The principle "psychoactive" chemical in marijuana is called tetrahydrocannabinol (THC). Actually, marijuana is now known to contain about 12 cannabinoids (direct chemical relatives of THC) as well as over 420 other chemicals. Virtually all of the chemicals found in marijuana seem to have at least some physiological or psychoactive effects.

Marijuana from areas such as Mexico, Columbia, Asia, etc. contains about 30 milligrams (mg) of THC per cigarette, but locally grown marijuana normally contains about 10 mg per cigarette. In recent years, however, locally grown marijuana has had a substantially increased THC content. It has not been unusual in the past for some of the local "suppliers" to try to convince their buyers that they have "good stuff" by lacing some of the locally sold joints with PCP (i.e. "Angel Dust", a very dangerous chemical which can cause long term psychosis, bad trips, and severe mental problems), LSD, strychnine (a lethal chemical) or Jimson weed (i.e. "loco weed").

The peak effect of smoking a joint is actually 3 to 7 hours after inhalation, in terms of the amount of THC in the blood stream, although some effects start within 30 seconds. After THC has entered the bloodstream, it does not just "go away". Some of the THC remains more or less permanently in the body while some is eliminated from the body over a period of several days. In addition, some of the original THC is converted to other related chemicals by the body. These related chemicals, or "metabolites", behave somewhat similarly to THC. Specifically, a fraction of some of the metabolites remains more or less permanently in the body while the rest is slowly eliminated.

We must carefully separate three different aspects of marijuana consumption: the physical presence of the cannabinoids in the body, the immediate pharmacological effects, and the physiological and anatomical effects. Cannabinoids can be detected in the blood for up to 5 days after a single, moderate dose of THC is consumed, and up to 12 days in the urine. Chronic use of marijuana can lead to detectable amounts of cannabinoids in the urine up to 36 days after termination of use. (There is also considerable evidence that some cannabinoids remain in the body over very long time periods and are not detectable by conventional means such as monitoring of the urine.) The "pharmacological effects" refer to the observable effects relating to the action of the drug on the body. It is known that the pharmacological effects of a single dose, which produce a "buzz" or "high" among other things, last for about 8 hours. The "physiological and anatomical" effects relate to changes in the functioning of the day-to-day processes which occur in the body and the changes in the cellular structures of the body. These physiological and anatomical effects are cumulative and occur over a long time, as we shall see.

A first-time user normally receives a dosage which may either be not quite sufficient or be just barely sufficient to produce a noticeable sense of impairment, or "buzz". Therefore, first-time users often get little or no effect from smoking a single joint and feel a little disappointed. Also, they may find themselves high only from the excitement of "doing pot" for the first time. Even though the pharmacological effects only last a few hours, and most of the THC is eliminated within a few days, the physiological effects are more subtle. People who continue to use marijuana regularly, say every weekend, never allow their bodies to return to "normal". Week by week, the level of THC and related cannabinoids in the body increases; not all of the previous material can be eliminated before an additional chemical load is introduced into the body. The user is not actually "high" all the time, but there is an impairment of abilities due to continued physiological effects. The user gets used to the impairment and doesn't notice any major signs, in the same way you cease to notice a "funny smell" after you have been in a room for a while. Nevertheless, the signs of impairment are often evident to others around him/her. This impairment is most significant with respect to brain function: tissue damage (some of it permanent), memory loss, personality change, loss of attentiveness and loss of interest are just some of the symptoms.

THC dissolves easily in any fat that it comes in contact with, and tends to accumulate in body fat, from which it is released only very slowly. Some of the regions in the body which accumulate marijuana are: brain tissue, the central nervous system, the message receptor parts of nerve endings (i.e. axons), the tissue surrounding the heart, the lungs, the testicles (in males) and the ovaries (in females). In males, the pot also accumulates in the semen. After sexual intercourse with a pot user, a female will have pot-laden semen contacting her cervix. The pot can cause a change in Pap smears from the cervix; it is not uncommon to find that Pap smears from such females will give results which are "suspicious" or "precancerous".

