

# Dangers of Marijuana

*Important Community Information  
From The Salvation Army*

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**Introduction** The recently released 1998 National Drug Strategy Household Survey reveals there is currently an epidemic of marijuana use among Australian teenagers, particularly young women.

From 1995 to 1998 in Australia, the number of 14 to 19-year-olds who had ever used marijuana increased from 36% to 45%, and those who had recently used increased from 29% to 35%. This compares with 8.3% of young people aged 12-17 in the US admitting current use of marijuana in 1998.

From 1995-1998, the number of young people aged 14-19 years who had recently used marijuana increased from 29% to 35%.

A particularly disturbing trend emerging from the Australian statistics was that numbers of young women who had recently used marijuana skyrocketed from 20% in 1995 to 34% in 1998 and numbers of those who had ever used increased from 24% to 45% during the three-year period.

At the same time, despite marijuana's image as a 'soft' drug, scientific and anecdotal evidence highlighting the dangers of cannabis has grown to the point where it cannot be ignored. The drug has been linked with ill-effects ranging from psychiatric disorders to infertility. Compounding this is the fact that the marijuana available to our young people today can be many times stronger than that used in 1960s and 1970s.

Marijuana is a unique drug in terms of its complexity. While most drugs are classified as hallucinogens, stimulants or depressants, marijuana could belong to all three of these groups as its effects on the nervous system vary according to potency, the way it is used, and the user. Unlike most other illicit drugs which contain one or two chemicals, marijuana is made up of more than 426 chemicals. More than 2,000 chemicals are produced when marijuana is smoked.

In spite of all the evidence condemning marijuana, there is a surprising lack of information readily available about its dangers. Parents are desperate for solid facts to share with their kids in encouraging them to avoid drugs. We hope this paper will go some way in helping to fill that vacuum.

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## Source

*Cannabis Sativa*, the Indian hemp plant.

## Names & Varieties

The most common name for the cannabis plant is marijuana (the terms 'cannabis' and 'marijuana' are used interchangeably). Other names include Indian hemp, hashish, charas, ganja, dagga and sinsemilla. Street and slang names include pot, grass, mull, weed, dope, hooch, hemp, joints, gunja, kif (kef), reefer, cone, hash, stash, rope, roach, skunk.

Marijuana is a name for the cannabis plant. Street names include pot, grass, mull, weed, hemp, dope, skunk.

Marijuana is used in various forms, such as:

- 'Grass' – leaves, stems and seeds which are dried and finely chopped. Looks a bit like dried parsley. THC content usually 1-3%.
- The flowering tops are also used, with THC content upwards of 6%. (THC is the main psychoactive ingredient in marijuana – the higher the THC content the more potent it is.)
- Sinsemilla (seedless) variety, with up to 17% THC.
- Hashish ('hash'), a mixture of dried, pressed flowers, leaves and resin, with around 8-14% THC. Sold in solid pieces.
- Hashish oil ('oil', 'honey oil'), a concentrated extract, brown-black in colour, with 15-50% THC.
- Crystals produced from hashish oil, with up to 60% THC.
- 'Skunk', a miniature hybrid plant with up to 30% THC.<sup>1</sup>

Marijuana is usually smoked dry as a joint or through a water pipe – 'bong'.

Cannabis is smoked on its own, with tobacco, or with other hallucinatory drugs. Most users roll loose marijuana into a cigarette, called a joint, or smoke it through a water pipe, called a bong. People also sometimes eat it in cookies or soup. Hash users may crumble and smoke the drug through a pipe or in a joint with tobacco or 'grass'. It is also sometimes baked into cookies or cakes. Hash oil is usually wiped onto a cigarette or rubbed into tobacco and smoked.

## Chemical Composition

Marijuana contains more than 426 chemicals including the harmful psychoactive substance, THC, which can remain in the body for long periods of time.

In terms of its chemistry, marijuana is one of the most complex of illicit drugs. While most other illicit drugs are made up of one or a few chemicals, cannabis contains more than 426. This includes the 62 resinous substances - 'cannabinoids' - found in the stem, leaves and flowers of the cannabis plant that are unique to marijuana. The main one is the harmful psychoactive ingredient THC.

The cannabinoids in cannabis are highly fat-soluble, which means they may remain in fatty parts of the body for long periods of time. A 50% concentration of THC can be found in the body 8 days after using cannabis, and traces can still be found up to 3 months after use. THC is constantly stored in the bodies of regular users, and accumulates particularly in the testes, liver and the brain.<sup>2</sup> When marijuana is smoked, over 2,000 chemicals are formed, including various cancer-causing substances. As a result of increasingly sophisticated growing methods, the marijuana

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## Potency

Today's marijuana may be 10 times stronger than in the 1960s and 70s.

available to young people today may be 10 times stronger than in the 1960s and 1970s.<sup>3</sup> In the words of Scott and Grice in *The Great Brain Robbery*, "Back in 1969, if you wanted to take in the same amount of THC as today's users regularly inhale, you'd have had to suck on a joint the length of an axe handle."

