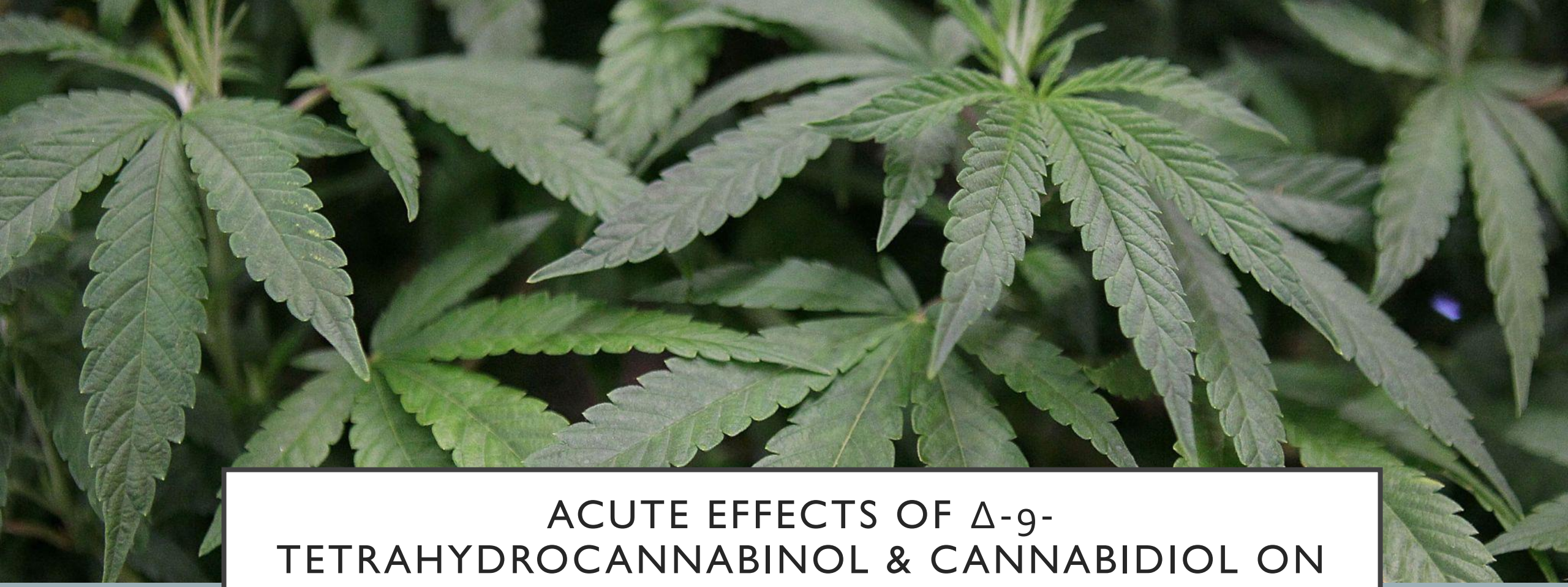

ACUTE EFFECTS OF Δ-9-TETRAHYDROCANNABINOL & CANNABIDIOL ON ATTENTIONAL BIAS IN HEALTHY VOLUNTEERS: A RANDOMISED, DOUBLE-BLIND, CROSSOVER STUDY

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King's College London

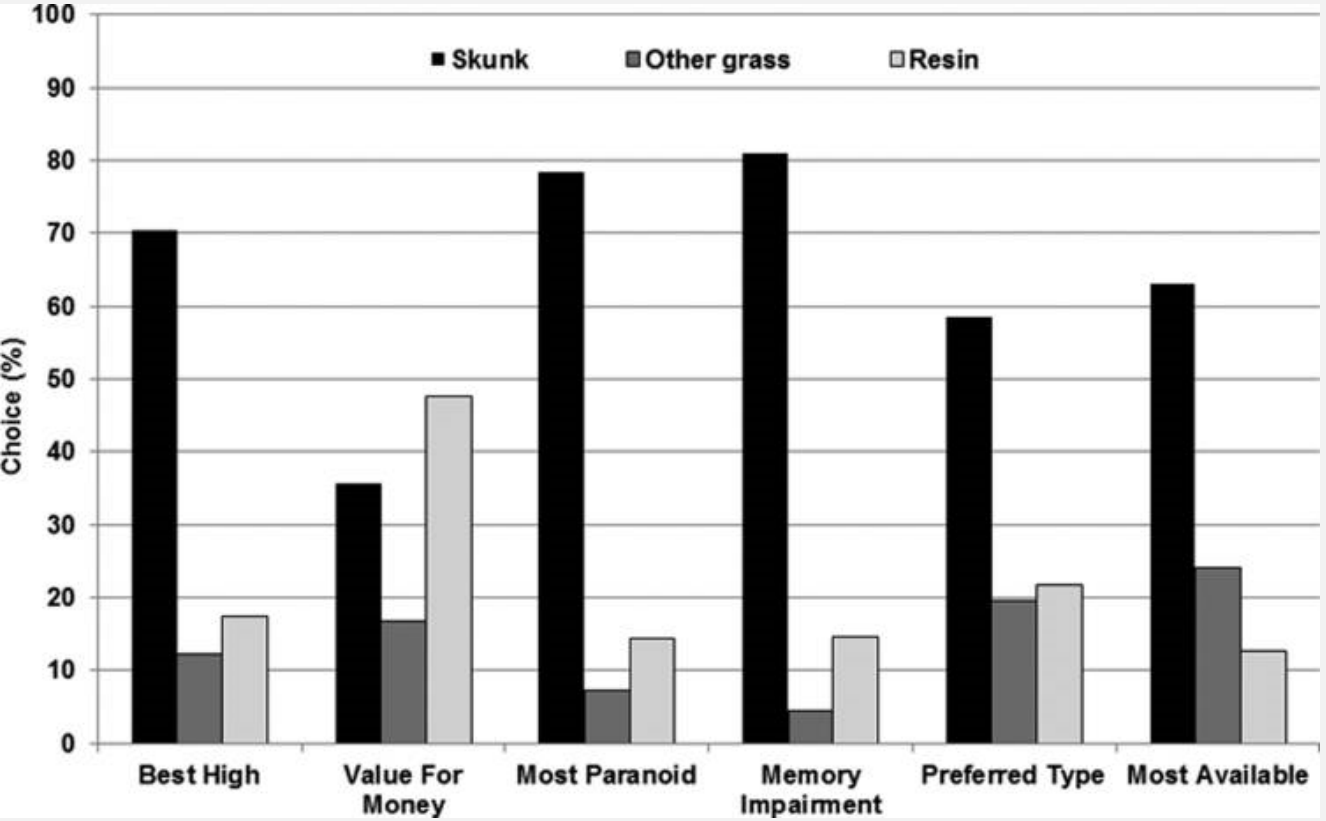
ATTENTIONAL BIAS

- Unconscious bias towards cannabis stimuli in regular cannabis users (O'Neill et al., 2020) and people with cannabis dependence (Vujanovic et al., 2016)
- Continued cannabis use leads to greater valuing of relevant stimuli
- Stronger valuation with greater frequency of use/dependence
- Therefore, attentional bias can be used as a measure of a person's association with cannabis
- Proxy for addiction-like behaviour

CANNABIS DEPENDENCE

- 9% who try cannabis become dependent (Lopez-Quintero et al., 2011)
- 17% if cannabis use is started in adolescence (Anthony 2006)
- 25-50% among daily users (Hall 2009)

