

# NARCOTIC EDUCATIONAL FOUNDATION OF AMERICA

Drug Abuse Education Provider of the:  
**California Narcotic Officers' Association**

## WHAT ABOUT MARIJUANA ?

### QUICK FACTS:

Marijuana, a plant from the cannabis family, is illegal and highly psychoactive. Marijuana and its associated compounds can seriously affect the human body. The acute cannabis drug influence, accelerates (speeds up) certain body functions. This class of drugs causes an "artificial" state of stimulation. Some of the signs of these body functions are increased heart and respiratory rate, elevated blood pressure, and the dilation of the pupils of the eyes. High doses have also caused very rapid and / or irregular heart beats, tremors, loss of coordination, and in some cases a stroke.

Cannabis addictive qualities are exerted on that region of the brain and central nervous system that is responsible for pain relief, endurance, muscle relaxation, and tranquilizer effects. The brain's neurochemicals associated with cannabis have a direct effect upon impairment, as expressed with judgment and decision making. The presence of non-convergence (inability to cross eyes) and non-reactive eye pupils can impair visual tracking ability, which may produce accidents and injuries. The elimination of the metabolic products of cannabis from the body is slow, as it stores in the fatty tissue. In chronic users it can be detected in urine for 30 to 45 days after use.

### HISTORY OF DRUG

Cannabis refers to a family of drugs which includes Marijuana, Hashish, Hash Oil and Pharmaceutical cannabinoids. The active ingredient in the cannabis family is the psychoactive drug delta-9 Tetrahydrocannabinol or "THC." The major species of plant that contains this active ingredient is *cannabis sativa*, with other varieties containing differing amounts of "THC."

Some of the first known references of marijuana were found in literature from India that dates back to the second millennium B.C. The ancient Greeks used alcohol rather than marijuana as an intoxicant; but they traded with marijuana-eating and marijuana-inhaling peoples. Hence some of the references to drugs in Homer may be to marijuana, including Homer's reference to the drug which Helen brought to Troy from Egyptian Thebes.

Marijuana has been used for thousands of years in medical and other clinical research. The ancient Chinese used marijuana in the treatment of a variety of ills. In the 18th Century, therapeutic use of cannabis was introduced to England by the medical profession. It was subsequently introduced to the United States for its medicinal possibilities, even though it was already being used at the time for its hemp-related properties. Most of the early cannabis products were marketed and used in liquid form.

*(continued column 3, this page)*

### THE MARIJUANA QUESTION IS CLUTTERED WITH PROPAGANDA AND FACT

#### ACUTE EFFECTS OF MARIJUANA

**Marijuana has four basic effects:**

#### STIMULATION:

- Increased pulse rate
- Increase in blood pressure
- Decreased attention span
- Craving for sweets
- Poor concentration

#### SEDATION:

- Droopy eyelids
- Non-convergence
- Giggly or giddy
- Poor muscle coordination
- Dry lips / mouth
- Slow speech

#### ANESTHESIA:

- Pain relief
- Memory loss
- Time distortion
- Increased hearing loss

#### HALLUCINOGENIC:

- Hallucinations
- Paranoia
- Delusions

### History (continued from column 1, this page)

Marijuana was introduced into New England in 1629. The marijuana plant was a major crop in the North Americas, and played an important role in both colonial and national economic policy. Virginia awarded bounties for hemp culture and manufacturing, and imposed penalties upon those who did not produce it.

At various times during the nineteenth century large hemp plantations flourished in Mississippi, Georgia, California, South Carolina, Nebraska, and several other states.

Since 1937, restrictive legislation on marijuana has increased in quantity and severity. Most state laws specify that marijuana penalties should be the same as other restricted drug penalties. After almost 60 years of prohibition, how successful have been the attempts to stamp out marijuana use? Recent figures indicate that marijuana is still one of the four major cash crops grown in the United States in terms of dollar-volume of sales. It ranks along with corn, wheat, and soybeans.

Now even larger quantities of marijuana are grown in countries such as Mexico, Colombia, Panama, Jamaica, and many other third world countries. This huge quantity of marijuana is then smuggled into the United States on planes, boats, cars, mules, and by individuals who sneak across our borders on foot, to be added to the multi-billion-dollar crop grown domestically.

## MARIJUANA EFFECTS ACCUMULATE

Evidence of the cumulative nature of the effects of marijuana is found throughout literature on the subject of marijuana. It has been found by research that it is necessary to smoke marijuana cigarettes several times to obtain the first intoxicated "high" After that stage was reached, (usually after about five cigarettes had been smoked, either all at once or spread out over several weeks), intoxication could be renewed by smoking only a portion of a joint.

## MARIJUANA USE "NOT SAFE"

There are claims that marijuana has a "reverse tolerance," with the implication that it is therefore safe. This notion of safety due to reverse tolerance has remained in the pro-marijuana propaganda literature in spite of the proof that the active components of marijuana do indeed accumulate in the body and in the brain.

The fate of the active ingredient of the cannabis drugs, delta-9 tetrahydrocannabinol (THC), has been determined by a number of studies. In laboratory animals and humans the administered THC was labeled with a radioactive isotope and traced in the body for distribution, retention, and transformation to other chemical forms and excretion. The retention of labeled THC measured in humans is about forty percent at three days, thirty percent at one week, by extrapolation; ten percent at forty-eight days and one percent at 4.6 months. A large fraction of administered THC is converted in the body to 11-hydroxy-THC - a substance that is several times more psychoactive than THC. Both active forms of THC tend to persist in the body for long periods of time.

