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AND SEMINARY

Chemical Dependency

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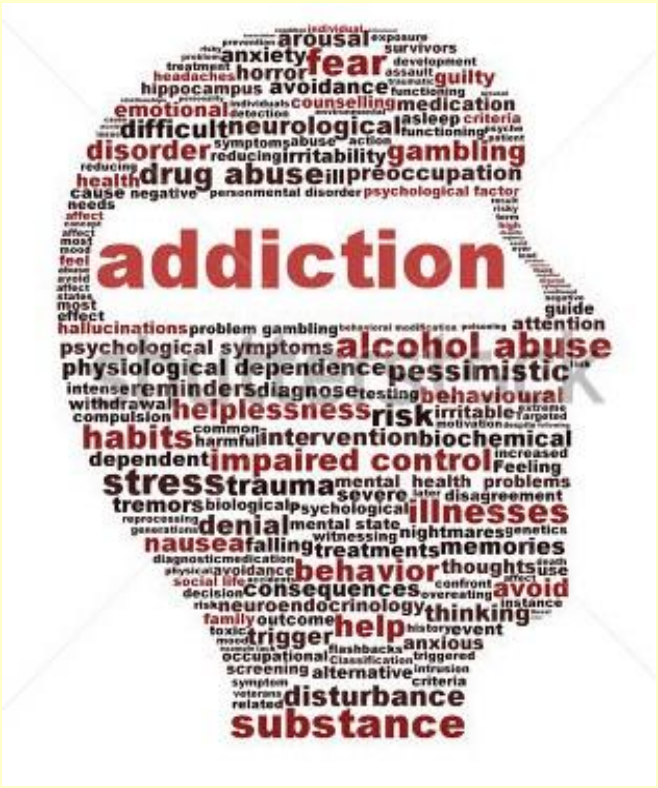
CHEMICAL DEPENDENCY



CHEMICAL DEPENDENCY

Drug dependency is a state in which the use of a drug is necessary for physical well being. **Physical dependency** upon mind altering chemicals is what defines it. While psychological dependency usually accompanies physical dependency, this psychological aspect alone does not constitute true drug dependency.

The drugs of which we are concerned include alcohol as a primary drug, as well as sleeping pills, tranquilizers, diet pills, and painkillers, together with cocaine, marijuana, and other so-called recreational drugs.

According to the National Institute on Drug Abuse Report “Data from the Drug Abuse Warning Network,” for a 6-month period, January-June of 1985, there were 69,050 emergency room visits in the United States because of drugs; 32,675 of these resulted

in deaths. These figures are much higher in the year 2012. Alcohol in combination with other drugs ranks first as the cause of these increasing deaths.

Increased drug use has dramatically impacted women, resulting in criminal behaviors. In 1983 alone, one woman in eight was in jail for a drug-related offense; in 1989, it was one in three; and it is much higher in 2012.

When the term drug abuse is used, the reference is to a broad classification of chemicals that basically effect and change the chemistry of the brain. Those most frequently abused are *downers*, *uppers* and *psychedelics*.

DOWNERS

The downers, or depressants, include such drugs as alcohol, and the sedatives and tranquilizers such as Valium, Darvon, Seconal. The opiates heroin and morphine, are also downers. These drugs slow the transmission of information between nerve cells and act to inhibit behavior, speech, heart rate, breathing and coordination.

When any of these are used in combination with another, the risk of death from over sedation increases greatly, sometimes with effects being as much as fifty times higher than could be achieved with one drug alone.

Metabolism of Downers

When neurotransmission is slowed down, the heart rate slows and breathing is depressed. The overall effect is one of calm and peace. Ironically, the person may also feel free, and venturesome, uninhibited, and may do things that they would not normally do.

This is because the transmitters that control behavior and register what is socially and morally acceptable are also depressed; the person *feels* stimulated (although

downers are not true stimulants). Whereas one would not normally drive down a street where children are playing at sixty miles per hour or go home from a bar with a strange man or woman, he or she might do so when the social controls and judgment facilities are so depressed or inhibited by drugs that these situations appear normal.

Taken further, with the ingestion of more and more alcohol, and perhaps combined with other sedatives, the body may become so relaxed that coma and death may ensue. Many inadvertent suicides result from combining sedatives in such a way that the entire nervous system is so depressed that life is virtually snuffed out.

The funny behavior we see when one has had one too many - saying silly things, unsteady gait, slurred speech - is the result of depressed inhibitions and impaired motor skills. Obviously, a person in this condition is a danger if they get behind a wheel or smokes in bed. The most insidious thing about being so intoxicated is that the person can feel that they are in fine shape and may argue about handing over their car keys.

Rebound Effect

When the brain has been depressed chemically, it fights back, struggling for life. It has been chemically slowed down or put to sleep and it comes back with greater activity than before, shooting off neurotransmitters at a great rate. This is called the “rebound effect.”

Hyperactivity and anxiety are experienced as the brain rebounds, or bounces back. This frequently means that one has to drink again, or take another Valium, or perhaps in the morning or during the night (the hair of the dog that bit me), to quiet the shaking nerves and to reduce the anxiety experienced from increased activity in the brain. One is on a relentless merry-go-round: drink/rebound/drink some more/rebound again/drink more.

Alcohol

When any drug is taken into the body, the whole body is affected. Alcohol is metabolized in the liver at the rate of one-half ounce every hour. This is the same for all alcohol: Beer, wine, liquor.

The liver breaks down toxins (poisons) in the system and keeps them from entering the bloodstream. When too much alcohol (a toxin) is introduced, the liver cannot keep up and the poison (acetaldehyde) goes directly into the bloodstream, causing intoxication.

Once the toxin reaches the brain, it has a direct effect on the enzymes called neurotransmitters. These neurotransmitters carry messages between the brain cells, which tell the body how to behave. Normally these messages are transmitted smoothly, but the introduction of these toxins changes the pattern: Downers such as alcohol and sedatives, cause the messages to slow down, with the potential of death if these messages come to a halt; uppers, or stimulants, cause the messages to speed up, with another death potential threatening.

Blood Alcohol Level (BAL)

An indication of intoxication (toxins in the body) is the Blood Alcohol Level (BAL). One frequently reads that someone was arrested for drunk driving with a BAL of .14 or .22. This is the ratio of alcohol to a certain quantity of blood.

If the BAL registers .02, it is an indication that a person had one drink and is relaxed; .05 means two and a half drinks and the person is suffering from impaired judgment; .10 means five drinks, the person has little or no judgment, and is legally drunk; .20 means

ten drinks, erratic emotions, lack of coordination, and the individual has been legally drunk for six hours; .40 means that the person is in a stupor and has no judgment or coordination; .65 means the person may be in a coma and is near death.

Alcohol ranked Number One among drugs involved in emergency room visits. During 1994, there were 22,800 of such alcohol-related incidences; alcohol, in combination with other drugs, accounted for 35% of all suicides that year. In many cases, no one knows if these suicides were deliberate or accidental.

Sedatives

Sedatives are basically those drugs that have a calming, mellowing effect. They reduce anxiety, and induce sleep. Some of the more familiar ones are the barbiturates such as Seconal and Numbutal; the nonbarbiturate hypnotics, such as Doriden and Quaalude; and the minor tranquilizers such as Miltown, Librium, Valium, and sleeping pills, such as Dalmane. The people who manufacture drugs use nice sounding names to make it easier for you to take them.

The nonbarbiturate sedatives have been called the **benzodiazepines**. These are the downers, the tranquilizers, the sleeping pills. Valium is the most frequently prescribed drug in the United States: 70 million prescriptions are written yearly, 80% by nonpsychiatric physicians.

Mixed with alcohol, these benzodiazepines are lethal. Their effect upon the central nervous system is addictive and may be synergistic: That is, the presence of two or more drugs will result in a total effect much greater than the simple sum of the drugs. It means that drugs mixed arbitrarily can provide a multiplier effect. One plus one plus one does not equal three but perhaps six or ten or fifty.

Persons taking Valium or Dalmane while drinking run a greater risk of depressing their central nervous system to such a degree that death ensues. Many suicides have

inadvertently happened this way. The central nervous system does not know the difference between the depressing effects of booze and the depressing effects of other downers. Together they act to so depress not only anxiety and sleeplessness, but also the basic functions that are critical to life.

In a six-month period, from January to June of 1995, there were 4,357 suicides from tranquilizers; 2,070 of these were from Valium alone.

Opiates: Morphine and other Narcotics

One of the oldest drugs known to mankind, opium, springs from the unripe seed of the poppy. Homer, writing in 700 B.C., said that Helen of Troy "threw into the wine they were drinking a drug which takes away grief and passion and brings forgetfulness of all ills." (Odyssey IV, 220).

In the nineteenth century a tincture of opium was known as GOM, God's Own Medicine. The British fought two wars with China during this same time to insure that the opium trade would remain open, as the British had obtained control of opium in India and had vigorously promoted the use of opium and alcohol in both India and China.

From opium comes **morphine** and **codeine**, both highly effective in the relief of pain. Heroin is obtained from a chemical derivative of morphine. Today, synthetic opiate are produced that include methadone, Demerol, Percodan, Dilaudid, and Darvon.

The common characteristic of all narcotics is that they induce drowsiness and sleep (sedative) and that they kill pain (analgesic). Narcotics are highly addictive, and when accompanied with alcohol, prove to be deadly.

While the opiates share the sleep-inducing property of the sedative drugs, they also kill pain; sedatives do not kill pain. It is thought that the opiate do not actually remove the pain, but because of the euphoria they produce, they change the person's view of

the pain. The pain is still there, but the person is no longer aware and no longer cares if they hurt.

