




# Cannabis & Mental Health



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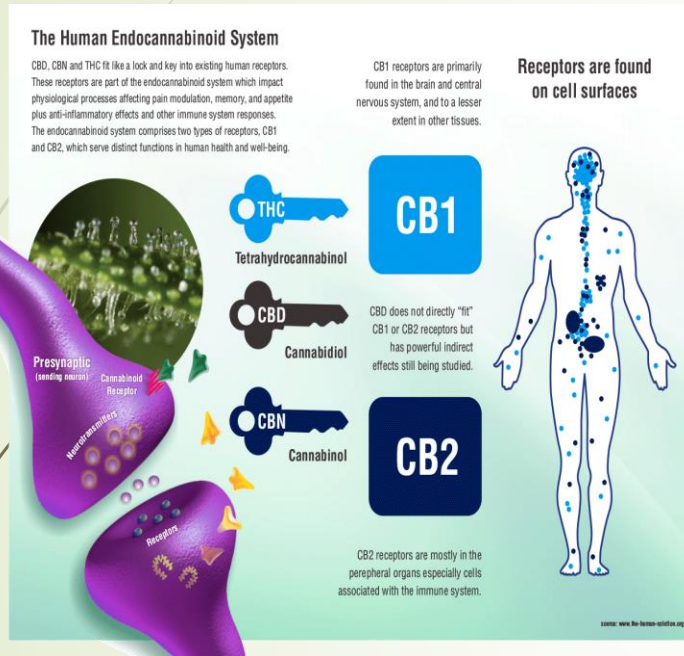
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# Cannabinoids

