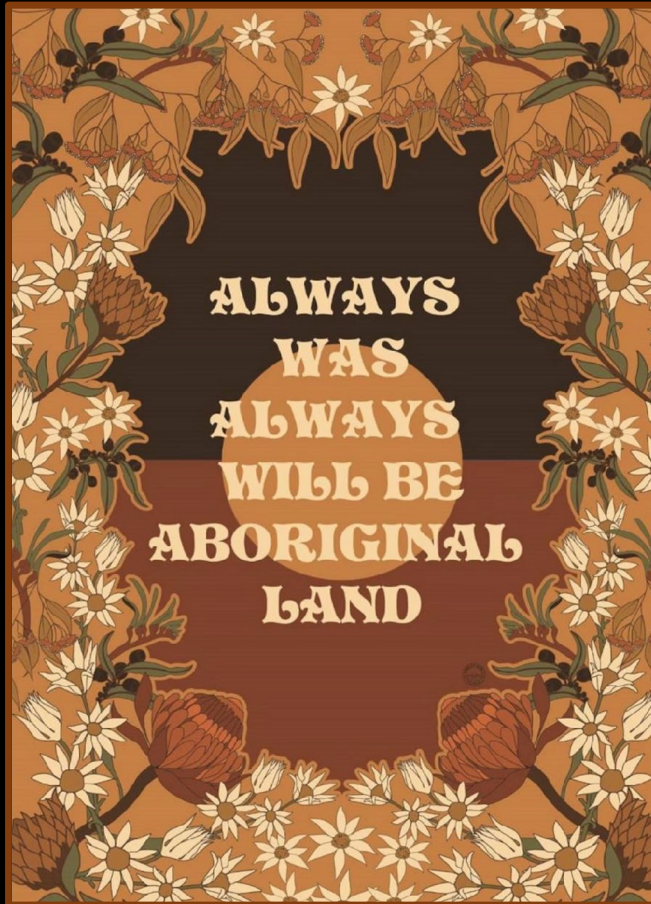


# Methamphetamine Use Disorder in Women

**Presented by**  
**A/ Prof Shalini Arunogiri,**  
**Clinical Director, Turning Point**

## Disclaimers & Acknowledgements

- Work discussed today is supported by a NCCRED Seed Funding (Round 3) Grant
- Presenting our work on behalf of our investigator group & our research team  
*S. Arunogiri, S. Catchlove, E. Bove, L. van Heerden, T. Grainger, V. Manning, G. Bedi, R. McKetin, D. Lubman*



Attribution @harleyanddj

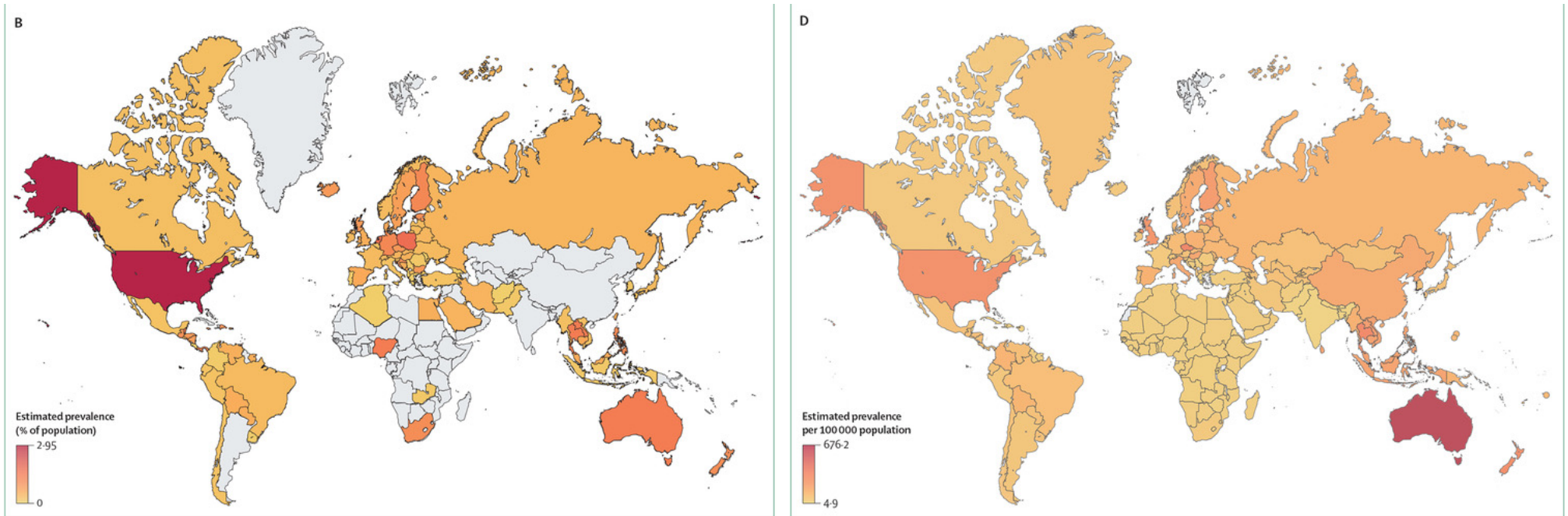
**The work I am presenting was conducted on the lands of the Wurundjeri people of the Kulin nation.**

