ALASKA LEGISLATURE COMMITTEE FILES 1987-1988 8672
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In the terminal phase, the blood-brain barrier should have essentially no effect on the THC blood concentration in the brain. How much effect this barrier has at 2 hours is not clear. However, let us assume conservatively that the blood-brain barrier is also in equilibrium at that time, so that THC concentration in the brain blood is the same as in the heart blood.

With this assumption, we conclude that a brain-blood THC level of 1% produces 50% of maximum "high". This is only 4 times greater than the steady THC blood level, 1/4 of 1%, in the brain of an individual who smokes one marijuana joint per day. Therefore, this steady THC level should be sufficient to produce appreciable sedation, keeping the daily marijuana smoker in a continually numbed state.

Storage of THC in the Brain

The brain weighs about 3 lbs, and 1/3 of this is fat tissue. Hence, a significant amount of the THC sequestered in the fat is stored directly in the brain. Since the blood-brain barrier strongly limits the flow of THC into the brain, the THC concentration in brain fat is lower than in general body fat. But how much lower?

The slow storage compartment (3) releases THC so slowly it should pass essentially unimpeded through the blood-brain barrier. In Figure 1, the rate parameter for release of THC from compartment (3) is 0.017. This corresponds to a half life of (6.7 min)/0.017, which is 6.6 hours. For this half life, the THC level drops only 10% per hour.

It can be shown that the peak THC level in compartment (3) is 39% of the injected THC. When this THC is released into the blood, 35% of it is stored in the fat. Hence, the THC in the fat that comes from compartment (3) is

0.39(35%) = 14%

The total THC in the fat is 35% of the injected dose. The ratio 14%/35% is equal to 0.40. Hence, 40% of the THC stored in the fat comes from the slow storage compartment, released so slowly it passes unimpeded through the blood-brain barrier.

As THC is released from the fat to the blood, 35% of it is recycled back into the fat. Consequently, 35% of the steady THC level in the fat of a regular marijuana smoker is recycled THC, which enters the fat so slowly it is unimpeded by the blood-brain barrier. Of the remaining 65%, which enters the fat directly, 40% comes from compartment (3), and only 60% arrives at a fast rate. Hence, the fraction of the steady THC level in the fat that enters at a fast rate is

0.60(65%) = 39%

The rest of the steady THC level (61%) enters the fat so slowly it passes unimpeded through the blood-brain barrier.

This analysis shows that the steady THC concentration in brain fat tissue should be at least 61% of that in the general body fat. Therefore, an appreciable amount of THC is stored in the brain of a regular

marijuana smoker.

What is the effect of THC stored in the brain cells? Dr. Robert C. Gilkeson has devoted considerable research to this issue. He explains that the membranes of nerve cells are fat (or "lipid") tissue, and so are sites for storage of THC molecules. The nerve cell membrane is crucially important because: (1) nutrients and waste products for the cell must pass across the cell membrane, and (2) this membrane is the primary source of neural electrical activity. When sticky THC molecules are stored in the nerve cell membrane, they degrade cell nutrition, and suppress electrical activity.

Hence, one would expect that long-term use of marijuana should cause serious brain damage. That this is so was demonstrated by experiments performed on the monkey by Dr. Robert Heath and his collegues at Tulane Medical School (Ref. [4], pp 713-730). Clear and detailed descriptions of this work have been given by Peggy Mann in Refs. [5, 6].

The following experiment was performed several times. For 6 months a monkey smoked the equivalent of 10 to 15 joints of marijuana per week, using monkey-sized joints. After recovering for 6 months, the monkey was sacrificed and its brain cells were examined under the electron microscope. Brain waves were measured from probes imbedded deep in the skull. These signals became severely distorted after 2 months of smoking, and remained distorted 6 months after smoking had stopped.

The brain cells showed severe damage, particularly those in a deep part of the brain called the limbic system, which is the center of motivation. For example, over 30% of the limbic brain cell nuclei had inclusion bodies, which are clots in the nuclei. In normal brains, less than 0.5% of brain cell nuclei have inclusion bodies. The incidence is much higher in old brains, particularly those of senile patients, but even then is much less than was observed in the brains of these young monkeys When the researchers first observed the enormous brain-cell damage, they were shocked at what they saw.

Historical Evidence

That marijuana is stored in the body, producing continual sedation, is not a new discovery. As explained by historian Franz Lowenthall, Professor of Near Eastern Literature at Yale University (Ref. [4], pp. 739-745), marijuana is an old problem to Arab society. The Arabs have struggled for centuries against the devastating effects of marijuana (or in their words "hashish"). A thirteenth century religious leader, Sheikh Ali al-Hariri, gave the following advice:

> "He has to give it up for forty days, until his body is free from it, and forty more days until he has rested from it after becoming free."

This conclusion by Sheikh al-Hariri, made 700 years ago, is remarkably consistent with our THC model.

What was obvious to Sheikh al-Hariri should also be obvious to people today. Why have we not drawn the same conclusion? Maybe we don't want to know the truth.

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[1] Edward R. Garrett and C. Anthony Hunt, "Pharmacokinetics of Delta-9-THC in Dogs", Journal of Pharmaceutical Sciences, vol. 66, No. 3, March 1977, pp 395-402.

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[3] L. Lemburger, R. Martz, B. Rodda, R. Forney, and H. Rowe, "Comparative Pharmacology of delta-9-THC and its 11-OH-delta-9-THC Metabolite", J. Clin. Inv., vol 52, p. 2411, 1973.

[4] Gabriel G. Nahas and Sir William D. M. Paton, Marijuana: Biological Effects, Pergammon Press, 1979.

[5] Peggy Mann, Pot Safari (A Visit to the Top Marijuana Researchers in the U.S.), Woodmere Press, New York, 1982.

[6] Peggy Mann, Marijuana Alert, McGraw-Hill, 1985 (with foreword by Nancy Reagan).

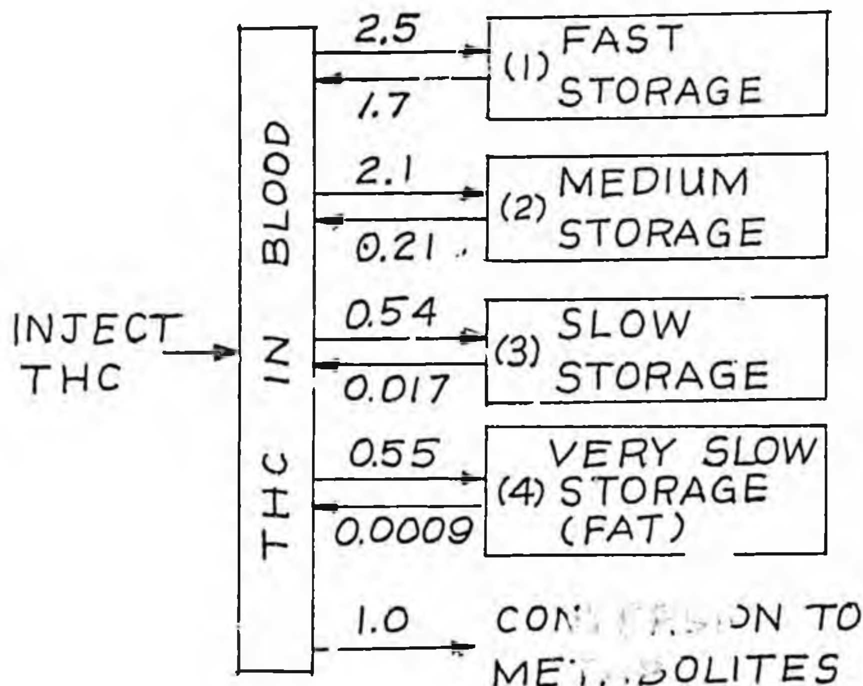

FIGURE 1: MODEL OF THC STORAGE IN THE BODY

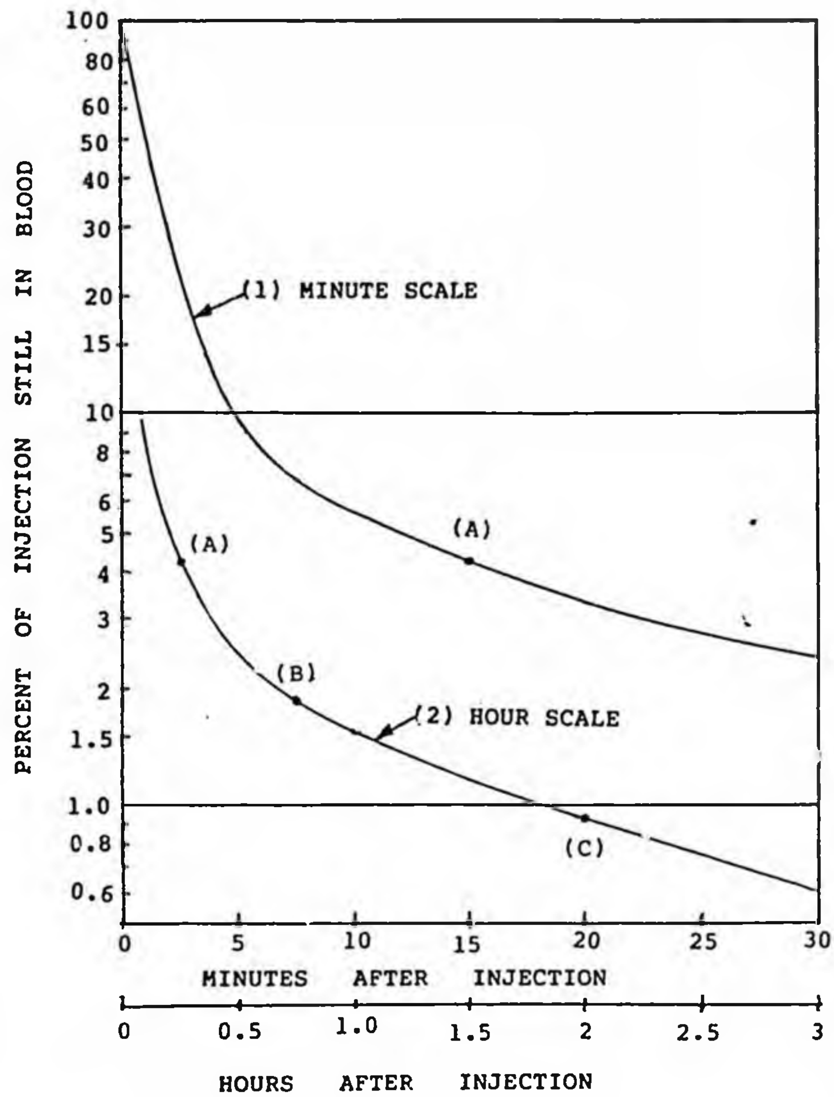

FIGURE 2: VARIATION OF THC BLOOD LEVEL WITH TIME

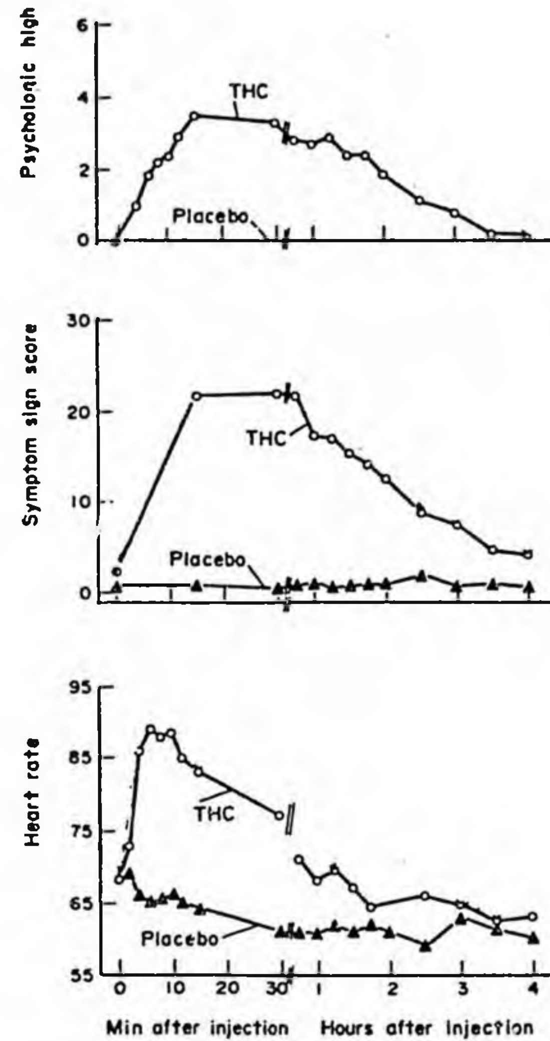

FIGURE 3: EFFECT OF THC INJECTION ON HEART RATE AND PSYCHOLOGICAL RESPONSES

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RECEIVED
1987
GOVERNOR'S OFFICE

March 19, 1987

Steve Cowper
Office of the Governor
P.O. Box A
Juneau, AK 99811

Re: Our File No. 2027.01

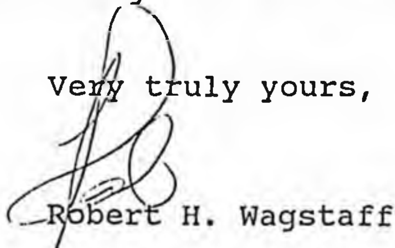
Dear Steve:

As we predicted last fall, the Legislature has introduced several bills calling for the "recriminalization" of marijuana with a number of unfactual alleged findings of fact. Enclosed please find a point by point rebuttal of all the purported "new" facts regarding marijuana.

In summary, nothing has changed as far as marijuana and scientific evidence since the Ravin decision in 1975. Indeed, the ultimate bottom line is that people all over the world have been using marijuana in various quantities for over 3,000 years and nothing has happened yet.

The issue presented in such legislation transcends marijuana. It deals with the right of privacy, the right of the people to be let alone to do what they want, so long as it doesn't affect anyone else. Please let me know if you would like any additional information or if I can be of any other assistance. We are not releasing the contents of this letter generally at this time.

Very truly yours,



Robert H. Wagstaff

RHW:ksg/01

NATIONAL ORGANIZATION FOR THE REFORM OF MARIJUANA LAWS

NORML

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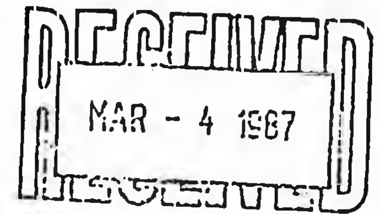
February 26, 1987



Robert Wagstaff
912 West 6th St
Anchorage, AK 99501

Dear Mr. Wagstaff:

I have examined the findings reported in House Bill #55 of the Alaskan Legislature and have found them flawed and inaccurate. Here is a point by point rebuttal of the findings. References to the National Academy of Sciences refer to their publication Marijuana and Health which reports their 1982 study of marijuana related research.

1) "THC, the mind altering ingredient in marijuana, is not soluble in water, but goes into the fatty tissues of the brain, testicles, ovaries, and other internal organs, and takes 30 days to be eliminated from the body;"

Actually, THC is broken down by the body soon after ingestion. It's metabolites stay in the body for up to 30 days, but these metabolites are non-psychoactive. Any toxicologist can confirm this. Urine testing advocates exploit the confusion between THC which is the active ingredient and is metabolized relatively quickly, and its metabolites (chiefly 9-carboxy-THC) which have no psychoactive effect but linger in the body for a month or so.

The following quote is from a recent article by Chemical & Engineering News (6/2/86). "Marijuana is the most commonly abused drug and the kinetics of its metabolism have been studied extensively. It is also an unusual drug in that it can be detected in urine for a long time. Very little of the original drug, Delta-9-tetrahydrocannabinol or THC, goes into the urine. The chemical is absorbed from the blood into body fat tissue where it is eliminated as it is slowly metabolized. . . (metabolites) can be found in urine for longer than a month . . ."

The following quote is from a Center for Disease Control MMWR Report (9/16/83). "Studies involving humans indicate that 80% - 90% of the total dose of Delta-9-THC is excreted within 5 days - approximately 20% in urine and 65% in feces."

Most experts claim that the metabolites disappear 10 to 14 days after ingestion in most cases. Urine tests detect these metabolites, which is why the manufacturers are required to point out that they are tests to indicate recent use, not intoxication or impairment. If THC remained in the system for 30 days, and remained active, the urine tests would be marketed as a way to indicate impairment. They aren't.

2) "the buildup of THC in the body causes the user to smoke more marijuana to achieve the desired high and may result in loss of sleep, appetite, and initiative, as well as moodiness and depression;"

The "buildup of THC" is actually tolerance to the drug, a physiological response humans and animals have to any drug. It occurs not because of the THC buildup, but because of other complex biological factors.

The symptoms mentioned accompany cessation of marijuana use in some individuals, not the buildup in the body. A majority of marijuana smokers experience no side-effects from cessation of use. If these symptoms indicate anything, they indicate the relative lack of serious side-effects from cessation of use, unlike those associated with alcohol and opiate withdrawal.

3) "it is possible for a human being to overdose from the use of marijuana, especially if it is used in conjunction with alcohol, because it increases the effects of alcohol;"

There is no record of anyone ever dying from an overdose of marijuana. It is one of the least toxic drugs known to man.

Raphael Mechoulam, who isolated the main ingredient of marijuana (THC) has edited Cannabinoids as Therapeutic Agents which includes an article by Mark Segal on Marijuana's potential as an analgesic. He reports that marijuana has promise as a pain killer because it is non-addictive and does not depress the respiratory tract (unlike opiods.) Marijuana's promise as a pain-killer is reported by the National Academy of Sciences, and by Roger Roffman in the book Marijuana as Medicine; its promise rests on the fact that finding #3 is essentially false.

Marijuana is a mild intoxicant, and as such should not be used in conjunction with other intoxicants. Whether marijuana increases the effects of alcohol, or complicates them, or just how one would subjectively describe the effects of mixing the two, is beside the point that multiple drug use provides multiple safety concerns. Marijuana, though, has far less severe cross-reaction with alcohol that barbituates or tranquilizers such as valium. Once again, a good toxicologist can provide confirmation of these points.

4) "the THC content of a marijuana cigarette 10 years ago was one percent, but is as high as 10 percent per cigarette today;"

Proponents of jailing people for marijuana use have been using this argument as if to suggest that marijuana is ten times more dangerous than it used to be. The premise that an increase in potency demonstrates an increase in danger is logically unsound. As with alcohol, consumers compensate for higher potency by consuming smaller doses. Anyone who counsels alcoholics will confirm that beer is no less dangerous than whiskey simply because it has a lesser potency.

The government has been trying to sell the increased potency argument for some time. The enclosed press release refers to a New York Times report in 1986 that marijuana had increased to an average potency of 3.5%, and that this was an alarming increase over the seventies. However, in 1980, The Times ran a similar story, only at that time they claimed that marijuana had an average potency of 4%. So, marijuana has actually decreased in potency, if you believe The Times.

5) "Marijuana causes schizophrenia, illusions, and hallucinations, including a dulling of the senses, creating the possibility that the user is unable to respond to body signals, such as pain;"

There is no clinical evidence that marijuana causes schizophrenia. The National Academy of Sciences found that drug abuse was more often than not a symptom rather than a cause of mental problems. Illusions and hallucinations are often subjective phenomena influenced by an individuals mental state and the power of suggestion. Individuals succeptible to lapses in their grasp of reality will compound their mental problems with the use of alcohol, marijuana, or other drugs.

Marijuana users do not hallucinate. They do experience an alteration of their space perception, and an apparent enhancement of colors. These, combined with impairment of motor coordination, are reasons why marijuana should not be used while driving a motor vehicle. However, to call these effects of marijuana "hallucinations" is misleading if not untruthful. Individuals who take LSD hallucinate. Individuals detoxifying from alcohol addiction hallucinate. Hallucinate means the individual sees something that isn't there. Marijuana users do not hallucinate.

The National Institute on Drug Abuse's pamphlet, "Marijuana", is far from being the best source on marijuana's effects. However, it's claims are based far more on actual research than popular myths. It makes no mention of hallucinations, illusions, or schizophrenia resulting from marijuana use.

Marijuana's promise as a pain killer is referenced above. However, the dose required to render an individual oblivious to body signals such as pain far exceeds standard levels of use. A sufficient dose to accomplish this would also put the subject to sleep. It is unlikely that this presents any danger to the individual or to society.

6) "although it may take a heavy cigarette smoker as long as 20 years to develop lung cancer, one marijuana cigarette a day may cause lung cancer in three years;"

Marijuana is used daily by over 6 million Americans, according to the National Institute of Drug Abuse. Marijuana has been a popular recreational drug used by a large percentage of young Americans since 1965. There is no record of case histories to document this finding. If this finding were true, we would have millions of case histories of young individuals with lung cancer from marijuana use. The case histories don't exist because the statement is false.

The National Academy of Sciences decided that marijuana smoking and tobacco smoking can not be compared because the methods of ingestion differ so greatly. Marijuana smokers smoke far less materials a day than tobacco smokers (up to 2 cigarettes a day compared to 20 - 60), but they inhale the smoke far deeper into the lungs. On the other hand, many marijuana smokers use a waterpipe (or "bong") which filters out many, but not all, of the tars that contribute to lung cancer.

Claims that marijuana is more carcinogenic than tobacco are compelled by a logic that dictates that because marijuana is illegal (except in Alaska) it has to be more dangerous than tobacco (or in other cases, than alcohol). The claims are based on the undisputed fact that marijuana contains more tar than tobacco, but ignore the differences in ingestion and dosage that make comparisons inaccurate. Marijuana smoke is bad for the lungs, it does

contribute to the formation of lung cancer, and I am convinced that by the year 2000 we will begin to hear of case studies of individuals who have lung cancer as a result of long term marijuana use.

Nonetheless, it is not true that a marijuana cigarette a day for three years will cause lung cancer. I offer my own lungs and continued health as proof.

7) "THC affects eggs, sperm, sexual hormones, and the development of a fetus, and marijuana use may result in deformed or undersized offspring;"

There are no documented cases of marijuana use causing a genetic deformity. I challenge anyone to provide one.

In April, 1984 Ralph Hingson delivered a paper at a NORML conference on "Effects of Marijuana Use on Pregnant Women". Dr. Hingson's conclusion was that marijuana use during pregnancy may result in a smaller birth weight for the fetus, but in an allowable range (similar to the smaller birth weight for babies from nicotine or alcohol using mothers.) NORML has been publicizing this since 1984. We regularly hear, though, from mothers who used marijuana during pregnancy who delivered babies of normal weight.

Laboratory tests have indicated that under some conditions, large doses of THC affect the eggs, sperm, and sexual hormones of rats and other animals. There is evidence that THC inhibits sperm mobility. However, the effects of marijuana on fertility seem to be negligible - as millions of marijuana smoking parents will attest to.

The National Academy of Sciences report affirmed that marijuana use has no effect on chromosomes or fertility.

8) "other physical reactions to marijuana include irreversible changes in the brain, sinusitis, pharyngitis, bronchitis, emphysema, increased heart rate, and decreased blood circulation;"

Marijuana use does not cause brain damage. NIDA recently announced proof that it does. My office contacted the researcher. His data actually suggested that a does of 50 marijuana cigarettes a day for 30 years would not cause brain damage. What NIDA based their comments on was his finding that 136 marijuana cigarettes for 30 years would cause slight premature senilia. An individual would have to smoke a marijuana cigarette every 8 minutes for 16 hours a day, for thirty years, to suffer any brain damage - if this study is conclusive. The enclosed NORML press release cited above re: marijuana potency contains more details of this study.

Smoking contributes to lung and sinus problems, and marijuana smoking is no different. Marijuana does increase the heart rate and/or blood pressure in some individuals; NORML cautions against marijuana use by individuals with cardiovascular problems.

9) "other psychological reactions to marijuana include loss of memory; impairment in thinking, reading comprehension, and verbal and arithmetic problem solving; impairment of perception of distance and time; and anxiety, panic, paranoia, psychosis, and psychological dependence."

People use marijuana because they enjoy the mild impairment of the senses marijuana contributes to. This impairment is short term, and wears off two to three hours after ingestion. There is no evidence of prolonged impairment from marijuana use. The effects described above up to but not including anxiety are the short-term effects desired by the marijuana user.

The danger of teenage marijuana use is that many teens are prone to mix relaxation and studying, meaning they think it is okay to study while high on marijuana or while drinking beer. Impairment limits the ability to learn, especially the acquisition of learning skills. This is why it is essential to deter adolescents from marijuana use, and a primary reason why NORML advocates legalizing marijuana for adults (and shutting down the black market that will sell to students.) However 90% of marijuana smokers are adults whose learning skills are unimpaired by their occasional, moderate marijuana use.

Marijuana produces a condition similar to stress on the human body (for example, the increase in heart rate.) Most users find this pleasurable (ironically even the ones who claim they use marijuana to alleviate stress), some first time users do not. This is what accounts to reports of anxiety attacks by new or inexperienced users of marijuana. No everybody who tries marijuana likes it, nor does everyone who uses it does so without ill-effect. People with pre-existing mental problems, as mentioned above, are succeptible to drub abuse. They are the source of reports of panic, paranoia, and psychosis resulting from marijuana use.

The issue of psychological dependence has been hotly debated for twenty years. Obviously, millions and millions of Americans use marijuana regularly. I contend they do so because they enjoy using marijuana. Whether they are psychologically dependent or not is a moot point. Marijuana is not an addictive drug, nor a dangerous one. Psychological reactions to it are cultural, not medical or biological. Once again, to belabor the point, some people with psychological problems abuse marijuana and other drugs. As with anxiety, panic, paranoia and psychosis, psychological dependence is not an observed side-effect in the overwhelmingly majority of marijuana users.

Additional Comments

To be to the point, these findings at best constitute horrible distortions and exaggerations of existing research findings. At worst they are deceptive lies and half-truths designed to mislead the legislature of Alaska.

The National and International Drug Law Enforcement Strategy of the National Drug Enforcement Policy Board (NDEPB) (Jan. 1987) states that "because the decriminalization of marijuana possession undermines the standard of the unacceptability of drug use, the 11 states (which includes Alaska) that have decriminalized marijuana possession should recriminalize this offense." This document also indicates that the Attorney General is now in charge of all anti-drug efforts, including drug-education plans.

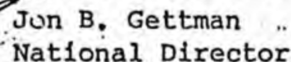
Many of the claims represented in the above findings replicate claims in the NDEPB's Analysis of the Domestic Cannabis Problem and the Federal Response, (8/86). The source cited was a Drug Enforcement Administration

report "The Health Implications of Marijuana Use." It is rift with phrases such as "research suggests," "have been observed," "marijuana may," and other cautious terminology which avoids making a direct conclusion. It is my opinion after studying these claims that the represent law enforcement's best attempt to justify the laws which they are obligated to enforce.

Social bias often interferes with sound scientific reasoning. The notion that marijuana is illegal so it must be dangerous is the driving rationale behind the ludicrous comments about marijuana above. The strategy of the NDEPB is to justify their increasing budget requests by turning drug education programs into law enforcement propaganda.

Please let me know how I can be of service in bringing the truth about marijuana to the people of Alaska.

