Educator's Kit

Cannabis Facts
Clearing the Smoke

ncpic
national cannabis prevention and information centre

Supported by the Australian Government

This resource has been developed by the National Cannabis Prevention and Information Centre (NCPIC) to support the DVD *Cannabis Facts – Clearing the Smoke*.

NCPIC is an Australian Government Department of Health and Ageing initiative.

About the Educator's Kit

This Educator's Kit is designed to accompany the DVD *Cannabis Facts: Clearing the Smoke*, produced by the National Cannabis Prevention and Information Centre (NCPIC) in 2011. Although the DVD can be viewed as a 'stand-alone' information resource, NCPIC recommends that it form part of an education seminar or workshop. The Educator's Kit has been produced to assist in the development of those training sessions.

The Kit includes a PowerPoint presentation and accompanying discussion guide.

About the DVD

This DVD is intended to raise awareness and provide evidence-based information on the health and social effects of cannabis use in Australia.

The DVD is approximately 30 minutes long and covers the following topics:

1. Cannabis use in Australia
2. How does cannabis work?
3. Cannabis and the brain
4. How potent is cannabis these days?
5. Is anyone more susceptible to harm from cannabis?
6. What do we know about the links between cannabis and mental health?
7. Cannabis dependence
8. Cannabis withdrawal

The DVD is designed to either be viewed in its entirety, or as individual chapters (listed above), depending on the context.

The DVD contains interviews with Australian experts in the social sciences field; including Professor Iain McGregor (University of Sydney), Dr Nadia Solowij (University of Wollongong), Dr Wendy Swift (University of NSW) as well as staff from NCPIC and alcohol and other drug (AOD) services.

Extended interviews with these experts may be viewed at the NCPIC website http://ncpic.org.au/workforce/alcohol-and-other-drug-workers/clearing-the-smoke/

Target audience for the DVD

The target audience for the DVD is AOD and allied health workers (i.e. mental health, youth, social work, case managers, counsellors, police and corrections workers, etc.)

It is envisaged that the DVD could also be used in adult educational settings such as universities and TAFE colleges. The DVD is not suitable or intended for screening with secondary school students.

How to use the Educator's Kit

The Kit includes a PowerPoint presentation and an accompanying discussion guide. If you plan to use the PowerPoint presentation and DVD in this way, it is recommended that you review the current literature on cannabis and also consult the factsheets available from the NCPIC website (www.ncpic.org.au) which are referred to in the Educator's Kit. You may also wish to utilise NCPIC's on-line catalogue which contains citations and articles relating to the latest research information about cannabis which can be accessed at http://ncpic.org.au/ncpic/publications/online-catalogue/

The PowerPoint presentation and DVD will take approximately 60-90 minutes to deliver as part of a training session.

You may also wish to use the NCPIC pre- and post-tests to measure the cannabis knowledge of your participants, before and after training. These are attached in Appendix 1 and 2. The answers have been provided in Appendix 3.

How to use the PowerPoint presentation

The PowerPoint presentation, *Cannabis Facts: Clearing the Smoke*, contains 33 slides and is provided as supplementary information for an education session on cannabis. The presentation will take approximately 30-45 minutes to deliver, depending on your audience and training style.

It is recommended that the PowerPoint presentation be delivered first, followed by a viewing of the DVD. The PowerPoint presentation will also introduce your audience to the work of NCPIC.

Before you start

Review the DVD and familiarise yourself with the training materials, as well as the background information relating to the slides in this Educator's Kit.

The following information about cannabis may assist in the delivery of the session. This information is not necessarily covered in the slides but may be useful to share with your audience.

What is cannabis?

Cannabis is a plant that has been grown for centuries. It belongs to the family Cannabaceae, the genus of Cannabis and the species of *Cannabis sativa*. Other species that have been identified include *Cannabis indica* and *Cannabis ruderalis*.

How does cannabis work?

The main way that cannabis is used around the world is by smoking. When the drug is smoked, it is inhaled into the lungs and within seconds it is absorbed into the bloodstream and carried to the brain where it attaches to specific receptors. The feeling of being 'stoned' or 'high' is caused mainly by the delta-9 tetrahydrocannabinol (THC) binding to cannabinoid receptors in the brain. Usually a person will begin to feel the effects of cannabis within minutes of inhalation. The peak effects of being stoned or high through smoking occur approximately 30 minutes after inhalation and last for between two-four hours.

Cannabis can also be eaten, usually in foods such as cakes and cookies. The effect of the drug is altered dramatically when it is eaten as the cannabis needs to be broken down in the stomach before it is carried by the blood to the brain. Depending on a person's metabolism, eating cannabis can take between 30-90 minutes before it affects the user. The stone or high will also last much longer, peaking 2-3 hours after ingestion and lasting between 5-12 hours. Although eating the drug does not affect your respiratory system, most people find it very difficult to gauge the dose and often end up using more than they are used to. This can lead to unpleasant effects such as anxiety and paranoia, which can last for hours – but seem to go on for much longer.

Cannabis and the brain

Cannabinoids affect a person by interacting with specific receptors located within different parts of the brain. Two kinds of cannabinoid receptors have been found to date and they are termed CB1 and CB2. A substance termed 'anandamide' was discovered in 1992. Occurring naturally within the brain, this substance binds to CB1 receptors. Other naturally-occurring substances that bind to CB1 have also been discovered, and these, together with the receptors are termed the 'endogenous cannabinoid system'.