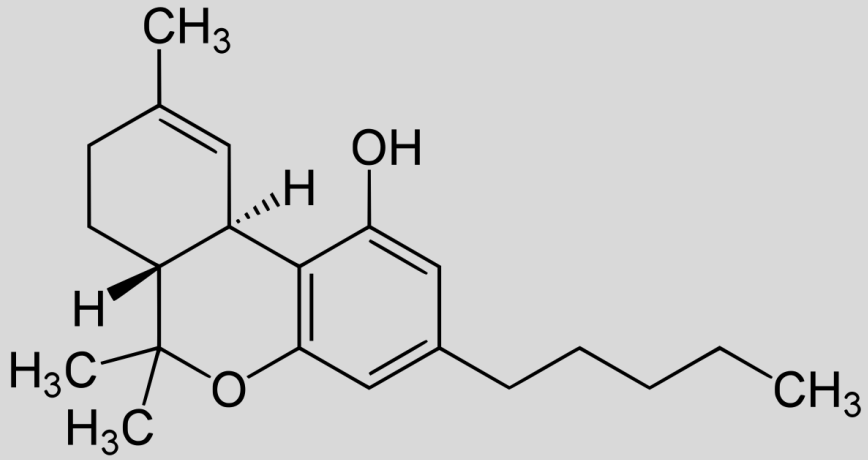
CANNABIS TYPE AND DEPENDENCE



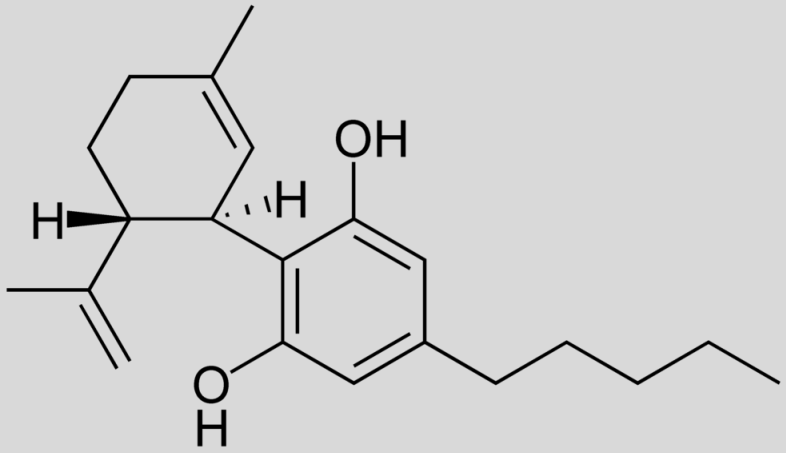
- Frequent use of high potency cannabis predicts dependence severity
- But high potency rated as preferred and most available
- Use of hash and herbal not associated with dependence

Freeman & Winstock 2015

CANNABIS SATIVA L.

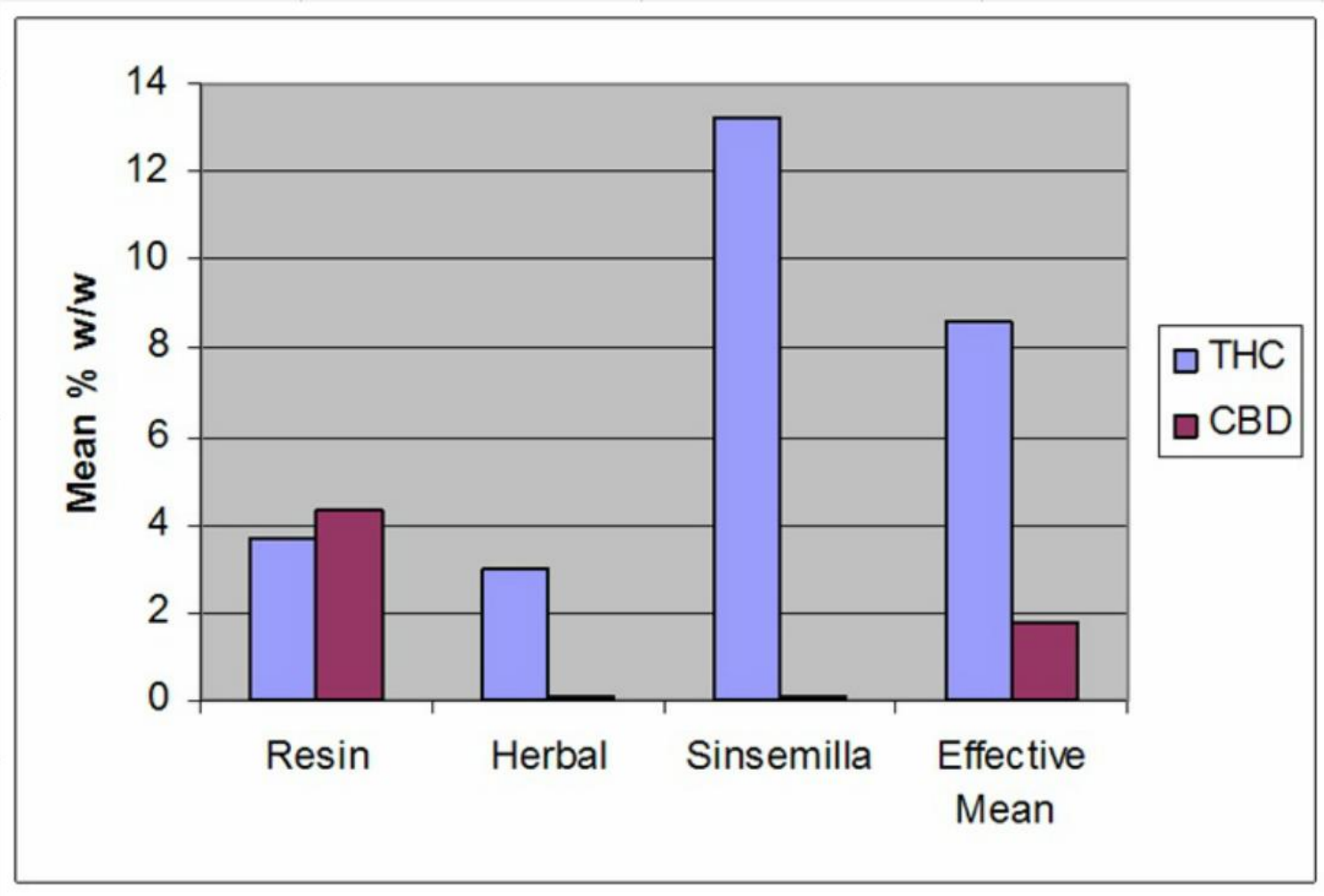


Delta-9-tetrahydrocannabinol (THC)

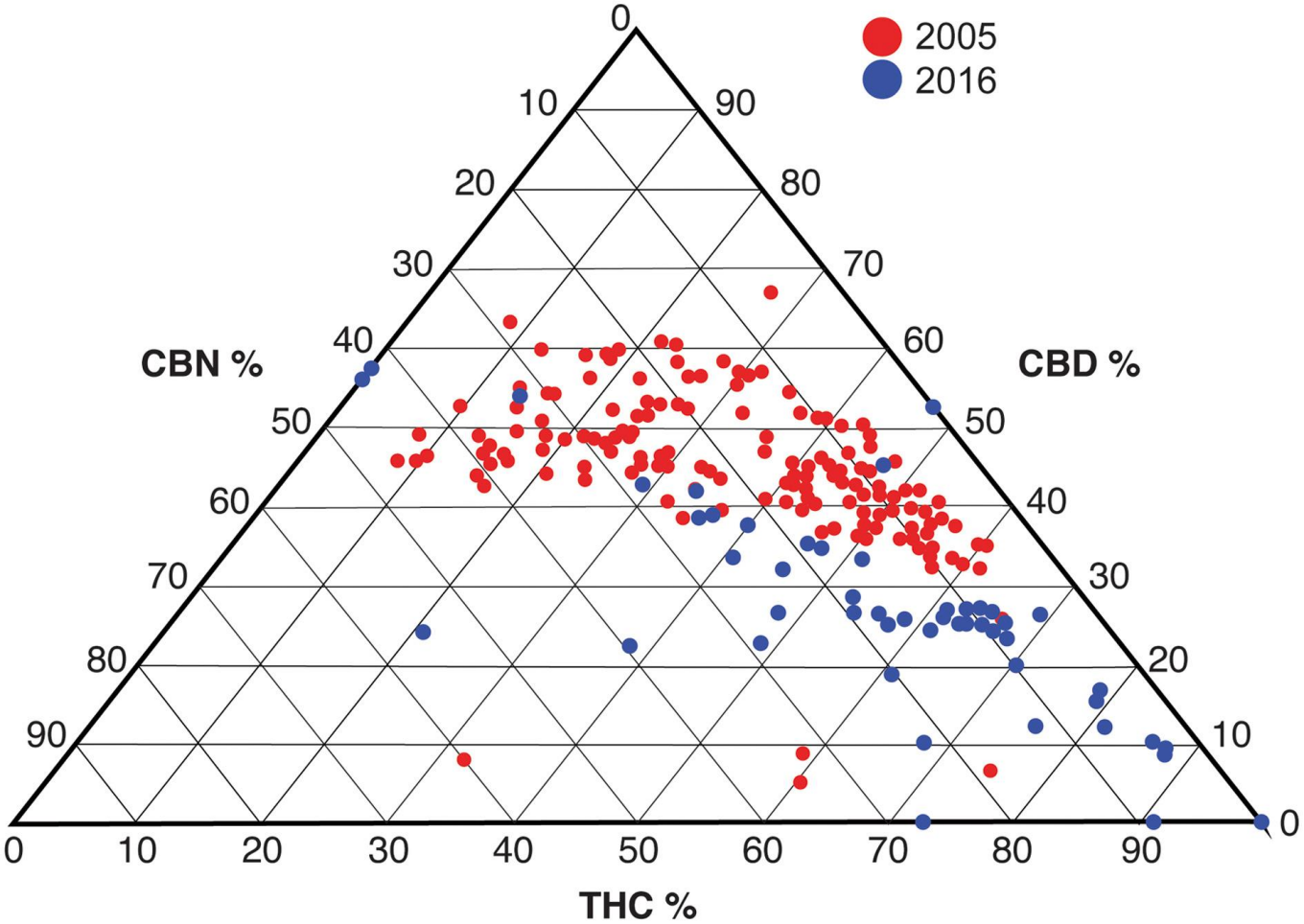


Cannabidiol (CBD)