Sincerely yours,



Jon B. Gettman
National Director

cc: Chris Hamre
enclosures

STATE OF ALASKA
THE LEGISLATURE

POUCH Y · STATE CAPITOL
JUNEAU, ALASKA 99811
907-465-3800

LEGISLATIVE AFFAIRS AGENCY

M E M O R A N D U M February 18, 1988

SUBJECT: Constitutionality of "criminalizing" possession of marijuana (CSSB 32 (HESS))

TO: Senator Bettye Fahrenkamp

FROM: Jack Chenoweth
Legislative Counsel

You have asked whether the legislature may constitutionally make possession of any amount of marijuana illegal.

In a memorandum accompanying the original version of SB 32, the drafter, Keith Levy, wrote:

> . . . This draft makes the possession of any amount of marijuana illegal. The proposed amendment to AS 11.71.060(a) specifically concerns possession of any amount less than one-half pound and makes it a misdemeanor.
>
> This provision conflicts with the right to privacy under Art. 1, sec. 22 of the Alaska Constitution. In the case of Ravin v. State, 537 P.2d 494 [(1975)], the Alaska Supreme Court ruled that this right to privacy within the home prevailed over an inadequately compelling governmental interest in preventing marijuana possession and use by adults in the home. The policy arguments made in the bill are not, in my opinion, sufficiently weighty to overcome the constitutional protection recognized in the Ravin decision.

Since then, as you know, the findings provisions of the original bill have been amended and extended and incorporated into the version that is the Senate HESS Committee Substitute. The committee substitute makes no change in the operative text of the bill.

It is the constitutionality of that committee substitute as to which you inquire.

*

In Ravin, the court acknowledged that the right of privacy is limited by the "legitimate needs of the State to protect the health and safety of its citizens." 537 P.2d 494, at 501. Responding to the evidence marshalled by the state in defense of its prosecution, the court determined that

> . . . It appears that effects of marijuana on the individual are not serious enough to justify widespread concern, at least as compared with the far more dangerous effects of alcohol, barbiturates, and amphetamines. Moreover, the current patterns of use in the United States are not such as would warrant concern that in the future consumption patterns are likely to change.

Ravin, supra., at 509 - 510. The court did not close the door to debate or to the adoption of legislation that would survive constitutional scrutiny:

> Research is continuing extensively. Scientific doubts persist, however, and that fact has significance for our application of the law. It is a long-standing rule of law that statutes designed to protect the public health will receive a liberal construction. . . . There is a presumption in favor of public health measures; when there is substantial doubt as to the safety of a given substance or situation for the public health, controls intended to obviate the danger will usually be upheld.

Ravin, supra., at 510. But, the court concluded:

> . . . no adequate justification for the state's intrusion into the citizen's right to privacy by its prohibition of possession of marijuana by an adult for personal consumption in the home has been shown. The privacy of the individual's home cannot be breached absent a persuasive showing of a close and substantial relationship of the intrusion to a legitimate governmental interest. Here, mere scientific doubts will not suffice. The state must demonstrate a need based on proof that the public health or welfare will

in fact suffer if the controls are not applied. [Emphasis added]

Ravin, supra. at 511.

In an inquiry as to constitutionality of legislation setting controls on possession of marijuana in the home, the burden is on the state to "demonstrate a need based on proof that the public health or welfare will in fact suffer if controls are not applied."

Under scrutiny, would CSSB 32 (HESS) meet the burden laid down in the Ravin decision?

Assuming CSSB 32 (HESS) is passed and becomes law, in a prosecution under it, applying the Ravin test, a court is not constrained to look only at the legislative findings to ascertain whether there is "demonstrated . . . need based on proof" that public health or welfare will be affected by the criminal re-regulation of the possession of the plant. The court may also conduct an analysis beyond the findings cited by the legislature in its consideration of the bill, Gray v. State, 525 P.2d 524 (Alaska, 1974), and rely on other relevant evidence and arguments "including matters which have never been presented to or considered by the legislature in its deliberations." Gray, supra., note 15 at 528. 1/

What is in balance is, as the court has said

> . . . the general proposition that the authority of the state to exert control over the individual extends only to activities of the individual which affect others or the public at large as it relates to matters of public health or safety, or to provide for the general welfare. . . . The state cannot impose its own notions of morality, propriety, or fashion on individuals when the public has no legitimate interest in the affairs of those individuals. . . .

Ravin, supra., at 509.

The "findings"--bill section 1 identifies them as such--purport to set out factual conclusions from which the legislature has decided to proceed to "recriminalize" marijuana. 2/ As I've reviewed the recitations, I've found that many of the statements are general and speculation, or

have relatively little to do with concerns of public health, safety, and welfare that affect significant numbers of Alaskans. 3/

More to the point, however, is my belief that the Senate committee did not establish a record in hearings that would verify the recitations set out in the findings sufficient to meet the Ravin burden. A comparative examination of the findings to the court's analysis in Ravin leads me to conclude that much of the material set out as findings is little more than conclusions that have already received some attention by the court in the initial decision. 4/ Virtually all of the findings in section 1(a) of the bill have a counterpart in the extended discussion of the physiological and psychological effects of the drug undertaken by the court in its decision. Almost everything that the Senate committee substitute reports as "fact" or offers as conclusion is addressed in the earlier opinion. (So, for example, where the committee substitute asserts that the "THC content of commonly obtainable marijuana has increased from less than one percent 10 years ago to as high as 10 percent today" (finding 6), the Ravin decision seemingly anticipates the finding by reporting--and subsequently dismissing--the claim that "most of the [physiological] damage suggested by [the] studies [reviewed and relied on by the court] comes in the context of intensive use of concentrated forms of THC." Ravin, supra., at 506, Emphasis added. And, where the committee substitute recites that "other psychological reactions to marijuana include loss of memory, anxiety, panic, paranoia, psychosis, psychological dependence, and impairment in thinking, reading comprehension, verbal and arithmetic problem solving, and perception of distance and time" (finding 12), the litany appears to have been taken almost intact from similar observations made in the Ravin decision at pp. 505-507.)

Recitations of findings unsupported by significant evidence--or at least significant new evidence--makes it less likely that the court would sustain the enactment against a constitutional challenge.

Even at that, the emphasis in section 1(a) of the committee substitute is overwhelmingly on the purported effect of marijuana on the individual. By itself, that is probably not enough, as Keith Levy has claimed, to meet the test of Ravin, i.e., that the record show that the legislature's

deliberations found "a close and substantial relationship of the intrusion to a legitimate governmental interest." The opinion makes it quite clear that government may not "simply decide what is in a person's best interest and then compel it." The burden, the court has made clear, is on the government to demonstrate that "the public health or welfare will in fact suffer if the controls are not applied."

I am not prepared to speculate on how the court would rule on this bill. In candor, however, like Keith Levy, I have serious reservations. This office has previously addressed the question of the constitutionality of this and similar legislation (HB 698, 13th Legislature; SB 163, 14th Legislature), and our conclusions have been consistent. Now, despite the Senate HESS committee's revision of the findings as it produced the committee substitute, I cannot conclude that the HESS committee substitute meets the *Ravin* tests. Suffice to say that, without reviewing the specific testimony that the senate committee received last year as it considered the bill, it should be clear that bill findings that are unsupported by rigorous examination by the legislative committee that authored them would surely be insufficient to meet the burden of the *Ravin* test. But even if the underlying evidence is sufficient in that regard, it is far from clear to me that the evidence offered compels the conclusion the state may now act to prohibit possession of marijuana for a reason related to the public health or public welfare.

Thank you for the opportunity to comment.

1/ In its decision, the Ravin court wrestled with the adequacy of the record. In the absence of a legislative record, it undertook its own examination, an extensive review of pertinent evidence that, in the decision, the court summarized as follows:

> [W]e conclude that citizens of the State of Alaska have a basic right to privacy in their homes under Alaska's constitution. This right to privacy would encompass the possession and ingestion of substances such as marijuana in a purely personal, non-commercial context in the home unless the state can meet its substantial burden and show that proscription of possession of marijuana in the home is supportable by achievement of a legitimate state interest.
>
> This leads us to the second facet of our inquiry, namely, whether the State has demonstrated sufficient justification for the prohibition of possession of marijuana in general in the interest of public welfare; and further, whether the State has met the greater burden of showing a close and substantial relationship between the public welfare and control of ingestion or possession of marijuana in the home for person use.
>
> The evidence which was presented at the hearing before the district court consisted primarily of several expert witnesses familiar with various medical and social aspects of marijuana use. Numerous written reports and books were also introduced into evidence.
>
> . . .
>
> The justification offered by the State to uphold AS 17.12.010 are generally that marijuana is a psychoactive drug; that it is not a harmless substance; that heavy use has concomitant risk, that it is capable of precipitating a psychotic reaction in at least individuals who are predisposed towards such reaction; and that its use adversely affects the user's ability to operate an automobile. The State relies upon a number of medical researchers who have raised questions as to the substance's effect on the body's immune system, on chromosomal structure, and on the functioning of the brain. On the other hand, in almost

> every instance of reports of potential danger arising from marijuana use, reports can be found reaching contradictory results. It appears that there is no firm evidence that marijuana, as presently used in this country, is generally a danger to the user or to others. But neither is there conclusive evidence to the effect that it is harmless. . . .
>
> Possibly implicit in the State's catalogue of possible dangers of marijuana use is the assumption that the State has the authority to protect the individual from his own folly, that is, that the State can control activities which present no harm to anyone except those enjoying them. Although some courts have found the "public interest" to be broad enough to justify protecting the individual against himself, most have found inherent limitations on the police power of the state. An apposite example is the litigation regarding the constitutionality of laws requiring motorcyclists to wear helmets. Most of the courts addressing the issue, including this one, have resolved it by finding a connection between the helmet requirement and the safety of other motorists, but a significant number of courts have explicitly rejected such restrictive measures as beyond the police power of the state because they do not benefit the public. Typical of the logic of these latter cases is the dissent of Justice Abe in State v. Lee, [465 P2d. 573 (1975)] in which the Hawaii Supreme Court upheld a motorcycle helmet requirement despite finding no clear link between lack of the requirement by the motorcyclist and injury to others. The court reasoned that where a person's conduct is so reckless, and the resulting injury and death are so widespread as to be of concern to the public, then the conduct affects the public interest and is within the scope of the police power. Justice Abe dissented, citing a general right to be left alone or liberty to do as you please. There has to be a genuine harm to others, he wrote, to justify such controls; a state cannot simply decide what is in a person's best interest and compel it.

Ravin, supra., at 504-509. (Footnotes omitted.)

After finding, on the basis of the evidence offered and considered, a "need for control of drivers under the influence of marijuana," the court concluded:

> [G]iven the relative insignificance of marijuana consumption as a health problem in our society at present, we do not believe that the potential harm generated by drivers under the influence of marijuana, standing alone, creates a close and substantial relationship between the public welfare and control of ingestion of marijuana or possession of it in the home for personal use. Thus we conclude that no adequate justification for the state's intrusion into the citizen's right to privacy by its prohibition of possession of marijuana by an adult for personal consumption in the home has been shown. The privacy of the individual's home cannot be breached absent a persuasive showing of a close and substantial relationship of the intrusion to a legitimate governmental interest. Here, mere scientific doubts will not suffice. The state must demonstrate a need based on proof that the public health or welfare will in fact suffer if the controls are not applied.

<u>Ravin, supra.</u>, at 511 (Footnotes omitted.)

<u>2</u>/ The language and content of the proposed findings that support subsection 1(a) of CSSB 32 appear to derive from related material and proposed findings incorporated into CSHB 698 of the 13th Legislature. A document in our records recites that the findings used in CSHB 698 "are taken from the testimony in several [House] Judiciary Committee hearings, including (but not limited to)" testimony or material submitted by

> Dr. Reese T. Jones, clinical psychiatrist, University of California, San Francisco; and
> Dr. Gabriel G. Nahas, Columbia University, New York City, re: the psychological effects and the biological effects, respectively, of the use of marijuana.

There is an additional sheet reciting other proposed conclusions, some of which appear to have been incorporated into the findings in the earlier bill (and carried forward into this bill), but the source of the information is not noted or disclosed.

<u>3</u>/ The tendency of the findings set out in section 1 of CSSB 32 to generalize and to speculate as to the personal and public health consequences of use of small amounts of

the drug may be illustrated by the "tentativeness" of some of the principal findings set out in subsection (a) of the committee substitute:

-- the findings recite the buildup of tetrahydrocannabinol (THC) in the tissues of the body, but conclude only that "repeated administration of even small doses may lead to an accumulation" of the drug at cumulatively higher levels (finding 3) and that the buildup "may result in loss of sleep, appetite, and initiative . . . " (finding 4);

-- the findings note that "marijuana may cause schizophrenia, illusions, and hallucinations . . ." (finding 8); that use of the drug "may result in deformed or undersized offspring" (finding 10); and that its use "may [hasten the onset of] lung cancer" (finding 9).

That the findings rely on national studies and have little direct relevance to data based on studies involving or affecting Alaskans seems self-evident.

As to the assertions made in subsection (b) of the committee substitute, the subsection in which the legislature makes direct reference to the public health and welfare of the people of the state, I question whether the committee has a basis for the proposed conclusions. There is nothing in the drafting file to indicate the source of these specific statistics and conclusions.

4/ In its opinion, the Ravin court reported at length on its conclusions concerning the physiological and psychological effects of the use of the drug:

> The short-term physiological effects are relatively undisputed. An immediate slight increase in the pulse, decrease in salivation, and a slight reddening of the eyes are usually noted. There is also impairment of psychomotor control. These effects generally end within two to three hours of the end of smoking.
>
> Long-term physiological effects raise more controversy among the experts. The National Commission on Marihuana and Drug Abuse reported that among users "no significant physical, biochemical, or mental abnormalities could be attributed solely to their marijuana smoking." Certain researchers have pointed to possible deleterious effects on the body's immune

defenses, on the chromosomal structures of users, and on testosterone levels in the body The methodology of certain of these studies has been extensively criticized by other qualified medical scientists, however. These studies cannot be ignored. It should be noted that most of the damage suggested by these studies becomes in the context of intensive use of concentrated forms of THC. It appears that the use of marijuana, as it is presently used in the United States today, does not constitute a public health problem of any significant dimensions. It is, for instance, far more innocuous in terms of physiological and social damage than alcohol or tobacco. But the studies suggesting dangers in intensive cannabis use do raise valid doubts which cannot be dismissed or discounted.

The immediate psychological effects of marijuana are typically a mild euphoria and a relaxed feeling of well-being. The user may feel a heightened sensitivity to taste and to visual and aural sensations, and his perception of time intervals may be distorted. A desire to become high can lead to a greater high; fear of becoming high or general nervousness can cause the user to fail to experience any high at all. In rare cases, excessive nervousness or fear of the drug can even precipitate a panic reaction. Occasionally a user will experience a negative reaction such as anxiety or depression, particularly when he takes in more of the substance than needed to achieve the desired high. However, in smoking marijuana, the user can selftitrate, or control the amount taken in, since the effect builds up gradually.

Additional short-term effects are an impairment of immediate-past-memory facility and impairment in performing psycho-motor tasks. Experienced users seem less impaired in this regard than naive users.

In extreme rare instances, use of marijuana has been known to precipitate psychotic episodes; however, the consensus of the experts seems to be that the potential for precipitating psychotic episodes exists only for a limited number of prepsychotic persons who could be pushed into psychosis by any number of drug or nondrug-related influences.

> There is considerable debate as to the long-term effects of marijuana on mental functioning. Certain researchers cite evidence of an "amotivational syndrome" among long-term heavy cannabis users. However, the main examples of this effect are users in societies where large segments of the population exhibit such traits as social withdrawal and passivity even without drug use. The National Commission concludes that long-time heavy users do not deviate significantly from their social peers in terms of mental functioning, at least to any extent attributable to marijuana use.
>
> Most authorities have accepted the theory that marijuana users develop a "reverse tolerance", that is, that a moderate user needs less and less marijuana over time to achieve a high. Recent research indicates that this may be true only up to a point, and that beyond a certain intensity of use a true tolerance begins to develop. If true, this may be relevant regarding only heavy use of concentrated forms of cannabis, since marijuana is physically addicting. It also rejected the notion that marijuana as used in the United States today presents a significant risk of causing psychological dependency in the user. Rather, the experimental or intermittent user develops little or no psychological dependency. Lengthy use on a regular basis does present a risk of such dependency and of subsequent heavier use, and strong psychological dependence is characteristic of heavy users in other countries. This pattern of use is rare in the United State today, however.
>
> While there is no confirmed report of a human ever having died from an overdoes of cannabis, the toxic levels of THC have been determined from tests on animals. The lethal dose for marijuana is approximately 40,000 times the dose needed to achieve intoxication. The equivalent ratio of intoxicating to lethal doses for alcohol is 4/10 and for barbiturates 3/50.

Ravin, supra., at 506-508 (Footnotes omitted).

I suspect that one key element in any judicial analysis would be the link between adult possession and use of marijuana and the impact of that use on, and opportunity for

use by, adolescents living in the same home. In Ravin, citing a 1971 article in the American Medical Association Journal, the court related that "24% of Anchorage school children in grades six through twelve had used marijuana, as had 46% in grades eleven and twelve." Ravin, supra., at 505. In CSSB 32, the legislature finds that "the daily use of marijuana in the state has increased to as high as four percent among the general population and as high as six percent among secondary school students" (finding 2). The analysis prompts other, unanswered, questions. Are the figures cited for the Anchorage School District representative of the state as a whole? As to the purported increased usage of the drug on a regular basis, claimed now to be six percent among secondary school students, is that an increase when compared to patterns of use reported in the 1971 report of the Journal of the American Medical Association? And--most significantly in a bill that attempts to regulate possession of marijuana by adults--do public health officials and educators and others who might be familiar with the welfare of secondary school students provide testimony of the serious deleterious effects of either their use of marijuana or of their regular exposure to its use by adults?

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Irwin RAVIN, Petitioner,
v.
STATE of Alaska, Respondent.
No. 2135.

Supreme Court of Alaska.
May 27, 1975.
As Amended May 28, 1975.

Proceeding was instituted on defendant's motion to dismiss charge of violation of statute proscribing possession of marijuana. The District Court, Third Judicial District, Anchorage, Dorothy D. Tyner, J., denied motion to dismiss and the superior court affirmed and petition for review from the superior court's affirmance was granted. The Supreme Court, Rabinowitz, C. J., held that need for control of drivers under influence of marijuana and existing doubts as to safety of marijuana demonstrate a sufficient justification for statutory proscription of possession of marijuana, and thus an individual's right to possess or ingest marijuana while driving is subject to statute proscribing possession of marijuana; and that no adequate justification exists for State's intrusion into citizen's right of privacy by its prohibition of possession of marijuana by an adult for personal consumption in home, and thus possession of marijuana by adults at home for personal use is constitutionally protected.

Remanded for further proceedings.

Boochever and Connor, JJ., filed specially concurring opinions.

1. Criminal Law ⟹1030(2)

Issue of cruel and unusual punishment in application of statute proscribing possession of marijuana to possession of marijuana for personal use was not considered by Supreme Court, since issue was not raised below or in petition for review to Supreme Court. Rules of Appellate Procedure 24(e); AS 17.12.010, 17.12.150.

2. Constitutional Law ⟹82

Once a fundamental right under State Constitution has been shown to be involved and it has been further shown that this constitutionally protected right has been impaired by governmental action, government must come forward and meet its substantial burden of establishing that abridgment in question was justified by a compelling governmental interest.

3. Constitutional Law ⟹82

When governmental action interferes with an individual's freedom in an area which is not characterized as fundamental, a less stringent test is ordinarily applied and, in such cases, court's task is to determine whether legislative enactment has a reasonable relationship to a legitimate government purpose, and under this "rational basis" test state need only demonstrate existence of facts which can serve as a rational basis for belief that measure would properly serve public interest.

4. Constitutional Law ⟹82

If governmental restrictions interfere with individual's right to privacy, court will require that relationship between means and ends be not merely reasonable but close and substantial.

5. Constitutional Law ⟹82

Federal right to privacy arises only in connection with other fundamental rights, such as the grouping of rights which involve the home, and even in connection with penumbra of home-related rights, right of privacy in sense of immunity from prosecution is absolute only when private activity will not endanger or harm the general public. Const. art. 1, § 22; U.S.C.A. Const. Amends. 1, 3–5, 14.

6. Constitutional Law ⟹82
Drugs and Narcotics ⟹41

Right to privacy amendment to Alaska Constitution cannot be read so as to make the possession or ingestion of marijuana itself a fundamental right. Const. art. 1, § 22.

7. Constitutional Law ⟹82

Privacy amendment to Alaska Constitution was intended to give recognition and protection to the home. Const. art. 1, § 22.

8. Constitutional Law ⟹82

Privacy in the home is a fundamental right. Const. art. 1, § 22; U.S.C.A.Const. Amend. 4.

9. Constitutional Law ⟹82

Right of privacy in the home must yield when it interferes in a serious manner with the health, safety, rights and privileges of others or with the public welfare. Const. art. 1, § 22; U.S.C.A.Const. Amend. 4.

10. Constitutional Law ⟹82

No one has an absolute right to do things in the privacy of his own home which will affect himself or others adversely. Const. art. 1, § 22; U.S.C.A. Const. Amend. 4.

11. Constitutional Law ⟹82

Right of privacy in home is limited in that possession of substances is guaranteed only for purely private, noncommercial use in home. Const. art. 1, § 22; U.S.C.A. Const. Amend. 4.

12. Constitutional Law ⟹70.1(10)

In determining validity of legislative proscription of possession of marijuana, it is not function of court to reassess scientific evidence in the manner of a legislature.

13. Constitutional Law ⟹82

State cannot impose its own notions of morality, propriety, or fashion on individuals when the public has no legitimate interest in the affairs of those individuals.

14. Constitutional Law ⟹82

The right of an individual to do as he pleases is not absolute and it can be made to yield when it begins to infringe on the rights and welfare of others.

15. Constitutional Law ⟹81

Authority of state to control activities of its citizens is not limited to activities which have a present and immediate impact on public health or welfare.

16. Constitutional Law ⟹82

State is under no obligation to allow otherwise "private" activity which will result in numbers of people becoming public charges or otherwise burdening the public welfare.

17. Health and Environment ⟹20

Statutes designed to protect the public health will receive a liberal construction.

18. Health and Environment ⟹20

There is a presumption in favor of public health measures.

19. Health and Environment ⟹20

When there is substantial doubt as to safety of a given substance or situation of public health, controls intended to obviate the danger will usually be upheld.

20. Automobiles ⟹332

Need for control of drivers under influence of marijuana and existing doubts as to safety of marijuana demonstrate a sufficient justification for statutory proscription of possession of marijuana; and thus an individual's right to possess or ingest marijuana while driving is subject to statute proscribing possession of marijuana. AS 05.25.060, 17.12.010, 17.12.150, 28.-35.030; Const. art. 1, § 22; U.S.C.A.Const. Amends. 1, 14.

21. Drugs and Narcotics ⟹43

No adequate justification exists for State's intrusion into citizen's right of privacy by its prohibition of possession of marijuana by an adult for personal consumption in home, and thus possession of marijuana by adults at home for personal use is constitutionally protected. AS 17.-12.010, 17.12.150; Const. art. 1, § 22; U.S.C.A.Const. Amends. 1, 4, 14.

22. Constitutional Law ⟹82

Privacy of individual's home cannot be breached absent a persuasive showing of a close and substantial relationship of the intrusion to a legitimate governmental interest.

23. Drugs and Narcotics ⟹62, 68

Neither federal nor Alaska Constitution affords protection for the buying or selling of marijuana, nor absolute protection for its use or possession in public. AS 17.12.010, 17.12.150; Const. art. 1, § 22; U.S.C.A.Const. Amends. 1, 4, 14.

24. Drugs and Narcotics ⟹56

Possession at home of amounts of marijuana indicative of intent to sell rather than possession for personal use is unprotected. AS 17.12.010, 17.12.150; Const. art. 1, § 22; U.S.C.A.Const. Amends. 1, 4, 14.

25. Constitutional Law ⟹250.1(2)
Drugs and Narcotics ⟹43

Statute proscribing possession of marijuana is not violative of equal protection on ground that other commonly used recreational drugs, such as alcohol and tobacco, are not proscribed, even though they may inflict more damage on user than does marijuana. AS 17.12.010, 17.12.150; Const. art. 1, § 22; U.S.C.A.Const. Amend. 1, 14.

26. Health and Environment ⟹20

It is not irrational for legislature to regulate those public health areas where it can do so, when other areas exist where controls are less feasible.

27. Drugs and Narcotics ⟹43

Fact that marijuana may be the least harmful of drugs covered by statute proscribing possession is not alone sufficient to make classification of marijuana with other drugs covered irrational. AS 17.10.010 et seq., 17.12.010, 17.12.150(3); U.S.C.A.Const. Amends. 1, 14.

28. Constitutional Law ⟹70.3(12)

Wisdom of statute proscribing possession of marijuana was for legislature, rather than judiciary. AS 17.10.010 et seq., 17.12.010, 17.12.150(3).

R. Collin Middleton and Robert H. Wagstaff, Anchorage, for petitioner.

Stephen G. Dunning, Asst. Dist. Atty., Joseph D. Balfe, Dist. Atty., Anchorage, Norman C. Gorsuch, Atty. Gen., Juneau, for respondent.

OPINION

Before RABINOWITZ, C. J., and CONNOR, ERWIN, BOOCHEVER and FITZGERALD, JJ.

RABINOWITZ, Chief Justice.

The constitutionality of Alaska's statute prohibiting possession of marijuana is put in issue in this case. Petitioner Ravin was arrested on December 11, 1972 and charged with violating AS 17.12.010.[1] Before trial Ravin attacked the constitutionality of AS 17.12.010 by a motion to dismiss in which he asserted that the State had violated his right of privacy under both the federal and Alaska constitutions, and further violated the equal protection provisions of the state and federal constitutions. Lengthy hearings on the questions were held before District Court Judge Dorothy D. Tyner, at which testimony from several expert witnesses was received. Ravin's motion to dismiss was denied by Judge Tyner. The superior court then granted review and after affirmance by the superior court, we, in turn, granted Ravin's petition for review from the superior court's affirmance.

[1] Here Ravin raises two basic claims: first, that there is no legitimate state interest in prohibiting possession of marijuana by adults for personal use, in view of the right to privacy; and secondly, that the statutory classification of marijuana as a dangerous drug, while use of alcohol and tobacco is not prohibited, denies

1. AS 17.12.010 provides:
Except as otherwise provided in this chapter, it is unlawful for a person to manufacture, compound, counterfeit, possess, have under his control, sell, prescribe, administer, dispense, give, barter, supply or distribute in any manner, a depressant, hallucinogenic or stimulant drug.
AS 17.12.150 defines "depressant, hallucinogenic, or stimulant drug" to include all parts of the plant *Cannabis Sativa L.*

him due process and ... law.[2]

We first address ... that his constitutional privacy compels the ... State of Alaska is pro... ing the private possess... juana. Ravin's basic ... exists under the federa... tutions a fundamental ... scope of which is suffi... compass and protect th... ijuana for personal use ... mental constitutional ri... then have the burden ... compelling state interest ... session of marijuana. ... controlling principles, ... that the evidence submi... sides demonstrates that ... atively innocuous subs... compared with other ... stances, and that nothing ... a compelling state inter... the State.

Ravin's arguments nec... amination of the contou... right to privacy and t... court's review of the leg... nation to criminalize po... juana.

[2] We have previous... to be applied when a cla... state action encroaches u... al's constitutional rights. *Smith*, 501 P.2d 159 (Alas...