The areas of the brain that are most affected when people smoke or ingest cannabis are the memory (the hippocampus), concentration (cerebral cortex), perception (sensory portions of the cerebral cortex) and movement (the cerebellum, substantia nigra, globus pallidus). When THC activates cannabinoid receptors, it interferes with the normal functioning of these areas of the brain. The highest density of cannabinoid receptors are found in parts of the brain that influence pleasure, memory, thinking, concentration, sensory and time perception, and co-ordinated movement.

Slides 1-2

Introduce yourself to the group. Provide an overview of the presentation/education session. Ask participants to fill out the pre-test.

If you are unfamiliar with the participants in the group, you might like to conduct an 'icebreaker' exercise e.g. ask them to introduce themselves to you and the group.

Find out how much contact they have with cannabis users and ask them to assess their knowledge of cannabis with a self-determined score out of 10. (This will give you an idea about how knowledgeable participants think they are about cannabis.)

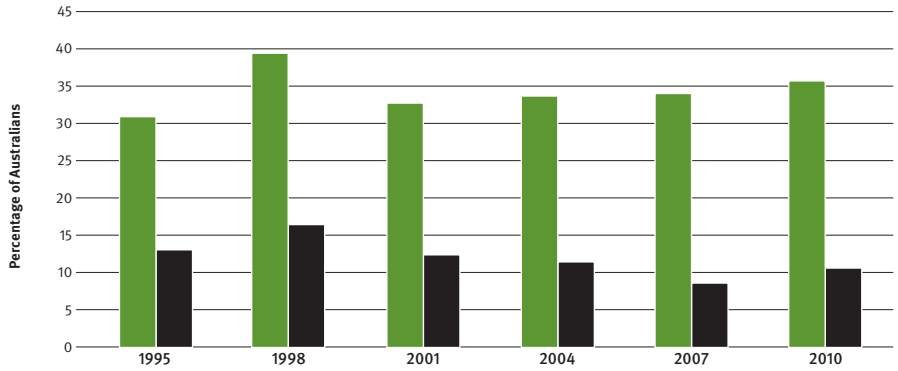
Slides 3-5

Prevalence of cannabis use in Australia and around the world

According to the World Drug Report, cannabis is the most popular illicit drug worldwide, with approximately 4 per cent of the world population reporting that they have tried the drug. This amounts to approximately 160 million people. The Oceania region (including Australia and New Zealand) and the USA have the highest reported prevalence of cannabis use. See the World Drug Report 2010 for further information about prevalence of cannabis use internationally.
http://www.unodc.org/documents/wdr/WDR_2010/World_Drug_Report_2010_lo-res.pdf

According to the latest National Drug Strategy Household Survey, approximately one third of all Australians over the age of 14 have ever tried cannabis and approximately one out of every ten had used cannabis in the preceding year.

Figure 1 – Percentage of Australians aged at least 14 years reporting lifetime and recent cannabis use, 1995 to 2010



	1995	1998	2001	2004	2007	2010
Ever used	31.1	39.1	33.1	33.6	33.5	35.4
Recent use	13.1	17.9	12.9	11.3	9.1	10.3

According to the 2008 Australian Secondary Students' Alcohol and Drug Survey (ASSAD) 14 per cent of all students aged between 12 and 17 years reported the use of cannabis at some time in their life.

Over the years cannabis use amongst those attending secondary school has continued to decrease according to the ASSAD, reaching its lowest level in 2008.

For more information relating to statistics about cannabis use and young people, consult the following factsheet on the NCPIC website:
http://ncpic.org.au/workforce/alcohol-and-other-drug-workers/cannabis-information/factsheets/article/cannabis-and-young-people

Slide 6

Alcohol and Other Treatment Services in Australia 2008-09: the National Minimum Data Set

This data examining alcohol and other drug treatment in Australia shows the principal 'illicit' drug of concern that most Australians are seeking treatment for is cannabis.

Around 143,000 treatment episodes were reported during 2008–09, a decrease of about 10,000 episodes compared with 2007–08. The largest group of clients accessing treatment for AOD issues were males aged 20–29 years. This data has been consistent over time. Younger clients were more likely to receive treatment for cannabis-related problems and older clients for alcohol use.

Alcohol remains the most common principal drug of concern, increasing over time to 46 per cent of all treatment episodes in 2008–09 compared with 38 per cent in 2002–03. Treatment for cannabis use has remained stable at about 22 per cent while amphetamine treatment as a proportion of all episodes has declined from 11 per cent in 2007–08 to 9 per cent in 2008–09.

For more information relating to alcohol and other treatment services in Australia please access the following publication: http://www.aihw.gov.au/publication-detail/?id=6442472422

Slide 7-8

These slides introduce participants to some of the major concerns about cannabis use in Australia. Basic information about the short- and long-term harms of cannabis are generally well known and therefore have not been included in this presentation. This information is available on the NCPIC website if you wish to include it.

Slide 9

Problems associated with adolescent cannabis use

Adolescence is a period when many developmental changes are occurring in the brain as it reaches maturation. What many do not realise is that the adolescent brain is more susceptible to harm than the fully-formed adult brain (which matures in our mid twenties).

Studies have shown that if a young person uses cannabis early in life (before the age of 16) and for a prolonged period of time, it can lead to a number of significant problems.

Adolescent use of cannabis has been linked to a range of developmental and social problems. While there are serious concerns about the potential effects of cannabis use on memory and learning, it is unclear whether the use of cannabis causes lasting effects in this area – although quantity, frequency and duration of cannabis use are believed to increase the risk of future problems.