## SUMMARY OF EYE EFFECTS WITH MARIJUANA

*Finding how often approximate present time may last.*

- ◆ Redness eyes (Conjunctiva)
- ◆ Dilated Pupil
- ◆ Pupil failure to hold (Rebound Dilation)
- ◆ Non-convergence
- ◆ Droopy eyelids
- ◆ Failure to estimate distance - frequent, 4 to 6 hours

## MARIJUANA AND THE BRAIN

During the "high" period following the smoking of marijuana, the body organ concentrations follow that of the blood. There is a peak of concentration in the brain corresponding to that of the blood which lasts about four to six hours. Although the concentration of THC in the brain is much lower than in the other organs, that fact is not a measure of its effectiveness. The THC taken up by the brain is concentrated largely in the cell membranes, where the local concentration is twice as high as THC content of the red blood cells.

## FACTS NOT FICTION

Marijuana of the 1990's is more toxic than that of the past. Well over 400 chemical substances are known to be contained in the *cannabis sativa* (marijuana) plant. Delta 9 THC is the predominant of all the poisonous substances. "Sinsemilla" marijuana has increased the THC potency as much as ten fold.

## HIGH RISK PEOPLE

1. Pregnant women should not use the drug.
2. Adolescents should be discouraged from use, especially heavy use.
3. People with heart problems may be further impaired by heart-accelerating property of cannabis.
4. People with lung disease should not use the drug because of its irritant effects.



**MARIJUANA LEAF**

## CANNABIS METABOLITES

METABOLITE	PLASMA LIFE	EUPHORIA	IMPAIRMENT
Delta 9 THC	2 to 3 hours	YES	YES
OH-THC	4 to 6 hours	MILD	YES
C-THC	3 to 6 days	NO	YES

C-THC (11 Nor delta 9-tetrahydrocannabinol) has been detected in the urine for as long as 45 days after ingestion in chronic users.

## “THC” ACCUMULATES IN BODY FAT TISSUE

The disappearance of THC from the blood over several hours of the “high” is not due to its removal from the body; it merely accumulates in fat tissue, which has a high affinity for THC. Some of the THC is partially degraded, but it remains a cannabinol residue. Cannabinol residues and THC are excreted largely by the bile, but only at a very slow rate. The implication of this finding for humans is that progressive retention will increase the body burden of THC for many months before reaching equilibrium, when the rate of the excretion become equal to the rate of intake. The chronic marijuana smoker increases the brain’s burden above the chronic level when smoking produces a transitory peak concentration in the blood and brain. But, the user is never without significant quantities of THC in the brain at a level determined by the brain’s equilibrium with the body’s fat. In the chronic marijuana user, the high brain levels cannot be reduced without the many months of abstinence necessary to clear THC from the body fat.

The accumulation of THC in the body fat means that the THC becomes involved with lipoproteins and the lipid layers of the cell membranes. One cannabinoid is responsible for the alteration of liver functions which has been shown to take place independently of the psychic effects of THC.

## OTHER CANNABIS INFLUENCE INDICATORS

- ◆ Odor of marijuana
- ◆ Marked reddening of the conjunctivae
- ◆ Debris inside the mouth
- ◆ Coating on the tongue
- ◆ Body tremors
- ◆ Relaxed mannerism
- ◆ Presence of associated paraphernalia

## RISKS OF CONTINUED USE OF MARIJUANA

### INCREASED RESPIRATORY PROBLEMS

Smoke from a marijuana cigarette and THC have been shown to damage the lungs, impede brain function and hamper the immune system.

*(University of Arizona study)*

One marijuana cigarette causes the absorption of five times more carbon monoxide and four times the tar into the blood than one cigarette. *(The New England Journal of Medicine)*

Microscopic cell damage of the airway lining caused by 3 joints per day equals the damage caused by one pack of cigarettes. *(University of California at Los Angeles study)*

### BEHAVIORAL CHANGES

The continued use of THC interferes with the normal function of the hippocampus and the cortex. These are believed to be related to marijuana’s reported detrimental effect on memory. *(Pfizer Central Research)*

### BLOOD FLOW PATTERNS IN BRAIN

The use of THC seems to shut down or restrict blood flow patterns to the frontal lobe of the brain where thinking and memory occurs. Continued use may be detrimental in school age young adults as this has a direct effect on learning and memory. *(Brigham and Women’s Hospital Boston, Mass., study)*

### CELLULAR ACTIVITY

THC has been shown to depress cell division and synthesis of DNA. It has been further shown that it suppresses the immune response of the blood lymphocytes, and alters the structure of the brain cell membrane. Alteration of cell structure in the lung air passages has also been observed. *(Dr. Forrest S. Tennant Jr. study)*

## DIFFICULT TO STOP USING MARIJUANA ?

The average marijuana user will stop using this drug upon being convinced that the lifestyle and effects are not what they seek. The user is not addicted or physically dependent on marijuana, using it only about twice a week, while the narcotic addict requires the drug on a regular daily basis. Nevertheless, the average marijuana user is likely to encounter difficulties. The user’s friends are probably users and the pressure to continue to join in when the “roach” is passed is very great. On the physical side, the marijuana user may have intermittent headaches for the first few months upon abstaining. This is a mild withdrawal symptom. There may also be symptoms of sleeplessness, restlessness, and agitation, which a physician can alleviate in order to help the user withdraw completely from the drug.

As in most of drug dependency, whether physical or mental (including alcohol, barbiturates, tobacco, amphetamines and narcotics), body conditioning through hard physical exercise is helpful in readjusting the brain reflexes tied to the daily lifecycle. Physical exercise is also helpful in reestablishing the normal vigor of the pleasure mechanisms that rule over the brains functions.



**MATURE TOP OR “BUD”**