2. In his briefs before this ... attempts to raise the issue ... usual punishment in the a... 17.12.010 to possession of m... sonal use. Because this issu... below or in the petition fo... court, we decline to consider ... proceeding. *See* Appellate ... Moran v. Holman, 501 P.2... (Alaska 1972).

3. 501 P.2d at 171. *See* Sta... P.2d 132 (Alaska 1973); St... 502 P.2d 473 (Alaska 1972) ... 525 P.2d 524, 527 (Alaska ... v. State, 526 P.2d 1131, 1133 ... State v. Adams, 522 P.2d 113...

him due process and equal protection of law.[2]

We first address petitioner's contentions that his constitutionally protected right to privacy compels the conclusion that the State of Alaska is prohibited from penalizing the private possession and use of marijuana. Ravin's basic thesis is that there exists under the federal and Alaska constitutions a fundamental right to privacy, the scope of which is sufficiently broad to encompass and protect the possession of marijuana for personal use. Given this fundamental constitutional right, the State would then have the burden of demonstrating a compelling state interest in prohibiting possession of marijuana. In light of these controlling principles, petitioner argues that the evidence submitted below by both sides demonstrates that marijuana is a relatively innocuous substance, at least as compared with other less-restricted substances, and that nothing even approaching a compelling state interest was proven by the State.

Ravin's arguments necessitate a close examination of the contours of the asserted right to privacy and the scope of this court's review of the legislature's determination to criminalize possession of marijuana.

[2] We have previously stated the tests to be applied when a claim is made that state action encroaches upon an individual's constitutional rights. In *Breese v. Smith*, 501 P.2d 159 (Alaska 1972), we had before us a school hairlength regulation which encroached on what we determined to be the individual's fundamental right to determine his own personal appearance. There we stated:

> Once a fundamental right under the constitution of Alaska has been shown to be involved and it has been further shown that this constitutionally protected right has been impaired by governmental action, then the government must come forward and meet its substantial burden of establishing that the abridgement in question was justified by a compelling governmental interest.[3]

This standard is familiar federal law as well. As stated by the United States Supreme Court:

> Where there is a significant encroachment upon personal liberty, the State may prevail only upon showing a subordinating interest which is compelling.[4]

The law must be shown "necessary, and not merely rationally related, to the accomplishment of a permissible state policy."[5]

[3] When, on the other hand, governmental action interferes with an individual's freedom in an area which is not characterized as fundamental, a less stringent test is ordinarily applied. In such cases our task is to determine whether the legislative enactment has a reasonable relationship to a legitimate governmental purpose.[6] Under this latter test, which is sometimes referred to as the "rational basis" test, the State

2. In his briefs before this court, Ravin also attempts to raise the issue of cruel and unusual punishment in the application of AS 17.12.010 to possession of marijuana for personal use. Because this issue was not raised below or in the petition for review to this court, we decline to consider the issue in this proceeding. *See* Appellate Rule 24(e). *Cf.* Moran v. Holman, 501 P.2d 769, 770 n. 1 (Alaska 1972).

3. 501 P.2d at 171. *See* State v. Wylie, 516 P.2d 142 (Alaska 1973); State v. Van Dort, 502 P.2d 453 (Alaska 1972); Gray v. State, 525 P.2d 524, 527 (Alaska 1974); Gilbert v. State, 526 P.2d 1131, 1133 (Alaska 1974); State v. Adams, 522 P.2d 1125 (Alaska 1974).

4. Bates v. Little Rock, 361 U.S. 516, 524, 80 S.Ct 412, 417, 4 L.Ed.2d 480, 486 (1960). *See* Roe v. Wade, 410 U.S. 113, 155, 93 S.Ct. 705, 35 L.Ed.2d 147, 178 (1973).

5. McLaughlin v. Florida, 379 U.S. 184, 196, 85 S.Ct. 283, 290, 13 L.Ed.2d 222, 231 (1964), quoted in the concurrence of Mr. Justice Goldberg in Griswold v. Connecticut, 381 U.S. 479, 497, 85 S.Ct. 1678, 14 L.Ed.2d 510, 522 (1965).

6. *See* Concerned Citizens v. Kenai Peninsula Borough, 527 P.2d 447, 452 (Alaska 1974); Mobil Oil Corp v. Local Boundary Comm'n, 518 P.2d 92, 101 (Alaska 1974); Meyer v. Nebraska, 262 U.S. 390, 43 S.Ct. 625, 67 L. Ed. 1042 (1923).

need only demonstrate the existence of facts which can serve as a rational basis for belief that the measure would properly serve the public interest.

In our recent opinion in *Lynden Transport, Inc. v. State*, 532 P.2d 700 (Alaska 1975), we recognized the existence of considerable dissatisfaction with the fundamental right-compelling state interest test. There we said:

> It has been suggested that there is mounting discontent with the rigid two-tier formulation of the equal protection doctrine, and that the United States Supreme Court is prepared to use the clause more rigorously to invalidate legislation without expansion of "fundamental rights" or "suspect" categories and the concomitant resort to the "strict scrutiny" tests. We are in agreement with the view that the Supreme Court's recent equal protection decisions have shown a tendency towards less speculative, less deferential, more intensified means-to-end inquiry when it is applying the traditional rational basis test and we approve of this development. *See* Gunther, *Foreword: In Search of Evolving Doctrine on a Changing Court: A Model for Newer Equal Protection*, 86 Harv.L.Rev. 1 (1972). *See, e. g.*, James v. Strange, 407 U.S. 128, 92 S.Ct. 2027, 32 L.Ed.2d 600 (1972); Jackson v. Indiana, 406 U.S. 715, 92 S.Ct. 1845, 32 L.Ed.2d 435 (1972); Humphrey v. Cady, 405 U.S. 504, 92 S.Ct. 1048, 31 L.Ed.2d 394 (1972); Eisenstadt v. Baird, 405 U.S. 438, 92 S.Ct. 1029, 31 L.Ed.2d 349 (1972); Reed v. Reed, 404 U.S. 71, 92 S.Ct. 251, 30 L.Ed.2d 225 (1971).

[4] This court has previously applied a test different from the rigid two-tier formulation to state regulations. In *State v. Wylie*,[7] we tested durational residency requirements for state employment by both the compelling state interest test and a test which examined whether the means chosen suitably furthered an appropriate governmental interest.[8] It is appropriate in this case to resolve Ravin's privacy claims by determining whether there is a proper governmental interest in imposing restrictions on marijuana use and whether the means chosen bear a substantial relationship to the legislative purpose. If governmental restrictions interfere with the individual's right to privacy, we will require that the relationship between means and ends be not merely reasonable but close and substantial.

Thus, our undertaking is two-fold: we must first determine the nature of Ravin's rights, if any, abridged by AS 17.12.010, and, if any rights have been infringed upon, then resolve the further question as to whether the statutory impingement is justified.

As we have mentioned, Ravin's argument that he has a fundamental right to possess marijuana for personal use rests on both federal and state law, and centers on what may broadly be called the right to privacy. This "right" is increasingly the subject of litigation and commentary and is still a developing legal concept.[9]

In Ravin's view, the right to privacy involved here is an autonomous right which gains special significance when its situs is found in a specially protected area, such as the home. Ravin begins his privacy argument by citation of and reliance upon *Griswold v. Connecticut*,[10] in which the Supreme Court of the United States struck down as unconstitutional a state statute effectively barring the dispensation of birth control information to married persons. Writing for five members of the Court, Mr. Justice Douglas noted that rights protected by the Constitution are not limited to those specifically enumerated in the

7. 516 P.2d 142 (Alaska 1973).

8. *Id.* at n. 16.

9. The right to privacy was recently made explicit in Alaska by an amendment to the state constitution. Alaska Const. Art. I, § 22.

10. 381 U.S. 479, 85 S.Ct. 1678, 14 L.Ed.2d 510 (1965).

Constitution. In order to secure the enumerated rights, certain peripheral rights must be recognized. In other words, the 'specific guarantees in the Bill of Rights have penumbras, formed by emanations from those guarantees that help give them life and substance."[11] Certain of these penumbral rights create "zones of privacy", for example, First Amendment rights of association, Third and Fourth Amendment rights pertaining to the security of the home, and the Fifth Amendment right against self-incrimination. The Supreme Court of the United States then proceeded to find a right to privacy in marriage which antedates the Bill of Rights and yet lies within the zone of privacy created by several fundamental constitutional guarantees. It was left unclear whether this particular right to privacy exists independently, or comes into being only because of its connection with fundamental enumerated rights.

The next important Supreme Court opinion regarding privacy is *Stanley v. Georgia*,[12] in which a state conviction for possession of obscene matter was overturned as violative of the First and Fourteenth Amendments. The Supreme Court had previously held that obscenity is not protected by the First Amendment.[13] But in *Stanley* the Count made a distinction between commercial distribution of obscene matter and the private enjoyment of it at home. The Constitution, it said, protects the fundamental right to receive information and ideas, regardless of their worth. Moreover, the Supreme Court said,

> . . . in the context of this case - a prosecution for mere possession of printed or filmed matter in the privacy of a person's own home—that right takes on an added dimension. For also fundamental is the right to be free, except in very limited circumstances, from unwanted governmental intrusions into one's privacy.[14]

The Supreme Court concluded that the First Amendment means a state has no business telling a man, sitting alone in his own home, what books he may read or what films he may watch. The Court took care to limit its holding to mere possession of obscene materials by the individual in his own home. It noted that it did not intend to restrict the power of the state or federal government to make illegal the possession of items such as narcotics, firearms, or stolen goods.

The Stanley holding was subsequently refined by a series of cases handed down in 1973. In *Paris Adult Theatre I v. Slaton*,[15] the Supreme Court rejected the claim of a theater owner that his showing of allegedly obscene films was protected by *Stanley* because his films were shown only to consenting adults. The Court explicitly rejected the comparison of a theater to a home and found a legitimate state interest in regulating the use of obscene matter in local commerce and places of public accommodation. It apparently found no fundamental right involved in viewing obscene matter under these conditions, for it noted that the right to privacy guaranteed by the Fourteenth Amendment extends only to fundamental rights. The protection offered by *Stanely*, the Supreme Court stated, was restricted to the home, and it explicitly refused to say that all activities occurring between consenting adults were beyond the reach of the government.[16]

11. 381 U.S. at 484, 85 S.Ct. at 1681, 14 L.Ed.2d at 514.

12. 394 U.S. 557, 89 S.Ct. 1243, 22 L.Ed.2d 542 (1969).

13. *See* Roth v. U. S., 354 U.S. 476, 77 S.Ct. 1304, 1 L.Ed.2d 1498 (1957).

14. 394 U.S. at 564, 89 S.Ct. at 1247, 22 L.Ed.2d at 549.

15. 413 U.S. 49, 93 S.Ct. 2628, 37 L.Ed.2d 446 (1973). *See also* United States v. Orito, 413 U.S. 139, 93 S.Ct. 2674, 37 L.Ed.2d 513 (1973); United States v. 12 200-Ft. Reels, 413 U.S. 123, 93 S.Ct. 2665, 37 L.Ed.2d 500 (1973).

16. In a companion case, *United States v. Orito*, 413 U.S. 139 93 S.Ct. 2674, 37 L.Ed.2d 513 (1973), the Supreme Court observed

[5] These Supreme Court cases indicate to us that the federal right to privacy arises only in connection with other fundamental rights, such as the grouping of rights which involve the home. And even in connection with the penumbra of home-related rights, the right of privacy in the sense of immunity from prosecution is absolute only when the private activity will not endanger or harm the general public.

The view is confirmed by the Supreme Court's abortion decision, *Roe v. Wade*.[17] There appellant claimed that her right to decide for herself concerning abortion fell within the ambit of a right to privacy flowing from the federal Bill of Rights. The Court's decision in her favor makes clear that only personal rights which can be deemed "fundamental" or "implicit in the concept of ordered liberty" are protected by the right to privacy. The Supreme Court found this right "broad enough to encompass a woman's decision whether or not to terminate her pregnancy," but it rejected the idea that a woman's right to decide is absolute. At some point, the state's interest in safeguarding health, maintaining medical standards, and protecting potential life becomes sufficiently compelling to sustain regulations. One does not, the Supreme Court said, have an unlimited right to do with one's body as one pleases.

The right to privacy which the Court found in *Roe* is closely akin to that in *Griswold*: in both cases the zone of privacy involves the area of the family and procreation,[18] more particularly, a right of personal autonomy in relation to choices affecting an individual's personal life.

In Alaska this court has dealt with the concept of privacy on only a few occasions. One of the most significant decisions in this area is *Breese v. Smith*,[19] where we considered the applicability of the guarantee of "life, liberty, the pursuit of happiness" found in the Alaska Constitution,[20] to a school hairlength regulation. Noting that hairstyles are a highly personal matter in which the individual is traditionally autonomous, we concluded that governmental control of personal appearance would be antithetical to the concept of personal liberty under Alaska's constitution. Since the student would be forced to choose between controlling his own personal appearance and asserting his right to an education if the regulations were upheld, we concluded that the constitutional language quoted above embodied an affirmative grant of liberty to public school students to choose their own hairstyles, for "at the core of [the concept of liberty] is the notion of total personal immunity from government control: the right 'to be let alone.'"[21] That right is not absolute, however; we also noted that this "liberty" must yield where it "intrude[s] upon the freedom of others."[22]

Subsequent to our decision in *Breese*, a right to privacy amendment was added to the Alaska Constitution. Article I, section 22 reads:

> The right of the people to privacy is recognized and shall not be infringed. The

16. that the *Stanley* right to possess obscene matter in the home is limited to the home and does not create a right to transport, receive, or distribute the matter. The Supreme Court further said that it is not true that a zone of constitutionally protected privacy follows such materials when they are moved outside the home. *See* United States v. 12 200-Ft. Reels, 413 U.S. 123, 93 S.Ct. 2665, 37 L.Ed.2d 500 (1973).

17. 410 U.S. 113, 93 S.Ct. 705, 35 L.Ed.2d 147 (1973).

18. *Cf.* Eisenstadt v. Baird, 405 U.S. 438, 453, 92 S.Ct. 1029, 1038, 31 L.Ed.2d 349 (1972) where the Supreme Court said in part:

> If the right of privacy means anything, it is the right of the *individual*, married or single, to be free from unwarranted governmental intrusion into matters so fundamentally affecting a person as the decision whether to bear or beget a child.

19. 501 P.2d 159 (Alaska 1972).

20. Alaska Const. Art. I, § 1.

21. 501 P.2d at 168.

22. 501 P.2d at 170, quoting Bishop v. Colaw, 450 F.2d 1069, 1075 (8th Cir. 1971).

legislature shall implement this section. The effect of this amendment is to place privacy among the specifically enumerated rights in Alaska's constitution. But this fact alone does not, in and of itself, yield answers concerning what scope should be accorded to this right of privacy.[23] We have suggested that the right to privacy may afford less than absolute protection to "the ingestion of food, beverages or other substances".[24] For any such protection must be limited by the legitimate needs of the State to protect the health and welfare of its citizens.[25]

Although a number of other jurisdictions have considered the privacy issue as it applies to marijuana prosecutions, they provide little help in defining the scope of article I, section 22 of Alaska's constitution. In Hawaii, whose constitution also contains an express guarantee of the right to privacy,[26] the supreme court has faced a similar issue. In *State v. Kantner*,[27] the Supreme Court of Hawaii upheld a conviction for possession of marijuana by a 3–2 vote, with one member of the majority concurring only because he thought the constitutional issue had not been properly raised. A majority rejected the claim that application of the statute violated guarantees of equal protection and due process, and two members of the court rejected the claim of violation of "fundamental liberty" based on *Griswold*. In dissent, Justice Levinson emphasized the guarantees of privacy and personal autonomy which he found in both the Hawaii Constitution and the due process clause of the Fourteenth Amendment to the United States Constitution. He found that the right to privacy "guarantees to the individual the full measure of control over his own personality consistent with the security of himself and others."[28] The experiences generated by use of marijuana are mental in nature, he wrote, and thus among the most personal and private experiences possible. So long as conduct does not produce detrimental results, the right of privacy protects the individual's conduct designed to affect these inner areas of the personality. The state failed to show, he found, any harm to the user or others from the private, personal use of marijuana, and so the statute infringed on the right to personal autonomy.

In a Michigan case the same year, a conviction for possession of marijuana was overturned by a unanimous court, though for a variety of reasons. One of the justices in *People v. Sinclair*,[29] Justice T. G. Kavanagh, rested his opinion squarely on the basic right of the individual to be free from government intrusions. He found the marijuana possession statute to be "an

23. For a discussion of the origins and scope of a similar constitutional guarantee of privacy, in the Hawaii Constitution, Art. I, § 5, see *State v. Kantner*, 53 Haw. 327, 493 P.2d 306 (1972), particularly n. 4 in the dissent of Justice Levinson at p. 314. This court has, in the area of searches and seizures, attempted to define the right of privacy. *See, e.g.*, Erickson v. State, 507 P.2d 508 (Alaska 1973); Mattern v. State, 500 P.2d 228 (Alaska 1972); Davis v. State, 499 P.2d 1025 (Alaska 1972); Ellison v. State, 383 P.2d 716 (Alaska 1963); Rabey v. City of Fairbanks, 476 P.2d 470 (Alaska 1970); Sleziak v. State, 454 P.2d 252 (Alaska 1969).

24. Gray v. State, 525 P.2d 524, 528 (Alaska 1974). In *Gray* we said:

    There is no available recorded history of this amendment, but clearly it shields the ingestion of food, beverages or other substances. But the right of privacy is not absolute. Where a compelling state interest is shown, the right may be held to be subordinate to express constitutional powers such as the authorization of the legislature to promote and protect public health and provide for the general welfare.

25. *Id.* If the State were required, for instance, to carry the extremely heavy burden of showing a compelling state interest before it could regulate the purity of foodstuffs and medicines, the result would be a practical inability to protect the public from health threats which consumers could neither know about nor protect themselves against.

26. Hawaii Const. Art. I, § 5.

27. 53 Haw. 327, 493 P.2d 306 (1972).

28. 493 P.2d at 315.

29. 387 Mich. 91, 194 N.W.2d 878 (1972).

impermissible intrusion on the fundamental right to liberty and the pursuit of happiness, . . . is an unwarranted interference with the right to possess and use private property.'[30] He noted the basic freedom of the individual to be free to do as he pleases so long as his actions do not interfere with the rights of his neighbor or of society. ". . . 'Big Brother' cannot, in the name of *Public* health, dictate to anyone what he can eat or drink or smoke in the *privacy* of his own home."[31]

Generally, however, privacy as a constitutional defense in marijuana cases has not met with much favor. It was rejected, for instance, by the Massachusetts Supreme Judicial Court in *Commonwealth v. Leis*,[32] where the court held that there was no constitutional right to smoke marijuana, that smoking marijuana was not fundamental to the American scheme of justice or necessary to a regime of ordered liberty, and that smoking marijuana was not locatable in any "zone of privacy". Furthermore, the court said, there is no constitutional right to become intoxicated.[33]

[6] Assuming this court were to continue to utilize the fundamental right-compelling state interest test in resolving privacy issues under article I, section 22 of Alaska's constitution, we would conclude that there is not a fundamental constitutional right to possess or ingest marijuana in Alaska. For in our view, the right to privacy amendment to the Alaska Constitution cannot be read so as to make the possession or ingestion of marijuana itself a fundamental right. Nor can we conclude that such a fundamental right is shown by virtue of the analysis we employed in *Breese*. In that case, the student's traditional liberty pertaining to autonomy in personal appearance was threatened in such a way that his constitutionally guaranteed right to an education was jeopardized. Hairstyle, as emphasized in *Breese*, is a highly personal matter involving the individual and his body. In this sense this aspect of liberty-privacy is akin to the significantly personal areas at stake in *Griswold* and *Eisenstadt v. Baird*. Few would believe they have been deprived of something of critical importance if deprived of marijuana, though they would if stripped of control over their personal appearance. And, as mentioned previously, a discrete federal right of privacy separate from the penumbras of specifically enumerated constitutional rights has not as yet been articulated by the Supreme Court of the United States. Therefore, if we were employing our former test, we would hold that there is no fundamental right, either under the Alaska or federal constitutions, either to possess or ingest marijuana.

The foregoing does not complete our analysis of the right to privacy issues. For in *Gray* we stated that the right of privacy amendment of the Alaska Constitution "clearly it shields the ingestion of food, beverages or other substances", but that this right may be held to be subordinate to public health and welfare measures. Thus, Ravin's right to privacy contentions are not susceptible to disposition solely in terms of answering the question whether there is a general fundamental constitutional right to possess or smoke marijuana. This leads us to a more detailed examination of the right to privacy and the relevancy of where the right is exercised. At one end of the scale of the scope of the right to privacy is possession or ingestion

30. [illegible] N.W.2d at 896.

31. *Id.*

32. 2[illegible] N.E.2d 898 (Mass.1969).

33. The privacy argument has been rejected in several other cases. Miller v. State, 458 S.W.2d 680 (Tex.Crim.App.1970); *In re Klor*, 64 Cal.2d 816, 51 Cal.Rptr. 903, 415 P.2d [illegible] (19[illegible]); People v. Aguiar, 257 Cal.App.2d 597, 65 Cal.Rptr. 171 (1968); United States v. Drotar, 416 F.2d 914 (5th Cir. 1969), *vacated on other grounds*, 402 U.S. 939, 91 S.Ct. 1628, 29 L.Ed.2d 107 (1971); Borras v. State, 229 So.2d 244 (Fla.1969); Raines v. State, 225 So.2d 330 (Fla.1969). *See* Scott v. United States, 129 U.S.App.D.C. 396, 395 F.2d 619 (1968).

in the individual's home. If there is any area of human activity to which a right to privacy pertains more than any other, it is the home. The importance of the home has been amply demonstrated in constitutional law. Among the enumerated rights in the federal Bill of Rights are the guarantee against quartering of troops in a private house in peacetime (Third Amendment) and the right to be "secure in their . . . houses . . . against unreasonable searches and seizures . . ." (Fourth Amendment). The First Amendment has been held to protect the right to "privacy and freedom of association in the home."[34] The Fifth Amendment has been described as providing protection against all governmental invasions "of the sanctity of a man's home and the privacies of life."[35] The protection of the right to receive birth control information in *Griswold* was predicated on the sanctity of the marriage relationship and the harm to this fundamental area of privacy if police were allowed to "search the sacred precincts of marital bedrooms."[36] And in *Stanley v. Georgia*,[37] the Court emphasized the home as the situs of protected "private activities". The right to receive information and ideas was found in *Stanley* to take on an added dimension precisely because it was a prosecution for possession in the home: "For also fundamental is the right to be free, except in very limited circumstances, from unwanted governmental intrusions into one's privacy."[38] In a later case, the Supreme Court noted that *Stanley* was not based on the notion that the obscene matter was itself protected by a constitutional penumbra of privacy, but rather was a "reaffirmation that 'a man's home is his castle.'"[39] At the same time the Court noted, "the Constitution extends special safeguards to the privacy of the home, just as it protects other special privacy rights such as those of marriage, procreation, motherhood, child rearing, and education."[40] And as the Supreme Court pointed out, there exists a "myriad" of activities which may be lawfully conducted within the privacy and confines of the home, but may be prohibited in public.[41]

[7] In Alaska we have also recognized the distinctive nature of the home as a place where the individual's privacy receives special protection. This court has consistently recognized that the home is constitutionally protected from unreasonable searches and seizures, reasoning that the home itself retains a protected status under the Fourth Amendment and Alaska's constitution distinct from that of the occupant's person.[42] The privacy amendment to the Alaska Constitution was intended to give recognition and protection to the

34. Moreno v. United States Dep't of Agriculture, 345 F.Supp. 310, 314 (D.D.C.1972), *aff'd*, 413 U.S. 528, 93 S.Ct. 2821, 37 L.Ed.2d 782 (1973).

35. Boyd v. U. S., 116 U.S. 616, 630, 6 S.Ct. 524, 29 L.Ed. 746, 751 (1886).

36. 381 U.S. at 486, 85 S.Ct. at 1682, 14 L.Ed.2d at 516.

37. 394 U.S. 557, 89 S.Ct. 1243, 22 L.Ed.2d 542 (1969).

38. 394 U.S. at 564, 89 S.Ct. at 1247, 22 L.Ed.2d at 549.

39. Paris Adult Theatre I v. Slaton, 413 U.S. 49, 66, 93 S.Ct. 2628, 2640, 37 L.Ed.2d 446, 462 (1973).

40. U. S. v. Orito, 413 U.S. 139, 142, 93 S.Ct. 2674, 2677, 37 L.Ed.2d 513, 517 (1973). *See* U. S. v. 12 200-Ft. Reels, 413 U.S. 123, 93 S.Ct. 2665, 37 L.Ed.2d 500 (1973).

41. U. S. v. Orito, 413 U.S. 139, 142–143, 93 S.Ct. 2674, 37 L.Ed.2d 513, 518 (1973).

42. State v. Spietz, 531 P.2d 521 (Alaska 1975); Ferguson v. State, 488 P.2d 1032 (Alaska 1971). *See* cases cited *supra* at n. 21. The home receives special attention in other areas of Alaska's laws, e. g., the homestead exemption in relation to execution sales, AS 09.35.090; the justifiable homicide defense pertaining to the prevention of a felony in the home, AS 11.15.100; and the distinction between burglary in a dwelling house and burglary in other structures, AS 11.20.080–.100.

home. Such a reading is consonant with the character of life in Alaska. Our territory and now state has traditionally been the home of people who prize their individuality and who have chosen to settle or to continue living here in order to achieve a measure of control over their own lifestyles which is now virtually unattainable in many of our sister states.

[8–11] The home, then, carries with it associations and meanings which make it particularly important as the situs of privacy. Privacy in the home is a fundamental right, under both the federal and Alaska constitutions. We do not mean by this that a person may do anything at anytime as long as the activity takes place within a person's home. There are two important limitations on this facet of the right to privacy. First, we agree with the Supreme Court of the United States, which has strictly limited the *Stanley* guarantee to possession for purely private, noncommercial use in the home. And secondly, we think this right must yield when it interferes in a serious manner with the health, safety, rights and privileges of others or with the public welfare. No one has an absolute right to do things in the privacy of his own home which will affect himself or others adversely. Indeed, one aspect of a private matter is that it *is* private, that is, that it does not adversely affect persons beyond the actor, and hence is none of their business. When a matter does affect the public, directly or indirectly, it loses its wholly private character, and can be made to yield when an appropriate public need is demonstrated.

Thus, we conclude that citizens of the State of Alaska have a basic right to privacy in their homes under Alaska's constitution. This right to privacy would encompass the possession and ingestion of substances such as marijuana in a purely personal, non-commercial context in the home unless the state can meet its substantial burden and show that proscription of possession of marijuana in the home is supportable by achievement of a legitimate state interest.

This leads us to the second facet of our inquiry, namely, whether the State has demonstrated sufficient justification for the prohibition of possession of marijuana in general in the interest of public welfare; and further, whether the State has met the greater burden of showing a close and substantial relationship between the public welfare and control of ingestion or possession of marijuana in the home for personal use.