**I wish to acknowledge them as the Traditional Owners, and to pay my respects to their Elders, past and present, and to extend that respect to Aboriginal and Torres Strait Islander peoples here today.**

**This land was never ceded.**

## Methamphetamine Use Disorder

# Methamphetamine use internationally



Prevalence of use

Prevalence of dependence (age-standardized)

# Methamphetamine use in Australia

The death rate involving meth/ amphetamine was **4 times higher** in 2018 than 1999.<sup>[1]</sup>

The estimated **social costs** of methamphetamine use in 2013–14 was **over \$5 billion**.<sup>[8]</sup>



In 2019, 49% of Australians associated the use of meth/ amphetamine with a drug problem.<sup>[4]</sup>

**Methamphetamine** accounted for **7.5% of all drug-related hospitalisations** in 2021–22 (10,100 hospitalisations), down from 8.2% (12,400) in 2020–21. <sup>[9]</sup>



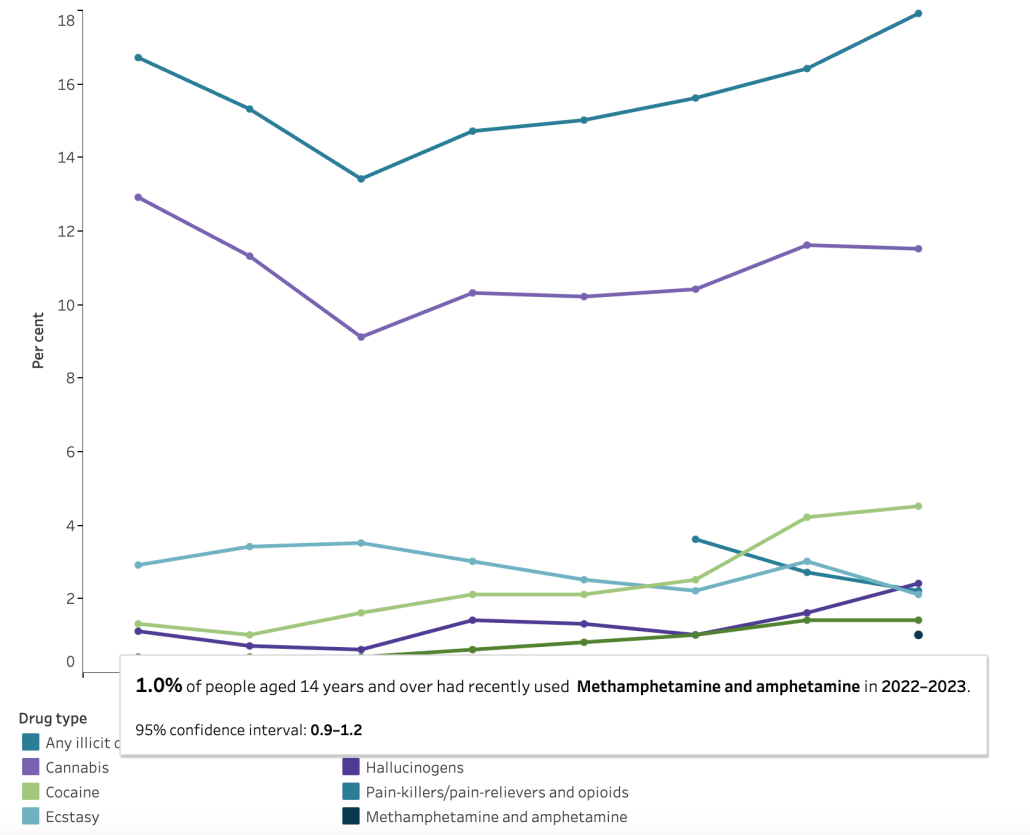
2019 national wastewater data analysis indicates that **methamphetamine remains the highest consumed illicit drug** monitored by the program.<sup>[3]</sup>