It is this extremely pleasant euphoric state that habituates one to the opiates. It is common knowledge that heroin is used to remove mental pain; we have etched on our collective conscience the image of a poor or disenfranchised person, lying in a tenement hallway, nodding in a twilight smile, immune to the squalor around them.

In the Eugene O'Neill play, **Long Day's Journey into Night**, Mary Tyrone, a morphine addict, defends the use of her drug to her son: "It kills the pain. You go back until at last you are beyond its reach. Only the past when you were happy is real."

Although the downers (alcohol, tranquilizers) and the painkillers (opiates) both create a euphoria, they are different classes of drugs. Theoretically, physical cross-tolerance, does not develop **between** them. Cross-tolerance definitely, however, does develop **among** the different opiates: If one is dependent upon morphine, one is likewise dependent upon heroin, Demerol, etc. Moreover, the National Institute on Drug Abuse categorizes the opiates heroin and morphine under the general category of "Narcotic Analgesics," which includes painkillers such as Darvon, Percodan, Codeine, Demerol, and Dilaudid.

However, because the effect of bringing one down, of the slowing down of the neurotransmitters, is similar in both cases, many people have **experienced** an actual tolerance/dependency effect between downers and opiates. Many addicted people get the same effect from Valium and Librium as they do from Codeine and Dilaudid. They make no distinction. And those looking for a way to justify the use of opiates will note that they are in a distinct class and may feel free to use them. Theoretically, this may be true; actually, it does not hold up.

The effects of combining an opiate with a sedative (alcohol) are extremely dangerous. Both slow down and depress breathing and the entire respiratory process.

Combining the two drugs may easily depress respiration, leading to a coma and ultimately to death.

Methadone maintenance programs (which attempt to withdraw chronic heroin users by substituting methadone, a less powerful opiate but one closely related to heroin), have revealed that patients who drink heavily while on methadone have ten times the death rate as those who abstain from alcohol while being withdrawn. In addition, while on programs, thousands have become methadone addicts. A drug is still a drug.

Both alcohol and other drugs, these opiate pain killers, heroin and morphine, lose toxicity with increased use. However, they can still be overdosed. In fact, most of the overdose cases are among new users with undeveloped tolerance. From January to June 2005, emergency cases of heroin/morphine episodes numbered 8,890; only 3.9% of these people died. On the other hand, 4,515 people overdosed on Valium; 68.4% died.

This is in no way to say that the narcotics user is safe. They usually die from malnutrition, accident, or extreme tissue damage. Up to 60% of narcotics addicts consume large amounts of alcohol, with 30% having a history of alcohol dependency. It must be stressed that narcotics dependency combined with alcohol dependency is lethal; narcotic-related death and insanity are no less common than alcohol-related damage and death.

UPPERS

Uppers are referred to as stimulates and include the amphetamines Benzadrine, Dexadrine, Elavil, and cocaine as well as many other drugs used mainly for diet and weight reduction. Stimulants increase the speed at which the nerve cells receive information. The heart rate dramatically increases and the body feels full of energy. When uppers are abused the most frequent cause of death is heart failure. Speed kills, a popular saying in the 1960's, means exactly that.

Metabolism of Uppers

When stimulants reach the brain, they cause the neurotransmitters to fire off messages too quickly. The person will have increased energy, a lack of appetite, and an exaggerated sense of well-being. They will talk nonstop and sound disconnected as their thoughts run away with them.

When these stimulants (cocaine, amphetamines, etc.) wear off, the person is left with a letdown feeling, with anxiety, and with a heart that beats uncomfortably fast. It takes time for the neurotransmitters to begin to carry the nerve messages correctly again; in the case of any prolonged chemical abuse, the receptors that receives the messages become damaged.

This is why, even after the body has been cleansed of the offending substances, the person may still have motor-skills impairment and memory loss. Although these conditions may correct themselves with time and abstinence, the condition can be so distressing that the person will return to the drug of choice, that drug or drink that they prefer, in order to feel what they perceive as normal. In other words, a person usually returns to the drug they are most comfortable with, regardless of the side-effects.

Amphetamines

Amphetamines are referred to as speed, those stimulants that rev up the human motor and pour energy into the system.

Many alcoholics and drug addicts first begin using amphetamines as diet pills. Weight problems plague the American people. 90% of Americans think they are overweight; 35% want to lose at least fifteen pounds; 33% of American women, ages nineteen to thirty-nine, diet at least once a month; thirty million American women (1 in 3) wear dresses size 16 or above. And 95% of weight loss during dieting is soon put back on. Diet pills are as American as Halloween candy.

Others take stimulants to stay awake while driving or taking exams or competing in sports.

One woman, presently a recovering alcoholic, describing her use of Black Beauties (amphetamines): "They were great, my real friends. I could drink more, I could screw around and still do what I had to do. I never slept and never ate. My parents thought I was anorexic." Still another recovering alcoholic described her two-year experience with amphetamines as "Zoom! Zoom! Zoom!"

Aside from the synergistic or multiplier effect of mixing amphetamines and alcohol, amphetamines frequently have more subtle effects on persons affected by those addicted to drugs. Because there is no cross-addiction (they are in two distinct classes of drugs), a person may play one off against the other and still be involved in rearranging one's mood and behavior.

One woman, now recovering, had first become addicted to dextroamphetamines given her by her boy-friend, a medical student. For over 25 years, she would alternate periods of intense speeding with periods of drinking. When her husband a physician, cut off her pills, she would step up her drinking until it got so bad that he would allow her to have her pills again. She presently feels that her drinking would have escalated faster and that she would have gotten into treatment sooner if she had not had the pills to pull her in another, equally disastrous direction.

Amphetamines for Children

A specific amphetamine-like substance, methylphenidate, commonly called Ritalin, also deserves attention. Medically, it is intended to work as a stimulant in adults and as a reducer of restlessness, hyperactivity and distractibility in children.

When drugs have one effect on adults and the opposite effect on children, this is

known as the Paradoxical Effect.

Ritalin is generally administered to children diagnosed with minimal brain damage (M.B.D.) or with attention-deficient disorder (A.D.D.) The latter is interpreted to mean a condition that is manifested by those children who day-dream or whose attention wanders off in the classroom. In a particular second grade class, 9 out of 22 children were on Ritalin. These children would march to the office every noon to get their smart pill.

To date, there has been no research proving that Ritalin is a precursor of drug abuse in children. However, clinicians are finding *high correlations* between teenage alcoholism/drug addiction and the use of Ritalin as a child.

Ritalin is chemically related to the amphetamines, speed. Regardless of its obverse reaction (calming) in children, the wisdom of administering it to children has been brought into question.

In *The Essential Guide to Prescription Drugs*, the location of Ritalin's action in areas within the outer layer (cortex) of the brain that are responsible for higher mental functions and behavioral reactions.

In describing how Ritalin works, the book states, "Not established. Present thinking is that this drug may increase the release of the nerve impulse transmitter, or epinephrine. The resulting stimulation of brain tissue improves alertness and concentration, and increases learning ability and attention span. (The primary action that calms the overactive child is not known)."

There are a myriad of reasons why a child may be inattentive and restless in school: Preoccupation with family problems, sight or hearing difficulties, food or environmental allergies, school-work that is either too difficult or too easy.

It is relatively easy to administer a pill to a child who is having problems (and subsequently, causing problems) in the classroom. While Ritalin may be quite effective with some children, its use as an antidote for a child's daydreaming and restlessness is profoundly questioned.

Ritalin is an amphetamine-like chemical that locates itself in the neurotransmission of the cortex of the brain. Knowledge and understanding of the chemistry of the brain is still in a relatively primitive stage; more is left to be discovered than we already know. Therefore, the first thing we must be wary of is that what we don't know may truly hurt us at a later date. (Thalidomide was quite effective in preventing miscarriage…).

Second, other valid physical or social problems may interfere with a child's behavior in the classroom. These will not go away with the use of Ritalin. The incentive to search out these problems is removed if the child begins improved classroom functioning with Ritalin. It actually masks real problems that do not get solved.

Third, a child learns that a pill can solve their problems. If pills can help you get better grades, they can also help you lose weight, calm down or pep up (whichever way you want to go), mellow out, get friendly, get sexy. Not paying attention in school is of a very different order than having a strep throat. At an early age, a child is introduced to the nonphysical illness pill by the medical profession. In other words, they learn it is all right to solve your problems with a little pill.

Last, the 15 million children who have an alcoholic parent are five times as likely to develop drug problems as those children who do not have such a parent. It is these very children who most likely are demonstrating the above-mentioned problems in the classroom. To administer an amphetamine-like substance, about which little is known, to a high-risk population is unconscionable, (It must also be noted that it does not matter to the child's genetic predisposition if their parent is actively drinking or recovering. They inherit the same genes).

Cocaine

Cocaine, gold dust, or the champagne of drugs is the recreational drug of choice of the day. Government figures estimate that there are six thousand new coke users daily, that as many as 9 million use cocaine regularly (at least once a month), and that as many as 2.8 million Americans may be addicted to cocaine. In 2001, 1,204 people died from cocaine; in 2008, cocaine was responsible for 33% of all suicides in New York City.

Just as one can't step into the bright sunlight without casting a shadow, one is unlikely to use only cocaine without another companion drug, such as heroin, amphetamines, Valium, and most frequently, alcohol. The reason for the use of the central nervous system depressants lies in the nature of how cocaine affects that system.