A review of current literature suggests that the early initiation of cannabis use can have an impact on the following:

Memory, attention and learning

Early and continued use of cannabis can:

- affect memory, attention and the ability to think clearly, making it difficult to concentrate and learn new things
- affect movement and balance whilst intoxicated
- be associated with a moderate decrease in IQ in heavy, current cannabis users

These effects do not appear to continue once the person has stopped using cannabis.

Poorer school performance

While it is difficult to distinguish whether this is due to learning difficulties, lack of motivation or because cannabis users mix with peers who may be involved in a range of risk-taking behaviours, using cannabis at an early age is independently associated with:

- poorer school performance
- increased absent days
- increasing the risk of leaving school without any qualifications

Problematic behaviours

Studies have shown that those who use cannabis from an early age are at risk of later developing problems, characterised by childhood hardships, social disadvantage, behavioural difficulties and problematic peer affiliations.

Using cannabis at an early age is also linked to higher risk-taking behaviours such as:

- higher levels of leaving the family home at a younger age
- sexual activity at a younger age, which can result in unplanned pregnancy and other associated issues such as sexually transmitted diseases
- higher levels of offending behaviour such as motor vehicle theft and break and enter offences to pay for their drug use

Increased risk of mental health issues

Cannabis use has been linked to a range of mental health problems such as psychosis, depression or anxiety. The potential for depression and anxiety is increased because cannabis use from an early age is associated with learning difficulties, poorer educational outcomes and problematic behaviour.

Using cannabis from an early age places the person at risk of:

- impaired emotional development
- increased risk of becoming more dissatisfied with their life
- increased likelihood of experiencing depression

Other concerns about early use of cannabis by young people

- cannabis is illegal in Australia, as it is in most countries in the world. It is an offence to cultivate, possess, use, sell or supply cannabis. Doing so could result in a caution, a criminal record or even incarceration, depending on the type of offence and which jurisdiction it was committed in
- cannabis can have short- and long-term consequences on health, such as respiratory diseases including chronic cough and bronchitis, as well as some cancers
- cannabis use can increase the risk of psychotic episodes occurring or trigger a mental illness
- cannabis use can lead to dependence in young people who use cannabis regularly over a period of time (early initiation is linked with progression to heavy use and dependence)
- relationships with family and other friends who do not use cannabis may become problematic
- using cannabis has been associated with a decrease in motivation (although the evidence is inconclusive if an 'amotivational syndrome' actually exists), which can impact on school, work, family, friends and life in general
- the cost of using cannabis can result in financial difficulties

See also the NCPIC factsheet: Cannabis and Young People
http://ncpic.org.au/workforce/alcohol-and-other-drug-workers/cannabis-information/factsheets/article/cannabis-and-young-people

Slide 10-11

Aboriginal and Torres Strait Islander peoples' cannabis use

It has long been recognised that the quality and quantity of information on Aboriginal and Torres Strait Islander peoples' patterns of illicit drug use requires significant improvement. Review of the available data suggests that as with the general population, there are varying patterns of use of different illicit drugs according to location, as this influences availability amongst other factors. In general, however, Aboriginal and Torres Strait Islander people who become involved in drug use typically begin that use at a younger age than non-Indigenous Australians.

Across the general community the research shows that cannabis use has been declining over the past decade. In contrast, some Aboriginal and Torres Strait Islander workers across the country are becoming increasingly concerned about the recent rapid escalation and pervasiveness of cannabis use within some of their communities.

At the national level, the most recent National Aboriginal and Torres Strait Islander Health Survey (2004-05) reported that 23 per cent of non-remote Aboriginal and Torres Strait Islander people aged over 17 years reported using cannabis in the previous 12 months with 20 per cent reporting cannabis use in the 2002 National Aboriginal and Torres Strait Islander Social Survey.

No meaningful direct comparisons can be made on these aggregated data given the differing demographic profile (particularly age), sample sizes and methodologies used in the various surveys. Over the same time period however, levels of cannabis use in the previous 12 months were markedly lower and declining in the general Australian population.

Slides 12-14

The vast majority of people who use cannabis in Australia smoke it using a joint (a hand-rolled cigarette) or a bong (a water pipe). Tobacco is often added to make the cannabis go further and because cannabis burns more efficiently when mixed with tobacco. Cannabis smoke contains a similar range of harmful chemicals to that of tobacco smoke – including bronchial irritants, tumour promoters and carcinogens. Inhaling cannabis smoke in the long-term is likely to result in damage to the respiratory tract. Harms appear to be additive for individuals who smoke both tobacco and cannabis. Research exploring the association between respiratory cancers and cannabis use is still limited, but those who smoke cannabis are more likely to experience an increase in sputum production, airway inflammation, coughing and wheezing.

One of the main problems with smoking cannabis is that people tend to inhale cannabis more deeply into their lungs. They also hold onto the smoke longer – up to four times longer than if they were smoking tobacco. It is important to note that cannabis also has a higher combustion temperature than tobacco, which means that it burns at a higher temperature on the mouth and throat. Many people who smoke joints also tend to smoke them down to a shorter butt length which increases the risk of respiratory harms.

Cannabis contains approximately five times more carbon monoxide and three times more tar than a standard cigarette. It is estimated that one joint or bong is equivalent to three to five cigarettes in lung damage. So if a person is smoking 30 bongs per day they may be smoking the equivalent of 100 cigarettes.