[12] The evidence which was presented at the hearing before the district court consisted primarily of several expert witnesses familiar with various medical and social aspects of marijuana use.[43] Numer-

43. Among the works we have examined in addition to the testimony below are the following: Marihuana: A Signal of Misunderstanding, the First Report of the National Commission on Marihuana and Drug Abuse (March 1972); Drug Use in America: Problem in Perspective, the Second Report of the National Commission on Marihuana and Drug Abuse (March 1973); Drug Use in Anchorage, Alaska, 223 J.Am.Med.Ass'n 657 (1973); G. Nahas, Marihuana:—Deceptive Weed (1973); Nahas *et al.* Inhibition of Cellular Mediated Immunity in Marihuana Smokers, 183 Science 419 (1974); L. Grinspoon, Marihuana Reconsidered (1971); Hearings before the U. S. Senate Subcommittee on Internal Security, May 1974; Nahas & Greenwood, The First Report of the National Commission on Marihuana (1972): Signal of Misunderstanding or Exercise in Ambiguity, draft of article to be published in Bulletin of N. Y. Academy of Medicine; Marihuana and Health: Fourth Annual Report to the U. S. Congress from the Secretary of Health, Education, and Welfare (1974); Silverstein & Tessin, Normal Skin Test Responses in Chronic Marihuana Users, 186 Science 740 (1974); Marihuana: The Grass May No Longer Be Greener, 185 Science 683 (1974); Marihuana (II): Does it Damage the Brain?, 185 Science 775 (1974); Depression of Plasma Testosterone Levels After Chronic Intensive Marihuana Use, 290 N.Engl.J.Med. 872 (1974); Plasma Testosterone Levels Before, During and After Chronic Marihuana Smoking, 291 N.Engl.J.Med. 1051 (1974); Marijuana Survey-State of Oregon, Drug Abuse Council (1974).

ous written reports and books were also introduced into evidence.[44]

Marijuana is the common term for dried leaves or stalk of the plant *Cannabis sativa L.* The primary psychoactive ingredient in the plant is delta-9-tetrahydrocannabinol (THC). Most marijuana available in the United States has a THC content of less than one percent. Other cannabis derivatives with a higher THC content, such as hashish, are available in the United States although much less common than is marijuana.

According to figures published by the National Commission on Marihuana and Drug Abuse[45] in 1973, an estimated 26 million Americans have used marijuana at least once. The incidence generally cuts across social and economic classes, though use is greatest among young persons (55% of 18–21 year-olds have used it). Only about 2% of the adults who have used it were classified by the National Commission as "heavy users" (more than once daily). The experience in Alaska seems to be similar. A report published in the Journal of the American Medical Association in 1971 indicated that 24% of Anchorage school children in grades six through twelve had used marijuana, as had 46% in grades eleven and twelve.[46]

Scientific testimony on the physiological and psychological effects of marijuana on humans generally stresses the variability of effects upon different individuals and on any one individual at different times. The setting and psychological state of the user can affect his responses. Responses also vary with the amount of marijuana one has used in the past. A new user, for instance, often feels no effects at all.

44. It is not the function of this court to reassess the scientific evidence in the manner of a legislature. *See* U. S. v. Thorne, 325 A.2d 764 (D.C.App.1974), where an attack on the constitutionality of the District of Columbia marijuana statutes was made. There the court said:

> In our opinion the court below misconceived its function in its approach to the constitutionality of the statutory proscription of the possession and use of marijuana. In deciding that this drug has virtually no harmful effects upon the human system, the court had occasion to consider the testimony of four expert witnesses and a voluminous mass of documentary studies. The court weighed this evidence and resolved the conflict to its own satisfaction. If this were a hearing or a trial turning upon the determination of facts upon which there was conflicting testimony, such procedure was, of course, correct.
>
> But a holding that a legislative enactment is invalid cannot rest upon a judicial determination of a debatable medical issue. Any party assailing the constitutionality of a statute has the heavy burden of demonstrating that it has no rational basis.
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> . . . . . .
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> . . . It is apparent from the record in this case that the question decided by the court below after the hearing on the pretrial motions was "at least debatable." Hence, under the tests set forth in *Carolene Products*, the court should have deferred to congressional judgment.

Similarly the Supreme Judicial Court of Massachusetts in Commonwealth v. Leis, 243 N.E.2d 898, 901–02 (1969), said:

> We know of nothing that *compels* the Legislature to thoroughly investigate the available scientific and medical evidence when enacting a law. The test of whether an act of the Legislature is rational and reasonable is not whether the records of the Legislature contain a sufficient basis of fact to sustain that act. The Legislature is presumed to have acted rationally and reasonably. See Commonwealth v. Finnigan, 326 Mass. 378, 379, 96 N.E.2d 715; Coffee-Rich, Inc. v. Commissioner of Pub. Health, 348 Mass. 414, 422, 204 N.E.2d 281. "Unless the act of the Legislature cannot be supported upon any rational basis of fact that reasonably can be conceived to sustain it, the court has no power to strike it down as violative of the Constitution." Sperry & Hutchinson Co. v. Director of the Div. on the Necessaries of Life of Commonwealth, 307 Mass. 408, 418, 30 N.E.2d 269, 274, 131 A.L.R. 1234. See United States v. Carolene Prod. Co., 304 U.S. 144, 154, 58 S.Ct. 778, 82 L.Ed. 1234.

Justice Kirk, in his concurring opinion in *Leis*, also explains the question of legislative judgment and the range of judicial cognizance.

45. Drug Use in America: Problem in Perspective, the Second Report of the National Commission on Marihuana and Drug Abuse (March 1973) at 64.

46. Drug Use in Anchorage, Alaska, 223 J.Am.Med.Ass'n 657 (1971).

The short-term physiological effects are relatively undisputed. An immediate slight increase in the pulse, decrease in salivation, and a slight reddening of the eyes are usually noted. There is also impairment of psychomotor control. These effects generally end within two to three hours of the end of smoking.

Long-term physiological effects raise more controversy among the experts. The National Commission on Marihuana and Drug Abuse reported that among users "no significant physical, biochemical, or mental abnormalities could be attributed solely to their marijuana smoking."[47] Certain researchers have pointed to possible deleterious effects on the body's immune defenses,[48] on the chromosomal structures of users,[49] and on testosterone levels in the body.[50] The methodology of certain of these studies has been extensively criticized by other qualified medical scientists, however. These studies cannot be ignored. It should be noted that most of the damage suggested by these studies comes in the context of intensive use of concentrated forms of THC. It appears that the use of marijuana, as it is presently used in the United States today, does not constitute a public health problem of any significant dimensions. It is, for instance, far more innocuous in terms of physiological and social damage than alcohol or tobacco. But the studies suggesting dangers in intensive cannabis use do raise valid doubts which cannot be dismissed or discounted.

The immediate psychological effects of marijuana are typically a mild euphoria and a relaxed feeling of well-being. The user may feel a heightened sensitivity to taste and to visual and aural sensations, and his perception of time intervals may be distorted. A desire to become high can lead to a greater high; fear of becoming high or general nervousness can cause the user to fail to experience any high at all. In rare cases, excessive nervousness or fear of the drug can even precipitate a panic reaction. Occasionally a user will experience a negative reaction such as anxiety or depression, particularly when he takes in more of the substance than needed to achieve the desired high. However, in smoking marijuana, the usual method of taking it in this country, the user can self-titrate, or control the amount taken in, since the effect builds up gradually.

Additional short-term effects are an impairment of immediate-past-memory facility and impairment in performing psychomotor tasks. Experienced users seem less impaired in this regard than naive users.

In extremely rare instances, use of marijuana has been known to precipitate psychotic episodes; however, the consensus of the experts seems to be that the potential for precipitating psychotic episodes exists only for a limited number of prepsychotic

47. Marihuana: A Signal of Misunderstanding, First Report of the National Commission on Marihuana and Drug Abuse (March 1972), p. 61.

48. *See* Nahas, et al. Inhibition of Cellular Mediated Immunity in Marihuana Smokers, 183 Science 419 (1974). *But cf.* Normal Skin Test Responses in Chronic Marijuana Users, 186 Science 740 (1974).

49. *See* Stenchever, Statement before the Senate Subcommittee on Internal Security, May 16, 1974. The National Institute on Drug Abuse, in Marihuana and Health, Fourth Report to the United States Congress from the Secretary of Health, Education, and Welfare, states in part:

> The preclinical findings of greatest interest and potential significance during the past two years have been a series of studies indicating that delta-9-THC (and possibly other marihuana constituents) have an effect upon certain basic cellular mechanisms which involve the uptake of amino acids and the nucleotides into primary nuclear components such as DNA. Since this may interfere with basic biological processes, the preliminary data raises the possibility that the effects of marihuana, under some circumstances, may be more widespread on the organism than has been previously thought.

Id. at 6.

50. Depression of Plasma Testosterone Levels After Chronic Intensive Marihuana Use, 290 N.Engl.J.Med. 872 (1974). *But cf.* Plasma Testosterone Levels Before, During and After Chronic Marihuana Smoking, 291 N.Engl.J. Med. 1051 (1974).

persons who could be pushed into psychosis by any number of drug or nondrug-related influences.

There is considerable debate as to the long-term effects of marijuana on mental functioning. Certain researchers cite evidence of an "amotivational syndrome" among long-term heavy cannabis users. However, the main examples of this effect are users in societies where large segments of the population exhibit such traits as social withdrawal and passivity even without drug use. The National Commission concludes that long-time heavy users do not deviate significantly from their social peers in terms of mental functioning, at least to any extent attributable to marijuana use.[51]

The experts generally agree that the early widely-held belief that marijuana use directly causes criminal behavior, and particularly violent, aggressive behavior, has no validity. On the contrary, the National Commission found indications that marijuana inhibits "the expression of aggressive impulses by pacifying the user, interfering with muscle coordination, reducing psychomotor activities and generally producing states of drowsiness, lethargy, timidity and passivity."[52] Moreover, the Commission and most other authorities agree that there is little validity to the theory that marijuana use leads to use of more potent and dangerous drugs. Although it has been stated that the more heavily a user smokes marijuana, the greater the probability that he has used or will use other drugs, "it has been suggested that such use is related to 'drug use proneness' and involvement in drug subcultures rather than to the characteristics of cannabis, *per se*."[53]

The most serious risk to the public health discerned by the National Commission is the possibility of an increase in the number of heavy users, who now constitute about 2% (500,000) of those who have used the drug. Within this group certain emotional changes have been observed among "predisposed individuals" as a result of prolonged heavy use. This group seems to carry the highest risk, particularly in view of the risk of retarding social adjustment among adolescents if heavy use should grow.

Most authorities have accepted the theory that marijuana users develop a "reverse tolerance", that is, that a moderate user needs less and less marijuana over time to achieve a high. Recent research indicates that this may be true only up to a point, and that beyond a certain intensity of use a true tolerance begins to develop.[54] If true, this may be relevant regarding only

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51. Marihuana: A Signal of Misunderstanding, the First Report of the National Commission on Marihuana and Drug Abuse (March 1972), 63. *See also* Marihuana and Health, Fourth Report to the United States Congress from the Secretary of Health, Education and Welfare (1974), which reads at 12:

> While chronic users in the United States have used for appreciably shorter periods of time than users overseas, studies of American chronic users are potentially of great importance in assessing possible implications of marihuana use for the American population. In one large scale study of undergraduate student use comparisons were made between nonusers (including those who had done a limited amount of experimentation), occasional users and chronic users (those who had used three or more times a week for three years or more or for two years if use was almost daily). No statistical differences in academic performance were found nor was there any evidence of reduced motivation. . . . Another study of moderately using medical students who has used regularly for three or more years and who were matched with nonusing medical students for intelligence, found no difference on an extensive battery of neuropsychological tests.

52. *Id.* at 70–71.

53. Marihuana and Health, Fourth Report to the United States Congress from the Secretary of Health, Education, and Welfare (1974) at 6.

54. "While tolerance to the effects of marihuana has not been generally observed among American users, there is increasingly convincing evidence that tolerance (i. e., larger dosages required to produce the same effects found with lower dosages) does develop under conditions of heavy, regular use. Given

heavy use of concentrated forms of cannabis, since marijuana use is self-limiting due to the forms in which it is taken.

The National Commission rejected the notion that marijuana is physically addicting. It also rejected the notion that marijuana as used in the United States today presents a significant risk of causing psychological dependency in the user. Rather, the experimental or intermittent user develops little or no psychological dependence. Lengthy use on a regular basis does present a risk of such dependence and of subsequent heavier use, and strong psychological dependence is characteristic of heavy users in other countries. This pattern of use is rare in the United States today, however.

While there is no confirmed report of a human ever having died from an overdose of cannabis, the toxic levels of THC have been determined from tests on animals. The lethal dose for marijuana is approximately 40,000 times the dose needed to achieve intoxication. The equivalent ratio of intoxicating to lethal doses for alcohol is 4/10 and for barbiturates is 3/30.

The number of persons arrested for marijuana possession has climbed steeply in recent years. In 1973, over 400,000 marijuana arrests occurred, a 43% rise over the previous year. It should also be noted that 81% of persons arrested for marijuana-related crimes have never been convicted of any crime in the past, and 91% have never been convicted of a drug-related crime.[55]

The justifications offered by the State to uphold AS 17.12.010 are generally that marijuana is a psychoactive drug; that it is not a harmless substance; that heavy use has concomitant risk; that it is capable of precipitating a psychotic reaction in at least individuals who are predisposed towards such reaction; and that its use adversely affects the user's ability to operate an automobile. The State relies upon a number of medical researchers who have raised questions as to the substance's effect on the body's immune system, on chromosomal structure, and on the functioning of the brain. On the other hand, in almost every instance of reports of potential danger arising from marijuana use, reports can be found reaching contradictory results. It appears that there is no firm evidence that marijuana, as presently used in this country, is generally a danger to the user or to others. But neither is there conclusive evidence to the effect that it is harmless.[56] The one significant risk in use of marijuana which we do find established to a reasonable degree of certainty is the effect of marijuana intoxication on driving. We shall return to this aspect of the problem later in this opinion.

Possibly implicit in the State's catalogue of possible dangers of marijuana use is the assumption that the State has the authority to protect the individual from his own folly, that is, that the State can control activities which present no harm to anyone except those enjoying them. Although some courts have found the "public interest" to be broad enough to justify protecting the individual against himself,[57] most have found inherent limitations on the police power of the state. An apposite example is the litigation regarding the constitutionality of laws requiring motorcyclists to wear helmets. Most of the courts addressing the issue, including this one, have resolved it by finding a connection between

the relatively low doses and infrequent use typical of present patterns of use in the United States it is not surprising that tolerance has not usually been observed. . . . While the amounts involved were usually large and quite atypical of current use patterns, the probability of a withdrawal syndrome in at least some American heavy users must be considered." Marihuana and Health, Fourth Report to the United States Congress from the Secretary of Health, Education, and Welfare (1974) at 10, 75–81.

55. Marihuana: A Signal of Misunderstanding, Appendix II, at 622.

56. Petitioner's witnesses, Doctors Fort and Ungerleider, both testified that marijuana was not harmless.

57. *E. g.*, Raines v. State, 225 So.2d 330 (Fla. 1969).

the helmet requirement and the safety of other motorists,[58] but a significant number of courts have explicitly rejected such restrictive measures as beyond the police power of the state because they do not benefit the public.[59] Typical of the logic of these latter cases is the dissent of Justice Abe in *State v. Lee*,[60] in which the Hawaii Supreme Court upheld a motorcycle helmet requirement despite finding no clear link between lack of the equipment by the motorcyclist and injury to others. The court reasoned that where a person's conduct is so reckless, and the resulting injury and death are so widespread as to be of concern to the public, then the conduct affects the public interest and is within the scope of the police power. Justice Abe dissented, citing a general right to be left alone or liberty to do as you please. There has to be a genuine harm to others, he wrote, to justify such controls; a state cannot simply decide what is in a person's best interest and compel it.[61]

[13, 14] We glean from these cases the general proposition that the authority of the state to exert control over the individual extends only to activities of the individual which affect others or the public at large[62] as it relates to matters of public health or safety, or to provide for the general welfare. We believe this tenet to be basic to a free society. The state cannot impose its own notions of morality, propriety, or fashion on individuals when the public has no legitimate interest in the affairs of those individuals. The right of the individual to do as he pleases is not absolute, of course: it can be made to yield when it beings to infringe on the rights and welfare of others.[63]

[15, 16] Further, the authority of the state to control the activities of its citizens is not limited to activities which have a present and immediate impact on the public health or welfare. It is conceivable, for example, that a drug could so seriously develop in its user a withdrawal or amotivational syndrome, that widespread use of the drug could significantly debilitate the fabric of our society. Faced with a substantial possibility of such a result, the state could take measures to combat the possibility. The state is under no obligation to allow otherwise "private" activity which will result in numbers of people becoming public charges or otherwise burdening the public welfare. But we do not find that such a situation exists today regarding marijuana. It appears that effects of marijuana on the individual are not serious enough to justify widespread concern, at least as compared with the far more dangerous effects of alcohol, barbitu-

58. *E. g.*, Kinzery v. Chappel, 504 P.2d 831 (Alaska 1972); People v. Bielmeyer, 54 Misc.2d 466, 282 N.Y.S.2d 797 (1967); State v. Mele, 103 N.J.Super. 353, 247 A.2d 176 (1968).

59. *E. g.*, American Motorcycle Ass'n v. Davids, 11 Mich.App. 351, 158 N.W.2d 72 (1968); People v. Fries, 42 Ill.2d 446, 250 N.E.2d 149 (1969). *See* Everhardt v. New Orleans, 208 So.2d 423 (La.App.1968), *rev'd*, 217 So.2d 400 (1969); People v. Carmichael, 53 Misc.2d 584, 279 N.Y.S.2d 272 (1967), *rev'd*, 56 Misc.2d 388, 288 N.Y.S.2d 931 (1968).

60. 51 Haw. 516, 465 P.2d 573 (1970).

61. Similarly, in *State v. Kantner*, 53 Haw. 327, 493 P.2d 306 (1972), which involved the constitutionality of Hawaii's marijuana statute, Justice Abe noted his belief that the statute went beyond the police power of the state because of the lack of evidence that use of marijuana harms anyone other than the user. There is, he wrote, under the Hawaii Constitution a fundamental right of liberty to make a fool of oneself so long as one's act does not endanger others.

62. *Cf.* Liggett Co. v. Baldrige, 278 U.S. 105, 111–12, 49 S.Ct. 57, 59, 73 L.Ed. 204, 208 (1928):

> The police power may be exerted in the form of state legislation where otherwise the effect may be to invade rights guaranteed by the Fourteenth Amendment only when such legislation bears a real and substantial relation to the public health, safety, morals, or some other phase of the general welfare.

63. *See* Roe v. Wade, 410 U.S. 113, 154, 93 S.Ct. 705, 35 L.Ed.2d 147, 177 (1973); Gray v. State, 525 P.2d 524, 528 (Alaska 1974); Breese v. Smith, 501 P.2d 159, 170 (Alaska 1972).

rates and amphetamines. Moreover, the current patterns of use in the United States are not such as would warrant concern that in the future consumption patterns are likely to change.[64]

[17-19] Research is continuing extensively. Scientific doubts persist, however, and that fact has significance for our application of the law. It is a long-standing rule of law that statutes designed to protect the public health will receive a liberal construction.[65] We have seen repeated examples in recent years where scientific doubts as to the safety of various products, drugs, or environmental conditions have been held to justify controls. There is a presumption in favor of public health measures; when there is substantial doubt as to the safety of a given substance or situation for the public health, controls intended to obviate the danger will usually be upheld.

But one way in which use of marijuana most clearly does affect the general public is in regard to its effect on driving. All of which brings us to the opposite (from the home) end of the scale of the right to privacy in the context of ingestion or possession of marijuana, namely, when the individual is operating a motor vehicle. Recent research has produced increasing evidence of significant impairment of the driving ability of persons under the influence of cannabis.[66] Distortion of time perception, impairment of psychomotor function, and increased selectivity in attentiveness to surroundings apparently can combine to lower driver ability.[67] In this regard, Ravin points out that marijuana usually produces passivity and inactivity, in contrast to alcohol, which increases aggressiveness and is likely to result in overconfidence in one's driving ability. Although a person under the influence of marijuana may be less likely to attempt to drive than

64. We recognize that more potent forms of cannabis than marijuana are commonly used in other countries and are available on a limited scale here. However, studies of use patterns here do not indicate any great likelihood of a significant shift in use here to the more potent substances. If such a shift were to occur, then marijuana use could be characterized as a serious health problem.

65. 3 Sutherland Statutory Construction § 71.02 (4th ed. 1974) and the cases cited in note 42 supra.

66. *See* Marihuana and Health, Fourth Report to the United States Congress from the Secretary of Health, Education, and Welfare 105 (1974). This report contains citations to the most recent studies.

67. Evidence that marijuana has a detrimental effect on driving performance, especially as the dose increases, continues to mount. It has been found to increase both braking and starting times, to adversely affect attention and concentration abilities, and to detract from performance on a divided attention task, all of which are presumably involved in driving. A recent Canadian study of driving ability while marijuana-intoxicated examined drivers' performance under both driving course and actual traffic conditions. A significant decline in performance as measured by several criteria was found in most drivers tested. Based on the accumulated evidence, it seems clear that driving while under the influence of marijuana is ill-advised. Marihuana and Health, Fourth Report to the U. S. Congress from the Secretary of Health, Education, and Welfare 10-11 (1974).

Petitioner's own experts do not disagree with the Secretary's conclusions. Dr. Grinspoon testified that ". . . it stands to reason that anybody who is intoxicated or has a psychoactive drug in him should not drive, because there is no question . . . his wherewithall is not with him, and I think that would be the case with marijuana." Dr. Fineglass stated that ". . . moderate or heavy use of marijuana can definitly interfere with some of the local skills that would be necessary for the operation of a motor vehicle, and therefore, in their recommendations did take note of driving while intoxicated as a potential danger to the public safety." Dr. Ungerleider testified that although the immediate effects of marijuana intoxication on the organs and bodily functions are transient and have little or no permanent effect, "there is a definite loss of some psychomotor control, temporary impairment of time space perception. . . ." Later in the course of his testimony, Dr. Ungerleider concluded that recent studies had proven that driving under the influence of marijuana presents a serious risk resulting from impaired driving ability.

a person under the influence of alcohol. there exists the potential for serious harm to the health and safety of the general public.[68]

[20-24] In view of the foregoing, we believe that at present, the need for control of drivers under the influence of marijuana and the existing doubts as to the safety of marijuana, demonstrate a sufficient justification for the prohibition found in AS 17.12.010 as an exercise of the state's police power for the public welfare. Given the evidence of the effect of marijuana on driving an individual's right to possess or ingest marijuana while driving would be subject to the prohibition provided for in AS 17.12.010. However, given the relative insigificance of marijuana consumption as a health problem in our society at present, we do not believe that the potential harm generated by drivers under the influence of marijuana, standing alone, creates a close and substantial relationship between the public welfare and control of ingestion of marijuana or possession of it in the home for personal use. Thus we conclude that no adequate justification for the state's intrusion into the citizen's right to privacy by its prohibition of possession of marijuana by an adult for personal consumption in the home has been shown. The privacy of the individual's home cannot be breached absent a persuasive showing of a close and substantial relationship of the intrusion to a legitimate governmental interest. Here, mere scientific doubts will not suffice. The state must demonstrate a need based on proof that the public health or welfare will in fact suffer if the controls are not applied.

The state has a legitimate concern with avoiding the spread of marijuana use to adolescents who may not be equipped with the maturity to handle the experience prudently, as well as a legitimate concern with the problem of driving under the influence of marijuana. Yet these interests are insufficient to justify intrusions into the rights of adults in the privacy of their own homes.[69] Further, neither the federal or Alaska constitution affords protection for the buying or selling of marijuana, nor absolute protection for its use or possession in public. Possession at home of amounts of marijuana indicative of intent to sell rather than possession for personal use is likewise unprotected.[70]

In view of our holding that possession of marijuana by adults at home for personal use is constitutionally protected, we wish to make clear that we do not mean to condone the use of marijuana. The experts who testified below, including petitioner's witnesses, were unanimously opposed to the use of any psychoactive drugs. We agree completely. It is the responsibility of every individual to consider carefully the ramifications for himself and for those around him of using such substances. With the freedom which our society offers to each of us to order our lives as we see fit goes the duty to live responsibly, for

68. Current Alaska law enacted since the trial of this case prohibits driving under the influence of an hallucinogenic drug. AS 28.35.030. Alaska law also specifically prohibits operation of a boat while under the influence of marijuana. AS 05.25.060.

There does not now exist a means for detecting the presence of cannabis in the body which is available for practical use by law enforcement agencies. Such means are in use in laboratories, however, and research is progressing toward a device which could be used by police in the way that breathalyzer tests for alcohol are used now.

69. We do not intend to imply that the right of privacy in the home does not apply to children. See Breese v. Smith, 501 P.2d 159, 167 (Alaska 1972). We note that distinct government interests with reference to children may justify legislation that could not properly be applied to adults.

70. Statistics indicate that few arrests for simple possession occur in the home except when other crimes are simultaneously being investigated. The trend in general in law enforcement seems to be toward minimal effort against simple users of marijuana, and concentration of efforts against dealers and users of more dangerous substances. Moreover, statistics indicate that most arrests for possession of marijuana in Alaska result in dismissals before trial.

our own sakes and for society'. This result can best be achieved, we believe, without the use of psychoactive substances.

[25, 26] We briefly address Ravin's second assertion of error, namely that AS 17.12.010 denies him due process and equal protection of the law. The argument is two-fold. First, Ravin asserts, the proscription denies equal protection because the other commonly used "recreational" drugs, alcohol and tobacco, are not proscribed, though they inflict far more damage on the user than does marijuana. We reject, however, the assumption that the legislature must apply equal controls to equal threats to the public health. Assuming some degree of control of marijuana use is permissible, it does not follow that the political obstacles to placing controls on alcohol and tobacco should render the legislature unable to regulate other substances equally or less harmful.[71] It is not irrational for the legislature to regulate those public health areas where it can do so, when there exists other areas where controls are less feasible.

[27] Ravin also attacks as irrational the classification of marijuana with the other drugs covered by AS 17.12.150(3) ("depressant, stimulant, or hallucinogenic"). He may be correct that marijuana is the least harmful of the drugs covered by AS 17.12.150(3), but that alone is not sufficient to make the classification irrational. In a number of cases the classification of marijuana either as or with narcotic drugs has been struck down as irrational in view of the relative harmlessness of marijuana.[72] In other cases, courts have deferred to the legislative finding of facts implicit in the classification.[73] However, in every case in which statutes have been struck down, the statutory scheme classified marijuana with, or subject to equal sanctions with, the most dangerous proscribed drugs. In Alaska, however, "hard" drugs are in a completely different category[74] from marijuana, with substantially greater penalties for misuse. The drugs with which marijuana is grouped in AS 17.12.150(3) are not so different from marijuana that yet another classification must be set up for marijuana alone. We find no merit to Ravin's contention on this point.