Cocaine is chemically so similar to the neurotransmitter norepinephrine (NE) that it actually mimics NE's action in carrying the nerve impulse between cells. NE is the neurotransmitter that works as a metronome for the emotions, balancing out behavior so highs and lows are avoided. In manic-depressive patients, NE levels are found to be high in the manic phase and low in the depressive phase.

Depending upon the way that cocaine is taken into the body (ingested, inhaled, injected), it travels rapidly to the brain, where it begins to work in the neurotransmission current. Because it is chemically similar to NE, it speeds up the firing between neurons, creating the exquisite "high" described by cocaine users.

However, the brain thinks that it has produced too much, so it cuts back on its own production of NE. Because cocaine is short lived (from twenty to forty minutes), it

withdraws quickly, leaving the supply of NE depleted. With the near absence of NE in the synapse, the emotions plummet, creating the coke crash or blues, similar to the deep downward mood swing of manic-depressed.

In order to avoid the crash, the coke user learns to bring themselves down with a chemical depressant so they can shoot (or snort or smoke) back up again. A major depressant used is alcohol. Others are Valium, heroin (speedballing), or even cough medicines such as Nyquil or Formula 44 which are high in alcohol.

In a 1991 study at John's Hopkins University School of Medicine, researchers have cloned the protein that pumps Dopamine, the neurotransmitter linked to pleasure and movement. Cocaine binds to this protein pump and clogs it, flooding the narrow space between the sending and receiving cells. This flooding causes the euphoric rush or high associated with cocaine.

A recovering alcoholic described his two-year romance with cocaine and alcohol: "The first time I snorted, I went up - a high that I never knew existed. I was off and running. It took 30 seconds to hit - then it was total elation. My nose cleared, my hands and feet got numb. Soon I had no body, no mind. They were one and I was one with the universe. I was up as high as I could go."

"Let's say that first high took me to the maximum, up to 100. Then when I came down, I went to -10. The next time, it was only up to 80, but down to -20. I kept looking for that Magic Place that I went to the first time, but I never got there again. But I kept going down deeper and deeper."

"I moved from a few drinks a day to a quart, then to a half gallon of vodka in just a few years. You can drink as much as you want with coke. Coke lets you drink ad infinitum. I was about to commit suicide, but I ran out of money and had to quit coke. But I still had my booze."

"I was a scout master, president of the J.C.s, head of the school board, Man of the Year in our community. I won the District Service Award, and was Father of the Year. They asked me to run for mayor eight times. I ended up selling coke to kids - my own and their friends."

Although there is still some academic debate on the addictiveness of cocaine, treatment centers are filled with people hooked on the drug. In addition, the potential for kicking off an addiction to alcohol is high, because alcohol is frequently used to avoid the coke crash.

A 30 year old man in treatment for cocaine addiction stated, "If anyone ever comes to your home and offers you coke punch him in the face. If you are in his house, run out the door. I lost $30,000, my business, my home, my wife and kids in six months, all because of cocaine. It is so good no one should ever try it."

The classical addiction model requires both a *tolerance* effect and *physical withdrawal* symptoms. Tolerance means that one needs more and more of a drug to get the same effect. With regard to cocaine, the tolerance effect may actually work in reverse.

This is known as the "kindling effect:" Each drug experience has an increased toxic reaction, even at lower dosage. Each time the person returns to the use of the drug, seeking that glorious first high, it becomes more and more painful. This may easily end in a major seizure with respiratory collapse and death.

Dr. Neal A. Lewin, instructor in clinical medicine at New York University School of Medicine, states that people are taking cocaine "in a compulsive manner in potentially dangerous doses. The end result is very much like what you see with people who are addicted to heroin or amphetamines - a total disruption of their social and professional lives. The chronic cocaine abuser ends up just as devastated."

The marriage of cocaine and alcohol is a ticking time bomb. Cocaine by itself augments the senses. Unlike the alcoholic who slurs their words, shakes, has blackouts, and gets sloppy, the person on coke looks and acts like a dynamo. The coke user visit's the Magic Place where body and soul are one.

Jules Trop, a recovering cocaine addict describes his Magic Place: "In the beginning, I thought I was communicating with God. In the end, I thought I was God."

Because cocaine creates a state of hyper alertness, one can drink ad infinitum; the usual signs of increased intoxication are not felt; the person who is lowering themselves slowly with alcohol is protected from its immediate consequences. However, because cocaine is short-lived, the stimulating effects of cocaine vanish and one is left with a high blood alcohol level.

This is particularly dangerous when one gets behind the wheel. Within fifteen minutes, the cocaine withdraws and another drunk driver is loosed upon the highway.

In a 1991 report, the Center for the Future of Children estimates that each year 4.5% or 160,000 babies are exposed to cocaine before birth. More than 600,000 babies are exposed to some type of illicit drug before birth.

In a 1993 interview, Dr. Ira Chasnoff, an associate professor of pediatrics at Northwestern University Medical School and Director of the National Association for Perinatal Addiction Research and Education, stated that 75% of these babies showed behavior problems and 25% experienced growth deficiencies, brain hemorrhages and respiratory difficulties.

There is little money for prenatal care and drug-treatment for addicted mothers. Dr. Chasnoff estimates that for every dollar spent on prenatal and drug-treatment, we save $10 to $15 in long-term care for drug exposed children.

Cocaine, the fun powder of the eighties, the snow that symbolizes verve, success, power, the drug of the stars and of those who approach stardom, frequently preambles a life of dependency on drugs, on alcohol and a life destroyed for their children.

Crack

Another form of cocaine is called crack, a mixture of cocaine and common baking soda and water. It gets its name from the sound it makes as it cooks.

It is smoked, much like free-basing, and creates an intoxification more intense than cocaine alone. It is quicker, more euphoric, immediately addictive.

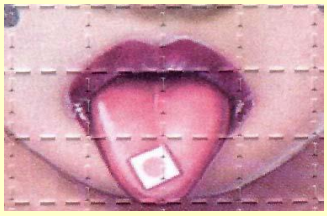
Forty hours after forward Len Bias, University of Maryland All-American, signed with the Boston Celtics, he was dead of cardio respiratory arrest. A bar of crack was found in his car.

The chief medical examiner for the State of Maryland said that in a case like Bias's, cocaine would interrupt brain signals to the heart, causing it to beat irregularly and inducing arrest. Upon autopsy, it was discovered that his heart had not been damaged by strenuous physical activity, as some had anticipated, but that there were signs of previous cocaine use.

The uses of crack and the exchange of sex for drugs have led to an epidemic of syphilis. Nearly half of those with syphilis report having used sex for drugs. The Philadelphia Department of Health reported a 550% rise of syphilis from 1985-1989.

Perhaps the most tragic effect of the crack epidemic that chokes our cities is the legacy of crack babies, little twisted, jerking souls that will never really have a chance. Crack kills and destroys lives and families forever.

PSYCHEDELICS



Psychedelics - LSD, marijuana, mescaline - do not appear to be addictive in themselves, but the attendant, frequent use of alcohol and other drugs is certainly cause for alarm. We must also take into account the deaths, such as suicide and automobile accidents, related to the use of psychedelics. Art Linkletter's daughter made headlines many years ago when, under the influence of LSD, she jumped to her death from a 12-story window.

Psychedelics have also been reported to be responsible for psychotic episodes in unstable individuals who, without mind-bending drugs, might have been able to suppress them. Long-term therapy may be necessary to treat the underlying disease which might never have shown itself otherwise.

Marijuana

Perhaps the most common entry level or getaway drug, in addition to alcohol, is marijuana. The substance marijuana (grass, pot, weed, joint, dope, etc,) is a mixture of the crushed leaves, flowers, and small branches of the hemp plant Cannabis Savtiva. It grows throughout the world and is first recorded as having been used in 2700 B.C.

The primary psychoactive agent of marijuana is tetrahydrocannabinol (THC). At relatively low doses, THC acts on the brain like a mild sedative (such as alcohol or valium); at higher doses, it resembles the hallucinogens, such as LSD. In addition, high doses do not produce the anesthesia, coma, and death inherent in sedatives.

There is rampant confusion in both the scientific and medical communities regarding THC. This is especially alarming considering the vast numbers of people, especially the young, who regularly smoke marijuana.

Pharmacologically, THC is classified as “a unique psychoactive drug.” This is because little is really known about it. The chemical structure of THC does not resemble any known or suspected neurotransmitter and it is not presently known which transmitters are affected by THC.

Because of its popularity in the 1960’s and 1970’s, myriad studies were conducted on the effects of marijuana. Many of these, in hot pursuit of ready government and foundation research monies, were done quickly, carelessly, and without proper controls. And because of increased national interest, unreliable results received much publicity.

We are left with a body of controlling information regarding the long-term use of marijuana.

What is known is that the tar content of a marijuana cigarette (joint) is seven to twenty times that of an ordinary cigarette. If one smokes 3 to 5 joints a day, it may be considered to be like smoking as much as 3 to 5 packs of cigarettes. This may be

compounded if the marijuana smokers also smokes regular cigarettes. Doctors are presently finding young people in their 20's and 30's with pulmonary emphysema, wherein 50-70% of their lung capacity is destroyed.

THC does not dissolve in water, and therefore is not eliminated by the kidneys as alcohol does. It lodges in the white blood cells and reduces their capacity to fight infection. At an adolescent psychiatric hospital in St. Louis, half of which accommodates psychiatric patients and half of which is for chemical dependents, it was found that the chemically dependent patients evidenced **10 times** the number of infections as the psychiatric patients. Lowered resistance to infection is a hallmark of smoking marijuana.