Although smoking cannabis through water (i.e., a bong) might seem to be a safer alternative to using joints, research has shown that bongs do not reduce tar or carbon monoxide, nor the risks posed by deeper inhalation. Further, using a plastic bong with hose and/or aluminium foil is particularly dangerous because people will also inhale all the by-products and petro-chemicals in the plastic which are released through heating/burning the cannabis in a plastic vessel. In addition, because the water in a bong cools the smoke down, it may be easier for the user to breathe in more smoke and hold it in their lungs for longer, thus increasing their exposure to the harmful effects of using cannabis in this way.

Some people believe that inhaling or steaming cannabis through a vaporiser is a safer way of using the drug. It would appear however, that vaporisers produce potentially toxic levels of ammonia, particularly for those exposed to side stream vapours, with the potential for long-lasting neuro-behavioural effects.

For further information see also NCPIC factsheet: Respiratory effects of cannabis http://ncpic.org.au/ncpic/publications/research-briefs/article/respiratory-effects-of-cannabis

Slides 15-17

How potent is cannabis these days?

Potency is a complicated area and it is difficult to give a clear answer on what is happening in the Australian situation. While there have been reports in the media of cannabis being at least 30 times stronger than in the past, the available data does not support this. It is more likely that there has been approximately a two-fold increase in potency levels over the past 30 years, based on the data from the USA and Europe.

Although potency is an important issue, it is also important to remember that the increase in health problems relating to cannabis could also be due to the increased popularity of using stronger parts of the plant than were once used. While cannabis users in the 1970s and 80s were most likely to smoke the leaves and tips of the plant, cannabis users today prefer to smoke the more potent flowering tops, or buds, of the female plant. Furthermore, there is good evidence that people now begin using cannabis at an earlier age.

Research shows that young, regular (daily or near daily) users are most at risk of many of the adverse effects of cannabis, including mental health problems and dependence.

In the mid 1990s, we saw hybrid versions of cannabis hit the Australian market and since then, hydroponically grown cannabis is more likely to be used, although outdoor growing still occurs. Certain varieties of cannabis such as sinsemilla (female plants that do not contain any seeds) have also recorded increased potency in the UK.

The most potent part of the cannabis plant is the unfertilised heads/buds or flowers of the female plant. Here you will find the highest concentration of THC.

For further information about cannabis strains and potency please see the NCPIC factsheet: Cannabis potency: http://ncpic.org.au/workforce/alcohol-and-other-drug-workers/cannabis-information/factsheets/article/cannabis-potency

It is important to note that there are a number of issues that affect the potency of the cannabis plant. These include:

There are many **different varieties of the plant** including *Cannabis sativa* and *Cannabis indica*. These, plus the many hybrid versions now available all have different growing cycles, size, potency and cannabinoid make-up.

Variations in cannabinoids and the concentration of THC, CBD and CBN results in different effects.

Different parts of the plant have different concentrations of THC. The unfertilised flowers/buds or heads of the female plant contain the highest concentration of THC compared to the leaves and stems.

Different forms of cannabis result in varying potencies, e.g., flowers, hash (resin) and hash oil all have differing amounts of THC.

Depending on the **storage method**, THC degrades over time. Exposure to sun and air will reduce the potency of the drug.

'Bush buds' commonly refers to an outdoor grown plant. 'Hydro' cannabis commonly refers to cannabis that is grown indoors in a controlled environment. Available evidence suggests that hydroponic cultivation has become the norm in Australia over the past 15-20 years.

Growing a plant indoors means that there is more control of light, humidity and temperature, helping the chosen plant to reach its full 'potential' THC level. Hydroponic cultivation also allows for unseasonal growth and the production of up to four crops per year, as opposed to one crop which flowers over the summer months.

Adding to the potency issue is the presence of adulterants. Evidence suggests that hydroponically grown cannabis is more likely to be contaminated with fertilizers, chemical sprays, growth hormones and pesticides. Researchers are still investigating the effects of products used in the growing cycle on cannabis users. Studies have shown, however, that naturally-occurring contaminants such as *Aspergillus* fungi or heavy metals from the soil can remain on the plant when it is not adequately flushed (washed) and dried.

THC and other cannabinoids?

While many workers in the sector are aware of the presence of the psychoactive cannabinoid THC in the cannabis plant, many do not realise that the plant actually contains up to 80 other cannabinoids, some of which are also psychoactive.

These cannabinoids affect the potency of the plant and the type of stone or high a user may experience. The most significant cannabinoid aside from THC is cannabidinol (CBD). Interestingly, CBD has anti-anxiety effects and will lessen the psychoactive effects of THC. This means that a plant with a greater percentage of CBD may reduce the intensity of the effects of the THC. Use of a cannabis plant with less CBD has been shown to have an increased psychological impact and result in unwanted effects such as anxiety and paranoia.

See also the NCPIC factsheet: Cannabinoids
http://ncpic.org.au/workforce/alcohol-and-other-drug-workers/cannabis-information/factsheets/article/cannabinoids

Slide 18

Cannabis dependence

Typically, the vast majority of people who use cannabis do not progress to using the drug regularly, or for long periods of time, with most ceasing their use in their late 20s. Some people, however, develop significant problems with the drug.

Research indicates one in ten cannabis users become dependent on the drug. Dependence most commonly occurs within a year of initiation, which is much slower than for other drugs like heroin and cocaine.

The risk of cannabis dependency increases the earlier a person begins using cannabis, the more frequently a person uses and the more heavily they use it during adolescence.

A cannabis user who is dependent is likely to report that they use cannabis just to feel ‘normal’.