## Mental illness

Marijuana use can lead to feelings of depression, anxiety, aggression, and paranoia.

Mental effects caused by marijuana can include depression, flashbacks, aggressive feelings, anxiety leading to panic, paranoia, confusion, delusions (especially of persecution), hallucinations resulting from toxic psychosis, psychotic disorder (insanity), delirium, and depersonalisation.<sup>4</sup>

In the more severe psychiatric cases, users may have to be admitted to a hospital emergency room. During 1998, then NSW Health Minister Dr Andrew Refshauge MP reported that between 1993 and 1997 hospitals experienced an almost 10% increase in the number of cannabis-dependent patients suffering from drug-induced psychotic illness.<sup>5</sup>

Of 200 participants in a 1997 National Drug and Alcohol Research Centre (NDARC) study of long-term cannabis users in Australia, 40% had consulted mental health professionals, been admitted to a psychiatric hospital, or prescribed medication for a psychological problem.<sup>6</sup>

Studies have linked marijuana with various psychiatric and psychological problems, including schizophrenia.

Studies conducted in Sweden of more than 50,000 people over a 15-year period revealed that those who had used cannabis 50 times or more were 6 times more likely to develop schizophrenia than non-users.<sup>7</sup> Marijuana may also trigger schizophrenia in those already predisposed to the illness.<sup>8</sup> A 1990 study of schizophrenia and substance abuse found that 42% of schizophrenics had used marijuana in their lifetime.<sup>9</sup>

The link between marijuana and mental illness has raised concerns that heavy use may be contributing to Australia's already high suicide rate.

## Memory & learning problems

People who use marijuana may experience memory loss and learning difficulties.

Young people who use marijuana may experience short-term memory loss lasting up to six weeks.<sup>10</sup> PET brain scans<sup>a</sup> of chronic users show marijuana may continue to impact the brain three or more days after use, particularly affecting motor coordination, learning and memory.<sup>11</sup>

In America, a group of teenage marijuana users tested for short-term memory performed poorly compared to a control group matched in age, education level, and IQ. The memory loss persisted after six weeks drug-free (supervised).<sup>12</sup>

<sup>a</sup>A method of brain mapping whereby scientists can 'visualise' what is going on in the brain.

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## Effect on coordination/accidents

Studies have shown marijuana use is a factor in many accidents.

Because it impairs coordination, marijuana is a factor in many accidents, according to studies. A 1991 study of ten pilots in a flight simulator showed they made significant errors in landing the plane up to 24 hours after smoking just one low-potency marijuana cigarette.<sup>13</sup>

Numerous studies over the years have linked marijuana with road accidents. Particularly worrying is that marijuana impairs drivers' abilities long after they feel its intoxicating effects have worn off.<sup>14</sup>

## Brain Ageing

Marijuana has been linked with ageing of the brain similar to Alzheimers.

Marijuana is the only drug of abuse for which there is solid evidence linking it with ageing in the part of the brain responsible for short-term memory (the hippocampus). The Professor of Pharmacology at Oxford University, England, found brain atrophy in young people who were heavy marijuana users to be equal that of 70 to 90-year-olds. Recent studies of rats also suggest THC may hasten ageing of the brain.<sup>15</sup>

## Apathy

Chronic users of marijuana may become unmotivated.

Chronic users of cannabis may experience what is often referred to as 'amotivational syndrome' - that is, apathy and loss of motivation.<sup>16</sup> The user may display little interest in school, sport and other activities that were previously enjoyed. Care taken with personal appearance and/or hygiene may also lapse significantly.

## Addiction

Research is increasingly showing marijuana to be an addictive drug.

Contrary to claims that marijuana is not addictive, research is increasingly proving that cannabis is a drug that causes physical, as well as psychological, dependence.

The 1997 NDARC study of long-term cannabis users revealed more than 90% were dependent on the drug, with 40% being severely dependent.<sup>17</sup> Other studies support these findings.<sup>18</sup>

Unfortunately, as with most forms of addiction, cannabis users tend to be unaware that they have become dependent on the drug, and often ignore or deny the negative effects in their lives.

## Reproductive System

Long-term marijuana use may lead to low sperm counts, impotence, and loss of sex drive in men.

