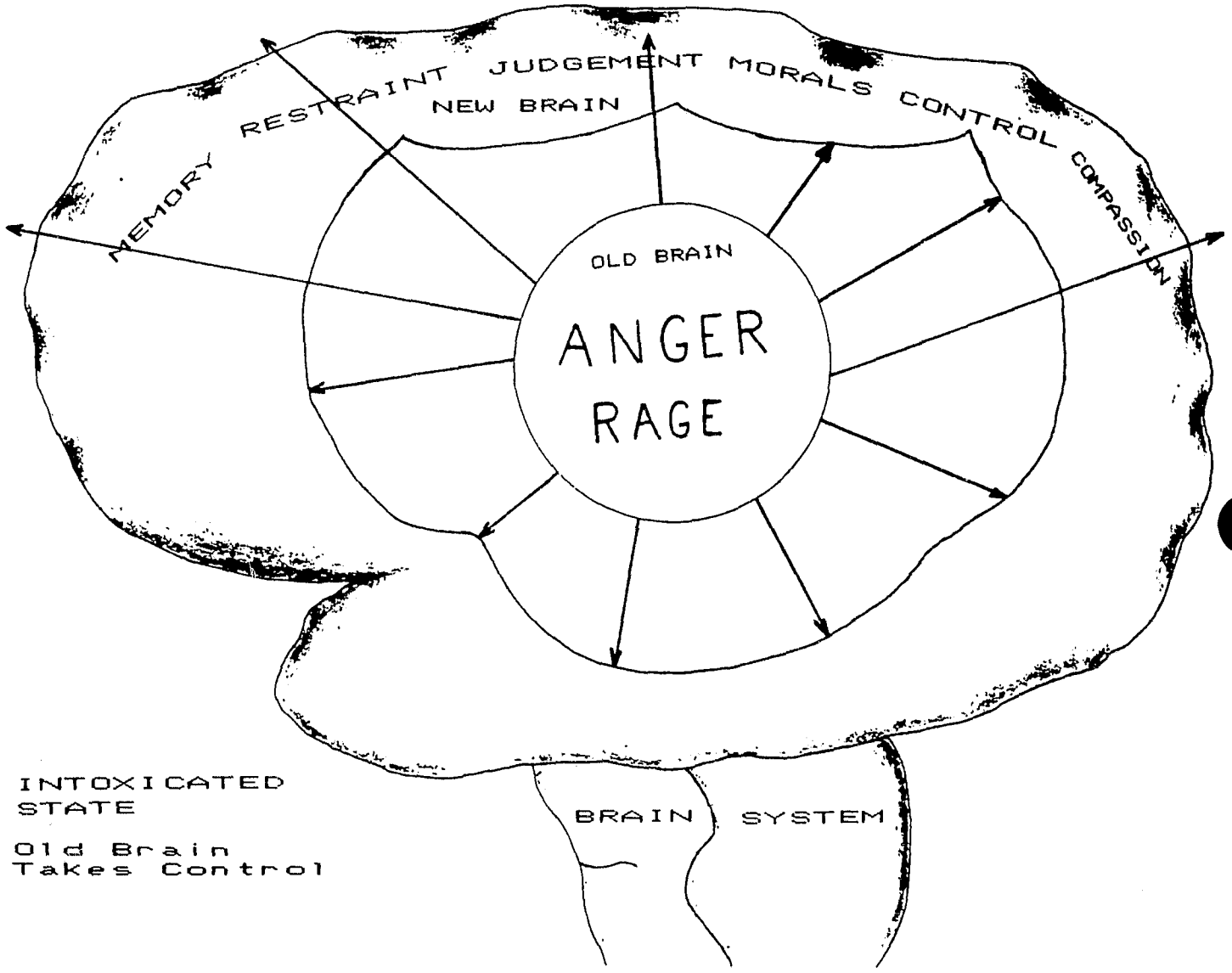
Alcohol is a sedative and a mild anesthetic. It "numbs up" or reduces the effectiveness of all brain cells, and thus psychological function. All of the brain is affected, although each individual level seems to affected in sequence. The first level to be seriously disrupted is the complex new brain. Our sense of judgement, morality, control, restraint, and compassion is impaired to some degree, depending on individual differences, because of this alcohol intoxication. Balance and coordination are also affected.

With the new brain impaired, the centers of the old brain take over. Our emotions and more primitive feelings might take control over our personalities. An intoxicated person might start crying, laughing, or display other emotions for little or no apparent reason. Childish behaviors might also appear as well as risk taking and poorly thought out acts. Thousands of youths die drunk while speeding in a vehicle after having had their sense of judgement and morality impaired by alcohol. Spouse abuse, murder, and numerous other acts of violence occur during this period of reduced inhibitions. Since it normally takes the liver an hour to detoxify the alcohol in one drink, the old brain takes control for long periods of time. The old brain, like a child playing with a loaded gun has only to make one error before serious consequences (jail or death) can result. When further intoxication occurs, only the automatic centers of the old brain (brain stem) remain functioning to keep the person alive. When these centers are too sedated to function, death occurs from inability to breath, or a person might suffocate on their own vomit.

The Process of Psychological Addiction

Long before physical addiction occurs, the chances are the drinker has developed a psychological addiction. The psychological addiction to alcohol/drugs is more difficult to break than the physical one. Physical addiction can be broken through hospitalization. Psychological addiction can ultimately only be broken by the users themselves. With alcohol, the psychological addiction normally happens slowly, starting with experimentation leading to social/recreational drinking, then regular and compulsive use before the grip of psychological addiction takes it's final hold. Because the process is so gradual, the drinker often times fails to realize what is happening.

WEAKENED CORTEX



INTOXICATED
STATE

Old Brain
Takes Control

A system of mental defenses develops to protect the drinker's self-image. Rationalizations about drinking (everyone does it, and besides it's legal), denial (I can stop anytime I want), projection (it's your fault that I drink so much) and generally one large "lie" is created to justify the drinking. Soon, there develops a secret irritation when drinking is discussed, or when there is no alcohol around. Later, alcohol may be "hidden" and drinking may become more of a private thing, in the isolation of one's own home. Stress seems to trigger thirst and before a person realizes what's happened, he/she gets drunk when he or she feels upset, angry, depressed, or even just have normal problems. Irritability and these negative feelings only escalate when the person gets sober, so that the person is coaxed to drink more and more. While everyone is different, one thing can be said. The drinker along with the whole family is affected by the addiction.

Family Disease Concept

The tragic aspects of addiction involve it's contagious character. The entire family is disrupted when one member is addicted. Often times the family develops a "siege" or "crisis" mentality so that everyone lives under fear and tension. There is less order, less family leisure time activities, and the spouse often times takes on the role of co-alcoholic. The co-alcoholic lives in fear of the alcoholic's behavior. Generally the spouse feeds into manipulations on the part of the drinker which place part of the blame on the spouse. It's not unusual for the alcoholic to say "If it weren't for your nagging I wouldn't drink so much." This mastery at blaming others is a symptom of the addiction.

Effects on Children

Children are also affected by the drinker's behavior. While every family and child is different, we find that in many families a pattern develops in response to the problem drinker's behavior. Often the first born takes on the leadership role. It is said that these eldest fill the void left by the addicted parent. What happens though is that these children are prematurely thrust into adulthood and must sacrifice their own childhood, an event they probably grow up to resent. These children sometimes grow up wanting to be alcohol abuse counselor's, possibly to "save" their fallen parent.

Second born children may rebel against the family's disorganization. These children get attention through their rebellious acts. Sometimes these second born children are in constant conflict with authority as their lack of respect for their own parents has transferred onto the rules of society.

Third born children are said to more openly display their fear of the alcoholic parent. Sometimes these children develop an active fantasy life to escape their fear. This withdrawal from reality may pose problems during childhood. In adulthood, these children may marry problem drinkers, because they may, ironically, feel more comfortable with them because they know what to expect. They too may also be trying to "save" a fallen parent in their own way, as the first born may do.

Although the role addiction plays on family members is real, the patterns may vary. Some children seem to have been immune to the whole experience, marry, and live normal lives. A much higher percentage, however, seem to be affected in that they go on to live the same types of lives as their parents, falling prey to the same chemical that ruined their own childhood. These three roles are depicted in the film Soft is the Heart of a Child.

Legal Responses

Public concern has risen due to the alarming statistics that can be associated with alcohol abuse. We have entered a newer "prohibitionist" type era in which traffic laws for drunk driving have become very strict, incarceration has been used for repeated offenders, and legal drinking ages have been increased.

Alcohol does not excuse family or community violence, and offenders are sentenced just as with other violators. Many crimes continue to be committed under the influence of alcohol. There has been some discussion about what type of role alcohol plays in crime. Some psychologists believe that alcohol is used as a sedative by those persons who are criminally oriented, helping them to commit more crime with less fear. Many other psychologists believe that, with the "new brain" anesthetized, more impulsive, and hence criminal, acts follow.

Current legal trends indicate that crimes committed under the influence of alcohol will continue to be prosecuted. The fact that a person was intoxicated while committing is not a legal excuse, for the person willingly consumed the alcohol. In fact, a person who becomes "mean and nasty" when drunk is seen as more of a threat to others, and some people will desire to confine him longer to prevent further crimes. Similarly, traffic offenses, and accidents resulting in injury or loss of life will probably result in stiffer penalties and possible prison sentences. The law is reflecting the public's determination to stop drunk driving and the needless loss of life.

Summary

Alcohol is responsible for the loss of thousands of lives and billions of dollars yearly. This central nervous system depressant acts to loosen normal levels of control, bringing forth impulsive and emotional acts, sometimes resulting in prison sentences. Deaths from overdose, fatal accidents, and other deaths directly related to alcohol, are many times greater than all the illegal drugs combined.

Alcohol can cause a serious type of physical addiction that eventually results, with the exception of the ear, in damage to every organ in the body. Psychological addiction usually precedes physical addiction and is accompanied by numerous excuses and lies about excessive drinking.

Those around the alcoholic are also affected, especially the spouse and children who may display guilt and anger similar to that of the drinker. There is a familial link between alcoholics and their parents as with other disorders such as diabetes and heart disease. Alcoholism is progressive and unless treated, will result in death.

Legal responses to drinking have become more aggressive recently. Stiffer penalties are being given to those convicted of traffic offenses while intoxicated, and being drunk is not an acceptable excuse for any crime. A new prohibition does not seem politically possible, and so the problem of alcohol abuse must be solved at an individual and small-group level. Education is necessary to teach the difference between responsible use and damaging abuse.

OTHER SEDATIVE/HYPNOTICS

Although alcohol is by far the most abused sedative/hypnotic, there are other drugs in this category that are also widely abused. This sedative/hypnotic group of drugs also includes the minor tranquilizers, barbiturates, and general depressants.

Drugs in the sedative/hypnotic group are known for their anxiety relieving qualities. They work to at least temporarily reduce tension and nervousness and have been widely prescribed through the years for phobias and anxiety disorders.

Barbiturates

Barbiturates are sedative/hypnotic drugs that are derived from Barbituric Acid. These drugs can be further classified by their duration of activity. Some work for only a short time period and others have longer lasting duration. In some drug combinations, the short and long acting varieties are combined to yield a drug that sedates in the short and long term. The barbiturates typically end with the letters "al." These drugs have names like amytal, amobarbital, phenobarbital, and seconal. The primary medical use of these drugs is as anti-seizure medication since they seem to sedate and relax centers of the brain which control seizure activity. Low doses of some of these barbiturates seem to help control seizures with a low potential for addiction since the dosages given are very low.

Barbiturates were much more widely used as sleeping pills and sedatives during the 1950's until their reputation was marred by the large number of suicides and accidental overdoses on these drugs. For example, Marilyn Monroe died of barbiturate overdose, with alcohol as a factor. Barbiturates, as with other sedative/hypnotics are synergistic (have a multiplier effect) with alcohol. Many people with problems of anxiety and insomnia use alcohol. Because tolerance develops both to alcohol and to sedative hypnotic drugs, people usually take more and more of these drugs to get the desired effect. Unfortunately, the lethal dose (the amount it would take to kill you) does not shift upward as much as the effective dose. What happens with barbiturates is that at some point, the amount needed to relieve the anxiety or insomnia is dangerously close to the lethal dose. When alcohol is added to the picture, the lethal dose is crossed since alcohol serves to multiply the strength of other sedatives as already mentioned. Consequently, the drug user dies of respiratory arrest.

Benzodiazepines (Minor Tranquilizers)

These drugs were basically viewed, medically, as safer replacements for the barbiturates, and at one point were believed to be non-addictive. They are safer, for if taken alone, it is difficult to overdose to the point of respiratory arrest. Valium, Librium, Ativan, Dalmane and Xanax are among the frequently used minor tranquilizers. Many alcohol detoxification centers use tranquilizers as a drug which aids in alcohol withdrawal. There is cross dependence among all sedatives so these drugs can be used to satisfy craving for one another, or to cushion the effects of withdrawal. Minor tranquilizers should not be confused with the major tranquilizers which are antipsychotic drugs like Thorazine, Haldol, and Stelazine.

In general, the benzodiazepines have a wide margin of effective dose to lethal dose. However, if alcohol is also ingested, lethal doses are much more likely. Minor tranquilizers are physically addictive, and are supposed to be prescribed only for short periods of time, to help a person get over a traumatic experience. Unfortunately, some physicians have kept patients on tranquilizers for long periods, and there is a lengthy withdrawal in these cases, characterized by anxiety and irritability, as well as cravings.

Other Sedatives

Methaqualone (Quaalude) is a strong and highly addictive sedative. Its action may come on suddenly and consequently this particular drug has been blamed for numerous traffic accidents and fatalities. Users have also been known to drink alcohol in combination with this drug, which increases the likelihood of the user taking a lethal dose, or becoming quite intoxicated. Because of these problems, this drug was made illegal in the early 1980's and cannot now be legally prescribed.

Meprobamate, glutethimide, and chloral hydrate are other general sedatives. Meprobamate has muscle relaxant properties and is less dangerous than glutethimide which has similar properties to many of the barbiturates. Used as a sedative for tension and anxiety, glutethimide (Doriden) is a long lasting drug whose potency may be a disadvantage because of the potential for overdose and abuse. Chloral hydrate was the first such hypnotic and sedative, predating the barbiturates but still used for anxiety and insomnia. It is almost identical to ethyl alcohol. Chloral hydrate has not been a widely abused drug in recent times.

Volatile solvents such as airplane glue (toluene) and gasoline are also classified as sedatives. However, they are more dangerous than alcohol, as our livers cannot detoxify them as quickly. Brain damage has occured as the solvents dissolve cell membranes as well as making a person feel intoxicated. Death can occur even quicker if a person places a bag over his or her head when breathing these fumes, as he or she can pass out and not be able to breath fresh air.

Drug Interactions

Sometimes sedatives are used by drug abusers to relax them after they have been using amphetamines or other stimulants. The sedation helps to slow their system down which has been "keyed up" by the stimulants they had previously been using. This can lead to physical and psychological addictions to sedatives as well as the stimulant drug. Another danger is that heroin or other narcotic addicts sometimes use barbiturates or alcohol to reduce discomfort when the narcotic is not available. When the narcotic is again used, the combination of a sedative and a narcotic can be lethal.

Psychological and Physical Dependence

Like alcohol, abuse of any sedative can result in psychological as well as physical dependence. Psychological dependence of course involves the intense craving and active seeking of the drug while the physically addictive properties actually result in physical symptoms. Like withdrawal from alcohol, cramping in the stomach, convulsions and seizure-like reactions can occur. Withdrawal from the sedative hypnotic group can be dangerous, as with alcohol, and close monitoring may be necessary.

Abuse Potential

Quaaludes, thought by many "street users" to be a sexual stimulant, were very frequently abused. Because of the widespread abuse of this drug, it was made a schedule 1 drug which means it's only legal use is for research. Not even a licenced physician can prescribe this drug anymore. Underground laboratories still make it though and there is an illegal supply still available.

One thing about the sedative drugs is that most of these drugs can be legally prescribed. Abuse results when these drugs are misused and higher than the prescribed doses are taken. For the many persons diagnosed as having legitimate nervous disorders, these drugs have been a blessing. Others have become physically addicted to these drugs as their tolerance to these drugs slowly builds. Because some patients can potentially abuse these drugs, records are kept and physicians are responsible for monitoring their patients' dosage levels. However, it is not unusual to find entire medicine cabinets filled with these types of drugs because they are effective, at least in the short term, against anxiety disorders and insomnia. In the long term at higher doses, these medications actually create more problems for the user since use becomes a necessity to avoid nervousness. Tension increases as sleep becomes increasingly more difficult to achieve. Sedatives actually block dream sleep which the most essential and relaxing stage of sleep. Using drugs beyond their prescribed limits is a dangerous practice.

Sedatives are powerful drugs that can lead to physical addiction. When properly used at prescribed levels, they are effective in treating seizure disorders, anxiety, and insomnia. Long term use of higher dosages of sedatives not only causes psychological addiction but also physical addiction. In several instances, users have actually died because of the multiplier effect other sedatives have on alcohol. Although the amount to get high increases (tolerance), the lethal dosage level (the amount it takes to kill you) does not appreciably increase. A user may need almost as much of a sedative drug to get high, eventually, as it takes to kill him or her.

ALCOHOL AND OTHER SEDATIVES

OUTLINE

I. OVERVIEW

A. History and Origin

1. Alcohol is known to man for 5000 years.
2. Ancient Egyptians operated breweries.
3. Alcohol was taxed on an Ancient Greek Island.
4. Plato and later Confucius warned about strong drink.
5. Prohibitionist feelings resulted in 1919 passage of the 18th Amendment to the Constitution.
6. Prohibition is repealed in 1933, control is at the state level
7. AA is the first treatment, in 1935.
8. Laws regarding drunk driving are toughening

B. Basic Facts and Composition

1. Alcohol is the waste of yeast's action on sugars.
2. At concentrations of 14%, yeast die in their alcohol waste
3. Distillation is possible because alcohol boils at a lower temperature than water.

C. Blood Alcohol Content or BAC

1. The amount of alcohol in a can of beer, cup of wine or mixed drink are essentially the same.
2. Alcohol is a "diuretic" that causes urination
3. 95% of all alcohol is broken down by the liver.
4. 5 drinks per hour equal a BAC of .1% or legal intoxication.
5. Women will have a higher BAC/drink because they generally have more fatty tissue than men.
6. Individual differences also play a role in what BAC level produces intoxication.

II. BASIC FACTS AND STATISTICS

A. Alcohol Related Deaths, Accidents, and Injuries

1. 70% of adults drink, 1/7 of which (15 million) of which are problem drinkers

2. Alcohol abuse is a factor in:

a. 70% of all homicides
b. 65% of all suicide attempts
c. 35% of all suicides
e. 50% of all fatal car crashes
f. 45% of all fatal motorcycle crashes
g. 40% of all industrial accidents
h. 52% of all fires
i. 80% of all deaths due to fire
j. 60% of all drownings

3. 170 deaths per day involve the use of alcohol

4. Alcohol is related to the highest number of deaths in youth because of accidents, particularly traffic accidents.

5. There are approximately 1000 deaths by direct alcohol poisoning per year.

B. Dollars Loss to Society

1. Estimates of losses to society range from 32.75 billion in a 1975 study to 100 billion in a 1981 study.

III. PHYSICAL EFFECTS

A. Digestive System

1. Irritation of digestive tissues

a. Esophagitis
b. ulcers
c. gastritis
d. cancer

2. Inflammation of the digestive organs

   a. pancreatitis
   b. fatty liver and alcoholic hepatitis
   c. cirrhosis of the liver

B. Cardiovascular System

1. Weakening of the heart muscle

   a. Alcohol Cardiomyopathy
   b. Beri-beri heart disease
   c. Cardiac arrhythmias

2. Circulatory problems

   a. Bruise easily because blood platelet levels reduced
   b. blood fat levels increased
   c. blood pressure increased
   d. lowered immunity because of white cells deficiency

C. Reproductive System

1. Sexual difficulties

   a. lowered testosterone, the male sex hormone
   b. Long term use causes impotence

2. Problems in Reproduction

   a. Women's menstrual cycle is disturbed
   b. Damage to the unborn fetus (Fetal Alcohol Syndrome)
      1. Lower intelligence and retardation
      2. Physical Deformities

D. Physical Dependence

1. Increases in tolerance levels
2. Slight increases in the lethal dose (LD) level
3. Dangerous Withdrawal

   a. Seizures and convulsions are common
   b. hallucinations and formication (bugs and snakes)
   c. Korsakoff's psychosis and Wernicke's disturbances

IV. PSYCHOLOGICAL DISTURBANCES

A. Central Nervous System (CNS) Depressant

1. relaxes the mind and reduces level of control
   a. takes away some of the constraint of the New Brain
      1. judgement decreased
      2. morals lowered
      3. abstract thinking hindered
      4. memory impaired

   b. Allows the emotional old brain to seize control

V. OTHER SEDATIVES

A. Barbiturates

1. used as sleeping pills and to prevent seizures
2. effective dose rises, lethal dose level doesn't
3. are synergistic with alcohol, combination easily leads to death

B. Minor Tranquilizers

1. Valium, Librium, Xanax are the most common
2. used medically for short-term relief of anxiety
3. produce physical addiction after long-term use
4. are synergistic with alcohol, combination can cause death

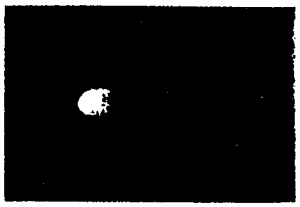
C. Methaqualone (Quaalude)

1. used as sleeping medication
2. synergistic with alcohol
3. due to high abuse potential was removed from market

D. Volatile Solvents

1. glue sniffing has led to deaths
2. body cannot detoxify as fast as alcohol

Controlled Ingredients: **amobarbital sodium 100 mg**
secobarbital sodium 100 mg
Trade Name: Tuinal
CSA Schedule: II



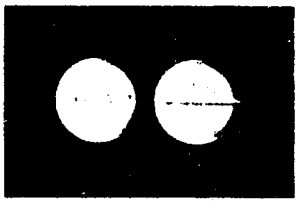
Controlled Ingredient: **talbutal 120 mg**
Trade Name: Lotusate
CSA Schedule: III

Controlled Ingredient: **phenobarbital 30 mg**
Trade Name: Luminal
CSA Schedule: IV

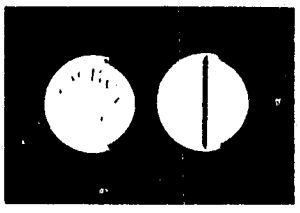
Controlled Ingredient: **phenobarbital 30 mg**
Trade Name: Phenobarbital
CSA Schedule: IV

Controlled Ingredient: **phenobarbital 60 mg**
Trade Name: Phenobarbital
CSA Schedule: IV

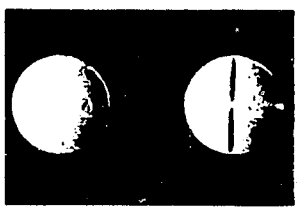
Controlled Ingredient: **glutethimide 500 mg**
Trade Name: Doriden
CSA Schedule: III



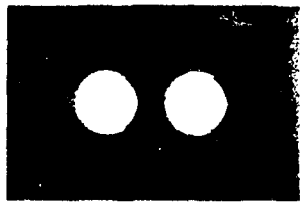
Controlled Ingredient: **methaqualone 300 mg**
Trade Name: Quaalude - 300
CSA Schedule: I (no longer marketed in U.S.)



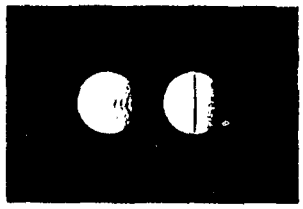
Controlled Ingredient: **methaqualone 250 mg**
Trade Name: Mandrax *(not marketed in U.S.)*
CSA Schedule: I
Other Ingredient: **diphenhydramine hydrochloride 25 mg**



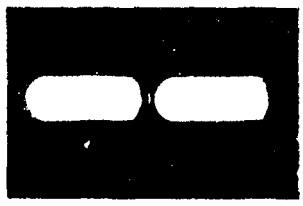
Controlled Ingredient: **meprobamate 400 mg**
Trade Name: Equanil
CSA Schedule: IV



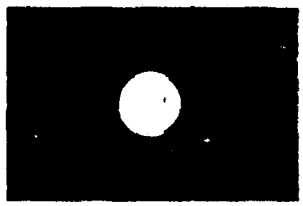
Controlled Ingredient: **meprobamate 400 mg**
Trade Name: Miltown
CSA Schedule: IV



Controlled Ingredient: **meprobamate 600 mg**
Trade Name: Miltown 600
CSA Schedule: IV

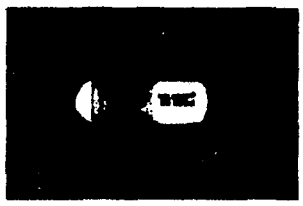


Controlled Ingredient: **meprobamate 400 mg**
Trade Name: SK-Bamate
CSA Schedule: IV



Controlled Ingredient: **methyprylon 200 mg**
Trade Name: Noludar
CSA Schedule: III

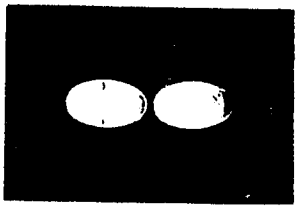
Controlled Ingredient: **methyprylon 300 mg**
Trade Name: Noludar - 300
CSA Schedule: III



Controlled Ingredient: **ethchlorvynol 500 mg**
Trade Name: Placidyl
CSA Schedule: IV

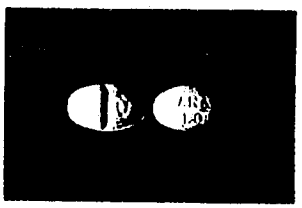
Controlled Ingredient: **ethchlorvynol 750 mg**
Trade Name: Placidyl
CSA Schedule: IV

Controlled Ingredient: **alprazolam 0.5 mg**
Trade Name: Xanax
CSA Schedule: IV

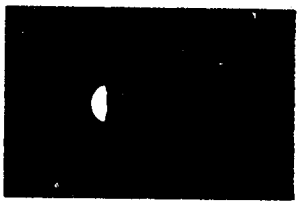


Controlled Ingredient: **alprazolam 0.25 mg**
Trade Name: Xanax
CSA Schedule: IV

Controlled Ingredient: **alprazolam 1 mg**
Trade Name: Xanax
CSA Schedule: IV

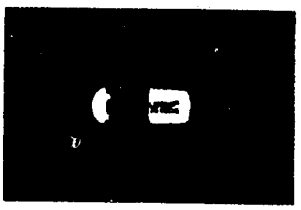


Controlled Ingredient: **chlordiazepoxide hydrochloride 5 mg**
Trade Name: Librium
CSA Schedule: IV

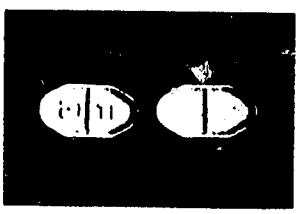


Controlled Ingredient: **chlordiazepoxide hydrochloride 10 mg**
Trade Name: Librium
CSA Schedule: IV

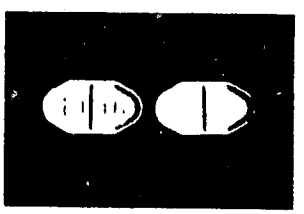
Controlled Ingredient: **chlordiazepoxide hydrochloride 25 mg**
Trade Name: Librium
CSA Schedule: IV



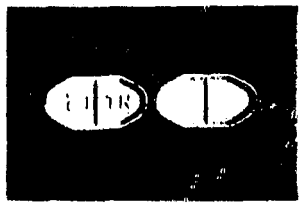
Controlled Ingredient: **clorazepate dipotassium 3.75 mg**
Trade Name: Tranxene
CSA Schedule: IV



Controlled Ingredient: **clorazepate dipotassium 7.5 mg**
Trade Name: Tranxene
CSA Schedule: IV

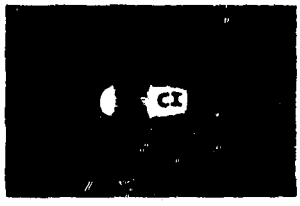


Controlled Ingredient: **clorazepate dipotassium 15 mg**
Trade Name: Tranxene
CSA Schedule: IV

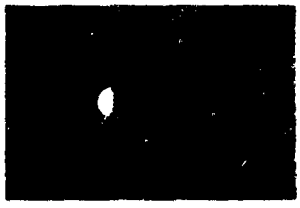


Controlled Ingredient: **clorazepate dipotassium 22.5 mg**
Trade Name: Tranxene - SD
CSA Schedule: IV

Controlled Ingredient: **clorazepate dipotassium 3.75 mg**
Trade Name: Tranxene
CSA Schedule: IV

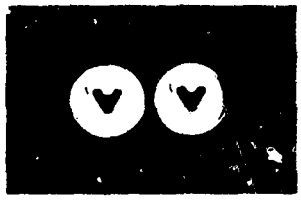


Controlled Ingredient: **clorazepate dipotassium 7.5 mg**
Trade Name: Tranxene
CSA Schedule: IV



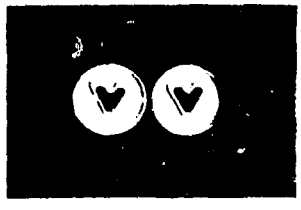
Controlled Ingredient: **clorazepate dipotassium 15 mg**
Trade Name: Tranxene
CSA Schedule: IV

Controlled Ingredient: **diazepam 2 mg**
Trade Name: Valium
CSA Schedule: IV

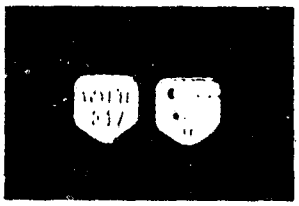


Controlled Ingredient: **diazepam 5 mg**
Trade Name: Valium
CSA Schedule: IV

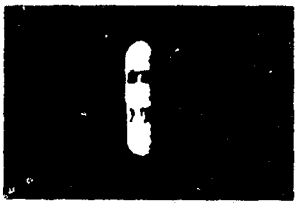
Controlled Ingredient: **diazepam 10 mg**
Trade Name: Valium
CSA Schedule: IV



Controlled Ingredient: **oxazepam 15 mg**
Trade Name: Serax
CSA Schedule: IV

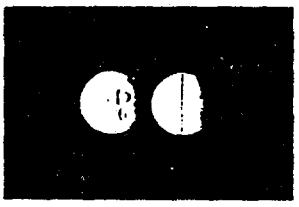


Controlled Ingredient: **prazepam 5 mg**
Trade Name: Centrax
CSA Schedule: IV



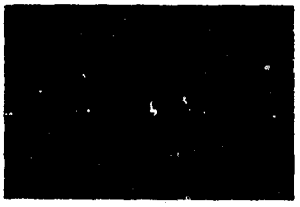
Controlled Ingredient: **prazepam 10 mg**
Trade Name: Centrax
CSA Schedule: IV

Controlled Ingredient: **prazepam 10 mg**
Trade Name: Centrax
CSA Schedule: IV

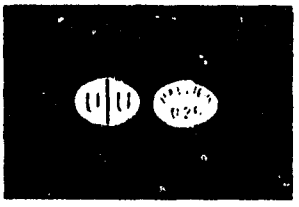


Controlled Ingredient: **temazepam 15 mg**
Trade Name: Restoril
CSA Schedule: IV

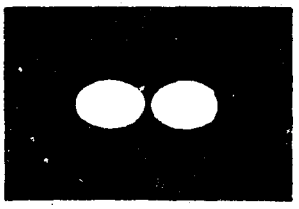
Controlled Ingredient: **temazepam 30 mg**
Trade Name: Restoril
CSA Schedule: IV



Controlled Ingredient: **triazolam 0.25 mg**
Trade Name: Halcion
CSA Schedule: IV

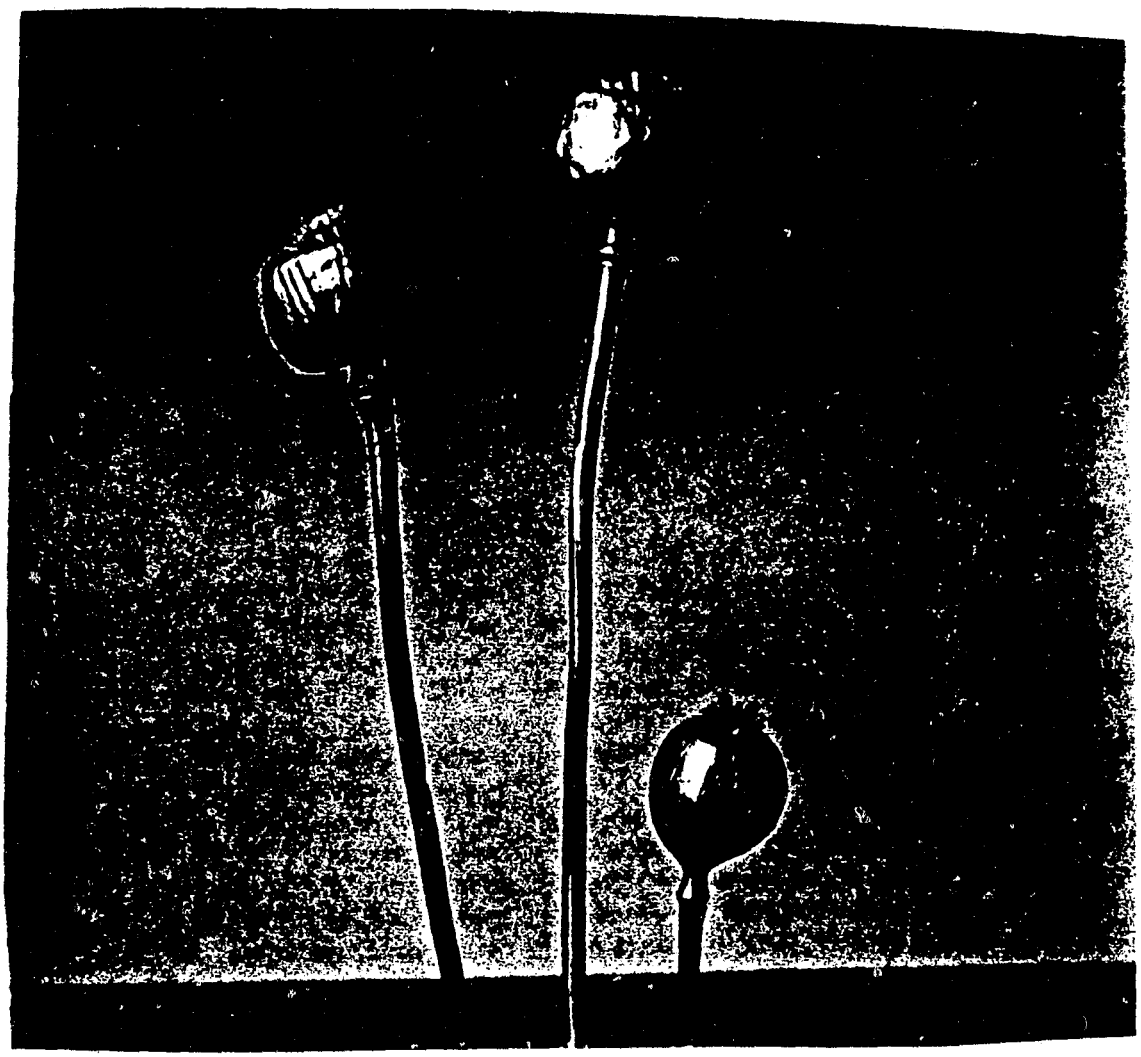


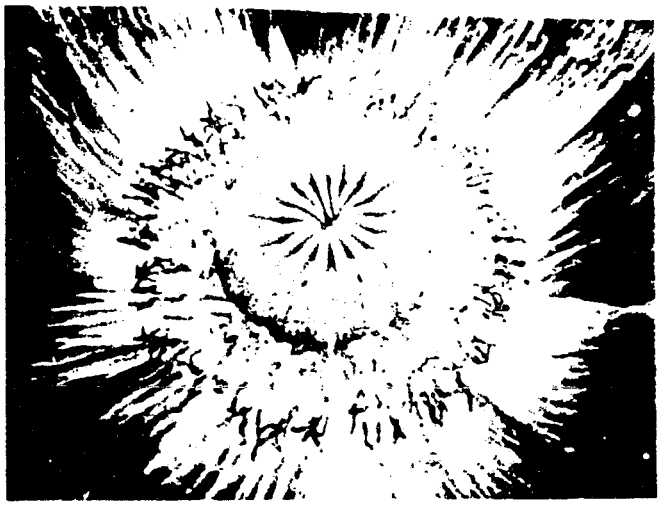
Controlled Ingredient: **triazolam 0.5 mg**
Trade Name: Halcion
CSA Schedule: IV



CHAPTER V

NARCOTIC ANALGESICS





The poppy Papaver somniferum is the main source of nonsynthetic narcotics

The milky fluid oozes from incisions in the unripe seedpod

Since ancient times the fluid has been scraped by hand and air dried to produce opium

NARCOTIC ANALGESICS

THE OPIATES

TITLE:

Narcotic Analgesics

PURPOSE:

To develop an awareness of the effects of Natural, Semisynthetic, and Synthetic Narcotic Analgesics on the body and mind.