Cannabis dependence is diagnosed when a person experiences at least three of the following in one year:

- tolerance to the effects
- withdrawal from cannabis, such as irritability, trouble sleeping and craving for the drug
- using more than was intended
- persistent desire to stop taking cannabis and being unsuccessful
- spending lots of time obtaining, using or recovering from the use of the drug
- giving up important activities in favour of using cannabis
- continuing to use even when it is known that it is causing problems

There are a number of other risk factors that can be associated with becoming dependent on cannabis. If young people have experienced adverse life events, family dysfunction, behavioural or emotional problems during childhood or have parents who use cannabis and other drugs, the chance that they will become dependent on cannabis is significantly increased.

For further information see also NCPIC factsheet: Cannabis and dependence
http://ncpic.org.au/workforce/alcohol-and-other-drug-workers/cannabis-information/factsheets/article/cannabis-and-dependence

Slide 19

Cannabis withdrawal

Historically, cannabis was not seen as a drug of dependence. However there is now a growing body of research evidence indicating that there is a clinically significant withdrawal syndrome associated with long-term cannabis use in some regular users, particularly those who have a higher severity of dependence. Cannabis withdrawal typically begins within 24 hours of last cannabis intake and usually peaks one to four days after. Some withdrawal symptoms such as developing good sleeping patterns, generally take longer.

Withdrawal symptoms are actually signs that the body is recovering and readapting to being cannabis free, therefore withdrawal symptoms are positive signs of recovery. The most commonly reported symptoms of cannabis withdrawal are sleep disturbances including insomnia, strange dreams and nightmares. Other common signs and symptoms include irritability, anger, anxiety, depression and reduced appetite.

As yet, there are no effective pharmacological treatments to help reduce cannabis withdrawal symptoms or to block the effects of cannabis, although studies are underway.

Quitting tobacco at the same time

The vast majority of people who smoke cannabis in Australia either smoke tobacco or mix tobacco in with their cannabis, which is called 'mulling up'. If tobacco is mixed with cannabis, it is likely that some of a person's withdrawal symptoms will be caused by tobacco withdrawal.

Being in withdrawal from both cannabis and tobacco does not mean that it will be twice as difficult to quit and research tells us that it is better to quit both drugs simultaneously.

For further information see also NCPIC factsheet: Cannabis withdrawal syndrome
http://ncpic.org.au/workforce/gps/factsheets-for-gps-and-patients/article/cannabis-withdrawal-syndrome

For further information on the management of cannabis use disorder you may also want to consult these Clinical Guidelines: http://ncpic.org.au/static/pdfs/resources-gp/clinicians-guidelines.pdf

Slides 20-25

So what do we know about the links between cannabis and mental health?

The link between the use of cannabis and mental health problems is an issue that receives a great deal of attention. Although severe illnesses such as schizophrenia have received a large portion of this attention, there is also debate about whether the use of cannabis can lead to more common psychiatric disorders such as depression and anxiety.

There have been a number of studies that have explored the link between cannabis use and mental health symptoms. Strong associations are often found but this is not the same as a causal link (i.e. one causes the other).

Does smoking cannabis cause schizophrenia?

Psychosis refers to a group of mental illnesses where people experience difficulty in telling what is real from what is not. Someone suffering from a psychosis might hear voices or see/taste/smell

things that are not really there (hallucinations), or believe things that are not true (delusions). Schizophrenia is a form of psychosis.

Hallucinations and delusions can also be accompanied by muddled thinking and speech, making it difficult for other people to understand the person.

There have been reports of people experiencing these psychotic symptoms after smoking a lot of cannabis or more cannabis than they are used to. This is rare and the symptoms, although frightening at the time, usually go away if cannabis use is stopped. Cannabis has been shown to make psychotic symptoms worse in those who already have a psychotic disorder such as schizophrenia. People with psychotic disorders should be advised and assisted to cut-down and cease their cannabis use.

Evidence suggests that cannabis may somehow trigger schizophrenia in those who are already at risk of developing the disorder and they may experience psychosis earlier. Those with a vulnerability to developing schizophrenia, such as having a family history of the illness, should be strongly advised against using cannabis for this reason.

An important study by Dr Matthew Large and colleagues (2011) sheds light on one of these possible confounding factors. This latest research has brought together the findings of 83 studies that explored the nature of the relationship between cannabis, alcohol and other drugs and the onset of psychotic illnesses (typically schizophrenia). Using improved statistical techniques, they were able to conclude that overall, cannabis use is associated with an earlier onset of psychotic illness by up to 2.7 years. Interestingly, alcohol use did not have any effect on age of onset. The study was also able to show that known influences such as gender or age differences between the samples of cannabis and non-cannabis users with psychosis were not responsible for the effect on age of illness onset.

Does smoking cannabis cause depression or anxiety?

The link between cannabis and other more common mental health disorders such as depression and anxiety is confusing, because cannabis is often used to relieve symptoms of these conditions.

Cannabis may seem to help ease depression before the effects of the drug wear off; however after that, smoking cannabis may make depression worse. Those who use cannabis have been shown to have higher levels of depression and depressive symptoms than those who do not use cannabis. Although results are mixed, there is a substantial amount of evidence to suggest that cannabis use, particularly frequent or heavy use, predicts depression later in life. Young women appear to be more likely to experience this effect.

Cannabis can lead to symptoms of anxiety, such as panic, in the short-term, but there is a lack of evidence pointing to cannabis as an important risk factor for chronic anxiety disorders.