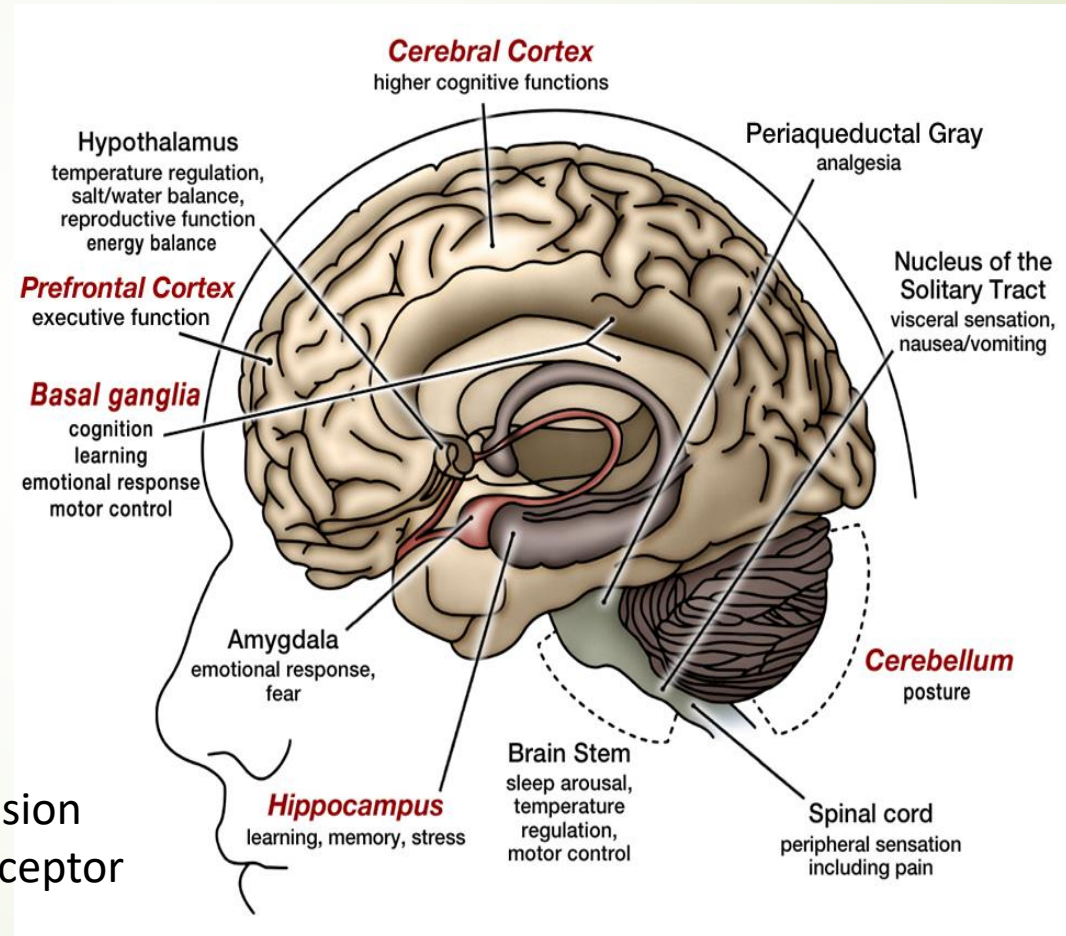


- Three forms of cannabinoids: phyto (plant), endo (within) and synthetic (manufactured)
- There are >100 unique phytocannabinoids in the cannabis sativa plant along with terpenes (entourage /ensemble effects) and more than 500 other chemicals when combusted
- The most common is the intoxicating THC and the most medically promising for conditions such as epilepsy is cannabidiol (CBD) which is not intoxicating in most doses but is psychoactive
- Smoked cannabis exerts psychoactive effects within minutes that peak within 30 minutes and last 2-5 hours when smoked.

# Cannabinoid receptor system



**Red** = abundant CB1 receptor expression  
**Black** = moderately abundant CB1 receptor expression





# How is cannabis consumed?

## ➤ Smoked

- cigarette (joint/spliff with or without tobacco)
- pipe, a water pipe (bong/cone), or a hookah
- hollowed-out cigar (blunt)

## ➤ Vaporized

- heated plant material
- heated oil or wax (dab)

## ➤ Consumed orally

- baked goods or other food products (brownies, cookies, etc.)
- beverages: tea, milk-based products, soda, coffee etc
- capsules (typically synthetic for pharmaceuticals e.g dronabinol)