To understand the addictive properties of these drugs.

OBJECTIVES:

1. To identify 3 historical events related to narcotic use in America.
2. To understand 3 physiological effects of narcotic use.
3. To understand 3 psychological effects of narcotic use.
4. To identify 3 diseases which can result from the illicit use of narcotics.

TIME FRAME:

120 minutes

EXERCISES/TEACHING TOOLS:

Folding display on "Drug Abuse" sold by: HEI
P.O. Box 21207
Waco, TX 76702

Have each student develop a list of things which "trigger" the thought for the drug or their craving for it.

Chapter 5 Sample Questions

TRUE OR FALSE

1._____ Narcotics originated from a plant cultivated by Indians in the Andes Mountains.

2._____Heroin is a natural narcotic found in raw opium.

3._____ "Analgesic" means pain killer.

4._____ Diaudid, Demerol, Talwin, Percodan, and Methadone are all synthetic or semisynthetic narcotics.

5._____ Morphine can be extracted from morning glory seeds.

6._____ Quaaludes, Librium, Ativan, Xanax, and Tranxene are all synthetic narcotics.

7._____ Constipation and cough supression are two side effects of narcotic use.

8._____ Heroin is legally prescribed in England.

9._____ Physical dependence develops to every narcotic analgesic.

10_____ Dirty needles are responsible for the spread of AIDS, Hepatitis, Endocarditis, and encephalitis.

NARCOTIC ANALGESICS

INTRODUCTION

History

Opium is one of the oldest drugs known to man. It's properties as a medicine were probably known to the ancient Sumerians, in the Near East where opium is alleged to have been first cultivated. Opiates have proven effective in the reduction of pain without impairing other senses, the elimination of stomach cramps, as cough suppressants, and effective in the treatment of diarrhea.

Around 1200 A. D., the Arab traders took opium into the Far East. Alcohol was illegal in China, but not opium. In 1729, emperor Yung Cheng, made smoking opium illegal, and China was the first nation of the world to pass laws against this drug. Death by strangulation was the sentence to those that sold the drug in opium shops.

In 1762, Dover's Powder, was an over the counter opium preparation used widely in England. Laudanum, an alcohol and opium syrup was legally available in America as a sedative and pain reliever during the late 1800s. It has been said that the men were getting drunk in the saloons while the women of that period were becoming opium addicts at home. Even some of the members of the prohibitionist movement apparently used these opiates which were ingredients of many patent medicines of the period.

In the 1800s, China was part of the British Empire, which encouraged opium production. The Chinese began to resent the presence of opium in their country. Many people were victims of addiction. Despite their effort to rid themselves of opium, two wars with Britain failed to end the opium trade in their country. Around 1880, as many as half of all men in China were addicted to opium. The problem had grown to such proportions, that the death penalty was imposed for opium use.

As our own country grew, so did the railroads. Many of the workers on these railroad lines were Chinese who smoked opium. Opium use increased during this period, spreading to all ethnic groups. The use of opium became popularized as recreational and medicinal during the end of the century.

Early Laws

There were two laws passed during the early 1900's which tried to control opium and cocaine use. The Pure Food and Drug Act of 1906 required all medicines that had opiates or cocaine, to be labeled as having such. The government wanted the people to know what they were buying. Opiates and cocaine could still be purchased legally in most parts of the country. By 1914, the Federal Government took a stronger stance against these drugs, and indicated that opiates and cocaine could be used only in the course of professional practice. Professional practice did not include giving opiates to addicts to maintain their habit. Several thousand doctors were imprisoned because of their decision to continue giving narcotics to the addict in the form of a prescription. Many doctors began to legally prescribe stimulants as a substitute, possibly as a way to circumvent the law and to continue their treatment. Interestingly enough, opium was thought of as a cure for alcoholism, morphine was thought of as a cure for opium addiction, heroin was thought of as a possible treatment for morphine addiction, and now methadone, a synthetic opiate, is thought of as a treatment for heroin addiction. Heroin actually was named because of the belief that the drug was a "heroine" or "hero" over addiction. Little was known at that time about the disease process of addiction. Many thought addiction could only occur in the stomach.

Growth of the Illicit Market

Organized crime began to emerge as a force in America during, and possibly as a result of prohibition (of alcohol) which lasted from 1919 to 1933. After prohibition ended, a very lucrative source of illegal income was eliminated from the coffers of these crime families. Possibly as a result of this loss of illegal income, the popularization and illegal importation of drugs began to emerge. The new crime money was to be found in the illegal importation and sale of heroin. This continues until today, although there are probably less than 1/2 million heroin addicts in this country. If cocaine/crack become more expensive, heroin could become more popular. History indicates that as cocaine becomes inaccessible, heroin becomes a substitute drug.

Heroin is being used in England to treat pain in cancer patients, with some success. In the U. S., morphine and synthetics fill this need for an effective pain killer, although some say that heroin is more effective for many patients.

Future trends

Designer/synthetic drugs which can be more easily obtained through the manufacturing process may eventually replace all of the natural/semisynthetic opiates found on the illicit market. Methadone was developed by Germany as a synthetic replacement for morphine during WWII, and named in honor of Adolph Hitler (Dolophine). Demerol and Dilaudid were developed later. A "designer drug" called Fentanyl is many times more powerful than heroin and is currently being illegally manufactered. Many will die because of the high level of potency these drugs have, and many will be left disabled by disorders like those mimicking Parkinson's Disease caused by improper manufacturing procedures.

Today, heroin is classified as a Schedule 1 Narcotic, which means that the drug's only legal use in this country is for research. In countries such as England, physicians are still allowed to prescribe heroin and indicate that it is a more effective drug than morphine for the treatment of pain and as a maintenance drug for addicts. Although heroin is a stronger drug than morphine, there is no special quality that makes these drugs significantly different. A general statement is that all opiates and other similar narcotic analgesics have similar actions, although potency and length of action varies. What is said in this chapter concerning heroin is generally true for all other narcotics. All are physically addictive and can be psychologically addicting as well.

THE OPIATES

Opium is the raw sap extract of the Papaver Somniferum seed pod. This flower, more commonly known as the poppy, produces several naturally occurring opiates. The psychoactive opiates found in opium are morphine, codeine and thebaine. Morphine comprises most of the opium sap extract, and is the most powerful, while codeine is found in smaller proportions. Only traces of thebaine can be found in opium.

The semisynthetic derivatives of opium are heroin, hydromorphone (Dilaudid) and oxycodone (Percodan, Tylox). These drugs start with morphine, codeine or thebaine, and are changed through a chemical process. For example, heroin is morphine treated with acetic acid.

The synthetic narcotics are made exclusively by laboratory procedures. Meperidine (Demerol) and Dolophine (Methadone) are two such drugs. Designer drugs include such drugs as Fentanyl.

PHYSICAL EFFECTS

Dosage and Pathway in the Body

The narcotics are commonly injected intravenously (shooting up) or subcutaneously (skin popping). Medically, many are taken by mouth, but because the effect is slower, people using narcotics to get high tend to inject. Inhalation is possible but less popular. In Vietnam, the drugs were reportedly so pure, one could absorb enough to get "high" simply by rubbing the substance on the skin.

All the narcotics have similar effects, but there are large differences in the amount needed for the same effect, and differences in the duration of the effect. Heroin (diacetylmorphine) passes into the brain ten times easier than morphine, which explains its increased potency. The liver must metabolize heroin into monoacetylmorphine, then into morphine where it will be excreted primarily in the urine. Larger amounts of the drug reach the brain when in the monoacetylmorphine stage of breakdown.

Effective Dose to Lethal Dose Ratio

Heroin and other narcotics have a fairly small ratio between the dose required for a desired effect and the lethal dose. The ratio is approximately one to three. The actual amount varies between individuals, and within an individual as tolerance develops. This slim margin of safety, combined with the uncertainty of the percentage of "cut" in heroin bought in the street (which is usually only 2% heroin), makes this very dangerous to use. Most overdose deaths for confirmed addicts is not to the heroin itself, but due to the combination of alcohol or barbiturates with heroin. One study found that half of the heroin users died within a five year period, many of them "weekend chippers" who had not developed a tolerance. The most common cause of death was overdose, with others dying for things such as fights during robberies. A study in the Bureau of Prisons in which nearly 250 heroin addicts were interviewed, found that all but two knew friends or acquaintances who died of narcotic overdose.

If too much of a narcotic is absorbed too quickly, and especially if alcohol or barbiturates are present, breathing stops and the lungs fill with fluid from the blood. The breathing sounds like that of a person suffering from asthma, before it finally stops. The heart beat then fades away when there is not enough oxygen to nourish heart muscle. First aid for an overdose victim would include keeping him or her awake and moving, artificial respiration if breathing stops, and taking the person to an emergency room so that a narcotic antagonist can be given.

Central Nervous System Effects

The narcotics primarily act on the central nervous system. The major medical action is "analgesia", the dulling or elimination of pain. For narcotics this occurs with relatively little effect on the other senses of touch, pressure, vision and hearing. Drowsiness is common, and there is some diminishing of alertness and mental acuity. This makes the operation of vehicles dangerous. Sedation of the brain's respiratory centers occurs, and is the primary danger. The opiates, especially codeine, also suppress the brainstem's "cough center". The electrical brain waves change to a state similar to sleep. However, narcotics reduce the amount of dream sleep, which can have a bad psychological effect.

Although most of the central nervous system effects of narcotics are of sedation, there is excitation of the "vomiting center". It is quite common for new users to feel nausea and vomit repeatedly.

Effects on the Eye

Pupils in the eyes constrict (pin point pupils), an effect toward which a user does not develop a tolerance.

Cardio-Vascular Effects

Normal medicinal doses have no effect on heartrate or blood pressure. Decreased blood pressure may result at higher doses.

Effects on the Gastrointestinal Tract

In the stomach and intestines, there is a general decrease of the digestive process which results in severe constipation. Water absorption is enhanced although the level of digestive secretion is reduced. The feces dehydrate and harden, which makes the opiates very effective in relieving diarrhea, but in excess can create a dangerous blockage. Several complications can result from this lack of proper digestion including aspiration pneumonitis, ulcers, cholecystitis, pancreatitis, biliary colic, and biliary rupture. Users do not develop a tolerance to the constipating effects of opiates.

Effects on the Genital-urinary Tract

There are also several complications that can result because of the loss of sensation and increased tone in areas of the ureter, bladder and sphincter. Urinary retention, stones, bladder rupture, and uremia become more likely in the heroin user.

Effects on the Lungs

The opiates can cause the constriction of the bronchial musculature, and the closing of air tubes in the lungs. At moderate to high doses, breathing can become more difficult. Pneumonia and carbon dioxide narcosis become increasingly likely.

Complications from the Use of Needles

There are numerous complications which occur because of unsanitary practices in the use of these drugs. Drug abusers constitute the second largest group of AIDs victims. It is estimated that as many as one third of all long term I.V. drug users have the inactive AIDs virus. Most victims of AIDs in the prison system have probably acquired this disease from I.V. drug abuse.

Hepatitis is the second largest threat. Viral hepatitis is the infection of the liver. Yellow Jaundice can develop as the infection advances, leaving the victim very weak. Pain in the area of the liver is often mistaken for withdrawal pain or masked by the strong analgesic effect of the narcotic. If left untreated, hepatitis can lead to cirrhosis and death results.

Bacterial or fungal endocarditis are also prevalent. This infection of the heart itself can be fatal and is difficult to treat in the advanced stages. Hospitalization for those who have been properly diagnosed can last for months. Again pain is masked by the drug.

Sclerotic or occlusions in the veins may develop. Veins actually deteriorate from repeated puncturing, leaving "track marks." Internal scabbing and infection destroys these veins, and the addict must become more creative (under the tongue, in the groin) or shoot deeper to satisfy their craving.

Skin abscesses can also occur. Abscesses can be the result of bacterial infection in the skin, speeded along by the weakness of the immune system from improper diet and health care practices. These abscesses can actual leave puss filled holes in the body, which penetrate through the skin.

Drug Interaction

Barbiturates and alcohol greatly increase the risk of death by sedation of the respiratory centers. Narcan is a true antagonist for the opiates and can eliminate the effects within minutes after administration. If an overdose victim can be taken to a hospital in time, Narcan may save his or her life.

Tolerance

The body develops tolerance (needing more of the drug to get the same effect) to the drug's euphoric, respiratory depressant, analgesic, and sedative effects. Tolerance does not develop to the constipating effects nor to the pupil constricting effects.

Potency

Street heroin is around 2% pure. When this purity exceeds 4%, two things usually happen. Several users, usually "chippers" or occasional users, are found dead because of overdose, and numerous persons who were not using begin to use. When a user overdoses on heroin, sometimes co-users are eager to find where the victim got these "good" drugs. During the Vietnam era, soldiers were able to get highly pure drugs. Users have reportedly stated that they could actually feel the effects by simply rubbing the drug on their skin. Of course, injecting the drug produces a more potent effect then "snorting" or inhaling the drug.

Factors Leading to Death

Respiratory arrest, in which the breathing stops and fluid fills the lungs is the most common cause of death. Also, serious medical conditions can be masked by the pain killing effect of narcotics, e.g. endocarditis, hepatitis. Death can also result from the impurities (cut) in the drug which are poisonous. A "hot shot" can be due to a dealer cutting his drugs with substances like cleaning powders etc., rather than quinine, milk or sugar powders as is commonly the case.

Withdrawal

Physical withdrawal, call "the jones," usually begins four to eight hours after the last dose. Physical withdrawal can best be described as "flu like" symptoms of weakness, intestinal pain and cramps, cold sweating, "goose bump" flesh (hence the term "cold turkey"), diarrhea, intense yawning, insomnia, and dilated pupils. Withdrawal from narcotics is not life threatening, unless the person has a severe heart condition.

PSYCHOLOGICAL EFFECTS

Addictive Potential

Heroin and the opiates represent a highly addictive class of drugs. These drugs are addictive for several reasons. Not only is physical pain eliminated but psychological pain as well. The drug provides a quick release from feelings of anxiety and tension. Persons using the drug quickly learn to bury their feelings in the drug as the addiction gains a stronger and stronger grip.

Type of Euphoria

Heroin produces a "sleepy, dreamy, pleasant" state described as the "nod." The pleasure appears to come from the stomach area and has been described as "orgasmic." This pleasure apparently lasts longer than the pleasure derived from cocaine. Consequently it is not unusual for "poly drug abusers" to mix the two drugs.

User Profile

It has been speculated that the more neurotic types of emotions are controlled by heroin, and hence those prone towards anxiety and a low self image will use this drug. Illicit heroin is more commonly found in poorer sections of cities where crime may be more prevalent. A subculture may evolve around the drug or the user may simply have a criminal orientation.

Professionals, like doctors, who are addicted use drugs like demerol, morphine, and dilaudid which can be obtained by circumventing the rules governing the control of these drugs. For example, a nurse could pocket half a dose or a dose which has been refused by a patient. Drug users may use professionals by complaining of pain from legitimate or illegitimate injuries. Veterans wounded in the war can get Tylox, Percodan, Talwin, or other types of narcotics for pain.

Psychological Addiction

Psychological addiction is the craving and irritability that may persist following physical withdrawal. This craving comes from the identification of the drug with it's effects. Craving can be "triggered" by places, people, or times. It is most difficult to resist psychological craving when drugs are visible and there are no constraints. Most everyone experiences some type of craving. Craving can be illustrated by imagining a very hungry person who sees their favorite dish of food. Craving heroin is similar, although more extreme, to craving certain types of food. When food is around, that craving is most difficult to resist. Thinking about food will also make the craving worse. When one is reminded of food by T.V. adds or other stimuli, the thought of eating begins to exert control.

Generally speaking, it is the psychological addiction that is the most difficult to break. Physical addiction lasts only a few days once the drug is withdrawn. Psychological addiction can last a lifetime. It is not so unusual for an inmate to serve several years in prison drug free, and return to using heroin once release because of the "triggers" present. Sometimes inmates set themselves up for failure by seeking old drug abusing "buddies", or frequent areas where drugs are sold. Sometimes this behavior is intentional and directed at easing back into the drug subculture, other times it is not so obvious to the user. The unfortunate thing is that many feel more comfortable in this subculture, and hence repeat the cycle of addiction and detoxification several times, so that eventually, it becomes a way of life.

Progression of Addiction

Initially, the addict uses heroin to get high, to feel good and alleviate concern. Gradually, as tolerance develops, the drug abuser can no longer feel the same level of "high" and must use larger doses. Because of the expense involved, criminal behavior may escalate as tolerance climbs even higher. Eventually, the user takes heroin not to get high, but to stall off the inevitable effects of withdrawal. Use becomes a matter of avoiding pain, not seeking pleasure.

NARCOTIC ANALGESICS

OUTLINE

I. INTRODUCTION

A. History

1. one of the oldest known drugs
2. used by the ancient Sumerians
3. 1200 A.D., Arab traders took into China
4. 1700's, China passes the death penalty for opium use
5. China and Britain war over opium and imperialism
6. Dover's powder, a popular over the counter drug sold in England and the U.S., contains opium.

B. Early Laws

1. Pure Food and Drug Act of 1906 required manufactures to label all products containing opiates or cocaine.
2. Harrison Narcotic Act of 1914 restricted physicians from using opiates to treat addiction.
3. Controlled Substances Act of 1970 places Heroin in the Schedule 1 category. Use is restricted to research only.

C. Future Trends

1. Synthetic and Designer Drugs

a. Methadone and now LAAM have been developed
b. Demerol is a synthetic morphine substitute
c. Fentanyl, extremely potent and potentially damaging, is becoming a drug of abuse.

II. THE OPIATES

A. Opium is the raw sap from the poppy
B. Natural Opiates - Morphine and Codeine
C. Semisynthetic Opiates - Heroin and Dilaudid
D. Synthetic Derivatives - Methadone and Demerol

III. PHYSICAL EFFECTS

A. General Effects-reduction of respose to pain

B. Cardio-vascular-dilation, or relaxing of arteries

C. Gastrointestinal tract-constipation with possible complications/infections.

D. Lungs-breathing becomes more difficult as bronchial tubes constrict.

E. Death results from overdose when the brain's breathing control center is overly sedated

1. most overdose deaths from narcotics are among new users
2. alcohol and barbiturates greatly increase risk, this combination is responsible for most overdose deaths among addicts

F. Numerous Complication from the use of Dirty Needles

1. I.V. drug users are the second largest group of AIDs carriers, the largest group in prison.
2. Hepatitis, liver infection, can be spread.
3. Bacterial infections of the heart and brain
4. Skin infections, abscesses,
5. Collapsed veins from repeated punctures

G. Interaction Effects

1. with MAO inhibitors (antidepressants) to cause death
2. Multiplier effect (synergism) with other antidepressants and major tranquilizers.
3. Narcan neutralizes the opiates (antagonist).

H. Tolerance

1. Does develop for the drug
2. The lethal dose rises with increases in tolerance
3. Does not develop to the constipating effect and pupil constricting effect (pin eyes).

I. Potency

1. 2-4% pure on the street
2. 50% or higher purity in Vietnam

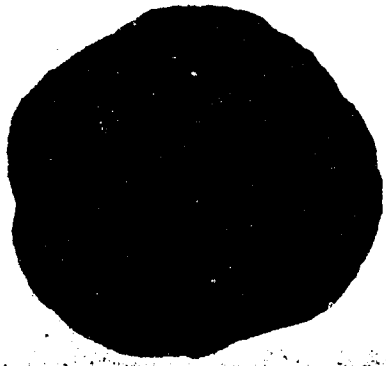
J. Factors Causing Death

1. breathing stops
2. Medical Complications-infections, stroke, AIDS

IV. Psychological Effects

A. Addictive Potential-High
B. Type of Euphoria-sleepy, dreamy, "orgasmic."
C. User profile-nervous, cultural, professionals with access
D. Psychological Addiction-craving and seeking the drug
E. Progression of Addiction-increase of dose is inevitable with continued use

Opium

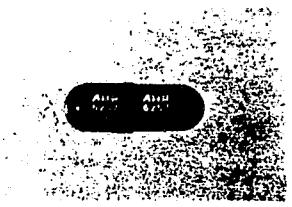


Southwest Asian heroin

Mexican heroin

Highly refined Southwest Asian heroin or Southeast Asian heroin

Controlled Ingredient: **Codeine phosphate 30 mg**
Trade Name: Phenaphen with Codeine No. 3
CSA Schedule: III
Other Ingredient: acetaminophen 325 mg



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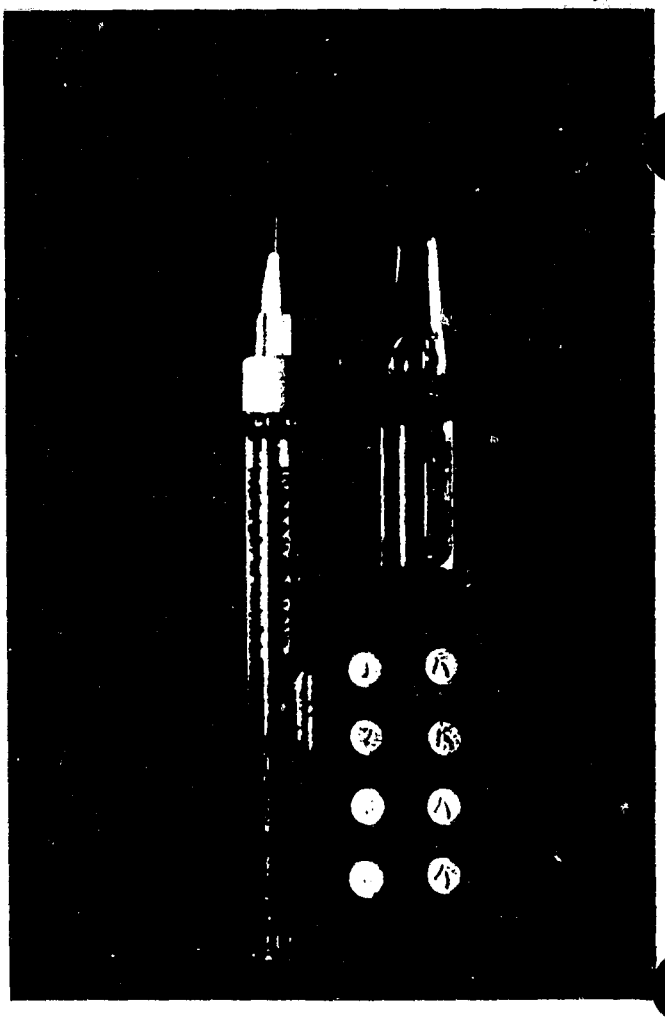
Controlled Ingredient: **morphine sulfate 15 mg per ml**
Trade Name: Morphine Sulfate Injection *(syringe)*
CSA Schedule: II

Controlled Ingredient: **morphine sulfate**
Trade Name: Morphine Sulfate *(powder)*
CSA Schedule: II

Controlled Ingredient: **morphine sulfate 15 mg per ml**
Trade Name: Morphine Sulfate Injection *(vial)*
CSA Schedule: II

Controlled Ingredient: **hydromorphone hydrochloride 2 mg per ml** *(syringe)*
Trade Name: Hydromorphone HCl
CSA Schedule: II

Controlled Ingredient: **hydromorphone hydrochloride 2 mg per ml** *(ampule)*
Trade Name: Dilaudid
CSA Schedule: II



Controlled Ingredient: **hydromorphone hydrochloride 1 mg**
Trade Name: Dilaudid
CSA Schedule: II

Controlled Ingredient: **hydromorphone hydrochloride 2 mg**
Trade Name: Dilaudid
CSA Schedule: II

Controlled Ingredient: **hydromorphone hydrochloride 3 mg**
Trade Name: Dilaudid
CSA Schedule: II

Controlled Ingredient: **hydromorphone hydrochloride 4 mg**
Trade Name: Dilaudid
CSA Schedule: II

Controlled Ingredient: **diprenorphine hydrochloride 2 mg per ml**
Trade Name: M50-50
CSA Schedule: II

Controlled Ingredient: **etorphine hydrochloride 1 mg per ml**
Trade Name: M99
CSA Schedule: II

Controlled Ingredient: **meperidine hydrochloride 100 mg** *(tablets)*
Trade Name: Demerol HCl
CSA Schedule: II

Controlled Ingredient: **meperidine hydrochloride 50 mg per ml** *(ampule)*
Trade Name: Demerol HCl
CSA Schedule: II

Controlled Ingredient: **meperidine hydrochloride 25 mg in 1 ml** *(syringe)*
Trade Name: Demerol HCl
CSA Schedule: II

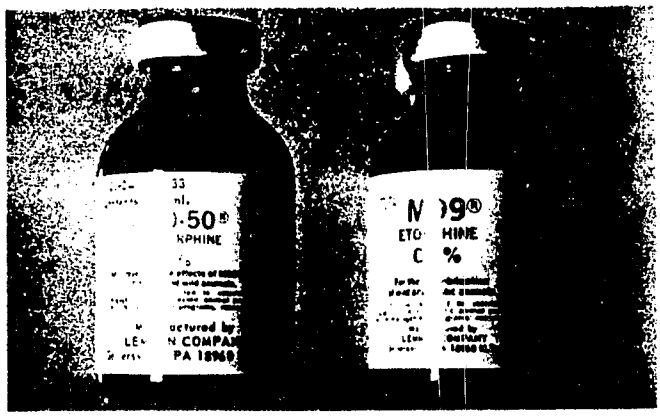
Controlled Ingredient: **meperidine hydrochloride 100 mg per ml** *(vial)*
Trade Name: Demerol HCl
CSA Schedule: II

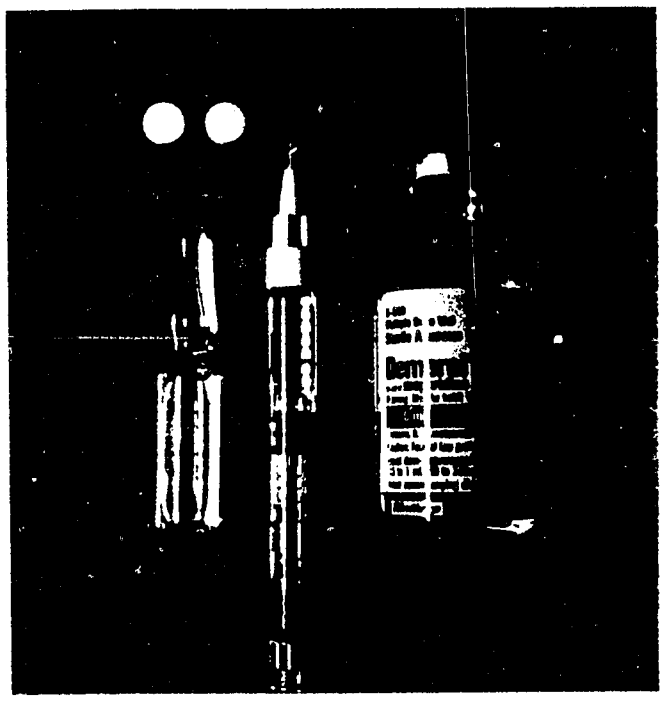
Controlled Ingredient: **methadone hydrochloride 40 mg**
Trade Name: Methadone HCl Diskets
CSA Schedule: II

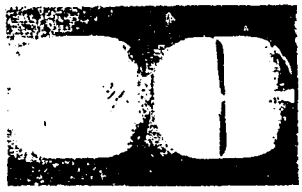
Controlled Ingredient: **methadone hydrochloride 5 mg**
Trade Name: Dolophine HCl
CSA Schedule: II

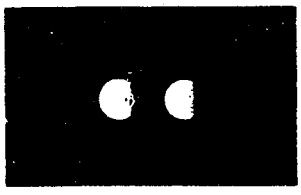
Controlled Ingredient: **methadone hydrochloride 10 mg**
Trade Name: Dolophine HCl
CSA Schedule: II

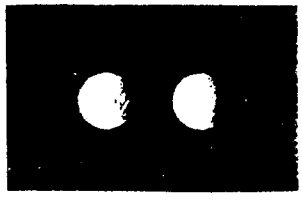
(left to right)









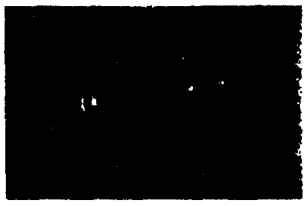


Controlled Ingredient: **propoxyphene hydrochloride 65 mg**
Trade Name: Darvon
CSA Schedule: IV

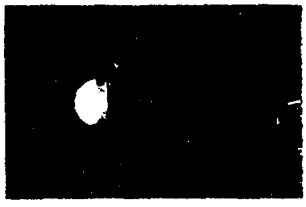
Controlled Ingredient: **propoxyphene hydrochloride 32 mg**
Trade Name: Darvon Compound
CSA Schedule: IV
Other Ingredients: aspirin 227 mg
phenacetin 162 mg
caffeine 32.4 mg

Controlled Ingredient: **propoxyphene hydrochloride 65 mg**
Trade Name: Darvon Compound - 65
CSA Schedule: IV
Other Ingredients: aspirin 227 mg
phenacetin 162 mg
caffeine 32.4 mg

Controlled Ingredient: **propoxyphene hydrochloride 65 mg**
Trade Name: SK - 65 Compound
CSA Schedule: IV
Other Ingredients: aspirin 227 mg
phenacetin 162 mg
caffeine 32.4 mg

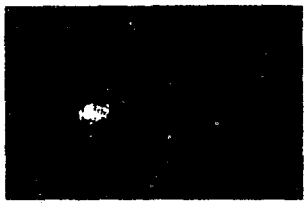


Controlled Ingredient: **propoxyphene hydrochloride 65 mg**
Trade Name: Darvon with A.S.A.
CSA Schedule: IV
Other Ingredient: aspirin 325 mg



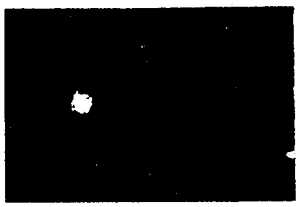
Controlled Ingredient: **propoxyphene napsylate 100 mg**
Trade Name: Darvon - N
CSA Schedule: IV

Controlled Ingredient: **propoxyphene napsylate 100 mg**
Trade Name: Darvon-N with A.S.A.
CSA Schedule: IV
Other Ingredient: aspirin 325 mg

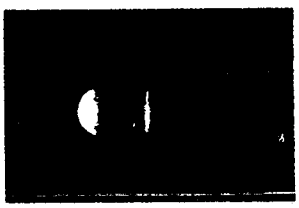


Controlled Ingredient: **propoxyphene napsylate 100 mg**
Trade Name: Darvocet-N 100
CSA Schedule: IV
Other Ingredient: acetaminophen 650 mg

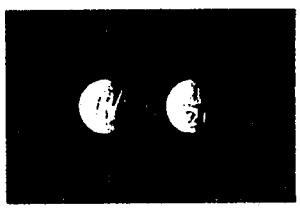
Controlled Ingredient: **propoxyphene hydrochloride 65 mg**
Trade Name: SK-65 APAP
CSA Schedule: IV
Other Ingredient: acetaminophen 650 mg



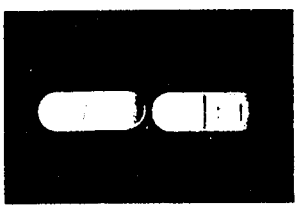
Controlled Ingredient: **propoxyphene hydrochloride 65 mg**
Trade Name: Wygesic
CSA Schedule: IV
Other Ingredient: acetaminophen 650 mg



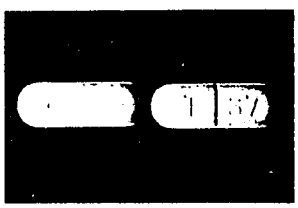
Controlled Ingredient: **pentazocine hydrochloride 50 mg**
Trade Name: Talwin
CSA Schedule: IV



Controlled Ingredient: **pentazocine hydrochloride 50 mg**
Trade Name: Talwin Nx
CSA Schedule: IV
Other Ingredient: naloxone hydrochloride 0.5 mg



Controlled Ingredient: **pentazocine hydrochloride 25 mg**
Trade Name: Talacen
CSA Schedule: IV
Other Ingredient: acetaminophen 650 mg



CHAPTER VI

COCAINE AND OTHER STIMULANTS

Cocaine Hydrochloride

COCAINE AND OTHER STIMULANTS

TITLE:

Cocaine and other Stimulants

PURPOSE:

The purpose of this lesson is to discuss the hazardous effects (psychological and medical) of cocaine and other stimulant abuse. Treatment strategies for cocaine and other stimulant abuse are outlined as well as a self-test for addiction. A special section on "crack" is included.

OBJECTIVES:

The objectives of this lesson are as follows:

a. To describe the addictive properties of cocaine and stimulants.

b. To provide a self-assessment to determine if one is addicted to cocaine and stimulants.

c. To describe the psychological and medical consequences of cocaine and stimulant abuse.

d. To outline treatment strategies for cocaine and stimulant abuse.

e. To discuss the physical/psychological hazards of "crack".

TIME FRAME:

Length is approximately 2 to 2 1/2 hours (excluding films)

TEACHING TOOLS:

Cocaine Addiction survey (see appendix), films, reference material, 10 True/False Questions.

Chapter 6 Sample Questions

TRUE OR FALSE

1._____ Cocaine is medically classified as a narcotic.

2._____ Severe depression is often associated with cocaine withdrawal.

3._____ Acute paranoid reactions nearly always occur after long term heavy use of cocaine and amphetamines.

4._____ Mixing Cocaine with heroin cancels the effect of both drugs.

5._____ Smoking cocaine is not possible.

6._____ "Crack" is cocaine hydrochloride.

7._____ Stimulants like cocaine repress natural drives.

8._____ Death can result after the first use of cocaine.

9._____ Coffee and Nicotine are weak stimulants.

10_____ Dextro- and Methamphetamines are also weak stimulants

COCAINE

History

Cocaine is an alkaloid extracted from the leaves of the coca plant, which has been cultivated in the Andean highlands of South America since prehistoric times. The Peruvian Indians who live in high altitudes have used the coca leaf to provide energy, reduce hunger, and alleviate headaches. It is legal for them to use it in the form of raw leaves and in the form of tea. However, much of the coca production is diverted to crude factories where the active ingredient, cocaine, is extracted for export.

When the Spanish conquistadors came to South America, they initially tried to suppress coca use, largely because of its ties to the native religion which they were attempting to destroy. However, they found that coca was useful in getting native mine and field workers to work harder with little food or rest in high altitudes. They even paid workers in part with coca leaves.

Coca was rarely seen outside South America until the mid-1800s when German scientists isolated the active ingredient, cocaine. It was experimented with as a medical drug, and at first appeared very promising as a treatment for alcohol and morphine addiction, and as a treatment for depression. However, it was not many years before the dangers of abuse were published, which can include compulsive use, convulsions, paranoid psychosis and even death. By the turn of the century in America, cocaine was an ingredient in many "patent medicines" which did not have to reveal their ingredients. This medicines often did make people feel better, but they had no warning regarding the dangers of too frequent use. Cocaine was also a main ingredient of a new soft drink, Coca-Cola, which contained cocaine until it was outlawed by the Harrison Narcotic Act of 1914. Even today "Classic Coke" uses flavoring from the coca plant, although all the cocaine has been removed.

Extent of Use

A 1985 survey found that some 3% (5.8 million) of the American population used cocaine within the past month. Approximately 5% of high school students, and 25% of the young adult (age 18-25) sample reported having used it at least once in their life (20 million Americans), although fewer reported use within the last year. The trend is that those who continue use to switch from snorting to the more dangerous smoking of cocaine, although at the time of this survey snorting was still the preferred method of use.

Origin and Composition

About 75% of the available cocaine in our country comes from Columbia, while another 25% reportedly comes from Bolivia, Peru, and several other countries. About 144,600 pounds of cocaine were consumed by Americans in 1986 as compared to 62,000 pounds of the drug in 1983 (source: NIDA).

In order to increase profits, cocaine dealers add other ingredients to the drug such as procaine, a local anesthetic or other powdered substances. There have even been reports that white plastic shavings have been used as an adulterant. These other ingredients may cause physical problems, in addition to the physical problems from the cocaine itself. Someone who is used to injecting adulterated cocaine or cocaine that has been "stepped on" may overdose if the purity of the cocaine purchased is unexpectedly higher.