The most insidious effects of marijuana are in the brain. Because it is not water-soluble, it stays in the body longer than any other drug. It takes up to seven days to get rid of half a dose of the THC from one joint. The unexpelled THC of heavy, and long-term pot smokers gathers in what Dr. David Olds calls "large globs" in the brain, evidenced upon autopsy.

Pot smokers may experience a distorted sense of time (stoned); they may experience a distorted sense of speed and distance (hallucinated); they may suddenly experience the effects of marijuana even when they are not smoking (flashbacks); they may become sluggish, apathetic, lacking in ambition (amotivational syndrome).

Pot, the great differentiator of the 1960's, replaced in the eighties by cocaine, is still the entry level drug of millions of young Americans. It is still the favorite relaxer of the graying and balding Flower Children of the 1960's.

A reported 30 million Americans use marijuana; 9 million use it daily. As with cocaine, it rarely stands alone, but is accompanied by the glass of white wine, the cold beer. And while the addictive properties of marijuana are still debated, millions find themselves growing more and more dependent upon the glass of white wine, the cold

beer.

Millions began a life of addiction to alcohol with that first innocent drag on a joint, wherein they were introduced to the magic of a psychoactive, mood-altering chemical. THC, so innocent, so up-beat, so camp.

DUAL ADDICTION/POLY-ADDICTION

In a 1983 survey by A.A., the presence of addiction to another drug besides alcohol increased 25% in 1981 to 31% in 1983. Of those under the age of 31, the percentage climbs to 51%.

In a 1985 study from England, 76% of those entering treatment centers for alcoholism had been on other drugs in the prior two weeks. Women far exceed men in the use of other drugs: 32 out of 35 women and 49 out of 72 men.

In another 1985 study by the University of Oklahoma, only 3 out of 258 alcoholics at an in-patient treatment center used only alcohol; the other 253 were on stimulants, tranquilizers, depressants, or narcotics, or combinations of these drugs.

The terms dual-addiction (addiction to two drugs) and poly-addiction (addiction to many drugs) are commonly used to describe the situation of chemically dependent people. In fact, there are therapists and counselors who feel that it is rare today for one to be dependent strictly upon alcohol.

Alcohol appears to be the one constant in all these addictions. There are those who begin with pot and beer, those who mix their diet pills with wine, those who ease themselves down from a coke high with vodka. Some hop-scotch: Valium or painkillers and then, when the prescription runs out, switch to alcohol; when the alcohol gets out of control, back on the Valium.

Mixing

It has become increasingly popular to mix uppers, such as cocaine, with downers such as heroin (speedballing). The heroin and cocaine are taken together by injection to produce a smooth longer-lasting high. The heart rate speeds up and then slows down from the mixture, an action which was responsible for the deaths of John Belushi and David Kennedy. This is like speeding a car, braking fast, speeding, braking again.

Another way drugs are mixed comes from taking sleeping pills at night to rest and diet pills during the day to stay awake. When it is time to sleep again, more of the sedative may be necessary to calm down and accidental overdose can be the result. This is like being in an out of control elevator; up, down, up, down.

Tolerance/Cross-Tolerance

If one has developed a tolerance for alcohol and/or other drugs, it means that more and more of the drug is needed to create the same effect. Tolerance is usually seen together with dependence, which means that one must increase the dosage of the drug to feel normal, although the altered body chemistry is objectively abnormal. Once dependence has occurred, the individual has no choice but to continue usage or experience withdrawal.

Tolerance to any drug can be seen as an indication of addiction. People with normal responses do not generally take drugs in the amount or with the frequency that leads to chemical dependency, or drug abuse.

Cross-Tolerance

Cross tolerance occurs between drugs in the same classification. If one is tolerant to alcohol, they will have tolerance to all other sedatives, even if they have never ingested any other sedative besides alcohol.

In addition, this cross-tolerance must be seen in relation to where a person is in the progression of jellinek's disease: if they are in the middle stage with increased tolerance, they will have a higher tolerance to all drugs in the same category; when they lose their tolerance, they lose it all to drugs in that same category.

When the alcoholic takes a tranquillizer, they need a higher dosage than the non-alcoholic. This is seen when alcoholics (both active and recovering) need to be anesthetized for surgery; they need a greater amount to achieve the same effect.

A woman with jellinek's disease who had not had a drink in 13 years was undergoing minor surgery. The anesthesiologist could not get her under. As she was finally beginning to fall asleep, she heard him say to the surgeon, "This one must be a drinker." The tolerance that one develops after years of drinking is a permanent bio-chemical fixture, regardless if the person is actively drinking or not.

Cross-Addiction

Cross-addiction works much like cross-tolerance in that the jellinek's disease sufferer is addicted to all drugs in the same classification. This is why switching from alcohol to Valium or Librium does not relieve the alcoholism, it only compounds it. The body does not know if the sedative is a liquid or a solid; the chemistry of the brain simply slows down and eventually, with enough alcohol and/or tranquillizers, comes to a halt.

Tolerance and addiction do not occur between the different classes of drugs (uppers, downers, psychedelics). However, to go from alcohol to cocaine is still using a chemical

to affect a mood; the user will generally go back to the drug of choice or wind up combining the two.

A person recovering from drug and/or alcohol addiction is playing Russian roulette when they use other depressant drugs. Pain medications is to be done advisedly, and only under the supervision of a doctor knowledgeable about drug and alcohol addiction and of the patient's drug history. In instances of surgery or acute pain, the recovering person must inform the attending physicians (surgeons, anesthesiologists, internists, etc) that they are drug dependent, although recovering.

Treatment centers are presently seeing people who had been in treatment eight or ten years previously for alcoholism who, ignorant of the wide sweep of jellinek's disease, find themselves addicted to cocaine. A drug is a drug is a drug.

Progression of Tolerance Effect

When drinking and using drugs first begins, the person goes from feeling normal into euphoria and then back again to normal as the liquor wears off. If they have put too much liquor into their system, they may feel pain (hangover) and remorse for a while, but eventually winds up normal again.

As the disease progresses, they will drink again during the pain stage but will feel only a mild euphoria and is quickly taken through normal and back to pain. In the final stages, pain becomes constant and the drinking can only produce a lesser degree of pain that is by now perceived as normal. When William Faulkner was asked why he drank so much, he replied, "For the pain."

This increased tolerance demands that someone with jellinek's disease has to consume large amounts of liquor/or pills just to maintain a feeling they can live with. Unfortunately, for him, alcohol and pills do not lose their toxicity with increased tolerance so that he may drink himself to death before he can seek help. Many of the

32,675 people who died from drugs and alcohol, from January to July of 1985, would still be alive today if they had gotten help.

EUPHORIA

It is that desirous euphoric state that is the siren's call to a life of addiction. Euphoria - that feeling of well-being or buoyancy or calm that lifts the harassed mother out of her kitchen, that smooths out the jagged edges of the executive's day, that relieves the boredom of the truck driver, that creates a feeling of connectedness for the lonely senior citizen, that empowers the teenager to act out their fantasies.

It may be the incredible being one with the universe feeling that accompanies the hallucinations produced by psychedelics. It may be that of the alcoholic who picks himself up with a snort of cocaine and then drinks a glass of wine to mellow the journey to sleep. It may be that of someone who takes their marijuana with a cold beer, making life seem not so hard, but rather nice and even funny.

Millions begin a life of addiction with that first innocent drag on a joint, that lovely white wine to enhance a meal, the cold beer at the ball park, or the prescription pill to lessen pain or anxiety.

Because these are so much a part of the American way of life, it is difficult, if not impossible, to see the chemical snare into which millions of us are beckoned, held, and finally trapped. It is the destroyed careers, the fractured marriages and broken children, the loss of quality of life and billions of dollars that are the landmarks of that devastation that we once called peace.

Selected Glossary of Terms Used by Drug Addicts

Bang: The thrill in drug taking.

Burned out: A vein no longer useful for injection because of numerous puncture wounds.

Cold turkey: Complete and sudden withdrawal from drugs in jail.

Den: Place where several gather to use narcotics.

Drive: Addict's description of feeling good.

Goof ball: A pill or capsule of barbiturate used by addicts when they cannot get their supply of narcotics.

Hard stuff: Heroin, when compared to marijuana.

High: When an individual is under the effect of marijuana or other drugs.

Hooked: One who no longer can resist taking drugs.

Hophead: One who has become addicted to use of drugs.

Horse: Another name for Heroin.

Hot shot: An overdose of drugs, sometimes fatal.

Joy popper: One who takes drugs only occasionally.

Junk: Any illegal drug.

Junkie: A drug addict.

Kick: Feeling of satisfaction after taking drugs (also lift).

Kicking the habit: Constant twitching of arms, legs, and feet, some twenty-four hours after last dose of morphine, during withdrawal.

Main-liner: Any addict who uses intravenous injections.

Reefer: Marijuana cigarette.

Shakes: Uncontrolled physical tremors of addict when withdrawn from drugs.

Sniffer: Inhalation of cocaine from thumbnail or match cover.

Snow: Slang for cocaine.

Stick: A marijuana cigarette.

Stuff: Any drug used illegally.

Drugs

These additional notes were taken from College Psychology, second addition by Spencer A. Rathus 1984, and the study notes of Dr. Donald R. Vestal, Ph.D.

We have noted that drugs often play a role in the treatment of sleep disorders. But drugs are used "recreationally" or to "expand consciousness" as well as to treat problems.

The world is a supermarket of consciousness-altering chemical substances, or drugs. America is flooded with hundreds of drugs that distort perceptions and change mood--drugs that take you up, and let you down, and move you across town. Some people use drugs because their friends do, or because their parents tell them not to. Some are seeking pleasure. We go off on our internal trips, and many times drugs provide both the vehicle and the fuel.