Cannabis use has been associated with decreased testosterone production and low sperm counts in men.<sup>19</sup> There is also some evidence that sperm produced by users is abnormally shaped and may have biochemical or structural defects.<sup>20</sup>

Cannabis use may cause teenage boys to complete puberty later than usual because it decreases testosterone levels.<sup>21</sup> While some men believe cannabis increases sexual desire and performance, the long-term effects of use can include impotence, loss of sex drive/ desire, and infertility.<sup>22</sup>

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There is concern that heavy cannabis use may also decrease levels of fertility in women, but this is not fully proven. Research reveals that many women who use marijuana do not have normal menstrual cycles, which is connected to fertility.<sup>23</sup>

## Harm caused to babies/children

Cannabis use during pregnancy carries enormous risks, including ten times the risk of the child developing leukaemia.

For a woman to consume cannabis whilst pregnant is extremely risky. This can affect the baby in the womb, after his/her birth, and later in life. There is higher risk of miscarriage, lower birth weight, and premature birth. It is also believed the children of women who used cannabis are more likely to have behavioural problems.<sup>24</sup>

However, most worrying of all were the results of research conducted during 1989 in the US which revealed that children whose mothers smoked marijuana just before or during pregnancy had ten times the risk of developing leukaemia.<sup>25</sup>

## Chromosome damage

Cannabis use may mutate genes.

According to Moffit, Malouf and Thompson in *Drug Precipice* (1998), studies conducted in laboratories suggest marijuana is able to change the character of genes in cells, or 'chromosomes' (chromosomes contain the hereditary characteristics of our cells). It is suggested that these changes may be mutagenic – that is, able to be passed on to future generations.

## Respiratory effects

Possible respiratory effects from using cannabis include emphysema, bronchitis, asthma, sinus and lung cancer.

When marijuana is smoked, various gases and tiny particles are produced, including cancer-causing substances such as benzopyrene and benzanthracene, which are present in nearly double the concentrations found in tobacco smoke.<sup>26</sup> Smoking one marijuana cigarette leaves airway deposits of 4 times as much cancer-causing tar as one tobacco cigarette.<sup>27</sup> Marijuana is also a suspected cause of the lung disease, emphysema, and marijuana users have an increased risk of developing acute and chronic bronchitis, asthma, sinus problems and airway injury.<sup>28</sup>

While marijuana smokers normally smoke a lot less often than tobacco smokers, joints are rarely filtered and the smoke is drawn more deeply into the lungs and held in longer, causing chronic irritation to the airways.

A study in the US of patients under 40 years old with respiratory tract cancer noted that 70% of them were daily marijuana users.<sup>29</sup>

## Immune System

Marijuana use can reduce immunity to infection & disease.

Marijuana users may experience impairment of immune functions - the body's capacity to fight infection and disease. A 1989 US study revealed that THC in marijuana reduces the activity of cells in the body that destroy foreign substances.<sup>30</sup> This would counter claims that mari-

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## Heart Disease

When a person smokes tobacco, carbon monoxide in the smoke takes the place of oxygen in the blood, causing the heart to beat faster to make up for oxygen loss. Over time, this process weakens the heart muscle, which is why around 25% of deaths related to tobacco are from coronary heart disease.

Smoking marijuana places a strain on the heart and may be connected to heart disease.

A similar process occurs with marijuana; however, there is even greater pressure on the heart. Just ten puffs on a low-potency joint was shown to increase the heartbeat of angina patients to 100 per minute, as well as increasing blood pressure. This was more than double the effect of tobacco. In other studies, the heartbeats of marijuana smokers increased from a normal rate of 70 per minute to 130-150 per minute.<sup>31</sup>

## Gateway Drug

Whilst not everyone who tries marijuana will progress to other drugs, more than 90% of heroin users in The Salvation Army's Bridge Program for rehabilitation have reported that they commenced illicit drug use with marijuana.

There is evidence to support claims that marijuana is a 'gateway drug'.

There is other evidence to support claims that marijuana is a 'gateway drug'. One US study showed that 20% of persons who used marijuana 3-10 times went on to use cocaine and 75% of persons who used marijuana 100 or more times progressed to cocaine.<sup>32</sup>

## Family Conflict

Drug abuse among young people, and use of marijuana in particular, may be a factor in the breakdown of family relationships leading to youth homelessness.

Cannabis is a major drug of abuse among homeless youth, and abuse of the drug may be a factor in the initial breakdown of family relationships.

Teenage drug abuse was a key cause of conflict in 42% of families assisted through The Salvation Army's 'Reconnect' program, which assists families with a teenager considered to be 'at risk' of becoming homeless.