Amphetamines were the 2nd most common principal drug of concern (24% of treatment episodes)

# Methamphetamine past 12 month use in Australia

Figure 1: Proportion of people aged 14 and over who recently used selected illicit drugs, 2001 to 2022–2023



# Methamphetamine use in Australia

**Table 1: Summary of methamphetamine and amphetamine use among people aged 14 and over in 2022–2023**

<b>Lifetime use</b>	7.5% (1.6 million people)
<b>Recent use<sup>1</sup></b>	1.0% (200,000 people)
<b>Opportunity to use in the last 12 months<sup>2</sup></b>	3.8%
<b>Age group most likely to use</b>	20–29 and 40–49 (1.7%)
<b>Average age of first use</b>	22.2 years

**Table 2: Summary of methamphetamine and amphetamine use among people who had used it in the previous 12 months in 2022–2023**

<b>Used monthly or more often</b>	37%
<b>Main form used</b>	Crystal/ice: 43%
<b>Diagnosed or treated for a mental health condition</b>	44%
<b>High and Very high psychological distress</b>	44%

## Women with MAUD

### Why focus on this?

- Clinically important sex differences
  - *Methamphetamine pharmacokinetics*
  - *Drug-induced behavioural changes*
  - *Cognitive processing*
  - *Structural brain changes*
  - *Effects on neurotransmitter systems*
  - *Telescoping phenomenon*
- More consistent behavioural effects
- Paucity of research despite increased treatment-seeking

## Why oxytocin?

- Naturally occurring neuropeptide
- Associated with trust, sexual arousal and relationship-building
- Syntocinon- IV in labour/delivery
- Research into impacts on social cognition and social behaviour



News—  
**'The love hormone' – a new treatment for addiction?**

# Oxytocin & Substance Use Disorder

## Background

- Modulates the hypothalamic-pituitary-adrenal (HPA) axis, reducing the secretion of cortisol- stress response
- OT modulates neuro-behavioural effects of alcohol and other drugs
- OT interaction with stress + addiction circuitry, neurotransmitter systems
- Administering OT -> reduction in self-administration; withdrawal symptoms; cue-reactivity and cue- and stress- induced craving
- Promotion of social bonding and trust

**So, OT as a treatment for addiction?**

# Oxytocin & Stimulant/ MA Use Disorder

Stimulant Use Disorder in opioid treatment setting – RCT, **Male veterans** in an opioid treatment program

- Increased treatment attendance
- No effect on craving

MA use disorder – RCT, **MSM** group

- Enhancing efficacy of psychosocial therapies
- Enhancing group bonding

frontiers  
in PsychiatryORIGINAL RESEARCH  
published: 17 January 2022  
doi: 10.3389/fpsyg.2021.654987

## Intranasal Oxytocin for Stimulant Use Disorder Among Male Veterans Enrolled in an Opioid Treatment Program: A Randomized Controlled Trial

Christopher S. Stauffer<sup>1,2,3\*</sup>, Salem Samson<sup>4</sup>, Alex Hickok<sup>1,2</sup>, William F. Hoffman<sup>1,2</sup> and Steven L. Batki<sup>5</sup><sup>1</sup> Department of Mental Health, VA Portland Health Care System, Portland, OR, United States, <sup>2</sup> Social Neuroscience and Psychopharmacology Lab, Department of Psychiatry, Oregon Health and Science University, Portland, OR, United States, <sup>3</sup> Department of Psychiatry and Behavioral Sciences, San Francisco School of Medicine and San Francisco VA Health Care System, University of California, San Francisco, San Francisco, CA, United States, <sup>4</sup> School of Nursing, Massachusetts General Hospital (MGH) Institute of Health Professions, Boston, MA, United States

## OPEN ACCESS

Edited by:  
Justin Strickland,  
Johns Hopkins Medicine,  
United States

The increasing prevalence of illicit stimulant use among those in opioid treatment programs poses a significant risk to public health, stimulant users have the lowest rate of retention and poorest outcomes among those in addiction treatment, and current treatment options are limited. Oxytocin administration has shown promise