Dosage and Pathway

Cocaine is ingested primarily by three methods.

1. Snorting or absorption of cocaine hydrochloride through the nasal membranes/sinus cavities.

2. Injection of cocaine hydrochloride into a vein.

3. Freebasing or inhaling fumes of cocaine base/rock.

It takes about three minutes for the user to achieve a high by snorting, one half minute when it is injected, and a few seconds when it is smoked. The intensity of the high is affected by the amount and purity of the cocaine, the speed at which it enters the brain, and the user's acquired tolerance to cocaine (requiring increasingly larger doses to achieve the same results). Generally, a "line" of cocaine used for snorting contains about 25-30 milligrams, about the same quantity is used for injecting the drug and less is used in freebasing because the purified form has a greater kick.

Physical Effects

Although it is legally used medically as a local anesthetic that blocks nerve pain and reduces bleeding, it is generally recognized as a stimulant and euphoriant. Cocaine interacts with substances in the central nervous system that carry messages to various parts of the brain. It narrows blood vessels and thus raises blood pressure, increases the respiration rate and body temperature, and increases general activity level.

Cocaine appears to have its effect by altering the effectiveness of two neurotransmitters in the brain. Neurotransmitters are chemical messengers that transmit information from one brain cell to another. The neurotransmitter "dopamine" is involved with the brain's pleasure or reward system, and helps a person learn to repeat an act that led to the release of dopamine. The second neurotransmitter effected by cocaine is "noradrenaline," which is involved with alertness and nervousness.

Normally, these neurotransmitters are "shot out" of a brain cell when that cell is "talking" to another cell, and then after the other cell receives the message the extra neurotransmitter is pumped back into the sending cell. Cocaine appears to have its effect by preventing the unused neurotransmitter from being pumped back into the sending brain cells. The extra neurotransmitter stays near the receiving brain cells, and continues to stimulate those cells, producing an unusual degree of excitement. This excitement is of pleasure (dopamine) and alertness (noradrenaline). However, the extra neurotransmitter is destroyed by the body when not protected within the brain cells.

In this way, the person using cocaine experiences initial excitement, but then depletes his or her natural supply of these neurotransmitters and becomes exhausted and depressed. It takes time for the body to replenish its natural supply, but the typical response of a cocaine abuser is not to rest and recuperate, but to take even more cocaine in order to stay high.

The physical effects of cocaine in other parts of the body is to constrict blood vessels, and to produce a numbness in the area where it is placed. This constriction of blood vessels will slow the absorption of cocaine from the nasal tissues, and will also prevent enough blood from reaching these tissues, causing areas of cell death. The blood vessel constriction elevates blood pressure and can induce heart attacks, as another effect of cocaine is to speed the heartrate. There is a general increase in muscle tone in the short run, with increased physical stamina.

Effective Dose to Lethal Dose Ratio

Because tolerance develops quickly to cocaine, a user will often take a dose in the evening that would be lethal in the morning. It is difficult to say what dose is lethal, for there is a "kindling" effect in which some nerves appear to become increasingly sensitive to the convulsive and irritating effects, while other nerves are not effected in this way or even become less sensitive, especially to the euphoric effects.

Cocaine kills over 700 Americans each year from direct poisoning effects. The most common reason for death appears to be the constriction of blood vessels leading to the heart, producing a heart attack. Many users have experienced chest pain while using cocaine; these chest pains indicate a near heart attack. Other reasons for death include the bursting of blood vessels in the brain due to sudden rises in blood pressure, heart over-stimulation leading to fibrillation (quivering) rather than normal beating, and death from fever and convulsions.

Is cocaine addicting?

According to the leading experts (Dr. Mark Gold, Author of 800-COCAINE, Dr. Sidney Cohen, author of The Substance Abuse Problems, and Dr. Oakley Ray, author of Drugs, Society and Human Behavior) cocaine is definitely addicting.

The criteria for addiction are:

1. Increased tolerance is experienced.
2. Withdrawal is experienced.
3. The acquisition and use of the drug affects job and family.
4. The use of the drug contributes to illegal activities.

Cocaine abuse can certainly lead to addiction by these criteria.

1. Tolerance and Dependence

In the past, addiction to cocaine was believed to be rare, because relatively small doses were snorted. Very high doses of cocaine are now consumed when a user injects cocaine into his or her veins, or inhales purified fumes of cocaine. Tolerance for the drug quickly increases so that more and more of the drug is needed to obtain the desired high. The compulsion to keep using is so great that the repeated injection or continued smoking of the drug soon outweighs all other drives such as hunger and sex. The craving or psychological dependence induced by cocaine is extreme in some people, particularly those who smoke freebase/rock or inject cocaine. Cocaine caused about 15,000 emergency room visits and over 700 deaths in 1986. Eventually, the cocaine has little pleasant effect and paranoid thoughts and actions develop. Users report hiding in their homes with loaded guns waiting for law enforcement officials to enter.

2. Withdrawal

Withdrawal occurs when a compulsive user of cocaine stops using the drug. The intensity of the withdrawal depends on several factors including the manner in which cocaine is administered, the frequency of use, and the dosage. Cocaine withdrawal usually involves exhaustion, depression, irritability, sleeplessness, loss of energy, and intense craving for cocaine. Suicide may be more likely during this time, especially if the person has spent all his or her resources, or if the person feels that he or she has lost the respect of other people.

Many pharmacologists do not believe that true physical dependence (addiction) to cocaine occurs, because terminating its use does not result in the same physical withdrawal crisis as found in abusers of narcotics, or sedatives such as alcohol in which life-threatening convulsions can occur. However, experts who treat cocaine dependence agree that cocaine use can produce withdrawal symptoms that are at least in part physical (exhaustion and depression caused by depletion of neurotransmitters) especially among those who inject or freebase cocaine.

3. The acquisition and use of the drug affects job and family.

The most common adverse effect on the family is financial and emotional. The user who become dependant on this drug allows it to be the focus of his or her life, even more important than friends and family. Cocaine addicts will lie, take money from their family, ignore responsibilities, and prefer to be high rather than spend time with loved ones. Cocaine becomes their primary love in life, their major source of pleasure. There are many who have lost houses, cars, jobs, and freedom due to their unreasonable desire for cocaine.

Chronic cocaine use causes serious medical problems which cannot be ignored by family members, friends and fellow workers. When it is "snorted" frequently and in substantial doses, it has highly destructive effects. It dries out the delicate nasal membranes until they crack and bleed almost constantly. Perpetual "cold-like" symptoms with a constantly running nose and a persistent dull headache are common. Small amounts of cocaine left in the nasal passages and not absorbed into the bloodstream can erode the cartilage separating the nostrils. Plastic surgery may be required to repair the damage. The blood supply to delicate nasal tissue is restricted because cocaine is a vasoconstrictor. This restricted blood flow to nasal tissue can also result in damage to the septum and other tissues. Some people experience convulsions, especially those with epilepsy.

Chronic medical complications associated with the intravenous use of cocaine include hepatitis, skin infections, tetanus, and possibly AIDS. Seizures are sometimes experienced by heavy cocaine users regardless of the route taken. Heavy users of cocaine experience "shakes", depression and fatigue when they "crash" after staying high for days at a time. Chronic users suffer from dental problems, malnutrition and sexual dysfunction, and sometimes death from overdose.

Death from cocaine does occur. The sudden increase in blood pressure can rupture arteries in the brain. The most common cause of cocaine overdose death is a heart attack. The heart is speeded, but the blood supply to this muscle is choked due to cocaine's effect of constricting blood vessels, resulting in a heart attack and possible death. Smoking cocaine in freebase or crack form is the most dangerous, as it is possible to have very large doses enter the body. When taken by nose, the blood vessels there tend to constrict, reducing the amount that gets into circulation. The number of annual cocaine-caused deaths was 328 in 1983, and has jumped to 734 in 1986.

A Center for Disease Control in 1982, stated that 11,000 cocaine abusers (about 950 per month) were admitted to Federally funded drug abuse programs in 1980, triple the number of just three years earlier. This does not include the 3,000 or more private centers that treat drug abusers. Treatment can be expensive and long term. Self-help groups continue to provide much support although a period of hospital confinement can help get one through the withdrawal phase and establish new behavior patterns.

Considering the psychological and physical affects of heavy cocaine use, it would be impossible for family relationships and job performance not to be adversely affected. Relationships, values and priorities change in respect to the chronic user`s single-minded drive to obtain and use cocaine. Animal studies show how addicting the drug is since food, water, and sex is ignored for cocaine, to the point of death.

Cocaine is the ultimate reinforcer. In one study, monkeys pressed on a bar repetitively (12,800 times) in order to obtain a single dose of cocaine. They worked for cocaine in preference to food even though they were starving, and even ignored a receptive female in their cage, while pressing the bar for the drug. The monkeys preferred an electric shock in order to obtain a large does of cocaine even though they could have received a lesser dose without a shock. The monkeys in an unlimited access situation, self-administered cocaine by bar pressing until they died of brain seizures. These monkeys reportedly were normal until they were given cocaine, and did not have any situational stresses. All monkeys responded in this compulsive manner.

If humans had unlimited access to cocaine they would probably behave like the monkeys. The highly rewarding properties of cocaine can make obsessive users of mature and well integrated people. People often change their values and abandon friends, relatives, and career in the pursuit of cocaine.

4. The use of the drug contributes to illegal activities.

The acquisition of cocaine is an illegal act. Cocaine users risk losing their health, important relationships (wife, husband, parents, siblings, children), careers or jobs, and their freedom. People who under normal circumstances would not consider breaking the law, will risk a prison term in order to obtain cocaine.

The use of cocaine can certainly contribute to illegal acts for which one can be incarcerated. Many offenders deny that cocaine use contributed to their illegal activities, saying that money, peers and the thrill of getting over on the law were the main motives for their actions. For others, the compulsive drive to obtain and use cocaine was the prime cause which led them into associations and activities which contributed to their incarceration and legal problems. This latter group could benefit from a drug treatment program if they are receptive to the notion that they are in need of treatment.

Numerous clinical reports indicate that users sell everything believing they can later replace their possessions. Eventually, some even sell the use of their bodies. Later, as funds are depleted, other types of crime appears. Selling cocaine, robbery, and numerous other crimes are committed by previously law abiding citizens. The criminally-oriented escalate their activities, possibly up to ten-fold, when in this desperate state of addiction.

How can cocaine addiction be treated?

Successful treatment of cocaine abuse typically goes through the following stages:

1. The abuser reaches a stage of unhappiness which cannot be denied or rationalized. The stage is frequently referred to as "bottoming out." Legal problems and incarceration sometimes are a strong enough shock for the cocaine abuser to examine his/her life and decide to make a change.

2. At this point, the abuser has to change associations (friends, peers), his/her identity, and thinking. Individual and group counseling can be helpful in this process.

3. A superior alternative to the habit must be found. The patient must rediscover the value of friends, relatives, health, work and self-esteem that a drug-free life can offer.

4. To prevent a relapse, there are some resolutions a cocaine addict must adopt and stick to, according to Dr. Mark Gold, a nationally recognized expert in this area.

   * He/She must avoid drug users altogether.

   * He/She must not stay in a room or at a party where someone is preparing to use or is using drugs.

   * He/She must not help friends find drugs or accompany a friend on such an expedition.

   * He/She must not touch or handle any drugs at any time.

   * He/She must not accept or fill any drug prescriptions without program approval.

   * He/She must avoid going to places where he/she knows drugs will be available - a rock concert, for example.

   * He/She must realize that he can think about cocaine, crave it, but not use it. He/She must also realize that he/she is required to honor his/her treatment commitment in the face of all temptations and pressures to terminate.

Referral Sources in the Community:

800-COCAINE is the cocaine hot-line available for providing information and referral, if that is indicated.

Cocaine Anonymous (CA) is available in most metropolitan areas. The guidelines for CA are as follows:

* Do not associate with cocaine users. Leave a place when you find that cocaine is present.

* Switching to other drugs, or trying to cut down on cocaine is futile. The message is: "Stop using cocaine and other drugs."

* Make amends with the people you hurt while you were a "cocaine junkie." In that way the shame and guilt will be reduced.

* Examine your self, identify the flaws in your character, cultivate spiritual awareness. These activities will help prevent slipping back into the old ways.

* Look around you in CA. Are these people happier and more content than your cocaine using friends were?

* Recovering addicts can help the addict who wants to recover.

* Addiction is a progressive illness that cannot be cured, but it can be arrested through total abstinence for a lifetime.

* For additional information regarding CA, contact:

CA Central Office
712 Wilshire Boulevard
Suite 149
Santa Monica, CA 90401
Telephone: (213) 553-8306

A self-evaluation questionnaire, reprinted with permission, is available in the appendix.

CRACK

What is crack?

Crack is crystallized freebase cocaine sold in the form of ready to smoke "rocks". The name freebase literally describes the pure cocaine alkaloid freed from its hydrochloride salt. The new rocks are nicknamed "crack" because of the cracking sound they make as they are smoked.

Why is crack so dangerous?

Crack is especially insidious and dangerous because it is sold in ready to smoke, small $10.00 to $20.00 vials. It is priced within most people's financial limits and can create an almost unbreakable need for continued use.

Smoking cocaine freebase or crack gives the user a far more intense and rapid euphoria than snorting cocaine powder. However, this euphoric high lasts only about five minutes and is followed almost immediately by an equally unpleasant crash, characterized by feelings of irritability and agitation and intense cravings for more of the drug.

Data collected on the 800-COCAINE hotline through May of 1986 show that the majority of callers had experienced severe and life threatening medical and psychological side effects: chest congestion (65%), chronic cough (40%), brain seizures with a loss of consciousness (7%), severe depression (85%), loss of sexual desire (58%), memory lapses (40%), violent behavior (31%) and suicide attempts (18%).

Unlike "snorted cocaine" which is taken through inhaling the powder through the nose, crack is smoked. The blood vessels in the lungs are numerous, and unlike the sinus cavity do not collapse enough to limit intake (cocaine is a vasoconstrictor). Consequently, dangerously high doses that are extremely addictive are taken in, rendering the user extremely eager to seek the "crack" high. Crack is to cocaine as heroin is to opium, and THC is to marijuana.

Users of cocaine claim that they had some control while using cocaine, but no control while using crack. Clinical reports indicate the addictive potential of this new form of the drug cocaine may be the most addictive we have ever faced. Some users report the intensity of the "high" to be stronger than injecting cocaine. Indeed, it takes crack less time to get to the brain than injected cocaine. This speed and intensity of the high makes crack potentially our most serious drug problem.

STIMULANTS

What are stimulants?

Stimulants ("uppers") refer to several groups of drugs that tend to increase alertness and physical activity. Some people use stimulants to counteract the drowsiness or "down" feeling caused by sleeping pills or alcohol. This up/down cycle is extremely hard on the body and dangerous. Amphetamines, cocaine, preludin, ritalin, nicotine and caffeine are all stimulants.

What are amphetamines?

Amphetamines include three closely related drugs - amphetamine, dextroamphetamine, and methamphetamine. Their street names include: "speed", "white crosses", "uppers", "dexies", "bennies", and "crystal". In pure form, they are yellowish crystals that are manufactured in tablet or capsule form. Abusers also sniff the crystals (although this is painful) or make a solution and inject it.

Are amphetamines used for medical purposes?

Amphetamines are used for treating narcolepsy (a rare disorder marked by uncontrolled sleep episodes) and attention deficit disorder (hyperactivity) in children. They also are prescribed for short-term treatment of obesity.

What are the physical effects of amphetamines?

Amphetamines increase heart and breathing rates and blood pressure, dilate pupils, and decrease appetite. In addition, the user can experience a dry mouth, sweating, headache, blurred vision, dizziness, sleeplessness, and anxiety. Extremely high doses can cause people to flush or become pale; they can cause a rapid or irregular heartbeat, tremors, loss of coordination, and even physical collapse. An amphetamine injection creates a sudden increase in blood pressure that can cause death from stroke, very high fever, or heart failure.

How do amphetamine users feel?

In addition to the physical effects, users report feeling restless, anxious and moody. Higher doses intensify the effects,and the user can become excited and talkative and have a false sense of self-confidence and power.

People who use large amounts of amphetamines over a long period of time also can develop an amphetamine psychosis: seeing, hearing and feeling things that do not exist (hallucinations), having irrational thoughts or beliefs (delusions), and feeling as though people are out to get them (paranoia).

People in this extremely suspicious state frequently exhibit bizarre -sometimes violent- behavior. These symptoms usually disappear when people stop using the drug.

What about long-term effects?

Long term heavy use of amphetamines can lead to malnutrition, skin disorders, ulcers, and various diseases that come from vitamin deficiencies. Lack of sleep, weight loss, and depression also result from regular use. Frequent use of large amounts of amphetamines can produce brain damage that results in speech and thought disturbances, and difficulty sleeping long after use. In addition, users who inject amphetamines intravenously can get serious and life-threatening infections from unsterile equipment or self-prepared solutions that are contaminated. Injecting them can cause lung or heart disease and other diseases of the blood vessels, which can be fatal. Kidney damage, stroke, or other tissue damage also may occur.

Can people become dependent on amphetamines?

Yes. Some people report a psychological dependence, a feeling that the drug is essential to their normal functioning. These users frequently continue to use amphetamines to avoid the "down" mood they get when the drug's effects wear off.

In addition, people who use amphetamines regularly may develop tolerance, the need to take larger doses to get the same initial effect.

When people stop using amphetamines abruptly, they may experience fatigue, long periods of sleep, irritability, hunger, and depression. The length and severity of the depression seems to be related to how much and how often the amphetamines were used. All stimulants place the body in a condition termed "stress," which is necessary in emergency situations, but does wear out the body's resources.

What are "look-alike" stimulants?

Look-alike stimulants are drugs manufactured to look like real amphetamines and mimic their effects. The drugs usually contain varying amounts of caffeine, ephedrine, and phenylpropanolamine. These three legal substances are weak stimulants and often are found in over-the-counter preparations, such as diet pills and decongestants. More recently, new drugs called "act-alikes" have been manufactured to avoid new State laws that prohibit look-alikes. The act-alikes contain the same ingredients as the look-alikes but do not physically resemble any prescription or over-the-counter drugs. These drugs are sold on the street as "speed" and "uppers" and are expensive, even though they are not as strong as amphetamines. They often are sold to young people who are told they are legal, safe and harmless. This is one reason they are being increasingly abused.

What are the effects of look-alikes?

Some negative effects of look-alikes, especially when taken in large quantities, are similar to the effects of amphetamines. These effects include anxiety, restlessness, weakness, throbbing headache, difficulty breathing, and a rapid heartbeat. There have been several reports of severe high blood pressure, leading to cerebral hemorrhaging and death. Often, in an emergency, look-alike drug overdose cases are misidentified by physicians and poison control centers. This can cause a problem in determining the proper treatment.

What are the dangers of look-alikes?

One of the greatest dangers is that these drugs are easily available and are being used by young people and others who do not normally abuse drugs. Once people start using these drugs, they may be at high risk for using other drugs.

Because look-alikes are not as strong as real amphetamines, they are extremely dangerous for people who deliberately, or accidentally, take the same amount of real amphetamines as they would take of the look-alikes. For example, people who buy look-alikes on the "street" may, unknowingly, buy real amphetamines and take enough to cause an overdose. On the other hand,people who have abused amphetamines may underestimate the potency of the look-alike drugs and take excessive amounts that can result in a toxic reaction.

Is caffeine a drug?

Yes. Although caffeine is legal, and is present in coffee, tea, chocolate, and many colas, it is a stimulant drug. Overdoses are common, but are usually in the form of nervousness and inability to sleep when taken in liquid form. More severe overdoses can easily occur when the caffeine is taken in pill form (NoDoz). Like amphetamines and cocaine, an overdose can result in confusion, convulsions, and paranoia. Like all drugs, caffeine can be used and it can be abused.

As with other stimulants, moderate doses of caffeine decrease reaction time, and increase mental alertness. Heartrate increases, blood vessels constrict, and blood pressure increases. Long-term heavy use is associated with peptic ulcers. Caffeine differs from other stimulant drugs in that urination is highly stimulated, and basal metabolism (the rate at which cells burn sugar) is increased an average of 10% with three or four cups of coffee. This increase in cellular metabolism is probably responsible for caffeine's stimulating effects on the nervous system.

Heavy users of caffeine do exhibit withdrawal symptoms, which are usually in the form of headaches, irritability, restlessness and lack of energy. A 1969 study showed that physical dependence does occur on five or more cups of coffee a day.

A fatal overdose is possible but unlikely at it would require about 10 grams, equivalent to 70 to 100 cups of coffee. A toxic but not lethal delirium can occur after taking 10 tablets of NoDoz, which can create a state of confusion and mania that can last for days.

It is also worth noting that rats fed large doses of caffeine have become highly aggressive, launching unprovoked attacks on other rats and even becoming self-mutilating.

In summary, caffeine, although legal, is a drug that must be used with caution.

COCAINE/STIMULANTS OUTLINE

I. What is cocaine?

A. Alkaloid extracted from the leaves of the coca plant

B. A stimulant, euphoriant and local anesthetic

1. narrows blood vessels
2. raises blood pressure
3. increases respiration rate
4. increases heart rate

II. How is cocaine used?

A. Routes of administration

1. Orally

a. chewing the leaves reduces blood flow to teeth causing loss of teeth.
b. drinking teas or elixirs as in the original Coca Cola.

2. intranasal (snorting)

a. intranasal inhalation limits the dose because of the constriction of the nasal capillaries.
b. limited blood to nasal tissue destroys nasal septum resulting in holes and severe bleeding

3. injecting (shooting) into the vein

a. injecting can spread numerous diseases including aids and infections to vital organs
b. Collapsed veins from frequent punctures (track marks)

4. Smoking (basing)

a. unlimited passage due to large area of lung tissue exposure to the drug
b. rapid rise of cocaine in the blood causing intense euphoria
c. rapid decrease in blood levels causing immediate craving

IV. Is cocaine addicting?

A. Studies with animals show they prefer cocaine over food, sex, or water, until death occurs

B. The same type of dependence is reported in humans

1. Increased tolerance is experienced
2. Withdrawal in the form of depression is experienced
3. Drug cravings dominate the personality at the expense of work, family and health.
4. As finances are deleted, illegal acts become more likely as a means to get money for drugs

V. How can cocaine addiction be treated?

A. Feelings and thoughts go through changes

1. Initially, unhappiness and depression
2. Changes in associations, identity, and thinking
3. Beneficial alternatives are developed
4. Resolutions are made
5. Changes in habits develop with support

B. Community followup is advisable

1. found through 800-COCAINE
2. Cocaine Anonymous or Narcotics Anonymous

VI. What is crack? (rock, freebase)

A. Crystallized cocaine most often produced by heating a mixture of cocaine hydrochloride, baking soda and water

B. Purified cocaine which can be smoked

C. Highly addictive because of the large dose and rapid rise of blood serum levels

VII. What are stimulants? (speed, uppers)

A. Drugs that increase heart rate, respiration, physical activity and nervousness levels

1. loss of sleep and appetite
2. irritability, restlessness
3. false confidence
4. suspiciousness and paranoia
5. sudden increase in blood pressure
6. heart failure, kidney damage

B. Coffee and tobacco are weaker stimulants while cocaine and amphetamines are stronger stimulants.

C. Amphetamines are longer lasting than cocaine but have a similar effect, although less euphoria.

1. usually injected but occasionally inhaled
2. often impure because they can be illegally manufactured

D. The two types of amphetamines are meth and dextroamphetamine. Preludin (bam) is weaker although chemically related to amphetamines, is used for weight reduction. Ritalin is a weaker stimulant used for childhood attention deficit disorder.

E. Addictive potential

1. increased tolerance
2. sometimes mixed with heroin (speedball)
3. Severe depression and fatigue after discontinued use
4. Contributes to neglect of health, family, and law

VIII. What are "look-alike" stimulants?

A. Drugs manufactured to look like amphetamines and mimic their affect

1. avoid State laws by using legal drugs
2. maximize placebo affect

B. "Act-alikes" contain the same drugs as "look alikes" but look different

1. avoid State laws prohibiting "look-alikes"
2. produce the same sensations as "look-alikes"

C. Problems associated with "look-alikes" and "act-alikes"

1. encourage and facilitate young to use drugs
2. overdose and toxic reactions
3. mistaken for the real drugs in a hospital emergency room

IX. Is caffeine a drug?

A. Moderate doses

1. increase mental alertness
2. decrease reaction time

3. constricts blood vessels
4. increases blood pressure
5. increases heartrate
6. stimulates urination
7. increases rate of cell metabolism

B. High doses

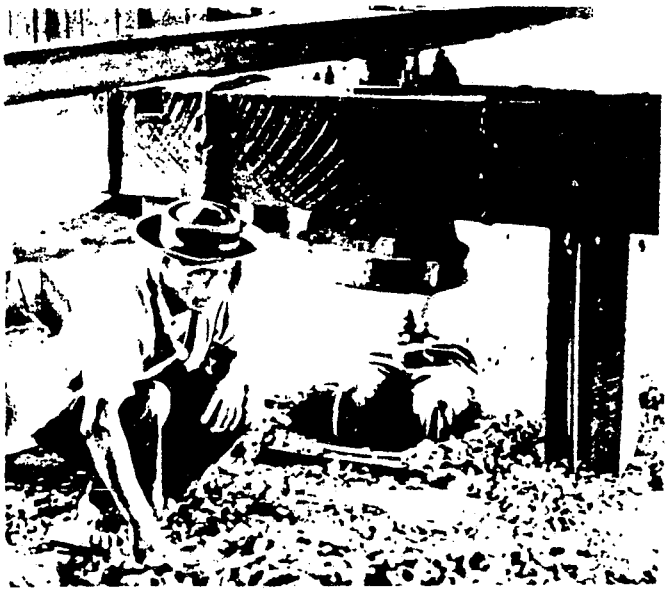
1. one gram (10 cups of coffee) can produce a state of confusion and mania that can last for days in some cases
2. causes paranoia
3. may induce convulsions
4. lethal dose is 10 grams (70-100 cups of coffee)
5. rats fed large doses become highly aggressive, even self-mutilating

C. Long-term effects

1. peptic ulcers
2. physical addiction with five or more cups a day
3. withdrawal symptoms
   a. headaches
   b. irritability
   c. restlessness
   d. lack of energy

D. Is a drug, that can be used in moderation, or abused

Cocaine lab



Gathering coca leaves in the Andes

PHOTOS © ANGEL FRANCO—VISION FOTOS

High and low: *In a public restroom, first euphoria and then, outside, vomiting*

"Crack"

CHAPTER VII

HALLUCINOGENS

HALLUCINOGENS

PURPOSE

The purpose of this lesson is to present information on the psychoactive substances called Hallucinogens.

OBJECTIVES

After exposure to the lesson materials presented by a competent instructor, an attentive motivated student will be able to:

1) Describe the general effects of drugs in the Hallucinogens drug class, sometimes called Psychedelics or mind-expanders

2) Identify at least five drugs classified as Hallucinogens

3) For the drugs-- LSD, Psilocybin, Mescaline, and PCP-- be able to recall factual information about their names, history, origin, forms, dosage, path in the body, effects while under the influence, and long term effects.

4) Be able to describe at least two adverse effects of intoxication for the drugs-- LSD, Psilocybin, Mescaline, and PCP.

5) Be able to describe at least two adverse long term effects of the drugs-- LSD, Psilocybin, Mescaline, and PCP.

TIME FRAME: 2 hours

EXERCISES AND TEACHING TOOLS

1) Before presenting the information on intoxication effects for each drug, have class members who used the drug describe their experiences.

2) A homework assignment in which drug "X" could be any of the Hallucinogens: "What could you do naturally to produce experiences similar to the intoxicating effects of drug X?"

3) At the end of the entire lesson ask class members to address this question: "In your opinion, which of the drugs we have discussed is the most harmful and why?"

4) Conduct a contest similar to the old "College Bowl" in which the class is divided into two teams and the instructor asks the members of each team, in sequence, a question about the Hallucinogens. Score points for correct answers.

Chapter 7 Sample Questions

True or False

1)_____ LSD slows down most bodily processes.

2)_____ LSD makes most people more suggestible.

3)_____ Psilocybin comes from a cactus.

4)_____ Not only does PCP cause numbness, depending on dose it also acts as a stimulant, depressant, and hallucinogen.

5)_____ PCP is used as an anesthetic in surgery.

6)_____ MDA and MDMA are both depressants and hallucinogens.

7)_____ Tolerance develops to Mescaline.

8)_____ Peyote, a cactus containing mescaline, is used legally by American Indians.

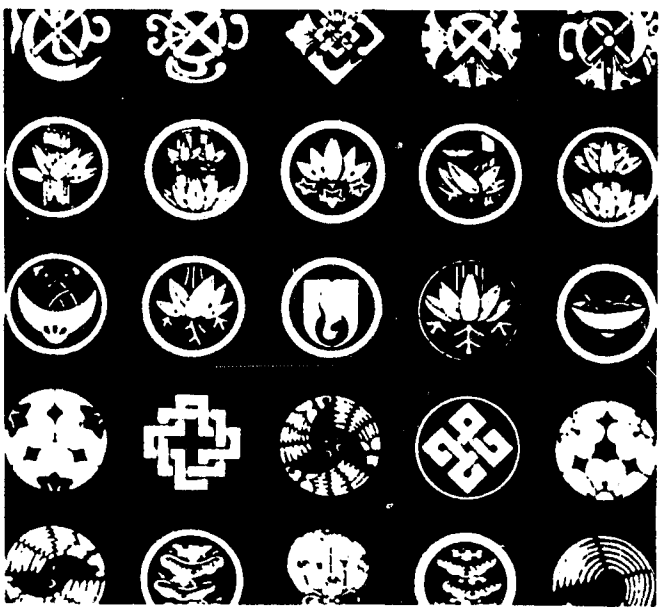
9)_____ Under the influence, PCP is more likely to produce a "blank stare" than is LSD.

10)_____ PCP makes a person under the influence more sensitive to pain.

Peyote cactus

Psilocybe mushroom

LSD blotter paper



HALLUCINOGENS

Hallucinogens are those psychoactive substances which can produce perceptual distortions when taken at effective dosage levels. These drugs primarily cause changes in body awareness and visual distortions (changes in color and size perception). They can also cause visual hallucinations (seeing things that aren't really there). Hallucinogens have been called Psychedelic (mind expanding), Psychotomimetic (psychosis imitating), Illusionogenic (illusion producing), and Psychodysleptic (mind disrupting).

There are a number of chemicals in this drug class, including LSD (acid), Psilocybin (magic mushrooms), Mescaline (peyote), PCP (angel dust), and a variety of chemicals known by abbreviations, including MDA, MDMA, DOM, TMA, DPT, DET, and DMT. Hallucinogens can be further classified into three groups of drugs with similar effects: (1) LSD, psilocybin, DET and DMT all appear to disrupt the functioning of the serotonin brain system, which filters awareness of sensations and thoughts. Without this filtering, sequential step-by-step thought processes are overwhelmed by normally unconscious sensations and images. (2) The second group are called hallucinogenic amphetamines and include drugs such as mescaline, MDMA, MDA, DOM, and TMA that add the stimulating effects of amphetamine to the hallucinogen effect. (3) PCP is an anesthetic which disrupts information processing, causing both numbness and confusion. Of the hallucinogens, it is the most dangerous.

Cannabis preparations such as marijuana, hashish, and hash oil all contain THC which acts as a tranquilizer as well as a hallucinogen. Cannabis products are often classified as hallucinogenic, but will have a separate chapter in this manual.

LSD

INTRODUCTION

LSD is the abbreviation of the technical term d-Lysergic Acid Diethylamide. It has many numerous street names including: Acid, Micro Dot, Orange Sunshine, Purple Haze, and Windowpane, and it has been sold as Mescaline and Peyote.

History

During the middle ages, a fungus called ergot that grows on rye was sometimes baked in bread. A chemical produced by this fungus, called ergotamine, resulted in agonizing burning sensations, confusion, convulsions, miscarriages, and blood circulation problems that resulted in gangrene of hands and feet. Many sought refuge at the shrine of St. Anthony where they recovered largely because of their ergotamine-free diet. Ergotism became known as "St. Anthony's Fire." It resulted in the accidental overdose death of 11,000 Russians in 1926. Throughout history, accidental ingestion has caused this type of poisoning. LSD is a chemical made from ergotamine. LSD itself has not been shown to cause any tissue damage, and no human death has been directly caused by overdose. However, because ergotamine is a chemical precursor of LSD, there is a possibility that poor chemical processing could allow this as a dangerous contaminant. It should be remembered that illegal drugs are not regulated for purity by the Food and Drug Administration.

LSD was first derived from ergotamine in Switzerland by Sandoz Laboratories in 1938, although the hallucinogenic property of the drug was not recognized until 1943, when a chemist named Albert Hoffman accidentally took an LSD "trip" after he some got on his skin. He reported that he experienced a stream of fantastic images and a kaleidoscope-like play of colors, which lasted about two hours. Three days later he took a larger dose, which he thought very small, but which we know now was an unusually large dose, and for some six hours experienced colored patterns, perceptual distortions of vision, time, being out of his body, and fears of going crazy.

Because this drug produced visual hallucinations, it was investigated as a possible way to mimic and learn about mental illness. There was a great deal of research with LSD from the 1950's until 1966. It did not prove beneficial for schizophrenics, and had mixed results for others. It was found that paranoid schizophrenics became worse. A consistent finding in research was that the setting or situation is very important, for people under the influence of LSD are very suggestible. Some patients reported new insights, becoming aware of beauty they had ignored, and increased creativity, while others said that it was frightening and that they would never take it again.

LSD has been tried in the treatment of chronic alcoholics and heroin addicts, with some studies reporting no benefit, and others reporting high success rates. Success may be related to good preparation, guidance, followup, and possibly with religious feelings, which were reported by the majority of normal subjects trying it for the first time in several studies.

A 1960 study of LSD and mescaline in some 25,000 doctor-supervised sessions found an attempted suicide rate of 1 in 2500, and the incidence of psychotic reactions lasting more than two days of 1 in 1500. The incidence rate among mental patients was somewhat higher, with 1 in 830 attempting suicide and 1 in 550 experiencing prolonged psychotic states. A 1969 study of some 50,000 professionally supervised LSD sessions found a suicide rate of 1 out of 2150. In a less controlled situation, due to illegality, a higher rate of these problems can be expected, but in general research suggests that LSD produced psychotic/suicidal reactions occur less frequently than produced by PCP. However, because suggestibility is such an important factor with hallucinogens, those more suggestible probably suffer greater than average risks of psychotic reactions or suicidal behavior.

Much of the early non-scientific experimentation with LSD was among movie stars and other prominent people in California. It came to national attention in 1957 when Life magazine praised the drug as part of its "great adventure" series. Other Life articles in the early 60's included an article on LSD as a new anti-aggression drug, and an article on LSD-influenced art.

During the 1960's, Timothy Leary, a Harvard professor, experimented with LSD and psilocybin, and became excited about their potential for therapeutic change. He actively promoted the uncontrolled use of these drugs and advocated a "Turn on, Tune in, and Drop Out" philosophy. He was a political radical, promoting the taking of LSD by the millions as a way to change American society. The drug was generally viewed by society as unpredictable, although many took the drug as an expression of defiance against authority, for "person growth" or simply for experimentation. The U.S. Army and the CIA also experimented with this drug during this period for possible use as a confusing agent for interrogation and for war.

As LSD and related drugs became more popular, fears of uncontrolled use and unpredictability also grew, a near panic arose, and most hallucinogens were classified as illegal in 1966. Use declined during the 1970's. LSD seems to again be returning to popularity in some parts of the country, and may be sold as mescaline or peyote, or THC. Survey estimates of the number of American youths who have tried hallucinogenic drugs shows a decline from 5% in 1982, down to 3% in 1985. The American experience with hallucinogens appears to have been largely by Whites (13%), with fewer Hispanics (6%) and Blacks (3%). The usual pattern of use is to experiment and then leave it alone.

Origin, Composition, Production, and Forms

LSD is an odorless, colorless, and tasteless derivative of ergot, a certain type of fungus which grows on rye. A related but far less powerful chemical, lysergic acid amide, is found in morning glory seeds. However, this related chemical has far less visual potency than LSD while still producing unpleasant nausea, and thus is rarely used. LSD can be derived from ergot, but most of it is synthesized from other laboratory chemicals.

LSD is so potent, that an extremely small quantity can be placed on sugar cubes, blotter paper or small tablets which can be swallowed. A minimal effective dose is 60 micrograms (60 millionths of a gram). A "microdot" or dried drop of LSD on paper, and "windowpane", small squares of gelatin sheets, are two common forms of this ingestible drug.

Although it is very powerful drug, threats to contaminate a city water supply are unfounded, as the chemical is easily destroyed by the chlorine used as a disinfectant.