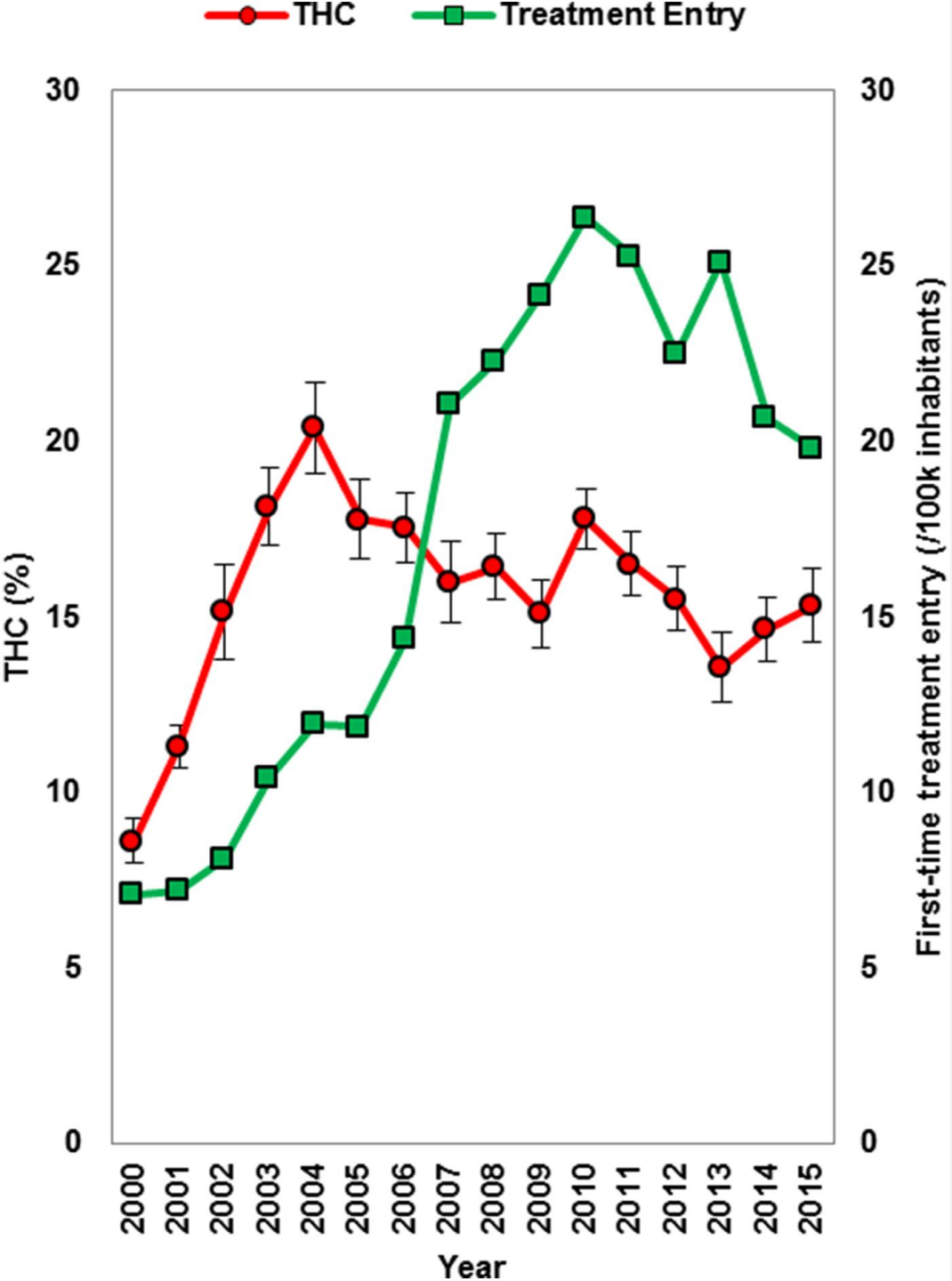
CANNABIS TYPE AND POTENCY POTTER ET AL 2008



POTENCY CHANGES
POTTER ET AL 2018



- Highest **THC** content of resin in 2005 was **10.8%**
- 25% of samples in 2016 exceeded that
- Highest **THC** content of resin in 2016 was **29%**



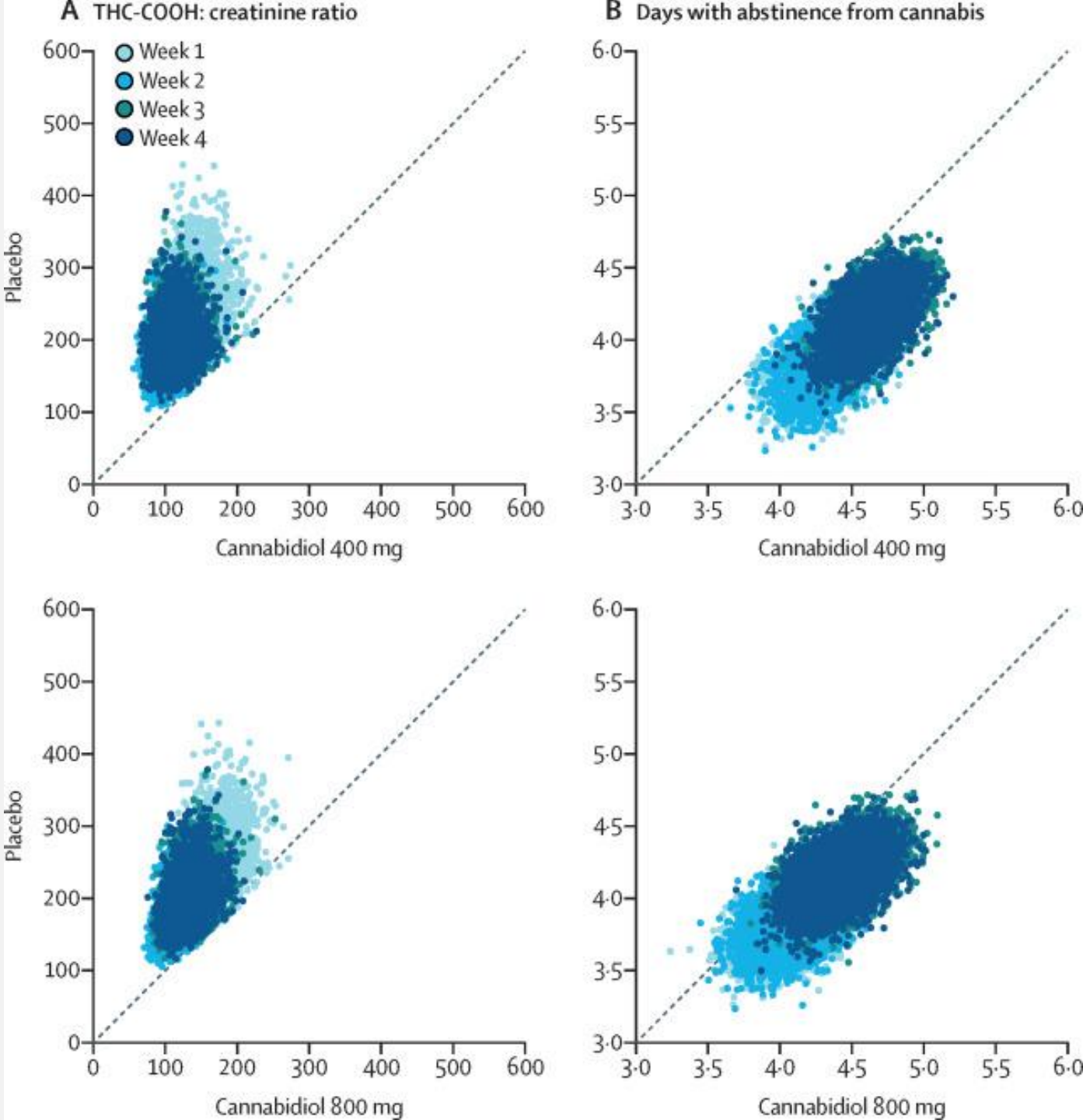
MORE THC, MORE PROBLEMS

- Data from the Netherlands
- More systematic testing compared to UK data
- When cannabis potency (i.e. **THC** content) increases, increase in first time admissions for drug-related issues five years later

Freeman et al., 2018

CBD TO TREAT DEPENDENCE

- **CBD** trialled in individuals with cannabis use disorder who wanted to quit
- Both 400mg and 800mg **CBD** daily reduced **THC** metabolites in urine and increased number of days not using cannabis over 4 weeks



Freeman et al., 2020

THC, CBD AND ATTENTIONAL BIAS

- People who use higher **CBD**:**THC** ratios tend to show reduced attentional bias to cannabis stimuli when sober and when intoxicated with their usual cannabis (Morgan et al., 2010)
- What about in more infrequent users?
- Do we see signs of addiction-like behaviour following acute dosing?