[28] One other facet of this petition remains for discussion. Ravin urges us to recognize that whatever harm results from marijuana use is far outweighed by the negative aspects of enforcement. Over 400,000 persons were arrested for marijuana-related crimes in 1973: 81% of them had no previous criminal records. Using these statistics, and asserting that marijuana use does not pose a substantial public health threat, Ravin questions the wisdom of AS 17.12.010. We note that the Alaska Bar Association, American Bar Association, National Conference of Commissioners on Uniform State Laws, National Advisory Commission on Criminal Justice Standards and Goals and the Governing Board of the American Medical Association have recommended decriminalization of possession of marijuana. The National Commission on Marihuana and Drug

71. *See* U. S. v. Maiden, 355 F.Supp. 743 (D.Conn.1973); U. S. v. Kiffer, 477 F.2d 349 (2d Cir. 1973). In attacking a complex problem, the state need not choose between attacking every aspect of that problem or not attacking that problem at all. Dandridge v. Williams, 397 U.S. 471, 90 S.Ct. 1153, 25 L.Ed.2d 491 (1970); McDonald v. Board of Election Commissioners, 394 U.S. 802, 89 S.Ct. 1404, 22 L.Ed.2d 739 (1969).

72. *E. g.*, People v. McCabe, 49 Ill.2d 338, 275 N.E.2d 407 (1971); Attwood v. State, 509 S.W.2d 342 (Tex.Crim.App.1974); see People v. Sinclair, 387 Mich. 91, 194 N.W.2d 878 (1972); *cf.* State v. Zornes, 475 P.2d 109 (Wash.1970).

73. *E. g.*, Bettis v. United States, 408 F.2d 563 (9th Cir. 1969); Commonwealth v. Leis, 243 N.E.2d 898 (Mass.1969); Miller v. Texas, 458 S.W.2d 680 (Tex.Crim.App.1970); Raines v. State, 225 So.2d 330 (Fla.1969); People v. McKenzie, 169 Colo. 521, 458 P.2d 232 (1969); People v. Stark, 157 Colo. 59, 400 P.2d 923 (1965). *See* State v. Kantner, 53 Haw. 327, 493 P.2d 306 (1972).

74. *See* AS 17.10.010 et seq. (The Uniform Narcotic Drug Act).

Abuse has recommended that private possession for personal use no longer be an offense. A Canadian study has arrived at similar results. And at least one state, Oregon, has already decriminalized possession of small amounts of marijuana.[75]

In opposition, the State argues that under Alaska's constitutional system of separate but equal branches of government the issue is a "political controversy over the State's fundamental policy toward the drug marijuana". Thus, the "issue should be properly determined by the people's elected representatives". We agree that determination of the wisdom of a particular legislative enactment is more properly the subject of investigation and resolution by the legislature rather than the judiciary.

The record does not disclose any facts as to the situs of Ravin's arrest and his alleged possession of marijuana. In view of these circumstances, we hold that the matter must be remanded to the district court for the purpose of developing the facts concerning Ravin's arrest and circumstances of his possession of marijuana. Once this is accomplished, the district court is to consider Ravin's motion to dismiss in conformity with this opinion.

Remanded for further proceedings consistent with this opinion.

BOOCHEVER, Justice (concurring, with whom CONNOR, Justice, joins).

Because of the importance of the issues discussed in this case and the possibility that portions of the opinion may be construed as substantially circumscribing the Alaska Constitutional right to privacy, I find it necessary to file this concurrence. By its reliance on certain United States Supreme Court cases[1] and the manner in which some of the conclusions are set forth, the opinion may be read as limiting the right of privacy principally to protection of activities engaged in within the confines of the home.[2] The opinion relies chiefly on United States Supreme Court precedent, although there is no Federal Constitutional provision corresponding to art. I, § 22 of the Alaska Constitution which specifies that "the right of the people to privacy is recognized and shall not be infringed". While Federal cases defining the right of privacy derived from other provisions of the United States Constitution are of assistance in determining the perimeters of our constitutional right to privacy, we are certainly not bound by those cases in construing the separate Alaska provision. Even when Alaska Constitutional provisions are closely akin to those of the Federal Constitution, we have stated:

> While we must enforce the minimum constitutional standards imposed upon us by the United States Supreme Court's interpretation of the Fourteenth Amendment, we are free, and we are under a duty, to develop additional constitutional rights and privileges under our Alaska Constitution if we find such fundamental rights and privileges to be within the intention and spirit of our local constitutional language and to be necessary for the kind of civilized life and ordered liberty which is at the core of our constitutional heritage. We need not stand by idly and passively, waiting for constitutional direction from the highest court of the land. Instead, we should be moving concurrently to develop and expound the principles embedded in our constitutional law.[3]

Although the majority opinion emphasizes the right of privacy in the home, it rec-

75. O.R.S. 167.207. The Alaska legislature have also recently passed a bill which would decriminalize possession of marijuana in certain contexts.

1. Stanley v. Georgia, 394 U.S. 557, 89 S.Ct. 1243, 22 L.Ed.2d 542 (1969); Griswold v. Connecticut, 381 U.S. 479, 85 S.Ct. 1678, 14 L.Ed.2d 510 (1965).

2. The court writes that art. I, § 22 of the Alaska Constitution ". . . was intended to give recognition and protection to the home".

3. Baker v. City of Fairbanks, 471 P.2d 386, 401–02 (Alaska 1970) (footnotes omitted).

[illegible] that analysis of the Federal decisions does not indicate that the right of privacy is relegated to the home. It is true that *Griswold v. Connecticut*[4] invalidated a Connecticut statute prohibiting the distribution of contraceptives and the dissemination of birth control information to married adults by finding a right of privacy, emanating from other constitutional provisions, within which the marital relationship, arguably home related, was protected. But the later case of *Eisenstadt v. Baird*[5] held that a statute prohibiting the distribution of contraceptives to unmarried persons but allowing such distribution to married persons violated the equal protection clause of the fourteenth amendment. In so holding, the Court referred to *Griswold* and explained what the case stood for.

> If under Griswold the distribution of contraceptives to married persons cannot be prohibited, a ban on distribution to unmarried persons would be equally impermissible. It is true that in Griswold the right of privacy in question inhered in the marital relationship. Yet the marital couple is not an independent entity with a mind and heart of its own, but an association of two individuals each with a separate intellectual and emotional makeup. If the right of privacy means anything, it is the right of the *individual*, married or single, to be free from unwarranted governmental intrusion into matters so fundamentally affecting a person as the decision whether to bear or beget a child.[6]

The Court held that the right of privacy involved being free to decide for oneself whether to bear or beget a child, a right relating to the autonomy of the individual, not to a place.

Similarly, *Roe v. Wade*,[7] in upholding the right of a woman to decide whether she should terminate her pregnancy, stated:

> This right of privacy, whether it be founded in the Fourteenth Amendment's concept of personal liberty and restrictions upon state action, as we feel it is, or, as the District Court determined, in the Ninth Amendment's reservation of rights to the people, is broad enough to encompass a woman's decision whether or not to terminate her pregnancy.[8]

Again, the right of privacy pertained to the freedom of the individual to decide as to her course of action and was unrelated to any situs.

On the other hand, there are the *Stanley—Paris Adult Theatre I* group of cases[9] holding that the "broad power to regulate obscenity does not extend to mere possession by the individual in the privacy of his own home" although obscenity is not otherwise constitutionally immune from state regulation.

Thus it appears that the United States Supreme Court has found a right of privacy to exist as to activities within the home or with reference to values associated with the home, and, additionally, as a right of personal autonomy, to make decisions that shape an individual's personal life.[10]

Since the citizens of Alaska, with their strong emphasis on individual liberty, enacted an amendment to the Alaska Constitution expressly providing for a right to

4. 381 U.S. 479, 85 S.Ct. 1678, 14 L.Ed.2d 510 (1965).

5. 405 U.S. 438, 92 S.Ct. 1029, 31 L.Ed.2d 349 (1972).

6. *Id.* 405 U.S. at 453, 92 S.Ct. at 1038, 31 L.Ed.2d at 362.

7. 410 U.S. 113, 93 S.Ct. 705, 35 L.Ed.2d 147 (1973).

8. *Id.* 410 U.S. at 153, 93 S.Ct. at 727, 35 L.Ed.2d at 177.

9. Stanley v. Georgia, 394 U.S. 557, 89 S.Ct. 1243, 22 L.Ed.2d 542 (1969); Paris Adult Theatre I v. Slaton, 413 U.S. 49, 93 S.Ct. 2628, 37 L.Ed.2d 446 (1973); United States v. Orito, 413 U.S. 139, 93 S.Ct. 2674, 37 L.Ed.2d 513 (1973); United States v. 12 200-Ft. Reels, 413 U.S. 123, 93 S.Ct. 2665, 37 L.Ed.2d 500 (1973).

10. On Privacy: Constitutional Protection for Personal Liberty, 48 N.Y.U.L.Rev. 670, 703 (1973).

privacy not found in the United States Constitution, it can only be concluded that that right is broader in scope than that of the Federal Constitution. As such, it includes not only activities within the home and values associated with the home, but also the right to be left alone and to do as one pleases as long as the activity does not infringe on the rights of others. Thus, the decision whether to ingest food, beverages or other substances comes within the purview of that right to privacy.[11]

The right to privacy, however, is not monolithic. For example, the right to decide whether to eat strawberry ice cream cannot be placed on the same level as that of deciding whether to bear a child. Moreover, the importance of the right may properly be related to the place where it is exercised, for example, at the home or in the market place. Other considerations would be the nature of relationships involved (marital, doctor-patient, attorney-client, etc.), the particular activity in question and the individual's interest in it.

Having discussed generally the contours of what I perceive to be the right to privacy under the Alaska Constitution, I shall turn briefly to the test utilized by the court in determining infringements of that right. Particularly in equal protection cases, but also as to cases alleging infringement of other constitutional rights, the United States Supreme Court,[12] and this court[13] in the past, have followed a two-tiered test. If the right involved was deemed to be "fundamental", a statute infringing upon it was required to be "necessary" to further a "compelling state interest". Whereas if the right infringed upon was classified as non-fundamental, any rational basis that might be conceived to justify the legislation was held to be sufficient.[14] As a practical matter, the test was result oriented, since once a right was declared to be fundamental, the challenged regulation or legislative act would be stricken,[15] whereas otherwise some reason could usually be found to sustain it.

I agree with the majority's departure from that test in areas where we have discretion to depart from standards established by the United States Supreme Court. With reference to laws challenged as invading the Alaskan right of privacy,[16] I would apply a single flexible test dependent first upon the importance of the right involved. Based on the nature of that right, a greater or lesser burden would be placed on the state to show the relationship of the intrusion to a legitimate governmental interest. I agree with the majority opinion that interference with rights of privacy within one's home requires a very high level of justification. Similar considerations would apply to certain relationships, without reference to situs, i. e. attorney-client, doctor-patient, priest-parishioner, marital relationship, parent-child. In all cases involving a right of privacy, I believe that the relationship of the intrusion to a legitimate governmental interest must be carefully examined. The court should not abandon protection of the right of an individual to decide how to conduct his life because a rational basis may be "con-

11. Gray v. State, 525 P.2d 524 (Alaska 1974).

12. *See* Bates v. Little Rock, 361 U.S. 516, 80 S.Ct. 412, 4 L.Ed.2d 480 (1960); Roe v. Wade, 410 U.S. 113, 93 S.Ct. 705, 35 L.Ed.2d 147 (1973).

13. Lynden Transport, Inc. v. State, 532 P.2d 700 (Alaska 1975); Breese v. Smith, 501 P.2d 159 (Alaska 1972).

14. Lynden Transport, Inc. v. State, 532 P.2d 700, 706 (Alaska 1975).

15. Where a fundamental right has required use of the compelling state interest test, only one law has been found valid by the Supreme Court, Korematsu v. United States, 323 U.S. 214, 65 S.Ct. 193, 89 L.Ed. 194 (1944), but no state law has passed muster. Dunn v. Blumstein, 405 U.S. 330, 363–64, 92 S.Ct. 995, 31 L.Ed.2d 274, 296–97 (1972) (Burger, C. J., dissenting). *See* 48 N.Y.U.L.Rev. 670 at 702. *See also* Gilbert v. State, 526 P.2d 1131 (Alaska 1974).

16. Of course, in any event where Federal Constitutional rights are involved, we must at least apply the minimum standards prescribed by the United States Supreme Court. Baker v. City of Fairbanks, 471 P.2d 386, 401-02 (Alaska 1970).

ceived" for the legislation in question. The importance of the governmental interest and the means utilized to accomplish this goal must be balanced against the nature of the particular right of privacy.[17]

Applying this test to the facts in this case, assuming that the defendant was found in possession of marijuana in an automobile, I agree with the majority that a valid reason existed for the prohibition due to the proven effect of marijuana on driving, and the unavailability of practical tests for ascertaining whether one is under the influence of an hallucinogenic when balanced against the rather minor status of the right involved, to possess marijuana in public. Accordingly, I would affirm the order denying the motion to dismiss.

CONNOR, Justice (concurring).

I concur in the majority opinion and the separate concurring opinion of Justice BOOCHEVER, but wish to add some observations.

The decision today properly leaves unanswered the question of how far the right to privacy, in connection with the possession of marijuana, extends outside the home. Such a determination can be made only when we are presented with specific facts against which the individual's claim of privacy can be measured, as opposed to the state's assertion of power to control the possession of marijuana. Under the test we have employed in determining the scope of the right to privacy, it is necessary to balance these conflicting claims and determine whether the state's prohibition bears a direct and substantial relationship to effectuating a legitimate state interest.

The record in the case before us does not contain facts about the particular circumstances in which appellant possessed marijuana. Accordingly, we must remand the case for further elucidation of the facts.

It is certain that the right to privacy does not vanish when one leaves the home.[1] There are certain aspects of personal autonomy which one carries with him even when he ventures out of the home, though the claim to privacy diminishes in proportion to the extent that one's person and one's activities impinge upon other persons. But, in order to trace the contours of the right to privacy, it will be necessary to engage in a critical analysis of the facts of each case which presents itself for decision. Only in this fashion can the right to privacy, outside the home, be determined on a reasoned, coherent basis so as to furnish the courts and the public with reliable rules of action. Much definitional work, therefore, remains to be done in the cases yet to be determined.

In the Matter of the ALASKA BAR ASSOCIATION, Petitioner,

v.

Robert F. MARTIN, Respondent.

No. 2495.

Supreme Court of Alaska.

July 14, 1975.

The Bar Association brought disciplinary proceeding and recommended a suspension. The Supreme Court held that the respondent's misconduct warrants suspension from practice for a period of 90 months.

Suspension ordered.

17. 48 N.Y.U.L.Rev. 670 at 705.

1. The right to privacy which received protection in Roe v. Wade, 410 U.S. 113, 93 S.Ct. 705, 35 L.Ed.2d 147 (1973), has nothing to do with the locus of the home and, for the most part, is concerned with matters occurring outside the home.

political gossip, the daily crises, the delicious high that is obtained only at the center of the action. Like any lobbyist, he was first of all selling himself, and he took pains to develop his public persona of Mr. NORML, the cool and collected pot politician, party-giver and ladies' man. In fact, he had to an extent modeled himself after NORML's first financial patron, Hugh Hefner. But there was another, darker side to Stroup's personality, an angry side. He was angry in part at the drug laws and at a political establishment that, as he saw it, loved to guzzle its whiskey but denied his generation the right to enjoy its drug of choice. At another level Stroup was angry at his past, angry at a small-town Baptist boyhood in Dix, Illinois, that for years he had only wanted to escape. There was a certain Jekyll-and-Hyde quality to Stroup. If he could be charming and considerate, he could also be abruptly cold, self-righteous, and intensely critical of others, including his close friends and allies, if they did not match him in their dedication to the cause. This duality seemed to flow from the influence of two quite dissimilar parents: a father with a small-town politician's live-and-let-live attitude and a mother who was a devout Southern Baptist and not at all tolerant of the sins of the world.

In the fall of 1975 I was asked to conduct a *Playboy* interview with Stroup. By then the reform movement had scored some major victories. In 1973 Oregon had ended criminal penalties for smoking, and in the summer of 1975 five more states had done the same: Alaska, California, Maine, Colorado, and Ohio. NORML had provided national leadership to this burst of reform, by gaining publicity for the issue, by advising state legislators on what strategies and expert witnesses might be most effective, and often by paying the expenses for those outside witnesses to go to testify. Moreover, NORML had begun a far-ranging legal program, which involved both aid to individual defendants and court challenges to the constitutionality of state and federal marijuana laws, and to the federal government's ban on the medical use of marijuana. For many years the government had treated marijuana smokers pretty much as it pleased, but now NORML was rallying some of the brightest young lawyers in America to the smokers' defense.

As I studied the marijuana debate in preparation for my interview with Stroup, I began to think of it in terms of a war, a terrible civil war. I was struck by the parallels between this issue and the other great nation-dividing issue of the time, the war in Vietnam. In both

cases the political establishment had been hell-bent to convince young Americans of something they refused to believe: that they should go die in Vietnam, in one case; that they should not smoke marijuana, in the other. In the minds of many Americans the two wars seemed to have blended: The slippery little Vietcong in Southeast Asia had become the dope-smoking hippie at home, and it was somehow imperative that the government's armed forces search out and destroy him. The same mentality that could say we had to destroy a village to save it in Vietnam could argue that we had to send a college student to prison to save him from marijuana.

The marijuana war was being waged on one front as a military conflict, in which tens of thousands of police and narcotics agents busied themselves arresting millions of young people for smoking and/or selling the weed. But as NORML, the Marijuana Commission, President Nixon, Sen. James Eastland, and others began a national debate on the issue, it became increasingly a propaganda war, fought through the media, as the pro-marijuana and anti-marijuana forces battled for the hearts and minds of millions of nonsmoking Americans who would ultimately determine the outcome of the conflict in the political arena.

In 1976 I spent six months as Jimmy Carter's speechwriter and had an opportunity to view the marijuana issue from the perspective of a presidential campaign. If there is anything to be learned in a national campaign, as it moves endlessly from city to city, rally to rally, enclave to enclave, it is that America is an incredibly large, diversified, and potentially explosive nation, less melting pot than tinderbox. The divisions are all there—black and white, Protestant and Catholic, North and South, immigrant and blueblood—waiting for politicians to exploit them. Now to that list has been added the division between those who enjoy drugs and those who fear them. The issue had been exploited in 1972, when McGovern supported decriminalization and Nixon opposed it. Nixon's followers denounced McGovern as the candidate of the three A's—acid, amnesty, and abortion, marijuana having been transformed by political hyperbole into "acid," or LSD.

Fortunately, the drug issue was not exploited in the 1976 campaign. Carter had endorsed decriminalization early in his campaign. I had assumed he was motivated by a combination of intellectual honesty and political necessity: the former because he knew his sons had smoked, the latter because the issue was important to a lot of young

When Stroup arrived in Sacramento, Brownell took him around to meet several Democratic assemblymen, one of whom took him for an outside agitator and threw him out of his office, whereupon Stroup carried his lobbying campaign to Beverly Hills, where he rallied rich liberals to contact their assemblymen. The Playboy mansion was made available for lobbying efforts, a fact that reflected Hefner's intense interest in the legislation.

The second vote came on June 24. The Republicans invoked unit rule again. During two hours of emotional debate, Assemblyman Willie Brown, a black liberal, waved a hand-rolled cigarette and declared that people who smoked a few joints were not criminals. (He later said the joint was made of tobacco). John Briggs, the anti-gay, anti-pot leader, gave the Democrats a candid summary of his political strategy: "It's quite possible that in 1976 your platform will be 'Grass, Gays, and Godlessness.'"

The bill needed forty-one votes, and it got forty-two. In Brownell's eyes the heroes of the second vote were two first-term Democrats from conservative districts who voted no the first time but switched to yes on the second vote. One of them was Floyd Mori, a Mormon who neither smoked nor drank. The reformers had succeeded in convincing him that a vote against jail penalties did not amount to an endorsement of marijuana. The other convert was Richard Robinson, a former Marine officer in Vietnam who decided that as a matter of conscience he could not oppose reform, even if his vote was not needed and might harm him politically.

The bill's passage was denounced by Ed Davis, who said the legislature was favoring "pansies and potheads" and urged Governor Brown to veto it. In fact, Brown postponed action on the bill until it was within hours of becoming law without his signature; then he signed it with a minimum of ceremony. Still, he signed it, and on the first day of 1976, California stopped putting people in jail for smoking marijuana.

A state agency later conducted a survey of the results of the new law in its first year. It found that arrests dropped from about eighty-eight thousand in 1975 to about ten thousand in 1976 (these were for possession of more than an ounce), and about forty thousand citations were issued for possession of less than an ounce. An estimated $25 million in police and court costs was saved.

Finally, in the 1976 elections, there was a political footnote: None of the Democrats who supported the reform bill was defeated.

That spring, as the battle raged on in California, strange things were happening in Alaska.

The Alaska saga actually began in 1972, with two young lawyers sitting around one evening smoking marijuana and grumbling about the marijuana laws. The two lawyers in Alaska were about thirty years old, and their names were Robert Wagstaff and Irwin Ravin. Wagstaff was a native of Kansas City who had done his undergraduate work at Dartmouth. It was there, in 1961, that he first smoked. Marijuana was not readily available in those days, but Wagstaff was a jazz fan, and some black jazz musicians introduced him to the weed. He returned to the University of Kansas law school, then moved to Fairbanks, Alaska, where he became an assistant district attorney. It was in Fairbanks that he met Ravin, a native of Newark, New Jersey, and a graduate of Rutgers. Later they moved to Anchorage and practiced law together.

They also smoked marijuana, and as they talked that night in 1972, they agreed the legal and political climate in Alaska was such that a good test case, with the right client, could overturn the marijuana laws. But who would be that client?

That question was left unresolved. Then, a couple of nights later, fate intervened in the person of a Fairbanks policeman who stopped Ravin because a taillight was out on his car. It was a routine traffic violation. All Ravin had to do was sign the citation and go on his way. But Ravin decided the time had come to take a stand. Knowing he had a couple of joints in his pocket, he refused to sign the citation. That left the arresting officer no choice but to take him to the station. There he was routinely searched, the two joints were found, and the case of *Ravin* v. *Alaska* came to be.

Wagstaff and another lawyer, R. C. Middleton, filed a motion to dismiss the charges before trial, arguing that the state law prohibiting possession of marijuana was unconstitutional because it violated the right of privacy guaranteed by both the U.S. and the Alaska constitutions. In a sense, the issue was not so much legal as political. Reformers in other states had made the same right-of-privacy arguments and had always been turned down. But Alaska was not like

other states. It was a frontier. People went there for privacy, for freedom; for Alaskans the right of privacy came near to being sacred. That, at least, is how Wagstaff hoped the courts would see things, and he was aware that the Alaska supreme court was the youngest and most liberal in the nation.

Lengthy hearings were held in district court on the constitutional question. Wagstaff was a member of the national board of the ACLU and he had legal and financial help from it. He also had help from NORML, who paid the expenses for Drs. Thomas Ungerleider, Joel Fort, and Lester Grinspoon to go to Alaska to testify. The district court denied Wagstaff's motion to dismiss, and he appealed the constitutional question to the Alaska supreme court. By the spring of 1975 the court was near a decision, and Wagstaff was increasingly optimistic that it would be a favorable one.

Meanwhile, things were happening in the state legislature. State Senator Terry Miller, a clean-cut Republican in his early thirties, had introduced a decriminalization bill similar to Oregon's. Stroup never went to Alaska, but he kept in touch with the situation there through Wagstaff, who had agreed to be NORML's state representative. As legislative hearings drew near, an unexpected conflict arose between Stroup and Wagstaff. Wagstaff was convinced there was a very good chance that the supreme court would make smoking legal in Alaska. For that reason he was very skeptical about the decriminalization bill. It provided for $100 fines for private possession and $1000 fines for public smoking or possessing while driving. As far as Stroup was concerned, it was a good bill, but Wagstaff feared that if the bill passed, it would take the pressure off the supreme court to rule in favor of Ravin. Thus, Alaska might settle for a system of fines when it could have had full legalization of private possession. He therefore announced to Stroup that he intended to go testify *against* the bill.

Stroup couldn't believe it. Wagstaff was the kind of smart, able lawyer he dreamed of finding to be a NORML state coordinator—and now he said he was going to testify against decriminalization. Stroup thought it made him and NORML look like idiots. A transcontinental shouting match ensued.

"Bob," Stroup insisted, "we can't have NORML opposing a decriminalization bill. It may not be a perfect bill, but we've only been able to pass one in America so far."

Wagstaff was not moved, and he did in fact testify against the bill. It

didn't matter. On May 16 the Alaska bill passed, and the state's new Republican governor, Jay Hammond, keeping the promise he had earlier made, did not veto it. The bill became law without his signature.

That made Alaska the second state, after Oregon, to adopt decriminalization. Then, eleven days after the legislature acted, the state supreme court, in a stunning decision, ruled five to none that possession of marijuana by adults at home for personal use was constitutionally protected by the right-of-privacy provision in the state constitution.

In its fifty-four page opinion the court said there was "no firm evidence" that marijuana was harmful to the user or to society, and that "mere scientific doubts" could not justify government intrusion into the privacy of the home. The court added, "It appears that the use of marijuana, as it is presently used in the United States today, does not constitute a public health problem. . . It appears that effects of marijuana on the individual are not serious enough to justify widespread concern, at least as compared with the far more dangerous effects of alcohol, barbiturates and amphetamines."

The ruling stuck down the legislature's new system of fines for marijuana use. Private cultivation of marijuana was not mentioned by the court, but later the state attorney general ruled that the right of privacy included cultivation. It was as legal to grow marijuana in Alaska as it was to grow tomatoes. Only sale remained illegal.

On June 16 Maine became the third state, after Oregon and Alaska, to decriminalize marijuana use. The main reason marijuana-law reform passed easily in Maine was that it was part of a new state criminal-code revision that had been recommended by a high-level commission after several years of study. The commission concluded that far too much time and money were being spent on victimless crimes, such as marijuana use and prostitution, and the legislature accepted the view.

In Maine, as in several other states, it was not until after decriminalization passed that its opponents, particularly law-enforcement officials, began to speak out strongly against it. Pressure from police officials, who claimed the new law was causing increased smuggling activity in the state, led to new hearings the next year. A

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JOURNEY TO THE MIND'S EYE

POT STING IN HAWAII

THE 10 WORST THINGS THAT HAPPENED TO POP MUSIC BY JAMES MARSHALL

NO. 144 AUGUST 1987

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ON THE COVER: Sharon M. is the lead singer of *Black Light Chameleons*, a New York-based psychband (**pictured left**). Captain Whizzo's light show is visible to the naked eye at NYC's *Mind's Eye* Events (**see feature**).

NORML-IZER

THE BIG CHILL: Alaska's Proposed Pot Law

By JON GETTMAN, NORML Director

(The following testimony was given to the Senate Judiciary Committee on May 1, 1987 during a public hearing on Senate Bill /32, which if passed would recriminalize marijuana use in the state of Alaska.)

Mr. Chairman, members of the committee, citizens of **Alaska:** My name is Jon Gettman and I am the National Director of **NORML**, the National Organization for the Reform of Marijuana Laws. Founded in 1970, **NORML** is an educational organization dedicated to the review and study of marijuana use, marijuana laws, and their effect on our society.

The **Marijuana Tax Act of 1937** marked the beginning of federal attempts to deter marijuana use by making it illegal. And here we are, **50 years later**, living proof of prohibition's ineffectiveness, still discussing whether criminal penalties are appropriate for marijuana use.

Alaska has the respect and admiration of people around the world for its integrity on the matter of marijuana use. They are impressed by your dedication to the principle of privacy, which Justice Brandeis once remarked is the cornerstone of all our freedoms. We are impressed by Alaska because we know that your dedication to privacy is founded on a deep conviction to the ethic of personal responsibility.