Are some people more at risk than others?

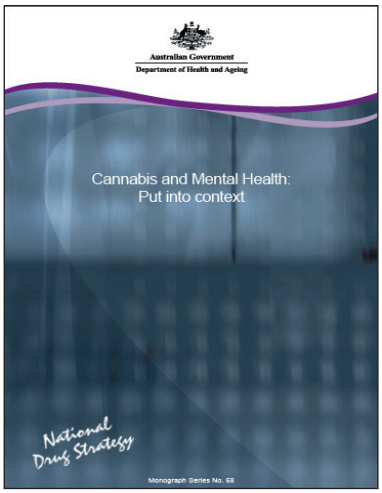
Generally speaking, those who start smoking cannabis earlier (early adolescence) and smoke heavily, are more likely to experience negative consequences. This may in turn lead to mental health problems, but also lead to more general life problems, like conflict at home or school/work, financial problems and memory problems.

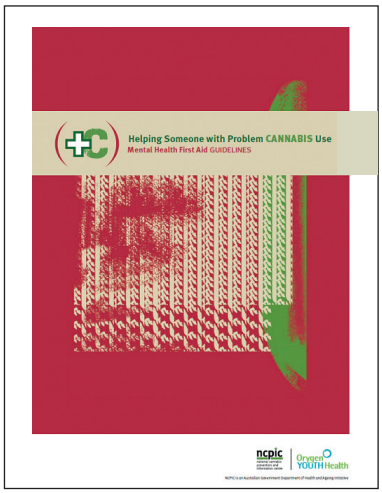
Again, if someone has a genetic vulnerability or has an existing mental health issue, cannabis should be avoided.

For further information see also NCPIC factsheet: Cannabis and mental health
http://ncpic.org.au/workforce/alcohol-and-other-drug-workers/cannabis-information/factsheets/article/cannabis-and-mental-health

You may also want to familiarise yourself with this study: **Large, M., Sharma, S., Compton, M.T., Slade, T., & Nielssen, O.** (2011). Cannabis use and earlier onset of psychosis: A systematic meta-analysis. *Archives of General Psychiatry 68*, 555-561.

The following publications are also great resources to provide background information on the links between cannabis and mental health. Copies of the monograph 'Cannabis and Mental Health: Put into context' are available via the NCPIC website http://ncpic.org.au/static/pdfs/young-people-training-package/cannabis-and-mental-health-put-into-context.pdf. The publication titled 'Helping someone with problem cannabis use: Mental health first aid guidelines' is also available to download at http://ncpic.org.au/ncpic/news/ncpic-news/article/helping-someone-with-problem-cannabis-use-mental-health-first-aid-guidelines





Slides 26-30

These slides relate to some of the activities conducted by NCPIC.

NCPIC was established in 2007 in response to community concerns about cannabis use.

The mission of the Centre is to reduce the use of cannabis in Australia by preventing uptake and providing the community with evidence-based information and interventions.

It aims to achieve this by offering the following services to a range of target audiences:

- a website providing cannabis information to the community, users, their families and the various workforces involved in the delivery of cannabis-related interventions.
- a free Cannabis Information and Helpline. The Helpline is available from 11am – 8pm Monday to Friday (including public holidays). After hours all calls will be directed to a message service as well as to Lifeline (13 11 14) as an alternative contact.
- regular e-Zines, a Bulletin Series on the latest cannabis research by NCPIC and its consortium partners, as well as latest findings internationally and a series of Research Briefs. The Australian Institute of Criminology also provides a Bulletin Series and a Research into Practice Brief series for the Centre.
- national free training on the delivery of motivational and brief interventions for cannabis-related problems among adolescents and adults.

- a variety of projects to inform service delivery, such as findings of studies on barriers and facilitators to cannabis treatment seeking and the development and exploration of new models of delivering interventions via telephone, web and post.
- community activities to increase awareness of the harms associated with cannabis use such as a school poster competition, short film competition, an Aboriginal and Torres Strait Islander music competition, road safety messages, and partnerships with key organisations (e.g. our cannabis and sport project).
- a dedicated section of the website for Aboriginal and Torres Strait Islander Australians, featuring links to our artwork and community-building project 'Cannabis: It's not our culture' (www.notourculture.org.au), up-to-date cannabis-related research regarding Aboriginal and Torres Strait Islander Australians and links to other relevant resources.