Dosage and Pathway

LSD is normally taken by mouth. A normal dosage of LSD is 50-150 micrograms, equivalent to 100,000 to 300,000 doses to the ounce. This is a very small quantity, and consequently, LSD is considered to be by far the most potent drug known. Only 1 out of each 10,000 molecules actually enters the brain, further illustrating the potency of this drug. Most LSD is metabolized by the liver and is finally excreted in the feces within three days. The drug readily passes the placental barrier in pregnant women.

The effects of an oral dose peak within 2 and 3 hours, but will continue for at least six hours. Usually, all effects are over after 12 hours, and a person can then sleep. Higher doses increase the intensity of the effects rather than the length of time affected.

Tolerance develops rapidly to LSD although there is no physical dependence or withdrawal symptoms. It is rare for users to take daily doses, for tolerance to further doses lasts at least three days and up to one week. During this time, dosage must be greatly increased to produce equivalent effects, and even with very large doses little more may happen than if the person took marijuana. The majority of users take LSD monthly or weekly at the most.

Effective Dose to Lethal Dose Ratio

Studies using mice have found that half of the mice die when given a dose of LSD equivalent to 50-60 micrograms per kilogram of body weight. This is equivalent to a dose of 35,000-42,000 micrograms for a 70 kilogram man. Another study estimates a human lethal dose at about 14,000 micrograms. These doses are hundreds of times greater than the usual dose. So far, no human death has been attributed to the direct effects of LSD poisoning, although irrational behavior has taken its toll.

Factors which may Influence Potency

As with any drug, the setting, purity, dose, expectations, mood, personality factors like intelligence, suggestibility and imagination, and cultural factors all play a role in the reaction to the drug. A person's behavior on the drug somewhat unpredictable as anything that happens can change the person's emotional reactions.

Physical Effects

LSD appears to have its major effect by disabling our perceptual filtering system. This filtering system, which uses the neurotransmitter serotonin, reduces awareness of unimportant thoughts and perceptions. Serotonin is necessary for sleep, when almost all awareness is filtered out. Serotonin is also necessary while awake for shifting attention by ignoring less important perceptions, and for relaxing. This filtering system also is involved with habituation to new stimuli, that is ignoring most of what we are accustomed to. Without the filtering system acting as a "brake", people are more aware of thoughts and feelings. It could be said that they, like those suffering from the mental illness of schizophrenia, are less in control of what they can ignore. By disabling the natural "braking system" LSD has a stimulant effect on the central nervous system.

After ingesting LSD, the user will have dilated pupils, is not able to sleep, may salivate more, eyes may water more, and the person may feel chilled although there is usually a slight rise in body temperature. There may be increases in heart rate and blood pressure. There is also a loss of appetite. Several of these effects are also commonly experienced with stimulants.

Some bothersome effects of the drug might be mild nausea, chills, trembling, blurred vision, and ringing in the ears. Dizziness, distraction from pain, increased dreaming, and tingling sensations may also be felt. What frightens people the most is a fee ing of being unable to control the experience.

Studies of electrical brain activity show a shift in activity from the left to the right hemispheres. The left side of the brain generally acts in a logical step-by-step manner, controlling the activity of the right hemisphere which thinks in images and generalities. Most people have developed one area of the left hemisphere that dominates and controls the rest of the brain, but LSD disrupts that normal control. The result is a great increase of conscious awareness, but also less ability to stick to a task.

Psychological Effects

The general psychological effects include increased awareness, distortions in perception, increased emotional sensitivity, distortions in judgement, and effects on behavior. Users have been known to hurt or even kill themselves because of faulty beliefs, and the occurrence of flashbacks (memories of drug perceptions) has been reported within several months after use. While LSD does not appear to directly create moods such as euphoria or sadness, people tend to exaggerate their emotional reactions under the influence of this drug.

Effects on Perception

Several distortions of time and sensation occur. Everything may seem to be alive. Time may become irrelevant or seem to slow down. A person may feel that barriers are dissolved and that he or she is connected in some way to things outside. Sensations, including those of one's body may become intensified and seem strange or new. Ordinary things may seem novel and beautiful, as if one was seeing them for the first time. Visual after-images, more intense colors, and patterns may all appear. Actual hallucinations or "visions" also occur, especially if the eyes are shut, although the person remains aware that they are drug-induced. Synesthesia, the mixing of different senses, like seeing colors in response to sounds has been reported. In general there is a great increase in conscious awareness, but a decrease in ability to logically deal with this rush of perception.

Surprisingly LSD, which in general increases awareness, has been found to provide longer pain relief than morphine for the pain of advanced cancer. Pain relief may persist for weeks. This is probably explained in terms of expanded awareness, as cancer patients under the influence of LSD are still aware of their pain, but are also aware of much more than the pain they previously focused on, and can learn to keep their focus on other things in addition to their pain.

Effects on Emotion

General sensitivity to emotions becomes apparent. Emotional suggestibility is a drawback, for it is as if a persons emotional defenses are gone, leaving the person open. Euphoria, detachment, mystical feelings, paranoia, and panic have all been found to increase. "Bad trips" have been reported to have occurred at least once by one quarter to one half of all users. Fears of being out of control or of going insane may occur.

Effects on Thinking

Significant impairment of attention, concentration, short-term memory, judgement, problem solving, and eye-hand coordination is evident with large doses.

A user may feel separated from self or a stranger to self. One's identity may blend with the surroundings. Users may believe they are being reborn or are remembering other significant past events. Religious experiences are reported by 25% to 95% of initial users, depending upon setting.

The bringing to conscious awareness of previously unconscious thoughts and emotions is potentially helpful in psychotherapy. However, due to unpredictability and the illegal status of this drug it is no longer used by psychiatrists.

Effects on Behavior

The usual behavior of a person under the influence of LSD is to quietly indulge in sensations. Isolated incidents of violence such as murder or assault are rare although self-injury is more common. This self-injury usually comes from faulty beliefs of super human power. In one instance a student drilled a hole in his head under the influence, while in another instance a woman set herself on fire. Several cases of persons jumping to their death from windows have been reported, usually due to a delusional belief that they could fly. It is considered dangerous for people who are paranoid or at risk for psychosis, as it may start a psychotic episode. While reasonably safe under professional supervision, bizarre behavior is possible and may lead to harm with illicit unsupervised use.

Long Term Effects

The body quickly develops a tolerance to LSD. More and more of the drug is needed to produce the same level of effect, and very little happens when LSD is taken after a previous dose. Cross tolerance also develops to other hallucinogens. Physical addiction or withdrawal symptoms have not been demonstrated, and tissue or genetic damage has not been found. However, psychological dependence may occur in people if they believe that they need a drug to see beauty or to be happy.

Several negative long-term effects may occur. Increased suggestibility, paranoia, unusual beliefs, confusion, flashbacks, and risk of psychosis are potential dangers. Studies of psychological functioning among users have so far shown no signs of brain damage, but there are reports of long-lasting emotional scars.

Flashbacks are rare, usually mild and short-lasting, more frequent under stress and fatigue, and very rarely occur four months after use of LSD. The exact mechanisms of flashbacks is not understood. Some believe they are due to drug storage in the brain while others believe the drug brings out borderline mental illness, but the most common explanation is that flashbacks are simply memories of drug experiences.

PSILOCYBIN OR PSILOCIN

INTRODUCTION

History

The "magic mushroom" has been part of mystical religious ceremonies for thousands of years. When Spanish Conquistadors came to Mexico and Central America, they found an ancient religion practiced by the native indians that included the use of psilocybin mushrooms to obtain visions. A different mushroom was used in Asia by Siberian tribesman for similar purposes, and is praised in a Hindu religious book written nearly four thousand years ago. Psilocin and psilocybin were first isolated by Sandoz laboratories by the same chemist who first isolated LSD. Dr. Hoffman isolated psilocybin from mushrooms in the late 1950s. It was studied, along with LSD and mescaline, as a psychiatric drug. It was promoted by Dr. Leary and others as a drug for the masses, and like LSD was outlawed in 1966 due to fears of uncontrolled use.

Origin and Composition

Psilocybin has been found in 90 different kinds of mushrooms. However, there are some 5000 species of mushrooms, and there is a danger of confusion with poisonous species. Psilocybin and the chemically similar psilocin are usually found in the same variety of mushrooms. A chemical copy can be synthesized in the laboratory.

Dosage and Path

The typical dosage is from 1 to 4 mushrooms or 4 to 10 milligrams of the drug. The effects are first felt after 30 minutes and peak about 90 minutes after ingestion, although the effects last for around 6 hours. The drug is powerful, but generally considered less potent than LSD. Most of the drug exits the body after 8 hours although traces can be detected after a week.

Effective Dose to Lethal Dose Ratio

Mouse studies have found that half of them are killed at a dose of 280 milligrams of psilocybin per kilogram body weight. This is equivalent to a dose of 19,600 milligrams for a 70 kilogram man. This is thousands of times greater than an effective dose. No human deaths have been attributed to psilocybin. However, many people have died from the poison found in other mushrooms, and so eating a mushroom without expert knowledge is foolish. Also, one variety of psilocybin mushroom, which also contains a poison, resulted in the death of a six year old boy.

EFFECTS UNDER THE INFLUENCE

General Effects

As with most drugs, the context of use is important. For hallucinogens and specifically, psilocybin, the context of use is even more significant because of the role that the increase in suggestibility plays.

Physical Effects

Generally speaking, the same physical effects noted earlier with LSD are also apparent with psilocybin. Since the drug is not as potent, these effects are less intense. Smaller increases in blood pressure, heart rate, and pupil dilation, are noted than with LSD. Because the "trip" is shorter, there is less exhaustion. Psilocybin resembles the body's natural serotonin, the neurotransmitter that is used by our "perceptual filtering" system. This attention filtering system is temporarily disabled under the influence of psilocybin.

Like LSD, the same bothersome feelings of nausea, feeling cold, limb numbness and trembling can occur.

Psychological Effects

As with LSD, perceptual distortions and colored visual hallucinations are the primary effect. Synesthesia (seeing sounds), euphoria, disorientation, anxiety, and even panic can occur.

Long Term Effects

As with all hallucinogens, tolerance and cross tolerance is evident along with the danger of psychological dependency. Physical addiction or the presence of withdrawal effects has not been documented. Psychosis can occur in those susceptible. As with LSD, long-term use can lead to paranoia or unusual beliefs.

MESCALINE

INTRODUCTION

History

The tops of the small peyote cactus were the principle source of mescaline for native American cultures which have used this drug during religious ceremonies. The drug has been used since at least 300 B.C. in Mexico and has been used in the Southwestern regions of the United States by tribes celebrating religious ceremonies. Even today, the Native American Church has the right to use peyote legally during their religious practices, and nearly half of American Indians belong to this church.

Mescaline was first isolated from the peyote cactus in 1856. The drug was legal for all Americans until 1966, but because of fears concerning increasingly widespread use it was outlawed along with the other hallucinogens. Until then, peyote buttons could be purchased through mail order houses.

Origin and Composition

Mescaline can be found in a few species of cacti, especially peyote. These cacti generally have little in the way of spines, so this chemical may be their defense against insects. The peyote cactus is the principle source of the drug which can be expensive to manufacture and is rarely found on the street. Most drugs sold as mescaline on the street are either PCP or LSD, which can be more profitably manufactured.

Dosage and Path

The drug is normally ingested orally by chewing the peyote buttons, or as a powder in gelatin capsules. The typical dose is 200-600 milligrams which lasts for 4-8 hours. Most mescaline is excreted from the body in pure form.

Effective Dose to Lethal Dose Ratio

Experiments on mice have found that half of the mice die when given a dose of 500-600 milligrams per kilogram of body weight. This is equivalent to a dose of 35,000 to 42,000 milligrams for a 70 kilogram man. This is hundreds of times the usual dose. No human death has been directly attributed to mescaline poisoning.

Effects Under the Influence

As with the other hallucinogens mentioned, the effects are dependent on the context of use. A fearful paranoid person who does not know that this drug has been given to him may experience extreme panic while others expecting pleasant effects may remain calm while under the influence. Generally speaking, mescaline is weaker in potency than psilocybin which in turn is weaker than LSD. It has some amphetamine-like stimulating action in addition to its hallucinogenic effect.

Physical Effects

Generally the drug produces a similar physical reaction to that noted previously for LSD and psilocybin. Increases in heart rate, blood pressure, temperature, and pupil dilation are evident. Nausea can also occur and is reportedly stronger than with LSD. This nausea is much stronger when mescaline is taken in it's natural form of peyote, due to other chemicals also present in the plant. Mescaline is structurally similar to the amphetamines although not considered very toxic even at higher level doses. Mescaline apparently has a wider range of safety than the synthetics. The related synthetics of mescaline including STP (DOM), MDA, MDMA (ecstacy) and MMDA have considerably more toxic effects (nausea, tremors, and convulsions) at higher doses. Also called hallucinogenic amphetamines, these synthetics act like amphetamines at low doses, and hallucinogens at higher doses.

Psychological Effects

Distortion of the senses is evident along with excitation and nausea. At high doses kaleidoscopic movement of colors, hallucinations in the five senses, time distortion, and ego doubling (thoughts of being out of one's body) have been reported. Many have reported religious experiences, and American Indians use it to "communicate with the spirit world." At lower doses there is generally a feeling of well-being and an increase in positive feelings toward others.

Long Term Effects

Tolerance develops toward mescaline, as well as cross tolerance to other hallucinogens. In some people the drug can produce psychological dependency although this is not common. Physical addiction or withdrawal symptoms are not evidenced. Overdose leading to death has not been documented in humans. Increased use is correlated with heightened passivity and psychosis in predisposed individuals.

PCP

INTRODUCTION

Classification

This unpredictable drug was developed as a surgical anesthetic, but was found to have hallucinogenic, depressant, anesthetic and stimulant properties dependent on dose and individual differences. The drug is generally considered a hallucinogen although is not similar in action to the other hallucinogens.

Names

The technical name of PCP is "Phencyclidine" or 1-(1-phencyclohexyl) piperidine hydrochloride.

Slang terms include names like: Angel Dust, Wack, THC, Dust, Lovely, Loveboat, Rocket Fuel, John Hinckley, Butt Naked, and Keys to St. E's.

History

PCP was originally made in 1926 as a surgical analgesic and anesthetic for humans. The frightening side effects of the drug led to its withdrawal from use for humans in 1965. PCP continued to be used with animals until 1978. Today it is only made in illicit laboratories which purchase controlled chemicals normally used in the manufacture of plastics.

The early illegal use of PCP was in the late 60's, when it was often sold as THC. It was experimentally tried by users of other hallucinogens, but was rarely the drug of choice. However, because of its easy manufacture and low cost, it was more available than many more preferred drugs, and its use spread.

Origin and Composition

Around ten chemicals are needed to make PCP although there are two main precursors - piperidine and cyclohexanone. The manufacturing process is dangerous since ether is used and many have been blown up when someone simply lit a cigarette or flicked a light switch.

PCP can be made into a liquid, powder, or crystal and can also be found in capsule or tablet form. Normally, PCP is smoked in mint, parsley, oregano, marijuana or tobacco cigarettes which are dipped in the liquid or laced with powder. The drug smells like a mixture of chlorine, ammonia, and fish oil and some dealers have used insecticides or formaldehyde to produce a strong chemical odor to fool users.

Dosage and Path

The typical dose is 10-100 milligrams in a 24 hour period. The drug is usually smoked although it can be ingested or snorted. The drug usually stays active in the body for 4-6 hours and is stored in fat deposits. PCP can be found in the urine of users for several days.

General Effects

The effects derived from PCP vary from user to user, and from time to time. In most cases, the user feels a "numb" state with no pain, a mild euphoria, and an ability to ignore problems. Some have used this drug continuously for years with no apparent brain damage. Others have become psychotic or brain damaged after just a few experiences with the drug. Because the drug is manufactured illegally, the purity and composition may not be known to the user. Much of what is experienced is dose related.

Low Doses (5 milligrams)

PCP may have stimulant as well as depressant properties at low doses. Agitation and excitement, incoordination, blank stares, rigid muscles, loss of feeling in body parts, uncontrolled eye movement, inability to speak, profuse sweating, and oversensitive hearing may all be present. Hallucinations like "melting faces" or extremely vivid imaginations have been reported. Users have reported using their mind to imagine anything they want. Increased strength, assaultive and bizarre behavior, and poor judgement is also evident even at low doses. Incoordination and dizziness are frequently reported effects of the drug. Increased heart rate, pupil constriction and a warm tingling sensation are also noted.

Moderate Doses (10+ milligrams)

The anesthetic properties of the drug are more potent at moderate levels. The user may feel paralyzed but aware, or be in a short lasting coma. The eyes may be open with rapid uncontrolled eye movement. Vomiting, excessive salivation, shivering, flushing, sweating, paranoia, decreased sensation, grossly impaired judgement with repetitive movements and psychotic-like behavior may also occur at moderate dose levels.

PCP users are feared by police, as there have been instances of gruesome crimes, and of those high on PCP becoming violent and having unusual strength. When high on PCP people feel no pain, and often cause damage to others and themselves while in a frenzy. There have been cases of users who have broken bones, or have been shot and not realized it.

High Doses

At high doses, the drug is potentially lethal. Death can result from respiratory depression, pulmonary edema, or brain seizure activity. Convulsions, fever, paranoia, high blood pressure, and finally prolonged coma usually precede death which can occur more frequently than previously thought. A near-death overdose may be followed by a recovery phase marked by confusion and delusions that last several weeks. In some cases, overdose leads to a psychosis lasting a few months. Most deaths from PCP, however, are caused by accidents or the result of poor judgement which occur at low or moderate dose levels.

Physical Effects

At high doses, coma, stupor, large elevations in blood pressure, seizure activity, violent convulsions and possibly death. Seizure activity is common and users have a high risk of needing emergency medical care due to becoming psychotic and highly agitated.

Effective Dose to Lethal Dose Ratio

Toxicity studies have found that half of the test animals were killed at a dose of 179 mg./kg. when taken orally, and 15.9 mg./kg. when injected. Smoking is probably similar to the injection route, due to rapid increase in blood levels. This means that approximately 1 1/3 grams of pure PCP will kill half of 70 kg. men injecting or smoking this dose, an effective to lethal dose ratio of 1 to 10. Because it can remain in the body's fat, a lesser dose may cause death after prolonged use.

Psychological Effects

A PCP "high" can be a numbness which some people find satisfying or it can be confusing and frightening. The user may feel confusion, depersonalization, distortion of body and of time, depressed, hear voices, see "monsters," or feel a floating relaxed and calm feeling. Impaired judgement and aggressive behavior is more likely. Several acts of murder by persons under the influence of PCP, have been reported with apparent amnesia by the assailants as to their crime. In Washington D.C., a woman reportedly placed her baby in a freezer while another elderly woman was brutally raped and murdered by assailants under the influence. Convicts have reported fighting with police while feeling no pain, and one man reported throwing his baby out a window, believing it to be a devil.

Behavioral Effects

Bizarre behavior is frequently reported. Running naked (hence the name "butt naked"), pulling out one's teeth, increased strength and decreased awareness of pain that results in torn muscles, car crashes, drowning, and similar accidents are more likely. Some users report increased sexual interest and "aphrodisiac-like" properties, but more often a numb withdrawal is the result. Others report staring at the same thing for hours on end. Eventually, many users prefer to use the drug continuously and feel uncomfortable if not intoxicated.

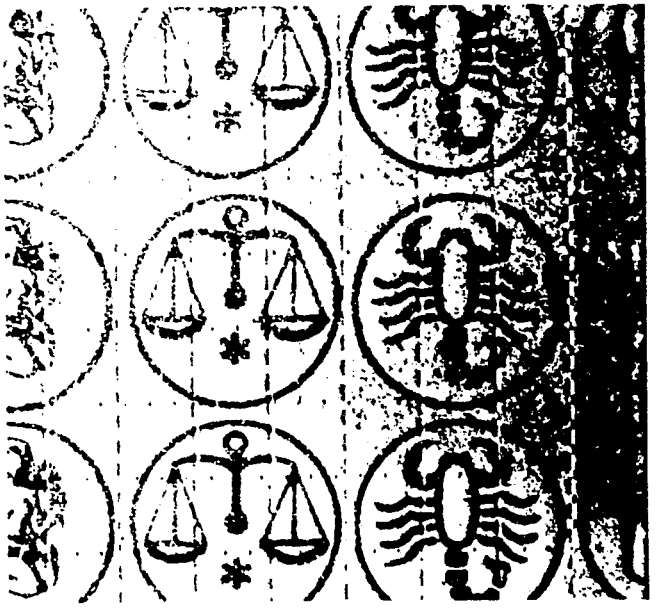
Long Term Effects

Use of PCP results in an increased level of tolerance as well as psychological dependence. Physical addiction or withdrawal has not been demonstrated. Long term use can result in brain damage in which retention and memory are affected and emotion is flat. "Rubber heads" and "burn out" are two terms used to describe those with brain damage due to PCP. Psychosis can also be the result of extended or even short term use. A certain percentage of PCP users need psychiatric hospitalization (hence the name "keys to St. E's"), which could be short term or could be permanent. Flashbacks are also commonly reported even years after last use. These flashbacks can be as intense as the actual use of the drug itself but are more often of a lower intensity.

Temper outbursts, confusion, laziness, speech problems, slowed reflexes, loss of weight, depression, anxiety, and a general disorientation have all been reported as a result of long term use.

LSD blotter paper

LSD blotter paper



HALLUCINOGENS
OUTLINE

I. Overview

A. Definition: Hallucinogens are psychoactive substances which when taken into the body at high enough dosages produce hallucinations. At low to moderate doses they are likely to produce perceptual distortions, illusions, and/or significant changes in mood.

B. Other Names for the Hallucinogen Class of Drugs

1. Psychedelics-- "mind manifesting or expanding"
2. Psychotomimetic-- "psychosis imitating"
3. Illusionogenic-- "illusion producing"
4. Psychodysleptic-- "mind disrupting"

C. Examples

1. LSD
2. Psilocybin
3. Mescaline (Peyote)
4. MDMA, MDA, DOM, TMA, DPT, DET, DMT
5. PCP (also acts as an anesthetic)
6. Marijuana (also acts as a tranquilizer)

II. LSD

A. Names

1. Technical: D-Lysergic Acid Diethylamide
2. Slang: LSD, LSD-25, 25, Acid, The Hawk, The Chief, Big D, The Cube, White Lightning, Yellow Dots, Purple Wedges, Purple Owsleys, Green Caps, Yellow Caps, Paisley Caps, Blue Dots, Pink Dots, Purple Flats, Orange Wedges, Blue Caps, Brown Caps, Blue Double Domes, mescaline, blotter, orange sunshine, purple haze

B. History

1. 1926-- An outbreak of 11,000 cases of ergotism occurred in Russia. Ergot is a fungus which grows on grains and which contains LSD. The symptoms of ergotism included tremors, vomiting, high temp., convulsions.
2. 1938-- LSD first made at Sandoz Labs in Europe, but psychoactive effects not recognized.
3. 1943-- Psychoactive effects discovered when Hoffman, a chemist at Sandoz, accidently took trip on LSD when some of it was absorbed into his skin

4. 1950s and 1960s-- LSD used in psychotherapy research.
5. 1960s-- It became popular as a street drug; was promoted by Timothy Leary, Harvard psychologist, who said "Turn on, tune in, and drop out"
6. 1950s, 60s, and 70s-- It was tested by the U.S. Army and the CIA for military purposes, stockpiled as a weapon.
7. 1966-- taken off the market and made illegal
8. 1970s-- It declined in popularity.

C. Origin, Composition, Production, and Forms

1. It can be extracted from ergot, a fungus which grows on grains
2. It can be synthesized in the lab.
3. It is odorless, tasteless, and colorless in its pure form.
4. Forms
   a. liquid placed into sugar cubes
   b. microdot-- dried drops on paper
   c. windowpane-- small squares of gelatin sheets
   d. powder
   e. tablets
   f. capsules
   g. blotter-- dried drops on paper

D. Dosage and Pathway Through Body

1. Common dosage is 50-150 micrograms. This is a very small quantity, and thus LSD is considered a very powerful drug.
2. Usually introduced by swallowing, but has been injected or smoked.
3. Effects usually begin 30-40 minutes. after ingestion, reach peak at 1-3 hours, and last 6-12 hours.
4. Only 1/10,000 of LSD actually crosses into brain.
5. Most excreted in feces within 3 days.
6. Common pattern of use is once a month, due to rapid tolerance

E. Effects While Under the Influence

1. Effects depend on purity, dosage, set and setting.
   a. Set-- characteristics of the user, especially expectations, mood, imagination intelligence, personality, cultural background
   b. Setting-- characteristics of the surroundings at the time of use, especially companions, place, stimulation
   c. All effects listed below do not occur to all users all the time, but are representative

2. Common Physical Effects
   a. stimulating
      1) enlarged pupils
      2) insomnia (lack of sleep)
      3) increased body temperature
      4) increased sweating
      5) increased salivation
      6) increased reflexes
      7) loss of appetite
      8) increased blood pressure
      9) increased heart rate
      10) watering eye
   b. bothersome
      1) mild nausea
      2) chills
      3) trembling
      4) blurred vision
      5) ringing in ears
   c. other
      1) dizziness
      2) distraction from pain
      3) increased dreaming
      4) tingling sensation
3. Some Effects on Perception
   a. time seems to slow down or seem irrelevant
   b. past, present, and future may seem mixed
   c. sensations more intense
   d. increased awareness of own body
   e. prolonged after-images
   f. with eyes closed, vivid images of colored patterns
   g. synesthesia-- different senses become mixed up, changes in one sense cause changes in another sense, eg. person may "hear colors"
   h. various illusions
      1) seeing waves and vibrations
      2) distortions in sizes
      3) objects appear to have faces
4. Some Effects on Feelings
   a. increased emotional sensitivity to gestures, voice tone, faces of others
   b. increased suggestibility
   c. objects seem more meaningful
   d. feelings more intense and pure
   e. common feelings: euphoria, openness, detachment, mystical feeling, reverence, wonder, awe, paranoia, panic
   f. reduced motivation to move
   g. A bad trip includes frightening feelings, lasting up to 12 hours. Study: 24% of LSD users reported having had at least one bad trip.

5. Some Effects on Thinking
   a. impairments
      1) of attention or concentration
      2) of short term memory
      3) of ability to plan
      4) of ability to solve problems
      5) of eye-hand coordination
   b. other
      1) depersonalization-- thinking that the self is unreal or strange
      2) dissolving of self and blend with surroundings
      3) experience self as animal, plant, body part, or cell
      4) look down on own body
      5) important thoughts of self, man, cosmos
      6) relive past, become child again
      7) reexperience birth or own life in womb
      8) a few report participating in historical events before their own birth

6. Possible Irrational Behavior; a few documented cases of:
   a. harm to others (not as common as with PCP)
      1) murder
      2) assault
   b. harm to self (more common)
      1) usually caused by belief of having super human abilities (flying)
      2) staring at sun, causing retinal damage
      3) plucking out eyeball
      4) 24 year old British student tried to conquer time by drilling hole in his skull with a dental drill
      5) 24 year old woman set self on fire

F. Long Term Effects

1. Tolerance develops after only 2-3 days of use; there is cross tolerance with mescaline and psilocybin
2. No demonstration of physical damage or withdrawal effects (no physical addiction)

3. Flashbacks
   a. while not using the drug the person experiences fragments of the experiences he had while under the influence
   b. usually last few seconds to a few minutes
   c. rarely occur more than 4 months after a trip
   d. not caused by LSD left in body, caused by psychological factors
   e. usually triggered by stress, fatigue, alcohol, marijuana, or driving a vehicle
   f. study: 23% of users reported flashbacks
   g. study: 60% of users reported flashbacks
   h. study: 28% of users reported flashbacks; 50% pleasant and 50% unpleasant
4. study: for persons using it more than 50 times, visual-spatial abilities were impaired
5. change to a passive, introspective, mystical orientation to life for many users
6. increased risk of psychosis in some persons, especially teenagers and those already mentally unbalanced
7. study, 1974: persons with schizophrenia began their illness earlier if they had used hallucinogenic drugs (incl. LSD) in their pasts
8. Most studies indicate that when taken in the usual dose and pattern, LSD does not cause chromosome damage and birth defects in humans

III. Psilocybin and Psilocin

A. History

1. 1000 BC-- mushrooms containing psilocybin were used in religious ceremonies
2. 1700s-- mushrooms containing it used by Siberian tribesmen
3. 1950s-- Hoffman, the man who discovered LSD, at Sandoz lab isolated the drug from mushroom
4. 1961-- drug synthesized by Hoffman in lab

B. Origin, Composition, Production, and Forms
1. found in 90 different kinds of mushrooms - several other mushrooms are poisonous
2. Psilocybin and Psilocin are usually found in same mushroom; some evidence that former is converted to latter in the body.
3. can be made in the lab

C. Dosage and Path in Body
   1. typical dose is 1-4 mushrooms or 4-10 milligrams of psilocybin
   2. peak effects 30-90 minutes after ingestion
   3. effects last for approximately 6 hours
   4. less potent and shorter acting than LSD
   5. most exit body after 8 hours, traces at 1 week

D. Effects While Under the Influence
   1. Effects are quite variable and depend on purity, dose, set and setting.
   2. Effects listed below do not occur to everyone, but are representative.
   3. Physical Effects
      a. small increases in temperature
      b. small increases in heart rate
      c. small increases in blood pressure
      d. pupils enlarge
      e. dry mouth
      f. nausea
      g. vomiting
      h. twitching
      i. trembling
      j. convulsions of limbs
      k. numbness of extremities
   4. Psychological Effects
      a. euphoria
      b. relaxation
      c. perceptual distortions
      d. lightness of feet, desire to dance
      e. colored visual hallucinations
      f. tendency to laugh
      g. intense sensations
      h. synesthesia
      i. disorientation
      j. sometimes anxiety
      k. sometimes depression

E. Long Term Effects

   1. Tolerance develops quickly
   2. Withdrawal effects not demonstrated
   3. Psychosis in predisposed individuals

IV. Mescaline

A. History
   1. 300 BC-- used from cacti in Mexico
   2. 1856-- isolated from the peyote cactus
   3. 1966-- outlawed for sale to public
   4. now only legal for members of Native American Church (American Indians) for use in religious ceremonies

B. Origin, Composition, Production, and Forms

1. found in several cacti, the most famous is the peyote cactus, found in Mexico and Southwest U.S.
2. forms
   a. mescal buttons-- dried tops of the peyote cactus
   b. gelatin
   c. powder

C. Dosage and Path in the Body

1. typical dose is 500-800 milligrams
2. usually swallowed
3. effects last for 4-16 hour
4. most eliminated in pure form, not broken down in liver

D. Effects While Under Influence

1. variable and dependent on dose, purity, set, setting
2. similar to LSD but not as strong
3. effects listed not always occur, but represent.
4. Physical Effects
   a. increased heart rate
   b. increased blood pressure
   c. increased temperature
   d. enlarged pupils
   e. nausea
5. Psychological Effects
   a. kaleidoscopic movement of colors
   b. hallucinations of hearing, taste, smell, touch, sight
   c. time distortion
   d. ego doubling-- thought of being out of body
   e. religious or mystical experiences

E. Long Term Effects

1. Tolerance develops
2. No physical withdrawal effects
3. Psychosis in predisposed individuals
4. Psychological dependence

V. The Hallucinogenic Amphetamines

A. Examples
MDMA, DOM, TMA, MDA, DPT, DET

B. Effects
act like amphetamines at low doses, like hallucinogens at higher doses

VI. PCP

A. Classification: an anesthetic not easily classified into any category because it has stimulant, depressant, analgesic, and hallucinogenic properties, but as it produces true hallucinations (experienced as true), it is classified as an anesthetics hallucinogen

B. Names

1. Technical
   a. Phencyclidine
   b. 1-(1-phencyclohexyl) piperidine hydrochloride
2. Slang
   Angel Dust, Dust, Crystal, Cyclone, Embalming Fluid, Elephant Tranquilizer, Horse Tranquilizer, Killer Weed, Super Weed, Mint Weed, Mist, Monkey Dust, Peace Pill, Rocket Fuel, Goon, Surfer, KW, Scuffle, Hog, Tic Tac, T, Zombie Weed, Lovely, Love Boat, Green, Keys to St. E's, Butt Naked, Wacky Weed, THC

C. History

1. 1926-- made as a surgical analgesic and anesthetic for humans
2. 1965-- withdrawn for medical use with humans because of frightening side effects in patients after surgery, including temporary psychosis
3. used as animal tranquilizer by veterinarians
4. 1978-- withdrawn for use as animal tranquilizer because of convulsions and unpredictable effects

D. Origin, Composition, Production, and Forms

1. synthetic drug from chemicals used to make plastics
2. forms: powder, liquid, tablets, capsules
3. commonly sprinkled on parsley, marijuana, or tobacco and smoked
4. usual street purity is 5-30% PCP
5. odor of PCP is similar to odor of mixture of chlorine, ammonia, and fish
6. street sellers often call it something else, misrepresent it

E. Dosage and Path in Body

1. typical dose is 10-1000 milligrams in 24 hour period
2. most commonly smoked, but sometimes snorted, swallowed, or injected
3. lasts for 4-6 hours
4. stored in fat of body
5. stays in urine for several days

F. Effects While Under The Influence

1. At Low Doses (5 milligrams)
   a. agitation and excitement
   b. incoordination
   c. blank stare
   d. rigid muscles
   e. loss of feeling in parts of body
   f. inability to speak
   g. rapid uncontrolled eye movements
   h. reduced pain sensitivity
   i. flushing
   j. profuse sweating
   k. oversensitive hearing

2. At Moderate Doses (10+ milligrams)
   a. coma or stupor
   b. eyes are open
   c. rapid uncontrolled eye movements
   d. vomiting
   e. excessive salivation
   f. repetitive movements
   g. shivering
   h. muscles rigid after touching them
   i. flushing
   j. profuse sweating
   k. decreased sensations of pain, touch, position (which can lead to body damage by over exertion)
   l. paranoia
   m. grossly impaired judgement

3. At High Doses
   a. prolonged coma (23 hours to many days)
   b. eyes closed
   c. high blood pressure
   d. spasm of muscles, body bent backward
   e. repetitive movements
   f. muscles rigid
   g. convulsions (which can lead to death)
   h. no sensations of pain, touch, position
   i. profuse sweating
   j. excessive salivation
   k. flushing
   l. fever
   m. paranoia
   n. grossly impaired judgement and reasoning-sometimes leading to severe injury and death

4. Other Reported Physical Effects
   a. increased heart rate
   b. warm feeling
   c. tingling sensation
   d. pupil constriction
   e. trouble walking
   f. trouble talking
   g. dizziness

5. Other Reported Psychological Effects
   a. confusion
   b. feeling of having superhuman strength
   c. depersonalization
   d. distortion of body image
   e. time expansion
   f. anxiety
   g. euphoria
   h. depression
   i. auditory hallucinations
   j. visual hallucinations and distortions (melting faces)
   k. various delusions
   l. relaxation
   m. floating sensation
   n. feeling of isolation
   o. changes in space perception
   p. changes in time perception
   q. impaired judgement
   l. amnesia for the period of intoxication

6. Other Behavioral Effects
   a. assaulting other people
      1) example: woman placed her baby in the freezer
      2) example: elderly woman raped with a pipe and murdered by several youth
      3) example: man threw 2-year old son out apartment window, thinking it was a devil
   b. running naked in public places
   c. self-harm
      1) drowning most common
      2) car crashes
      3) example: DC woman scratched chunks of face to remove imagined insects
      4) example: teenager ate rat poison to kill imagined rats in body
      5) death has resulted from self-harm

G. Long Term Effects

1. Tolerance develops
2. Some evidence of withdrawal effects in some people
3. flashbacks
4. visual disturbances
5. disorientation
6. anxiety
7. depression
8. temper outbursts
9. confusion
10. lethargy
11. trouble concentrating
12. memory problems
13. dull thinking
14. slowed reflexes
15. trouble with speech
16. psychosis; study, 1976: 1/4 patients treated for PCP overdose returned to hosp. for treatment of schizophrenia within 1 year, in absence of drug use
17. loss of weight

Chapter 8

CANNABIS

(Marijuana)

CANNABIS

TITLE:

Cannabis (marijuana)

PURPOSE:

To develop an understanding of the mental and physical effects of cannabis products.

OBJECTIVES:

1. To understand that cannabis products include marijuana, hashish, the oil extract, and the active ingredient, THC.

2. To know that cannabis has an ancient history of use for fiber, medicinal, religious, and recreational purposes.

3. To know that its legality varies by nation and state, with acceptance in some areas, severe penalties in others.

4. To know that it is the most popular illegal drug in the U.S., with 1/6 of working adults using it regularly.

5. To learn the physical effects, including red eyes, increased heart rate, impaired night vision recovery.

6. To learn the mental effects, including impaired short-term memory, increased awareness of sensations, time distortions, interference with complex tasks such as driving.