## ➤ Other

- Topical
- Pessaries, suppositories



# Emerging admin methods relevant to teens



**USCHEAL**

*Health, Emotion, & Addiction Laboratory*

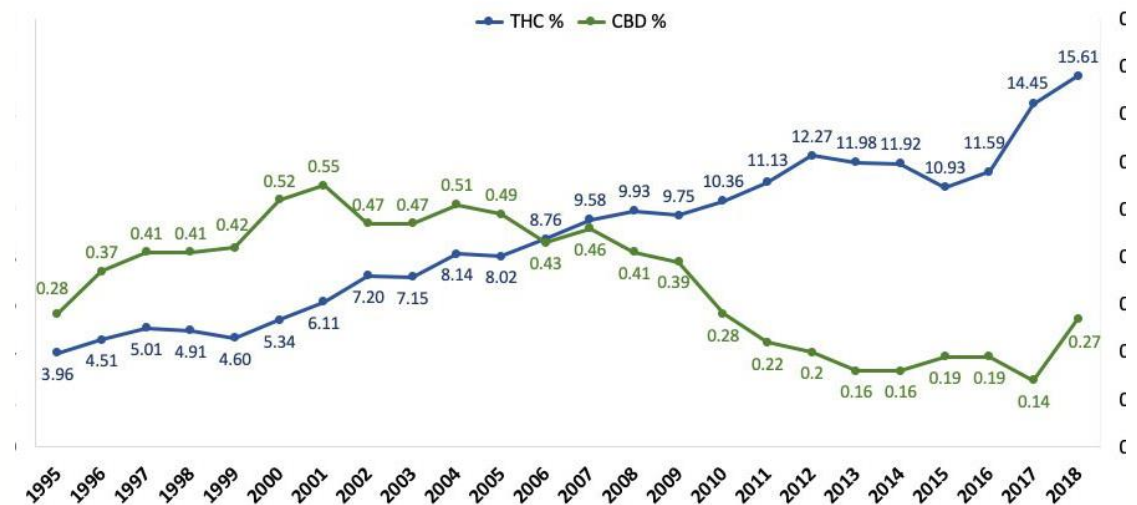


# Potency

- Potency of the principal psychoactive cannabinoid delta 9 tetrahydrocannabinol (THC) is generally higher than ever before (15-25%) and greatly differs by preparation technique with cannabidiol (CBD) almost bred out of most strains.
- A study of cannabis seized in NSW as part of the Cannabis Cautioning Scheme tested more than 200 samples and found that the samples showed high mean THC content of 14.7% and low mean cannabidiols (CBD) content of 0.1%. with no significant differences in cannabinoid content between those seized from indoor versus outdoor cultivation sites
- Waxes and oils have extremely high THC potency (up to 90+%)
- Daily use leads to very high tolerance to the effects that anecdotally can be partially overcome with also using high potency edibles via a different metabolic pathway



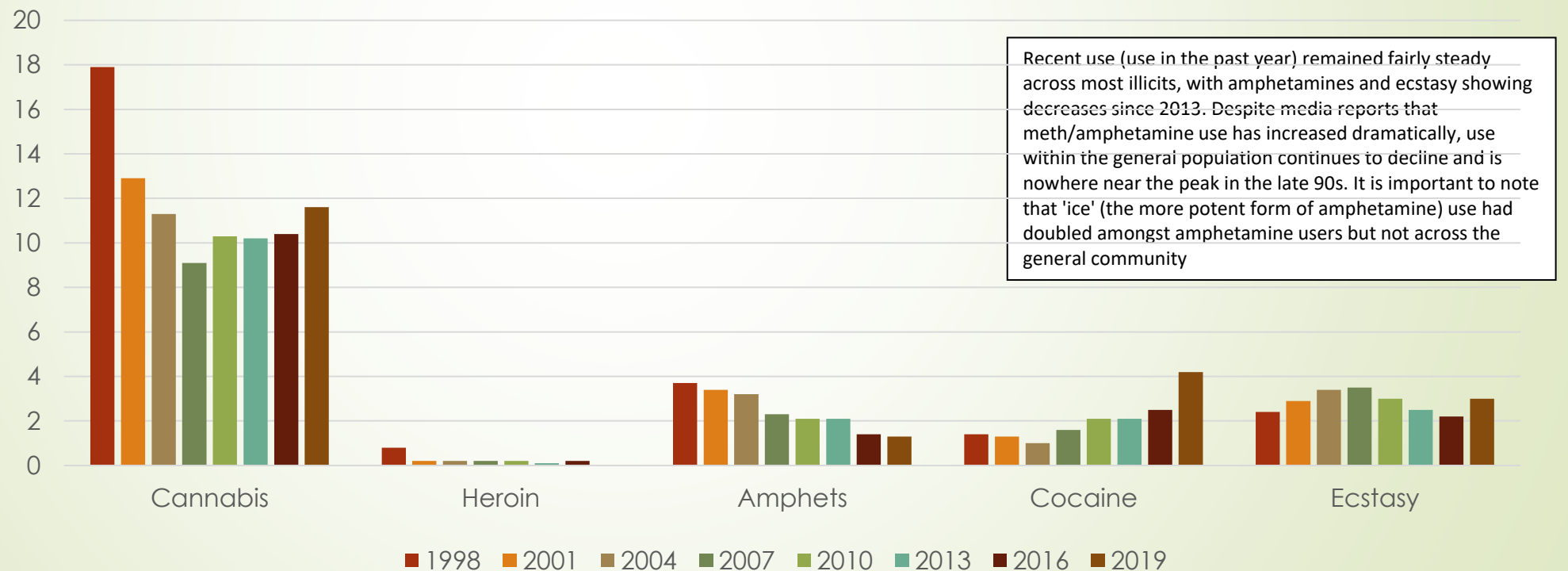
**Percentage of THC and CBD in Cannabis Samples Seized by the DEA from 1995-2018**