Stauffer et al. *Trials* (2019) 20:145  
https://doi.org/10.1186/s13063-019-3225-7

Trials

## STUDY PROTOCOL

## Open Access



## Oxytocin-enhanced motivational interviewing group therapy for methamphetamine use disorder in men who have sex with men: study protocol for a randomized controlled trial

Christopher S. Stauffer<sup>1,2\*</sup>, Jenna M. Moschetto<sup>3</sup>, Scott M. McKernan<sup>3</sup>, Elaine Hsiang<sup>4</sup>, Brian Borsari<sup>1</sup> and Joshua D. Woolley<sup>1</sup>

Journal of Substance Abuse Treatment 116 (2020) 108059

Contents lists available at ScienceDirect



Journal of Substance Abuse Treatment

journal homepage: [www.elsevier.com/locate/jsat](http://www.elsevier.com/locate/jsat)

## Oxytocin-enhanced group therapy for methamphetamine use disorder: Randomized controlled trial

Christopher S. Stauffer<sup>a,b,d,\*</sup>, Jenna M. Moschetto<sup>a,b</sup>, Scott McKernan<sup>a,b</sup>, Nathan Meinzer<sup>c</sup>, Chavy Chiang<sup>d</sup>, Rachel Rapier<sup>d</sup>, Elaine Hsiang<sup>d</sup>, Jerika Norona<sup>d</sup>, Brian Borsari<sup>a,b</sup>, Joshua D. Woolley<sup>a,b</sup><sup>a</sup> San Francisco Veterans Affairs Medical Center, United States of America<sup>b</sup> University of California, San Francisco, United States of America<sup>c</sup> Solano Consulting, LLC, United States of America<sup>d</sup> Portland Veterans Affairs Medical Center & Oregon Health and Science University, United States of America


## ARTICLE INFO

Keywords:  
Psychotherapy, group  
Oxytocin

## ABSTRACT

**Background:** Methamphetamine (METH) use is a public health crisis that disproportionately affects men who have sex with men (MSM). There are currently no FDA-approved pharmacological interventions to treat methamphetamine use disorder (METH-UD). METH-UD is associated with elevated rates of HIV, hepatitis C, andMONASH  
University

Eastern Health



# **MOXY: An open label pilot study of oxytocin for methamphetamine withdrawal in women**

**Presented by  
Dr Sarah Catchlove,  
Research Fellow, Turning Point**

## mOXY: An open label pilot study of intranasal oxytocin for methamphetamine withdrawal in women

- 7-day residential inpatient withdrawal admission at Wellington House in Box Hill, Victoria
- Self-administration of oxytocin intranasally twice per day
- Questionnaires completed daily but otherwise withdrawal admission was as per standard of care



# Aims

## Primary objective:

To assess feasibility of the protocol

## Secondary objectives:

- Length of stay up to 7 days in the inpatient unit
- Withdrawal symptom severity
- Relapse rates
- Treatment engagement at 1-month post discharge
- Safety and tolerability of intranasal oxytocin

# Eligibility

- Inclusion:
  - Adult females (aged  $\geq 18$  to  $\leq 65$  years)
  - DSM-5 criteria for moderate to severe MAUD
  - Able to comply with study protocol
  - Able to provide informed consent to participate
- Exclusion:
  - Non-English speaking
  - Lactating, pregnant, or not willing to use contraception
  - Other SUDs (excl. nicotine, cannabis)
  - Unstable medical conditions
  - Current participation in another trial