The brain is protected by a special fatty membrane called the "blood-brain" barrier, through which THC is able to pass. However, shortly after passing through the barrier, the THC reacts chemically and decomposes into another chemical which CANNOT pass back out through the barrier: the chemical is now trapped permanently inside the brain. Medical evidence now seems to indicate that it is this decomposition product of THC, rather than THC itself, which is "psychoactive". What makes matters worse, this decomposition product seems to be quite stable.
Some other effects of THC:

1. Because THC attacks the testicles, males who are relatively heavy users may be chronically impotent or suffer from a reduced sexual drive. Sperm counts are lowered and the semen is contaminated with pot. Because the senses are deluded by the drug, the male may claim that "sex is better with pot", but his female partner normally claims that just the opposite is true. Male partners of female pot users also indicate that the female is relatively unresponsive.

2. People under the influence of marijuana are normally hyperexcited and tend to overreact. This in turn affects one's ability to drive and it is now almost certain that more accidents in the 16 to 36 year age group can be attributed to marijuana impairment than to alcohol impairment. Marijuana also distorts one's sense of time and space, so that timing judgments during driving are impaired and driving errors occur frequently.

3. If marijuana is consumed at the same time as alcohol, the effects of the marijuana are intensified. As a result, although pot smokers may try to get more of a "buzz" by mixing pot and alcohol, the interaction between pot and alcohol also intensifies adverse medical and psychological effects and can lead to serious problems in some cases.
4. It is not uncommon for pot users to get a type of chest pain called "angina". Such pain is a signal that the heart is experiencing difficulty. If a pot user finds that he is suffering from angina, there is a definite risk that even moderate exercise could bring on a heart attack. Discontinuation of pot usage may bring about some relief from the angina but a physician should be consulted immediately and the user should not engage in sporting activities in the meantime. To ignore such a symptom could be extremely dangerous.

5. Contrary to popular opinion, marijuana "flashbacks" occur on a regular basis, so that long after a user has stopped smoking pot he/she may suddenly become high. This flashback tendency occurs because the chemical produced by the decomposition of THC accumulates more or less permanently in the brain tissue. The flashback effect may also be a cause of some traffic accidents involving ex-pot-users.

6. Street opinion often claims pot is good for you because they give it to cancer patients. Unfortunately, this is not quite what is happening. Pot has been used with patients who are suffering from severe side effects of chemotherapy in an effort to lessen the sickness and vomiting sometimes associated with such powerful anticancer drugs. The marijuana is NOT "good for you" in the sense that everyone should run out and try it; rather, it had a limited role in helping extremely sick people tolerate their medication. Also, the only way that the pot can have an effect on the nausea associated with chemotherapy is to get the person "stoned". There is actually no need for treating such nausea with pot since there now exist more effective antinausea drugs which don't have such mind-altering side effects.

7. Street opinion sometimes claims pot is good for the lungs of people with asthma because it expands the blood vessels and lung passages. Again, this is a "half truth": the expansion DOES occur, but marijuana smoke is typically inhaled deeply into the lungs to achieve a greater "high" and thus leads to lung irritation and a rapid heartbeat. (Since marijuana increases the user's heart rate by as much as 50 %, it is dangerous for people with heart problems.) Chronic bronchitis is frequently found in heavy users. Marijuana also increases the amount of methaemoglobin in the blood, leading to a serious impairment of the blood's ability to carry and release oxygen. One of the "telltale" signs associated with pot smoking is a reddening of the eyes which occurs as a result of the expanded blood vessels in the eyes. It is often pointed out that glaucoma, a disease in which pressure builds up inside the eyeball and can eventually lead to loss of vision, can be treated with marijuana, BUT the amount of marijuana needed to have a significant effect requires that the patient gets "stoned". Nevertheless, glaucoma is NOT a good excuse for smoking pot because there are other medications available which can treat glaucoma, and are far more effective.