# Changes in 'recent use' (%): 1991-2019

AIHW (2020) 2019 National Drug Household Survey: Brief Findings

%



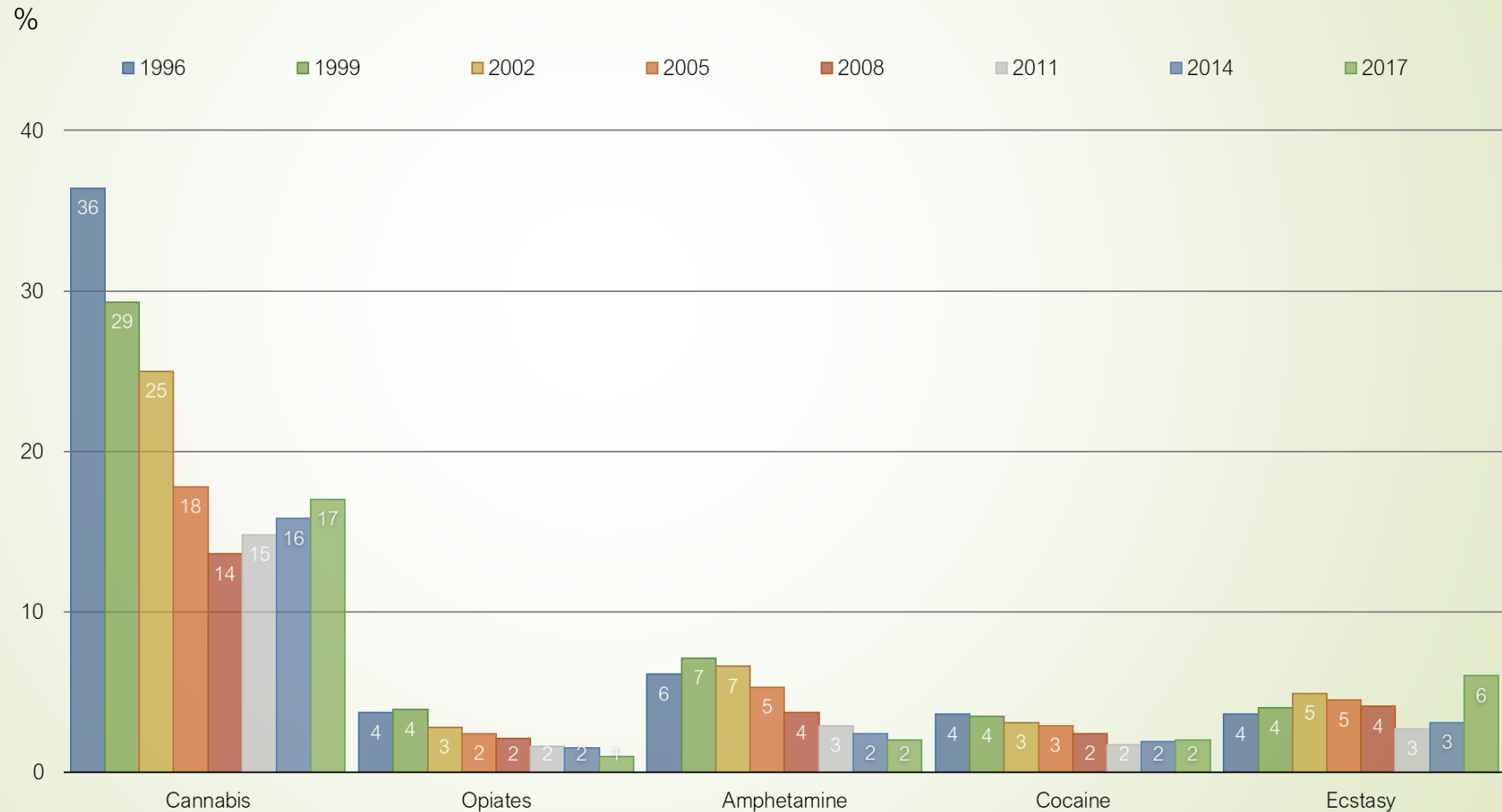
# Changes in patterns of cannabis use 2013-2016