7. To become aware of possible medical problems such as lung damage, hormone reduction, risk to unborn children.

8. To become aware of fears concerning possible brain damage, that use is experimental and may not be risk-free medically.

9. To appreciate the severe penalties for possession and distribution due to its prohibition.

TIME FRAME:

90 minutes

EXERCISES/TEACHING TOOLS:

Discussion of group members' foolish behavior while stoned.

Chapter 8 Sample Questions

True or False

____ 1. Cocaine is the most widely used/abused illegal drug.

____ 2. Marijuana contains less cancer causing tar than an equal amount of tobacco.

____ 3. The active ingredient in marijuana is medically classified as a narcotic.

____ 4. Marijuana or its active ingredients are currently being used to treat cancerous tumors.

____ 5. Hashish has the same active ingredient as marijuana.

____ 6. There is some evidence that marijuana lowers sperm count.

____ 7. Marijuana can be eaten, but is less potent that way.

____ 8. Marijuana use and increased aggressiveness go together.

____ 9. While stoned on marijuana, a person has less ability to remember things.

____10. Marijuana will help a drunk person drive better.

CANNABIS

INTRODUCTION

Names

Cannabis is better known in America as hemp when it is used for rope or, when used as a drug, it is usually called marijuana, the Spanish word for Mary Jane. Marijuana usually refers to the leaves of the plant. There are three varieties of cannabis. Cannabis Sativa is the most common, as it can be used for both rope and for the psychoactive ingredient known as tetrahydro-cannabinol, which will be called THC for short. Cannabis Indica is lower in fiber but higher in THC content. A third variety, Cannabis Ruderalis, is rare outside of Siberia. Cannabis or marijuana has several slang names including: Grass, Weed, Pot, Reefer, Herb, Hemp, Tea, and Mary Jane. It is known as ganja in India, and as dagga in Africa.

History

Cannabis has been used for rope, paper, medical, recreational and religious purposes for thousands of years. It is probably native to central Asia, for archaeologists have found evidence that hemp was used for clothes and rope as early as 8500 years ago. The first recorded use in medicine occurred around 2737 B.C. in China. As early as 1000 B.C., cannabis was used in India as part of the Hindu culture. Its cultivation spread around the world, and it was used for clothing, in medicine, and recreationally by ancient Romans and Arabs, who were active in trade.

Ancient Chinese physicians, who had limited medicines, recommended it for a variety of illnesses from constipation to rheumatism to asthma to absent-mindedness. Over the years it has apparently been effective in the treatment of nausea, as an antiseptic (germ killer) and as an analgesic (pain killer). Recent studies suggest that it may be an effective treatment for glaucoma, a disease in which pressure in the eye results in blindness. It should be noted that modern medicine uses only the active and effective ingredients from plants, not the raw leaf or resin which contain a mixture of dozens of chemicals. If cannabis is approved for medical use, it is probable that only the effective ingredient (THC) will be used, although raw marijuana or extracted oil may also be used.

In America, hemp was the second largest export and at one time (1762), farmers were fined for not growing it. Even our first president grew it. The hemp or marijuana plant can be used to make clothing and rope, and is still used today to make fine paper. Half of all American clothes were made from hemp fiber as early as 1630. Cannabis extract became popular in medicines during the 1800's. Marijuana increased in popularity as a recreational drug during the years when alcohol was prohibited. It was especially associated with jazz clubs, and was seen as a vice of minority groups. During the 1930's growing public concern led to the passage of the Marijuana Tax Act of 1937, designed to end its availability. This act was later ruled unconstitutional based on Timothy Leary's case, which essentially said that to pay a tax would be to incriminate oneself and hence a violation of 5th Amendment rights. However, Federal law, and most state laws, make it a crime to possess or distribute cannabis products, including marijuana (the leaves), hashish (the resin), and the essential oil. It was removed from the list of approved medical drugs in 1941.

In 1951, the Boggs act incorrectly labeled marijuana as a narcotic. Several state laws punished possession with lengthy prison sentences. In Texas, between 1955 and 1973 a person convicted of possession could have received 2 years to Life. In Utah, Georgia, Illinois, and Missouri, a life sentence for a second possession charge was possible. It was also possible to receive the death penalty in Georgia and Missouri for selling marijuana to a minor. In some countries, similar laws are still in effect. In Turkey, stiff penalties still exist for first offense possession of marijuana or hashish. In Malaysia, sale of drugs is a capital offense and in Singapore, possession of marijuana is punishable by hanging. As you would guess, these countries do not have a large drug problem.

Currently, marijuana is illegal in almost every state, although penalties for personal possession have been reduced in most states. Use and possession of small amounts of marijuana is legal in Alaska and a misdemeanor offense in several other states. Other states continue to consider marijuana possession a felony offense punishable by several years in prison. The National Organization to Reform Marijuana Laws, a lobbying group for cannabis, keeps statistics on marijuana arrests. During the years 1981 through 1986, arrests for distribution totalled 417,188 and arrests for possession totalled 2,067,088. This brings the total marijuana-related arrests to nearly 2 1/2 million Americans just during these six years. Over the twenty-one year period from 1965 through 1986, the total number of arrests for marijuana reached some 7 million. While the inclusion of marijuana possession as a criminal act is a political controversy, it is clear that an arrest record can have detrimental effects.

Federal law classifies marijuana and its ingredients as a Schedule I drug, with high abuse potential and no accepted medical use, whose only legal use is for research. Promising research results have been obtained using it to treat nausea and lack of appetite resulting from chemotherapy used in the treatment of cancer. No claim has been made that THC or marijuana itself is an anti-cancer drug, but it may reduce the unpleasant side effects of the anti-cancer drugs. Because marijuana tends to lower the pressure inside the eye, THC and marijuana has experimentally been used to treat glaucoma, an eye disease which can cause blindness. It may also have potential for the relief of anxiety (in low doses), distraction from mild pain, use as a mild muscle relaxant, and in stimulating the appetite. However, it has not been approved for regular medical use. More research is needed to determine if it is safe and effective.

Statistics and Facts About Current Use

In 1977, there were 43 million Americans who admitted to using marijuana at least on one occasion. Sixteen million of these Americans were current users during that time period. About 50 million Americans had tried marijuana by 1981. A national survey of households was conducted by the National Institute on Drug Abuse (NIDA) in 1982. In 1982 some 64% of young adults reported that they had used marijuana or hashish, with 21% using it 20 or more days in the previous month. More disturbing, 27% of teenagers reported using marijuana, with 6% using it almost daily.

Teenage use is probably the most disturbing aspect of marijuana. As will be discussed later in this chapter, heavy use during adolescence raises several medical concerns, and concerns about teenagers developing a drug-oriented lifestyle that could lead to more serious problems. Fortunately, education appears to be having some effect, even though marijuana is increasingly available. A yearly survey of high school seniors started in 1978 found that 10.7% of those surveyed admitted to daily use during the last 30 days. This percentage has steadily dropped, and the 1986 survey found daily use by high school seniors at the 4% level. In the 1986 survey, 85% of seniors said that they could easily purchase marijuana, but only 38% said that they would use it even if it were legal.

A 1985 NIDA survey found that among employed 20-40 year olds, 29% admitted to using an illicit drug in the past year, and 16% admitted to using marijuana at least once in the past month. This is a small decrease from the 1982 survey, but still says that some 37 million Americans reported using an illicit drug, usually marijuana, during the past year. Of these 18 million admitted to using marijuana within the month. Some experts have questioned these statistics, saying that many people are denying drug use in such government surveys out of fear of consequences for admitting use. Although exact figures are not known, marijuana appears to be the fourth most popular recreational drug in America today, with at least 40 million users, only surpassed by tobacco, caffeine, and alcohol in popularity.

Cannabis products are widely available in many parts of the world, and in fact in some countries the recreational and religious use of marijuana and hashish is legal while alcohol is illegal. Cannabis plant fiber (hemp) is still used today to make rope, twine, textiles, and paper for quality bibles. The oily resin of the fiber helps the materials made from the fiber endure better than many other commercially available fibers. Naturally, there is little if any THC content (the major psychoactive ingredient) found in the above products because of the variety of hemp used, and the manufacturing process. Smoking a hemp rope will not get you high, but only make you cough.

Most of U.S. marijuana supply used to come from Mexico and South America, most hashish from SouthWest Asia. However, as smuggling has been resisted as part of the War on Drugs, the price has increased, making this a more valuable commodity. U.S. growers have accounted for an increasing portion of the U.S. supply. Current estimates are that it is a $33 Billion dollar crop in the U.S., the most valuable cash crop, even though eradication efforts have prevented 1/4 to 1/3 of the illegal crop from reaching the market.

Origin and Composition

Cannabis Sativa plants can grow to 18 feet in height in 3 to 5 months in tropical regions. This "weed" has been found growing wild in several regions of the United States, probably due to prior cultivation for hemp fiber. Cannabis Indica is shorter, has less fiber but higher resin content. It is cultivated only for its leaves, flower buds and resin which are used for their psychoactive effect. There are 421 different chemicals in cannabis, 61 of which are unique to this plant, and 4 of which have some psychoactive property. The main psychoactive ingredient in marijuana is THC or delta-9-tetrahydrocannabinol, which was first isolated in the 1960's.

Marijuana can contain as little as 1/2 of 1% THC, or as high as 15% THC for sinsemilla (high quality seedless). Hashish usually contains from 5% to 20% THC. The oil extract from cannabis usually contains around 20% THC, but can contain up to 50%. This oil can be extracted from marijuana using alcohol as a solvent. The most common form of usage is the marijuana cigarette or "joint" which contains the dried leafy matter and weighs about a half a gram. The standard marijuana supplied by the National Institute on Drug Abuse (NIDA) for research contains 1.2% THC. However, most of the marijuana currently available illicitly contains over 5% THC, and so the NIDA marijuana is considered to be of poor quality by users.

Dosage and Body Path

The typical marijuana cigarette (government-grown marijuana for research having 1.2% THC content and weighing 1.5 gram) will contain around 20 milligrams of THC. In general, only half of the THC actually goes into the smoke, the rest being destroyed by burning. Even so, smoked marijuana has about three times the potency of eaten marijuana. The effects of smoked marijuana or hashish begin 1-5 minutes after use, peaking in 30 minutes and lasting 2 to 3 hours. Eaten marijuana or hashish takes longer to have an effect, and also lasts longer. It is more difficult to regulate the dose when it is eaten, and it is common for people to ingest more than desired. It is also possible to vaporize the oil without combustion.

Since THC is a vegetable oil, the drug is fat soluble. Most of the THC is broken down (metabolized) by the body within several hours, but the breakdown products are stored in the fat and are only slowly released to pass out through the urine and feces. It can be detected in urine up to one week after occasional use, and up to one month after stopping regular use. There have been cases of detection up to three months after ending heavy use.

EFFECTS OF CANNABIS

Effective Dose to Lethal Dose Ratio

No human death has been directly attributed to poisoning by overdose of THC or cannabis products. It has been estimated that a lethal dose would require ingestion of approximately seven pounds of flowering tops within a 24-hour period. Experiments have shown that about 40,000 times the amount of THC ordinarily smoked in a joint is needed to kill a mouse. This makes it the least toxic drug known (at least in the short run). It should be cautioned however, that because it is illegal there is no quality control and other drugs such as PCP are sometimes mixed with marijuana. Also there is a danger of herbicides such as paraquat and possibly insecticide contamination.

Physical effects

The most obvious physical effects of marijuana include red eyes and a dry mouth. This dryness may be related to the decrease in eye pressure, and from subjective reports also occurs in male semen which can slow its production. To some degree THC stimulates the heart, producing tachycardia (rapid heart beat), which could be dangerous in heart patients. The appetite is usually stimulated. The speed at which eyes adjust to darkness is also slowed, which could impair night vision while driving.

Moderately high doses of THC have been shown to decrease ability to shift attention, which is probably the reason that driving skills are impaired under the influence. Short-term memory is also impaired, although fortunately this does not seem to be a permanent effect. While under the influence, brain waves slow and more alpha (relaxation) waves are found. Many people become very sleepy and a small number report diarrhea.

Several hormones are affected by THC. Some studies suggest that testosterone, the male sex hormone, tends to decrease, which raises the possibility of a reduced sperm count in males with borderline fertility. Women may produce prolactin in less quantities which means their milk production may be lowered if they are nursing.

Difficult to Metabolize

THC is an oil and cannot mix with the body's water like alcohol does. Alcohol leaves the body in one day. THC oil lodges in the fatty part of cells and inhibits the passage of material into the center. The concentration of oil in the cells builds with each use since it takes several weeks for the body to cleanse itself from this oil. Daily users accumulated very high levels of this "gummy" THC or its metabolites. All cells contain fat, but two areas of the body which contain high levels of fatty cells are the brain and the reproductive organs. This "pyramiding" of THC may be responsible for the memory and reproductive problems possibly associated with marijuana.

Several laboratory studies have found a connection between THC and a decreased immune response at the cellular level. So far, an increase in colds or other diseases has not been found in users, but further studies need to be done, as this is a possible danger.

In a 1976 study, marijuana was found to produce quicker chest pain in cardiac patients than cigarette smoke. The increase in heart rate, although not a problem for most people, may be a danger to heart patients.

Probably the most dangerous aspect of chronic marijuana use is its effect on the lungs. Hot marijuana smoke can irritate the lining of the lungs, producing scar tissue and bronchitis. A study in Jamaica of heavy marijuana with tobacco smokers found that blood levels of oxygen were reduced. As with tobacco, we may find a more serious problem as time progresses, that of cancer. To date this connection has not been made, but this possibility exists. It is probable that smoking both marijuana and tobacco greatly increases the risk. Marijuana smoke is usually taken in unfiltered cigarettes and the smoke is normally held for long periods of time. There are several known cancer causing agents in marijuana smoke including tar, some of the main carcinogens in tobacco cigarettes. One study has isolated squamous metaplasia cells (precancerous cells) in marijuana smokers. Marijuana contains some 50% more known carcinogens than tobacco but it is usually held in the lungs longer, so that 1 "joint" of NIDA marijuana probably equals four cigarettes in dangerousness. Smoking higher potency marijuana (using the same THC dose) would lower this risk. However, many marijuana users smoke all day, and are probably at risk for the same diseases as a tobacco smoker.

Psychological Effects

Psychological effects depend on a number of factors including the purity, dose, setting, and expectations of the user. In one study for example, those using marijuana alone were much more quiet and withdrawn than those using marijuana in a group.

Increased aggressiveness and uncontrolled rages were attributed to marijuana users in the 1930's when the drug was made illegal. However, research has not supported this claim. In fact, humans are generally less aggressive under the influence of marijuana, although they are still capable of aggression.

There are some people who claim that marijuana use aids in meditation and prayer, and some religious groups (such as Rastifarians) say that they use marijuana as a religious sacrament.

Marijuana typically produces a feeling of euphoria and relaxation in most users although there are reports of paranoia and intense fear among inexperienced users or with high doses. There can be perceptual distortions which have led some experts to classify this drug as a hallucinogen. These perceptual changes include an increase in awareness of bodily feelings, taste, hearing and color vision. Sensitivity is not actually increased, but people may be more aware of sensations. Time distortions (things seeming to happen slower or quicker than normal) are common.

Common cognitive impairments would include decreases in ability to concentrate and attend, reduced levels of judgement, increased reaction time, poorer coordination, and lessened ability to perform complex tasks. These impairments may be ignored by some users who prefer to believe that they can drive and concentrate better than while sober. However, several studies have verified that marijuana use is associated with traffic deaths (California and Massachusetts), although alcohol is usually also involved. The impairment from alcohol and marijuana together is especially great. In one study using a flight simulator, pilots made 7 times more serious errors while stoned on pot than while sober. In general, being under the influence of two marijuana joints is approximately equal to being legally drunk. The decrements in performance can last for hours after the high wears off.

Rarer although possible psychological effects can include more serious mental disturbances. Hallucinations, paranoia, confusion, panic attacks, anxiety, depression and psychotic thinking have all been reported. Severe reactions are more likely from larger doses and also more probable when the drug is eaten. Novice and younger users are more vulnerable to these effects than older users and the person's level of mental stability can also play a role.

LONG TERM EFFECTS

Tolerance and Withdrawal

Marijuana use does result in tolerance to the drug when used in high doses. More marijuana needs to be used to get the same effects, although tolerance does not increase as much as with many other drugs. When people use only small amounts, this tolerance has less of an effect. One study indicated that brain wave changes only occurred at high level doses for experienced users, while changes could be seen at lower levels in novice users. There are long term effects, for experienced users showed less brain wave changes even when restricted from marijuana for 1, 2 and 3 weeks.

There is some evidence that cross tolerance develops from marijuana to alcohol although this may not be a very high level of cross tolerance.

Withdrawal effects sometimes occur with heavy users despite the generally accepted notion that marijuana is only psychologically addictive. The most common withdrawal effects are a mild headache, and then an irritability that lasts one or two days. Rarer withdrawal effects include sweating, hot flashes, insomnia, hiccups, increased salivation, weight loss, brain wave changes, depression, restlessness, a decrease in appetite, tremor, nausea, vomiting, and diarrhea. Some former heavy users have said that they did not feel clear-headed until months after quitting.

STUDIES SHOWING HARM

Harm to Lungs

Chronic marijuana may cause a variety of problems to the lining of the lungs. Cough and chest pains can result as evidenced from one study where soldiers who smoked hashish over a 6 month to 2 year period had more bronchitis and asthma than those who did not smoke it. An additional factor in many of these cases was tobacco, which increases the risk. In a 1978 study, one "joint" of low quality marijuana had the same effect as 16 cigarettes in reducing lung capacity. Another study indicates that marijuana smoke has more benzanthracene, benzopyrene and other tars than cigarette smoke. These substances are known cancer causing agents. Marijuana smoke contains about the same amount of carbon monoxide and other irritants as tobacco smoke. Squamous metaplasia (precancerous) cells have been identified in one study of marijuana smokers. In another study, lung cells exposed to marijuana smoke in a laboratory showed evidence of chromosome damage.

Decreased Sperm Count and Masculinity

One long term study covering 20 years indicates that chronic smokers of hashish show a definite deterioration in the necessary protein which surrounds the chromosomal material in the sperm cells. These findings suggest that chronic male smokers may have decreased fertility, resulting in the possibility of problems getting their wives pregnant.

There are other reports that sperm count is directly reduced in heavy marijuana smokers. One study found significant reductions in the number of healthy sperm found in these heavy users. Effects are thought to be reversible after use stops.

One study indicates that, apparently with the decrease in the male sex hormone testosterone, breasts may enlarge in heavy users, especially adolescents who are still developing sexually.

Female Reproductive System

One study found abnormal menstrual cycles in 39% of marijuana users as compared to 12% of nonusers. In another study pregnant marijuana smokers had a higher number of still births, miscarriages and lower birth rates than nonsmokers. Decreased levels of prolactin, a hormone responsible for milk production was also noted in pregnant women.

The effect on women's reproductive systems may be worse than that for men, for men produce many sperm cells, but women have a more limited number of eggs.

Possible Reduced Immunity to Disease

Results are conflicting but some studies suggest that marijuana smokers may be more prone to contracting diseases. In laboratory experiments in which THC was placed in a dish with human cells, the disease fighting cells have been described as ill formed and ineffective. Although this effect has not yet been found in humans, it is a possibility, especially for heavy users.

Long-Term Effects on the Nervous System

Flashbacks

Flashbacks have generally not been reported although there are some reported cases where flashbacks occur.

Amotivational syndrome

Many users of marijuana have been found to be lethargic and unmotivated, with a marked decrease in their level of ambition. Students may begin to lose interest in their studies, career persons lose their drive, and generally a passive orientation to life can develop. Although this syndrome does not occur in all smokers, it appears that this is one of the more prevalent patterns among heavy daily users. This effect is probably due to a continuous intoxication on marijuana. However, it is hard to say whether laziness is the result of marijuana smoking, or whether people who are lazy tend to smoke marijuana. This effect is probably dose-related, as a longitudinal study of 1,380 UCLA undergraduates found no relation between use of marijuana and grades. Although moderate use may not have an effect on motivation, continuous heavy use probably does, as the person who abuses in this way is constantly stoned.

Possible Factor in Causing Mental Illness

Certain persons who are predisposed to mental illness may become more disturbed following use of this drug. Some 10% of all patients admitted into mental hospitals in India were related to cannabis use while in Egypt, 30% of admissions were cannabis related. Overdose can result in panic or anxiety states, even in stable individuals.

The Possibility of Permanent Brain Damage

Whether cannabis use produces permanent brain damage is still an unanswered question. A 1977 study in India showed that 11 users of hashish did more poorly on tests of mental abilities than non-smokers. A 1978 study might explain why. Three monkeys given the equivalent of three joints of marijuana daily showed a clumping of waste material between nerve cells after six months of use. These foreign substances between nerve cells probably slow or reduce the communication among cells. Although reversible, this clogging of the space between brain cells may well be responsible for memory lapses and the other mental abnormalities mentioned.

There have been cases reported in which individuals who are experiencing memory problems recover after quitting use of marijuana. However, most users do not seem to experience such problems. A longitudinal study of 1,380 UCLA undergraduates found no relationship between the use of marijuana and grades. Also, large long-term studies of chronic smokers in New York (The LaGuardia Commission), Jamaica and in India (the Indian Hemp Commission) found little or no differences between users and non-users. The Jamaica study did find a lower oxygen level in the blood among heavy users of marijuana and tobacco. A study in Costa Rica of eighty men who smoked an average of 10 joints daily for 20 years found no organic brain damage, medical or psychological differences after they had quit for two days. The Costa Rica study also did not find a relationship between testosterone levels or immune system problems and the use of marijuana. However, the studies of marijuana are continuing, and it is possible that detrimental effects will be found even in moderate users. Those people using this drug are acting as experimental "guinea pigs".

Public Opinion and Legal Consequences

Most marijuana users who feel that marijuana is safe for adults still do not want their children to use this drug. The research on marijuana use indicates that there are several identifiable dangers. Since this drug can only be legally used for research purposes, it falls under the category of a Schedule 1 drug under the Controlled Substances Act. Trafficking in marijuana can carry a 5 year sentence for the first offense and a 10 year sentence for the second offense. State laws vary greatly from complete legalization for personal use as is the case in Alaska, to misdemeanor in some states, to a felony offense in other states. Use of any drug, including marijuana or alcohol, is against the rules of the Bureau of Prisons. Use of illegal drugs in prison is considered a most serious offense, and users face severe disciplinary action and possible parole set-backs.

Many Americans have arrest records due to possession of marijuana, with the National Organization for Reform of Marijuana Laws (NORML) estimating that over seven million Americans have arrest records for marijuana since 1965. An arrest record may prevent people from obtaining desired jobs, which is certainly among the detrimental effects.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OUTLINE

I. Cannabis (Marijuana)

A. Names

1. Technical: Cannabis Sativa or Cannabis Indica
2. Forms: Marijuana, Hashish, Extracted Oil
3. Names: Grass, Weed, Pot, Ganja, Dagga, Bhang, Charas, Kif, Hashish, Acapulco Gold, Ace, Ashes, Baby, Broccoli, Butter, Gage, Hemp, Jive, Mary Jane, Tea, THC, Herb, Reefer.

B. History

1. Throughout recorded history uses of marijuana have been medical, religious, and recreational.
2. An attempt has been made to medically treat almost every illness or ailment known to man by the use of marijuana.
3. 2737 BC-- first recorded use in Chinese medicine, as antiseptic, for pain, constipation, asthma
4. 1000 BC-- first record of use in Indian Hindu culture, used for meditation
5. 1630-- half of American clothing made from hemp
6. 1800s-- popular in U.S. medicines for pain, digestive problems
7. 1937-- Marijuana Stamp Act essentially outlawed it
8. 1941-- removed from the list of approved medicines
9. 1951-- Boggs Act incorrectly classified it as a narcotic
10. 1955-73-- Texas law punishes first offense of possession of it with 2 yr. to life
    1970-- in Georgia, lst offense for sale had penalty of life in prison
11. 1970-- Comprehensive Drug Abuse Prevention and Control Act reduced federal penalties for possession.
12. 1975-- U.S. government began spraying marijuana in Mexico with Paraquat
13. 1980s--War on Drugs makes smuggling more risky, prices rise, outdoor and indoor cultivation in the U.S. accounts for increasing portion of supply, is now $33 Billion dollar crop, second in cash only to corn

C. Statistics and Facts About Current Use

1. 1977-- 43 million Americans had tried it, 16 million used in past year
2. 1977-- 28% of 12-17 year olds had tried it, 16% were current users
3. 1982-- 31% (60 million) Americans had tried it, 35 million users in past year, 3-5 million daily users
4. 1985-- 33% (62 million) Americans had tried it with 18 million admitting to use in past month, use declined slightly
5. Marijuana is 4th most popular drug, following caffeine, alcohol, and tobacco, even though some 7 million Americans have been arrested
6. use common in many parts of the world
7. still used to make rope, twine, textiles, bird seed, and paper for high quality Bibles
8. experimentally used to treat glaucoma (high fluid pressure inside the eye), to reduce pain, to reduce cramps and muscle spasms, and to reduce the nausea and loss of appetite caused by chemotherapy used to treat cancer

D. Origin, Composition, Production, and Forms

1. Cannabis Sativa plants can grow up to 18 feet tall, mature in 3-5 months after planting
2. Marijuana-- the dried and crumpled leaves of the Cannabis Sativa or Cannabis Indica plant
3. Hashish-- the oily resin from the flowers of the plant
4. Hash Oil-- refined oil of the plant
5. 421 different chemicals have been found in Marijuana, 61 of these are called Cannabinoids, 4 of these are known to be psychoactive
6. The primary psychoactive compound in Marijuana is THC or delta-9-tetrahydrocannabinol
7. Marijuana contains 1-5% THC, Sinsemilla (high quality seedless) 5-15% THC, Hashish 10-20% THC, Hash Oil 20-50% THC
8. Most common form is Marijuana cigarette or joint, weighing 1/2 gram

E. Dosage and Path in Body

1. A 1.5-gram marijuana joint with 1.2% THC used in research will contain about 20 milligrams THC
2. When Marijuana is smoked, 50% THC is burned up, only half is available in smoke
3. When smoked, effects begin in 1-5 minutes, peak in 30-60 minutes, and last 2-4 hours at which time most of the THC has been changed to a non-psychoactive form
4. When eaten, effects begin in 30-60 minutes and last 5-8 hours. Effect of eaten Marijuana is 1/3 effect of smoked marijuana for same quantity.
5. THC is broken down primarily by the liver into 35 different known metabolites (byproducts). Some THC is broken down by the lungs.
6. THC or its metabolites are stored in the fat
7. At the end of 1 week after smoking marijuana by a daily user, 45% of metabolites of THC have passed through feces, 30% have passed through urine.
8. THC metabolites are detectable by urine tests up to one month after daily use, up to three months after long-term heavy use.

F. Effects Under the Influence

1. Common Physical Effects
   a. increases in heart rate
   b. slowed dark adaptation
   c. reddening of eyes
   d. expansion of the bronchial tubes
   e. slowed brain waves
   f. decreased REM (dream) sleep
   g. stimulates appetite, especially for sweets
   h. diarrhea in some people
   i. decreased male hormone testosterone produced by the testes; study: 35% decrease at 3 hour after 1 joint, in novice user return to normal 12 hours after introduction, in heavy user return to normal after 1 week.
   j. decreased prolactin, a hormone responsible for milk production in females.
   k. Bronchitis. sinusitis, and respiratory problems
   l. Squamous Metaplasia cells (precancerous cells) and the possibility of lung cancer in heavy long-term users, since marijuana contains 50% more tar, a known cancer causing agent, than an equal amount of tobacco

3. Psychological Effects depend upon purity, dose, set, and setting. Study: persons using Marijuana alone became more quiet and withdrawn, but those using it in a group became more outgoing

a. Common General Effects
   1) euphoria
   2) relaxation
   3) time distortion
   4) space distortion
   5) more vivid sensation
   6) depersonalization-- self as strange or unreal
   7) religious feelings

b. Common Impairments in Mental Abilities
   1) in concentration or attention
   2) in transfer of information from short to long term memory
   3) in judgement
   4) in reaction time
   5) in coordination
   6) in recovery from glare
   7) in ability to perform complex or unfamiliar tasks as compared to simple or familiar ones

c. Lessened ability to operate any kind of vehicle
   1) study: more fatal highway accidents for users than nonusers
   2) study: in California 1 of 7 traffic deaths involved a driver stoned on pot (alcohol was also a factor for most)
   3) study: in Massachusetts 1 of 6 traffic deaths involved driver stoned on pot (alcohol was also a factor for most)
   4) study: in flight simulator tests pilots made 7 times more serious errors when stoned than not stoned
   5) study: two joints is equal to being halfway legally drunk in driving simulator test

d. Occasional Effects in Some People
   1) feelings of having greater insight
   2) depression
   3) anxiety
   4) panic attacks
   5) illusions
   6) hallucinations
   7) identity confusion
   8) psychotic thinking
   9) paranoia

4. Bad effects are more likely for eaten Marijuana than for smoked Marijuana, more likely for high doses than low doses, more likely for novice users than experienced users, more likely for teenagers than for adults, more likely for emotionally unbalanced than balanced persons.

G. Long Term Effects

1. Tolerance develops.
   a. study: daily users took 4-10 times more pot than 1st time users in order to show slowed brain waves
   b. study: experienced smokers (4 years) were given no pot for 1 week, given 2-10 joints per day for two weeks, then given no pot for 1 wk. The same amount of pot had less and less effect during the 2nd and 3rd weeks
   c. some evidence for cross tolerance with alcohol
   d. experienced users often smoke less to obtain desired effect, although they can tolerate more

2. Withdrawal effects occur for some heavy users.
   a. study: same as 4 week study above, during 4th week most subjects demonstrated mild withdrawal effects
   b. usual withdrawal effect: irritability
   c. withdrawal effects also seen: sweating, hot flashes, insomnia, hiccups, increased salivation, weight loss, brain wave changes, depression, restlessness, decreased appetite, tremor, nausea, vomiting, diarrhea
   d. withdrawal not reported by heavy users in a Jamaican study, is usually rare or mild

3. Harm to the Lungs
   a. chronic cough and chest pains may result
   b. study: soldiers who smoked hash for 6 months to 2 years had more bronchitis and asthma than those who did not smoke it
   c. study, 1978: 1 joint of Marijuana had the same effect as 16 cigarettes in reducing lung capacity in breathing tests
   d. study: Marijuana smoke has 70% more benzopyrene and more tars than cigarette smoke, these substances are carcinogens
   e. study: lung cells in the test tube showed more abnormal chromosomes after exposure to marijuana smoke

4. Decreased sperm count and movement in male heavy pot smokers

5. There is one published medical report about 3 males, aged 23-26, who smoked pot heavily for many years, who also developed enlarged breasts.

6. Flashbacks reported by some users.

7. There is evidence of loss of motivation and willpower in some heavy chronic pot users, however it is difficult to say if marijuana or laziness came first

8. Possible Harm to the Heart
   a. study, 1976: Marijuana smoke was quicker to produce chest pain in heart patients than was cigarette smoke

9. Possible Brain Damage
   a. study, 1977, in India: compared to 11 nonusers, 11 long term users of Hashish did more poorly on seven tests of mental abilities including memory, thinking-manual speed, and time perception
   b. study, 1978: three monkeys were given the equivalent of 3 joints per day for six months, there were bad effects on the neurons in the brain (wastes in synapses, wider synapses, clumping of vesicles, foreign substances typical of older animals)
   c. study, 1976, in Costa Rica: 80 long-term users averaging 10 joints/day were no different on intellectual tests than a matched group of non-users, after two days abstinence
   d. study, 1987, follow-up of Costa Rica study: the same users still could not be distinguished from non-users on intellectual tests two days after last use

10. There is laboratory evidence that high doses of THC may lower resistance to disease at the cellular level, but this has not been confirmed in humans.

11. Possible Harm to Reproductive System of Women
   a. study: 39% of users and only 12% of nonusers had abnormal menstrual cycles
   b. THC passes from mother to fetus
   c. study: Marijuana use was associated with higher rates of miscarriage, stillbirth, and lower birth rate among poor women
   d. decreased levels of prolactin, the hormone responsible for milk production in women

12. Possible Contributor to Mental Illness
   a. Some evidence that marijuana may precipitate mental illness in those already predisposed.
   b. studies: 10% mental hospital admissions in India were related to cannabis use, 30% in Egypt

13. Difficult to Metabolize
    a. unlike alcohol, THC is not water soluble, that is, it cannot mix with the body's water
    b. THC, the active ingredient in marijuana, is an oil that lodges in the fatty tissue and fat component of cells
    c. THC itself is broken down by the body in a few hours, but the breakdown products stay in the body and concentrate in the fatty areas
    d. THC breakdown products begin to add up during daily or even weekly use since it takes the body several weeks to dispose of THC
    e. this "pyramiding" of THC breakdown products in the body is not completely understood but effects on memory, and brain waves may be two possible results

14. Public opinion and legal consequences
    a. while many users view marijuana as "safe," these same users would normally not want their children to use this drug
    b. recent research about marijuana indicates that marijuana is not safe
    c. Under the Controlled Substance Act, marijuana is considered a schedule I drug, which means that its only legal use is for research.
    d. Trafficking in marijuana can carry a 5 year sentence for the first offense, and 10 year sentence for the second offense
    e. Use of marijuana in the Federal Prison system is against the rules and regulations, is a 100-level incident, and users face severe disciplinary action and possible delays in release
    f. Some seven million Americans have been arrested for marijuana possession

Chapter 9

TOBACCO

TOBACCO

TITLE:

Tobacco Products

PURPOSE:

To develop an awareness of the mental and physical effects of tobacco products, whether smoked, chewed or taken intranasally.

OBJECTIVES:

1. To identify four historical phases in the history of tobacco use. (use by American Indians, spread around the world, economic importance to the development of America, recent decline in use due to medical concerns)

2. To understand physiological effects (constriction of blood vessels - increased blood pressure; paralyzation of lung cilia; tar and carbon monoxide; lung/throat irritation; role in impotence)

3. To understand psychological effects (initial dizziness and lightheadedness; unusual combination of tranquilizing and stimulant properties; addictive properties)

4. To understand the medical dangers of tobacco (bronchitis; emphysema; lung, mouth and throat cancer; higher risk of heart attack; risk to fetuses)

TIME FRAME:

90 minutes

EXERCISES/TEACHING TOOLS:

Glass-encased sample of lung damaged by smoking. Spenco Medical Corporation P.O. Box 8113 Waco, TX 76710

Demonstration of tar sample taken from cigarette into "smoking doll". Health Edco, Inc. Waco, TX 76702

Chapter 9 Sample Questions

True or False

____ 1. Tobacco is physically addictive, like heroin.

____ 2. Tobacco can be "snorted" intranasally.

____ 3. Nicotine is a prime cause of cancer.

____ 4. Chewing tobacco does not cause cancer.

____ 5. Tobacco is medically classed as a stimulant, as is cocaine.

____ 6. Tobacco use can make penis erections difficult.

____ 7. "Tar" is the ingredient that raises blood pressure.

____ 8. Most adult cigarette smokers started before high school.

____ 9. Emphysema is reversible if a person stops smoking.

____10. Nicotine leaves the brain within half an hour.

TOBACCO

INTRODUCTION

History

Tobacco is the one widely-used drug unique to North America, although its use spread all around the world approximately 500 years ago. Columbus and other European explorers of his time were amazed to see American Indians who "drank smoke" from rolls of dried leaves which they set on fire. Other Indians burned the same leaves in pipes in order to "drink" the smoke. Indians who agreed to travel to Europe brought their tobacco with them, and sailors on the ships tried this curious smoke and found that they liked it. As today, nicotine, the active ingredient in tobacco, could be used as a mild stimulant, but also had the strange effect of being able to be used as a tranquilizer when a person felt anxious. The sailors also learned another fact about tobacco, that after they had smoked for a while, they had to continue smoking several times a day or experience a miserable craving that only tobacco could satisfy.

The tobacco did not have to be smoked to produce its stimulant or tranquilizing properties; it could also be chewed and could be "snorted" intranasally in the form of snuff. However it was found to be addicting in every form. Because of the steady demand for tobacco, it was quite valuable in times of short supply, and in England during the 1600s was exchanged for an equal weight of silver. Because of its addictive nature combined with high prices, many a rich estate was drained to support this habit. At about that same time, tobacco was a major commodity exchanged for African slaves, with the price set at about 500 pounds of tobacco for a slave taken by other Africans during raids of enemy tribes.