Slides 31-32

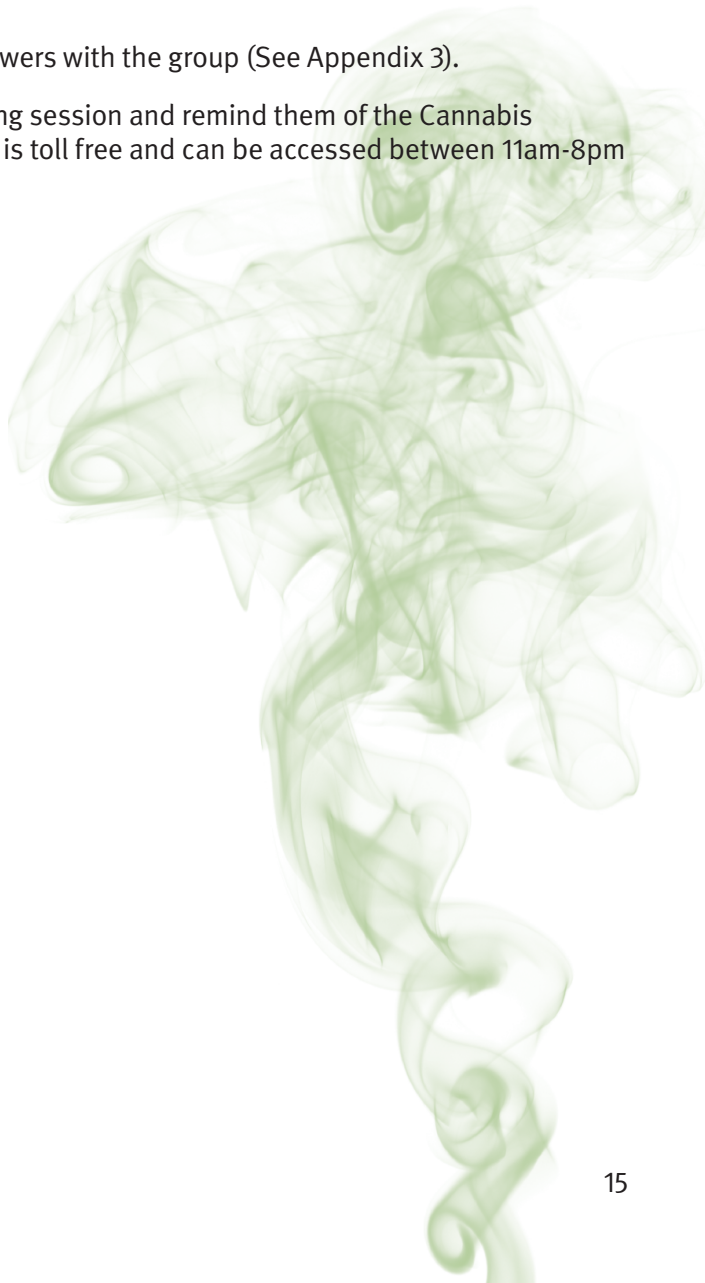
These slides provide an overview of the DVD *Cannabis Facts – Clearing the Smoke,*

As mentioned earlier in this guide, you may choose to play the DVD in its entirety or use specific chapters to support your training session.

Slide 33

Administer the post-test and go through the answers with the group (See Appendix 3).

Thank participants for participating in the training session and remind them of the Cannabis Information and Helpline (1800 30 40 50) which is toll free and can be accessed between 11am-8pm Monday to Friday.



Appendix 1 Pre-Cannabis Quiz

Please read the following statements and tick True, False or Don't Know.

1. Approximately 1 in 10 Australians (over the age of 14) have smoked cannabis in the past year.
   - ❑ True
   - ❑ False
   - ❑ Don't know

2. Cannabis is now 20-30 times stronger than it used to be.
   - ❑ True
   - ❑ False
   - ❑ Don't know

3. The effects of cannabis last longer if you eat the drug rather than smoke it.
   - ❑ True
   - ❑ False
   - ❑ Don't know

4. The psychoactive ingredient in cannabis used to measure potency is known as delta-9 tetrahydrocannabinol (THC).
   - ❑ True
   - ❑ False
   - ❑ Don't know

5. All regular cannabis users develop mental health problems.
   - ❑ True
   - ❑ False
   - ❑ Don't know

6. Evidence of cannabis smoking can be detected in urine for up to four weeks.
   - ❑ True
   - ❑ False
   - ❑ Don't know

7. You can become physically dependent on cannabis.
   - ❑ True
   - ❑ False
   - ❑ Don't know

8. Most daily cannabis users in Australia are in the 20-29 year age group.
   - ❑ True
   - ❑ False
   - ❑ Don't know

9. When you smoke cannabis the peak effects last around two hours.
   - ❑ True
   - ❑ False
   - ❑ Don't know

10. Most Australian cannabis users mix tobacco with their cannabis.
    - ❑ True
    - ❑ False
    - ❑ Don't know

Appendix 2 Post-Cannabis Quiz

Please read the following statements and tick True, False or Don't know.

1. Approximately one in 10 Australians (over the age of 14) have smoked cannabis in the past year.
   - ❑ True
   - ❑ False
   - ❑ Don't know

2. Cannabis is now 20-30 times stronger than it used to be.
   - ❑ True
   - ❑ False
   - ❑ Don't know

3. The effects of cannabis last longer if you eat the drug rather than smoke it.
   - ❑ True
   - ❑ False
   - ❑ Don't know

4. The psychoactive ingredient in cannabis used to measure potency is known as delta-9 tetrahydrocannabinol (THC).
   - ❑ True
   - ❑ False
   - ❑ Don't know

5. All regular cannabis users develop mental health problems.
   - ❑ True
   - ❑ False
   - ❑ Don't know

6. Evidence of cannabis smoking can be detected in urine for up to four weeks.
   - ❑ True
   - ❑ False
   - ❑ Don't know

7. You can become physically dependent on cannabis.
   - ❑ True
   - ❑ False
   - ❑ Don't know

8. Most daily cannabis users in Australia are in the 20-29 year age group.
   - ❑ True
   - ❑ False
   - ❑ Don't know

9. When you smoke cannabis the peak effects last around two hours.
   - ❑ True
   - ❑ False
   - ❑ Don't know

10. Most Australian cannabis users mix tobacco with their cannabis.
    - ❑ True
    - ❑ False
    - ❑ Don't know

Appendix 3 Answers to Cannabis Knowledge Quiz

1. Approximately one in ten Australians (over the age of 14) have smoked cannabis in the past year.

(b) True

- In the 2010 National Drug Strategy Household Survey (AIHW, 2011) 10.3 per cent of survey respondents reported that they had 'recently' used cannabis (i.e. within the previous 12 months) with 5.8 per cent reporting use in the past month.
- In this survey, 35.4 per cent of the Australian population over age 14 reported that they had ever used cannabis in their lifetime.

