New and emerging psychoactive substances

Webinar

Presented by
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Facilitated by
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A/Prof Katherine Mills

1 Edith Cowan University
2 The Matilda Centre for Research in Mental Health and Substance Use, University of Sydney

Before we get started...

Questions/comments “Q&A” “Chat”

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Remember: Complete CPD assessment at conclusion of webinar
Objectives

1. What are Novel Psychoactive Substances (NPS)?
2. How prevalent is NPS use in Australia?
   - Synthetic Cannabis
   - Unintentional Use
3. Strategies for working with people may be using NPS (possibly unwittingly)
What’s In A Name?

novel psychoactive substances

party pills

herbal highs

synthetics

legal highs

emerging psychoactive substances

research chemicals
The Vortex of Doom (Caldicott, 2016)

New compounds developed that fall outside the current law

The law finally catches up...

The “iron law” of prohibition

NPS Use in Australia?

[Sketch of Australia with a skull and crossbones]
Number of participants reporting NPS use:

Surveys: EDRS 2018

- Mephedrone
- MPD
- α-PVP
- N-bome
- Mescaline
- bk-MDMA
- Synthetic Cannabis
- Herbal High
- 2C-X
- DMT
Synthetic Cannabis (EDRS)

Abstract

Synthetic cannabinoid receptor agonists (SCRAs) are a dynamic class of new psychoactive substances (NPS), with novel chemotypes emerging each year. Following the putative detection of 5F-CUMYL-7ACA in Australia in 2016, the scaffold hopping SCRs 5F-CUMYL-PICA, 5F-CUMYL-PINACA, and 5F-CUMYL-7AAPCA were synthesized and characterized by nuclear magnetic resonance (NMR) spectroscopy, gas chromatography/mass spectrometry (GC-MS), and liquid chromatography/mass spectrometry (LC-MS).
Mix of 25C-NBOMe, 4-FA and MDMA sold as MDMA in Melbourne, Australia

by Tronica
Published on 03-02-2017 07:50

On the weekend 15-16 January 2017, there was a spate of poisonings, hospitalisations and deaths that have been associated a batch of capsules that were reportedly sold as MDMA or Ecstasy. Punters at Revolver nightclub and other clubs on Melbourneâ€™s Chapel Street were affected.

The contents of these caps appeared damp, more like a brown sugar consistency than crystals or powder.

Wastewater Analysis + Forensic Toxicology

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**Australian NPS Use**

- **‘Legal Highs’**
- **Unintentional Use**
- **RC’s**
**Synthetic Cannabinoid Agonists**

2005: Spice emerged in UK
2009: Chemical in Spice identified

![Chemical Structures]

**Kronic**

2011: Kronic emerged as a new drug in Australia
Produced in New Zealand
**First Legislative Action**

WA government banned 7 synthetic cannabinoid agonists in June 2011:

- JWH-018
- JWH-073
- JWH-122
- JWH-200
- JWH-250
- CP 47,497
- The C8 Homologue of CP 47,497

**Google Trends: “Kronic” Searches**

Smoke ‘em up Party

ABC News

Perth police close down kronic parties

Posted June 17, 2011 12:25:00

Police have defended their decision to stop two Perth venues from hosting parties for users of the synthetic cannabis kronic overnight.

Kronic users were planning to gather at The Bakery in Northbridge before the State Government’s ban on kronic came into effect at midnight.

However, police shut down the venue just hours before the event was due to start.

A second event was then organised at a hotel in Inglewood but this was also cancelled after police intervention.

Assistant Police Commissioner Michelle Fyfe has told the ABC’s morning program that police have a responsibility to ensure public safety.

“See it [the party] was about encouraging people to come along and binge smoke and drink,” she said.
100% Aussie Legal Kronic Now Available!

BLACK LABEL - our new 100% legal blend. You’ve been asking for it, and we’ve delivered – in accordance to demand, we’ve developed a new custom blend of Kronic for the Australian market. Containing no banned substances, the label in our line of premium, home-grown smoking blends will deliver you a smooth, long-lasting high. The height of innovation, Black Label contains a fully tropical flavour with a smooth long-lasting duration.

Do skills, taste, flavour and aromatic quality make it the perfect smoke for those looking to have some hassle-free and long-lasting quality to ease you into using all our products, we recommend smoking now – just a few times, and letting the effect come to you – with Black Label, we assure you’ll love it.

With a long-lasting duration and that Kronic, feel you know and love, Black Label is the perfect way to smoke up, take-up and take it a little less seriously.