Others, though, respect your laws because they are practical. They envy you in that respect, wishing the political climate in which they work would allow them to devote their time to more serious matters than debating adult marijuana use at home.

There have been repeated challenges to the policy of arresting marijuana users over the last 25 years that have discredited many of the old excuses justifying prohibition. The emotional voices calling for the imprisonment of marijuana users come up with some new excuse every few years. The latest is that because marijuana is, on average, more potent today than ten years ago, it is somehow more dangerous; more subtle is the implication that this increase in its potency renders previous research irrelevant.

The claim is that the more potent marijuana of the '80s is a new, different drug than the one many adults tried in the '60s and early '70s. First of all, as with alcohol, marijuana smokers compensate for a higher potency by simply using less. Secondly, high potency marijuana has been on the market, so to speak, for thousands of years under the name hashish. Though hashish is manufactured from the resins of oils of marijuana, pharmacuetically it has a high level of THC. This claim is part of a long historical trend of believing that despite the discrediting of previous scare stories about marijuana, new evidence emerging from research will finally prove that marijuana really is as bad as **"they"** said it was. It is this historical context that causes me to treat these claims with more than a bit of skepticism.

The National Academy of Sciences conducted a review of all the literature about marijuana. The study was chaired by Arnold S. Relman, editor of the **New England Journal of Medicine**. Their report, **Marijuana & Health**, was published in 1982. There have been no new developments since that time to contradict their findings. Just as in a court of law, there are rules of evidence by which to evaluate research claims. Without exception, the "dangers" of marijuana fail to satisfy those rules of evidence to the satisfaction of the National Academy of Sciences.

Let me address this bill pointedly. It is based on several "findings" that are without foundation. First of all, THC, the drug's active ingredient, does not, I repeat, **does not** lodge in the fatty tissues of the body for 30 days, as Finding Number One reports. Findings Number One and Number Two (which claims that this buildup cause "loss of sleep," "moodiness," and "restlessness") are simply wrong. THC is broken down by the body in a few hours, when the high associated with it wears off. It is the by-products of this chemical breakdown that lodge in the fatty tissues for several weeks. **These have no effect on the body whatsoever and there is not a single study that proves otherwise.** So there is no "buildup" of THC.

Finding Number Three, which claims "it is possible for a human being to overdose from marijuana," is also factually incorrect. Marijuana is one of the least toxic drugs known. You can not overdose from smoking marijuana. Furthermore, marijuana does not interact with alcohol, as other drugs do, and increase its potency. Any toxicologist familiar with marijuana will confirm this fact.

To the extent that marijuana and alcohol are both intoxicants, their use in conjunction, and to excess, would be irresponsible, and in some circumstances, dangerous.

Finding Number Four concerns the accusation that marijuana is more dangerous today because it is more potent. The "finding" also claims that marijuana averages a THC potency of 10 percent; actually, the average potency of marijuana these days is closer to 3.5

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percent. A slight digression will further underscore its irrelevance.

Experts are now realizing that the key to understanding drug related problems is to focus on addictive personalities rather than arguing about the relative addictiveness of different drugs. Present theory holds that, for a variety of reasons, some people are prone to abuse drugs, any drugs, legal or not. The potency of the drug is irrelevant for these people. An alcoholic is no less off the wagon for drinking beer than he or she would be for drinking vodka. The increased potency of marijuana makes it no less and no more dangerous than it was ten years ago, which is, relatively speaking, not dangerous at all.

Marijuana does not cause schizophrenia, illusions, or hallucinations (as Finding Number Five claims) and the only pain it can dull is that of headaches, muscle soreness, or cramps—which by the way is why urinalysis tests confuse the metabolites of marijuana with those of ibuprofen, the active ingredient in Advil. The possibility that marijuana makes the body unresponsive to severe pain, as the finding claims, is just not so.

There is no doubt that long-term marijuana smoking will increase someone's likelihood of lung disease or lung cancer, as in the case of smoking tobacco. Our lungs, it seems, are not made for smoke.

The claim that one marijuana cigarette a day for three years will cause cancer is preposterous. Millions of people have smoked far more marijuana than this for far longer, including, I admit, myself, and there are not millions of cases of lung cancer to prove this claim. As with the rest of the findings this bill is based on, this claim is contradicted by the Relman report.

Furthermore, examinations commissioned by the British government in 1894, by Mayor LaGuardia in New York in 1944, by President Nixon in 1972, by the LeDain Commission in Canada in 1974, by the Australian Royal Commission in 1977, by the National Academy of Sciences in 1982, and also by a British Advisory Council Report to the Home Secretary in 1982 have all concluded that these claims about the "dangers" of marijuana use are without foundation. Marijuana has been around for thousands of years, and it has not essentially changed during the last ten.

The simple fact is that marijuana users have found it to be relatively harmless. It is also clear that many other people just don't like this fact. Rather than leave this matter of choice to the individual as an issue of personal responsibility, some would rather have the state make that decision and intervene in the private lives of its citizens. This is what the invasion of privacy is all about, and if that is the intent of your law then you should be honest and change your findings to this simple statement: We find that many Alaskans don't like marijuana use by their fellow citizens because they are afraid of it.

And before I continue, let me share with you what my organization tells the public about marijuana use. It's bad for the lungs, and a waterpipe should be used to filter out some of the tars. It raises the blood pressure in some people, and should be avoided for that reason by people with cardivascular problems. The use of marijuana during pregnancy may contribute to a slightly smaller birth weight for the fetus, similar to alcohol or tobacco use during pregnancy; NORML advises women to cease marijuana use during pregnancy, as well as alcohol and tobacco. Marijuana causes short-term impairment and should not be used in conjunction with work, driving, and/or the use of heavy machinery, or under any circumstances by adolescents. And yes, gentlemen, it is true that marijuana slightly suppresses sperm production. However, this has no effect on fertility or chromosomes, as the Relman report confirms, and as do the several married couples of my acquaintance.

Arresting pot smokers is ineffective —and it costs too much money.

Ladies and gentlemen, we don't need to examine the works of experts to decide if marijuana causes this massive complex of adverse effects cited by its opponents. Marijuana has been used by over 75 million people, yet there is no prevalance of case histories (epidemiological or longitudinal studies) that prove a single one of these findings. There are no deformed babies on account of marijuana use, no overdoses, no lung cancer patients, and no brain-damaged patients either. The burden of proof, then, is with the accuser. I, for one, would like to know about the individuals whose cases would prove these findings, for I don't believe they exist. If it really caused genetic defects, surely out of the millions and millions of people who have used marijuana in the last 25 years, there would be some clear proof of deformed babies? Yet there is not. And there is almost certainly no indication that millions of young men are walking around with protruding breasts. This, I neglected to mention earlier, was one of the scare stories circulated during the '70s, that marijuana, by way of affecting hormonal production, caused breast development in young males.

And how about Alaska's fellow pioneer, The Netherlands, which has long had a tolerant attitude toward marijuana? Officials there, reported an April 18th article in the New York *Times*, have concluded that their noncriminal approach to marijuana is working, that marijuana use did not lead to harder drugs, and that the number of marijuana users has remained steady (at 36 percent) during the last ten years. Several years ago Spain decriminalized marijuana. Last fall a committee of members of the European parliament recommended that marijuana smokers caught with cannabis for their own use should be cautioned, not prosecuted.

Of even greater interest are domestic developments. In the last few years Columbia, Missouri, almost passed a decriminalization bill by referendum, a bill cleared the Milwaukee City Council, and another cleared the New Hampshire House by consent. Though neither measure became law, the town of Hickory Hills, Illinois, has enacted a decriminalization bill. And, one recently passed the House in Iowa by a wide vote, and awaits action in their Senate.

The alternative to arresting marijuana smokers is to drop criminal penalties, or, as in Alaska, to respect personal use and cultivation of marijuana as a matter of individual privacy. This approach is being studied by others not so much because of a noble respect for privacy, or, I'm sorry to say, justice and credibility, but for two other very understandable reasons.

1) Arresting marijuana smokers in ineffective. And 2) it costs too much money. Many experts share the opinion, voiced for example by Dr. William J. Kinnard Jr., Dean of the School of Pharmacy at the University of Maryland at Baltimore, that "legal control of marijuana is almost impossible and our limited resources should be directed to the control of the more toxic illicit substances," that is, cocaine and heroin.

Finally, if the legislature adopts these findings they will be challenged. Certainly the issue will end up in court, but that is not the arena that threatens the well-being of your communities the most. No, these findings will be challenged by the inquiring minds of your children. If these fears and distortions are adopted as fact, they will constitute a lie, and a lie easily contradicted by common sense, history, and scientific review. It is in the arena of credibility that this bill will damage the state of Alaska. If you want to send a message to your kids, tell them what we tell them: When you are old enough to accept responsibility for yourself you are old enough to make your own decisions. Alcohol, marijuana, and tobacco can all be harmful, though many people seem to enjoy using them in moderation. Some people have a tendency to abuse drugs, and unfortunately, we don't always know in advance who they are. Furthermore, young people lack the maturity to use and not abuse these drugs (as do many adults). These principles, a good, credible education, and a keen interest in development will keep your children from having drug problems.

IDENTIFYING THE MARIHUANA USER

by

Forest S. Tennant, Jr., M.D., Dr. P.H.

Dedicated To The
California Highway Patrol
Who Have Been The
Inspiration For This Handbook

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NOTE FROM THE AUTHOR

This is one of a series of manuals on specific drugs which are abused and/or may cause dependence. Much of it is based on observations made on my patients who have drug problems and from personal research studies. Since research on drug abuse is a relatively new field of endeavor, one can expect future changes in some of the information presented here. I have attempted to give the reader the most current information. As new information becomes available these manuals will be updated.

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SECTION I
BACKGROUND ON MARIHUANA USE

PURPOSE AND INTRODUCTION

- This manual is for law enforcement, medical, correctional, legal, and mental health professionals, as well as employers, teachers, and parents who must competently and accurately identify a drug user in his/her various stages of use.

- Much of the information given here comes from observations and studies conducted with drug users who have been treated in the author's facilities.

- This is the first edition of this manual. It will be updated when enough new information warrants it.

- The format of this manual is intended to help the reader to rapidly review the material, and to be used as a quick reference guide.

- Some material is presented in detailed tables to provide answers to specific questions.

- This manual was written in collaboration with many experienced drug abuse clinicians in order to provide as much scientific accuracy as possible.

- A list of scientific references is provided because there is considerable research that gives the scientific grounding for the identification procedures described here.

THREE CATEGORIES OF IDENTIFICATION

1. ***Acute Marihuana Influence***
   This category is of the most interest to law enforcement and medical personnel who must determine which drug someone has recently taken. For example, identification of the acute user is especially applicable when a person is publicly intoxicated, obviously sedated, driving poorly, or has had an accident or injury.

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2. ***Chronic and Covert Marihuana Use***
This category is of great interest to employers, teachers and parents, who must recognize the covert or non-obvious user. For example, this situation is applicable to a person who is performing poorly in work or in school, behaving abnormally, or who has certain specific medical symptoms.

3. ***Marihuana Addiction or Dependence***
This category is of most interest to medical, penal, and mental health personnel who must determine if addiction or dependence is present and must be medically treated. For example, this situation is applicable to a person who is admitted to a penal or medical institution, and a decision must be made whether medical withdrawal treatment is necessary.

WHAT IS MARIHUANA?

- Marihuana is the plant, Cannabis sativa.
- Hashish is the resin from Cannabis sativa. It is becoming more popular in the United States.
- The active ingredient in marihuana is delta-9-tetrahydrocannabinol (THC).
- THC is used medicinally to help relieve nausea and vomiting produced by anti-cancer drugs. THC is taken as a capsule or tablet when used for medical purposes.

HOW IS MARIHUANA USED?

- It is usually smoked as a cigarette or joint
- Hashish is smoked in a pipe.

POTENCY AND HAZARDS OF TODAY'S MARIHUANA

- Beginning in about 1983, the potency of the marijuana sold in the United States dramatically increased from 1-2% THC to 5-15% THC content. Some areas report a 27% THC level in marihuana.
- The increase in potency has made today's marihuana much more hazardous relative to causing impairment, addiction, and medical complications.
- Many persons in the United States have had personal experiences or have observed other persons during the 1960's and 1970's who smoked marihuana joints containing 1-2% THC. These persons are still under the impression that marihuana is quite harmless due to these experiences, and are not aware of the differences in marihuana today.
- Although the potency difference between 1 and 10% marihuana is a mathematical difference of only 9%, the human brain recognizes this as a 900% difference.
- In the late 1960's and early 1970's, the author observed that U.S. Army soldiers in Europe and Vietnam who smoked potent marihuana and hashish developed many medical complications. The same medical problems are now being observed in the United States in persons using marihuana.
- The high potency marihuana now being smoked is responsible for many accidents, injuries, addiction, and health complications. This new development is the primary reason this handbook has been developed.

HOW DOES MARIHUANA WORK IN THE BODY?

- The THC that is smoked partially changes into two other compounds after it enters the human blood stream. These two compounds are chemically known as 11-hydroxy-Δ9-tetrahydrocannabinol (OH-THC) and 11-NorΔ9-tetrahydrocannabinol-9-carboxylic acid (C-THC).
- THC is detectable in the human blood stream (plasma) for only about two hours. It produces euphoria and may cause visual, mental, and muscle (motor) impairment during this time period. OH-THC stays in the plasma 4 to 6 hours and may cause a small amount of euphoria. Depending on the amount smoked, C-THC may remain in the plasma for as long as 3 to 6 days. It causes no euphoria but may produce visual, mental and motor impairment. Consequently, users have no perception that they may be impaired.
- C-THC stays in human plasma for so long because it is lipophillic or fat-soluble. It goes into fatty tissue and "sticks" until it is released back into the plasma. Because of the fat-solubility of C-THC, it can be found in the urine for many days after one has stopped smoking marihuana. C-THC has been found in urine for up to about 45 days in chronic or addicted marihuana users.

SUMMARY OF MARIHUANA METABOLITES

Metabolite	Approximate Length of Time In Plasma	Causes Euphoria	Causes Visual, Mental, and Motor Impairment
THC	2-3 hours	Yes	Yes
OH-THC	4-6 hours	Mild, if any	Yes
C-THC	3-6 days	No	Yes

EVIDENCE OF IMPAIRMENT

- A study at Stanford University in California was done with 10 licensed, commercial pilots who smoked a marihuana joint and then were tested on a flight simulator 24 hours later. Pilots made landing errors and one even missed the runway!
- The author has detected strabismus of the eye (non-convergence) and non-or slow-reacting pupils up to one week after chronic marihuana smoking was stopped. These findings were present as long as C-THC was detected in the plasma.
- Due to new research, it is clear that one may remain legally and medically under the influence of marihuana for up to a few days after smoking it.

EFFECT OF MARIHUANA ON NEUROTRANSMITTERS AND THE IMMUNE SYSTEM

- Many controlled research studies have shown that marihuana has both stimulant and sedative effects on the body. Until recently, the cause of this has not been understood. Marihuana has been shown to reduce levels of the body's internal stimulant, norepinephrine, and the body's internal opioid, endorphin.
- These findings help explain why marihuana smoking causes an increase in pulse rate and blood pressure while at the same time may produce muscle relaxation, slow speech and sedation. In simple terms, marihuana has many of the simultaneous, combined effects of cocaine and heroin.
- The sex hormones, follicle stimulating hormone and luteinizing hormone, may be suppressed by chronic marihuana use.
- It is marihuana's effects on neurotransmitters, neurohormones, and the immune system that provide many of the physical signs and behaviors that allow for the medical and legal identification of acute and chronic marihuana use.

WHO ABUSES MARIHUANA?

- Marihuana was once known as a drug for the college student. Its use is now widespread in all age groups and socioeconomic classes. Today most users start using marihuana in their early teenage years, but use below age 10 years is not uncommon.
- Recent surveys of high school seniors in the United States reveal that as many as 60-70% have reportedly tried marihuana at least one time and about 5 to 7% report daily use.

- Drug addicts of various types frequently use marihuana as a second drug. This is particularly common in cocaine, amphetamine, and phencyclidine (PCP) addicts.
- Persons with the underlying psychiatric disorders of depression and schizophrenia often find marihuana particularly desirable.
- Most marihuana users are also cigarette smokers.

GENERAL PATTERNS OF MARIHUANA USE

Classification	Usual Frequency of Use	Chief Characteristic
Intermittent or occasional	1 to 4 times per month	Sometimes called social, casual, or "recreational" users. Also used to control stress.
Binge	Every few hours for a short period.	A great amount used in a short time period (weekend or evening).
Addiction or dependence	Type 1—6 to 12 times per day	Probably dependent upon THC or OH-THC. Withdrawal symptoms begin the day of cessation (when THC or OH-THC leaves the blood stream).
	Type 2—Daily or every other day	Probably dependent upon C-THC. Withdrawal symptoms occur about three days after cessation (when C-THC leaves the blood stream).

SECTION II

IDENTIFICATION OF ACUTE MARIHUANA INFLUENCE

ACUTE EFFECTS OF MARIHUANA

- Marihuana has four basic effects, although all four may not exist in one person at the same time.

Stimulation
- Increase in Pulse Rate
- Increase in Temperature
- Increase in Blood Pressure
- Decreased Attention Span
- Sweating
- Craving for Sweets
- Mood Elevation
- Poor Concentration

Sedation / Muscle Relaxation
- Droopy Eyelid
- Strabismus (non-convergence)
- Slow or Non-reactive Pupil
- Inability to Maintain Pupil Constriction
- Giggly or Giddy
- Visual-Perception Disturbance
- Poor Muscle Coordination
- Mouth-Breather (dry lips/mouth)
- Slow Gait
- Poor Balance
- Sleepy Appearance
- Slow Speech

Anesthesia/Analgesia
- Pain Relief
- Increased Hearing Threshold
- Memory Loss
- Time Distortion

Hallucinogenic
(Usually only with high doses or combined with other drugs)
- Hallucinations
- Paranoia
- Delusion

- Marihuana is commonly used with alcohol (a sedative), cocaine (a stimulant), PCP, or other drug which may potentiate some of its effects and reactions.

- Most of these effects last about 2 to 5 hours after smoking marihuana. Some effects, particularly vision, motor and mental may last for more than 24 hours, depending on the dosage taken.

GENERAL PHYSICAL AND BEHAVIORAL SIGNS OF ACUTE DRUG INFLUENCE

- All psychoactive drugs, when consumed in a high enough dose, will produce abnormal physical and behavioral signs in an individual who is not tolerant to the drug. Many of these signs are generic in that they are similar regardless of which drug, including marihuana, is taken. For example, a common misconception is that stimulants and sedatives cause very different acute physical and behavioral signs. Although there are some specific differences in the acute drug effects of stimulants and sedatives, both classes of drugs produce many identical symptoms. More importantly, low and high dosages of the same drug may produce different signs and symptoms. The degree of tolerance that a user may have will also influence symptoms. Further, persons in withdrawal from a stimulant, e.g., cocaine, may exhibit symptoms associated with the acute use of a sedative, e.g. heroin and vice versa.

- A problem in the physical examination and evaluation of the drug user is that the evaluator may not know the terminology to apply to what he/she observes. Listed here are a number of terms which may be used to describe the various generic symptoms and behaviors that are commonly observed with most types of acute drug influence, including acute marihuana influence.

- It is not essential that the evaluator or examiner memorize or even be able to recognize all of the signs and symptoms listed here to make a proper medical and legal diagnosis. The presence of only some of the following, when combined with laboratory confirmation of body fluid, (i.e. blood or urine) is sufficient to make a medical and legal diagnosis of acute drug influence.

TABLE OF GENERAL SIGNS AND SYMPTOMS FOUND IN ACUTE DRUG INFLUENCE

Accommodating	Expressionless	Paranoid
Agitated	Flat	Passive
Aggressive	Forgetful	Persnickety
Alert	Giddy	Pesky
Angry	Giggly	Rambling
Animated	Happy	Redundant
Anorexic	Hesitant	Relaxed
Anxious	Hostile	Remorseful
Antagonistic	Hyperactive	Repetitive
Antisocial	Hysterical	Resistive
Argumentative	Impatient	Restless
Befuddled	Inappropriate	Rigid
Belligerent	Inattentive	Ruffled
Bizarre	Incoherent	Sedated
Boisterous	Inconsistent	Silly
Bubbling	Indecisive	Sleepy
Cautious	Indifferent	Sluggish
Cocky	Irrational	Somnolent
Combative	Irritable	Stumbling
Confused	Insolent	Stuperous
Contentious	Intoxicated	Subdued
Contradictive	Jittery	Submissive
Dazed	Jovial	Talkative
Deliberate	Jumbled Speech	Tense
Denies	Laughing	Uncertain
Depressed	Lethargic	Uncooperative
Disheveled	Loud	Uneasy
Disjointed Speech	Mellow	Uncaring
Disoriented	Monotone	Unconcerned
Distracted	Moody	Unkempt
Drowsy	Mute	Unresponsive
Eager	Nervous	Unsteady
Erratic	Non-responsive	Violent
Euphoric	Non-communicative	Withdrawn
Evasive	Obstreperous	
Excited	Over-confident	

NOTE: Some of these terms mean the same thing and there may be other terms that are acceptable.

PHYSICAL EVALUATION/EXAMINATION OF A PERSON SUSPECTED OF ACUTE MARIHUANA INFLUENCE

- Below is a list of physical evaluation procedures to be used when a person is suspected of acute marihuana influence. It is not necessary to do every procedure to make a correct medical and legal identification. Most of these procedures can be done by a non-medical person:
  1. Listen for speech rate.
  2. Observe gait and balance.
  3. Look for sleepy apparance, droopy eyelids, mouth breathing, dry lips, and green tongue.
  4. Smell for odor of alcohol and marihuana.
  5. Assess responses for attention span, concentration, and giddiness.
  6. Assess depth perception by asking person to estimate a distance.
  7. Examine eyes for droopy eyelid, pupil reaction, strabismus (non-convergence), and redness.
  8. Determine muscle coordination and balance by finger-to finger, finger-to-nose, step-test, and/or one leg-balance-count test (divided attention).
  9. Take pulse, blood pressure, and respiratory rate.
  10. Feel skin for sweating and tremor
  11. Note if hallucinations, delusions, or paranoia is present.
  12. Instruct to give correct time, date, and place.
  13. Observe for general physical and behavorial signs of acute drug influence (see previous table).

LEGAL DIAGNOSIS OF DRUG INFLUENCE

- The elements required to make a ***legal*** diagnosis of acute drug influence are well established in case law. Furthermore, the elements are identical to the ***medical*** diagnosis of acute drug influence. Put simply, the elements required for a proper diagnosis of acute drug influence are the same in a medical clinic, emergency room, work place, police department, or on a highway. There are three basic elements required to make a medical and legal diagnosis:
  1. Reason to investigate further
  2. Physical evidence
  3. Laboratory confirmation

Professionals may differ in the terms that they use to describe the three elements. Some of the terms are listed here:

• **ELEMENT NO. 1 — Reason to Investigate Further**

Some Common Descriptive Terms	Some Common Reasons
Probable Cause (Law Enforcement) Just or "For" Cause (Industry) Reasonable Suspicion (Industry) Index of Suspicion (Medicine)	accident, injury, illegal activity, improper driving, abnormal behavior, psychosis, absenteeism, walk or talk

• **ELEMENT NO. 2 — Physical Evidence**

Some Common Descriptive Terms	Some Common Evidence
Supporting Evidence (Legal) Specific Objective Facts (Legal) Abnormal Physical Finding (Medicine)	abnormal walk, speech, balance, visual perception, blood pressure, pulse, mental state, eye signs, mental response.

• **ELEMENT NO. 3 — Laboratory Confirmation**

Sometimes called "essential evidence," this element requires that the drug be found in a body fluid which can be blood, urine, breath, saliva, eye fluid (vitreous), hair, or feces. Urine is the most common fluid that is analyzed with blood ranking second. Alcohol is usually measured in breath.

LABORATORY FINDINGS AND CORRELATIONS WITH DEGREE OF ACUTE INFLUENCE

Only in the case of alcohol does the body fluid concentration reflect any predictable degree of impairment of acute influence. Most states use a blood alcohol concentration of 100mg/100 ml, or 10 mg% as the legal criteria for acute alcohol influence because this level is known to cause significant physical impairment in persons who are not tolerant to alcohol. At this time, it is not scientifically possible to determine the degree of acute influence or impairment by the concentration of other drugs of abuse present in blood or urine. Therefore, qualitiative, not

quantitative urine and blood tests are the most appropriate to confirm a diagnosis of acute influence of marihuana, cocaine, heroin, amphetamines, and phencyclidine. It is also emphasized that the presence of abnormal physical signs, symptoms, and behaviors are the primary determinants of acute influence — not the laboratory test, which is only capable of confirmation.

LEGAL DIAGNOSIS OF ACUTE MARIHUANA INFLUENCE

• Recommended criteria are listed here for the medical and legal diagnosis of acute marihuana influence. Note that all three elements as described above are included.