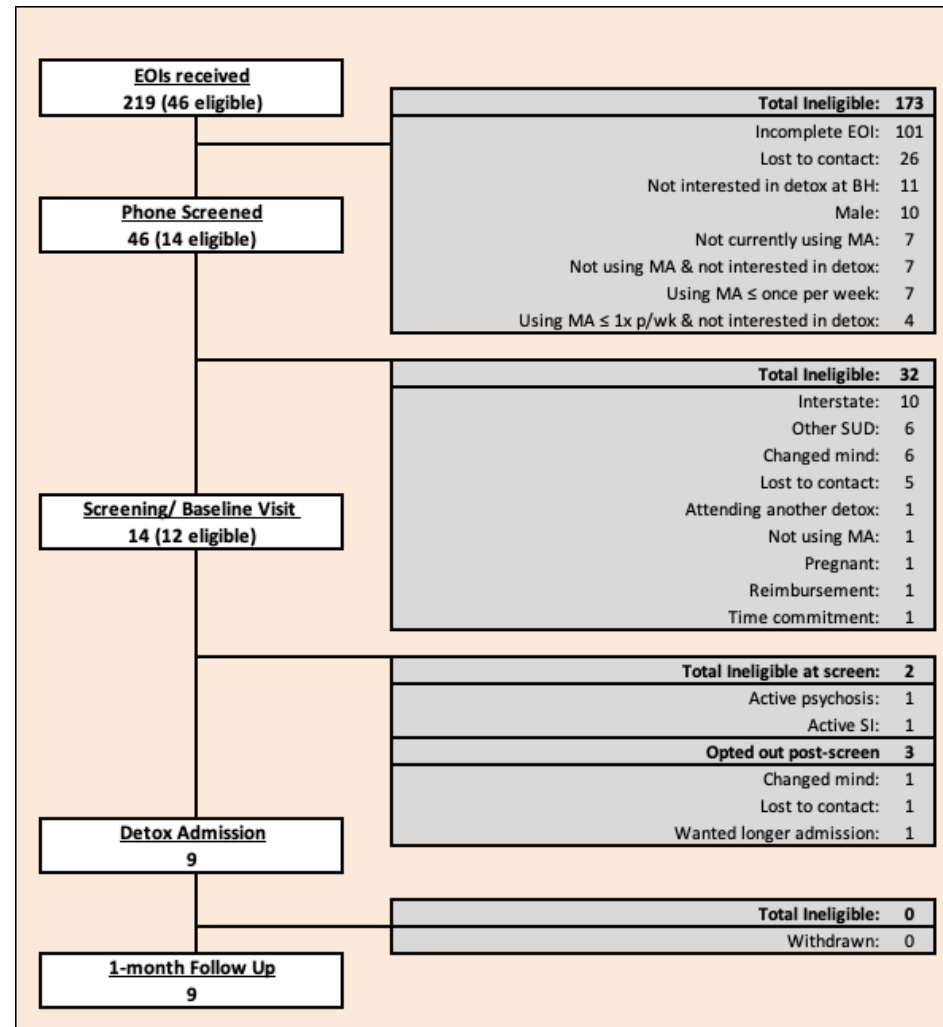
# Methodology

- Pre-screen telephone interview
- Screening assessment:
  - Written informed consent
  - Full eligibility assessment with trial physician
  - Comp assessment
- Baseline assessment:
  - Battery of surveys and computer tasks
  - Within 2 weeks of admission
- 7-day residential admission to WH
- 1-month follow-up assessment
  - Battery of surveys and computer tasks



**mOXY Protocol Paper**

# Recruitment



# Demographics

Enrolled participant demographics (n=9)		
<b>Age</b>	Mean +/- SD	37.7 +/- 7.4
	Min - Max	29-52
<b>Education (%)</b>	< Year 10	33
	High School	11
	Trade/Tech/Vocational Training	33
	University Degree	22
<b>Employment</b>	Casual	11.1
	Full Time	44.4
	Self-employed	22.2
	Unemployed	22.2
<b>Children (%)</b>	Yes	44.4
	No	55.5
<b>Living Arrangement (%)</b>	Living with friends	11.1
	Living with family	66.7
	Living alone	22.2
<b>Methamphetamine Use</b> 25.4 +/- 2.8	Mean +/- SD (days use/28)	25.4 +/- 2.8
	Min - Max (years)	3-20
<b>Previous Treatment (%)</b>	Yes	55.5
<b>Other Drug Use (%)</b>	Yes	33.3

# Results Feasibility

## Primary Objective

- Pilot data indicates that the protocol was feasible
- 14 screening visits completed, 3 opted out post-screen, 9 received study drug = 82% screen-to-drug administration
- Screen fail to drug administration ratio > 20%
- 100% of participants completed 1-month follow-up



# Results

## Length of stay (LoS)

### Secondary Outcome

- Mean LoS in inpatient admission =  $5.44 \pm 1.33$  days
- 5/9 (55.6%) engaged in their post-discharge plan
- MAUD have high rates of unplanned discharge:
  - Average of 5.5 days at TP
  - Median 5 days in MATES sample (n = 112)

**Addiction**  
RESEARCH REPORT doi:10.1111/j.1360-0443.2012.03933.x

#### Evaluating the impact of community-based treatment options on methamphetamine use: findings from the Methamphetamine Treatment Evaluation Study (MATES)

