

# “illegal” drugs and the future of psychiatry

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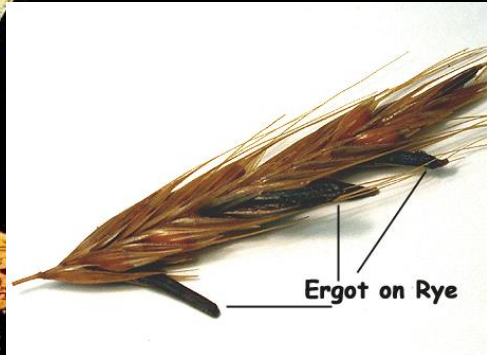
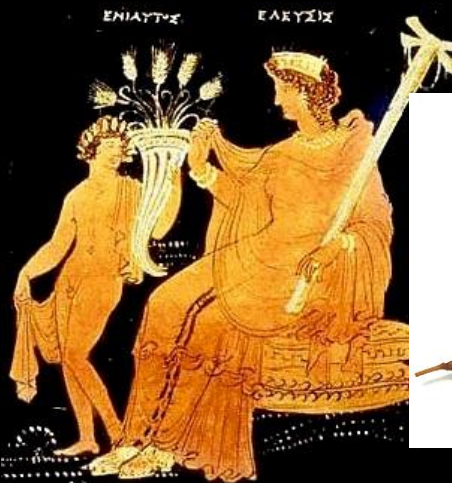
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# Starting with psychedelics - an enduring presence in human existence



# LSD – the ergot derivative that re-instigated psychedelic in the 1950s



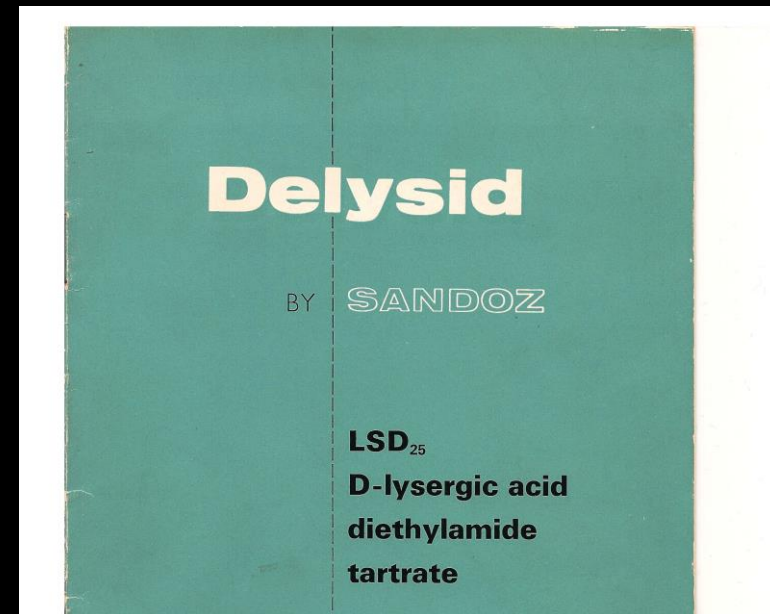
Albert Hofmann – the discoverer of  
LSD and psilocybin - at 100

# Clinical research with LSD in the 1950s and 1960s

- Hundreds of psychiatrists worldwide
- 1000 clinical papers
- 40,000 patients
- 40 books
- 6 International conferences