Retail price:
- 5gms – $10.95
- 10gms – $15.95

New Chemicals

JWH-018

AM-2201
Further Legislative Actions

**Federal:**
- 2011: 7 individual chemicals
- 2012: Broad groups + “Synthetic Cannabinomimetics”
- 2013: Consumer law (banned brands)

**State:**
- 2013: QLQ (everything)
- 2013: NSW (Anything with a Psychoactive Effect)
- 2013: SA (Similar Pharmacological effect)

New Local “Kronic”
Synthetic Cannabis (circa Nov 2016)

Further Legislative Actions

Federal:
– 2011: 7 individual chemicals
– 2012: Broad groups + “Synthetic Cannabinomimetics”
– 2013: Consumer law (banned brands)
– 2015: Anything with a Psychoactive Effect

State:
– 2013: QLD (everything)
– 2013: NSW (Anything with a Psychoactive Effect)
– 2013: SA (Similar Pharmacological effect)
– 2016: WA (Anything with a Psychoactive Effect)
– 2017: VIC (Anything with a Psychoactive Effect)

Harms (Australian 2016 GDS data)
Synthetic Cannabis - Epidemiology

93% of Australian’s would prefer to smoke natural cannabis to synthetic cannabis

Of those who preferred it to natural Cannabis, why did they prefer it?
- More intense effect & shorter duration (58%)
- Easier to get than cannabis (19%)
- Avoid Urine Screens (15%)

(Winstock & Barratt, 2015)

What about those who were smoking that didn’t prefer it to natural cannabis?

Drug testing (specific populations)
Military personnel (for review, see Loeffler et al., 2012)
Mental health patients (Every-Palmer, 2010)
- Perceived to be safer than cannabis
Parolees (Hopkins & Gilchrist, 2013; Perrone et al., 2012)
Family Court

Unable to access natural Cannabis
Synthetic Cannabis Withdrawal

More complex that natural cannabis

- More complex than natural cannabis
- More acute and severe than natural cannabis
  - CWAS scores peak at 2 days (cf 7 – 10 days)
  
  (Macfarlane & Chrisite, 2015)
CWAS Scores

- Synthetic Cannabis Withdrawal
  - More complex than natural cannabis
  - More acute and severe than natural cannabis
    - CWAS scores peak at 2 days (cf 7 – 10 days)
    - Cases of psychosis and seizures
      (e.g., Nacca et al., 2013)
  - Consider the possibility of in-patient withdrawal
    - Inpatient Rx was deemed necessary for 53% of people seeking community treatment in NZ
      (Macfarlane & Chrisite, 2015)
# Intoxication/Withdrawal Symptoms

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<td>Cognitive</td>
<td>Confusion, disorganised thought, memory problems, difficulty thinking clearly</td>
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<td>Behavioural</td>
<td>Agitation, restlessness, <strong>aggression</strong></td>
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<td>Mood Affect</td>
<td>Anxiety, <strong>irritability</strong>, inappropriate laughter</td>
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<td>Sensory Perceptual</td>
<td>Paranoia, perception distortions, delusions, hallucinations, <strong>psychosis</strong></td>
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<td>Physical</td>
<td>Tachycardia, hypertension, <strong>nausea</strong>, vomiting, tremors, numbness, tingling, light-headedness, <strong>seizures</strong></td>
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## Treatment Guidelines

- Treatment recommendations similar to cannabis:
  1. in acute setting, treat Sx (e.g., benzodiazepines for anxiety)
  2. most Sx will resolve spontaneously
  3. some with previously diagnosed psychotic disorders may not resolve as quickly
  4. no specific treatments developed for chronic use/withdrawal, treat symptomatically

*(Castellanos & Thornton, 2012)*
Australian NPS Users

- RC's
- 'Legal Highs'
- Unintentional Users

Possible Unintentional Consumption

**Ketamine**
- Methoxetamine
- 3-Meo-PCP

**Heroin**
- Acetyl-fentanyl (10x)
- MT-41 (hearing loss)
- 4FIB-fentanyl (4FIBF)
- U47700
- **W-18 (?10,000)**
  **Carfentanil**

**MDMA**
- BK-MDMA
- Mephedrone
- 2C-B, 2C-I
- MDPV
- PMA

**LSD**
- 2C-E
- DOM, DOB, DOI
- NBOMe series
Other scary stuff...

Alprazolam - 500mg

500mg of pure imported alprazolam. Includes express post. Inform yourself on proper safety and dosing before handling this product. This product is usually dissolved into a preference alcohol solution. You should avoid unidentifying your dose in the powder form as you may easily consume too much and end up sick or even sleeping. Submit your ENTIRE ADDRESS IN CAPITAL LETTERS in the following letter...

Sold by Dimercuris - 80 sold since Aug 26, 2015

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Express Post - 2 days - AUD $0.00 / Item

Purchase price: AUD 259.67

Qty: 1

Buy Now | Queue

Unintentional Use

Ecstasy-related presentations at NSW hospitals practically doubled in the past six years
**Clinical signs and Sx**

**Acute settings**

**Presentation:** Ataxia, Tachycardia, Arrhythmia, Hypertension, Hyperthermia, Rhabdomyolysis, Kidney Failure, Nausea, Anxiety, Agitation, Confusion, and Paranoia.

**Assessment**
- Lab results?
- Clinical presentation & careful questioning

**Treatment:** Symptomatic
- Benzo (not beta-blockers), Antipsychotics, Cooling, IV Saline

**Assessment**

The primary drug of choice that the person is presenting for may not be the most likely to cause them harm
- conversation around other drugs the person is using

The person’s primary drug of choice may contain new and novel drugs that could cause harm
- conversation about new and emerging “adulterants” they may be unintentionally ingesting
Psychoeducation - PEPE

Permission
– Implied when person asks for advice or you receive consent to provide information
– ‘What do you know about ecstasy? Would you like to know some more?’