8. Contrary to street opinion, users eventually increase their tolerance of THC (the body increases its enzyme activity in an effort to clear out the drug) and hence users require an increased dosage to get the same "high". Initially, however, there is an INCREASED effect as the novice user learns to interpret the mental and physical effects.

9. Marijuana smoke also contains many cancer-causing agents, to the extent that lung cancer and precancerous lesions are 4 to 5 times more likely to occur in a pot smoker than a cigarette smoker. Although lung cancer is an extremely frightening and painful way to die (you slowly suffocate), there is still little that can be done to cure advanced lung cancer - you simply get it and die. American data showed that 5 marijuana cigarettes do as much damage as 112 ordinary tobacco cigarettes. A report in The Medical Post (Aug. 7, 1984) stated that "We have found changes in the lungs of young marijuana smokers that we would not expect to see in smokers of tobacco, except perhaps in older, lifelong, tobacco users."

10. THC is known to attack the white blood cells, so that pot users gradually lose their resistance to bacterial and viral infection. Of special importance is the lowered resistance to Staphylococcus aureus ("golden staph"), which can lead to a fatal case of fulminating pneumonia in some instances. The marijuana stops the abilities of the white blood cells to move and attack bacteria. Also, the symptoms of people with mental diseases, diabetes, cardiovascular disease or epilepsy may be made worse by marijuana (in spite of the fact that severe epilepsy is occasionally helped by marijuana smoking).
11. Babies born to mothers who smoked pot during their pregnancy also have an accumulation of THC in their brains (i.e. THC can cross the placental barrier.) Such babies are "emotionally flat" and non-responsive to the mother. This emotional flatness has now been linked to subsequent child abuse. Other studies have shown that babies of women who smoked marijuana during their pregnancy have an increased risk of birth defects such as abnormal facial features and stunted nervous system development.

12. THC is now known to cause genetic damage by causing disruption of the DNA replication process. Here is where things get ugly. In males, the sperm can be severely damaged but if the sperm is not used within a short time (a few weeks or so), the body will reabsorb the sperm, break it down and assemble fresh, undamaged sperm. Hence, if a male pot user decides to stop using the stuff, his body will quickly clear any mutated sperm from his testicles and leave little or no permanent effect on his sperm - the male gets away with it, at least in terms of his reproductive abilities. (Although he may have a lowered sperm count.) On the other hand, the THC which accumulates around a female's ovaries will steadily increase the probability of having mutated eggs. Females are born with their lifetime supply of eggs; at first the eggs are very small, but at puberty the eggs start to mature. Hence, if a girl uses pot the probability of giving birth to a malformed child increases with the amount of pot smoked - the female doesn't get away with smoking pot. The use of pot is also known to disrupt the menstrual cycle. Even after a girl stops using pot, the threat of birth defects will be present. Again, the only way to minimize the probability is to quit as soon as possible. If a woman who has smoked pot gives birth to a malformed child, one of the psychological horrors awaiting her is that of looking at her child every day and asking herself whether the child would have been normal if she hadn't smoked pot.

13. Very heavy use of pot in some males disrupts their hormone system so badly that they develop female-like breasts. Such effects have NOT been noted in light or "recreational" users and are relatively rare even in heavy pot users.

14. Because THC accumulates in fatty tissue, people who have ceased using pot and decide to get in shape by exercising and "burning off some excess fat" occasionally get a little surprise: the THC stored in the fat now has nowhere to be stored and enters the bloodstream. There have been several reports of joggers who were suddenly "high" again.

15. Users of marijuana often claim that it reduces their anxiety level, leaving them calm and relaxed. Although it is true that such effects are noticed with some people, in others it produces dizziness, confused thinking, dissociation and concern about loss of sanity. Also, marijuana slows thought processes and speech patterns, impairs judgment, and produces an inability to concentrate.