• **ELEMENT NO. 1 — Reason to Investigate Further**
One of the Following Must be Present

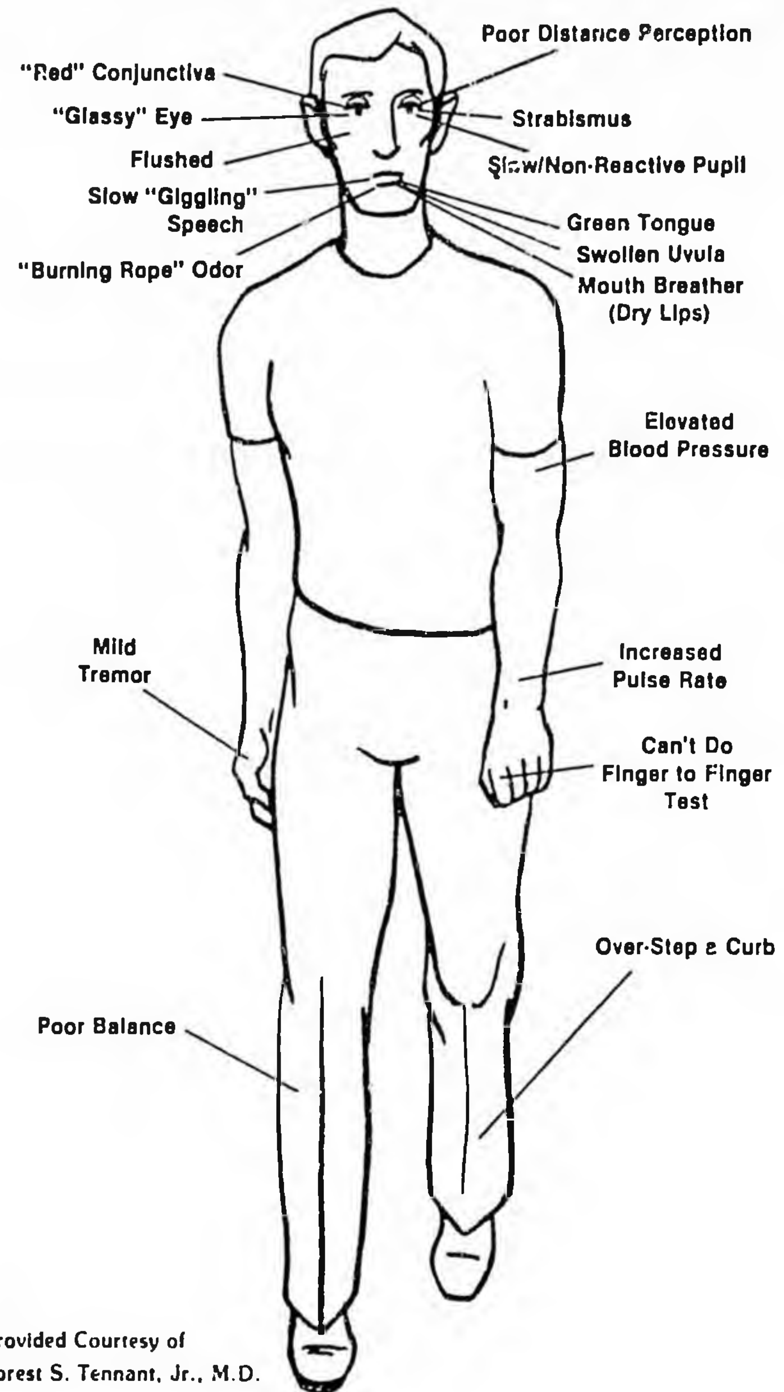
Accident
Injury
Illegal Activity
Recurrent Infections/Illness
Progressive Change in Mood, Mental Ability, or Memory
Deterioration of Work or School Performance
Psychiatric Symptoms
Abnormal Gait or Speech
Improper Driving
Sudden Disappearance from Work/Home
Other Unusual Behavior
Smell of Marihuana Smoke

ELEMENT NO. 2 – Physical Evidence – Supporting Evidence
Two or More of the Following Must Be Present

- Slow or Non-Reacting Pupil
- Pupil Cannot Hold Constriction in Direct Light (Rebound Dilation)
- Strabismus (Non-Convergence)
- Abnormal Walk or Stumbling
- Green Tongue
- Elevated Pulse
- Slow or Slurred Speech
- Abnormal Finger-to-Finger Test
- Unattentive or Unresponsive to Questions
- Does Not Know Current Time, Date, or Place
- Inappropriate Laughter or Giggling
- Other Acute General Influence Signs (See Table on page 8)
- Red Eye (Sclera)
- Dilated Pupil
- Droopy Eyelid
- Mouth Breathing and Dry Lips
- Abnormal Distance Perception
- Elevated Blood Pressure
- Abnormal Divided-Attention Test (One Leg-Count Test)
- Poor Balance/Coordination
- Excess Sweating
- Tremor
- Abnormal Step Test

ELEMENT NO. 3 –
Laboratory Confirmation – Essential Evidence
Presence of marihuana metabolite in urine, blood, or saliva.

Physical Signs of a Non-Tolerant Person Under Marihuana Influence



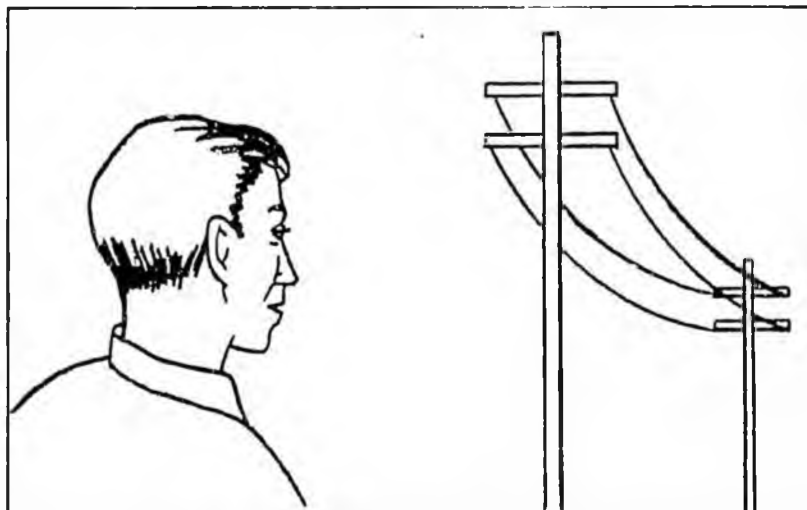
Provided Courtesy of
Forest S. Tennant, Jr., M.D.

SPECIFIC PHYSICAL TESTS FOR ACUTE MARIHUANA INFLUENCE

Physical tests can be conducted which demonstrate evidence of acute marihuana influence. These tests access one or more of the basic physical determinants of drug influence, i.e., perception, balance, coordination, and attention span. Not all of these tests need to be positive to establish the diagnosis of acute influence. Seldom are all the tests abnormal at the same time. Not all of these tests need to be done to establish a diagnosis of acute marihuana influence. In addition, there may be other tests or variants of these which can be utilized since the object of the physical tests is to document that marihuana is present in the body and that it is producing some physical effect.

Test #1 — Distance Perception Test

Procedure: Ask how far away an object is, such as a wall, telephone pole, etc.



Normal
Can estimate distance

Abnormal
Estimate is off 20% or more

Test #2 — Step Test

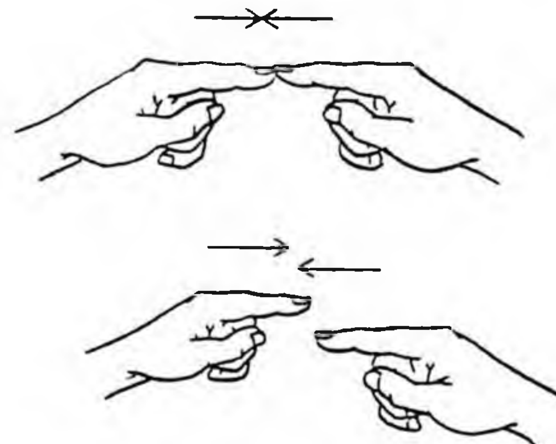
Procedure: Have subject attempt to step up a curb or stairs.

Normal
Can step up accurately

Abnormal
Over-steps or under-reaches

Test #3 — Finger-to-Finger Test

Procedure: With eyes open and arms extended, have the subject touch his index fingers. Then have subject shut his eyes and again try to touch his index fingers.



Normal
Less than 2" off and usually in a vertical plane

Abnormal
More than 2" off and usually in a horizontal plane

Test #4 — One Leg-Count-Balance Test (Divided Attention)

Procedure: Have subject stand on one leg, close eyes, and count to 10.

Normal	Abnormal
Can accomplish	Cannot stand on one leg and complete the count

Test #5 — Strabismus or Non-Convergence Test

Procedure: Ask subject to focus eyes on a finger or object at the end of the subject's nose.

Normal	Abnormal
Can "cross eyes" and gaze at object	One or both eyes will be unable to converge and will drift outward

Test #6 — Time Test

Procedure: Ask subject what time it is.

Normal	Abnormal
Will know correct time	Will be off at least 15 to 30 minutes

Test #7 — Pupillary Reaction

Procedure: (A) Shine a light on the pupil and quickly remove it. Observe reaction. Then shine the light on the pupil to see if the pupil can maintain its constriction.

Normal	Abnormal
Pupil rapidly reacts. With constant light it will maintain constriction for at least 5 to 10 seconds.	Pupil reacts slowly or not at all. With constant light, the pupil will not hold its constriction and will dilate to its original size or slightly bigger (rebound dilation).

Procedure: (B) Measure pupil size in room light and then put individual in darkness for five minutes.

Normal	Abnormal
Pupil will dilate	Pupil will not dilate

CHANGES IN VITAL SIGNS WITH ACUTE MARIHUANA INFLUENCE

Marihuana has stimulant properties due to its effects on norepinephrine. Consequently, vital signs may show stimulatory effects:

PUPIL SIZE —	Over 5.0 mm in diameter
PULSE —	Over 100 beats per minute (Normal - 72/minute)
BLOOD PRESSURE —	Systolic over 140 mm Hg (Normal - 120 mm Hg) Diastolic over 100 mm Hg (Normal - 90 mm Hg)
RESPIRATORY RATE —	Over 25 respirations per minute (Normal - 20/minute)
TEMPERATURE —	Over 100°F (Normal 98.6°F)
SPECIAL NOTE:	If two of the above are present and there is marihuana derivative in plasma, urine, or saliva, acute marihuana influence should be considered to be present.

VISION EFFECTS WITH MARIHUANA

There is growing evidence that some eye abnormalities and possibly other neuro-muscular effects are present as long as marihuana's long-acting metabolite, C-THC, remains in the blood stream (plasma). Basically this means that marihuana may produce impairment and meet the criteria for acute influence for possbily as long as three to six days after the last dose of marihuana. For example, a study was conducted at Stanford University in which ten licensed pilots were given a marihuana joint containing 19 mg of THC. Twenty-four hours later they were tested on a flight simulator, and all made landing errors, including one pilot who missed the runway. Other examples of vision effects of marihuana include numerous drivers driving erratically who are routinely arrested by the California Highway Patrol. Upon examination they show eye findings of strabismus and slow or non-reactive pupil but claim to have not smoked marihuana for three to four days. However, they show marihuana metabolite in their urine but no evidence of alcohol or other drug use.

The author has now studied some chronic marihuana users to correlate eye and other physical abnormalities with the presence of C-THC in plasma. Although strabismus (non-convergence) and slow, or non-reactive pupils were not present in every user, they were found in some marihuana users 3 to 6 days after they claimed to have ceased

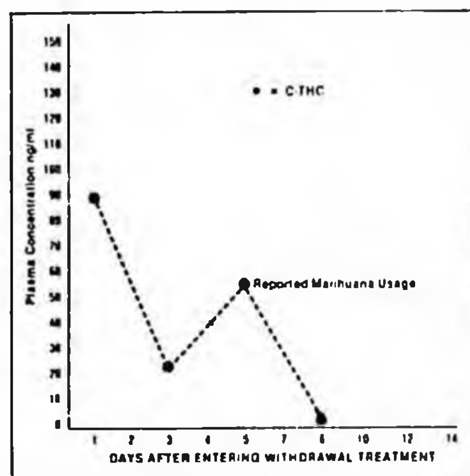
use. Figures in Example 1 show the plasma levels of C-THC in two chronic marihuana users who were treated by the author. In both cases one-sided strabismus and non-reactive pupil were present until C-THC was undetectable in plasma. The importance of this finding is that drug influence and impairment may remain for several days after marihuana was last used even though the user has no feeling of euphoria or perception of impairment. The presence of strabismus and a non-reactive pupil can impair visual tracking ability which may produce accidents and injuries.

CASE EXAMPLES OF PLASMA CONCENTRATIONS AND EYE ABNORMALITIES

To document whether eye abnormalities exist after cessation of marihuana use, the author has studied chronic users by determining the presence of C-THC in plasma while, at the same time, determining the presence of strabismus and non or slow-reactive pupils. Shown are two examples. In both cases C-THC remained in plasma for three days following the user's last reported use. In addition, strabismus and a non-reactive pupil were present during this time. Additionally, these persons experienced mild withdrawal symptoms when the plasma no longer showed C-THC.

EXAMPLE NO. 1

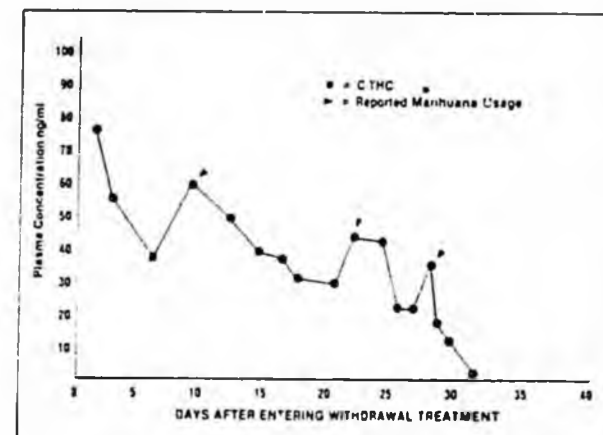
PLASMA CONCENTRATIONS OF C-THC DURING WITHDRAWAL IN A 3 TO 5 TIMES PER DAY MARIHUANA USER.



Strabismus and non-reactive pupil were present during the eight days that C-THC was detected in the plasma.

EXAMPLE NO. 2

PLASMA CONCENTRATIONS OF C-THC DURING WITHDRAWAL IN A ONE TIME PER DAY MARIHUANA USER



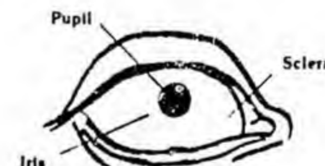
Strabismus and a non-reactive pupil were present during the 32 days that C-THC was detected in plasma

DETERMINATION OF PRESENCE OF PUPILLARY DILATION OR CONSTRICTION

In normal room light, the pupil of an adult is usually between 2.9 and 6.5 mm in diameter. About 1 to 3% of the adult population may have a congenital dilation or constriction.

A rapid way to determine if dilation or constriction is present is to measure the pupil diameter against one side of the iris.

Normal Size Pupil



Pupil diameter about same width as one side of iris

Constricted Pupil

Diameter much smaller than width of one side of iris

Dilated Pupil

Diameter much larger than width of one side of iris

MEASUREMENT OF PUPIL SIZE AND REACTION

Use a standard pupilometer for measuring of pupil size. Pictured here is an actual-size example which can be copied for use.

Veract, Inc.
338 So. Glendora Avenue
West Covina, CA 91790
(818) 919-7476

MILLIMETERS

1.0
1.5
2.0
2.5
3.0
3.5
4.0

PUPILOMETER

4.5
5.0
5.5
6.0
6.5
7.0

Normal size of adult pupil 2.9 to 6.5 mm

PAT P [illegible]

Dilated pupil of type observed with acute cocaine-amphetamine influence. Sometimes observed with acute marihuana influence.

Reddish sclera (dilated veins) of acute marihuana smoker.

Constricted pupil and reddish eye in person under acute influence of marihuana and heroin.

Droopy eye-lid, constricted pupil and reddish sclera of person under the acute influence of phencyclidine (PCP) and marihuana.

PUPIL MEASUREMENT GUIDELINES

1. During the day, test subject away from bright sun. At night, test the subject in light. Plain room lighting is best.

2. Measure pupil size by holding a flashlight at a 45° angle from the subject's lateral side. Never shine the light directly into the eye from the front, or the pupil will constrict and destroy the measurement.

3. Compare subject's pupil size to a pupilometer. Note sizes in millimeters.

4. Keep flashlight about one foot away.

5. Note the reaction or absence of reaction in subject's pupils by "flicking" the light beam on and off the pupil.

6. Repeat above procedures on at least one non-drug-using person in the same light and note results for comparison.

7. A few persons with a very dark iris surrounding the pupil cannot be adequately measured.

PHOTOGRAPHIC DOCUMENTATION OF PUPIL SIZE AND REACTION

There are some specific legal occasions when photographic evidence of pupil size and/or reaction may be advantageous. The following are key points when using this procedure.

1. A standard camera with a flash is sufficient since it reacts faster than the pupil can.

2. Take photograph with pupilometer next to the eye for comparison.

3. Room light is satisfactory. Avoid bright light or darkness.

4. To document non-reactivity by photograph, take a picture in room light. Then place the subject in a very dark room for 5 minutes and repeat the same photograph. A non-reactive pupil will not dilate in darkness. It is advisable to take photographs of a control subject at the same time and in the same light to demonstrate the difference.

SUMMARY OF EYE EFFECTS WITH MARIHUANA

Finding	How Often Present	Usual Approximate* Time May last After Smoking
Redness	Frequent	4 to 6 hours
Dilated Pupil	Sometimes	2 to 4 hours
Non- or Slow-Reacting Pupil	Usual	1 to 3 days
Failure to Hold Constriction (Rebound Dilation)	Sometimes	4 to 6 hours
Strabismus (non-convergence)	Frequent	1 to 3 days
Droopy Eyelid	Frequent	2 to 4 hours
Failure to Estimate Distance	Frequent	4 to 6 hours

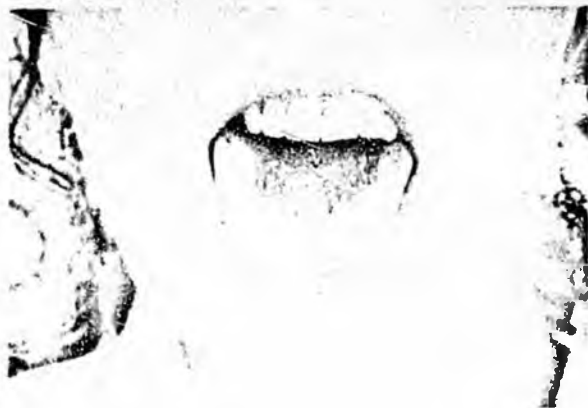
**Approximate means that the time may be shorter or longer*

LEGAL CASE EXAMPLES OF ACUTE MARIHUANA INFLUENCE

There are many legal challenges currently in process with employees who have been disciplined for marihuana use and/or detection in urine. In most of these caes, there was a claim of acute marihuana influence by the employer, but one of the three key elements was missing, i.e., cause for suspicion, physical evidence, or laboratory confirmation. Courts in California have now had considerable experience with drivers who are under the acute influence of marihuana and case law is now well established. The California Highway Patrol has developed the methodology to accurately identify the driver under marihuana influence and some of the information in this handbook is based on their experience. Following are two typical case examples:

CASE EXAMPLE #1 – California High Patrol

Element #1	Finding(s)
Cause to investigate	Weaving on road



Green coated tongue of marihuana-hashish smoker.

Glazed eye and droopy eye-lid of acute marihuana influence.

Reddish, glazed eye of acute marihuana influence. Normal size pupil and mild drooping of eye-lid.

Element #2 Physical Examination	Reddish eye Strabismus (one-side) Poor distance perception Non-reactive pupil Animated Anxious Evasive Giddy Indifferent
Element #3 Laboratory Confirmation	Negative Alcohol Breath Test Marihuana metabolite in urine

CASE EXAMPLE #2 – Industrial Accident

Element #1	**Findings**
Cause to investigate	Accident involving machinery
Element #2 Physical Examination	Glassy Eye Flushed Sleepy Non-responsive Inconsistent Unsteady Inappropriate Stumbling
Element #3 Laboratory Confirmation	Marihuana metabolite in urine

In the latter case, two lay persons made the physical observations and carefully recorded this in writing.

Section III

IDENTIFICATION OF CHRONIC OR COVERT MARIHUANA USE

HOW TO MAKE A DIAGNOSIS OF CHRONIC MARIHUANA USE

- There are two major criteria used in order to make a diagnosis of covert or chronic marihuana use when a person doesn't admit use.
  1. Presence of suggestive behaviors and signs.
  2. Marihuana derivative in blood or urine.
- The major problem of chronic marihuana use is to know when to suspect someone.
- When someone is suspected of chronic marihuana use, they can be confronted by telling them the signs and behaviors that make you suspicious. Once confronted, it may be appropriate for a physician, employer, parent, teacher, coach, etc., to ask for a urine test for definitive proof.

WHY MAKE A DIAGNOSIS OF CHRONIC OR COVERT MARIHUANA USE?

Chronic marihuana use has so many debilitating and negative consequences that it needs to be identified as early as possible in order to prevent it's numerous medical complications and social problems.

In contrast to most other drug or alcohol abusers, marihuana users, in the author's experience, have a higher success rate in stopping and maintaining abstinence. Early identification and intervention usually produces good results. Consequently, the best way to help a chronic or covert marihuana user is to identify him/her as soon as possible.

WHEN TO SUSPECT CHRONIC OR COVERT MARIHUANA USE

Only a blood or urine test will definitely diagnose marihuana use. However, you should suspect chronic marihuana use if you observe a combination of some of marihuana's chronic effects. Some of marihuana's long-term effects can be scientifically attributed to its ability to adversely affect the brain's norepinephrine, or endorphin systems. In addition, chronic marihuana smoking causes irritation of the respiratory system, instability of glucose metabolism, and occasionally, abnormalities of sex hormones. These hormone and respiratory changes can provide clues to chronic covert marihuana use if one knows the basic signs and behaviors associated with them.

BASIC SIGNS AND BEHAVIORS ASSOCIATED WITH CHRONIC AND COVERT MARIHUANA USE

- Frequent absences from school or work
- Time distortion, including tardiness, unusual meal times
- Frequent missed appointments
- Constant use of eye drops (usually Visine®)
- Wears marihuana-leaf jewelry, insignia, or have clips to hold cigarettes
- Wear sunglasses indoors
- Abnormal sleep pattern such as staying up after midnight or daytime sleeping
- Repetitive forgetfulness or broken promises
- Frequent accidents, injuries, and/or traffic violations
- Loss of interest or motivation in job/school/relationships
- Deterioration of work or school performance
- Careless in hygiene and grooming habits. Females stop polishing their nails or wearing lipstick and make-up. Males skip shaving. Fail to brush teeth
- Recurrent respiratory infections
- Poor pain and stress tolerance
- Acne worsens
- Sudden personality changes. Becomes dull, bland, humorless
- Binge eating of sweets and snacks between meals

TIME DISTORTION WITH MARIHUANA

Chronic use of marihuana and many other stimulant drugs alters the brain chemistry so that normal time patterns are not maintained. To illustrate, the normal person tends to know when three meals per day should be eaten, when to go to sleep at night, take a 15-minute coffee break, or when to leave for school or work to arrive on time. A person whose internal time clock has been disturbed by chronic drug use will have distorted behaviors, including inability to keep appointments and meet time deadlines. They will also tend to stay up late at night or sleep during the day.

MOTIVATION DISTURBANCES

Marihuana may disrupt the brain chemicals that allow one to be motivated to carry out normal day-to-day activities. Lack of motivation exhibits itself in a number of rather typical ways. Particularly affected are such common motivations, such as eating a proper diet, maintaining

normal hygiene, and treating one's fellow man in a civil and decent manner. A chronic or covert marihuana user may be unable to maintain a sufficient level of motivation to carry out these routine daily functions.

ABNORMAL SELF-PERCEPTION OF JOB OR SCHOOL PERFORMANCE

Cocaine, marihuana, and PCP may markedly impair a person's job or school performance. For unknown reasons, however, the drug user may have little or no accurate perception of this. They may insist that they are "doing fine" and that they do not deserve criticism in spite of failing grades or poor athletic or job performance. Unfortunately, the loss of accurate perception of self-performance may persist after drug use is stopped.

PERSONS MOST LIKELY TO SUSPECT

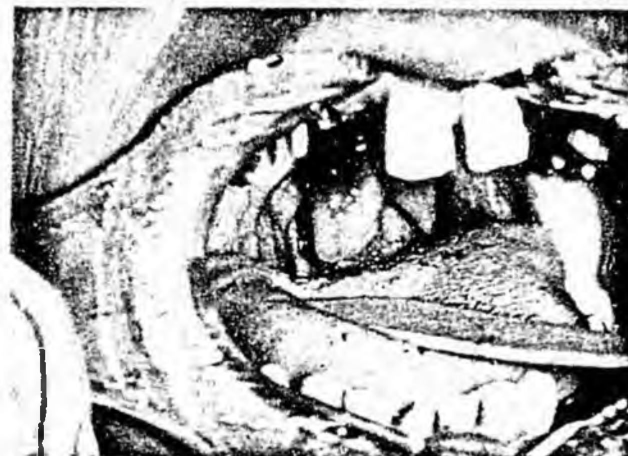
Cigarette smoking is the single, biggest indicator that a person may be using illegal drugs. Approximately one-third of the adult population over age 18 years smoke cigarettes, and of these, about 25% abuse drugs and/or alcohol. These figures may be higher for youth. The percentage of youth who are between 13 and 19 years of age, who smoke cigarettes and frequently use marihuana is probably over 50%. One reason youth who smoke cigarettes are likely candidates to use illegal drugs is because they are already knowledgeable about inhaling and are tolerant to the heat irritation produced by ordinary cigarettes. Physically and psychologicaly, it is a short step from cigarette smoking to marihuana or cocaine inhalation. Over 99% of heroin users smoke cigarettes. In the author's experience well over 90% of PCP and amphetamine users smoke cigarettes.

CRAVING FOR SWEETS

Constant ingestion of sweets is a behavior that many chronic marihuana users exhibit. Marihuana releases norepinephrine from neurons which can reduce blood sugar and cause craving for sweets. Extremely poor dental hygiene is often observed in chronic marihuana users and this may be related to the constant ingestion of sweets

ANESTHETIC AND ANALGESIC EFFECTS OF MARIHUANA

Marihuana has some pain relieving effects. It was even used for this purpose in ancient medical practice. It is probably anesthesia of the auditory (hearing) mechanism that enables drug users to listen to



Swollen uvula and poor dentition in a chronic marihuana-hashish user.

Blackened gums of chronic marihuana-cocaine smoker.

excessively loud music that irritates most normal people. The author has observed that many industrial accidents occur because either the victim or propagator was a marihuana user and apparently did not hear machinery, a vehicle, or even a verbal warning.

WORK PROBLEMS OF THE HIGHLY-TRAINED WORKER

Numerous research studies document that marihuana, particularly the high potency forms now sold in the United States can impair tasks that require superior mental and physical skills. Also, impairments can be demonstrated many hours after the euphoria or "high" has subsided. Specifically, marihuana may impair immediate recall, glare recovery, peripheral vision, and time sense. Visual illusions and inappropriate or incorrect memory may intrude into consciousness, leading to an interruption of correct mental sequencing of events in time called, "temporal disorganization." While simple, repetitive and well-known tasks can usually be performed properly, work requiring a high level of cognitive integration may be adversely affected. An example is a chronic marihuana user who operates a machine competently until it malfunctions at which time the person may not be able to recall or remember the appropriate safety measures. Put another way, when a person is under the influence of drugs, routine tasks usually get accomplished, but dealing appropriately with the unexpected or the unusual is quite another matter. Other adverse effects of chronic marihuana influence on the job include diminution of visual tracking, complex reaction time, hand steadiness, complicated signal interpretation, and attention span. Deficiencies in perception, memory and cognition make learning difficult which handicaps all but workers doing the simplest tasks.

The author has observed many middle-management personnel, who began smoking marihuana many years ago when it was only a 1-2% grade of potency. They now find they cannot achieve the level of skill called for in their jobs due to the impairment produced by the more potent marihuana.

