

The standard THC unit



LISBON
ADDICTIONS
2022



AIM

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Mental Health Group

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BATH

Disclosures

No conflicts of interest

The problem

Health effects of drugs: important to consider **quantity** as well as **frequency** of use

I drink alcohol
every day



One shot vodka
a day

I drink alcohol
every day



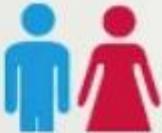
Four shots vodka
+ bottle of wine
a day



The solution – standard units

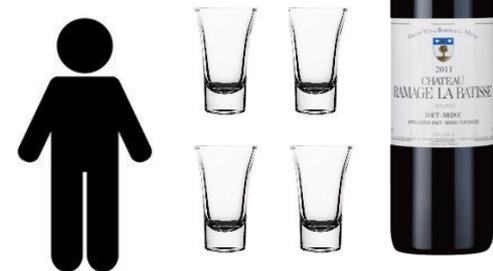
1 alcohol unit (UK) = 8g alcohol



You shouldn't regularly exceed  **14 UNITS per week**



7 units a week



98 units a week

Cannabis

I use cannabis
every day



$\frac{1}{4}$ of a joint

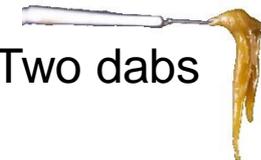
I use cannabis
every day



Three joints



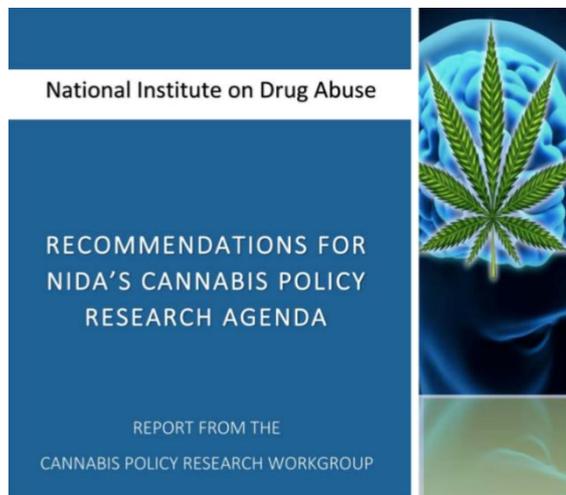
Two gummies



Two dabs

Diverse range of products, potencies, and methods of use; **no standardised measures**

Cannabis



Contents lists available at [ScienceDirect](#)

Drug and Alcohol Dependence

journal homepage: www.elsevier.com/locate/drugalcdp



Full length article

The Standard Joint Unit

Cristina Casajuana Kögel^{a,c,*}, María Mercedes Balcels-Olivero^{b,c}, Hugo López-Pelayo^{b,c},
Laia Miquel^{a,c}, Lídia Teixidó^{b,c}, Joan Colom^d, David John Nutt^e, Jürgen Rehm^{f,g,h,i,j},
Antoni Gual^{a,c}



Lack of standard unit hinders understanding of benefits and harms of cannabis; key priority to address