Because of its addictive qualities, attempts have been made over the years to limit or prohibit its use. For example, the Sultan of Turkey decreed the death penalty for smoking tobacco in 1633. However, even though many smokers were executed the habit persisted. About the same time the Russian czar ordered whipping or slitting of the nostrils but again without ending the demand for tobacco. This steady demand has been true for every nation which started the tobacco habit.

Tobacco growing was a major economic factor in the growth of early America, and even to this day America exports tobacco around the world. In earlier days, most tobacco was consumed in cigars and pipes, inhaled as snuff, or chewed. The cigarette was not unknown, but not commonly used until this century.

The explosive rise in cigarette consumption was due to three major factors. One was the public condemnation of chewing, and the related spitting of tobacco juice. This spitting was blamed for spreading tuberculosis. Two other factors were the development of milder tobacco that could be inhaled deeper without as much coughing, and the invention of machines to mass-produce cigarettes. American cigarettes became very popular around the world partly due to widespread distribution during two world wars.

The tobacco industry is a major economic force, with 1970 production of cigarettes at 583 billion. That is a daily per capita consumption of 11 cigarettes for each American adult. The percentage of Americans who smoke has dropped over the last 30 years, but remains a significant portion of the population. In 1955 some 54% of men smoked, while about 24% of women smoked. By 1965 nearly 30% of women had taken up this habit, while the percentage of male smokers changed very little. About that time, the U.S. Surgeon General publicized the dangers of tobacco smoking, and the percentage of Americans who smoke has steadily dropped. It appears that health education, and a change in public acceptance, have been the primary reasons for the decline in use for this legal drug. At present, approximately 30% of men and 24% of women smoke. Some others use snuff or chew tobacco. Many of these wish they could stop but find it very difficult.

Laws Regarding Tobacco

Tobacco has been a major agricultural product since the early years of America, and as such has enjoyed favorable treatment under the law. To this day, the government has programs to insure economic stability for tobacco growers. Tobacco products are taxed heavily, which is a source of revenue. However, recent medical research indicates that the costs to society outweigh the benefits. The costs of individual addiction and health problems have motivated laws banning the sale of tobacco products. By 1921, the year after alcohol prohibition, 14 states had laws prohibiting cigarettes, but as people continued to smoke anyway, the last statewide cigarette prohibition law was repealed in 1927. Almost all the states have laws forbidding sale to minors, but studies have shown that most smokers started in their early teenage years. An anti-smoking organization went to retail stores across the country and found that some 70% of the stores sold cigarettes to youths under the age of 14. This lax enforcement of the prohibition of sales to minors is one reason for teenage smoking. The reasons for smoking by teenagers are complex, and include peer pressure, a desire to have adult status, and much advertising by cigarette companies.

Starting in 1966, each cigarette package displayed a mandatory health warning. Television and radio advertising by tobacco companies was forbidden by law in 1970, but this had little effect on the percentage of smokers, although the ban may have reduced the amount of increase that might have occured if television and radio advertising were permitted. It should be noted that billboard, magazine, newspaper, and sports-related advertising continue. Most of this advertising is youth-oriented, and uses attractive, athletic models with white teeth.

In a 1978 Surgeon General's report, cigarettes have been blamed for 325,000 premature deaths per year. In this same year, 54 million Americans smoked 615 billion cigarettes. More recently, in 1988, our Surgeon General has stated that nicotine is addicting like heroin and cocaine. However, tobacco companies to date have enjoyed an unusual freedom from product liability claims, with some 200 legal suits resolved in favor of tobacco companies who have claimed that there is no conclusive evidence of cancer caused by cigarette smoking. Of course, a new court case may change the situation. However, anyone who started smoking after 1966, when the warning labels were added to cigarette packages, has less of a legal standing, as he or she has accepted known risks.

The greatest change in legal status has occured in recent years, with the advent of laws prohibiting smoking in areas where other people must breath the smoke. Many public and large private establishments have been divided into smoking and non-smoking areas. Recent legislation has prohibited smoking on many airplane flights. Non-smokers have demanded the right to breath clean air, and this appears to be the trend. A new form of nicotine, having it in chewing gum, meets the need of both users and those nearby who don't want to be affected. However, this gum is available only by prescription, and has such high doses of nicotine that smokers get dizzy after a short time. It is reasonable that a lower dose nicotine gum will become legal without a prescription, and be used by those desiring nicotine but being in areas where smoke would offend others. Legal nicotine gum would also reduce some of the medical problems associated with tobacco.

PHYSICAL EFFECTS

The active ingredient in tobacco is the drug nicotine. It is poisonous in a high enough dose, and can be used as an natural insecticide. It is probable that nicotine helps tobacco ward off the attacks of many insects. In humans nicotine is a stimulating alkaloid with addicting properties related in some ways to opiates and cocaine. Tobacco users tend, over time, to increase their dose of nicotine to an "optimal" level, and if they switch to low nicotine cigarettes will smoke more cigarettes to obtain the same dose.

The initial effects for a novice smoker, or if an experienced smoker has an unusually high dose, is of lightheadedness, dizziness, and some nausea. But the desired effect is also present, that of a mild euphoric stimulant. Tobacco is classed as a stimulant, like cocaine.

The effect in the mouth is an increase of saliva, especially if the tobacco is in the chewable form. The effect of smoked tobacco on lung cilia, the tiny hairs that clean out the lungs, is to paralyze them, which prevents their normal removal of tars and other pollutants from the lungs. This paralyzation of cilia is dangerous, as a one pack a day smoker breathes in one quart of tar each year. During sleep when no smoking occurs, the cilia can be active, and tars and other material are pushed toward the throat. This is why smokers tend to cough in the morning, but not as much later in the day (unless they exercise).

The senses of smell and taste are dulled when people smoke. When people stop smoking they often find that they eat more, which is partly nervous eating, but also due to the food tasting better.

The effect on the cardiovascular system is that of an increase in heartrate and blood pressure, due to a constriction of small blood vessels. Smokers tend to have impaired circulation to the extremities, and skin temperature is lower due to less blood flow. One organ affected is the penis. Nine out of ten men who complain of failure to achieve or maintain an erection are smokers, and often find that they can perform better sexually after they have quit smoking. The constriction of blood vessels increases the risk of heart attack, as the blood supply to the heart muscles is also constricted. The increase in blood pressure doubles or triples the risk of stroke (clogging of the blood supply to parts of the brain) and of brain hemmorhage, when blood vessels burst within the brain.

Respiratory diseases such as pneumonia and chest colds are more common among smokers, which is probably due to impaired cilia. Chronic bronchitis is a cough and shortness of breath due to irritated and swollen air passages. Emphysema involves scar tissue that takes the place of healthy lung cells in the air sacs called alveoli. This scar tissue cannot expand and contract like healthy lung cells, and so breathing is difficult. Bronchitis is reversible but emphysema is not, and can lead to disability and even death.

Cancer of the mouth, throat, and esophagus are most often caused by a constant irritant such as smoke. Cancer of the kidney, pancreas and bladder are also related to smoking. Lung cancer is even more deadly, as it is fatal in nearly all cases.

There is a danger to fetuses when pregnant women smoke or chew tobacco. Their babies suffer a higher rate of miscarriage, stillbirth, and premature birth. Their babies have lower birth weights. Because nicotine constricts blood vessels, there could be problems during fetal development due to lessened blood flow. Another problem with fetal development is that of carbon monoxide inhaled by the mother. This is a poison that prevents the normal carrying of oxygen by red blood cells. In large doses carbon monoxide can cause death, and at lower doses can kill sensitive brain cells.

ADDICTIVE POTENTIAL

Although nicotine produces a brief euphoric stimulation, this is fairly mild. The addiction potential is not due to the pleasure as much as to avoid withdrawal effects. Tobacco withdrawal effects include irritability, cravings to smoke, increased number of awakenings during sleep, increased eating, decreased heart rate, and increased confusion. Studies of mental abilities during withdrawal show that response speed consistently became worse within the first 24 hours of tobacco deprivation, improved slightly over the next nine days, but did not return to normal speed during this time. After resuming smoking, response speed returned to normal levels. The cravings and mental disturbance during withdrawal can last for weeks. A number of men who have quit both heroin and tobacco have said that tobacco was more difficult an addiction to end, as the withdrawal symptoms last much longer.

Another part of the addiction is not to nicotine, but to the behavior of smoking. The habitual behaviors such as lighting up, taking a "drag", holding a cigarette, and blowing smoke all are something to do as a way to combat boredom or to reduce tension. Ending these habits and substituting other things to do is part of the problem that smokers must solve when quitting.

Suggestions to deal with the habit-changing problem include chewing sugarless gum or toothpicks, drawing pictures, exercising, starting new hobbies, and even drumming or twiddling with one's fingers.

SOCIAL CONSEQUENCES

In addition to medical health hazards, cigarette-caused fires is another major problem. In 1984, cigarette-caused fires killed 1,570 people and seriously injured another 7,000. Cigarettes cause about 1/3 of residential fires. It should be noted that alcohol is also involved in about half of these fires, as falling asleep with a lit cigarette is the usual cause.

Many smokers began their babit in order to appear "cool" or socially acceptable, or perhaps to appear grownup and mature. However, in present society smoking is often seen as unattractive. The clothing and furniture of smokers tends to get burn holes, and to have a constant smell of smoke. The smell of smoke often bothers others, and can cause arguments if you don't respect their right to clean air. Worse, a person who may have been interested in you sexually can be turned off by yellow, stained teeth and what is, to most non-smokers, the extremely unpleasant breath of a smoker. It has been said that kissing a smoker is like licking a dirty ashtray.

QUITTING

Quitting the tobacco habit is not easy. Some people apparently just make up their mind to stop, do so, and never have a problem. However, most smokers have much more of a problem and, even if they do stop for long periods, experience cravings for months or even years. These cravings occur especially after eating, when they are around others who smoke, or in times of boredom or stress. In general, the first two weeks are the hardest, and if someone can abstain that long then he or she can stay clean for good. The occasional cravings after that tend to go away quickly, as the person turns attention to other things.

As is the case in quitting other drug habits, success in quitting smoking involves motivation, confidence, coping skills, and social support. There are a number of aids and programs that have been found useful by many ex-smokers. Some ways to do it yourself include setting a target date, and building up your confidence that you can quit at that time. When that date arrives, throw away all your cigarettes and matches to make it harder to restart. Quitting along with a friend is often helpful, as pride becomes a motivator. Take up an exercise such as jogging or lifting weights. This will make you feel better, and will help your lungs clean out faster. Don't expect too much at once. Estimate how much money you will save, and after a length of time use some of that money to buy yourself a treat for good behavior. Think of smoke as disgusting and something to avoid. Make a list of reasons to quit, such as health, increased energy, money, being attractive to others, setting a good example, and feeling pride in proving your inner strength. If you start to slip, look at your list for support.

Quitting cold turkey has worked for many, and in fact this is the method recommended by the American Cancer Society. Others find that cutting down first before quitting helps. Cutting down can be done by smoking only half of a cigarette, changing brands, using a filter, inhaling less, setting a daily quota, or delaying each time you light up. Other hints include placing a rubber band around your pack as a reminder that you plan to quit, or placing your pack in a place that is more difficult to reach. Some find that smoking with your other hand helps break the habit, as your movements are more conscious and less habitual.

Many of those who quit do slip and start smoking again. If this happens, don't feel like a failure. Nicotine is a powerful addiction. Learn from your slip and resolve to quit again. Believe that you can succeed.

Tobacco Chapter Outline

I. Introduction

A. Old History

1. European explorers amazed at Indians who "drank" smoke

2. Use spread quickly around the world

3. Tobacco was important product of America

4. Early attempts to prohibit use, including execution

B. Recent History

1. Milder cigarettes and disgust over spitting made cigarettes very popular in America

a. In 1955: 54% of men, 24% of women smoked

b. In 1966: nearly 30% of women smoked, surgeon general publicized dangers, added warning labels

c. At present 30% of men and 24% of women smoke

2. Decline appears to be due to public disapproval rather than laws

II. Laws Regarding Tobacco

A. Is major agricultural product since early years, government has programs to ensure economic stability

B. Attempts to prohibit tobacco in America

1. In 1921, the year after alcohol prohibition, 14 states had laws prohibiting cigarettes - the last state to give up on prohibition did so in 1927

2. Almost all states forbid sales to minors

a. A test of retail stores found that 70% would sell to youths under age of 14

b. Lax enforcement allows early use, 60% of smokers began by age 14

3. Starting in 1966, each cigarette package displayed a health warning

4. Television and radio advertising forbidden in 1970

   a. Billboard, magazine, newspaper and sports-related advertising continues

   b. Cigarette advertising shows attractive athletic models with white teeth

5. Greatest change has been of non-smokers demanding clean air, smoking allowed only in certain areas

6. Contradiction: nicotine-containing gum, the least harmful method, is illegal except by prescription

III. Physical Effects

A. Nicotine is active ingredient, is a stimulant alkaloid (like cocaine) which is addictive

B. Mental effects: mild euphoric stimulation, overdose produces dizziness, nausea

C. Lung cilia (little hairs that sweep out dirt from the lungs) are paralyzed, which allows tar and other foreign matter to remain

D. Sense of smell and taste is dulled, more salivation

E. Increase in blood pressure due to constriction of arteries (as with cocaine), impaired circulation to extremities and skin

F. Nine out of ten men complaining of erection problems are smokers who often regain their sexual potency after they quit.

G. Respiratory diseases

   1. Pneumonia and chest colds are more common among smokers

   2. Chronic bronchitis is a cough due to irritated and swollen air passages

   3. Emphysema is scar tissue in the air sacs, irreversible and potentially lethal

H. Increased risk of cancer

1. Cancers of mouth, throat, esophagus, kidney, pancreas and bladder are more common among smokers

2. Nine out of every ten cases of lung cancers can be attributed to smoking and is usually fatal

I. Danger to fetus if women smoke while pregnant

1. Higher rate of miscarriage, stillbirth, low birth weight

2. Carbon monoxide and nicotine both pass to fetus

IV. Addictive Potential

A. Nicotine produces mild euphoric stimulation, is classified as a stimulant, as is cocaine

B. Continued use is not so much to pleasure as to avoid withdrawal symptoms

1. Milder withdrawal than heroin, but longer lasting

2. Irritibility, increased number of awakenings, increased eating, decreased heart rate, cravings to smoke

3. Study: decline in mental abilities and response speed declined within first 24 hours of nicotine deprivation, was not back to normal 10 days later, improved after resuming smoking

C. Part of addiction is purely habit: lighting up, holding a cigarette, taking a drag, blowing smoke as things to do to relieve boredom and handle stress

V. Social Problems

A. Cigarettes cause about 1:3 residential fires, in 1984 killed 1,570 people and seriously injured another 7,000

B. Unattractive to others

1. Clothing, furniture, cars of smokers smell of smoke

2. Burn holes in clothing

3. Smell of smoke bothers many, can start arguments

4. Yellow, stained teeth, and smoker's breath is a sexual "turn off"

VI. Quitting

A. Many people quit easily after deciding to do so

B. Others with more "addictive personalities" find it hard to quit

C. First week is the hardest, but cravings will occur for months

1. When bored

2. When nervous

3. After eating

4. When others smoke

D. Cutting back

1. Put rubber band around pack to make it more of a conscious action

2. Delay each time you smoke, delay for longer times

3. Drink water instead of smoking

4. Puff without lighting

5. Put out cigarette when half done (Most carcinogens and tar are in the last half)

E. Deciding to Quit

1. Make a list of reasons to quit, keep it handy when you need help with cravings

2. Set a date to quit, make a firm commitment to keep that promise to yourself

3. Don't tell many people, except others who want to quit

4. Substitute other pleasures, especially exercise

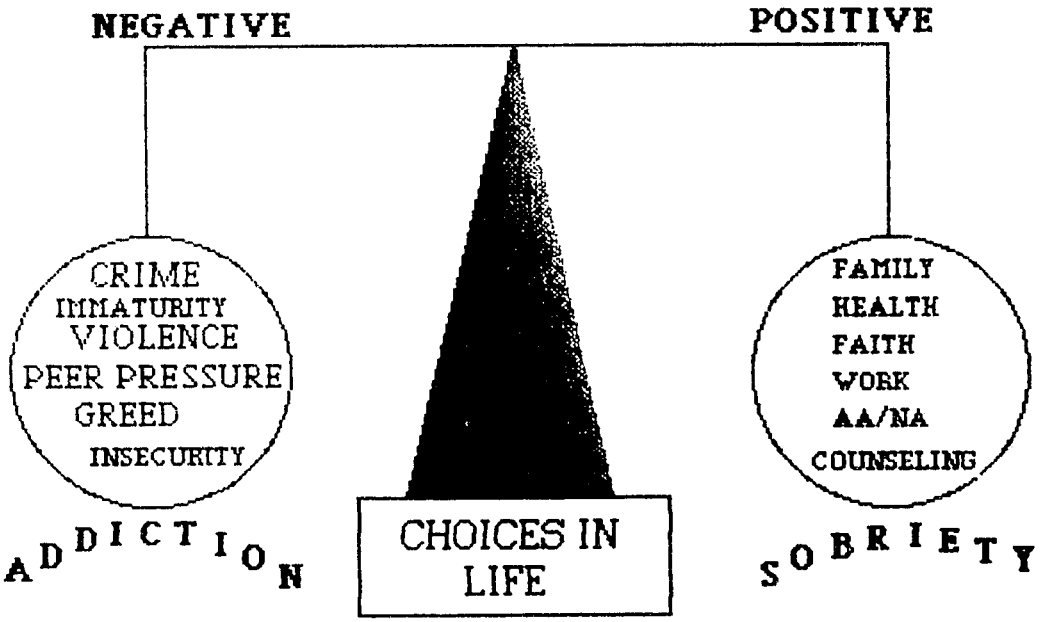
5. Buy yourself a reward with cigarette money you have saved

6. Don't be discouraged by a relapse, learn from it

7. Take pride in your self-control and inner strength

CHAPTER 10

RELAPSE PREVENTION



RELAPSE PREVENTION

TITLE:

Relapse Prevention

PURPOSE:

To explore the areas of high vulnerability to drug/alcohol abuse and to find alternative coping strategies.

OBJECTIVES:

1. To identify at least three situations that trigger cravings for drugs.

2. To understand the degree of influence others including peers have on your decision to use drugs.

3. To review or develop a list of alternatives to drug abuse.

4. To review or develop goals incompatible with drug/alcohol abuse and to develop strategies to avoid drugs.

TIME FRAME:

4 to 6 sessions

TEACHING TOOLS/RESOURCES:

1. Exercises 1-5

2. Relapse Prevention Workbook by Dennis C. Daley

Learning Publications Inc.
P.O. Box 1326, Dept. CO,
Holmes Beach, Florida 33509 1-800-222-1525
1-813-778-6818 (in Florida)

3. Brownel, K.D.; Marlatt, G.A.; Lichtenstein, E. and Wilson, G.T. Understanding and preventing relapse. American Psychologist, 41(7), 765-782

4. Drug Abuse and Drug Abuse Research. Pub. No.(ADM)87-1486

NIDA
5600 Fishers Lane
Rockville, Md. 20857

5. Creative Therapy-52 Exercises for Groups by Jane Dossick and Eugene Shea.

Professional Resource Exchange, Inc.
P.O. Box 15560
Sarasota, FL 34277-9990

1 (800) 443-3364

RECOMMENDED FILMS:

1. The wellness lifestyle
2. Personal plan for wellness

MTI
420 Academy Drive
Northbrook, Illinois 60062

PREVENTION CHAPTER TEST

TRUE OR FALSE

1.____ Drug abuse usually follows a definite course, only much faster during a relapse.

2.____ Researchers have proven that peers do not play a role in influencing others to abuse drugs.

3.____ Getting a job in a high drug traffic area poses no more risk to the recovering addict that any other area in town.

4.____ Testing drugs or alcohol to see if you are really cured is probably a trick you're playing on yourself to use again.

5.____ Associating with your old drug abuse "buddies" is advisable to test your willpower even if they are still using.

6.____ Controlled drug use is highly possible for a recovering drug abuser.

7.____ Marijuana is not habit forming or addictive and is safe to use.

8.____ Sports can produce a natural high.

9.____ Drugs prevent one from exploring other forms of enjoyment and recreation.

10.___ A renewed emphasis on family, health, fitness, education, diet, hobbies, and exercise are all potential ways to avoid drugs.

INTRODUCTION

Relapse prevention may well be one of your most important objectives after release. Keeping your sobriety could potentially prevent the deterioration of your health, improve your relationship with your loved ones, allow you to keep your freedom in society, and very well even save your life. In this chapter, we will examine how relapse begins and look at those things that led to addiction the first time around. We will also examine your vulnerabilities or areas of weakness, those times when you are most likely to again abuse substances, and look at alternatives to this abuse. But the time to stop abuse is now, while still in prison.

Relapse prevention involves breaking old patterns that increase the likelihood of drug abuse and starting new patterns of behavior which are incompatible with substance abuse. We will examine the various areas which could predispose one to substance abuse.

RELAPSE PREVENTION WHILE STILL INCARCERATED

Knowing the Rules

Drugs are available in most prisons. Inmates know who to see and how to get them. A minority of inmates in most prisons use drugs. Marijuana and alcohol seem to be the most preferred although cocaine and heroin may be increasing in popularity because of the shorter period of detection as compared to marijuana. "Home brew" or rotted fruit juice contains a maximum of 14% alcohol, usually tastes bad, but is used more than seems reasonable in this strict environment.

The urine surveillance program is a deterrent. Inmates are aware that disciplinary action is taken against those with positive urine tests. Inmates should be reminded in a matter-of-fact way what the consequences of drug/alcohol abuse in prison would be. Let the inmates know that regardless of their personal philosophy about drugs, that these sanctions are real, and that they would be a probable consequence of drug abuse.

Let the inmates know that when someone risks their freedom (delayed release, loss of good time, segregation) over a desire to "get high," then a problem does exist.

EXERCISE 1:

List the three possible sanctions for a positive urine:

1._____ 2._____ 3. _____

Answer:

The Bureau disciplinary rules place the use of illegal drugs in the greatest severity category (code 109). The possible sanctions are up to 60 days segregation in addition to loss of all good time and a disciplinary transfer. Even those sentenced under the new guidelines can be prevented from gaining 56 days a year good time.

Alcohol use is considered a high category offense (code 222). Sanctions can include loss of half of all good time, 30 days in segregation, and a disciplinary transfer.

Refusing to take urine or breathalizer tests have similar sanctions. Bringing drugs into the institution can lead to both Bureau sanctions and also an additional sentence from a court.

Health can be Affected

Drug abuse has caused immense problems to health. The education portion of this program focused on the types of health problems resulting from drug/alcohol abuse. Each person might have personal examples about how their own health or the health of a friend or relative was affected by substance abuse. This next exercise is designed to draw on these personal experiences and sensitize the group on the health risks should relapse occur.

EXERCISE 2

Instructions

The effects of drugs on health have been described in the preceding lessons. Now we want to explore how drugs have affected your own health or the health of someone you know. List below the way drugs, during the worst phase of abuse, have affected your health or the health of an acquaintance.

1._____

2._____

3._____

4._____

Have you ever seen someone die from drug overdose or related causes? How did you react in thought, feeling, and behavior?

Peer Pressure

Peer pressure is the influence which associates exert on a persons behavior. Peer pressure occurs when decisions are made to please others rather than self. There is both negative and positive peer pressure in prison. Pressure to use drugs is negative peer pressure because drug use conflicts with the values of health, safety, and freedom. Certain individuals will give in to this pressure from others to use drugs. The tactics used include:

1. Persistently asking someone to use drugs
2. Ignoring someone who doesn't use drugs
3. Insulting someone who doesn't use drugs (he's a snitch)
4. Glorifying drug abuse and the effects of intoxication
5. Creating a subculture which protects abusers

It takes a strong individual to stand up to peer pressure. Human beings are social creatures. We crave acceptance and recognition. Sometimes we are willing to sacrifice our health and ignore our better judgement for this acceptance. Peer pressure is the social reward and punishment system that others exert on an individual to get them to do something. Think about how you might have felt as a child when your friends laughed at you for wearing "funny" clothes. We seek to avoid embarrassment and gain recognition/acceptance. A type of negative peer pressure occurs when a group of people who you seek to join won't accept you until you start using drugs.

The influence might be very subtle. The change could be as simple as the way people talk to you or how often you are recognized. Unconditional acceptance is what drives many into these drug abuse groups, since there is seldom any rejection or criticism as long as everyone can continue to get high. Soon, the drug becomes everyone's best friend.

The following exercise is designed to provide a possible situation where peer pressure might occur.

EXERCISE 3

You are asked into the T.V. room by an associate. He/she pulls out some marijuana and starts smoking it. He/she offers you some. You say:

_____

_____

Discuss your response to your associate's offer. Would this response strain your relationship? What would this inmate think about you (e.g. that you're not "cool," and maybe a "snitch") ?

In many prevention programs which have been instituted in schools, a 4 or 5 step procedure to counteract peer pressure is taught. Review these steps with group members.

Step 1

Ask questions when you're unsure about the motives of your associate. (e.g. Why do you want me to go into the T.V. room. Is there some show you want to watch?)

Step 2

Identify rules. (e.g. Man, that's a 100 level shot!).

Step 3

Identify sanctions. (I'm not trying to do any more time or get a disciplinary transfer.)

Step 4

Offer an alternative activity. (Let's go play handball while the weather is still nice.)

Repeat Exercise 3 using the above four step procedure. Have each group member develop and present their own 4 step procedure to counteract peer pressure. Use the blackboard to record the best systems developed. Allow the group to discuss each person's system/procedure at avoiding peer pressure in prison.

Drug Substitutes

Most drug abusers and alcoholics do not get the same degree of craving in prison (after detoxification) that they get outside. While there are numerous exceptions to this observation, keeping clean and sober is generally easier in prison. Drug availability is limited and users can't "get it like they want it." Sometimes, however, users switch to legal drugs. It is not so unusual to see a former drug abuser drinking the equivalent of ten cups of coffee a day. The slang term "dope fiend sweet" describes the massive amounts of sugar used in coffee or tea to obtain the desired affect. While coffee, tea, cigarettes, and sugar aren't as strong as some drugs, they too can be abused.

It's not so unusual to see inmates who use these substances excessively starting the same abuse pattern they began on the street. Excessive use of caffeine, nicotine, and sugar could lead to sleep problems and the inmate finds him or herself complaining to the hospital about nervousness and insomnia.

Some ask for medication and actually feel that sedatives or tranquilizers are their only recourse. The cycle of abuse is already beginning again. When drugs, legal or illegal, are viewed as a way to solve problems, then relapse prevention has failed and the inmate has tricked him or herself back to abuse.

EXERCISE 4

Please list the substances you use now, the amount you use, and how often you use them:

	Substance	Serving Size	Servings per day
____	Coffee	_____	_____
____	Tea	_____	_____
____	Hot Chocolate	_____	_____
____	Caffeinated Soda (Coke, Pepsi etc.)	_____	_____
____	Candy	_____	_____
____	Cigarettes	_____	_____

Have you ever asked for medications to help you sleep or to relax?_____.

(Discuss this exercise with inmates willing to share their results, for others simply state that it is guide for self-evaluation)

Drugs Shortly After Release

It not so unusual for inmates to get drunk or high the first day out of prison. Inmates who have never touched drugs while "down" find something to get high with shortly after release. In actuality, this behavior may have been caused by recurrent thoughts about drugs/alcohol while still in prison. Several inmates who abused drugs shortly after release reported (after their parole was revoked) thinking about getting high for months or years prior to release. The seed is planted early and there are corresponding excuses that accompany this behavior.

Excuses:

1. " I owe it to myself, I've been straight for so long."
2. " I owe it to myself, I've been `down' so long."
3. " I owe it to myself, these people "gave me the shaft."
4. " I just want to see if I can handle it now that I'm clean."
5. " I want to test it to see if it is good before I sell it."
6. " I got a long bus ride and need something to steady my nerves."
7. " I really had it rough, so now I deserve to celebrate."

EXERCISE 5

Ask members of the group if they or anyone they know has ever used drugs right after release, and have them describe the circumstances surrounding this relapse. List the excuses used to get high right after release on the blackboard.

Drugs at the Halfway House

Some inmates will use drugs at their halfway house believing they can "beat" the urine surveillance. Several "street" methods of timing drug use and flushing will be tried to continue abuse undetected. These attempts simply delay the inevitable violation and return to prison which will follow either while in the Halfway House or while on parole.

The inmates should be aware of how a positive urinalysis is treated at the halfway house. A 100 code incident report is written, the Marshals are notified and the inmate is picked up for return back into custody. These halfway house failures and early parole violators often report a sense of intense depression and frustration since they essentially must begin again. The Parole Board must retard their release date. The inmate, his family, his employer, and friends must again put everything "on hold." Their trust in him or her is again violated. The violation/halfway house failure often "hurts" more than the initial sentence.

EXERCISE 6

Have each group participant visualize what it would be like to be returned to the institution after a brief period in the community. Ask group members to discuss how they would react and feel if they were to return as a halfway house failure or parole violator on a "dirty urine" after being in the community for just a few months.

Drugs/Alcohol in the Community

Drugs and alcohol are everywhere. They cannot be escaped or completely avoided. Chances are that someone an inmate knows is abusing drugs. What makes it difficult, is that many inmates have family members and close friends/associates who will again expose them to drugs. What is also of primary concern is that most inmates return to the same neighborhoods where they know where the drugs are and who uses them. An inmate will have a reputation when he or she returns to the street to either live up to or change. The same types of things will be present in the environment/community that were there before the inmate was incarcerated.

There will be parties, places, and people that would need to be avoided in order to increase the likelihood of success.

EXERCISE 7

List of "Triggers"

List those things in the community that would trigger your craving for drugs or alcohol.

_____	_____
_____	_____
_____	_____
_____	_____

Next, number each "trigger" so that the most likely event to cause you to crave drugs/alcohol is number 1, and the next most likely thing to cause drugs/alcohol craving is number 2 and so on. Discuss these results with those inmates who are willing. Ask, "How can you avoid or cope with the triggers?"

Attitude and Abuse

There are a number of inmates who will pass the first several hurdles in prison, the halfway house, and the first part of their release only to find that things aren't working out as planned. These persons might find that they aren't being promoted fast enough in their job, that their spouse or girl/boyfriend is putting pressure on them to produce financially, emotionally, etc. Marital problems, separations, spouse infidelity, job firings, disease, unemployment, boredom, and financial pressure are a few things that are a part of life. Life crises can cause a bad attitude toward life and towards sobriety. During a crisis or intense pressure, abuse is more likely. Drugs are that temporary escape from pressure that many persons seek.

EXERCISE 8

Generate a list of alternatives to drug abuse. Have each member describe their responses to the crisis situations listed below. Emphasis should be placed on positive ways to solving problems.

Stress situation 1

You find out that your lover has left you for someone else. Instead of getting high, you.....

Stress situation 2

You believe your boss has something personal against you. You find that you are getting all the hard assignments. When you protest, you get fired. Instead of getting high, you.....

Stress situation 3

You have no money and you're out of a job. You're depressed and your family has turned their back on you. Instead of getting high you.....

Feelings and Drug Abuse

Many persons relapse because they cannot manage their feelings. Drugs have been used to escape negative emotions such as excessive anxiety and depression.

EXERCISE 9

Try and remember the events and the way you felt just before you started using drugs. If you have relapsed before, try and visualize those feelings and the events that preceded your drug abuse and led to your relapse.

Events	Feelings	Type of Drug Used
_____	_____	_____
_____	_____	_____

PEER PRESSURE IN THE COMMUNITY

In the community, you may find that family members are using drugs, friends are using drugs, and even your boss may be using drugs. If you go out on a date, your date may offer you drugs. There will be peer pressure to use in the community.

Many well intentioned inmates have succumbed to this pressure and returned to drug abuse. They find they can easily refuse at first, but weaken later. The probability of relapse is high. Depending on the population studied, over half of those persons trying to recover from drug or alcohol abuse will relapse.

State the following:

Statistics indicate that over half of those who quit alcohol or drug abuse will relapse within the first year of their quitting. I want all of you to be in the successful group. All of you can be in that group if you are prepared to handle certain situations.

Ask yourself if you're going to return. Be honest within yourself and try to visualize how your relapse might happen.

Think of ways you might get tricked back into abuse.

In order to help "inoculate" you against some of those events that will lead you back to addiction, the following exercise is provided:

EXERCISE 10

1. Your sister is smoking crack in the bathroom and her bedroom everyday. She asks you at least once a day if you want to get high with her. Several months have passed and you have stayed strong, and refused her offers to get high. Today you have had a particularly hard day and she approaches you. She says "I have some really good stuff today. You look run down, are you sure you don't want any?"

You say.....

2. Your friends/associates all are still using drugs/alcohol. You have to pass them everyday since they live in the same neighborhood. They ask you "what's happening" and invite you to get high with them. They seem to be having a good time and it looks like they have plenty of drugs/alcohol.

You say.....

3. Your bills are piling up. All your former "dope buddies" are selling drugs and have flashy cars and clothes. You're driving an old beat up subcompact. An ex-associate asks you to deliver a package for $500.00 dollars. You don't know what's in the package but you assume it is drugs. You could use the money.

You say.....

THE COST OF ADDICTION

Most persons who use drugs don't think about the cost. Cost can be measured in terms of emotional pain, family disruption, and financial loss. It would be useful to think about these losses if they would serve to help prevent addiction.

EXERCISE

1. List the negative feelings, and describe the level of emotional pain caused by drugs or alcohol during your worst level of addiction:

Emotion (mad, glad, sad, etc.)	Level of Pain (mild, moderate, severe)
_____	_____
_____	_____
_____	_____

2. List how your family was affected by your drug/alcohol abuse:

Family Disruption (Separation, abuse, Neglect etc.)	Your Feelings now about this disruption (Angry at self, guilty, indifferent, etc.)
_____	_____
_____	_____
_____	_____

3. Calculate the amount of money you have spent in all your life for drugs and/or alcohol (first figure how much you spent in a year then figure how many years you used):

Total Amount Spent on Drugs during your life _____

Total amount spent on alcohol during your life _____

Total amount spent on cigarettes during your life_____

Total amount spent on coffee during your life _____

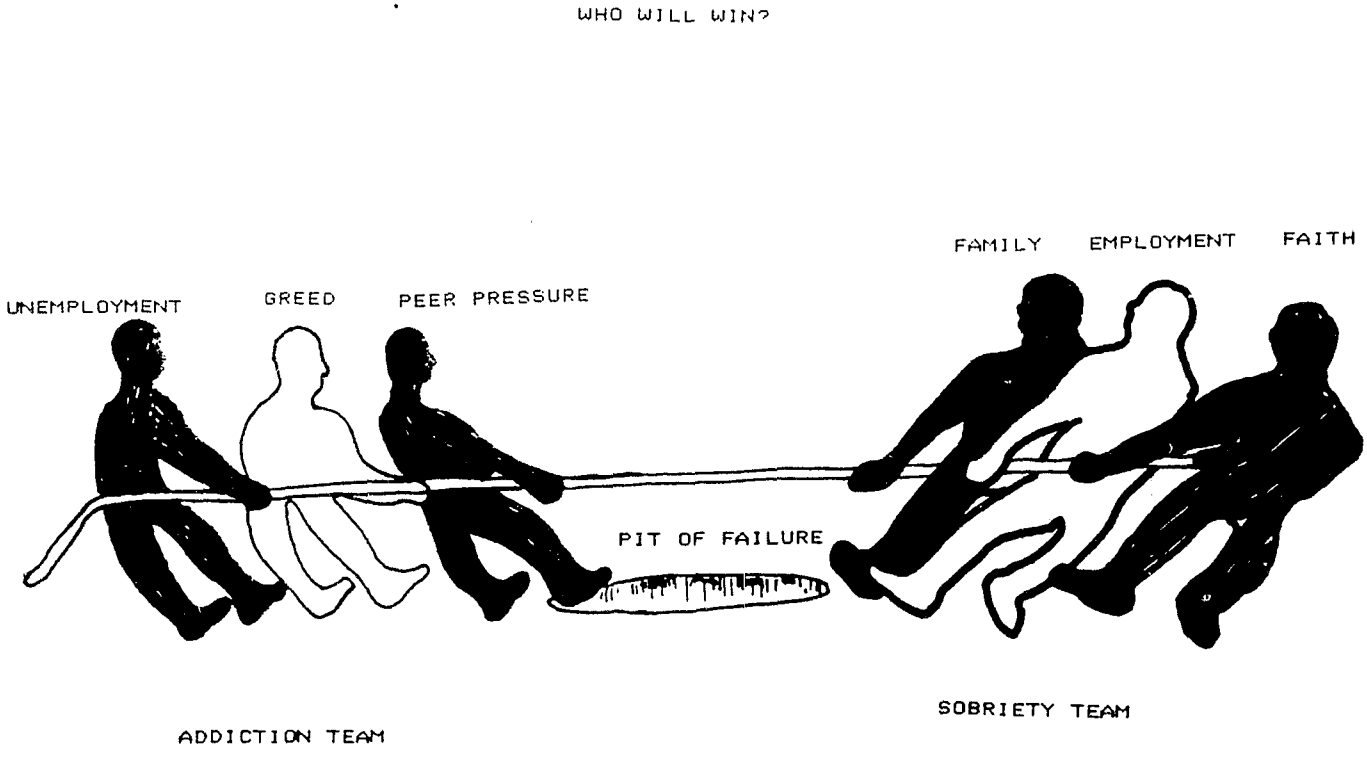
Total amount (added) on legal/illegal substances _____

Now figure the total amount spent on legal/illegal substances for the group as a whole. Is the figure low or high?