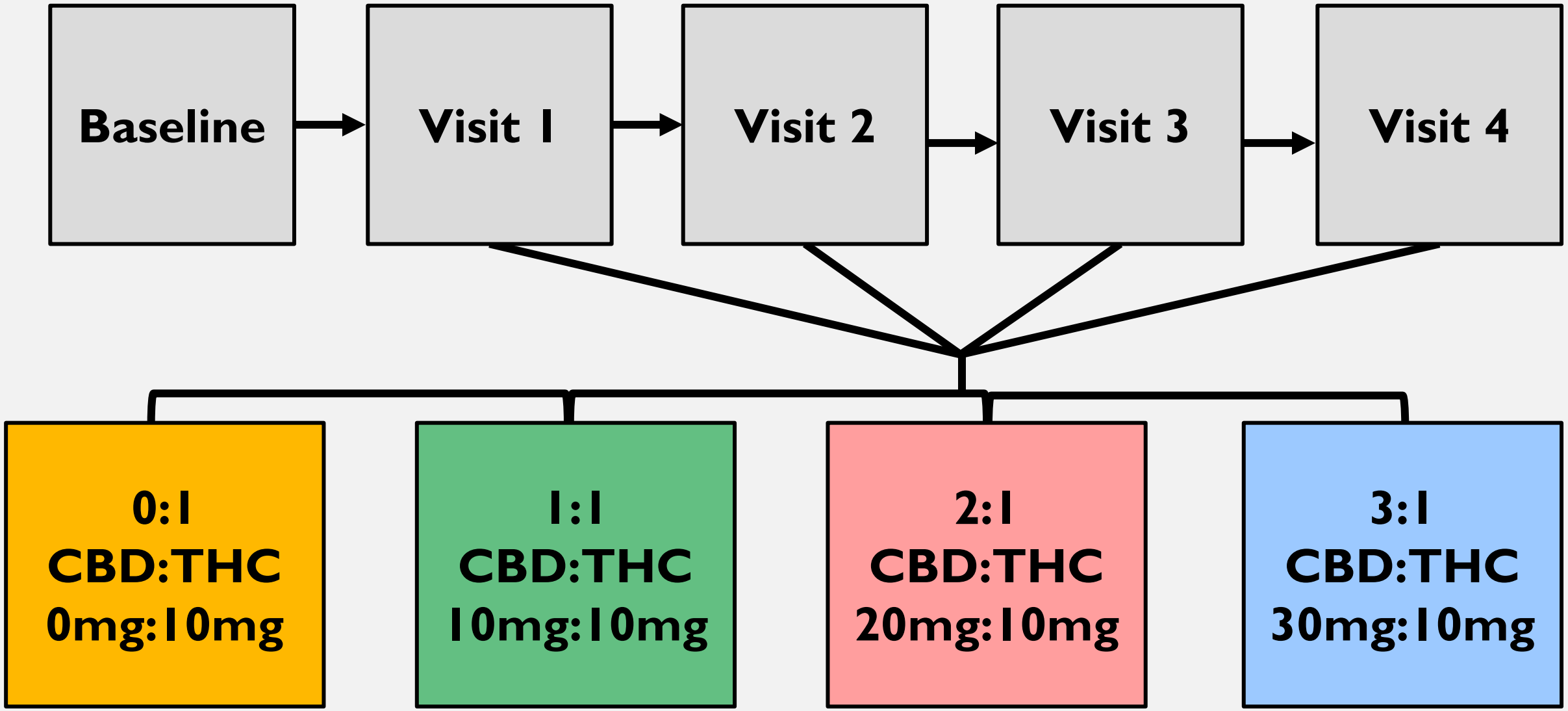
eCBD

- Does **THC** increase attentional bias towards cannabis stimuli?
- Does increasing **CBD**:**THC** ratio in inhaled cannabis attenuate this effect?

INCLUSION CRITERIA

- Infrequent cannabis use (mean cannabis use <1/week over the last 12 months)
- No past use of synthetic cannabinoids
- No past or present major mental, physical illness or substance use disorder
- Score <5 on the Fagerstrom Nicotine Dependence Questionnaire
- Negative urine drug screen
- No past 24-hour use of alcohol or tobacco

DOUBLE BLIND, RANDOMISED CROSSOVER STUDY



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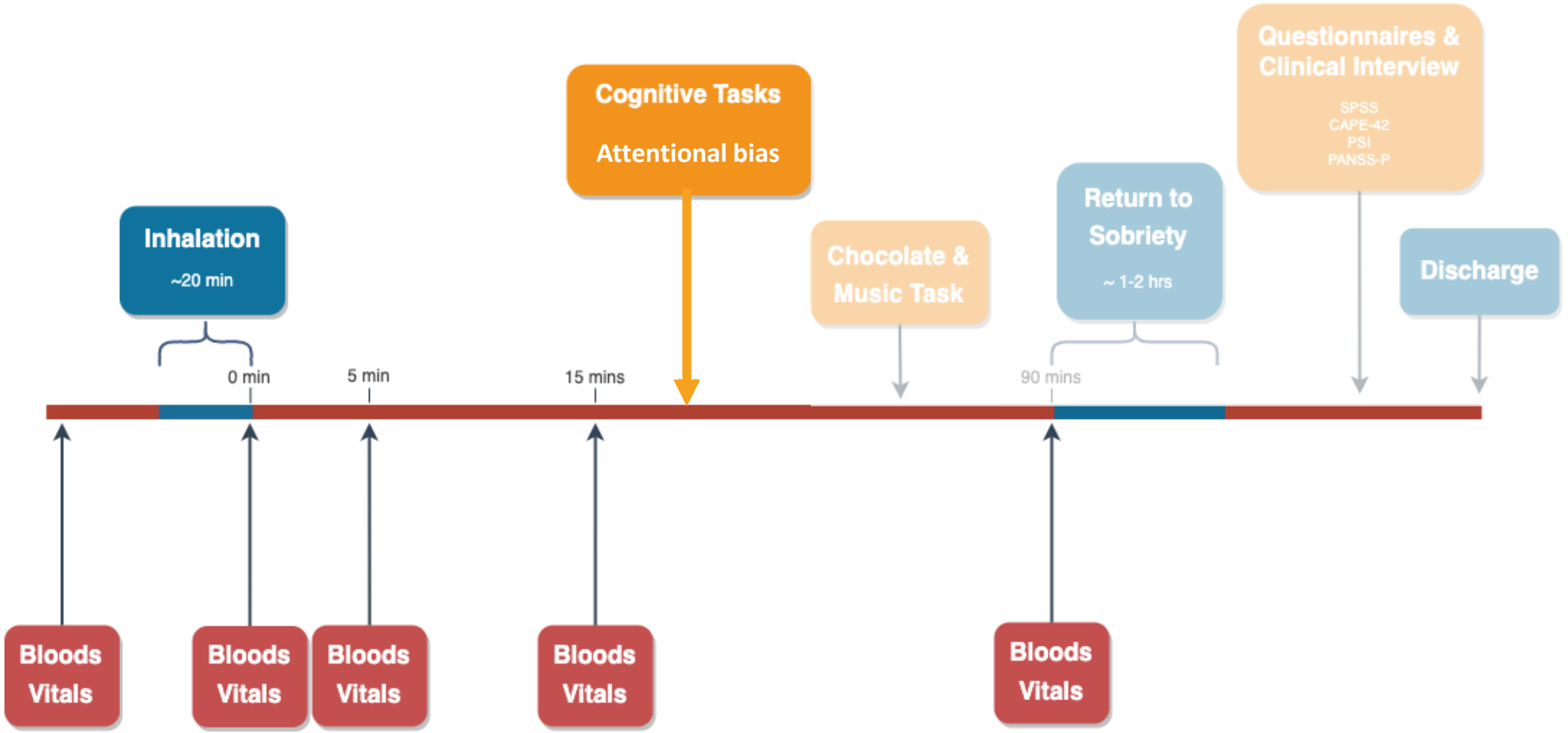
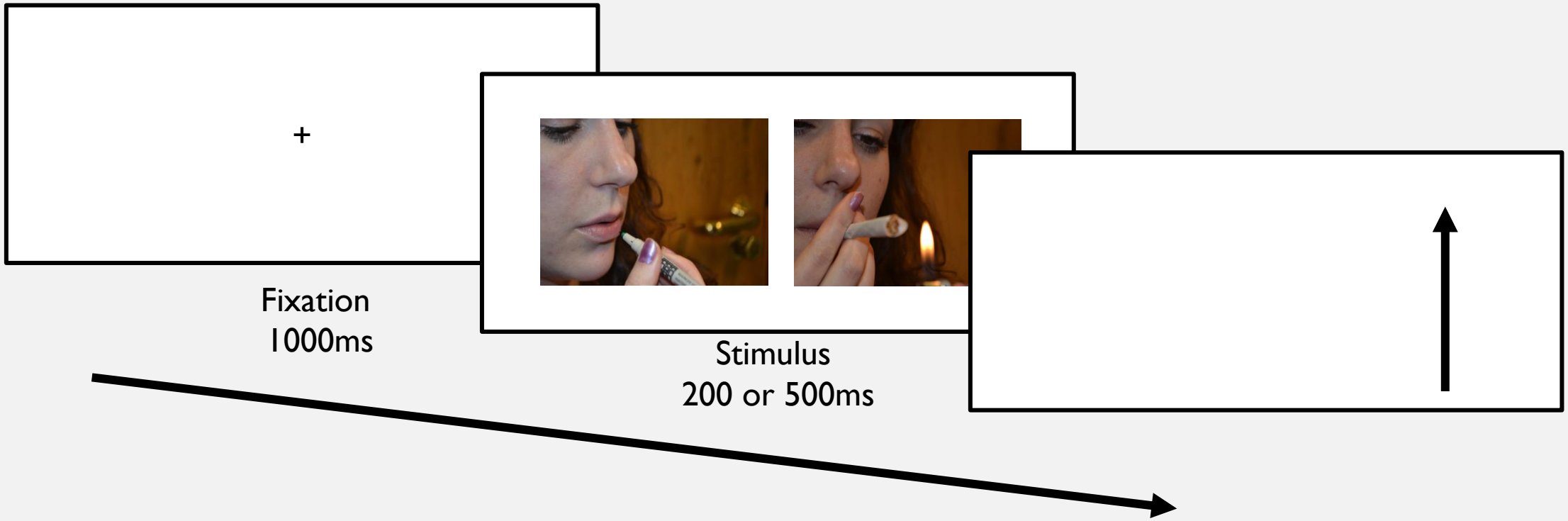