2. Cannabis is now 20-30 times stronger than it used to be.

(b) False

Regrettably, there is no monitoring of the potency of cannabis in Australian seizures and there has been no reporting from New Zealand in more than a decade. However, long-term users of cannabis in Australia report that cannabis appears to be stronger than in the past. On the available international evidence it would appear that the strength of cannabis has at least doubled over the last 20 years, but is not 30 times stronger as is sometimes claimed.

It is important to remember also that the typical patterns of use of cannabis have also changed significantly in that time.

For further information see also NCPIC factsheet: Cannabis potency
http://ncpic.org.au/ncpic/publications/factsheets/article/cannabis-potency

3. The effects of cannabis last longer if you eat the drug rather than smoke it.

(a) True

Depending on how cannabis is used, the body absorbs, metabolizes (breaks down) and eliminates THC differently. When cannabis is smoked, the effects come on quickly, because the THC is rapidly absorbed into the lungs and enters the bloodstream within minutes. Peak effects from smoking the drug will last about two hours; most people are no longer 'stoned/high' after four-six hours.

When it is eaten, THC takes much longer to be absorbed into the blood, so the effects come on more slowly (30-90 minutes depending on a person's metabolism). The effects of the drug will also last a lot longer than when it is smoked. The peak effects when eating the drug are more likely to last for five hours but can last up to 12. Some people who eat cannabis get impatient waiting for the effects to come on and often eat more. This can result in very unpleasant effects such as anxiety, paranoia, and feeling very out of control. It is much harder to regulate the desired dose and effects of the drug if you eat it.

4. The psychoactive ingredient in cannabis used to measure potency is known as delta-9 tetrahydrocannabinol (THC).

(a) True

Cannabis contains at least 500 compounds, 80 of these are cannabinoids, some of which have a psychoactive effect. THC has the strongest psychoactive effect and is most commonly used to measure the potency of the plant.

5. All regular cannabis users develop mental health problems.

(b) False

The majority of people who use cannabis *do not* develop mental health problems. Some people, especially those with a genetic predisposition to schizophrenia, depression and anxiety are more prone to developing mental health problems associated with cannabis use. It is important to note, however, that:

- early and heavy use of cannabis – especially smoking three or more times per week before the age of 15 is associated with up to six times the risk of schizophrenia
- cannabis use may precipitate schizophrenia in vulnerable individuals and continued use may worsen prognosis
- chronic, heavy cannabis use can lead to psychotic symptoms in vulnerable individuals, but symptoms usually recede after stopping

6. Evidence of cannabis smoking can be detected in urine for up to four weeks.

(a) True

Traces of cannabis can be detected in the urine of regular users for more than a month after the last use (with some users still recording positive tests for THC after longer periods). The reason for this is that cannabis is stored in the fatty tissues which means it takes more time (than other drugs) to be released back into the bloodstream and be excreted from the body. Even when a single dose of cannabis is consumed, traces can be detected in the urine for up to a week.

Please be aware that this is a guide only; factors such as how regularly someone uses cannabis, how much they use in a 'session', and their rate of metabolism, all affect how quickly the drug is cleared from their system.

Urine tests generally only identify whether cannabis has or has not been used in the recent past. They cannot accurately tell when or how much a person has used. Tests can also detect cannabis in blood, strands of hair and saliva, but more research is needed to establish how accurately they can measure patterns of use.

Urine testing is becoming common place in many Australian workplaces.

7. You can become physically dependent on cannabis.

(a) True

The evidence from animal and human laboratory and clinical studies has clearly demonstrated that cannabis dependence is a psychological and physical disorder. The most common physical withdrawal symptoms from long-term, heavy use of cannabis generally last one to 14 days and include the following:

- anger, aggression, irritability
- anxiety/nervousness
- decreased appetite
- restlessness
- sleep difficulties including strange dreams

Less common symptoms

- chills
- depressed mood
- stomach pain/physical discomfort
- shakiness
- sweating (at night)

8. Most daily cannabis users in Australia are in the 20-29 year age group.

(b) False

The 2010 National Drug Strategy Household Survey found that amongst recent users, *daily* cannabis use is more common among males than females, and most common among those over 40 years of age (17.6%) Interestingly, recent cannabis users aged 20-29 years were also less likely to use daily than 30-39 year olds (12.3% compared to 14%).

9. When you smoke cannabis the peak effects last around two hours.

(a) True

Depending on how cannabis is used, the body absorbs, metabolises (breaks down) and eliminates THC differently. When it is smoked, the effects come on quickly, because the THC is rapidly absorbed into the lungs and enters the bloodstream within minutes. THC begins metabolising in the lungs and continues in the liver, forming several different compounds (metabolites). Peak effects may last for around two hours; most people are no longer 'stoned/high' after four-six hours.

10. Most Australian cannabis users mix tobacco with their cannabis.

(b) True

The majority of Australian cannabis users mix the two drugs, with one recent study finding that 92% of their sample reported regularly 'mulling' tobacco with cannabis. Tobacco is often mixed with cannabis to make it last longer and make it burn 'better' (i.e. it doesn't go out as easily). The mixing of cannabis and tobacco is problematic, however, as many users can become nicotine dependent as a result of the practice.

Useful References

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