SOME SIGNS OF DETERIORATING WORK PERFORMANCE

Work Patterns

- Inconsistency in quality of work
- High/low periods of productivity
- Poor judgment/more mistakes than usual and general carelessness
- Lapses in concentration
- Difficulty in recalling instructions
- Difficulty in remembering own mistakes
- Using more time to complete work missing deadlines
- Increased difficulty in handling complex situations

Absenteeism

- Acceleration of absenteeism and tardiness, especially Mondays, Fridays, before and after holidays
- Frequent unreported absences, later explained as "emergencies"
- Unusually high incidence of colds, flu, upset stomach, headaches
- Frequent use of unscheduled vacation time
- Leaving work area more than necessary (e.g., frequent trips to water fountain and bathroom)
- Unexplained disappearance from the job with difficulty in locating employee
- Requesting to leave work early for various reasons

Accidents

- Taking of needless risks
- Disregard for safety of others
- Higher than average accident rate on the job

Mood/Actions

- Appears to be depressed or anxious
- Irritable
- Suspicious
- Complains about others
- Emotional unsteadiness /mood changes
- Withdrawn or improperly talkative
- Spends excessive amount of time on the telephone
- Argumentative
- Exaggerated sense of self-importance
- Violent
- Avoids talking with supervisor regarding work issues

Relationship to Others On the Job

- Overreaction to real or imagined criticism
- Avoiding and withdrawing from peers/supervisors
- Complaints from co-workers
- Borrowing money from fellow employees
- Complaints of problems at home such as separation, divorce and child discipline problems
- Persistent job transfer requests

Physical Signs or Condition

- Weariness, exhaustion
- Untidiness
- Yawning excessively
- Blank stare
- Slurred speech
- Sleepiness (nodding)
- Unsteady walk
- Sunglasses worn at inappropriate times
- Changes in appearance after lunch or break

MEDICAL PATIENTS WHO SHOULD ESPECIALLY BE SCREENED FOR COVERT MARIHUANA USE

- Psychiatric patients under age 25
- Teenagers Young Adults with Chronic Respiratory Infections and Allergies/Urticaria
- Pregnant Women under age 25
- Males with gynecomastia (enlarged breasts)
- Weight loss (indicating poor nutrition)

WORKERS WHO SHOULD ESPECIALLY BE SCREENED FOR COVERT MARIHUANA USE

- Chronically Absent
- Job Deterioration
- Frequently Tardy
- Accident or Injury Prone
- Memory Lapses
- Repeatedly Miss Deadlines
- Excessively Sick
- Poor Hearing
- Sleeping on Job

TEST TO DETERMINE IF SOMEONE YOU KNOW IS LIKELY TAKING MARIHUANA AND/OR OTHER DRUGS

Following is a self-test to determine if a person might be covertly taking marihuana and/or other drugs. If you complete this test and it suggests drug use, you may want to confirm or deny your suspicion with a urine test.

1. Does the person eat three meals per day at the normal eating times? YES NO
2. Does the person make it to school/work on time practically every day? YES NO
3. Does the peson voluntarily go to bed on weekdays by 11:00 p.m.? YES NO
4. Can you easily awaken the person in the morning? YES NO
5. Does the person meet curfews/or deadlines the vast majority of time? YES NO
6. Is the person's weight holding steady or slightly increasing? YES NO
7. Does the person comb his or her hair every morning? YES NO
8. Does the person brush his or her teeth at least morning and evening? YES NO
9. Does the person attend Church or Sunday School at least once a month? YES NO
10. Does the person invite friends to the house whose behavior is open and normal? YES NO
11. Does the person smoke cigarettes? YES NO
12. Does the person have a good attention span? YES NO
13. Does the person take responsibility for household chores? YES NO
14. Does the person take care to appear neat and clean? YES NO
15. Does the person frequently play loud rock music after midnight? YES NO

16. Does the person play "heavy metal" music or engage in other cult-like activities? YES NO
17. Has the person's acne worsened in the past 90 days? YES NO
18. Has the person lost interest in a school/work activity he/she used to enjoy? YES NO
19. Is the person having trouble getting along with teachers, coaches, friends, fellow-workers, or spouse? YES NO
20. Is the person having trouble getting along with you? YES NO
21. Has the person lost interest in the clothes that he/she wears or changed the type of clothing worn (for example, "dressing down")? YES NO
22. Has the person suddenly had a drop in grades or work performance? YES NO
23. Has the person had over three colds, sinus infections, or other respiratory ailments in the past one year? YES NO
24. Does the person sniff a great deal or have a chronic reddened appearance under the nose? YES NO
25. Does the person smoke a brown type cigarette? YES NO
26. Has the person failed to come home at night on more than one occasion during the past 90 days? YES NO
27. Does the person complain that a lot of people don't see things his or her way? YES NO
28. Does the person constantly complain that people including the family don't understand him/her? YES NO
29. Has the person had more than two motor vehicle accidents or other traffic violations in the past one year? YES NO

INTERPRETATION OF TEST TO SUSPECT COVERT DRUG USE

Questions 1 through 14:

A. Answer "No" to three or less: Drug use doubtful
B. Answer "No" to four to six: Drug abuse very likely
C. Answer "No" to seven or more: Drug abuse almost certain

Questions 15 through 29:

A. Answer "Yes" to three or less: Drug abuse doubtful
B. Answer "Yes" to four to six: Drug abuse likely
C. Answer "Yes" to seven or more: Drug abuse almost certain

THE WORST THING TO DO IF YOU SUSPECT MARIHUANA USE

The worst thing to do is to do nothing because a person may have little time left in which to continue drug use without risking permanent neurochemical changes. If you suspect drug use, it is important to take action that will either confirm or discount your suspicions.

INFORMING THE SUSPECTED USER

Step one is to find a quiet, uninterrupted time to inform the suspected user of your suspicion. There is one common downfall when most persons do this. That is to fail to tell the drug user the precise reasons drug use is suspected. In other words, don't simply say, "I think you are using drugs." Say, "Here is a list of specific reasons that make me think you are using drugs." Then read the list. Be specific and include all the behavior and physical symptoms that make you suspicious. Refer to the above table, to make your list.

WHAT IF MARIHUANA USE IS DENIED?

1. Tell the individual all the behaviors you want changed so that you will not longer be suspicious.

2. If the individual is an employee and your personnel policies allow for a medical evaluation and/or urine test for drugs, obtain these for confirmation.

LEGAL RIGHT TO TERMINATE AN EMPLOYEE FOR COVERT MARIHUANA USE

Many private companies and public organizations are now identifying marihuana users by a urine test. In some cases, the test is done for a cause such as previously listed or it is done as part of routine testing at an annual physical examination or other periodic testing time. At the present time, there are numerous law suits and arbitrations going on throughout the United States over the issue of whether an employer may legally terminate an employee for covert marihuana use. Most of the litigation has been brought about because the mere presence of marihuana metabolite in blood or urine, regardless of amount, does not prove there was any job impairment or hazard. In addition, the precise time of marihuana ingestion cannot be pinpointed by a urine test, and

marihuana can even enter urine in small amounts through passive (being near others smoking) inhalation. The author has now reviewed, been consulted, or appeared in arbitration hearings for several dozen cases of marihuana detection by employers. Although future court judgments and/or legislation could modify current trends, the author passes on the following observations to serve as legal guidelines for employers regarding marihuana use by employees.

- Companies should not urine test anyone unless there are written policies regarding procedures and penalties. Unionized organizations must have prior joint labor-management agreements.
- Pre-employment urine screening and disallowing employment for marihuana in the urine is now routinely done in many companies, and it is rarely challenged.
- Termination is rarely challenged if the three elements of acute marihuana influence, as described in this handbook are present and carefully recorded in writing, i.e., reasons to investigate further, physical evidence, and laboratory confirmation.
- Employees who may endanger others by virtue of their marihuana use, such as transportation personnel, machinery operators, or physicians, may often be successfully terminated or lose their license by virtue of marihuana detection, even though all of the criteria for acute influence is not present.
- Suspension or temporary termination for the purpose of treatment or documenting clearance of marihuana from blood and/or urine is essentially never challenged on legal grounds.
- Repeated positive urine tests, even without meeting criteria for acute influence is rarely challenged.

RECOMMENDED GUIDELINES FOR EMPLOYERS WHO DETECT MARIHUANA USE

Unless there are purely business or other non-drug related reasons, the author generally recommends that employers not terminate marihuana users. Why? My experience clearly shows that marihuana users can be withdrawn and remain abstinent much easier than the vast majority of alcoholics and other drug (cocaine, heroin, etc.) users, provided they are periodically urine tested. Since marihuana may be detected in urine for many days after a single usage, periodic urine testing can insure abstinence. In contrast, cocaine and alcohol cannot be detected in urine for more than about 24 to 36 hours post-use which makes relapse difficult to detect until it is full-blown.

For reasons not clearly understood by the author, he seldom sees marihuana users relapse if they remain abstinent for four consecutive months (120 days). In addition, the withdrawal symptoms of marihuana addiction are relatively mild and don't require hospitalization.

SPECIFIC STEPS TO RETAIN A MARIHUANA-DETECTED EMPLOYEE

1. Suspend or temporarily terminate the employee for purposes of clearing the urine of marihuana.

2. Don't hospitalize unless the employee requests it.

3. Have attending physician take a marihuana urine test weekly until clear.

   If you need precise documentation that marihuana is leaving the body in a timely, sequential fashion, plasma testing or quantitative urine testing can be done.

4. Return employee to regular duty when the attending physician certifies that the employee is fit for duty based on the following:

   a. No marihuana or other drug in urine
   b. No presence of strabismus and the pupil is reactive
   c. Has normal physical and mental abilities

5. Upon return to work, give employee in writing:

   a. List of all prior job deficiencies which were likely drug related
   b. Treatment and monitoring plan
   c. Penalty if there is future drug use

6. Urine test weekly for 90 to 120 days

7. Optional:

   a. Eye examination and alcohol breath test by trained person at time of each urine collection
   b. Drug education classes
   c. Counseling
   d. Self-help group
   e. Additional urine tests for one year

SECTION IV
IDENTIFICATION OF MARIHUANA DEPENDENCE OR ADDICTION

WHAT IS ADDICTION OR DEPENDENCE

- A modern definition of an addict or dependent person is someone who desires to keep a minimal quantity of drug in the blood stream at all times.

- When the drug quantity in the blood stream drops below a critical level, the addict will automatically take another dose to raise the blood level. The most common example is the person addicted or dependent on nicotine who will almost be unconscious of reaching for another cigarette in order to raise his or her blood level of nicotine. The minimal level in a marihuana addict is about 5-10 ng/ml of C-THC.

- It is necessary for the blood stream to maintain a minimal level of drug in order to saturate target areas of the brain. If a saturated area suddenly becomes unsaturated, withdrawal sets in. In the case of opioids and benzodiazepines, the target areas are known as "receptor sites."

- The concepts of physical and psychological dependence are archaic in light of new research on blood concentrations, receptor sites, brain chemistry, and withdrawal syndromes. All mind altering drugs, including nicotine, marihuana, and cocaine, can produce addiction or dependence, develop tolerance, and induce a withdrawal syndrome after cessation of chronic use. The author recommends the term "biologic" addiction or dependence rather than the terms "physical" or "psychologic" since both of these factors are always present to at least a limited degree.

- Addiction or dependence can be essentially diagnosed by simply knowing how long a specific drug stays in the blood stream and finding out from the user how often he/she uses it.

BACKGROUND EVIDENCE FOR MARIHUANA ADDICTION

Marihauna addiction was described in the United States over 40 years ago. In 1944, 35 "confirmed marihuana addicts" were admitted to a military hospital and developed withdrawal symptoms. Since this time, marihuana addiction has been reported in other countries. In addition, animals have demonstrated addiction to marihuana and there has been

one carefully controlled trial where humans were given known quantities of THC, and they developed withdrawal symptoms when marihuana was abruptly discontinued. Animals that are addicted to marihuana have demonstrated withdrawal symptoms when given naloxone, and the author has recently demonstrated this in a human marihuana addict. When naloxone precipitates withdrawal symptoms, it means that the addicting drug has opioid (i.e., heroin, morphine, etc.) activity. To complement these findings, another recent study in animals has demonstrated that THC will deplete endorphins in the nervous system. Furthermore, marihuana may also adversely affect the neurotransmitters, norepinephrine and serotonin. Current evidence suggests that marihuana addiction exists, at least in part, as a result of depleted endorphin, norepinephrine, and possibly other neurotransmitters.

COMMONLY OBSERVED MARIHUANA WITHDRAWAL SYMPTOMS

The following symptoms have been reported in animal and human studies

Insomnia	*Anorexia*
Nausea	*Photophobia*
Myalgia	*Cannabis craving*
Anxiety	*Depression*
Restlessness	*Mental confusion*
Irritability	*Yawning*
Chills	*Anergy*

TWO TYPES OF CLINICAL MARIHUANA DEPENDENCE

Two types of marihuana dependence are seen today. Type One is an individual who will self-administer marihuana several times per day, usually at an interval of about two to four hours unless asleep. This individual may voluntarily present to the clinician with the complaint that their daily dosage has escalated and that they are unable to cease use without medical assistance. The patient may or may not relate mental impairment primarily related to memory, motivation, time-keeping, abnormal thoughts, and work or school performance. In addition, they may relate a number of withdrawal symptoms that occur when they attempt abrupt cessation. The precise relapse rate following withdrawal is unknown, but it occurs.

CASE EXAMPLE: Voluntary Treatment

MV was a 25-year old male who presented with the complaint that he could not "stop marihuana by myself." He was a 12-year user having begun marihuana smoking at 13 years of age. He had used marihuana daily for about five years and was using two to three joints per day at the time of admission to outpatient treatment. The patient was married and held a regular job as a warehouse superintendent. He claimed he was having considerable conflicts with his wife and employer. In addition, he had noticed in the two months just prior to admission that he occasionally heard voices that were not real, did not always have total "control over his mind," and had some thoughts of suicide. He denied use of any other drug or excessive alcohol intake. His treatment admission breath alcohol was negative, and his urine contained marihuana metabolite, but no other abusable drug. The patient was administered desipramine, 25 mg. three times per day and was given weekly phsychotherapy for approximately six months. During the first ten days of treatment, he reported insomnia, abdominal cramps, diaphoresis, tachycardia, and anxiety. These symptoms subsided, and he submitted a urine void of marihuana approximately 30 days after admission. Most of the thought disturbances noted above disappeared after about two to six weeks of treatment. He denied any marihuana use during the six months after entering treatment, and he submitted monthly urine tests that showed no marihuana.

Type Two form of marihuana dependence is primarily being identified as a result of mandatory urine screening and treatment referral in the workplace. Seldom does a Type Two voluntarily present for treatment, although it may occur. In this form, the patient is usually self-administering marihuana every 24 to 36 hours and may give a history of carrying on this habit for several years. As in Type One, reported impairment relative to memory, motivation, time-keeping, and job performance is variable. In contrast to Type One, however, the patient may report few if any symptoms of withdrawal upon abrupt cessation. Relapse, however, is common.

CASE EXAMPLE: Identification On Job and Mandatory Treatment

HS was a 37-year-old male salesperson. He was reported to the management of his company to be a marihuana user who also sold it to other employees while on company premises. A mandatory urine test revealed the presence of marihuana metabolite, and in order to retain employment he was required to undergo withdrawal and enter a periodic urine-testing program. Upon interview, he stated that he had used marihuana every evening for approximately 22 years. He believed this habit had not been injurious to himself until approximately three months prior to treatment when he began to notice some defects in his short term memory. Physical examination was normal. Plasma analysis showed 80 ng/ml of C-THC. He was administered desipramine, 25 mg. three times per day and tyrosine. During the first three weeks following cessation of marihuana, he reported mild insomnia, depression, anergy, and craving. Urine analysis showed no marihuana metabolite after about 50 days. After six weeks of abstinence, he reported improvement of short term memory and improved job performance.

METABOLIC BASIS FOR TWO FORMS OF DEPENDENCE

New data on the metabolism and pharmacokinetics of marihuana provide a sound rationale as to why two basic clinical forms of dependence appear to exist. When a marihuana cigarette is smoked, THC is converted to two major metabolites, OH-THC and C-THC. THC and OH-THC both have psychoactive effects, and they remain in the plasma at concentrations above about 5 ng/ml to 10 ng/ml for only about two to six hours. During this period they appear to produce a short-term characteristic "high" or euphoria. This time period correlates well with the self-administration frequency of Type One marihuana dependence. The C-THC metabolite remains in plasma at concentrations above 5 ng/ml to 10 ng/ml for at least 48 to 72 hours or even longer. Although this metabolite may produce little or no euphoria, it is likely the compound that sustains Type Two dependence. A similar phenomenon also exists with some benzodiazepines, such as diazepam which also has long-lasting metabolites. For example, some withdrawal symptoms and even seizures may not appear for several days following cessation of diazepam dependence. The author has recently observed that withdrawal symptoms following abrupt cessation of marihuana dependence may not appear for several days.

SUMMARY TABLE: TWO FORMS OF MARIHUANA DEPENDENCE

	Frequency of Self-Administration	Likely Dependence metabolite(s)	Usual Referral Route	Patient's Perceived Dependence	Usual Severity of Withdrawal Symptoms	Relapse Rate
Type One	Multiple times each day	THC OH-THC	Voluntary self-referred	Significant	Moderate	High
Type Two	Every 24 to 48 hours	C-THC	Involuntary: Detected by mandatory screening	Minor to moderate	Mild	High

CLINICAL PRESENTATION OF THE MARIHUANA ADDICT

Until about 1982, the author seldom observed marihuana addiction/dependence in Los Angeles. Since that time, however, clinical demand for medical withdrawal treatment has steadily grown. Regardless of whether the patient sought treatment voluntarily or was identified by mandatory urine screening, all patients have essentially the same complaint, "Doctor, I've got a marihuana problem and I can't quit. I need your help."

As with other addictions, the marihuana addict doesn't normally seek medical withdrawal assistance from a physician until he/she has attempted to stop on his/her own, consulted a counselor, minister, friend, or family member, attended self-help groups, or even entered a hospital rehabilitation program and still continued to use marihuana. Unfortunately, there is no specific medical withdrawal treatment for marihuana addiction at this time. However, research is in progress to develop a specific withdrawal treatment.

HOW TO MAKE A PRESUMPTIVE DIAGNOSIS OF MARIHUANA ADDICTION OR DEPENDENCE

Addiction or dependence is assumed to be present if the following are evident:

- Person states that they have used marihuana one or more times per day for thirty or more consecutive days, just prior to evaluation.
- Person states that they cannot stop without medical assistance.
- Person states that they experience withdrawal symptoms, craving, or sickness when they stop use.
- Marihuana metabolite is present in urine or plasma.

SECTION V

LABORATORY IDENTIFICATION OF MARIHUANA USE

BACKGROUND FOR LABORATORY IDENTIFICATION

- Modern research has identified, at least to a great extent, how the human body accepts, deactivates, and eliminates drugs. This process is usually called "metabolism" or "pharmacokinetics."
- Laboratory identification for drugs of abuse primarily attempts to assay for the suspected drug in urine or plasma (clear part of blood).
- Urine testing is primarily qualitative and determines what someone used rather than how much was used. Urine tests have some capability of determining approximately when a drug was used.
- Plasma testing can tell the quantitative presence of a drug and give a reasonable estimate as to ***when*** a drug was used. Plasma testing can also give an estimte as to whether ***enough*** drug was taken to ***produce acute*** effects or toxic levels. If the person is tolerant to the drug, a plasma level may have little meaning.
- Quantitative urine testing for marihuana is used primarily to help rule out passive inhalation and determine if marihuana cessation is truly occurring in someone who claims to have ceased use.

BACKGROUND AND HISTORY OF MARIHUANA TESTING

Although urine testing capability for some illegal drugs of abuse occurred in the late 1960's and early 1970's, urine testing for marihuana was not technologically possible until about 1980. Blood (plasma) testing for marihuana is currently changing from research to general status. Due to the newness of the tests, there has been controversy over their interpretation. A large number of recent research studies, however, have clarified interpretation so that urine and plasma testing can now be used with great confidence.

URINE TESTING METHODS AVAILABLE ·

Five different technological methods are now available for marihuana urine testing. They are summarized below.

TEST	APPROXIMATE SENSITIVITY	GENERAL COST
Enzyme Multiplied Immuno Assay (EMIT)	• 20 ng/ml	Very Low
Thin Layer Chromatography (TLC.	10-20 ng/ml	Low
Radioimmunassay (RIA)	10-20 ng/ml	Low
Gas Chromatography — Mass Spectrometry (GC/MS)	5-10 ng/ml	High
High Performance (HPLC) Gas Liquid Chromatography	5-10 ng/ml	High

TOXICOLOGY UNITS OF MEASUREMENT

The usual measurement for marihuana metabolites (THC. OH-THC and C-THC) are in nanograms per millimeter. This is usually abbreviated ng/ml.

1 g	=	gram (There are 28 grams in one ounce)	1.0
1 mg	=	milligram (One thousandth of a gram)	0.001
1 ug	=	microgram (One millionth of a gram)	0.000.001
1 ng	=	nanogram (One billionth of a gram)	0 000.000.001
1 pg	=	picogram (One trillionth of a gram)	0 000.000.000.001
1 L	=	liter (approximately one quart)	
ml	=	milliliter (One thousandth of a liter)	

PLASMA TESTING

At this time, plasma testing is very expensive and is done by GC/MS or HPLC. It is quantitative, requires great technological skill and, consequently, is costly. Some commercial laboratories are beginning to offer plasma testing. However, there is little practical advantage of plasma over urine testing for screening asymptomatic persons. The amount of OH-THC and C-THC may not tell either precisely when

someone has used marihuana or how impaired they may be. It should be especially noted that plasma levels over 10 ng/ml, that are not accompanied by acute signs or influence, likely indicate the presence of tolerance and possibly dependence. The best use of plasma testing is to determine if a chronic user is eliminating C-THC from the plasma during withdrawal.

ACCEPTED STANDARDS TO AVOID FALSE POSITIVE URINE TESTS

Unfortunately, some laboratories new to urine testing are not aware of the long-established (at least 15 years!) standard "rule of two." This standard calls for testing any positive urine specimen, i.e., urine containing a drug with a second technological method. Only when the drug is detected by a second technologic method, is the urine deemed a true positive.

The one notable exemption to the "rule of two" is when the tested individual admits to recent marihuana use. This situation is frequent in medical and clinical settings. When this is the case, a single method is satisfactory. Other than self-admission, the author recommends the rule of two be followed in the following situations.

1. Pre-employment testing
2. Post-employment testing
3. Screening for covert use
4. Potential litigation

INTENTIONAL FALSIFICATION METHODS

Drug users have numerous techniques to submit a false negative test. Many adulterants may cause urine screening to show falsely negative.

Common Falsification Methods	Adulterants which may cause False Negatives
• Submit toilet or tap water	Salt
• Switch urines	Bleach
• Bring concealed urine in bag, mouth, or in body cavity to testing location	Lemon juice
	Liquid soap
	Blood

URINE TESTING FOR COERCION PURPOSES

There are many instances when the presence of marihuana in urine may result in a coercise action.

Loss of job
Suspension from job/school
Incarceration

In the early 1980's, the general standard to use a marihuana positive urine test for coercise purposes was to have it confirmed by GC/MS or HPLC after initial detection by EMIT, TLC, or RIA. This standard was primarily established because the less expensive methods, EMIT, TLC and RIA methods were not yet refined. Currently EMIT, TLC and RIA methods are extremely sensitive and specific. This has, for most purposes, eliminated the need for use of GC/MS or HPLC for confirmations. Many experts now believe that when two of these three methods (EMIT, RIA, TLC) are positive, there is actually as much or more assurance that marihauana is in the urine than when detected by GC/MS or HPLC. The reasons for this are that GC/MS and HPLC take extraordinary technical skill that is subject to human error and that the sensitivity is too low (i.e. less than 10 ng/ml).

Despite varying opinions among qualified experts, a given legal or other situation may mandate use of GC/MS or HPLC confirmation. To possibly avoid cost and litigation the author usually recommends that marihuana first be found on two of these three methods (EMIT, TLC, RIA) and that the urine specimen found to be positive be frozen in the event that some legal or other situation demands confirmaton by GC/MS or HPLC. Urine specimens can be frozen almost indefinitely without degradation of its marihuana content.

PASSIVE INHALATION

Studies have shown that someone who is extremely close to other persons who smoke marihuana may passively inhale it. Although someone may passively inhale enough to show 10 to 20 ng/ml in the urine for one or two days post-exposure, the author knows of no documented cases which show that passive inhalation can cause as much as 50 ng/ml of marihuana metabolite in urine, unless the subject is exposed to very dense marihuana smoke for many hours.

LENGTH OF TIME MARIHUANA STAYS IN PLASMA AND URINE

A great deal of publicity has been generated as to how long marihuana metabolites may remain in urine. It remains detectable in plasma and urine for many days due to the fact that it is fat-soluble. When smoked, marihuana metabolites enter the fat, lodge there, and then leak out over a period of time. It is important to point out that it is

only the regular, chronic user or addict that keeps marihuana in urine for more than a few days. The length of time that marihuana metabolites can be detected in plasma is much shorter than in urine because the kidney concentrates drug in the urine 100 to 1000 times that found in plasma. In other words, marihuana can be detected in urine much longer than plasma due to the kidney's ability to concentrate drugs.

APPROXIMATE URINE RETENTION

Approximate Frequency of Use	Approximate Length of Time in Urine*
Once per week	2 to 20 days
Twice per week	5 to 30 days
Daily	15 to 45 days

**Varies as to whether user is a chronic or occasional user and amount used.*

APPROXIMATE PLASMA RETENTION AFTER SMOKING MARIHUANA

Metabolite	Approximate Time in Plasma*
THC	2 - 3 hours
OH-THC	4 - 6 hours
C-THC	3 - 6 days

**Varies as to whether user is a chronic or an occasional user and amount used.*

HAIR AND SALIVA ANALYSIS

Saliva analysis is possible because the smoker leaves THC residues in the mouth while smoking. If found in saliva, it usually means that marihuna has been smoked within the previous one to three hours. However, this test cannot be relied upon for confirmatory diagnosis of marihuana use because the smoker can easily spit or wash the residue out of the oral cavity.

Hair analysis can be done if there is a medical or legal reason to know if someone used a drug approximately 30 days prior to hair sampling. Analysis of hair will not reliably reveal drug use occurring within the past one to two weeks prior to sampling. The major use of hair sampling is in forensic cases, and not appropriate for the usual drug use screening situations.

RELATIONSHIP OF URINE AND PLASMA CONCENTRATIONS WITH IMPAIRMENT OR INFLUENCE

There is no more misunderstood aspect of marihuana identification than the fact that there is no reliable way to correlate plasma or urine concentrations with impairment or influence. Undoubtedly, this confusion stems from the criteria used for determining impairment from alcohol. There is general agreement that a blood (reflected by breath or urine) alcohol concentration of 100 mg/deciliter or .10 mg% indicates some impairment or influence. No such correlation can be made with marihuana since it is fat soluble and released very slowly from the body compared to alcohol. For example, a very low urine concentration may be found in persons severely intoxicated and vice-versa.

The non-correlation of urine and plasma concentrations of abusable drugs with the degree of impairment and influence has recently prompted the National Institute on Drug Abuse to make this statement in the Journal of the American Medical Association: "Testing of drugs or drug metabolites in urine is only of qualitative value in indicating some prior exposure to specified drugs. Inferences regarding the presence or systemic concentration (quantity) of the drug at the time of driving or impairment from drug use are generally unwarranted. The presence of an illicit substance in urine that may indicate prior illegal action can, however, add a dimension to probable cause of observed driving performance."

Despite the lack of correlation between plasma and urine concentration and impairment, the finding of marihuana metabolites in urine or plasma means that marihuana is in body tissues including the brain, eye, nerves and muscles. Although a chronic user or addict may be tolerant and not have physical signs of acute influence, an employer, coach, teacher, or parent must assume that some subtle impairment exists. The author therefore, highly recommends that any individual with marihuana in urine, and particularly plasma, not be allowed to drive, work, play sports, or participate in any activity that could produce harm to the marihuana user or innocent bystanders. Risk-type acitivities should not be resumed until repetitive urine tests show no traces of marihuana.

GUIDELINES TO SELECTING A LABORATORY

1. Use only a laboratory that specializes in urine and/or plasma testing.
2. Follow the standard, "Rule of Two."
3. Has procedures to insure integrity and security of samples.
4. Reports results within 72 hours.
5. Can freeze specimens for future analysis.
6. Communicates well.