16. Many studies have shown that marijuana IS NOT HIGHLY PHYSIOLOGICALLY ADDICTIVE (that is, you don't go through terrible physical withdrawal symptoms as with heroin), but IT IS PSYCHOLOGICALLY ADDICTIVE (that is, you can't force yourself to kick the habit because you come to depend on it emotionally). Information compiled by the World Health Organization (WHO) indicates that there is "substantial evidence that at least mild degrees of dependence, both psychological and physical can occur. It should be noted that there is little or no evidence that pot smoking stimulates a desire for other, "harder", drugs. However, experience and personal testimony have shown that once the psychological barrier to using pot has been breached, some people find it difficult to resist experimenting with harder drugs.

NOTE: Data on the chemical and medical effects of marijuana has been hard to get because of the difficulty of the research. Virtually ALL of the data obtained before 1973 is suspect, yet it is this data which is quoted "on the street" when claiming that marijuana is harmless. Many researchers published early claims that marijuana had few if any problems associated with its usage, only to retract their claims as later, more accurate data was obtained. Also, many severe effects only showed up after a few years and were missed in the earlier, short-term studies. Medical researchers must be very cautious in their reports. For example, a study showing that "95 % of all users which smoked pot more than once a week exhibited precancerous lung tissue" might be quoted as "a single study which suggested that pot smoking could be linked to tissue change in the lungs"!
Reports linked to "college students in the 1960's" are now generally considered to be invalid since plants are now cultivated to deliberately increase the THC content (up to 10 times more in some cases).

Adolescents, who are undergoing rapid developmental changes, and the elderly with decreased rates of drug metabolism and increased prevalence of disease, may be more sensitive to marijuana and other drugs. Specifically, marijuana "is a powerful drug with a broad range of risks to health" and presents a hazard to an adolescent because it can disrupt:

a) many of the essential metabolic changes which are occurring as the body's chemistry is adjusting to emerging adult metabolic patterns. (In other words, you can mess up your body if you take pot when you are growing.) Any alterations in the male hormones may disrupt normal physical and sexual maturation.

b) emergence of an adult thought pattern. The ability to think in abstract terms may be permanently impaired, causing marijuana users to be "stuck" with immature thought processes which often require concrete examples before an idea can be fully understood. It has been said that "the two most insidious psychological effects of the drug are that it makes the user incapable of realizing how the drug is changing his or her life and, that by providing an easy escape from everyday problems, it prevents the user from becoming a mentally mature adult."

Ecstasy : Not a Safe Drug Any Longer
(Compiled by J. Hebden and K. Fisher, June 2001)

Ecstasy (3,4-methylenedioxyamphetamine or MDMA) is also called E, Love Drug, X, Adam, Clarity or XTC.

In its pure form, Ecstasy is a white powder which can easily be made at a cost of about one cent per pill (as opposed to the street value of about $20–$30 per pill). The most common street form of Ecstasy is in pill form, although the powder is sometimes snorted. The pills are available in fun and attractive pastel colours with fun imprints such as a VW symbol, peace sign, yin–yang symbol, and so on. Because Ecstasy frequently has not been properly purified, it may contain various poisonous impurities with dangerous side effects. Therefore, some groups now offer free testing of the supposed Ecstasy being sold because the danger of unknown composition is so great. Some tablets sold as ecstacy also contain PCP (which is so dangerous that the danger of a permanent "bad trip" is very large), "crystal meth" (which is highly addictive and very dangerous because of its ability to cause severe hallucinations and permanent mental impairment) and/or heroin (which is a highly addictive narcotic).

An increasingly severe problem is the tendency of more and more users to mix Ecstasy with other drugs. The results of this drug mixing (polydrug usage) is not just the severe interaction reaction when the drugs cause unexpected, and often lethal, side reactions. When overdosed users are brought into hospital emergency rooms, physicians don't know how to treat the overdose because of the multiple drugs present.