- A large drop in perception of cannabis as a problem drug from 23% to 14%
- Significant increase in recent use amongst older females from 12.1% to 16.1%
- Frequent use is up from 19.5% to 36% using weekly or more often



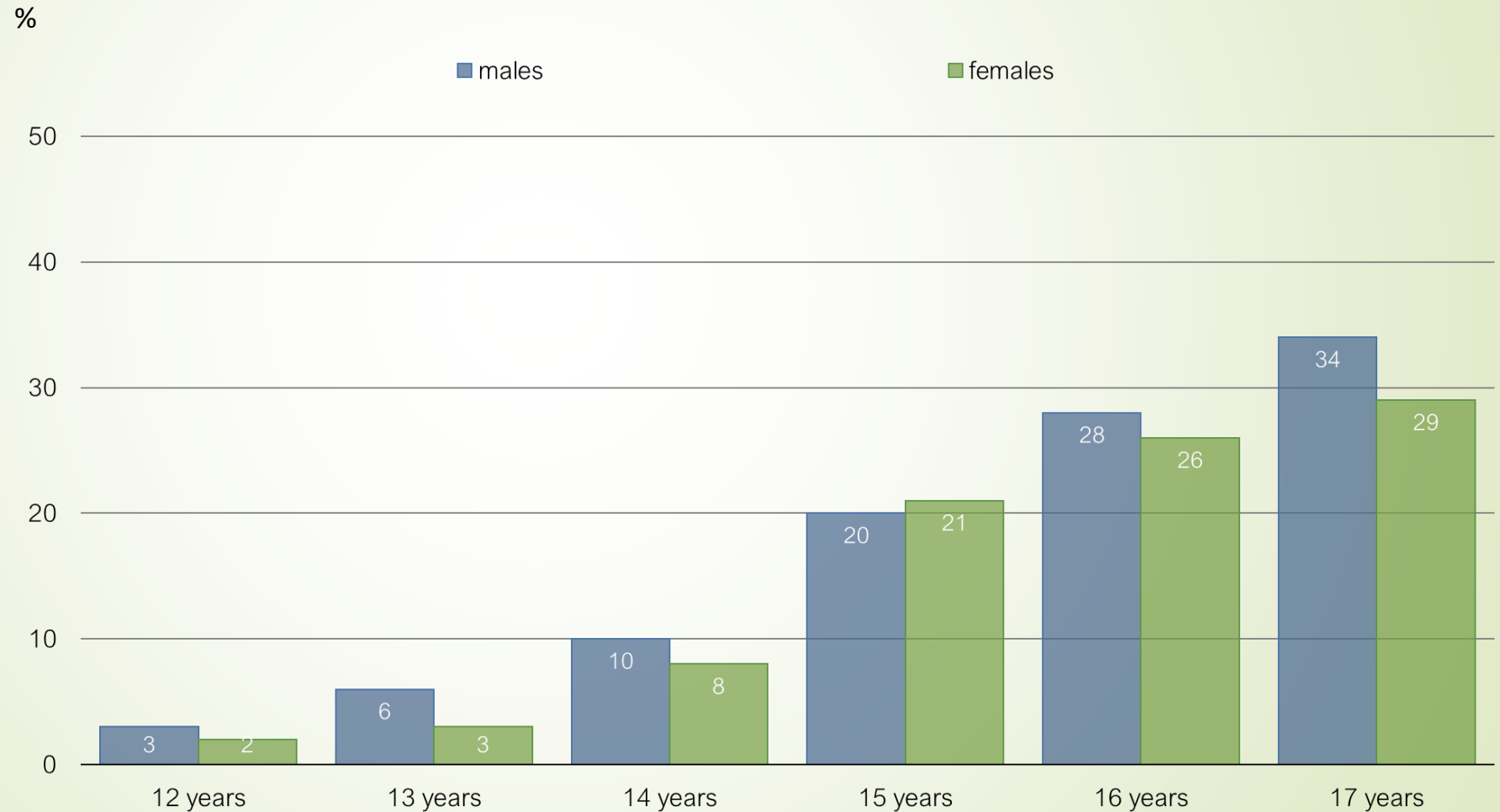
# Prevalence (%) of lifetime drug use among 12-17 year old students 1996-2017