The standard THC unit

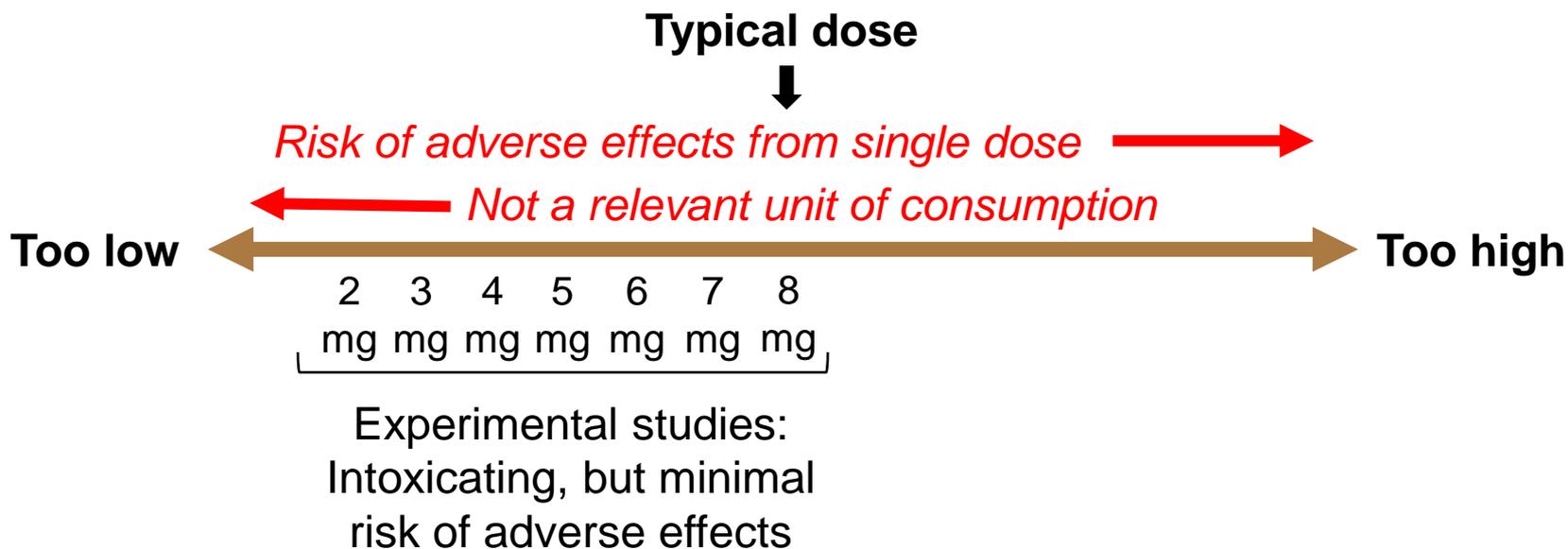
Two key points:

1. *Should reflect dose of primary pharmacological constituent (i.e. THC, in milligrams) – as for alcohol units (i.e. alcohol, in grams)*

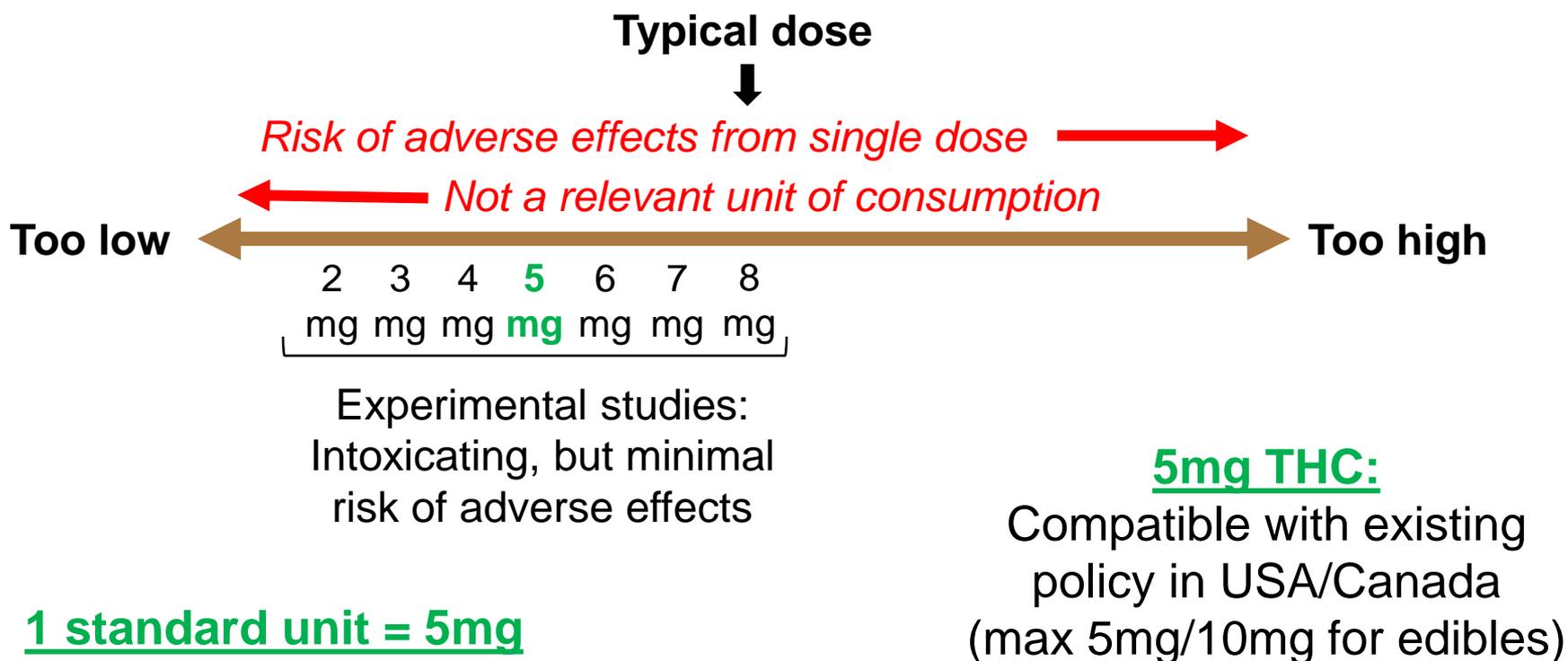
2. *Should apply to all products and methods of administration*