ALTERNATIVES TO DRUG ABUSE

Many people, in the beginning, use drugs as a form of recreation, escape, spiritual fulfillment, etc. These motives are not necessarily bad, but drugs are usually a poor solution. The key to prevention is to find alternative ways of coping with problems or fulfilling desires.

Learning to solve problems, to relax, to manage anger, to think before taking action, and to resolve family problems are important issues in drug abuse prevention. Included in the appendixes is material developed by Allan Y. Cohen for the National Clearinghouse for Drug Abuse Information. This appendix gives alternatives to drug and alcohol abuse and can be explored with group members so that each individual can evaluate his or her own motives for use and abuse, and can gain ideas for reaching their goals without using drugs.



CHAPTER XI

APPENDIXES

I. Answers to Sample Chapter Questions

II. Sample Pre-test and/or Post-test

III. References

IV. Recommended Films

V. Cocaine Addiction Questionnaire

VI. Suggested A&O Lecture

VII. Alternatives to Drug Abuse

APPENDIX I

Answers to Sample Chapter Questions

	Ch. 2	Ch. 3	Ch. 4	Ch. 5	Ch. 6	Ch. 7	Ch. 8	Ch. 9	Ch. 10
1.	T	T	F	F	F	F	F	T	T
2.	F	F	T	F	T	T	F	T	F
3.	T	T	F	T	T	F	F	F	F
4.	F	F	T	T	F	T	F	F	T
5.	F	T	F	F	F	F	T	T	F
6.	F	F	F	F	T	F	T	T	F
7.	F	F	T	T	T	T	T	F	F
8.	T	F	F	T	T	T	F	T	T
9.	T	F	F	T	T	T	T	F	T
10	F	T	T	T	F	F	F	T	T

Appendix II

Sample Pre/Post Test of Knowledge

Drug Education Class Pre-test/Post-test

Circle the Correct Answer

Do not share answers

name_____ reg. number_____ date_____

1. Symptoms of physical addiction include all but
   a. daydreaming about the drug b. muscle twitches
   c. diarrhea d. headaches

2. Symptoms of psychological addiction include all but
   a. cravings b. irritability c. headaches d. boredom

3. Reasons people try a drug include all but
   a. desire to be one of a group b. curiosity about effects
   c. desire to be an addict d. dissatisfaction with life

4. Different psychoactive drugs affect all but
   a. moods b. perception c. infections d. alertness

5. Which drug does not fit in the same class as the others
   a. tobacco b. cocaine c. amphetamines d. heroin

6. Which drug is NOT a sedative/hypnotic
   a. heroin b. quaalude c. alcohol d. barbiturate

7. When a person has a strong psychological addiction, the person is in danger of relapse for how long after last use
   a. one week b. one month c. one year d. a lifetime

8. Which causes the most deaths in America
   a. caffeine b. tobacco c. alcohol d. illegal drugs

9. The most dangerous drug to withdraw from is
   a. amphetamine b. cocaine c. alcohol d. heroin

10. If more and more of a drug is needed to get the same effect, we say a person has a
    a. tolerance b. greed problem c. synergism d. placebo

11. Ethyl alcohol is used for all but which purpose
    a. gasoline additive b. drinking c. solvent d. eyewash

12. Drinking alcohol is used for all but what purpose
    a. anesthetic b. disinfectant c. sedative d. douche

13. Most alcohol is eliminated by which organ
    a. kidneys b. liver c. lungs d. sweat glands

14. Synergism can produce dangerous combinations for all but
    a. alcohol and heroin b. marijuana and valium
    c. alcohol and valium c. barbiturates and heroin

15. Yeast makes alcohol as a
    a. food b. toxic waste product c. necessary chemical
    d. yeast does not make alcohol

16. Which has the most alcohol
    a. a shot of whiskey b. a beer c. a glass of wine
    d. they all have the same amount

17. For an average man, what number of drinks in the first hour will produce a blood alcohol level that is legally drunk
    a. one b. three c. five d. seven

18. What is the usual cause of death for a heavy alcoholic
    a. heart attack b. orgasm c. cirrhosis of liver
    d. starvation

19. Alcohol's effect on blood vessels is to
    a. expand b. constrict c. create spasms d. no effect

20. What percent of murders involve alcohol
    a. 10% b. 40% c. 70% d. 90%

21. The word "analgesic" means
    a. painkiller b. hallucinogen c. stimulant
    d. euphoriant

22. Morphine comes from
    a. underground laboratories b. opium poppies c. cannabis
    d. morning glories

23. The initial side effects of narcotics include all but
    a. coughing b. constipation c. vomiting d. sleepiness

24. All the following drugs can produce acute paranoia except
    a. cocaine b. caffeine c. amphetamines d. heroin

25. "Crack" is mainly
    a. cocaine hydrochloride b. cocaine base
    c. heroin and cocaine together d. cocaine and PCP

26. Long-term use of cocaine increases the desire for
    a. food b. sex c. work d. cocaine

27. Hallucinogens are used for all but what reason
    a. to induce mystical experiences b. to increase awareness
    c. to induce sleep d. to induce visual hallucinations

28. The most widely abused drug in America today is
a. marijuana b. alcohol c. cocaine d. glue fumes

29. Marijuana is classified as what type of drug
a. stimulant b. sedative c. hallucinogen d. narcotic

30. The active ingredient in marijuana is
a. LSD b. DMT c. THC d. HTC

31. Which of the following is NOT derived from the cannabis plant
a. marijuana b. hashish c. hemp rope d. narcotics

32. How many die in America each year from overdose of marijuana
a. none b. 10-50 c. 100-500 d. 1000-5000

33. How much medium quality marijuana will impair driving skills the same as being halfway to legally drunk
a. two tokes b. 1/2 joint c. two joints d. five joints

34. Comparing the "tar" and other carcinogens in marijuana and tobacco, and the way they are smoked, one joint of medium quality marijuana equals how many cigarettes
a. 1/2 b. 1 c. 4 d. 10

35. The cultivation and possession of small amounts of marijuana for personal use is legal in how many states in the USA
a. none b. one c. five d. fifteen

36. How many Americans have arrest records for marijuana
a. 100,000 b. 1,000,000 c. 4,000,000 d. 7,000,000

37. Which problem is not caused by large doses of marijuana
a. trouble remembering b. impaired judgement of time
c. panic d. uncontrollable aggressiveness

38. The usual cause of death from heroin is
a. heart failure b. withdrawal c. inability to breath
d. loss of blood

39. The active ingredient of tobacco is
a. THC b. nicotine c. tar d. a narcotic

40. The most important export product from early America was
a. corn b. hemp c. tobacco d. wheat

41. Circle the health hazard NOT associated with tobacco
a. cancer b. hard arteries c. stroke d. cirrhosis

42. Chewed tobacco is NOT associated with which cancer
a. lung b. mouth c. throat d. stomach

43. What is the usual cause of death from cocaine overdose
a. paranoia b. lung collapse c. heart attack d. angina

44. Which ingredient of tobacco raises blood pressure
a. tar b. nicotine c. carbon monoxide d. all of these

45. Most cigarette smokers start by what age
a. 14 b. 17 c. 20 d. 23

46. Nicotine can be used in gardening as a/an
a. fertilizer b. insecticide c. pH control d. mulch

47. Compared with heroin, the physical addiction to tobacco
a. is over quicker b. last the same c. takes longer
d. it is not physically addicting

48. The drug type most often associated with paranoia
a. sedatives b. hallucinogens c. stimulants
d. narcotics

49. The drug most often associated with extreme violence
a. LSD b. marijuana c. PCP d. thorazine

50. Which drug has no legitimate medical use
a. cocaine b. narcotics c. PCP d. methamphetamine

Answers to Pre-test/Post-test Questions

1. a
2. c
3. c
4. c
5. d
6. a
7. d
8. b
9. c
10. a
11. d
12. d
13. b
14. b
15. b
16. d
17. b
18. c
19. a
20. c
21. a
22. b
23. a
24. d
25. b
26. d
27. c
28. b
29. c
30. c
31. d
32. a
33. c
34. c
35. b
36. d
37. d
38. c
39. b
40. c
41. d
42. a
43. c
44. b
45. a
46. b
47. c
48. c
49. c
50. c

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APPENDIX IV

Films and their ratings

FILMS: (rated 1-poor to 10-exceptional)

Chapters 2 & 3. Overview of Drugs and Addiction

(8) Drug Dependency: The early Warning Signs, AIMS Instructional Media Services, Inc., 6901 Woodley Ave., Van Nuys, California, Tele: (800) 367-2467

(6) Drug Profiles: The Physical and Mental Aspects AIMS Instructional Media Services, Inc., 6901 Woodley Ave., Van Nuys, California Tele: (800) 367-2467

(5) How to Sabotage Your Treatment, Gerald T. Rogers Productions, 5225 Old Orchard Road, Suite 23, Skokie, Ill. 60077. Tele: (312)-967-8080.

(8) Psychoactive Drugs, Pyramid Films, 1537 14th Street, Box 1048, Santa Monica California 90406

(6) Medical Aspects of Mind Altering Drugs, FMS Productions P.O. Box 4428, 520 E. Montecito St. Suite F, Santa Barbara, CA 93140 Tele: 1-(800) 421-4609

(8) One Out of Ten, Southerby Productions, 1709 E. 28th St., Long Beach, California 90806.

(8)The Feeling Chart, FMS Productions, P.O. Box 4428, 520 E. Montecito St. Suite F, Santa Barbara, CA. 93140
Tele: (800) 421-4609

Chapter 4 Alcohol

(6) Adult Children of Alcoholics: Choices for Growth, Human Services Institute, P.O. Box 14610, Dept. A0123, Bradenton, Fl. 34280-4610

(8) Alcoholism and the Family, FMS Productions, P.O. Box 4428, E. Montecito St., Suite F, Santa Barbara, CA 93140, Tele: (800) 421-4609

(7) Alcohol and Human Physiology, AIMS Instructional Media Services, 6901 Woodley Ave., Van Nuys CA, 91406-4878 Tele: (800) 367-2467

(6) From Now On, Gerald T. Rogers Productions, 5225 Old Orchard Road, Suite 23, Skokie, Ill, 60077 (312) 967-8080.

(6) I'll Quit Tomorrow, Johnson Institute, 510 First Avenue North, Minneapolis MN. 55403-1607 Tele: (800) 231-5165

(8) Lots of Kids Like Us, Kinetic Inc, 255 Delaware Ave, Suite 340, Buffalo, N.Y. 14202. (716) 856-7631.

(9) My Father's Son, Gerald T. Rogers Productions, 5225 Old Orchard Road, Suite 23, Skokie, Illinois 60077. (312) 967-8088

(9) Soft is the Heart of a Child, Operation Cork, 8939 Villa La Jolla, Suite 203, San Diego, CA, 92037, Tele: (619) 452-5716.

(9) Twelve Steps: The Video, Gerald T. Rogers Productions, 5225 Old Orchard Road, Suite 23, Skokie Illinois, 60077. Tele: (312) 967-8080

5. Heroin and Other Narcotics

(7) Dead is Dead, (21 min) AIMS Instructional Media Services, Inc., 6901 Woodley Ave., Van Nuys, California, Tele: (800)367-2467

(?) Focus on Heroin, (15 min) American Educational Films, P.O. Box 8188 Nashville, TN 37207 (800) 822-5678

(?) Scag, (21 min) Britannica Films, 425 N. Michigan Ave., Chicago, IL 60611 (800) 558-6968

6. Cocaine and Other Stimulants

(8)Cocaine, Beyond the Looking Glass, The Hazelden Foundation, Pleasant Valley Road, Box 176, Center City, Minnesota 55012-0176

(7)Cocaine Diary, Coronet/MTI Films, 420 Academy Drive, Northbrook, Illinois 60062. (312) 940-1260 or (800) 621-2131.

(9)Cocaine Country, Films Incorporated, 5547 N. Ravenswood, Chicago, Ill, 60640-1199, (312) 878-2600, Ext. 43.

(7) Cocaine, the End of the Line, AIMS Instructional Media Services Inc., 6901 Woodley Ave., Van Nuys, California 91406-4878 Tele: (800) 367-2467

(8) Cocaine and Human Physiology, AIMS Instructional Media Services Inc., 6901 Woodley Ave., Van Nuys, California 91406-4878 Tele: (800) 367-2467

(7) Cocaine Pain, Coronet/MTI films, 420 Academy Drive, Northbrook, Illinois, 60062. (312) 940-1260 or (800) 621-2131.

(8) Cocaine Trail, Coronet/MTI films, 420 Academy Drive, Northbrook, Illinois, 60062. (312) 940-1260 (800) 621-2131.

7. Hallucinogens

(10) Angel Death, MTI, 108 Wilmot Road, Deerfield, Ill, 60015 (also sold by FMS Productions)

(8) Wack Attack,

8. Cannabis/Marijuana

(7) Marihuana and Human Physiology, AIMS Instructional Media Services, 6901 Woodley, Van Nuys, CA, 91406-4878 (800) 367-2467

(6) Waking up From Dope, Athena Productions, 22458 Ventura Blvd., Suite E, Woodland Hills, CA 91364, (818) 880-6370.

9. Tobacco

(8) Smoking: How to Stop (23 min.) '77 Pyramid Film and Video Box 1048 Santa Monica, CA 90406 (800) 421-2304

(?) Smoking: A Report on the Nation's Habit (17 min.) '82 Journal Films 930 Pitner Ave., Evanston, IL 60202 (800) 323-5448

(?) Smoking: Games Smokers Play (23 min.) Document Associates/The Cinema Guild 1697 Broadway, Suite 802 NYNY 10019 (212) 246-5522

APPENDIX V

Cocaine Addiction Questionnaire

TEST YOURSELF FOR ADDICTION

The symptoms of cocaine addiction are plain to see. The warning signals indicate that addiction is perilously close. The questions that follow spell these warning signals out in detail. Anyone who answers "yes" to as few as 10 of them, is teetering on the thin edge of addiction. An affirmative answer to more than 10 is a clear signal that coke has already taken over and that the user is addicted and is in urgent need of treatment to have a chance at a normal health and life. As a a guide to anyone taking the test, we have provided brief explanations and comments to make clear why an affirmative answer means trouble.

CHECK "YES" OR "NO" AS IT APPLIES TO YOU

YES	NO	
___	___	1. Do you have to use larger doses of cocaine to get the high you once experienced with smaller doses? (This means you have developed a tolerance to the drug, that is, you need more of it by a more direct route to achieve the same effect.)
___	___	2. Do you use cocaine almost continuously until your supply is exhausted? (This is called binging, and it signals loss of control over drug use.)
___	___	3. Is the cost of cocaine the major factor limiting your use, and do you wish you could afford more? (Your internal controls are virtually gone. The drug is in charge and you will find yourself doing anything to get it.)
___	___	4. Do you use cocaine two or more times a week? (If you do, you are in the highest risk group for addiction.)
___	___	5. Do you have three or more of the following symptoms? Sleep problems, nose bleeds, headaches, sinus problems, voice problems, difficulty swallowing, sexual performance problems, nausea or vomiting, trouble breathing or shortness of breath, constant sniffling or rubbing your nose, irregular heart beats, epileptic seizures or convulsions? (Three or more of these indicate severe loss of bodily function related to coke abuse-addiction.)

YES	NO	
___	___	6. Do you have three or more of the following psychological symptoms? Jitteryness, anxiety, depression, panic, irritability, suspiciousness, paranoia, problems concentrating, hallucinations, (seeing things that are not there), hearing voices, loss of interest in friends, hobbies, sports, or other non-cocaine activities, memory problems, thoughts about suicide, attempted suicide, compulsive repetitious acts, like combing the hair, straightening the clothes or ties, tapping the feet for no reason? (Cocaine abuse is causing psychological problems that are not within the individual's capacity to control.)
___	___	7. Have any or all of the problems specified in the previous two questions caused you to stop using cocaine for a period ranging from two weeks to six months or longer? (If not, the acquired disabilities are not strong enough to overcome the addiction.)
___	___	8. Do you find that you must take other drugs or alcohol to calm down following cocaine use? (You are trying to medicate yourself so as to maintain your cocaine habit without suffering the terrible side effects of addiction. You are, of course, flirting with becoming addicted to a second drug.)
___	___	9. Are you afraid that if you stop using cocaine your work will suffer? (You are psychologically dependent on the drug.)
___	___	10. Are you afraid that if you stop using cocaine you will be too depressed or unmotivated or without sufficient energy to function at your present level? (You are addicted and afraid of withdrawal symptoms.)
___	___	11. Do you find that you cannot turn down cocaine when it is offered? (Use is out of your control.)
___	___	12. Do you think about limiting your use of cocaine? (You are on the verge of addiction and are trying to ration use of the drug.)
___	___	13. Do you dream about cocaine? (This is related to compulsive use and the total domination of the drug.

YES	NO	
___	___	14. Do you think about cocaine at work? (This is also a part of the obsession with the drug.)
___	___	15. Do you think about cocaine when you are talking or interacting with a loved one? (Obsession with the drug dominates all aspects of living.)
___	___	16. Are you able to stop using the drug for one month? (This certainty is a sign of addiction?)
___	___	17. Have you lost or discarded your pre-cocaine friends? (You are stacking the deck in favor of cocaine by reducing negative feedback.)
___	___	18. Have you noticed that you have lost your pre-cocaine values; that is, that you don't care about your job or career, your home and family, or that you will lie and steal to get coke? (Addiction causes slow but steady changes in personality and the approach to life to reduce intrapsychic conflict.)
___	___	19. Do you feel the urge to use cocaine when you see your pipe or mirror or other paraphernalia? Or taste it when you are not using it? Or feel the urge to use it when you see it or talk about it? (This is called conditioning and occurs after long term, heavy use.)
___	___	20. Do you usually use cocaine alone? (When addiction sets in, this is the pattern. Social usage ceases.)
___	___	21. Do you borrow heavily to support your cocaine habit? (You can be pretty sure you're addicted if you are willing to live so far above your means to get the drug.)
___	___	22. Do you prefer cocaine to family activities, food, or sex? (This is a sure sign of addiction. Cocaine need overrides fundamental human needs for food, sex, social interaction.)
___	___	23. Do you deal or distribute cocaine to others? (This kind of change in behavior signals addiction because it is an accommodation to the need for the drug.)

YES	NO	
___	___	24. Are you afraid of being found out to be a cocaine user? (Addicts usually live a double life, preferring not to choose one or another alternative.)
___	___	25. When you stop using the drug, do you get depressed or crash? (This is a sign of withdrawal- a symptom of addiction. You have exhausted your body's resources)
___	___	26. Do you miss work, or reschedule appointments, or fail to meet important obligations because of your cocaine use? (The drug has taken over your life.)
___	___	27. Is your cocaine use a threat to your career or personal goals? Has your cocaine use caused you to lose your job? Has your cocaine use caused you to lose interest in or have violent quarrels with people you love? Has your cocaine use caused you to lose your spouse or loved one? (You would hardly sacrifice so much if you were not addicted.)
___	___	28. Do people keep telling you that you are different or have changed in a significant way way? (Addicted people are indeed different from the way they were pre-cocaine. Such comments are a clue to addiction.)
___	___	29. Have you used more than 50 percent of your savings for cocaine? Has your cocaine use bankrupted you and caused you to incur large debts? Have you committed a crime to support yourself and your cocaine habit? Have you stolen from work and/or family and friends? (If you are not addicted, would cocaine be worth these dreadful problems?)
___	___	30. Do you believe that your cocaine use has some medicinal value in treating a problem you have with energy, motivation, confidence, depression or sex. (Users who believe this are the most likely to develop addiction.)
___	___	31. Do you think you have had withdrawal symptoms when you stopped using cocaine. (Only addicted persons experience withdrawal.)

YES	NO	
___	___	32. If you had $100.00 to spend, would you spend it on cocaine rather than on something for your house or apartment, on a gift for someone you love, or on the theatre, records, movies, going out, with friends or family? (Addicts become fixated on their drug. They can think of nothing else, no one else, and no other form of entertainment.)
___	___	33. Do you think that you are addicted? (If you think so, you probably are.)
___	___	34. Do you use cocaine compulsively despite your recognition that the drug is a very real threat to your physical and psychological wellbeing, relationships, family and job? (This is addiction.)
___	___	35. Did you ever enter psychiatric treatment or therapy for a cocaine-related problem and not tell the doctor or therapist about your cocaine use or how current or recent it is? (When an addicted person is pressured into getting help he may not try to cover up the extent of his drug abuse, but may also use his treatment as a cover for his continued use of this drug.)
___	___	36. Did you have a cocaine problem that was cured either through your own efforts alone, with the help of friends, or with professional treatment? (The critical word is "cured." No addict is really "cured"--rather he has a remission of chronic disease that can recur should he become a user of cocaine again.)
___	___	37. Have you ever used cocaine and had hallucinations, a convulsion or seizures, angina, (severe pain around the heart), loss of consciousness, the impulses to kill yourself, or others? And when any of these side effects passed, did you figure that you would use less next time or use a purer quality of the drug? (These side effects are related to addictive use, but the addict prefers to ascribe them to over dose or to adulterants used to make the drug go further. He can continue to use the drug under the illusion that it will be okay the next time.)

YES	NO	
___	___	38. Do you leave paraphernalia or a supply of cocaine at work? (This may be a call for help by a person who feels that his life is out of his control. It is like a suicide note left so that people will find it and prevent the act.)
___	___	39. Do you sometimes wish that you would be discovered as a user by someone who would see to it that you got into treatment and recovered? (If so, you know you need help and want it))
___	___	40. Do you use cocaine three times a week or even more often, and still try to maintain an interest in diet, health, exercise and fitness? (The interest may be there, but the fact is that such heavy use of the drug makes it virtually impossible to act on the interest. There is too great a conflict in values.)
___	___	41. Have you switched from intranasal use to freebasing or intravenous use? (This usually means that tolerance to the drug has developed, and is likely that you will binge and become addicted in short order.)
___	___	42. Have you been using cocaine more than once a week for three or more years? (With this much use, any stress or change in your life can turn you into a daily user with a high probability of addiction resulting.)
___	___	43. Do you find yourself choosing friends or lovers because of their cocaine use? (This kind of behavior usually indicates a life out of control.)
___	___	44. Do you wake up in the morning and wonder how you could have let cocaine gain control over your life? (You are addicted if you have these thoughts.)
___	___	45. Do you find it almost impossible to fall asleep without a drink or sleeping pill or tranquilizer? (You now have a second addiction.)
___	___	46. Since you started using cocaine, have you ever wondered whether you would be able to live without it? (We find that people who raise this question are generally hooked on the drug.)

YES	NO	
___	___	47. Have you wondered whether you would be better off dead than continuing to use cocaine? (This question usually suggests an addiction so profoundly that the addict feels himself terminally ill.)
___	___	48. Have you ever wished that you would die of an overdose in your sleep? (Same as above).
___	___	49. Do you use cocaine in your car, at work in the bathroom, on airplanes, or in public places? (You are so desperate you want to be caught and helped.)
___	___	50. Do you use cocaine and them drive a car within six hours after use? (Cocaine has impaired your judgement and you are out of control. Don't wait to get help until after you have impaired or killed a pedestrian.)

APPENDIX VI

SAMPLE A&0 LECTURE

What is addiction?

Addiction is an irresistible compulsion to use drugs at increasing frequency even in the face of serious physical and/or psychological effects eventually leading to the extreme disruption of personal values and life.

What does addiction include?

1. Increased tolerance. You need more of the drug more often to get the same effect.

2. Withdrawal. You become physically ill or experience severe discomfort and irritability when you stop taking the drug.

3. Deterioration in family relationships. You pull further away from your family and friends because you feel they will not approve of your drug use.

4. Job performance suffers. You begin to call in sick, and the quality of your work deteriorates.

5. Illegal activities appear. You sell drugs or begin to associate with those who are criminally inclined. You end up in prison.

6. Your physical and mental health deteriorates. You develop medical or psychological problems directly or indirectly related to your use.

THESE ARE THE STAGES OF ADDICTION, AND UNLESS TREATED COULD LEAD TO DEATH

What can be done?

1. Intensive self-evaluation. One needs to be honest with him or herself. If you have a problem, the first step is to be strong enough to recognize it and admit it to yourself.

2. Ask for help. Seek treatment through the Chemical Abuse Program or Psychology Department here at the institution. Your attitude is crucial in how much you will gain from treatment. You must want change and be willing to work towards your recovery.

3. Attend "Self-Help" groups. Attend AA or NA once released to continue to arrest your addiction. Most addiction counselors agree that you can never be cured of an addiction. Your addiction to drugs can only be arrested. The cravings and desire to use drugs may return on occasion. Regular attendance in self-help groups will help insure that you will refrain from drug abuse once released.

4. Seek help if you have a relapse. If you do go back to drugs, get professional help. Chances are that, if you go back to drugs, you will only sink deeper into addiction without some type of intervention. Let family members help. Most persons who go back to drugs begin to shut out the world around them when they need to do the opposite.

5. Remember the problems that arose out of your past drug abuse. Drug users sometimes forget the pain and suffering that they have experienced from their past abuse. Think about what drug abuse did to your values, health, and family.

6. Remember that addiction can lead to legal complications. The new Federal Sentencing guidelines do not offer the opportunity for parole and hence more actual prison time will probably be served for crimes related to drugs.

What we expect from you if you decide to enter treatment here:

1. That you attend and participate in every group session you are enrolled in.

2. That you will complete all outside assignments as requested.

3. That you will accept responsibility for your decisions and accept the consequences.

4. That you refrain from abusing drugs and submit to more intensive urine surveillance if necessary to prove your abstinence.

What you can expect from the program:

1. A presentation of the mental and physical effects of drugs and alcohol.

2. The opportunity to understand your own personality better and what motivates you.

3. The opportunity to examine how your abuse has affected your family.

4. The opportunity to change if you desire.

ALTERNATIVES TO DRUG ABUSE:
STEPS TOWARD PREVENTION

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CONTENTS

Introduction

The sudden emergence of the drug problem and its pervasiveness have demanded immediate personal, social, and governmental response. In response, laws have been passed, treatment centers have been established, and education programs have been developed. The persistence of drug abuse, however, has begun to stimulate novel efforts and innovational programs. A hopeful new emphasis has emerged in the area of alternatives to drugs.

According to espousers of the alternatives approach, motives for drug-taking, whatever diverse pressures generate this behavior, inevitably include the need to escape from boredom, alienation, pain, frustration, and meaninglessness. People take drugs because they make them feel better. Alternatives to drug abuse are defined to include those constructive and viable attitudes, values, orientations, experiences, lifestyles, opportunities, activities, pursuits, and programs which can prevent significant drug abuse or diminish drug abuse by providing greater satisfactions than can drugs.

In this definition, "alternative" is not just another word for "substitute." This publication focuses on alternative pursuits which are most likely preferable to substances misuse—preferable for the individual and for society. However, it must be recognized that words like "constructive" and "preferable" are value-laden. Values are implicit in every approach to major social problems, and the same is true for alternatives strategy, but it seems appropriate to make implicit values explicit. In this spirit the following assumptions are given as underlying the alternatives approach to drug abuse.

1. Human beings have natural internal resources which make drug dependency unnecessary;
2. It is desirable for a social or national entity to protect and nurture these resources;
3. Thus, it is desirable to minimize adverse physical, psychological, and socio-cultural consequences of drug abuse;
4. All levels of drug abuse are undesirable, although drug abuse patterns having the most serious consequences should assume higher priority;
5. It is desirable to minimize recruitment into drug-dependent peer groups and subcultures as well as minimizing escalation to more dangerous drugs.

The alternatives approach is oriented toward those who think that something needs to be done and that solutions are possible. It is the purpose of this publication to introduce and describe new efforts based on the general idea of alternatives to drug abuse. The publication is designed for educators, community groups, drug abuse professionals, treatment personnel, parents, young people. The Clearinghouse invites comments and is interested in collecting information about alternatives programs throughout the country. Information about operating programs will be published in a directory which will be updated periodically. Please send information or materials on alternatives programs to:

National Clearinghouse for Drug Abuse Information
P. O. Box 84
Kensington, Maryland 20795

Alternatives Theory: A Summary

Most discussions of the possible direct causes for drug using behavior lead to a central assumption of alternatives theory—that effective drug abuse intervention programs should respond to the unfulfilled needs and aspirations of the individual. Some might argue that only massive sociocultural, economic and political changes could minimize the causes of drug abuse. Although this position may have long-range merit, the fact remains that immediate action is required under conditions that are likely to remain relatively stable in the near future. This publication focuses on the theory and practice of the possible-examining alternative approaches which can be applied under present circumstances.

The alternatives approach to drug abuse prevention can be described as a useful, perhaps necessary, adjunct to rational legislation, effective law enforcement, compassionate treatment programs and objective drug education. The drug abuse prevention strategy based on alternatives thinking focuses on eliminating the demand for drugs by generating more satisfying options to meet the legitimate needs and aspirations of individuals. The approach emphasizes causes, not symptoms, and is positive, not negative.

These principles have been summarized in recent literature on the alternatives model:

". . . It is our presumption that major inroads on drug abuse cannot be made by stressing the undesirability of drugs. It can only be done by offering *more desirable alternative involvements*—activities, life styles and satisfactions which are more *rewarding* than drug experiences and incompatible with dependence on chemicals.

. . . Thus, it seems logical to review priorities in drug abuse control, and develop programs that will attract persons (especially the young) to constructive alternatives. If the attractiveness of the alternative is sustained as one becomes more deeply involved, drug use becomes increasingly unattractive, since it is the nature of drugs to block efficiency in getting things done." (Emrich, 1971)

The Common Denominator

The common denominator that appears to limit the traditional methods of combatting drug abuse involves their inability to get at the motives and needs behind drug abuse. They deal with the symptom and not the cause. The issue is one of overall strategy. The virtual elimination of polio came not from building more hospitals, iron lungs and rehabilitation facilities, but from research and development of an effective vaccine. Alternatives theorists tend to look at the drug abuse problem with a similar perspective, though the problem is immensely more complex.

The theory behind the alternatives formulation is based on the importance of reacting to the causes and motives behind the multi-faceted drug use patterns in societies and subcultures. This general notion suggests that more constructive alternatives can be found to satisfy motives which now lead to drug abuse.

One author (Cohen, 1971) suggests that a basic motive exists in drug abuse that is central to alternatives thinking—the common sense observation that people take drugs because they want to, that drugs give relative satisfaction in some area of a person's life. Cohen suggests that people take drugs to "feel better" and to get "high"; that they experiment with different drugs in the hope that they will feel better on some level. Alternatives theory hypothesizes that people will stop taking drugs if they find something better, that they will be much less likely to start immoderate drug use if they have satisfying and meaningful alternatives.

Several writers on alternatives to drugs suggest that most people who use drugs are not necessarily criminal characters, rebellious, immature or mentally ill, that most are neither "social misfits," "sick," nor "ignorant" (Dohner, 1972-a). In this view, the majority of drug abusers may be relatively normal individuals who have learned through cultural, peer or personal example, that they should expect "better living through chemistry." Importantly, drugs have powerfully obvious and subtle disadvantages to their promise to provide happiness or release. Because of this, the drug abuser is, sooner or later, essentially open to superior alternatives. In sum, the alternatives emphasis seeks to maximize opportunities for people to explore satisfying non-chemical experiences and life pursuits.

Motives and Alternatives

Logically, alternatives to drugs should correspond to the motives impelling persons toward experimentation or continued abuse. So, before fashioning alternative approaches, it is essential to try to understand the motivational antecedents to drug preference. The immediate reasons for possible drug dependency vary among individuals, leading to different choices of drugs and patterns of use. It might be helpful to categorize some of these unfulfilled needs and aspirations in order to see what types of alternatives can be expected to be appropriate and effective in different individuals and groups.

In writing about adolescent drug use, Arnold Channin (1969) commented that "Teenagers use drugs primarily to find a new level of experience." For both youth and adults, one might say that drugs are used to find a new and/or different level of experience. One way of looking at specific motives involves their categorization by the different levels of experience which are sought, and the types of gratification most appealing to potential drug dependers. Table One is included as a frame of reference for presenting relevant motives. Contents of the Table are derived from articles by Dohner (1972-a), Channin (1969), and Cohen (1971). Each section encompasses one type of experiential level, a kind of gratification which might be sought. Then, a number of corresponding individual motives, needs and aspirations are listed, all of which may be directly related to drug use. After each numbered motive, the reader will find a listing of the types of drugs most probably used to respond to that motive. It should be noted that Table One is not meant to be totally comprehensive, nor should the categories be taken to be mutually exclusive. It is presented as a non-chemical stimulant to alternatives thinking.