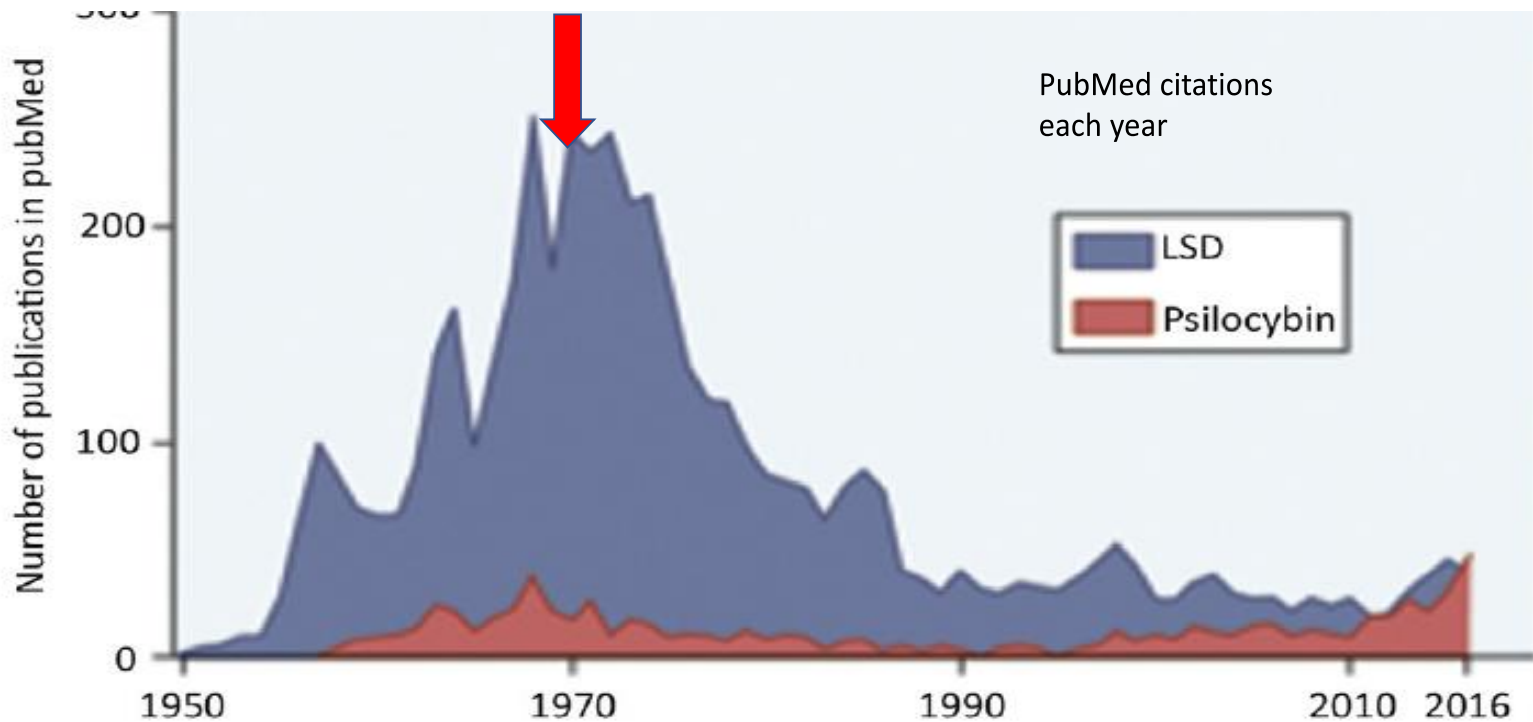
Results were overwhelmingly positive, describing safe and effective treatments.

(Masters and Houston, 1971)



# Then came “The War on Drugs”

Impact of the 1971 UN Psychotropics Convention on psychedelic research



# 2010 - Fighting back through brain imaging



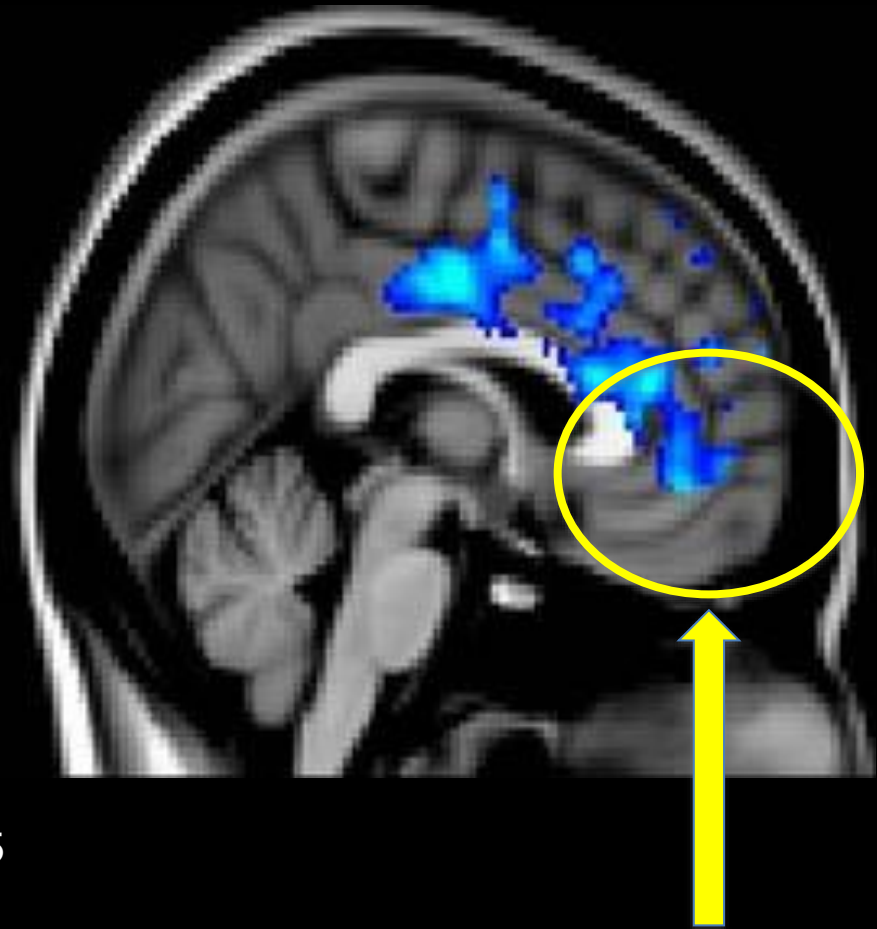
**The Beckley Foundation/Imperial College  
Psychedelic Research Programme**