Ecstasy has both a stimulant and hallucinogenic effect. Within 20-90 minutes of taking Ecstasy, the user experiences an increased heart rate, increased body temperature, sweating, tightening of the jaw, grinding of the teeth and nausea. A plateau phase follows for 2-3 hours and brings the user increased energy, well-being, confidence, talkativeness and a feeling of closeness to others. The senses of taste and touch also are enhanced. If the user has a "bad trip", the plateau phase bring 2-3 hours of paranoia, anxiety, visual hallucinations, fear of loss of control and an inability to concentrate. Hangover effects include decreased sleep, hunger and energy, depression, decreased sexual urge, irritability and decreased thinking ability.

Ecstasy works by flooding the brain with the chemical “serotonin”, which is produced naturally in the brain. This sudden release of serotonin produces the feeling of well-being. Unfortunately, this flood of serotonin is followed immediately by a dangerous lowering of the serotonin levels in the brain, causing the user to become depressed and, on rare occasions, a fixation on suicide or actual suicide.

Besides depression and suicide fixation, there are numerous other side effects now showing up frequently. Some of the side effects appear to be permanent in some users. One side effect is dangerously high body temperatures, which many users believe is simply due to not remembering to drink enough water while at a dance, whereas the truth is that the drug has caused the elevated temperature as a result of upsetting the heat regulation system in the body. If the elevated temperatures persist for sufficient time, brain damage can occur. Other known effects include rapid breathing and in certain cases, kidney failure. In addition, many users have exhibited paranoia and panic attacks. Ecstasy is known to have caused several deaths, usually due to kidney or
cardiovascular failure caused by hypothermia and dehydration. If users persist in strenuous physical activity or are in hot surroundings or have a pre-existing heart condition or take other drugs at the same time the risk of death rises dramatically. Even in a hospital emergency room, physicians have to be very careful to constantly monitor the victim because extra fluids must be administered to resuscitate the victim but the brain can swell and cause death if too much fluid is used. Permanent brain damage is a very real problem. Studies now suggest Ecstasy has long term psychiatric effects. All the reported effects are found in chronic users (who use it more than 10 times), occasional users and new users.

Studies of recreational users have shown that users have significant memory loss, including verbal memory, visual memory and a decreased attention span. In spite of the fact that ecstasy has a reputation as a non–addictive drug, chronic users have a strong desire to take more of the drug, suffer withdrawal symptoms if they don’t take more of the drug, have to take more of the drug to get the same high, neglect other sources of personal pleasure and continue to use the drug even when there is visible evidence that the drug is harming them. Some other effects that have been reported are catatonic stupor, continuing psychosis, visual flashbacks and an increased tendency to impulsive behaviour.

Evidence now shows that long–lasting nerve damage is caused by use of ecstasy. Chronic use of Ecstasy destroys the serotonin–producing sites in the brain, so that the brain is unable to produce normal amounts of serotonin. With these decreased levels of serotonin comes an inability to experience natural “highs” such as happiness and excitement, and an inability to feel “normal” emotions. In addition, the decreased serotonin levels produce short–term effects such as irritability, lethargy (lack of energy) and depression, with permanent long–term side effects that can include manic depressive behaviour and a sense of loss of personal identity.

MARIJUANA – 6

A FEW COLD FACTS ON SOME "HOT" DRUGS

You read. You Decide.

1. "Chinese Moon Seeds" Better known as the seeds of Angels Trumpet or wild Jimson Weed

   Cause delirium, dry out the mouth, make it hard to concentrate, dilate the pupils, create visual hallucinations and eventually a long, deep sleep. Users become verbally abusive, restless, nauseated, lose ability to judge distances, and loss of short-term memory. The seeds are quite poisonous, and can cause death in some cases when swallowed.