Rebecca McKetin<sup>1,2</sup>, Jake M. Najman<sup>3</sup>, Amanda L. Baker<sup>4</sup>, Dan I. Lubman<sup>5</sup>, Sharon Dawe<sup>6</sup>, Robert Ali<sup>7</sup>, Nicole K. Lee<sup>8,9</sup>, Richard P. Mattick<sup>2</sup> & Abdullah Mamun<sup>3</sup>

Centre for Research on Ageing, Health and Wellbeing, The Australian National University, Canberra, Australia; <sup>1</sup> National Drug and Alcohol Research Centre, University of New South Wales, Sydney, Australia; <sup>2</sup> Queensland Alcohol and Drug Research and Education Centre, University of Queensland, Brisbane, Australia; <sup>3</sup> Centre for Brain and Mental Health Research, University of Newcastle, Newcastle, Australia; <sup>4</sup> Turning Point Alcohol and Drug Centre, Eastern Health and Monash University, Melbourne, Australia; <sup>5</sup> School of Psychology, Griffith University, Brisbane, Australia; <sup>6</sup> University of Adelaide, Adelaide, Australia; <sup>7</sup> The National Centre for Education and Training in Addiction, Flinders University, Adelaide, Australia; <sup>8</sup> and National Drug Research Institute, Curtin University, Perth, Australia

#### ABSTRACT

**Aims** To evaluate the impact of community-based drug treatment on methamphetamine use using inverse probability of treatment-weighted (IPTW) estimators to derive treatment effects. **Design** A longitudinal prospective cohort

# Results

## Relapse Rates

### Secondary outcome

Mean days of use at:

- BL: 25.4 days out of last 28
- F/U: 19.33 days out of last 28
- 7/9 relapsed = 77.78%;
  - 5 no change,
  - 2 abstinent, and
  - 2 reduced use (4.5 days less on average)

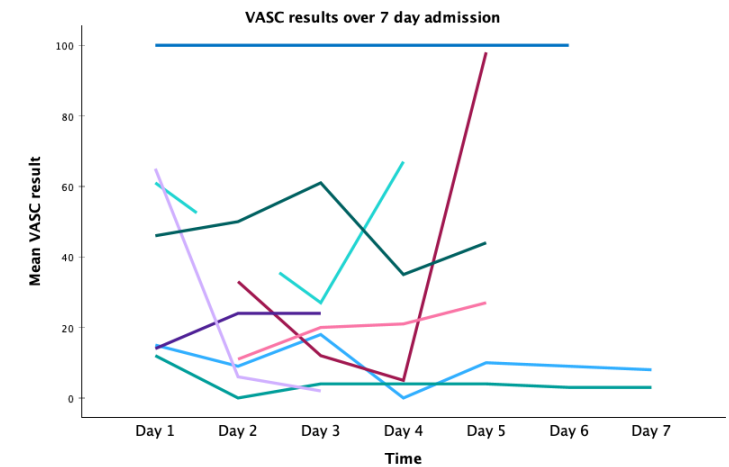
# Results

## Withdrawal Symptoms and Craving

### Secondary Outcomes

Amphetamine Withdrawal Questionnaire (AWQ):  
median 20.5, mean 21.91 (SD 8.89, range 8-40) over the admission dates, indicating moderate withdrawal

Visual Analogue Scale Craving (VASc):  
median 20.5, mean 34.57 (SD 34.74, range 0-100)



# Safety & Tolerability

## Secondary Outcome

### AEs and SAEs

- No SAEs reported
- 19 AEs reported:  
15 mild, 1 moderate, 3 severe

Headache, body aches, back & abdominal pain most common (5/9 participants)

- Further investigation into abdominal pain (2/5 participants)
- 3/9 participants did not report any AEs

	Count
<b>Other</b>	<b>9</b>
Blood on tissue on blowing nose	1
Constipation	1
Diplopia	1
Dysdiadochokinesis	1
Feeling faint w/o loss of consciousness	1
Feeling foggy/shaky/drained	1
Infected facial piercing (lip)	1
Light-headed/dizziness	1
Pins & needles and numbness of right foot	1
<b>Pain</b>	<b>6</b>
Abdominal cramping w/o menses	1
Body aches	1
Headache	2
Period/abdominal cramps	1
Right lumbar back pain	1
<b>Psychological</b>	<b>4</b>
Bad dreams	1
Depressed mood	1
Night terror	1
Sleep paralysis	1
<b>Grand Total</b>	<b>19</b>

# Next steps Treatments for MAUD

- Oxytocin is a safe a feasible treatment for MAUD
- Novel inpatient withdrawal treatments
  - Lisdexamfetamine – OLAM study recruiting soon

Thanks for your attention!