Following the drop off in popularity during the 1960's, alcohol has asserted its dominance among drugs used on college campuses. The majority of college students have tried marijuana, and perhaps one in five smokes it regularly. Many Americans have **depressants** to get to sleep at night and **stimulants** to get going in the morning. Valium, a minor tranquilizer used to relieve anxiety and tension, is the most widely prescribed drug in the world. Heroin may literally be the opium of the lower classes, while cocaine is the toy of the well-to-do. Despite laws, moral pronouncements, medical warnings, and an occasional exaggerated horror story, drugs are very much with us. (**Depressant:** A drug that lowers the rate of activity of the nervous system. From the Latin *de*-, meaning "down," and *premere,* meaning: to press.") (**Stimulant**: A drug that increases activity of the nervous system).

We shall deal with some general issues in drug use and abuse, and then turn our attention to specific drugs.

Drug Use and Abuse: Definitions and Dilemmas.

Use and abuse. Where does drug *use* end and *abuse* begin? If we use the legal status of a drug as our criterion, the use of prohibited substances like heroin, LSD, and marijuana constitutes abuse. But if we focus on whether one's use of the drug interferes with ability to meet the demands of daily life, abuse is not so easy to define. For example, the American Psychiatric Association (1980) defines alcohol abuse, or **alcoholism**, as drinking that repeatedly interferes with physical, personal, or social well-being. If you are missing work because you are drunk, or "sleeping it off," your behavior fit's the definition. From this perspective, the amount of the drug being used is not the central factor. It is whether the person's pattern of use interferes with other areas of life. (**Alcoholism**: Drinking that persistently impairs personal, social, or physical well-being).

Dependence, Addiction, and the Abstinence Syndrome. Drug **dependence** is generally defined as habitual use of a drug. Dependence has been confused with **addiction**, but addiction has a more specific meaning. Addiction is *physiological* dependence on a drug. Addiction implies that protracted use of the drug leads to bodily changes with certain biological and psychological effects. The central effect is the occurrence of withdrawal symptoms, or an **abstinence syndrome**, when the level of usage is suddenly decreased. Addictive drugs have characteristic abstinence syndromes. The abstinence syndrome for alcohol includes anxiety, tremors, restlessness, weakness, rapid pulse, and high blood pressure. A frequent effect of addiction is tolerance. When the body becomes habituated to a drug, higher doses may be required to achieve similar effects.

(**Dependence**: Habitual use of a drug. Dependence may be physiological or Physchological).

(**Addiction**: Physiological dependence on a drug. Addiction reflects bodily changes that stem from prolonged use of certain drugs).

(**Abstinence syndrome**: A characteristic cluster of symptoms that results from sudden decrease in the level of usage of an addictive drug. From the Latin *abstinere,* meaning "to hold back").

People may become *psychologically* dependent on a drug even if it is nonaddictive. Psychological dependence is defined as repeated use of the substance as a way of dealing with stress. One may become psychologically dependent on a drug without increasing tolerance. Many regular marijuana users show a *reverse* tolerance for the marijuana "high." With regular usage, they require relatively *less* marijuana to achieve this high.

Physiological Effects and Expectations. Our response to a substance reflects (a) the physiological effects of that substance, and (b) our *expectations* about its effects. Consider the case of reverse tolerance for the marijuana high. It may be that some of the **psychoactive** substances in marijuana smoke take a long time to be metabolized by the body. The effects of new doses would then be added to those of the substances remaining in the body. But regular users also *expect* certain effects. These expectations may interact with even mild bodily cues present in slight intoxication, producing effects previously attained only through higher doses.
(**Psychoactive**: Giving rise to psychological effects).

Once people have become psychologically dependent on a substance, they also show concern or anxiety over going without it. Many signs of anxiety--shakiness, rapid pulse, sweating, and so on--overlap with abstinence syndromes that result from addiction. Thus, people may believe that they are addicted to a substance when they are only psy-chologically dependent. Still, there are some aspects of abstinence for certain drugs that are unmistakably physiological. One example is **delirium tremens** ("the D.T's), which are experienced by some chronic alcoholics when they suddenly decrease or suspend usage. D.T.'s are characterized by heavy sweating, restlessness, **disorientation**, and terrifying **hallucinations**--often of creepy, crawling animals.
(**Delirium tremens**: A condition characterized by sweating, restlessness, disorientation, and hallucinations. The "D.T.'s" occur in some chronic alcohol users when there is a sudden decrease in usage. From the Latin *de*-, meaning "from," and *lira*, meaning "line" or "furrow" - suggesting that one's behavior is away from the beaten track or norm).

(**Disorientation**: Gross confusion. Loss of sense of time, place, and the identity of people).
(**Hallucinations**: hal-loose-sin-NAY-shuns. Perceptions in the absence of sensation. From the Latin *hallucinari*, meaning “to wander mentally”).

Causal Factors in Drug Dependence.

Cummings provides a striking example of how dependent people can become on a substance--in this case, water. A group of hospitalized alcoholics “moved their cots into the bathroom while the staff looked on, baffled. After several days it was found that these alcoholics had substituted water for alcohol. If one drinks eight gallons or more of water per day, the **pH** level of the blood is altered and one becomes **intoxicated**. The consequences of this was that the patients had to move their cots to the bathroom to be near the spout and the toilet, because eight gallons of water per day results in constant drinking and urinating. Numerous psychological and physiological causes for dependence on certain substances have been advanced.
(**pH**: A chemical symbol expressing the acidity of a solution. Abbreviation for “hydrogen power”).
(**Intoxicated**: Drunk).

Psychoanalytic Views. Psychoanalytic explanations of substance abuse propose that drugs help people control or express unconscious needs and impulses. Alcoholism for example, may reflect the need to remain dependent on an overprotective mother, or the effort to reduce emotional conflicts, or to cope with unconscious homosexual impulses.

Behavior/Social Learning Views. Learning theorists suggest that first usage of tranquilizing agents like Valium and alcohol usually results from observing others or receiving a recommendation. But subsequent usage is reinforced by the drugs’ positive effects on the mood and their reduction of unpleasant sensations like anxiety, fear, and tension. Avoidance of withdrawal symptoms for addicted people is also reinforcing.

Carrying the substance around is reinforcing because one can then avoid worrying about having to go without it. Some people will simply not leave the house without taking Valium along. After all, *something* upsetting could occur *sometime* during the day.

Genetic Predispositions. There is growing evidence that people can have a genetic predisposition toward addiction to certain substances (Vaillant, 1982). For example, rats have been selectively bred to show preference for alcohol over other beverages (Sigovia-Riquelma and others 1971). Moreover, the biological children of alcoholics who are raised by adoptive parents are more likely to develop alcohol-related problems than are the natural children of the adoptive parents (Goodwin and others, 1973; Goodwin, 1979). Cummings (1979) argues that not everyone can become addicted to heroin. Of newborn children of addicted mothers, about 92 percent show an abstinence syndrome, but the other eight percent do not. Cummings states that this difference cannot be attributed to the quantity of heroin used by the mother.

Prenatal Factors. The prenatal environment may also play a role. Julien (1978) reports that small amounts of alcohol by mothers during certain stages of pregnancy can predispose the child to alcohol-related problems.

Let us now consider the effects of some specific substances, beginning with alcohol.

Alcohol

No drug has meant so much to so many as alcohol. It's our dinnertime relaxant, our bedtime **sedative**, our cocktail party social facilitator. We celebrate holy days, applaud our accomplishments, and express joyous wishes with alcohol. The young assert their maturity with alcohol. The elderly use it to stimulate circulation in peripheral areas of the body. Alcohol kills germs on surface wounds. Some pediatricians even swab the painful gums of teething babies with alcohol.

Sedative: A drug that soothes or quiets restlessness or agitation. From the Latin *se-*

dare, meaning “to settle.”

Alcohol is the tranquilizer you can buy without a prescription. It is the relief from anxiety you can swallow in public with criticism or stigmatization. A man who pops a Valium tablet may look weak. A man who chugalugs a bottle of beer may be perceived as “macho.”

No drug has been so abused as alcohol. Perhaps 12 million Americans are alcoholics. Compare this figure to the 200,000 or so who use heroin regularly, or the 300,000 to 600,000 who abuse sedatives. The greatest number of problem drinkers is found among men aged 30-34 and 45-49, and among women aged 21-24 and 45-49 (Cahalan, 1970). Excessive drinking has been linked to loss of employment and downward movement in social status. Yet half of all Americans use alcohol, and despite widespread marijuana use, it is the drug of choice among adolescents.

Effects of Alcohol. Adolescent and adult samples expect that alcohol will have a number of effects, including reducing tension, diverting one from worrying, enhancing pleasure, increasing social ability, and transforming experiences for the better. What does alcohol do?

Chemically, alcohol is a depressant. It shows the activity of the central nervous system. It relaxes and deadens minor aches and pains. It may release people from normal inhibitions by reducing fear of consequence and by providing an excuse for unacceptable behavior. (It wasn’t me, it was the alcohol.”) We shall pursue this important issue below. Alcohol also induces feelings of elation and **euphoria** that may help wash away self-doubts and self-criticism.

Euphoria: (You-FOR-ree-uh) Feelings of well-being, elation. From the Greek *euphoros,* meaning “healthy.”

Alcohol also intoxicates. Increased quantities impair cognitive functioning, jumble the speech, and reduce motor coordination. Many people compensate for the effects of

alcohol on cognitive tasks by focusing on them more carefully, especially if they are not highly intoxicated. Despite our efforts to compensate for deterioration in motor coordination, alcohol is clearly implicated in perhaps half our automobile accidents.