Questionnaires & Clinical Interview
SPSS
CAPE-42
PSI
PANSS-P
Cognitive Tasks
Attentional bias
Return to Sobriety
~ 1-2 hrs
Inhalation
~20 min
Chocolate & Music Task
Discharge
0 min
5 min
15 mins
90 mins
Bloods Vitals
Bloods Vitals
Bloods Vitals
Bloods Vitals
Bloods Vitals

TASK 1: IMPLICIT WANTING



TASK 2: EXPLICIT LIKING

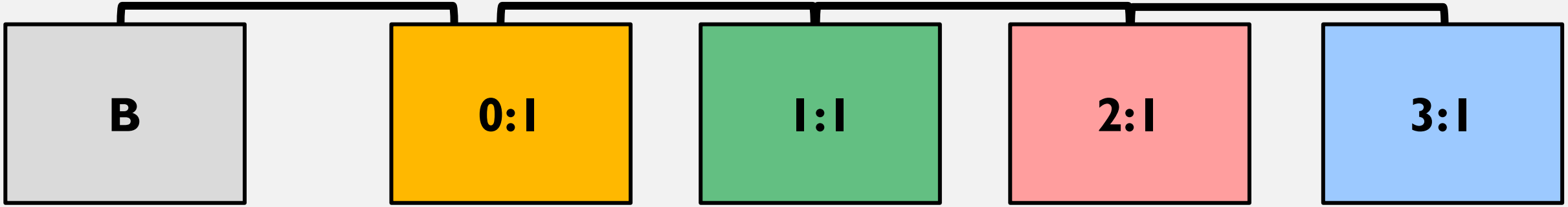
How pleasurable is this image?