How many milligrams for one standard unit?



How many milligrams for one standard unit?

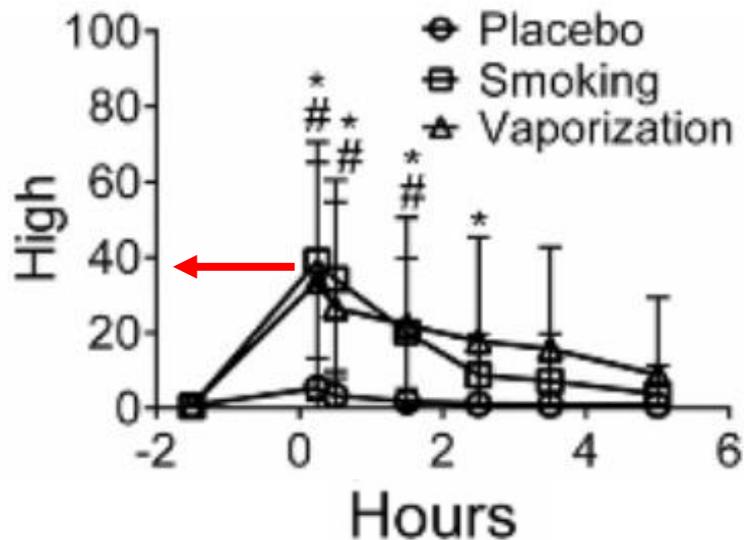


1 standard unit = 5mg

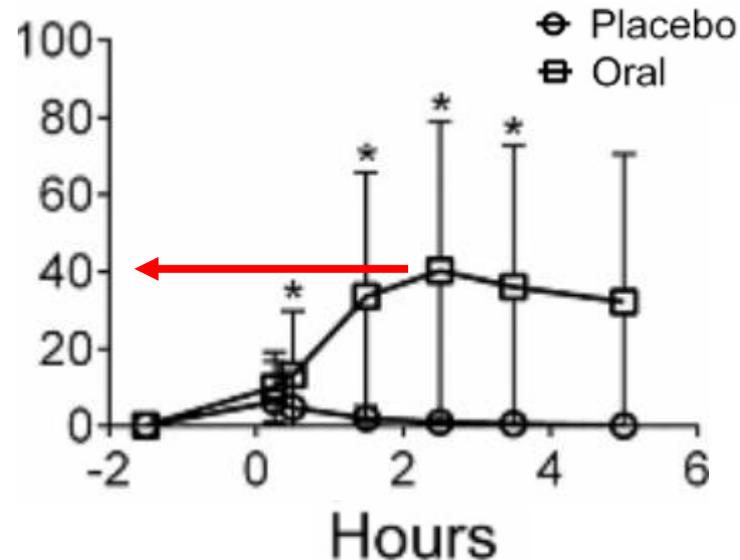
Limitations of the standard THC unit: different methods of use

Inhaled (smoked/vaporized): faster onset and offset than oral, but similar peak effects