As a food, alcohol is fattening. Yet chronic drinkers may be malnourished. Though high in calories, alcohol does not contain nutrients like vitamins and proteins. A diet low in protein can lead to **cirrhosis of the liver**, which affects many alcoholics. In this disease, connective fibers replace active liver cells, impending circulation of the blood. Drinking can also rupture small blood vessels, especially in the nose, leading to swelling and redness. Chronic drinking has been linked to heart disease, high blood pressure, and brain damage. Even moderate drinking by a pregnant woman can harm the fetus.

Cirrhosis of the liver: A disease caused by protein deficiency in which connective fibers replace active liver cells, impending circulation of the blood. Alcohol does not contain protein, therefore, persons who drink excessively may be prone to this disease. From the Greek *kirrhos,* meaning "tawny," referring to the yellow-orange color of the diseased liver.

Drinking as a Strategy. We tend to think of excessive drinkers, or people who act antisocially when they drink, as "victims" of alcohol. Yet recent theory and evidence suggests that many so-called victims may purposefully use drinking as an excuse for failure and antisocial behavior.

In one experiment, volunteers were given the chance to drink alcohol (supposedly in a taste test) after having to write an essay that ran counter to their actual attitudes. Subjects who drank more heavily were likely to maintain their pre-experimental attitudes. Subjects who drank less showed more attitudinal change after writing the essays. The researchers theorize that some of us may drink as a way of allowing us to live with actions that run counter to our attitudes.

In another experiment volunteers were given cognitive tasks. Some had access to

study materials and, consequently, had a high expectation of success. Others did not have study materials available. Subjects who could use study aids drank less than subjects who could not. The researchers suggest that subjects who were more likely to fail used alcohol as a *self-handicapping strategy*. That is, if they did fail, they could attribute their failure to the alcohol.

Hull (1981) notes that alcohol also lowers self-awareness. When we drink, we become less sensitive to personal and social standards and expectations, and less aware of our deviation from them. Thus, we are less likely to experience self-criticism, feelings of guilt, and shame for behavior we would not accept when sober. It is a short step to adopting drinking as a way of life when we seek excuses for doing things that would otherwise be unacceptable.

It should be noted that regardless of how or why one starts drinking, regular drinking can lead to physiological dependence. Once one has become addicted to alcohol, one will be motivated to drink in order to avoid withdrawal symptoms. Still, even when alcoholics have been "dried out" - withdrawn from alcohol - many return to drinking. Perhaps they are still seeking to use alcohol as an excuse for failing to live up to their expectations.

Let us now examine some experiments that suggest how we use drinking as a strategy in the area of sexual behavior.

Alcohol and Sex. Note this exchange between Macduff and a porter, two characters in Shakespeare's *Macbeth*:

Porter: Drink, sir, is a great provoker of three things.

Macduff: What three things does drink especially provoke?

Porter: **Marry**, sir **nose-painting**, sleep, and urine. **Lechery**, sir, it provokes and unprovokes; it provokes the desire, but takes away the performance.

Marry. In this quote, an alternate spelling for the name Mary--used to avoid

disrespect to the Virgin Mary In Shakespearean times, *Marry* was the equivalent of My goodness.

Nose-painting: Redness of the nose caused by rupture of small blood vessels.

Lechery: Unrestrained indulgence of sexual desires. May derive from the Greek *leichein*, meaning “to lick.”

Does alcohol stir up sexual appetite? Does it inhibit sexual response (“take away the performance”)? In a study of 20,000 readers of *Psychology Today*, three of five respondents wrote that alcohol increased their sexual pleasure. Women reported these enhancing effects more often than men. Many people believe that alcohol either increases or does not affect their sexual response, as did a group of male alcoholics studied by Wilson and his colleagues (1978).

Recent studies of response to sexually explicit films suggest that men who *believe* they have drunk alcohol (when they have not) show increases in sexual arousal, as measured by size of erection and subjective feelings of arousal. But men who have actually drunk alcohol, without knowing it, show decreased sexual response (Briddell & Wilson, 1976). Such studies were made possible by inability to taste vodka when mixed with tonic water. In this way, subjects can be led to believe they have drunk alcohol when they have not, and vise versa. Similar research shows that alcohol also decreases women’s response to sexually explicit films (Wilson & Lawson, 1978). Thus, our beliefs about the effects of alcohol may diverge markedly from its actual effects. The “sexy” feeling we may experience after a few drinks may stem from sensations we expect rather than arousal that is stimulated by alcohol.

Many of us may drink, or encourage dates to drink, to lower inhibitions. However, there is no evidence that alcohol directly reduces feelings of guilt. In experiments similar to those described above, men who *believed* they had drunk *alcohol*, when they had not, spent significantly more time looking at sexually explicit pictures than men who *believed* they had not drunk alcohol. Researchers conclude that drinking may have served as an excuse for prolonged looking at these pictures. Alcohol may provide us

with an excuse for an assortment of behavior we consider deviant.

Dim lights, candles, soft music, a little wine work wonders--sometimes. Why may wine stoke the fires of love? Is it because alcohol stimulates sexual arousal, or because a person who accepts an invitation for a drink may see himself or herself as participating in a seduction?

Treatment of Alcoholism. Treatment of alcoholism has been a frustrating endeavor. *Detoxification*, or helping an addicted alcoholic safely through the abstinence syndrome, is a generally straightforward medical procedure, requiring about one week. But assisting the alcoholic to then learn to cope with life's stresses through measures other than drinking is the heart of the problem. Several treatments have been tried, most with little documented success.

Medication. The drug *disulfuram* (brand name Antabuse) has been used most widely with alcoholics. Mixing Antabuse with alcohol can cause feelings of illness.

Alcoholics Anonymous. Many people consider Alcoholics Anonymous (AA), a nonprofessional organization, to be most effective with alcoholics. At AA, alcoholics undergo a conversion in identity to that of a "recovered alcoholic." This conversion requires confession of one's drinking sins to a group of alcoholics, and the making of a public commitment not to touch another drop. The new identity becomes confirmed with the passing of each sober day, and recovered alcoholics often help other alcoholics undergo a similar conversion.

Behavior Therapy. Behavior therapy is proving to be helpful to many alcoholics. Such methods include aversion therapy, relaxation training, covert sensitization, instruction in social skills, and self monitoring. A number of behavior therapists recommend a treatment strategy referred to as *controlled social drinking* instead of total abstinence. Critics argue that if an alcoholic, or a recovered alcoholic, has just one drink, he or she will go on an uncontrolled drinking binge.

Marijuana

The *Cannabais sativa* plant grows wild in, many parts of the world. This would arouse little interest but for the fact that **marijuana** is produced from it. Marijuana stirs interest because it helps some people relax and can elevate the mood. It also sometimes produces mild hallucinations, which is why marijuana is classified as a **psychedelic** or **hallucinogenic** drug.

Marijuana: The dried vegetable matter of the *Cannabis sativa* plant. (A Mexican-Spanish word).

Psychedelic: Causing hallucinations, delusions, or heightening perceptions.

Hallucinogenic: Giving rise to hallucinations.

The major psychedelic substance in marijuana is **delta-9-tetrahydrocannabinol**, which, perhaps to save energy, is usually referred to as THC. Other substances with possible psychedelic effects that are found in marijuana include *cannabichromene* and *cannabidol*. THC is found in the branches and leaves of male and female plants, but is concentrated in the **resin** of the female plant. **Hashish**, or "hash," is derived from this sticky resin. It is more potent than marijuana, although the effects are similar.

Delta-9-tetahydrocannbinol: The major active ingredient in marijuana. Abbreviated THC, its name describes its chemical composition.

Resin: The saplike substance of plants.

Hashish: A drug derived from the resin of Cannabis sativa. Often called "hash."

In the last century marijuana was used almost as aspirin is used today for headaches and minor aches and pains. Today many states are making marijuana legal. Marijuana is known to decrease nausea and vomiting among cancer patients receiving chemotherapy. It appears to help **glaucoma** sufferers by reducing fluid pressure in the eye. It may offer some relief from **asthma**. But there are side effects.

Glaucoma: An eye disease characterized by increased fluid pressure within the eye. A cause of blindness. (From the Greek *glaukos*, meaning "gleaming," referring to the appearance of the diseased eye).

Asthma: A condition marked by recurrent attacks of labored breathing accompanied by wheezing. A Greek word meaning “panting.”

Effects of marijuana. A survey of 150 Marijuana smokers found reports of different sensations at differing levels of intoxication. The early stages of intoxication are frequently characterized by restlessness, which gives way to calmness later on. Fair to strong intoxication is linked to reports of heightened perceptions, and increases in self-insight, creative thinking, and **empathy** for the feelings of others. Strong intoxication was linked to perceiving time as passing more slowly, and increased awareness of bodily sensations, such as heart beat. Smokers also reported that strong intoxication heightened sexual sensations. Visual hallucinations were not uncommon. Strong intoxication may cause smokers to experience disorientation. If the mood is euphoric, loss of identity may be interpreted as harmony with the universe.

Empathy: Ability to understand and share another person’s feelings. From the Greek *en*-, meaning “in,” and *pathos*, meaning “feeling.”

But some smokers encounter negative experiences with strong intoxication. Marijuana increases the heart rate. This increase combined with heightened awareness of bodily sensations leads some smokers to fear that their hearts will “run away” with them. Some smokers find disorientation threatening, and fear failure to regain their identities. High levels of intoxication occasionally induce nausea and vomiting.

Some people report that marijuana helps them to socialize at parties. But the friendliness characteristic of early stages of intoxication may give way to self-absorption and social withdrawal as the smoker becomes higher.