-3 -2 -1 0 1 2 3

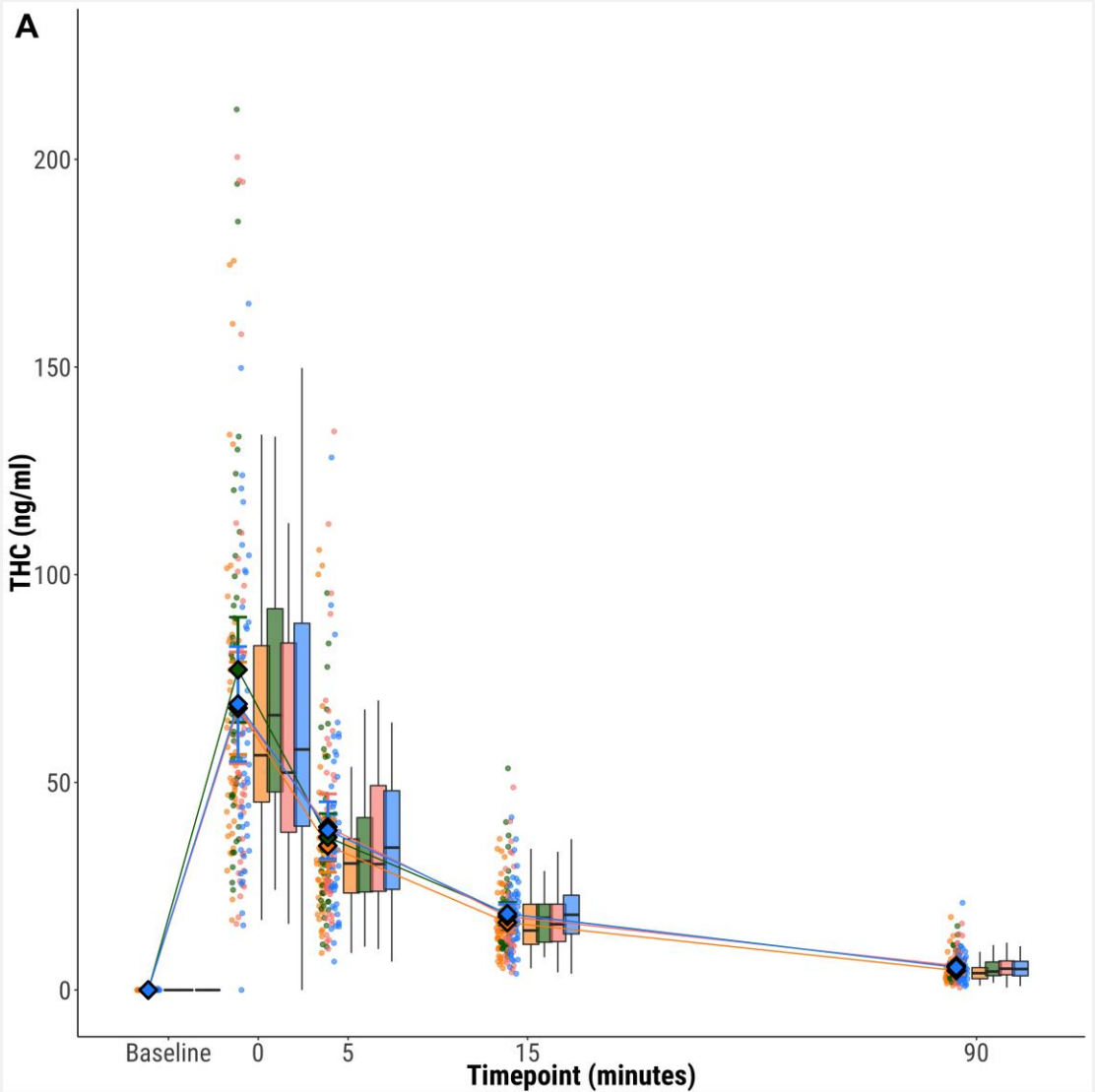
STATISTICAL ANALYSIS

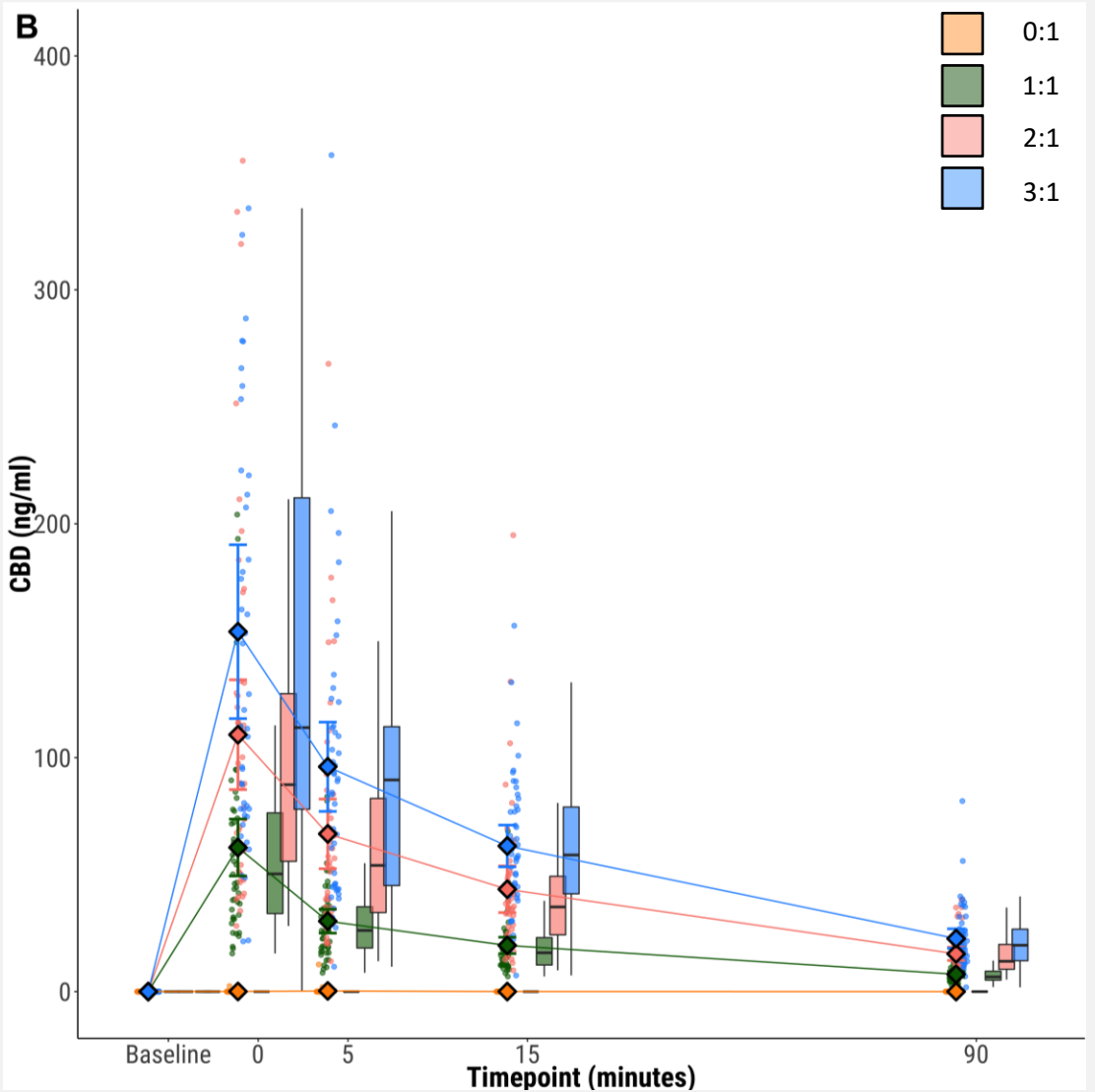
Paired t-test
Change from sober to intoxicated