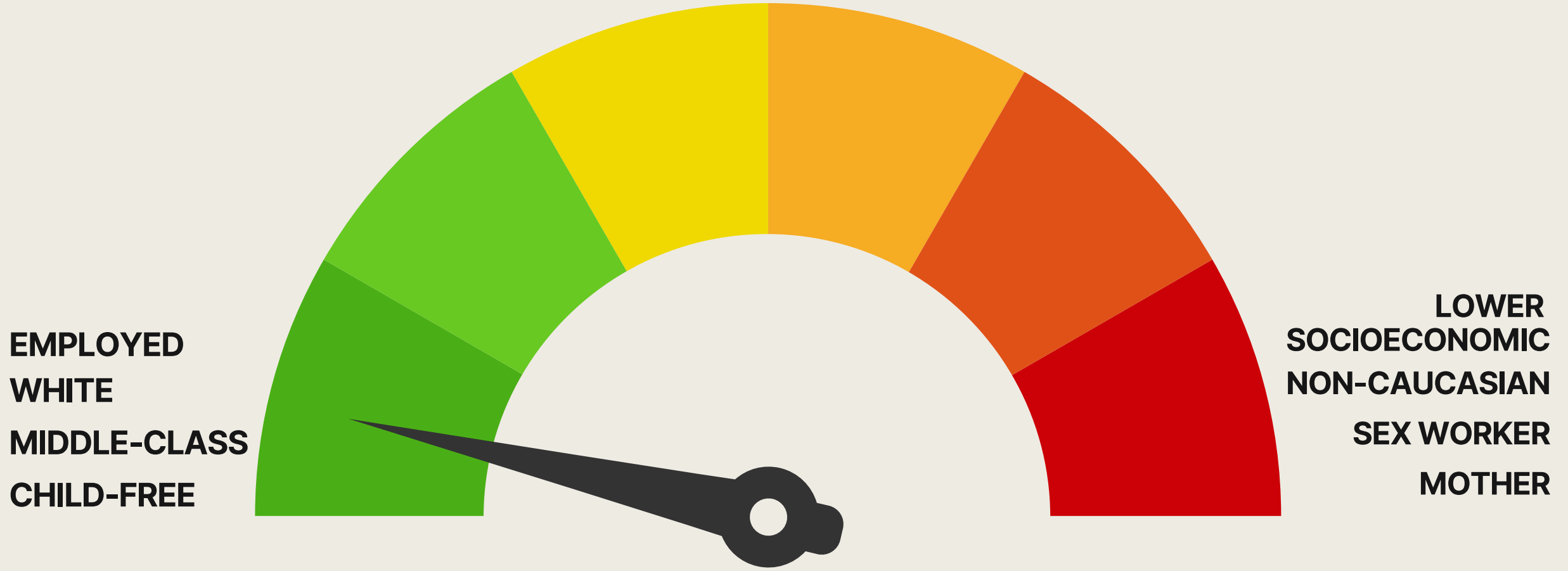
PRESENTED BY  
JENNY VALENTISH

CRACKS IN THE ICE WEBINAR

# BARRIERS TO TREATMENT



# STIGMA BAROMETER



# STIGMA BAROMETER



# STIGMA BAROMETER

PSYCHEDELICS  
ALCOHOL  
CANNABIS



METH  
HEROIN  
INJECTING



**NBC NEWS**

Psilocybin use is on the rise as public perception changes, report shows

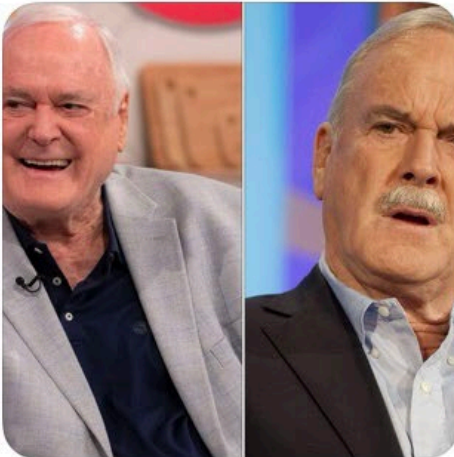
1w ago · Kaitlin Sullivan



**BUSINESS INSIDER**

Journeymen Collective guides CEOs in luxury psychedelic mushroom trips

Apple News+



Daily Mail

John Cleese reveals he 'took LSD aged 65' to know 'what it was all about'