More than 80% of the homeless young people currently being assisted by The Salvation Army's Oasis Youth Support Network in Sydney were involved in drug and alcohol abuse when they initially presented, and of those, almost all have used cannabis.<sup>33</sup>

## Medical use of marijuana

Marijuana was used in days gone by to treat various illnesses, and many people still claim the drug has properties that could benefit the sick. In particular, proponents of medical use of marijuana claim it eliminates the nausea, vomiting and weight loss common to cancer patients undergoing chemotherapy, and also assists some AIDS patients. It is also said to help treat glaucoma and multiple sclerosis. However, the American Medical Association, the American Cancer Society, the American Academy of Ophthalmology, and the National Multiple Sclerosis Society have all expressed concern over the potential for abuse and the lack of scientific evidence supporting its medical use.

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rosis Society all say that marijuana has not been proven as a safe and effective medicine.<sup>35</sup>

Any so-called therapeutic benefits of marijuana are outweighed by the dangers of the drug.

The main problem with cannabis is that every plant is different - cannabis is a varying combination of more than 426 chemicals, many of which little is known about. To overcome this problem, a synthetic form of THC is available in the US called Marinol, an anti-nausea drug. However, even this synthetic form of the drug has serious side effects. The warning sheet advises that the drug is highly abusable and can produce dependence, hallucinations, depression, panic and paranoia as well as decreased cognition, memory, coordination, and ability to control drives and impulses. The warning advises persons using the drug to be closely supervised and not to engage in activities requiring sound judgement. It concludes that a full-blown psychosis may occur in patients who receive doses within the lower portion of the therapeutic range.<sup>34</sup>

## Tell-tale signs of marijuana use

Tell-tale signs of marijuana use include equipment such as pipes, bongs and rolling papers, use of eyedrops/ bloodshot eyes, behavioural changes, apathy, and memory loss.

Some of the following 'danger signals' of marijuana use may help identify a drug problem in someone close to you.

- Drug paraphernalia, such as pipes, bongs, plastic bags, rolling papers, seeds, stems, and small tins.
- A pungent, smoky smell on clothing
- Bloodshot eyes/ use of eye-drops/ wearing sunglasses at inappropriate times.
- Loss of interest in school, sport, other activities – general apathy.
- Marked changes (for the worse) in attitude, behaviour and achievement at school or work.
- Sudden mood swings, hostility, bursts of anger
- Rebellious behaviour
- Withdrawing from previous friendships
- Disappearance of money or valuable objects from the home.
- Isolating themselves
- Becoming more secretive
- Loss of short-term memory, difficulty concentrating, shorter attention span.

## Symptoms of intoxication

Physical effects of use can include dry mouth, hunger, red eyes, vomiting, diarrhoea, dizziness, headache, & poor coordination.

Immediate physical effects can include:

- dry mouth
- hunger ('the munchies')
- increased heart rate
- red eyes due to raised intraocular pressure
- vomiting, diarrhoea, dizziness and headache
- decreased ability to drive a car and to perform tasks requiring fine

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muscle concentration.

Psychological/ emotional effects can include euphoria, relaxation, heightened senses, memory loss, lack of concentration, anxiety, agitation, paranoia, psychosis.

Immediate psychological/ emotional effects can include:

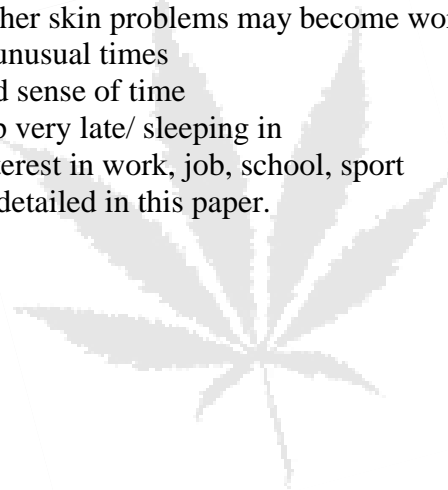
- euphoria, elevated self-confidence, relaxation
- feelings of well-being and heightening of the senses, such as vivid visual and auditory experiences.
- altered perception of time and space
- impaired memory
- difficulty concentrating
- anxiety and agitation
- paranoia, and irrational or psychotic behaviour may occur.

Some of the chronic effects of marijuana use are believed to be as follows:

## Signs of chronic use

Chronic marijuana users may experience apathy, frequent illness, skin problems, odd eating patterns and sleeping habits.

- amotivational syndrome, producing chronic lethargy, lack of drive or ambition, apathy, poor concentration and social withdrawal.<sup>35</sup>
- frequent respiratory infections
- acne & other skin problems may become worse
- eating at unusual times
- a distorted sense of time
- staying up very late/ sleeping in
- loss of interest in work, job, school, sport
- others as detailed in this paper.



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