Marijuana, a mild psychedelic, can relax one, provide feelings of euphoria, and enhance sensory pleasure. Perhaps two in five college students smokes marijuana on a regular basis.

Subjective Effects of Marijuana Use

In a recent study of college students in San Francisco, 53 students volunteered to take a survey of how marijuana affected them over a 13 day period. Three groups of subjective effects were identified, as noted in the table below:

Group 1. Sedative Effects (Most prominent during first few days)

Thinking seemed fuzzier	Arms or legs felt weaker
Thoughts moved slower	Stomach felt heavier
Harder to concentrate	Mouth and throat felt drier
Felt it was harder to talk	Lips felt numb
Movements seemed slower	Eyesight worse than usual
Body felt more unsteady	Eyelids felt as if they were closing

Group 2. Good Feelings (Increased regularly during study.)

Felt more at peace	Felt it was easier to talk
Had greater love for others	Liked to talk more
Liked having people around more	Noticed things more
Felt more relaxed	Saw comical side of things more
Felt extreme well-being	Felt happier and sillier
Thinking seemed clearer	Liked answering these questions

Group 3. Tension and Anxiety (Greatest at beginning and after discontinuation of marijuana at end of study).

Body felt worse than usual	Perspired more
Felt more tense than usual	Stomach felt more jittery

Noticed bodily feelings more than usual	Was less hungry than usual
Body felt more energetic	Had more on mind than usual
Body felt hotter	Noticed feelings more than usual
	Felt more irritable than usual

Sedative effects were most notable during the first few days of smoking. They decreased rapidly throughout the remainder of the study, suggesting that regular smokers come to tolerate marijuana's sedative effects. "Good feelings" increased slightly but regularly throughout the study suggesting a reverse tolerance for these effects (which may reflect buildup of substance-related chemicals in the body). "Tension-anxiety" sensations were greatest during the early days of the study and for several days after marijuana was discontinued. The authors suggest that the last group of sensations may constitute an abstinence syndrome for heavy smokers who suddenly decrease usage.

This interpretation implies that marijuana can be addictive and is controversial. Most other researchers believe that marijuana is not addictive, although, of course, people may become psychologically dependent on the substance.

Cigarettes

All cigarette packs sold in the United States carry this message: "Warning: The Surgeon General Has Determined That Cigarette Smoking Is Dangerous to Your Health." Cigarette advertising has been banned on the radio and television. In 1982, Surgeon General C. Everett Koop declared that "Cigarette smoking is clearly identified

as the chief preventable cause of death in our society and the most important public health issue of our time."

Cigarette smoking may cause cancer of the lungs, larynx, oral cavity, and esophagus, and may contribute to cancer of the bladder, pancreas, chronic lung and respiratory diseases, and other illnesses. Pregnant women who smoke risk miscarriage, premature birth, and birth defects.

Second-hand smoke is also a problem. People trapped in close quarters with smokers show increased levels of carbon monoxide in the blood. These quantities are sufficient to trigger asthma attacks and to distress people suffering from heart disease. Because of the effect on nearby nonsmokers, smoking has been banished from many public places, like elevators. Many restaurants now reserve sections for nonsmokers, and many restaurants have banned smoking altogether

Let us examine the components of tobacco smoke. Then we shall consider why people smoke and how they may be able to cut down or quit their habits.

Components of Tobacco Smoke: Tobacco smoke contains *carbon monoxide*, *hydocarbons* (or "tars") and *nicotine*.

Oxygen is carried throughout the body by a substance in the blood called **hemoglobin**. But when carbon monoxide combines with hemoglobin, it impairs the blood's ability to supply the body with oxygen. One result: shortness of breath. Some **hydrocarbons** have been shown to cause cancer in laboratory animals.

Hemoglobin: The substance in the blood that carries oxygen.

Hydrocarbons: Chemical compounds consisting of hydrogen and carbon.

Nicotine is a stimulant that can cause cold, clammy skin, faintness and dizziness, nausea and vomiting and diarrhea-all of which account for the occasional discomforts of the novice smoker. But nicotine also stimulates discharge of the hormone **epinephrine**.

Epinephrine (also called adrenalin) creates a burst of autonomic activity, including rapid heart rate and release of sugar into the blood. It also provides a sort of mental "kick." Nicotine is responsible for the stimulating properties of cigarette smoke, but its effects are short-lived. In the long run it can contribute to fatigue.

Nicotine: A stimulant found in tobacco smoke. (From the French name for the tobacco plant, *nicotine*).

Epinephrine: Another name for adrenalin, the hormone secreted by the adrenal medulla. (From the Greek *epi*, meaning "on," and *nephros*, meaning "kidney."

***Why People Smoke*.** If smoking is so dangerous, why do people smoke? Are smokers singularly unaware of smoking's perils? Let us examine a number of reasons for why people smoke:

1. *Rationalization*. It has been known for many years by smokers and nonsmokers alike that there are links between smoking and cancer. But as found by Pervin and Yatko (1965), smokers tend to rationalize their smoking. They are more likely than nonsmokers to report that a cure for cancer will be found in the near future. They may feel that their own level of smoking is within a safe range.

2. *Rites of passage*. For the young, smoking may still be seen in some groups, as a way of asserting maturity and independence. Some men believe that smoking is a way of asserting to be rugged, daring, and adventurous. Many young women smokers felt that smoking fit the self-image of the bright, sophisticated, career-oriented woman. For some adolescents, smoking has been a symbol of having come of age, of being daring, rugged, and adventurous.

3. *Observational learning and conformity*. We tend to be influenced by the behavior of others, especially movie stars. Many young men start smoking when they join the military service. This gives them the image of fitting-in with the boys.

4. *Addiction*. There is considerable controversy as to whether regular smokers

simply develop strong psychological dependence on cigarettes, or become addicted to them. It has been found that nicotine is excreted more rapidly when the urine is highly acid. Stress increases the amount of acid in the urine. For this reason, smokers may need to smoke more when under stress to maintain the same blood nicotine level. They may believe that smoking is helping them cope with stress.

5. *Pleasure*. Some people find pleasure in the handling of cigarettes, their taste, or in the surge of stimulation provided by nicotine. Regardless of why men or women smoke, there are a number of ways of cutting down and quitting altogether.

Quitting Smoking. When it comes to stopping smoking, common sense is also good psychology. Given the determination to quit, you or your friends may find it helpful to try some of the following suggestions:

* Tell your family and friends that you're quitting--make a public commitment.
* Think of specific things to tell yourself when you feel the urge to smoke: how you'll be stronger, free from fear of cancer, etc.
* Tell yourself that the first few days are the hardest--after that, withdrawal symptoms weaken dramatically.
* Remind yourself that you are superior to nonquitters.
* Start when you wake up, at which time you've already gone eight hours without nicotine.
* Stay away from places where people are likely to be smoking.
* Throw out all ashtrays and do not allow other people to smoke in your house.
* Don't carry matches or a cigarette lighter in your pocket.
* When you feel an urge to smoke put a stick of gum in your mouth, or chew on a toothpick.
* Ask God to help you, read the Bible and pray.

It's true that there is a high relapse rate for quitters. Be on guard. We are most likely to relapse--that is, return to smoking--when we feel highly anxious, angry, or depressed.

But when you are tempted, you can decrease the chances of relapsing by using almost any strategy, like reminding yourself of reasons for quitting, having a mint or going for a walk.

Will power is very important. Take a cigarette and put it in your hand, look at it and say, "Is this little thing contolling my life?" "Is this the little thing that is destroying my health." "Is my will being controlled by this little thing, or am I stronger than it." Throw the cigarette on the ground if necessary, throw down the whole pack of cigarettes, stomp on it and say, "I refuse to smoke anymore." "In the name of Jesus Christ I am now free from the bondage of cigarettes." Walk away and claim your victory in Jesus name!

Amphetamines

Amphetamines are a group of stimulants that were first used by soldiers during World War II to help them remain alert through the night. Truck drivers have used them to drive through the night. But amphetamines have become more widely known through students who have used them for an all-night cram session, and through dieters. One of their effects is reduction of hunger.

Amphetamines: Stimulants derived from *al-pha-methyl-beta-phenyl-ethyl-amine*, a colorless liquid consisting of carbon, hydrogen, and nitrogen.

Amphetamines and a relaxed stimulant, Ritalin, have been found effective in calming **hyperactive** children and increasing their attention span. A combination of stimulants and behavior therapy may be most effective with them. This paradoxical effect of stimulants may be explained by assuming that children may behave hyperactively because of inmaturity of the cerebral cortex. The amphetamines then stimulate the cortex to exercise control over more primitive centers in the lower brain.

Hyperactive: More active than normal.

Called, speed, uppers, bennies (for Bendzedrine), and dexies (for Dexedrine), these drugs are often used for the euphoric "rush" they can produce, especially in high doses.

Some people swallow amphetamines in pill form or inject liquid Methedrine, the strongest form, into their veins. They may stay awake and "high" for days on end. Such highs must come to an end. People who have been on prolonged highs sometimes "crash," or fall into a deep sleep or depression. Some people commit suicide when crashing.

People can become psychologically dependent on amphetamines, especially when they are using them to cope with depression. Tolerance develops rapidly, but opinion is mixed as to whether they are addictive. High doses may cause restlessness, hallucinations, paranoid delusions, insomnia, loss of appetite, and irritability.