Guerin & White (2017) ASSAD 2017 Statistics & Trends: Australian Secondary Students' Use of Tobacco, Alcohol, Over-the-counter Drugs, and Illicit Substances



# Used cannabis in the past year, Australian secondary school students (%), 2017

Guerin & White (2017) ASSAD 2017 Statistics & Trends: Australian Secondary Students' Use of Tobacco, Alcohol, Over-the-counter Drugs, and Illicit Substances



# Overview of cannabis related risks

- Many cannabis users report either unproblematic experimental, irregular use, or abstinence following the experience of a problem (Swift et al., 2008; von Sydow et al., 2001)
- Consequences are more likely if use is frequent, in larger quantities, or from an early age (Hasin, 2018; NAS, 2017; Silins et al., 2014; Volkow et al., 2014)
- Among other factors:
  - increasing potency (retail and unregulated sources),
  - method of use (smoke, eat, vape)
  - ratio of the components (THC:CBD), all can contribute to problems, including CUD (Freeman et al., 2018; van der Pol et al., 2014).



# Overview of cannabis related risks

Recent reviews have documented a range of adverse behavioral and health effects of cannabis use including:

- increased risk of motor vehicle crashes
- experience of respiratory distress
- impairments in learning, memory and attention
- educational failure (younger than 16 years)
- the development of psychoses among high-risk individuals (Hasin 2018; NAS, 2017).

# Cannabis & psychosis



- Substance induced psychosis: alcohol most commonly associated but only 5% ever develop schizophrenia compared with 30% for amphetamines and **46%** for cannabis (more commonly amongst males)
- Overall risk x2, heavy users x3.9, adolescent heavy x6
- Interval between initiation of regular monthly cannabis use and onset of psychosis = 6.3 years (on average 3 years earlier than non-users)

# Beyond association

- Cannabis use has effects beyond initial diagnosis:
  - reduced compliance with therapy and psychiatric medication
  - more re-hospitalisations and relapses
  - increased level of psychotic-dimension symptoms
  - increased family distress
  - increased cost to the community