# Psilocybin attenuates medialPFC activity

**Psilocybin  
attenuates activity in  
the brain region  
linked to depression**  
Carhart-Harris PNAS 2012

## **As do treatments for depression**

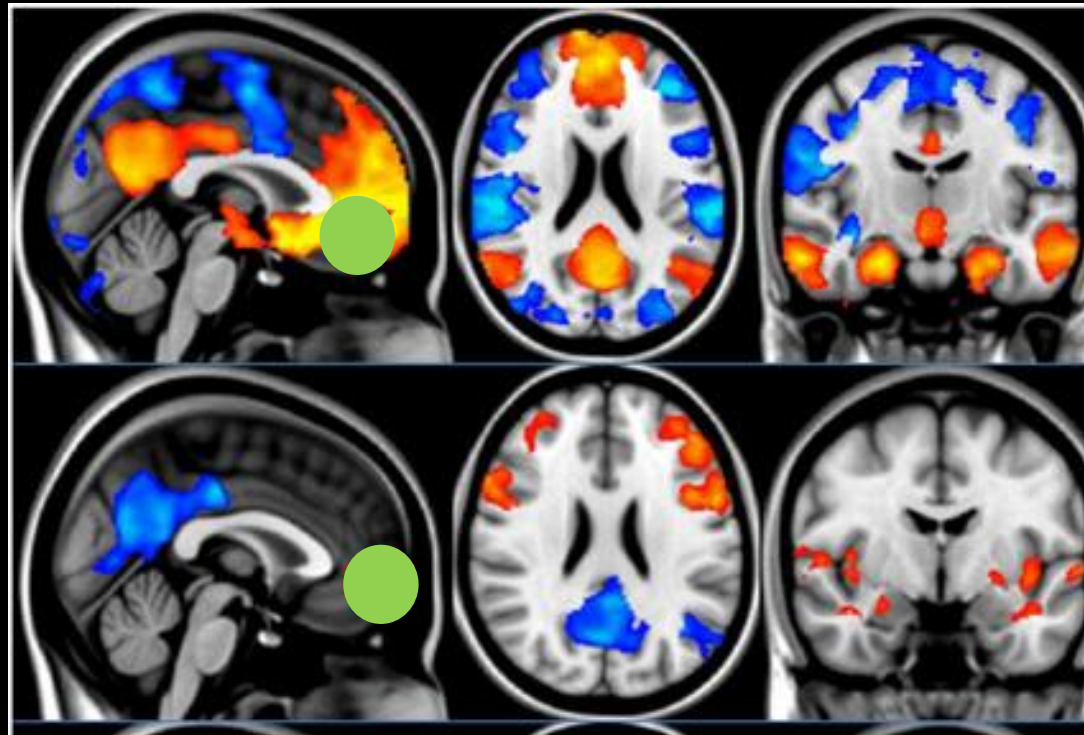
**SSRIs** Kennedy et al. 01  
**CBT** Goldapple et al. 04  
**Sleep deprivation** Gillin et al. 01  
**ECT** Bonne et al. 96  
**Placebo** Mayberg et al. 02  
**Deep brain stimulation** Mayberg et al. 05  
**Ketamine** Deakin et al. 08