Linear mixed models
CBD effect

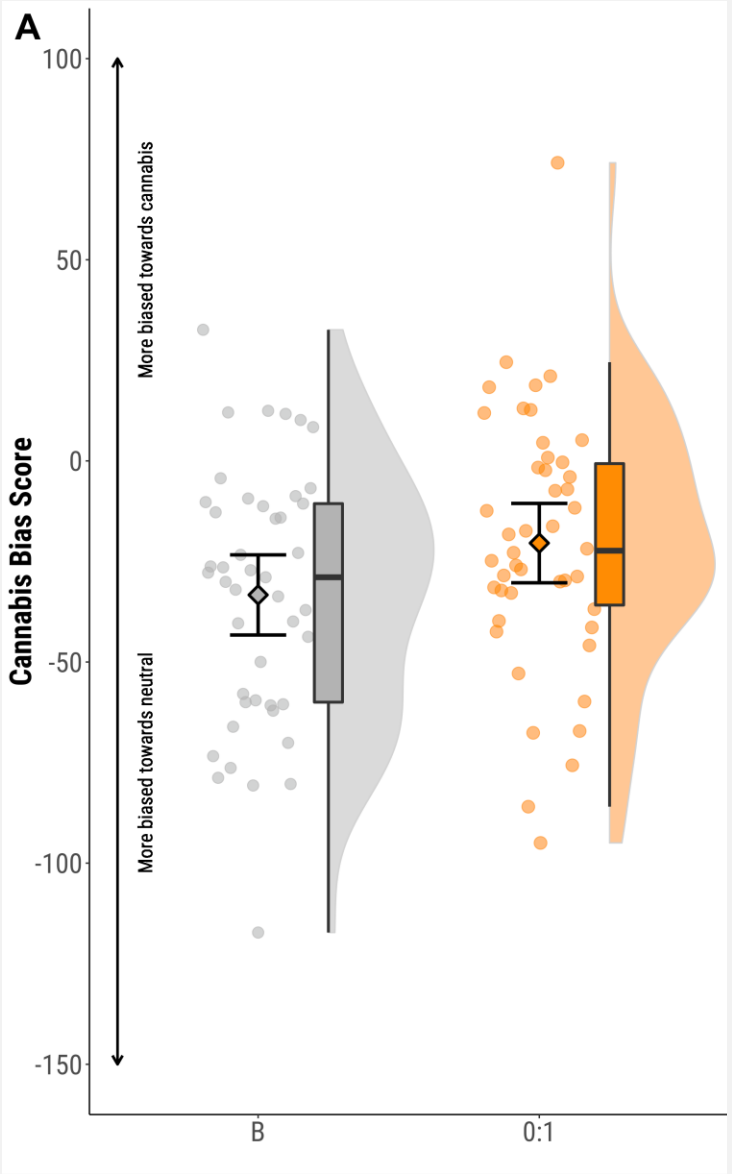


PHARMACOKINETICS

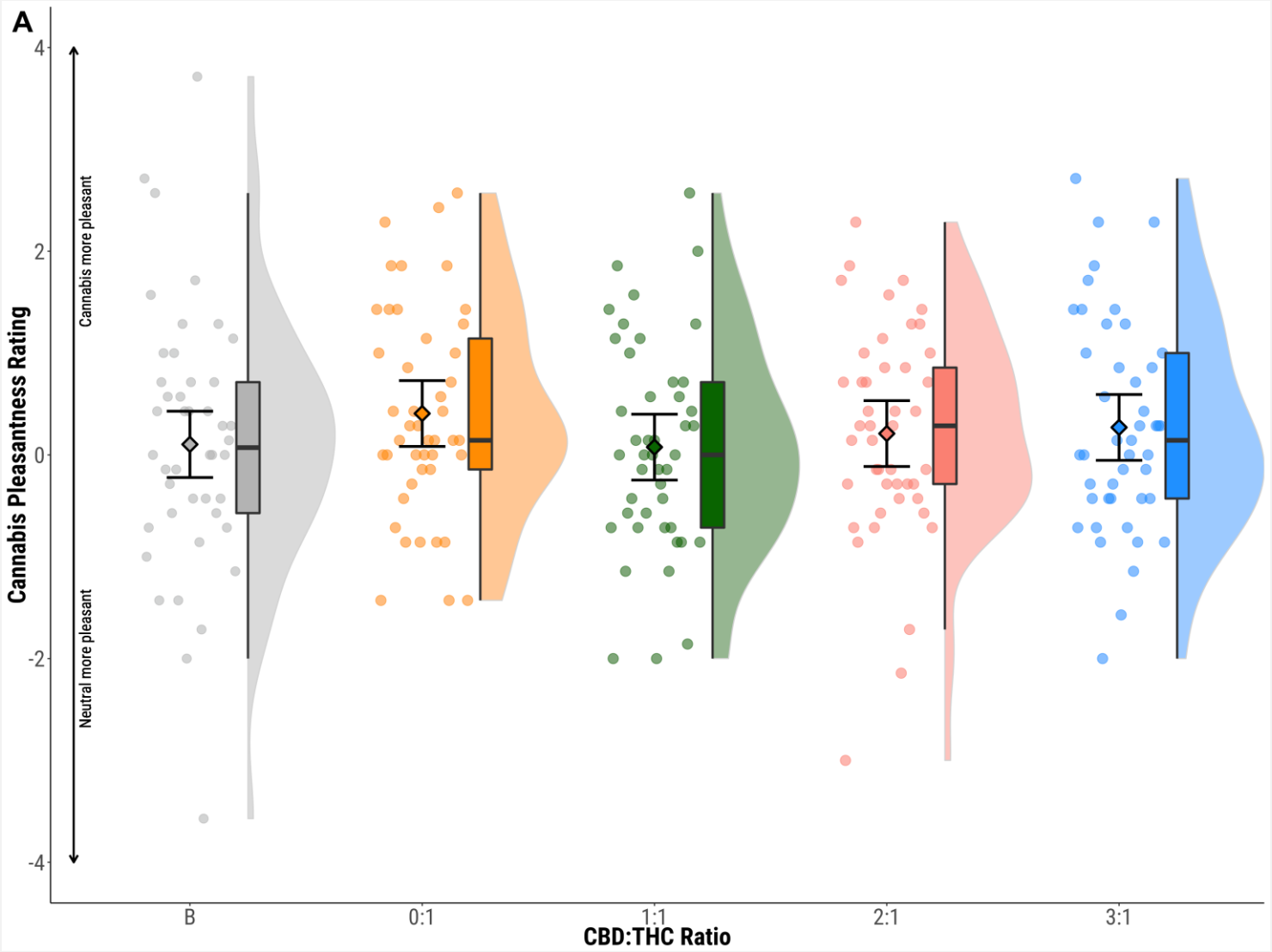




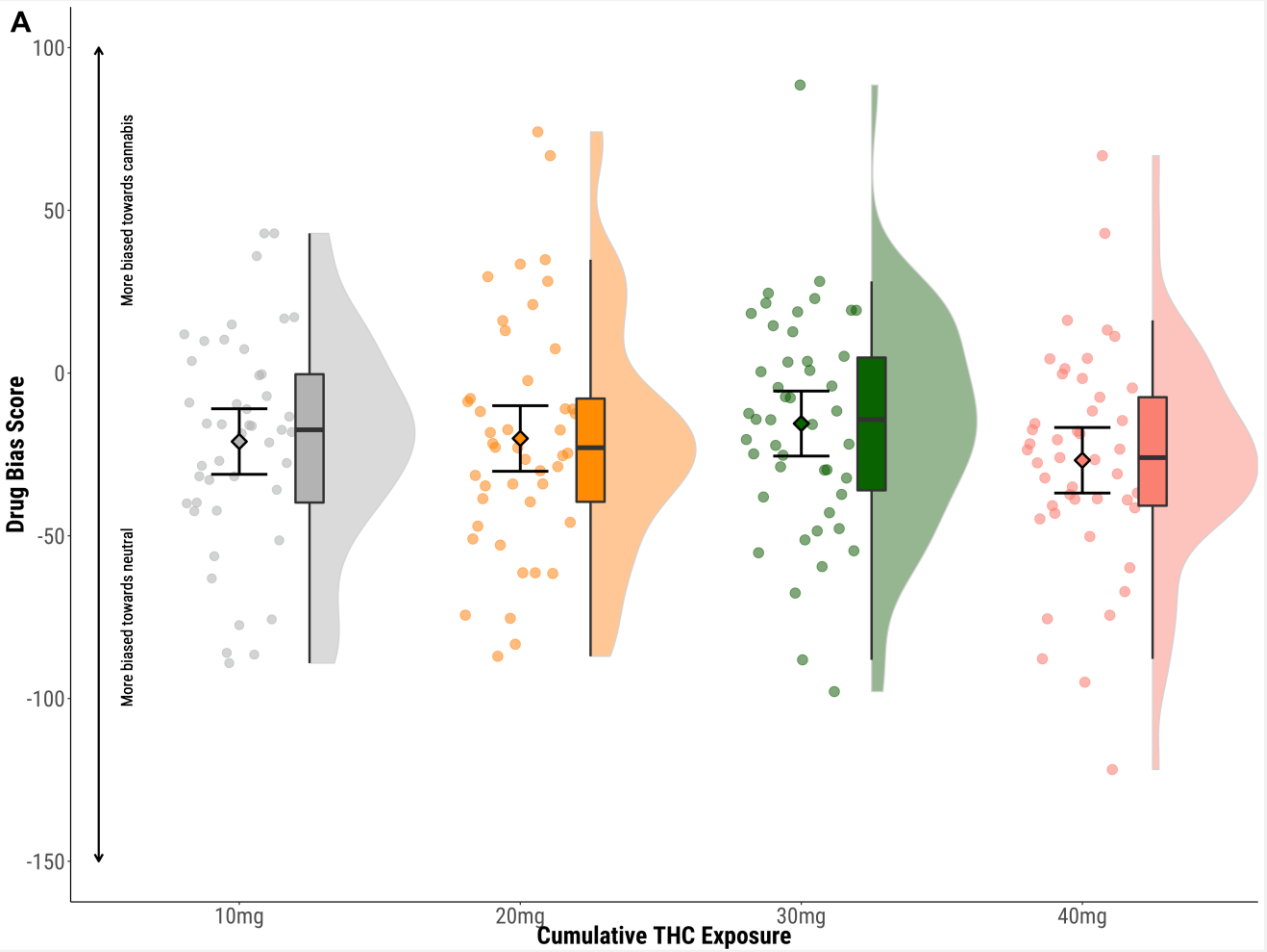
NO EFFECT OF CBD ON IMPLICIT WANTING

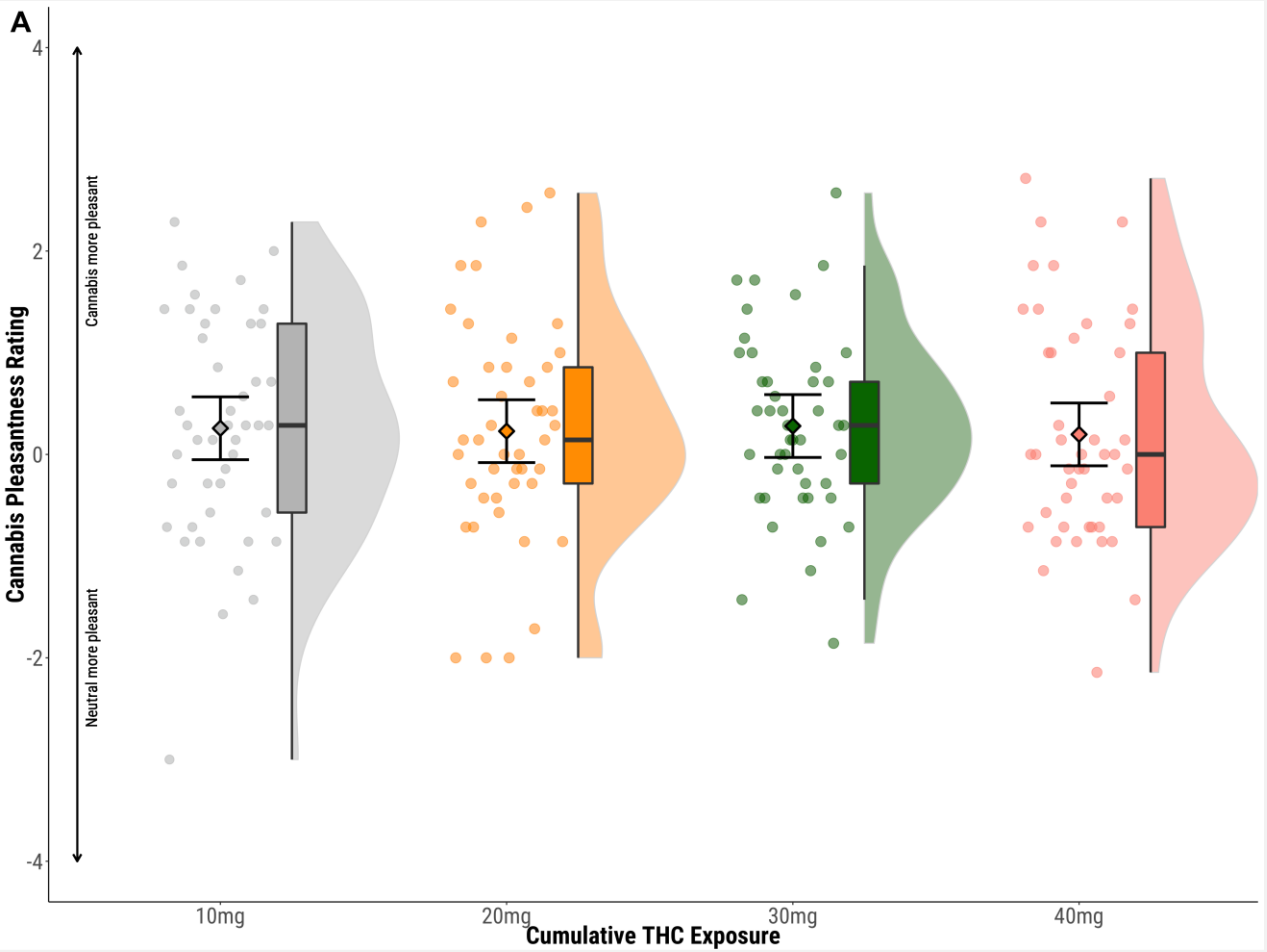


NO EFFECT OF THC OR CBD ON EXPLICIT LIKING

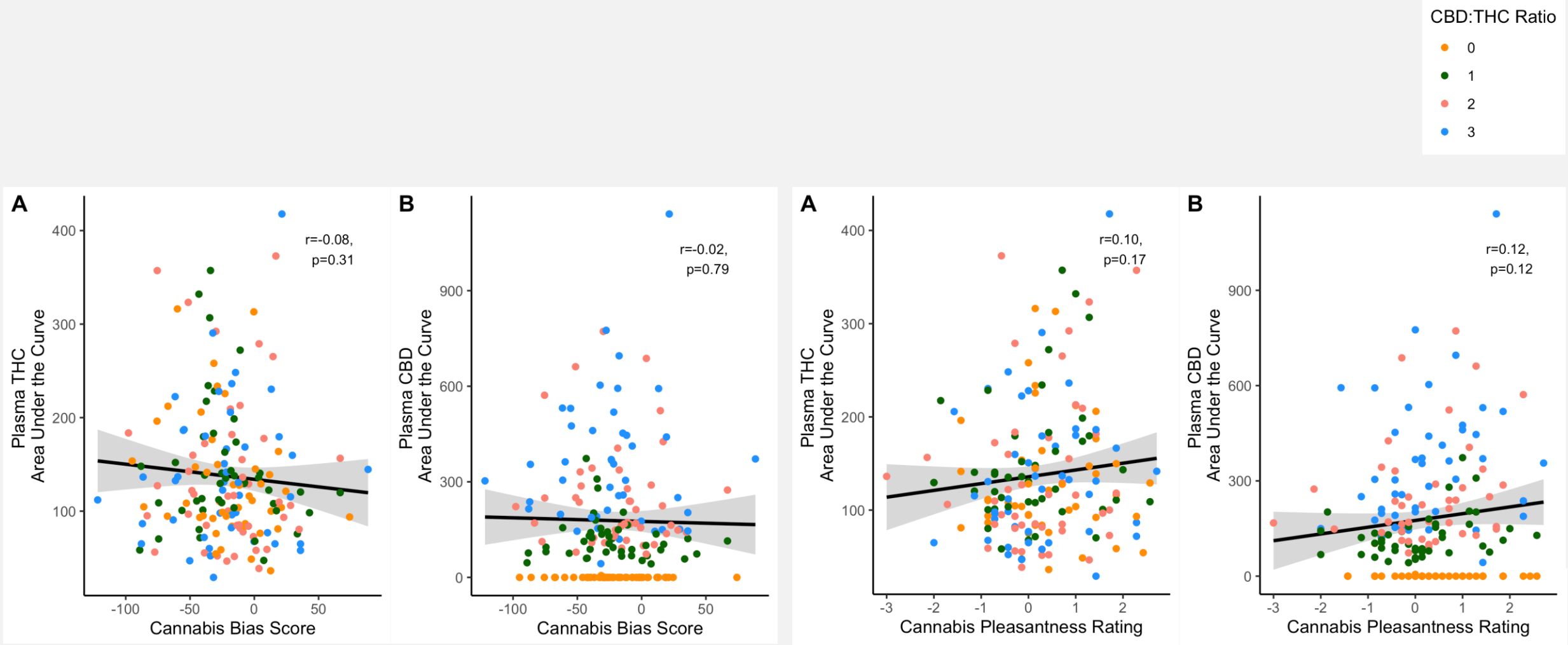


NO EFFECT OF CUMULATIVE THC EXPOSURE





NO RELATIONSHIP BETWEEN PLASMA THC OR CBD ON IMPLICIT WANTING OR EXPLICIT LIKING



DISCUSSION

- **THC** acutely increases implicit wanting of cannabis in infrequent users without noticeable changes in explicit liking
- At most common **CBD**:**THC** ratios, no evidence that **CBD** protects against this
- No evidence that cumulative **THC** exposure increases bias
- Acute effects versus chronic effects
- Reducing **THC** dose

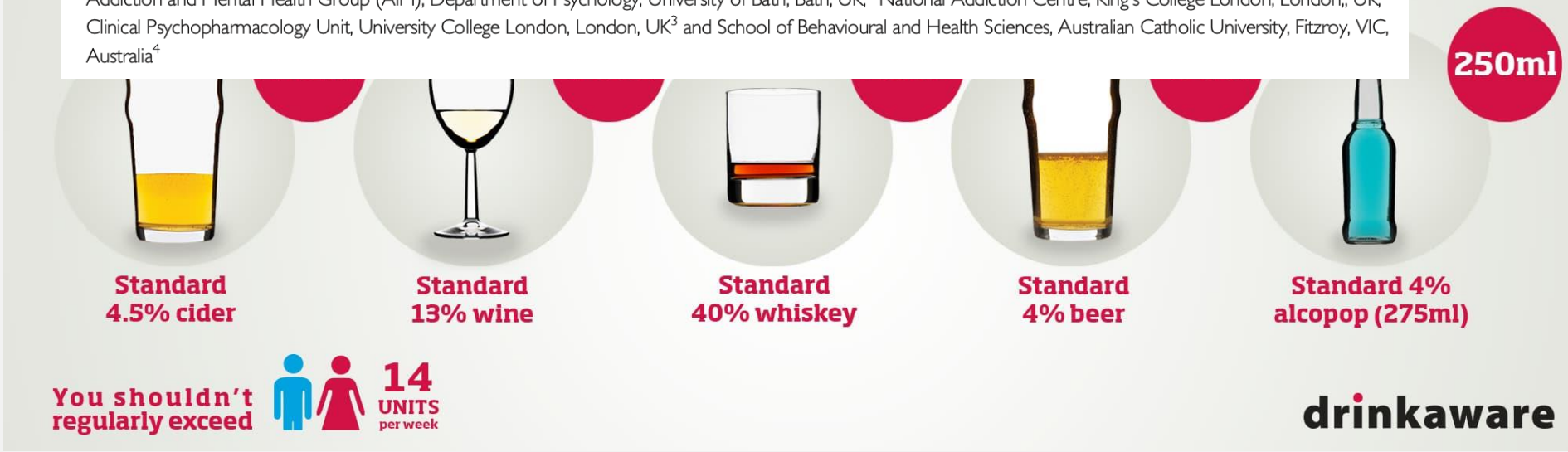
ADDICTION OPINION AND DEBATE

doi:10.1111/add.14842

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

Tom P. Freeman[1,2,3] **& Valentina Lorenzetti**[4]

Addiction and Mental Health Group (AIM), Department of Psychology, University of Bath, Bath, UK,[1] National Addiction Centre, King's College London, London,, UK,[2] Clinical Psychopharmacology Unit, University College London, London, UK[3] and School of Behavioural and Health Sciences, Australian Catholic University, Fitzroy, VIC, Australia[4]



SUMMARY