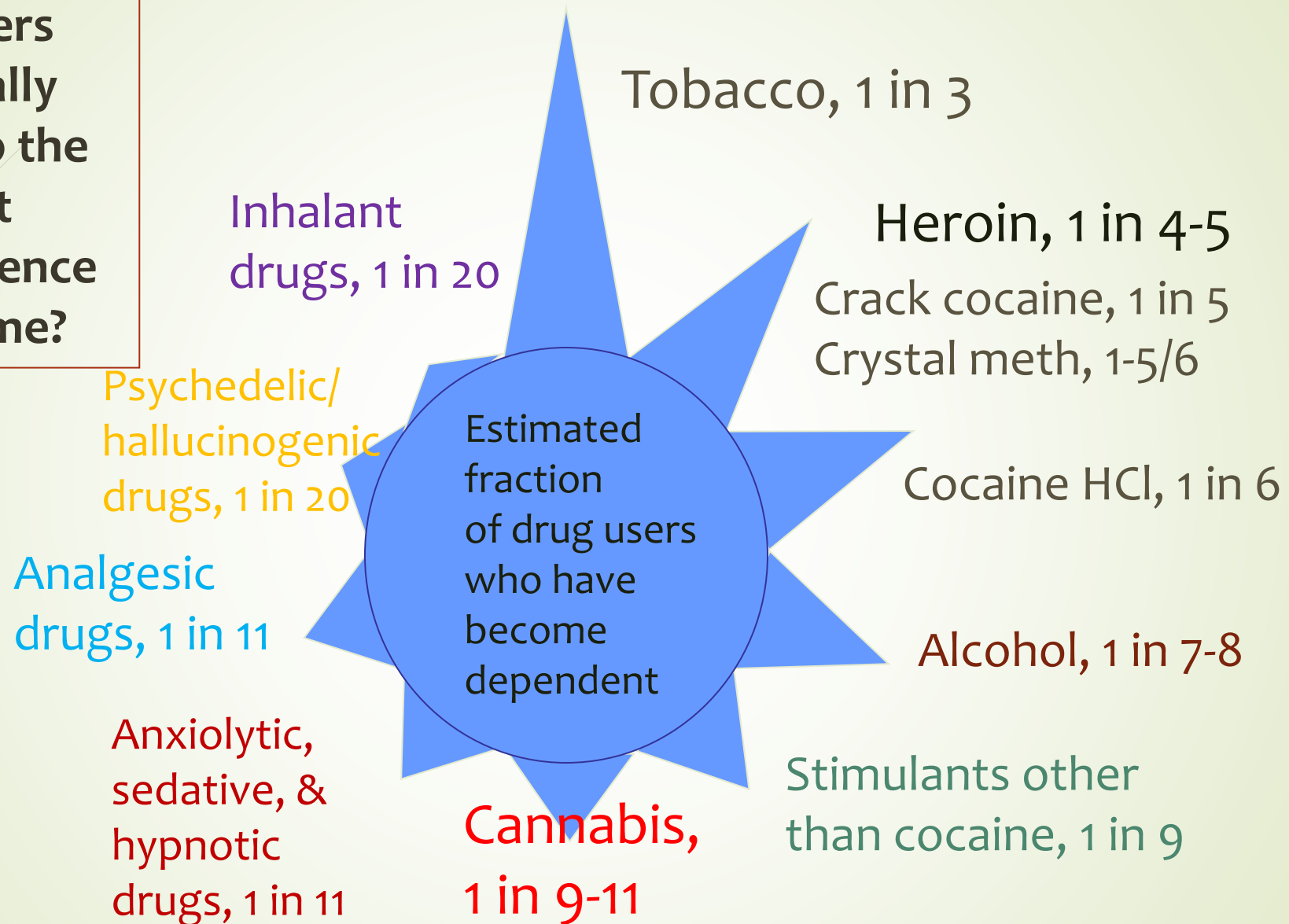


# Cannabis & depression/anxiety



- Cannabis users are more likely to experience depression and anxiety than non-users and those with anxiety and depression are more likely to report using cannabis
- The most recent systematic review of the relationship between adolescent cannabis use and later depression, anxiety or suicidal thoughts at age 18-32 years found an increased risk of developing major depression (7.2%) in young adulthood and suicidality, especially suicide attempts (almost 3.5 times more likely). This translates to some 413 326 young adult cases of depression potentially attributable to cannabis exposure in US (Gobbi et al., (2019) *JAMA Psychiatry*)
- The same study found no significant increase in rates of anxiety disorder

How many  
ever users  
eventually  
develop the  
relevant  
dependence  
syndrome?