1d ago



THE TIMES  
THE SUNDAY TIMES

Patrick Cox: rehab and psychedelics saved my life

Apple News+



Irish Examiner

Oliver Davis: Ireland may be in the midst of a psychedelic renaissance

2w ago



Real life

JESSICA  
FOGARTY

JESSICA  
SHORT

JASMINE  
BOURNE

# Ice queens of Wangaratta EXPOSED!

These young women turned the sleepy town of Wangaratta into the drug den of Victoria.

One of Fogarty's closest allies was another dealer, Jessica "Shorty" Short. Short was 10 years old when she learned the woman she thought was her biological mother was actually her stepmother. Her biological mum had died after leaving her, and the news traumatised Short.

## DISCOUNT SCHEME

She was bullied by other children, began self-harming and at 10 got hooked on drugs. With a \$3500-a-day ice habit, she too dealt the evil drug to pay for her habit. Recognising a kindred spirit, Fogarty went into partnership with Short.

The pair sold up to \$10 million worth of drugs between them. Short started her own discount scheme or street-level dealers called the "toying club", writing a drug-dealing master plan entitled "World Domination" and even plotting a trade to let in some of the most

Home > News

News

## Named, shamed and pictured

28/07/2020

👍 Like 1



PHIL JARRATT asks why some drink-drivers are photographically shamed in the media and not others.

But what is relatively new is the new and selective level of shaming employed by some digital news platforms through “borrowing” photos from social media accounts so they can shame by sight. In this, the selection process seems to be more related to youth and attractiveness than to the severity of the crime. Put it this way: if you’re a middle-aged businessman who blew a biggie, it seems you’re less likely to see your wrinkled prune on display than, say, a wild young thing or a young mum behaving badly. And, of course, if you don’t have a social media profile, there will most likely be no photo for the media to “borrow”.

# STIGMA FROM HEALTH PROFESSIONALS

AJGP



Volume 50, Issue 7, July 2021

## Qualitative

understandings of  
access to primary care  
services for consumers  
who use  
methamphetamine

Bernadette Ward Riki Lane Brendan Quinn  
Grant Russell



National Library of Medicine  
*National Center for Biotechnology Information*

## Professional stigma towards clients with methamphetamine use disorder – a qualitative study

[Ali Makki](#)<sup>a,CONTACT</sup>, [Carolyn Day](#)<sup>b</sup>, [Betty B Chaar](#)<sup>c</sup>



 The Sun

Mum, 49, was so drunk while driving ...

**Angela Jones was attempting to pick up her poorly child from school when police pulled her over** Credit: Facebook

---

Her defence lawyer, Andrew Main, told the court that it was Jones' day off and her autistic son was sick with a migraine.

He said she would now resign from her job as she couldn't "face the shame".

# Children murdered in SA went hungry as slain mother put ice habit ahead of her family

Stacey Lee

Updated 2 June 2016



Two children murdered north of Adelaide this week were often left to go hungry while their mother spent all of her money on her daily ice habit, secret documents reveal.

# *Steady* NERVES

HELLO! MARY  
WHAT TIME WILL —  
SAY WHAT'S THAT NOISE  
HOW CAN YOU STAND IT?



OH! THATS THE  
CHILDREN PLAYING —  
SINCE I HAVE BEEN  
TAKING *NERVINE*  
NOTHING BOTHERS ME



When you are rest-  
less, sleepless,  
nervous, try

## **Dr. Miles Nervine**

Your money back if  
it fails to relieve  
you. At your drug  
store. Small package  
25 cents. Large pack-  
age \$1.00.

# DR. MILES' NERVINE

LIQUID AND  
EFFERVESCENT TABLETS





# ONE SIZE DOES NOT FIT ALL

Of women with addiction issues:

74% reported sexual abuse,

52% reported physical abuse,

72% reported emotional abuse

**DR STEPHANIE COVINGTON**

43% of Australian women have experienced mental illness at some time, with more women than men experiencing symptoms in the previous twelve-month period

**ASSOCIATE PROFESSOR MARIA DUGGAN**  
**'INVESTING IN WOMEN'S MENTAL HEALTH'**