Table One
Levels of Experience, Motives and Drug Abuse Patterns

Level of Experience: Type of Gratification	Corresponding Motives, Needs, Aspirations	Most Probable Drugs of Abuse
A. Physical:		
Pertaining to the general feeling of physical well-being, and experience of the body.	1) Physical relaxation	1) Alcohol, tranquilizers (e.g., Librium, Valium, some over-the-counter sedatives, etc.), cannabis (marihuana and hashish)
	2) Relief from pain or anticipated prevention of sickness	2) Physician prescribed drugs, over-the-counter (OTC) drugs
	3) Increased physical energy, avoidance of fatigue	3) Stimulants (e.g., amphetamines, cocaine)
B. Sensory:		
Pertaining to the enhancement, exaggeration, or intensification of the physical senses.	1) Intensification/ enrichment of sensory input (e.g., sound, sight, touch, etc.)	1) Psychedelics (e.g., LSD, Mescaline, Psilocybin, STP, etc.), cannabis, occasionally others
	2) Enhancement of sexual experience	2) Alcohol, cannabis, occasionally others
C. Emotional:		
Pertaining to psychological and emotional experience, especially that which occurs within a personality; includes those internal feelings set off by the environment.	1) Psychological escape or release from emotional agony	1) Any, especially narcotics and alcohol
	2) Reduction of normal tension, anxiety, conflict	2) Alcohol, barbiturates, OTC sedatives, tranquilizers, cannabis

TABLE ONE (Continued)

Level of Experience: Type of Gratification	Corresponding Motives, Needs, Aspirations	Most Probable Drugs of Abuse
C. Emotional: (Continued)		
	3) Emotional relaxation	3) Alcohol, tranquilizers, cannabis
	4) Mood alteration	4) Stimulants, alcohol, cannabis
	5) Desire for psychological/ emotional insight	5) Psychedelics, cannabis
	6) Avoidance of decision-making; pressure avoidance	6) Any
	7) Desire for privacy, aloneness	7) Alcohol, narcotics
	8) Rebellion; assertion of independence or defiance of authority	8) Any, especially illicit or forbidden substances
	9) Intensification of personal courage	9) Stimulants, alcohol
	10) Increase in self-esteem	10) Any, especially alcohol, stimulants and cannabis
D. Interpersonal:		
Pertaining to interpersonal relations, acceptance in groups, feelings of communication among individuals, opposite sex relationships, etc.	1) Gain in peer recognition, as in "showing off"	1) Any
	2) Gain in peer acceptance, as in behaving according to "peer pressure"	2) Any

TABLE ONE (Continued)

Level of Experience: Type of Gratification	Corresponding Motives, Needs, Aspirations	Most Probable Drugs of Abuse
D. Interpersonal: (Continued)		
	3) Relaxation of interpersonal inhibition; facilitation of social interaction	3) Any, especially alcohol and cannabis
	4) Reduction of anxiety-provoking intimacy	4) Narcotics, cannabis, etc.
	5) Reduction in barriers to communication; also solution of interpersonal problems	5) Psychedelics, cannabis, stimulants
	6) Escape/release from family difficulties	6) Any
	7) Escape/release from feelings of loneliness, alienation	7) Any
	8) Establishment of feeling of "community" or belonging with actual or reference group	8) Any
E. Mental-Intellectual: Pertaining to the experience of mental and intellectual processes, such as thoughts, ideas, problem-solving, etc.	1) Reduction of boredom	1) Any
	2) Curiosity	2) Any
	3) Enhancement of learning processes	3) Stimulants, sometimes psychedelics
	4) Problem-solving, especially technical	4) Stimulants, sometimes psychedelics

TABLE ONE (Continued)

Level of Experience: Type of Gratification	Corresponding Motives, Needs, Aspirations	Most Probable Drugs of Abuse
E. Mental-Intellectual: (Continued)	5) Research on oneself, one's cognitive processes	5) Psychedelics, cannabis
	6) Mental fatigue avoidance, as in studying	6) Stimulants
F. Creative-Aesthetic: Pertaining to artistic creativity, the performance or aesthetic appreciation or experience of creative works or artistic phenomena.	1) Increase in creative performance ability	1) Cannabis, stimulants, psychedelics
	2) Increase in enjoyment of artistic productions	2) Cannabis, alcohol, psychedelics
	3) Creation of subjective states of fantasy or imagination	3) Psychedelics, cannabis
G. Experiential: Pertaining to generalized personal experience of new, unusual or intensified states of experience or consciousness. Usually somewhat difficult to label.	1) Desire for "pure pleasure," "fun," recreation	1) Any
	2) Nonspecific changes in consciousness or awareness; e.g., any "high," intoxication for its own sake, desire for a change, any change, in experience	2) Any
	3) Unusual distortion of the sensorium, "freaky" perception and associated experience	3) Psychedelics, cannabis, sometimes stimulants or barbiturates

TABLE ONE (Continued)

Level of Experience: Type of Gratification	Corresponding Motives, Needs, Aspirations	Most Probable Drugs of Abuse
G. Experiential: (Continued)		
	4) Engagement—the need to be personally and totally involved in the moment, whatever the experience; counteracting apathy and ennui	4) Any, except perhaps tranquilizers
H. Stylistic:		
Pertaining to styles of behaviors and attitudes, especially cognitive styles, cultural styles and lifestyles.	1) Need for identification through *imitation*, by youth of adults, by adults of youth, from media and subcultural "hero" figures; peer imitation	1) Any
	2) Automatic chemical reliance, — i.e., the culturally infused style of substance ingestion for any perceived deficiency	2) Any
	3) Desire for *immediacy* of achievement; impatience, intolerance of delay of gratification	3) Any; tranquilizers, volatile chemicals, OTC drugs less so

TABLE ONE (Continued)

Level of Experience: Type of Gratification	Corresponding Motives, Needs, Aspirations	Most Probable Drugs of Abuse
I. Social-Political:		
Pertaining to experiences generated by identification or involvement with social causes or political movements; also reaction to social and political inertia or change.	1) Identification with anti-establishment forces	1) Cannabis, psychedelics; sometimes any illicit substance
	2) Rebellion against disliked laws	2) Cannabis, etc.
	3) Overcoming discouragement or desperation with social-political future	3) Any
	4) Induced change in mass consciousness, sometimes by attempted disruption of "the system"	4) Psychedelics
J. Philosophical: (General and Personal)		
Pertaining to the experience of a guiding philosophy of life, an explanation of the universe; also personal identity, including goals, purpose, and values.	1) Search for purpose and meaning in life	1) Psychedelics, cannabis, others depending on peer group
	2) Organization of experience into a belief structure	2) Cannabis, psychedelics, stimulants
	3) Search for personal identity	3) Psychedelics, cannabis (directly); other drugs (indirectly)
	4) Creation or change in values and philosophical lifestyle	4) Any, especially cannabis and psychedelics

TABLE ONE (Continued)

Level of Experience: Type of Gratification	Corresponding Motives, Needs, Aspirations	Most Probable Drugs of Abuse
J. Philosophical: (General and Personal) (Continued)	5) Overcoming frustration from lack of meaningful vocation and work	5) Any
K. Spiritual-Mystical: Pertaining to experience with religious, spiritual or mystical characteristics, including intangible internal experiences with spiritual overtones or labeling.	1) Desire for intense spiritual experience, often labeled "higher levels of consciousness"	1) Psychedelics, cannabis
	2) Desire for specific mystical states, e.g., "enlightenment," communication with God, etc.	2) Psychedelics, cannabis
	3) Overcoming frustration with organized religion	3) Psychedelics, cannabis
	4) Augmentation of unorthodox spiritual methodology, e.g., yoga, meditation	4) Psychedelics, cannabis
L. Miscellaneous: Pertaining to combinations of above levels; factors difficult to categorize in one schema	1) Need for risk-taking, danger	1) Any, especially more dangerous drugs
	2) Need for adventure, exploration	2) Any
	3) "Vacuum phenomenon," or "What else is there to do?"	3) Any

TABLE ONE (Continued)

Level of Experience: Type of Gratification	Corresponding Motives, Needs, Aspirations	Most Probable Drugs of Abuse
L. Miscellaneous: (Continued)	4) Economic profit	4) Any illicit substance
	5) Combination of motives, needs, aspirations—none of which individually would produce drug abuse, but does in a cluster	5) Any
	6) Need to react to extreme mental or physical discomfort; e.g., as in the maintenance of narcotic addiction, or in extreme psychological pain and/or confusion	6) Any

Most of the categories and motives listed in Table One reflect proximate causes of drug abuse. This focus may be the most practical in development of alternatives programs. However, we should note that some alternatives theorists emphasize broader socio-cultural influences. Some of the many socio-cultural factors which have been suggested to be linked with drug abuse are the following:

1) General social and political disruption (erosion of confidence in Government, confusion over social goals, ecological uncertainty, etc.);
2) Breakdown of the family unit (more broken homes, family mobility, parental absence from the home, etc.);
3) Influence of the media (especially the advertising of chemicals);
4) Economic imbalance (existence of poverty, ethno-racial economic discrimination, affluence leading to boredom, etc.);
5) Rigidity of educational institutions (maladaptive characteristics of public education, boredom in schools, etc.);
6) Rapid technologic change;
7) Proliferation of value and belief systems; fluidity in standards of morality; and
8) Increase in leisure time.

Obviously, such broad problems in the social network breed symptoms of disharmony other than drug abuse.

A. Types of Alternatives

Looking back to Table One, it becomes clear that there need to be multi-varied alternatives for individuals and groups. "Different strokes for different folks" is a central precept in alternatives planning. Certain alternatives will be salient for some people, irrelevant for others, depending on their major unfulfilled needs and aspirations. Effective alternatives programs may be quite different for affluent whites than for poor minority groups, for the young than the aged, or for parents than for single people. It is also important to remember that diverse alternatives approaches must appeal to persons with healthy, creative and positive *aspirations* as well as to those with "problems." Many "healthy" people abuse drugs unnecessarily for positive reasons such as curiosity, emotional growth or the search for spirituality.

Although alternative approaches require diversity and variety, it is reasonable to expect that some will have more overall impact than others. It can be assumed that certain variables such as peer group pressure have more general causative potency among young drug users than others (e.g., relief from sickness). Thus to be effective, alternatives should be fashioned according to the motives most probably influencing the target individual or group.

(1) Time Stages for Alternatives Impact

One way of categorizing alternatives approaches involves analyzing intervention stages in drug abuse behavior patterns.

The first stage, *Prevention*, involves intervention before an individual has begun any drug abuse cycle. Here, the alternatives orientation focuses on developing a natural "immunity" to serious drug dependency. For example, some preventive approaches stress the development of such qualities as personal values, meaning and integrity, self-esteem, better interpersonal skills, greater respect for the natural life, etc., the objective being to create values so that the drug scene will have little to offer.

A second stage may be called *Early Intervention*. Here the target for alternatives programs is the casual experimenter who has yet to become heavily involved or psychologically committed to a drug abuse lifestyle. If meaningful alternatives are able to involve the new marihuana user, the pre-alcoholic, or the weekend experimenter, they can be guided away from further escalation of drug use and prepared for a more chemically free mode of existence.

A third stage may be called *Rehabilitation*, where drug use has severely limited the individual's options and resulted in powerful physical or psychological dependency. Although alternative strategies might be similar to those in early intervention, the alternative involvements must be stronger and especially sensitive to fulfilling the physical-psycho-social needs intertwined with severe dependency. It can be expected that success per unit effort will be less for the *Rehabilitation* stage because most chronic users are more hopeless and alienated than the experimenter. It is critical that planners maintain sensitivity to the fit between different alternative types and the appropriate intervention stages for the target population.

(2) Types of Intervention Agents

Alternatives approaches may also be seen according to the point of initiation, the intervention agent. Alternatives initiation can proceed along a continuum described by three major categories. The first, initiation by the *Individual*, involves a personal search for alternatives by a user or potential user who may go out and find an alternative on his own. For example, a casual user might discover a book about a certain alternative, follow it up and finally quit the drug scene altogether. On the helping end, it would involve a single individual trying to help stimulate alternatives for others, primarily on his own, without organizational sponsorship.

Institutional initiation refers to alternatives programs administered by institutions, organizations, agencies or governments which attempt to provide alternative pursuits to target populations. An example here would be a new alternatives school program initiated by the school administration and faculty. In this mode, the institution offers alternatives to potential or actual drug dependers.

The combination *Institutional-Individual* mode of intervention features institutional development of an organized alternatives program but requires the voluntary collaboration on the part of the potential benefactors. An example of this case would be an organized group of ex-addicts willing to assist others but requiring commitment and effort from the current user.

These typologies are mentioned since people have different goals in relation to alternatives programming. Conceivably, some could be drug experimenters looking for "a better way"; some might be responsible for the development and administration of formally organized drug programs, some might be concerned citizens, parents or students wishing to use their energies to stimulate others. So, even if the following examples seem to reflect particular emphasis on certain stages of intervention or certain initiation agents, the reader should realize the comprehensive applicability of alternatives thinking.

B. Examples of Alternatives to Drugs

Because the alternatives approach to drugs is still novel and foreign to many, it is often difficult to translate theory into action. Actually, the number of possible specific alternatives to drug-taking behavior is almost infinite. For all practical purposes, one cannot exhaustively list the many and varied alternative pursuits which have promise for counteracting or supplanting a predisposition to substance abuse. Indeed, such prescriptions may impede creative innovation. However, it is possible to give examples which may illustrate the theory and stimulate further thinking.

Table Two lists examples of alternative approaches, pursuits, affiliations and experiences which appear to have potential relevance to the unmet needs and aspirations related to drug abuse. Most of the examples were selected from a logical extension of alternatives theory; others were in-

cluded because of limited clinical or empirical evidence. In order to reinforce the relationship of alternatives to motives, Table Two lists alternatives under the same categories of Level of Experience (Type of Gratification) as found in Table One. Under closer inspection, it is seen that several alternatives listed are related directly to specific Corresponding Motives, Needs and Aspirations presented in Table One.

It can be seen that this list of alternatives covers a broad range of pursuits, all of which could have potential impact on certain individuals at certain stages of their development. It is helpful to be aware of the breadth of creative possibilities; however, these options also require crystallization into action.

Table Two
Levels of Experience and Examples of Alternatives to Drugs

Level of Experience: Type of Gratification	Corresponding Motives, Needs, Aspirations	Alternative Example
A. Physical:	Physical relaxation	1) Relaxation exercises; "hatha" (physical) yoga
	Relief from pain or anticipated prevention of sickness	2) Dance and movement training
	Increased physical energy, avoidance of fatigue	3) Training in preventive medicine; positive health habits
		4) Dietary and nutritional training and habits
		5) Physical recreation: competitive athletics (especially for *fun*); individual physical conditioning (e.g., jogging, exercise); hiking, nature study, certain outdoor work, etc.
		6) Gentle addiction withdrawal
		7) Experience and training in the martial arts, e.g., aikido, karate, judo
B. Sensory:	Intensification/ enrichment of sensory input (e.g., sound, sight, touch, etc.)	1) Sensory awareness training (including increased awareness of body position, balance, coordination, small muscle control, learning to diminish or intensify sensory input)
	Enhancement of sexual experience	2) Massage
		3) Visual exploration of nature
		4) Responsible sexuality (e.g., possible education in noncoital sexuality for adolescents)
C. Emotional:	Psychological escape or release from emotional agony	1) Competent, empathic individual counseling
	Reduction of normal tension, anxiety, conflict	2) Competent, empathic group psychotherapy
	Emotional relaxation	3) Special therapeutic techniques, e.g., psychodrama and role-playing (expertly conducted)
	Mood alteration	
	Desire for psychological/ emotional insight	

TABLE TWO (Continued)

Level of Experience: Type of Gratification	Corresponding Motives, Needs, Aspirations	Alternative Example
C. Emotional: (Continued)	Avoidance of decision-making; pressure avoidance	4) Instruction in the psychology of personal development (e.g., in secondary schools)
	Desire for privacy, aloneness	
	Rebellion; assertion of independence or defiance of authority	5) Effective education (including techniques like values clarification, especially in primary grades)
	Intensification of personal courage	
	Increase in self-esteem	6) Emotional awareness exercises, e.g., learning body language, honest, open self-awareness; psychological awareness workshops and seminars (especially for adults)
D. Interpersonal:	Gain in peer recognition, as in "showing off"	1) Creation of alternate peer groups
	Gain in peer acceptance, as in behaving according to "peer pressure"	2) Competently run, empathic experiences in peer and group process (including group discussion, sensitivity and encounter groups)
	Relaxation of interpersonal inhibition; facilitation of social interaction	3) Competent, empathic group psychotherapy
	Reduction of anxiety-provoking intimacy	

TABLE TWO (Continued)

Level of Experience: Type of Gratification	Corresponding Motives, Needs, Aspirations	Alternative Example
D. Interpersonal: (Continued)	Reduction in barriers to communication; also solution of interpersonal problems	4) Various "experiences in being," including interpersonal workshops aimed at development of caring, personal responsibility, confidence, trust and respect for others
	Escape/release from family difficulties	
	Escape/release from feelings of loneliness, alienation	5) Psychodrama, role-playing and other special techniques (expertly conducted)
	Establishment of feeling of "community" or belonging with actual or reference group	6) Competent, empathic individual counseling for interpersonal troubles
		7) Goal-directed, positive group activities through organizations such as Scouts, 4-H, F.H.A., school clubs, church organizations, etc.
		8) Social confidence training, instruction in social customs, "manners" of human interaction (especially for shy children)
		9) Self-examination of relationships
		10) Family life education and training

TABLE TWO (Continued)

Level of Experience: Type of Gratification	Corresponding Motives, Needs, Aspirations	Alternative Example
D. Interpersonal: (Continued)		11) Family therapy, family counseling, parent education
		12) Premarital and marital counseling/ education
		13) Temporary alternate families, alternate foster homes
		14) Emotional "tutoring," e.g., big brothers and sisters helping younger people
		15) Creation of community "rap centers"
E. Mental-Intellectual:	Reduction of boredom	1) Mental/intellectual hobbies and games; e.g., puzzles, chess, etc.
	Curiosity	2) Intellectual excitement through reading and discussion
	Enhancement of learning processes	3) Intellectual challenge through education, exploring frontiers of knowledge, stimulating curiosity
	Problem-solving, especially technical	4) Introspection; analysis of thought
	Research on oneself, one's cognitive processes	
	Mental fatigue avoidance, as in studying	

TABLE TWO (Continued)

Level of Experience: Type of Gratification	Corresponding Motives, Needs, Aspirations	Alternative Example
E. Mental-Intellectual: (Continued)		5) Memory training
		6) Training in problem-solving and decision-making, e.g., "Synectics" training
		7) Concentration and attention exercises
		8) Training in mind control, e.g., "psychocybernetics," auto suggestion, positive thinking, etc.
F. Creative-Aesthetic:	Increase in creative performance ability	1) Non-graded instruction or experiential opportunity in appreciation of artistic productions, e.g., music, art, drama, etc.
	Increase in enjoyment of artistic productions	2) Opportunities for artistic participation, e.g., non-graded lessons in art, music, drama, etc.
	Creation of subjective states of fantasy or imagination	3) Creative hobbies (e.g., crafts, sewing, cooking, gardening, handiwork, photography

TABLE TWO (Continued)

Level of Experience: Type of Gratification	Corresponding Motives, Needs, Aspirations	Alternative Example
F. Creative-Aesthetic: (Continued)		4) Experience in communication skills, e.g., writing, public speaking, media, conversation, etc.
		5) Theater games; other procedures encouraging imagination and creative fantasy
		6) Creation of community centers for the arts
G. Experiential:	Desire for "pure pleasure," "fun," recreation	1) Self-generated play experience
	Nonspecific changes in consciousness or awareness; e.g., any "high," intoxication for its own sake, desire for a change, any change, in experience	2) Experiments in sensory deprivation
		3) Bio-feedback training, e.g., alpha wave training
	Unusual distortion of the sensorium, "freaky" perception and associated experience	4) Sleeplessness & fasting (natural procedures for "intoxicated" states, only with health parameters)
	Engagement—the need to be personally and totally involved in the moment, whatever the experience; counteracting apathy and ennui	5) "Mind-tripping," e.g., guided daydreams and fantasy
		6) Hypnosis (expertly conducted)

TABLE TWO (Continued)

Level of Experience: Type of Gratification	Corresponding Motives, Needs, Aspirations	Alternative Example
H. Stylistic:	Need for identification through *imitation*, by youth of adults, by adults of youth, from media and subcultural "hero" figures; peer imitation	1) Exposure to others deeply and meaningfully involved in non-chemical alternatives
		2) Exposure to "hero" figures unfavorable to chemical abuse
	Automatic chemical reliance,—i.e., the culturally infused style of substance ingestion for any perceived deficiency	3) Enlistment in anti-drug or alternative programs
	Desire for *immediacy* of achievement; impatience, intolerance of delay of gratification	4) Exposure to philosophy of enjoying the *process* of attainment, not just the *product*
		5) Parental abstinence and moderation in drug use (parent agreement to cut down to give better example to children)
		6) Exposure to philosophy of the "natural," education regarding the artificiality of chemical dependence
I. Social-Political:	Identification with anti-establishment forces	1) Partisan political action, e.g., helping candidate campaigns
	Rebellion against disliked laws	

TABLE TWO (Continued)

Level of Experience: Type of Gratification	Corresponding Motives, Needs, Aspirations	Alternative Example
I. Social-Political: (Continued)	Overcoming discouragement or desperation with social-political future	2) Non-partisan lobbying, e.g., for ecological projects
	Induced change in mass consciousness, sometimes by attempted disruption of "the system"	3) Personal political involvement, e.g., running for elective or organizational office
		4) Field work with politicians and public officials
		5) Involvement in social service, including:
		a) Providing voluntary service to the poor (e.g., day care for working mothers, helping to locate housing, assisting access to health services, etc.)
		b) Providing companionship to the lonely, (e.g., companions for the aged, foster children, prison inmates, etc.)
		c) Work with schools (e.g., student tutoring programs,

TABLE TWO (Continued)

Level of Experience: Type of Gratification	Corresponding Motives, Needs, Aspirations	Alternative Example
I. Social-Political: (Continued)		volunteer teaching assistants and counselors, etc.)
		d) Work with drug abuse problems (e.g., peer or volunteer counseling, information provision)
		e) Work in preserving environment (e.g., recycling, identifying pollution, preservation of areas of natural beauty)
		6) Participation in ACTION (e.g., VISTA and Peace Corps)
		7) Citizen "potency" training (i.e., learning effectiveness with Government and bureaucracy)
		8) Voluntary efforts through organizational sponsorship, e.g., YMCA, Boys Clubs, Big Brothers, etc.
		9) Construction of responsible roles in community organization and governance for your pie

TABLE TWO (Continued)

Level of Experience: Type of Gratification	Corresponding Motives, Needs, Aspirations	Alternative Example
J. Philosophical: (General and Personal)	Search for purpose and meaning in life	1) Seminars, workshops on values and meaning of life (adults)
	Organization of experience into a belief structure	2) Courses on values, ethics, morality, meaning, etc. (schools)
	Search for personal identity	3) Reading philosophical literature
	Creation or change in values and philosophical lifestyle	4) Values clarification procedures; identity clarification procedures
	Overcoming frustration from lack of meaningful vocation and work	5) Exposure to philosophical (non-violent) aspects of martial arts, e.g., aikido and karate
		6) Exposure to metaphysical literature and thought
		7) Humanistic counseling oriented toward meaning and values clarification
		8) Achievement values, from meaningful challenge from career or employment
		9) Exposure to individuals committed

TABLE TWO (Continued)

Level of Experience: Type of Gratification	Corresponding Motives, Needs, Aspirations	Alternative Example
J. Philosophical: (General and Personal) (Continued)		to varieties of personal philosophies
		10) Creation of community "growth centers"
		11) Maximization of ethnic, racial and minority pride
K. Spiritual-Mystical:	Desire for intense spiritual experience, often labeled "higher levels of consciousness"	1) Study of spiritual literature, increased library holdings relevant to non-chemical spiritual methods
	Desire for specific mystical states, e.g., "enlightenment," communication with God, etc.	2) Creation of information centers for spiritual alternatives
	Overcoming frustration with organized religion	3) Exposure to holy men of different belief systems; exposure to different techniques of applied spirituality
	Augmentation of unorthodox spiritual methodology, e g., yoga, meditation	4) Meditation
	Pertaining to the experience of a guiding philosophy of life, an explanation of the universe; also personal identity, including goals, purpose, and values	5) Yoga (especially non-physical components)
		6) Contemplation and prayer
		7) Spiritual dance and song

TABLE TWO (Continued)

Level of Experience: Type of Gratification	Corresponding Motives, Needs, Aspirations	Alternative Example
K. Spiritual-Mystical: (Continued)		8) Increased course offerings in intellectual and experiential components of spiritual study (especially college level and secondary level)
L. Miscellaneous:	Need for risk-taking, danger	1) Sky-diving; scuba-diving, etc.
	Need for adventure, exploration	2) "Outward Bound" survival training
	"Vacuum phenomenon," or "What else is there to do?"	3) Exploration of new physical environments, e.g., flying, soaring, camping in wilderness areas, etc.
	Economic profit	4) Competence of "self-reliance training," e.g., vocational and occupational education, instruction in household technology (i.e., autos, electronics, plumbing, household appliances, etc.)
	Combination of motives, needs, aspirations—none of which individually would produce drug abuse, but does in a cluster	5) Family management education, i.e., accident prevention, childcare, money management, first aid, menu and diet planning, etc.
	Need to react to extreme mental or physical discomfort; e.g., as in the maintenance of narcotic addiction, or in extreme psychological pain and/or confusion	

TABLE TWO (Continued)

Level of Experience: Type of Gratification	Corresponding Motives, Needs, Aspirations	Alternative Example
L. Miscellaneous: (Continued)		6) Vocational counseling leading to meaningful employment
		7) Credited work experience through schools, e.g., house-building, merchandising, service station maintenance, restaurant training, etc.

Evaluation and Research

Too often, the urgency or ideological enthusiasm of anti-drug programs has precluded adequate evaluation and research. The same problem is possible in the alternatives area, where three pertinent questions should be raised: (1) What criteria for alternatives programs might best predict success or failure?, (2) How does one know if alternatives "work?," and (3) What research and evaluation strategies are needed to clarify effectiveness factors in the implementation of alternative approaches?

A. Evaluation of Alternatives: Practical Criteria

The fact that a set of behaviors or attitudes supplants drug abuse does not necessarily recommend it. The key to viable alternatives is a preferable and healthy option, not an equally destructive one. For example, joining a violent delinquent gang might replace drug using behavior, but this particular "cure" might be much worse than the symptom. To be consistent with the assumptions stated early in this publication, a successful alternatives thrust must become a true alternative and not merely a substitute. Thus, a well-run therapeutic community incorporates alternative emphases, especially when the addict is still a successful resident. The effectiveness of the alternatives offered in the therapeutic program ultimately depends on the progress of the resident after he re-enters society. Generally, then, a successful alternatives program should help a person develop those qualities leading to drug independence, with the capability to adapt in meeting the challenges of self, others, and society.

Based on alternatives theory, there are other *a priori* criteria which might define helpful guidelines to evaluation. For one, any alternative should tend to be or become relatively incompatible with drug abuse. For example, "listening to music" is not necessarily a promising alternative to drugs since one can be passively "stoned" at the time. However, training in active listening and deep study of music is more likely to be frustrated by drug use since the clarity of one's senses and cognition becomes more important.

In all practicality, the incompatibility of constructive alternatives and drug use can be subtle and may take time to become evident to a user. Informal data suggest that drug use should be discouraged during actual alternative involvements in order to make the distinctions come easier. For example, many have recommended alternative education or alternative schools as tools for alleviating the symptoms of drug abuse; but there appears to be increasing evidence that alternative educational input should be as free from chemicals as possible to be maximally effective. However, total abstinence, at least in the initial stages, is usually an unrealistic expectation.

Another stylistic criterion for possible effectiveness can be based on the tremendous passivity in drug abuse, the "taking in" with little effort, the waiting for "it" to "happen." Expect, then, for alternatives to be more effective as they call for activity, assertion of will, effort and commitment, and less successful as they construe the target individual as the passive recipient of some input. Preliminary observation suggests that *involvement* is one critical factor in successful alternatives programs, the drug abuser or potential abuser should be personally involved in some non-chemically based life pursuit, whether ordinary or exotic. Indeed, the content of the alternative pursuit may be much less important to the individual than the process of finding it or developing it. The value and energy given to the search for alternatives is a potent alternative in itself, whatever the object of search.

The literature on alternatives adds some additional requisites for successful approaches. Dohner (1972-b) comments:

"To be acceptable and attractive, any alternatives we offer must be realistic, attainable and meaningful. Any proposed alternative must assist people to find self-understanding, improved self-image, feeling of significance, expanded awareness or new experiences which they seek through drugs. These alternatives must also meet other criteria:

1. they must contribute to individual identity and independence,
2. they must offer active participation and involvement;
3. they must offer a chance for commitment;
4. they must provide a feeling of identification with some larger body of experience; and
5. some of the alternatives must be in the realm of the noncognitive and the intuitive."

Even in such intangible areas as the religious-spiritual, the literature offers criteria for evaluation. Cohen (1971) has cited the following as likely signs of a successful spiritual alternative:

"a. the generation of a positive view of human nature and oneself,
b. an attitude of relative tolerance toward other alternative movements, the absence of hostile fanaticism;
c. applicability of the alternative to ordinary life in society;
d. evocation of better feelings toward others and increased interpersonal effectiveness; and
e. emphasis on the attainment of love and wisdom vs. power and control of others."

In parallel, Dohner (1972-b) suggests that the qualities of positive alternative religious experience must:

"a. be extremely personal, applicable to everyday life and constantly evolving;
b. produce recognition of a force or entity greater than the individual,
c. be involved with the questions of self-fulfillment and the ultimate purpose of life;
d. produce an indescribable state; and
e. produce discernible positive changes toward self, others, life and the experience."

One other criterion applies more to the organized programs than the content of alternatives. This involves the degree to which a program is well organized, possesses effective leadership and has the capability of working within the social and political atmosphere of the community. In social action programming, effective people are equally as important as effective ideas.

B. Effectiveness of Alternatives Strategies

Understandably, the short shrift given to evaluation in the urgency to respond to drug abuse has affected the alternatives area and therefore evaluative research is somewhat scant. However, the emerging data seem encouraging. The empirical data consist of two types: clinical-observational and statistical. The clinical and observational studies are less formalized and tend to focus on individual cases and programs rather than general trends. They seem to be lending more and more credence to some kind of alternatives approach when they study successes in early intervention and rehabilitation. For example, it seems appropriate to conclude that many of former drug users discontinue drug use because of some more favorable alternative in life. Expectably, the more intense the drug dependency, the more intense and personally committing the successful alternative seems to be (e.g., for ex-opiate addicts—Synanon, fervent religious commitment, total involvement as ex-addict drug counselors, massive reorientation in lifestyle, job and family life, etc.). In a small corroborating study of more "moderate" former drug users (primarily psychedelic drugs), 11 of 32 subjects reported discontinuing drugs because they were "beyond it spiritually or psychologically." Two subjects cited "goal interference," and the remaining 19 pointed to "health concerns" (Cohen, 1968). It was noted that even where health concerns affected discontinuance, most interviewees related these concerns to some valued activity, pursuit or existent relationship which necessitated adequate health. Very few subjects reported significant physical pain, mental agony or general discomfort as being the motivating factors for their discontinuance.

Although the empirical criteria for effectiveness (including measurement of long-term discontinuance of drug abuse) of alternatives programs may be possible to construct when dealing with the rehabilitative and early interventive stages, criteria for prevention raise a more difficult question. Any preventive research on individuals is exceedingly difficult because a researcher is haunted by the question, "How do I know that the person would not have avoided drugs even if the alternative were *not* offered? Further, "How do I know that possible "failures" of the alternative strategy (e.g., primary school students who go on to experiment with drugs) would not have been much more severe drug dependers had they not been exposed to the alternative?" Truly rigorous research would include large sample longitudinal studies with closely followed control groups, a very difficult feat.

Yet there are other research strategies which show promise for the preventively oriented investigator, even if they are a bit less elegant. An apparently simplistic, but powerful, procedure is to ask the subjects what you want to know. Illustrating this was a most interesting study designed by high school faculty and students (San Leandro Study, 1969). A drug use questionnaire, anonymous and distributed by trusted peers, was collected from approximately 800 students at a suburban high school in the San Francisco Bay Area. In addition to other questions, the *non-users* (about 400) were asked the question, "If you do *not* use drugs, what has been the biggest deterrent for not using them?" The 260 completed responses to this open-ended question were categorized and generated the following results:

Biggest Deterrent		Percentage*
1.	No Need (life is fine, I'm happy, I turn on other ways, etc.)	39.8
2.	Physical or mental health or athletics	22.4
3.	Laws (respect for the law and fear of getting busted)	7.1
4.	Brains and good judgment (i.e., having them)	6.2
5.	Fear of the unknown	6.0
6.	Seen results in other people	4.9
7.	(Out of) Love and respect for parents	4.4
8.	Fear of addiction	3.4
9.	Friends (i.e., peer pressure against it)	3.2
10.	Other (not yet been contacted to take drugs, personal values or religion, unfavorable past experience, poor quality of drugs, and don't know)	10.2

*N = 260 students, percentage adds up to over 100% because of some combinations of reasons

If the total percentage of apparently *negative* reasons for avoidance are totaled (categories 3, 6, 8 and 9), the figure is 18.6%. Explicitly *positive* categories (i.e., expressing the primacy of positive alternatives or values in contrast to fear of something) total 44.2% (categories 1 and 7). Responses in category 2 were not fully analyzed, but many students worried about health problems in relation to goal interference, i.e., not being able to continue some valued activity, like athletics.

These results are entirely consistent with growing observational data suggesting that legal constraints plus scare-oriented education are only very limited deterrents. Even in this population, where alternatives programs were not specifically generated in the school, the bulk of non-users reported that some kind of alternatives orientation (even if it only meant satisfaction with non-chemical life) was the decisive preventive factor.

In sum, although tightly controlled research of clinical, observational and statistical nature is just beginning, the early results seem to encourage the continued development and testing of the alternatives components.

C. Suggestions for Further Research and Evaluation

Admitting the difficulties in evaluation of alternative programs, there may be helpful guidelines. For one, the richness of early clinical and depth interview studies suggests that the simplest research strategies can be effective. Pre-users, users and former users can generate considerable information if asked in sympathetic ways. At the least, it can be very helpful to interview a target population before, during and after intervention efforts.

Another promising type of research technique was illustrated above. Considerable research has focused on the reasons why people use drugs and what personality types might be dependency prone. However, such a strategy may have diminishing returns as a near majority of Americans, particularly the young, are predisposed to experiment with drugs. It may become increasingly futile to try to identify high risk individuals before dependency sets in, since there are more and more high risk individuals. More salient to an alternatives outlook is expanded research on reasons why drugs are *not used* or discontinued. (E.g., why do most young ghetto dwellers *not* become heroin addicts?) This could lead to rational assessment of priorities when developing alternatives programs for different groups and locales.

Considering the actual evaluation of structured alternatives programs, Emrich (1971) gives a basic paradigm:

"The evaluation essentially must take place on two levels, the community level and the individual level. . . . On the basis of theory, one can rather specifically define the qualities that would make up an effective alternatives program, on many of the dimensions of that program. One can also describe the impact that such a program would have on the personality of the participants, in contrast to the development that would occur had they continued in a drug-taking mode.

The basic hypothesis to be tested by the evaluation is that a successful alternatives program — that is, one that fulfilled most closely the a priori definition of an effective program — would be accompanied by the most perceptible drop in drug abuse and the most significant impact on the target social problems. Another hypothesis is that a successful program would produce most noticeably, and in the largest number of participants, a more constructive pattern of personal development."

Emrich goes on to give examples of monitoring several communities, their drug problems, social problems and individual case followup. In describing the final data analysis, he offers possible predictions made by an alternatives evaluation team:

"(1) That the communities having the most effective programs would also have the greatest fall-off in the prevalence of drug use;
(2) that the most effective programs would have the greatest social impact on the problems of choice;
(3) that the participants in the most effective programs would have the greatest satisfaction with the programs; and
(4) that the most effective programs would facilitate the most positive personal development on the part of the participants."

As well as encouraging objective outside evaluation, as suggested above, it is important for alternatives programs to build in evaluation systems as part of their own projects, that they monitor their relative effectiveness for their own advantage. It is suggested that they involve the target population in this procedure. Because no alternatives program is an island, planners are encouraged to think about the research possibilities of their programs and extend their evaluation plans into research designs which may generate knowledge about the reasons behind success or failure.

Techniques of Generating and Implementing Alternatives

It is anticpated that more of those concerned with the drug abuse problem will be wanting to turn to alternatives approaches. Given an idea of the theory, some examples of promising programs, warnings about evaluation and assuming interest on the part of the reader, the question arises, "How do I (we) get alternatives approaches started?" Again, techniques for generating alternatives differ according to the identity and motives of the initiators and target populations.

A. Communications

Contacting the Population

One of the major qualities of an alternatives program involves getting its message through to potential participants. There are various ways to reach people where they are, but this should be considered during the planning stages.

Some projects may opt for the person-to-person, word-of-mouth approach, probably the most powerful method, but also the one requiring the greatest expenditure of time and energy per person contacted. Other projects may concentrate on the media. (Remember, though, that followup is a prerequisite.) Some work with a "captive audience," and focus on institutional settings which require attendance (schools, prisons, etc.). Still others contact their people through "diversion," i.e., contacting persons after they have already come to the attention of the system (court and probation referrals, mental health crises, addiction clinics, etc.).

The nature of the contact is also crucial. The opportunity to participate must seem as inviting as possible, whether participation is voluntary or not. (Incidentally, a general rule is that programs are more successful when there is a voluntary component. However, adults, particularly parents, are notorious for their apathy in response to voluntary drug abuse prevention programs, so extra effort must be expended to enlist their active participation.) Effective, credible and attractive communication is immensely desirable for any new alternatives program.

B. Hints for the Intervention Agent

For the concerned individual, small groups, or representatives of agencies of the community, who wish to initiate a more alternative based program in their sphere of activity, some helpful hints might include the following:

(1) Know what you hope to accomplish. Make your values, expectations and goals explicit. Are they reasonable? too ambitious? credible?
(2) Know whom you want to assist. What is the target population? If you cannot appeal to everyone, who are your priorities?
(3) Understand the target population. If the population is using drugs or favorably disposed toward them, why? What satisfactions are being sought? If you don't know, ask. Conduct surveys, interview your subjects in confidential and empathetic surroundings. Find out what is most likely behind the drug use patterns. Your task is to find the most relevant levels of

experience from the population and fit the alternatives emphasis to their needs, not the converse.

(4) Survey current resources. Get comprehensive information on the pre-existing drug programs which are affecting the target group. Discover other alternatives-oriented programs in your area, even if they are not directly connected with the drug problem. Interview non-users and find out what they have gotten interested in.

(5) Involve the target population in planning. Try not to impose an alternatives approach on anyone; use the talents, resources and opinions of the target group as a guide for implementation. Let them become involved; this itself is a potent alternative.

(6) Start asking about new possibilities. Ask every contact about possibly effective programs; read the literature. Use the interests of the planning group and friends.

(7) Get political know-how. Be aware of the political and bureaucratic situation affecting possible programs. Try to enlist the support of important community forces. Cooperate with other groups. Know the roadblocks to implementation of new programs and plan for overcoming them.

(8) Use the drug abuse issue to assist implementation. You may opt for alternative approaches which directly affect the underlying needs for drugs, the conditions which nurture drug abuse. These may be controversial so you may do well to introduce your program as an anti-drug abuse program. Unless your approach has inherent weakness or unacceptability, it is difficult to resist well planned innovation billed as drug abuse intervention.

(9) Don't be afraid of making mistakes. Some alternatives approaches are hit and miss affairs. For various reasons, some may not be successful in the ordinary sense, especially at first. But these can be learning experiences, for the community as well as the planners. Only by feedback, some necessarily negative, do you get to the heart of the situation and know what works.

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