Opiates and Opioids

Opiates are a group of **narcotics** derived from the opium poppy. The ancient Sumerians gave the poppy its name. It means "plant of joy." The opiates include morphine, heroin, codeine, demerol, and similar drugs whose major medical application is **analgesia**. In this section we will discuss morphine, heroin, and the **opioid** methadone. Opioids are similar to opiates in chemical structure and effect, but are artificial (synthesized in the laboratory).

Opiates: A group of addictive drugs derived from the opium poppy that provide a euphoric "rush" and depress the nervous system.

Narcotics: Drugs used to relieve pain and to induce sleep. The term is usually reserved for opiates. (From the Greek *narke*, meaning numbness" or "stupor."

Analgesia: A state of not feeling pain, although fully conscious.

Opioid: A synthetic artificial drug similar in chemical composition to opiates.

Morphine: Morphine was introduced at about the time of the Civil War in the United States and the Franco-Prussian War in Europe. It was used to deaden pain from wounds, and used quite liberally. Addiction to morphine became known as the "soldier's disease." There was little stigma attached to this disease until morphine

became a restricted substance.

Morphine and heroin can have distressing abstinence syndromes, beginning with flu-like symptoms and progressing through tremors, cramps, chills alternating with sweating, rapid pulse, high blood pressure, insomnia, vomiting, and diarrhea. However, the syndrome can be quite variable from person to person. Many American soldiers who used heroin in Vietnam are reported to have stopped with little trouble when they returned home.

Heroin: Heroin was given its name because when it was derived it was hailed as "the hero" that would cure addiction to morphine. But heroin, like the other opiates, is a powerful depressant that can provide a euphoric rush and is highly addictive. Users of heroin find it so pleasurable that they claim it eradicates any thought of food or sex. Heroin was soon used to treat so many "problems" that it became known as G.O.M. (God's own medicine).

Heroin is illegal. Because the penalties for possession or sale are high, it is also very expensive. For this reason, many addicts support their "habits" through dealing (selling heroin), prostitution, or selling stolen goods. But heroin does not directly stimulate criminal or aggressive behavior. On the other hand, people who use heroin regularly may be more likely than nonusers to engage in *other* criminal behavior as well. Considering the legal penalties for heroin use, most users are willing to take high risks.

Although regular users develop tolerance for heroin, high doses can cause drowsinesss, stupor, altered time perception, and impaired judgment. A number of addicts die from so-called overdoses.

It has been suggested that alcohol or **quinine** may contribute to these deaths. As noted earlier, alcohol and heroin are both depressants, and they have addictive effects. Since 1939, when many New York City addicts contracted malaria from an epidemic of contaminated needles, heroin had been "cut" (diluted) with quinine, a medicine used to

treat malaria. But quinine can kill by flooding the lungs with fluid, a finding disclosed by autopsies of some “overdose victims.”

Quinine: A medicinal used to treat malaria.

Methadone: Methadone has been used to treat heroin addiction in the same way heroin was used to treat morphine addiction. This synthetic narcotic is slower acting than heroin and does not provide the thrilling rush. Most addicts so treated simply swap addictions. Because they are unwilling to undergo withdrawal symptoms, or to contemplate a life style devoid of drugs, they must be maintained indefinitely on methadone.

If methadone is injected, rather than taken orally, it can provide many addicts with sensations similar to those of heroin. Another drug *naloxone*, prevents users from becoming high if they later take heroin. Some addicts are placed on naloxone after being withdrawn from heroin. However, former addicts can choose not to take naloxone, and, again, drugs like naloxone do not provide former addicts with the desire to undertake a heroin-free life style.

Methadone: An artificial narcotic that is slower acting than, and does not provide the “rush” of, heroin. Methadone use allows heroine addicts to abstain from heroin without experiencing an abstinence syndrome.

Cocaine

No doubt you have seen commercials claiming that Coke adds life. Given its caffeine and sugar content, “Coke” --Coca Cola, that is--should provide quite a lift. But Coca-Cola hasn’t been “the real thing” since 1906. At that time the manufacturers discontinued use of the coca leaves from which the soft drink derived its name. Coca leaves contain cocaine, a stimulate that produces a state of euphoria, or high, reduces hunger, deadens pain, and bolsters self-confidience.

Cocaine is brewed from coca leaves as “tea,” breathed in (”snorted’) in powder form, and injected) “shot up”) in liquid form.

Users of cocaine are often devoted and well-to-do: Its price per ounce is about 70 times that of the finest beluga caviar and five times that of gold. Despite the expense, perhaps 20-30 percent of young adults have tried cocaine at least once.

Cocaine--also called *snow* and *coke*, like the slang term for the soft drink--has been used as a local anesthetic since the early 1800’s. It came to the attention of one Viennese neurologist in 1884, a young chap named Sigmund Freud, who used it to fight depression and published an early supportive article, “Song of Praise.”

Dependence: Cocaine is not addictive, but users can become highly psychologically dependent. Overdoses can lead to restlessness and insomnia, tremors, severe headaches, nausea, convulsions, psychotic reactions (hallucinations and delusions), and--though rarely--respiratory and cardiovascular collapse. Repeated “snorting” constricts blood vessels in the nose, drying the skin, and at times, exposing cartilage and perforating the nasal septum. These problems require cosmetic surgery.

Having noted these potential problems, it must be admitted that moderate cocaine use has not been shown to be a major medical concern. Although cocaine has been unavailable to the general public since the Harrison Narcotic Act of 1914, it is still commonly the anesthetic of choice for surgery on the nose and throat. Cocaine, by the way, is a stimulant, *not* a narcotic. Its classification as a narcotic was only a legality--bringing the drug under the prohibitions of the narcotics act.

Barbiturates and Methaqualone

If its name ends in -*tal*, it may well be a **barbiturate**, like ambarbital, phenobarbital,

pentobarbital, and secobarbital. Barbiturates are depressants with a number of medical uses, including relief of anxiety and tension, deadening of pain, and treatment of epilepsy, high blood pressure, and insomnia. Barbiturates are highly addictive, and lead rapidly to psychological dependence.

Barbiturate: An addictive depressant used to relieve anxiety or induce sleep.

Methaqualone, sold under the brand names Quaalude and Sopor, is a depressant similar in effect to barbiturates. Methaqualone is also addictive and quite dangerous.

Psychologists are generally opposed to using barbiturates and methalqualone for anxiety, tension, and insomnia. They lead rapidly to dependence and do nothing to teach the individual how to alter distributing patterns of behavior. Many physicians, too, have become concerned by barbiturates. They now prefer to prescribe minor tranquilizers like Vallium and Librium for anxiety and tension, and yet other drugs for insomnia.

Barbiturates and methaqualone are popular as street dugs because they relax the muscles and produce a mild euphoric state. High doses of barbiturates result in drowsiness, motor impairment, slurred speech, irritability, and poor judgment. An addicted person who is withdrawn abruptly may experience severe convulsions and die. High doses of methaqualone may cause internal bleeding, coma, and death. Because of addictive effects, it is dangerous to mix alcohol and other depressants at bedtime, or at any time.

LSD

LSD is the **acronym** for lysergic diethylamide acid, a synthetic hallucinogenic drug. Users sometimes just call it “acid.” Supporters claim that LSD “expands consciousness” and opens new worlds. Sometimes people believe they achieved great insights while using LSD, but when it wears off they often cannot apply or recall these discoveries exactly.

As a powerful hallucinogenic, LSD produces vivid and colorful hallucinations. LSD "trips" can be somewhat unpredictable. Some regular users have only "good trips." Others have one bad trip and swear off. Regular users who have had bad trips argue that people with bad trips were psychologically unstable prior to using LSD.

Acronym: A word formed from the first letters of other words.

Flashbacks: Some LSD users have **flashbacks**--distorted perceptions or hallucinations that occur days, weeks, or longer after usage but mimic the LSD "trip." It has been speculated that flashbacks stem from chemical changes in the brain produced by LSD. Users who do not have flashbacks prefer to be more in charge of their thought processes and have greater concern for meeting the demands of daily life.

Flashbacks: Distorted perceptions or hallucinations that occur days or weeks after LSD usage but mimic the LSD experience.

Other Hallucinogenicds: Other hallucinogenic drugs include **mescaline** (derived from the peyote cactus) and **phencyclmidine** (PCVP). Regular use of hallucinogenics may lead to tolerance and psychological dependence. But hallucinogenic are not known to be addictive. High doses may induce frightening hallucinations, impaired co-ordination, poor judgment, mood changes, and paranoid delusions.

Mescaline: A hallucinogenic drug derived from the mescal (peyote) cactus. In religious ceremonies Mexican Indians chew the button like structures at the tops of the rounded stems of the plant.

Phencyclmidine: Another hallucinogenic drug whose name is an acronym for its chemical structure. Abbreviated PCP.

Summary

Drugs consist of marijuana, the opiates, cocaine, barbiturates, amphetamines, and the hallucinogeans. Societal reaction to drugs has varied in place and in time. At one

time drug users were tolerated, even in the U.S., where later the use of drugs was made illegal. The nature of drug addiction has changed in the U.S., and there is increasing use by younger persons. Drug use appears to be much more prevalent in large urban centers. There are variations in drug use by age, sex, education, and occupation.

A person must be aware of the drug, know how to administer it, and recognize its effects. Drug addiction has a culture associated with it. This includes a system of sale and distribution of the drugs and the indoctrination of persons into the use of drugs by others who are already addicted. Drug addicts have an elaborate argot. Addicts often commit offenses in order to secure drugs or the money with which to purchase them.

There are two different approaches to the control of drug addiction. Some believe in rigid suppression, whereas others feel that this procedure has increased the deviant behavior by causing the development of an organization for illicit supply. They feel that drugs should be supplied to addicts through governmental and medical agencies.

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