Inhaled THC



Oral THC



Limitations of the standard THC unit: other cannabis constituents

CBD most likely
constituent to influence
effects of THC

Neuroscience and Biobehavioral Reviews 107 (2019) 696–712



How does cannabidiol (CBD) influence the acute effects of delta-9-tetrahydrocannabinol (THC) in humans? A systematic review

Abigail M. Freeman^{a,s}, Katherine Petrilli^a, Rachel Lees^{a,b}, Chandni Hindocha^{a,d}, Claire Mokrysz^a, H. Valerie Curran^a, Rob Saunders^a, Tom P. Freeman^{a,b,c}

ARTICLE OPEN

Check for updates

Does cannabidiol make cannabis safer? A randomised, double-blind, cross-over trial of cannabis with four different CBD:THC ratios

Amir Englund^{1,2}, Dominic Oliver², Edward Chesney², Lucy Chester², Jack Wilson³, Simina Sovi², Andrea De Micheli², John Hodsoll⁴, Paolo Fusar-Poli^{2,5}, John Strang^{1,6}, Robin M. Murray², Tom P. Freeman⁷ and Philip McGuire²

At CBD:THC ratios most common in medical and recreational cannabis products, no evidence that CBD influences the effects of THC

Limitations of the standard THC unit



Voltaire

“Don’t let perfect be the enemy of the good”

Standard THC unit not perfect, but potential to be “good” by increasing consistency in dose for research, policy and practice

The standard THC unit

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Addiction Opinion and Debate |  Full Access

‘Standard THC units’: a proposal to standardize dose across all cannabis products and methods of administration

Tom P. Freeman , Valentina Lorenzetti

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Commentary |  Open Access | 

Importance of a standard unit dose for cannabis research

Nora D. Volkow , Susan R.B. Weiss

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Standard tetrahydrocannabinol units: an idea whose time has come

David Hammond 

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The viability of a standard THC unit

Francesca M. Filbey 

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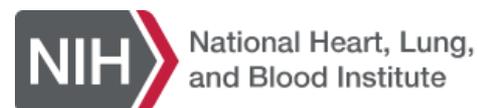
How experimental cannabinoid studies will inform the standardized THC unit

Lucy Chester , Edward Chesney, Dominic Oliver, Jack Wilson, Amir Englund

Endorsement of the standard THC unit

May 10, 2021 *By NIDA Director Nora Volkow, MD, and National Cancer Institute Director Norman E. Sharpless, MD.*

All investigators funded by US National Institutes of Health should measure and report research using the 5mg standard THC unit



College on Problems of Drug Dependence

Reporting the standard THC unit



A standard THC unit for reporting of health research on cannabis and cannabinoids

Summary of National
Institutes of Health
guidance for reporting
the standard THC unit

Panel: Summary of guidance on the standard THC unit

The standard THC unit:

- is defined as any formulation containing 5 mg of THC;
- applies to both natural and synthetic THC formulations;
- is specific to THC and does not apply to other cannabis constituents for which standard units have not been established;
- should be used to report the dose of THC administered to or consumed by research participants; pharmacokinetic parameters should be reported using conventional units (eg, ng/mL or ng·h/mL).

Reporting the standard THC unit

ARTICLE **OPEN**



Does cannabidiol make cannabis safer? A randomised, double-blind, cross-over trial of cannabis with four different CBD:THC ratios

Amir Englund ^{1,2}², Dominic Oliver ², Edward Chesney ², Lucy Chester², Jack Wilson ³, Simina Sovi², Andrea De Micheli², John Hodson⁴, Paolo Fusar-Poli^{2,5}, John Strang^{1,6}, Robin M. Murray ², Tom P. Freeman⁷ and Philip McGuire ²

“Each cannabis dose consisted of 10 mg of THC (two standard THC units [[16](#)])”

Conclusions

- Lack of standard unit for cannabis has limited our understanding of benefits and harms
- The standard THC unit: a low dose (5mg) applied to all cannabis products and methods of administration
- Applies to both medical and non-medical cannabis use
- Reporting the standard THC unit can increase consistency, facilitate data synthesis, and strengthen quality of evidence
- Can be used to inform the public and healthcare providers about safer levels of use

Thanks to:

Valentina Lorenzetti



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