Elicit
– ‘What would you most like to know about?’
– ‘How much do you know about...?’

Provide
– ‘Did you know that there are new dangerous chemicals being sold as ecstasy in Australia?’

Elicit
– ‘What do you think of this information?’

www.erowid.org

EROWID
Documenting the Complex Relationship Between Humans & Psychoactives

Plants & Drugs
Mind & Spirit
Freedom & Law
Culture & Art
Psychoactive Chemicals

Psychoactive Chemicals are chemicals which have mind- or emotion-altering properties. These chemicals range from the common to the extremely uncommon and include chemicals with a long history of use as well as those with little to no track record.

<table>
<thead>
<tr>
<th>NAME</th>
<th>OTHER NAMES</th>
<th>EFFECTS</th>
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<tbody>
<tr>
<td>Acidine</td>
<td>Green Fairy</td>
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<td>Acetylcholine</td>
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<td>Adrenochrome</td>
<td>Pink adrenaline</td>
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<td>Flakka, Gravel</td>
<td>Euphoric Stimulant</td>
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<td>Elavil</td>
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<td>Ayahuasca</td>
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<td>Euphoric Empathogen</td>
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<td>3C-Bromo-Dragonfly</td>
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<td>Toad Venom, 5-Hydroxy-DMT</td>
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<td>Robo, Tasslin</td>
<td>Dissociative, Cough Suppressant</td>
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<td>FFPRIDINE</td>
<td>Mini Things</td>
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<td>MCPP</td>
<td>CPP, 3-CPP</td>
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Health warning issued over new Monkey Dust drug

Authorities have issued a health warning over a new recreational drug appearing on the market called Monkey Dust. The drug, which is often sold as ecstasy at festivals, is a cheap version of bath salts and has hallucinogenic effects on its users. The Australian Federal Police say there were 4.5 kilograms of the drug seized last year, which would be enough for half a million doses to be sold on the streets.
Harm Reduction for NPS

When trying a new tab, pill, or powder:
Never be the first person in your group to use
Always start off small:
- Your first dose should only be a ¼ dose
- Wait for at least 90-120 minutes before re-dosing
Only use one drug at a time
Never use alone – always use with someone who can provide support if needed
Use in a safe and familiar place
Don’t drive, swim, play with knives or engage in other risky activities while under the influence of a drug

Reagent Testing

While law makers squabble over pill testing, people should test their drugs at home

As the festival season ramps up this summer, so too has the ecstasy death toll. There have now been five suspected drug-related deaths that might have been preventable if people knew what was in the drugs they were taking.

This has led to a call for governments to introduce pill testing by specialist at festivals. What many people might not know is they can already easily purchase reagent test kits to test their drugs at home (although possession of the drugs is still illegal). So, do it at home, they say, to save lives.
Reagent Testing

What is it?

• Presumptive test
• Can not provide quantitative information
• Not 100% accurate but better than nothing
• Negative results are more useful than positive results

NBOMe
Pill Testing/Drug Checking

Ecstasy pill tests 'will save lives', says Perth researcher

Josh Zimmerman | PerthNow
November 5, 2017 12:00AM

SECRET, unauthorised pill testing by a Perth researcher at a music festival last summer found 99 per cent of users chose to bin their drugs when told they contained unknown substances.

In an indication of the life-saving potential of pill testing, subsequent laboratory analysis of some of the discarded drugs detected the presence of the deadly NBOMe adulterant, a powerful psychedelic hallucinogen linked to three deaths and 20 hospitalisations at nightclubs on Melbourne’s Chapel Street.

Pill testing trial for Groovin the Moo given go-ahead after spate of festival deaths

By Ernie Scott and Jordan Dwyer
Updated 13 Feb 2019, 6:34am

At 15, Lotta’s skin was for ... a picnic. A transplant from her sister made her dream come true.

Clumsy or neat or too small? Uneven women are hurt by technology built for men.

How a DIY alternative to pacemakers could help end ovarian cancer.

TOP STORIES
- Most the man who got paid while North Whaley innovations lost millions.
- After years of budget blow, rip-off is in sight for WA households.
- A tale of two rooms: How racial segregation was exposed at an Australian hotel.
- "There’s no long left": Man told he’s going to die by doctor on robot visit.
- A sister told he suicide, pregnant.
Resources - Twitter

@stephenjbright
@Erowid
@ACTINOSproject
@GlobalDrugSurvy
@EMCDDA
@monicabarratt
@AODMediaWatch
@....

Thank You


Dr Stephen Bright
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s.bright@ecu.edu.au
Further info

For video recording and handouts of this webinar, visit
https://sydney.edu.au/research/centres/matilda-centre.html and click on ‘Workforce Training’

To complete CPD assessment (available until 3 October 2019):
https://www.surveymonkey.com/r/BLG6XMP

Next Webinar

Tuesday 28 May 2019, 7.30pm
Motivational interviewing

Register: https://zoom.us/webinar/register/WN_OldUyrowSqq-KgA9mwU4-Q