# Cannabis policy: Australia

Minor cannabis offences in jurisdictions that have decriminalised cannabis

Jurisdiction (year of initiation)	Maximum amount of cannabis allowed	Exclusions	Fine	Alternatives to paying fine
SA (1987)	<ul style="list-style-type: none"><li>• 100 grams plant material</li><li>• 20 grams resin</li><li>• 1 plant</li></ul>	Artificial cultivation; cannabis oil	\$50–\$150	Criminal conviction
ACT (1992)	<ul style="list-style-type: none"><li>• 25 grams plant material</li><li>• 2 plants</li></ul>	Artificial cultivation; cannabis resin and oil	\$100	Attend the Alcohol and Drug Program – an assessment and treatment program
NT (1996)	<ul style="list-style-type: none"><li>• 50 grams plant material</li><li>• 10 grams resin</li><li>• 1 gram oil</li><li>• 10 grams seed</li><li>• 2 plants</li></ul>		\$200	Debt to state, no conviction – juveniles are sent to assessment

Diversion programs for minor cannabis offences

Jurisdiction (year of legislation)	Maximum amount of cannabis allowed for option of diversion	Maximum number of cautions allowed	Diversion program description
TAS (1998)	50 grams	3 in 10 years	<ul style="list-style-type: none"><li>• First offence: caution plus information and referral</li><li>• Second offence: brief intervention</li><li>• Third offence: assessment and either treatment or brief intervention</li></ul>
VIC (1998)	50 grams	2	Cautioning notice plus voluntary education program
NSW (2000)	15 grams	2	Caution, plus information and referral
QLD (2001)	50 grams	1	Mandatory assessment and brief intervention session
WA (2011)	10 grams	1 (Adults) 3 (Juveniles)	Caution plus Cannabis Intervention Session

## Recent policy changes

2016: Medicinal cannabis can be accessed by various schemes but not registered by TGA (except Nabiximols)

CBD (semi/synthetic <2% THC) is now a S4 drug that may be prescribed. Low dose (<60mg/day) may be approved for pharmacy OTC access in 2021

2019: ACT passed a bill allowing for possession and growth of small amounts of cannabis for personal use as of 31 January 2020, although the laws conflict with federal laws which prohibit recreational use of cannabis and the supply of cannabis and cannabis seeds are not allowed



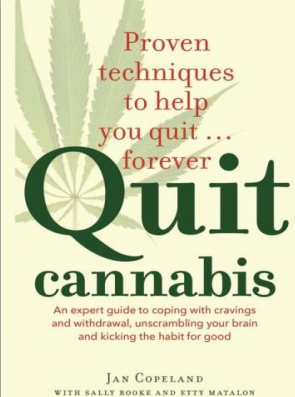
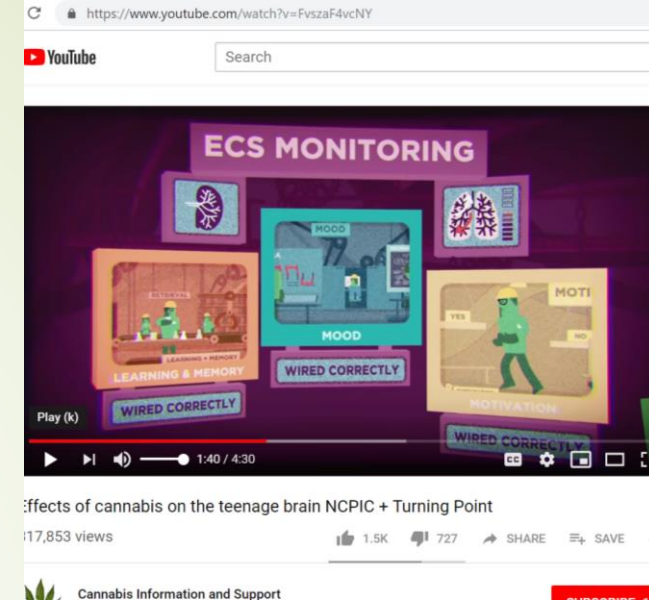
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Training webinars and a variety of resources

🐦 @CannaBoss



Is cannabis the  
missing piece?