- Attentional bias is associated with cannabis dependence
- **THC** acutely increases implicit bias towards cannabis stimuli in infrequent users
- Co-administered **CBD** may not be preventive of addiction
- Infrequent use alone may not increase bias further
- One way to better inform use is through a standard **THC** unit

MAIN STUDY FINDINGS

Associations of alcohol and substance use with mental health

KNOWLEDGE MARKET 2 (K2)

IN PROGRAMME

Friday, 25 November, 2022 - 10:50 to 12:20

View presentations

Chair

Goodwin Laura

Senior Lecturer In Mental Health, Lancaster University, United Kingdom

Oral presentation

4. Can we make cannabis safer? An experimental study of four CBD: THC rations in healthy volunteers

10:50 to 12:20 Knowledge market 2 (K2) Amir Englund

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 Oliver[2], Edward Chesney[2], Lucy Chester[2], Jack Wilson[3], Simina Sovi[2], Andrea De Micheli[2], John Hodsoll[4], Paolo Fusar-Poli[2,5], John Strang[1,6], Robin M. Murray[2], Tom P. Freeman[7] and Philip McGuire[2]

ACKNOWLEDGEMENTS

eCBD

Amir Englund
Ed Chesney
Jack Wilson
Lucy Chester
Simina Sovi
Stina Wigroth
John Hodsoll
John Strang
Robin Murray
Tom Freeman
Paolo Fusar-Poli
Philip McGuire

June 2019 – Data collection complete!

MRC Medical Research Council

Institute of Psychiatry at The Maudsley

KING'S College LONDON

TEAM eCBD KCL 2016

QUESTIONS?