2. LSD. Sometimes known as "blotter acid" or "acid"

   Causes intense hallucinations. Many users suffer from "bad trips", which is why drug users during the 60’s and early 70’s eventually stopped using the stuff. Some users have had permanent "bad trips" which have left them in a psychotic state for the rest of their life. Each trip lasts from 2 to 12 hours. Everything the user sees, feels and hears appears intensified. Time and distances appear distorted. The user's body may feel too light, too heavy or even distorted. Thinking and concentration is difficult. Short-term memory is impaired. Extreme mood swings, including joy, inspiration, depression, anxiety, terror and aggression. Drug-induced confusion has caused accidental deaths. Long term effects include: decreased motivation and interest, prolonged depression and anxiety. Use by pregnant woman can cause spontaneous abortion or mutated babies.

3. PCP. Better known as Angel Dust

   Effects last 3 to 18 hours. Produces a state of pleasurable intoxication, a sense of separation from surroundings, distorted feelings, difficulty in concentrating and talking. Users may become highly confused, paranoid, terrified, aggressive or completely passive. Bad trips are very common. Can cause convulsions, coma and death. Besides frequent flashbacks, users may have difficulty speaking and may suffer depression, anxiety and severe psychological disorders, up to and including permanent insanity.
4. Cocaine. Also known as coke, snow, nose candy, C

This is an extremely addictive drug. A specially-treated form ("crack") is almost 100 % addictive after a single usage. Users feel intensely happy, energetic and alert; have rapid heartbeat and breathing, high body temperature, dilated pupils, sweating, paleness, decreased appetite, insomnia and "stuffy nose". Large doses cause violent behaviour, tremors, twitching, hallucinations, pain or pressure in the chest, nausea, blurred vision, fever, muscle spasms, convulsions and death. Impurities in street cocaine have caused fatal allergic reactions. Long term users suffer restlessness, extreme excitability, insomnia, suspiciousness, hallucinations, delusions, weight loss, constipation, impotence and difficulty in urinating. Chronic users have runny noses, chapped nostrils and find that the tissue between one nostril and the other gets eaten away. Babies born to women who are users are often born premature or are stillborn, have abnormally low birth weights, and may be malformed. In addition, the babies may have mental problems and health problems which last their entire lifetime. Cocaine abuse can lead to heart attacks, strokes, seizures and sudden death.


Effects are felt after half an hour and last several hours. Feelings of relaxation or fatigue, separation from surroundings, heaviness or lightness. Larger doses cause distorted feelings, dizziness, sickness in the gut, numbness of the mouth, nausea, shivering, yawning, flushing and sweating. In many cases, the brown powder said to be extracted from "magic mushrooms" and sold as "psilocybin" is actually LSD or PCP and therefore is quite dangerous.

6. Inhalants: Glue, Gasoline and aerosol Sniffing

Causes feelings of extreme lightheadedness, happiness, vivid fantasies, and sometimes recklessness and feelings of invincibility. Can cause convulsions, slowed heartbeat and breathing, fatigue, inability to think clearly, tremors, thirst, weight-loss, depression, irritability, hostility, paranoia, loss of short-term memory (which prevents ability to learn anything), and severe brain damage. Users find they can't read or watch TV because their memory is so "shot" that they can't remember what happened a few seconds before. A typical heavy user can't even tell you what has happened to him during his life. The fumes destroy the throat, lungs and stomach. Some users spoon the glue into their mouth to get the full effect of the "high". Kidney and liver damage may occur. If the user passes out with a plastic bag over the mouth, death from suffocation can occur. Death can also occur if the user is startled or engages in strenuous activity while intoxicated. Damage may be irreversible; scientists are still not sure of all the long-term effects. Drinking alcohol at the same time will compound the damage to the body. Users must use more and more every time to get the same high. Withdrawal symptoms include chills, hallucinations, headaches, abdominal pains, muscular cramps and tremors.