fMRI BOLD image

# Psilocybin uncouples default mode network (DMN) which mediates our sense of self

**Placebo**  
strong correlations in  
activity between frontal  
and posterior parietal  
regions

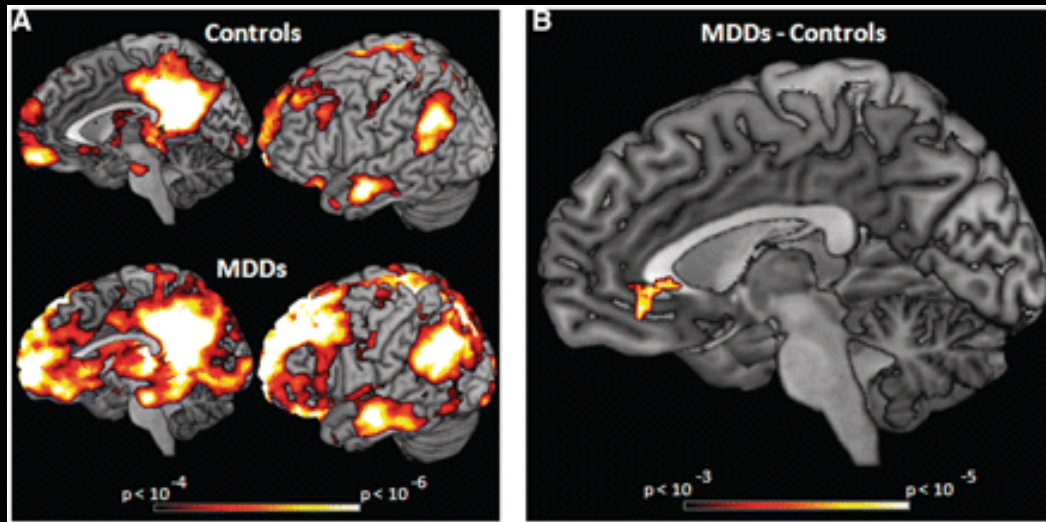


**Psilocybin**  
correlations lost or even  
negative

Seed region

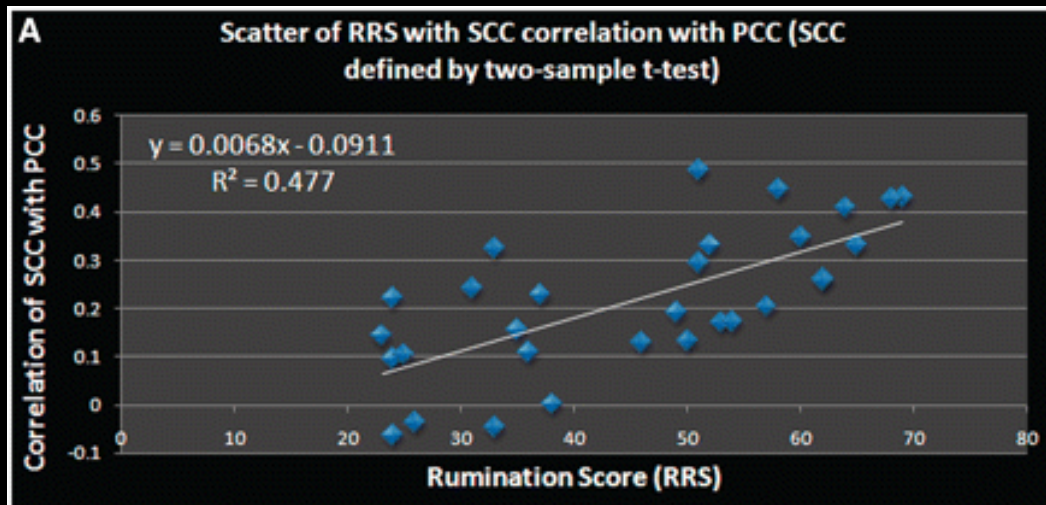


# DMN is overactive in depression and this predicts extent of rumination



**A) PCC functional connectivity – excessive in depression**

**B) Greater PCC to SCC (subgenual cingulate cortex) connectivity in depression**

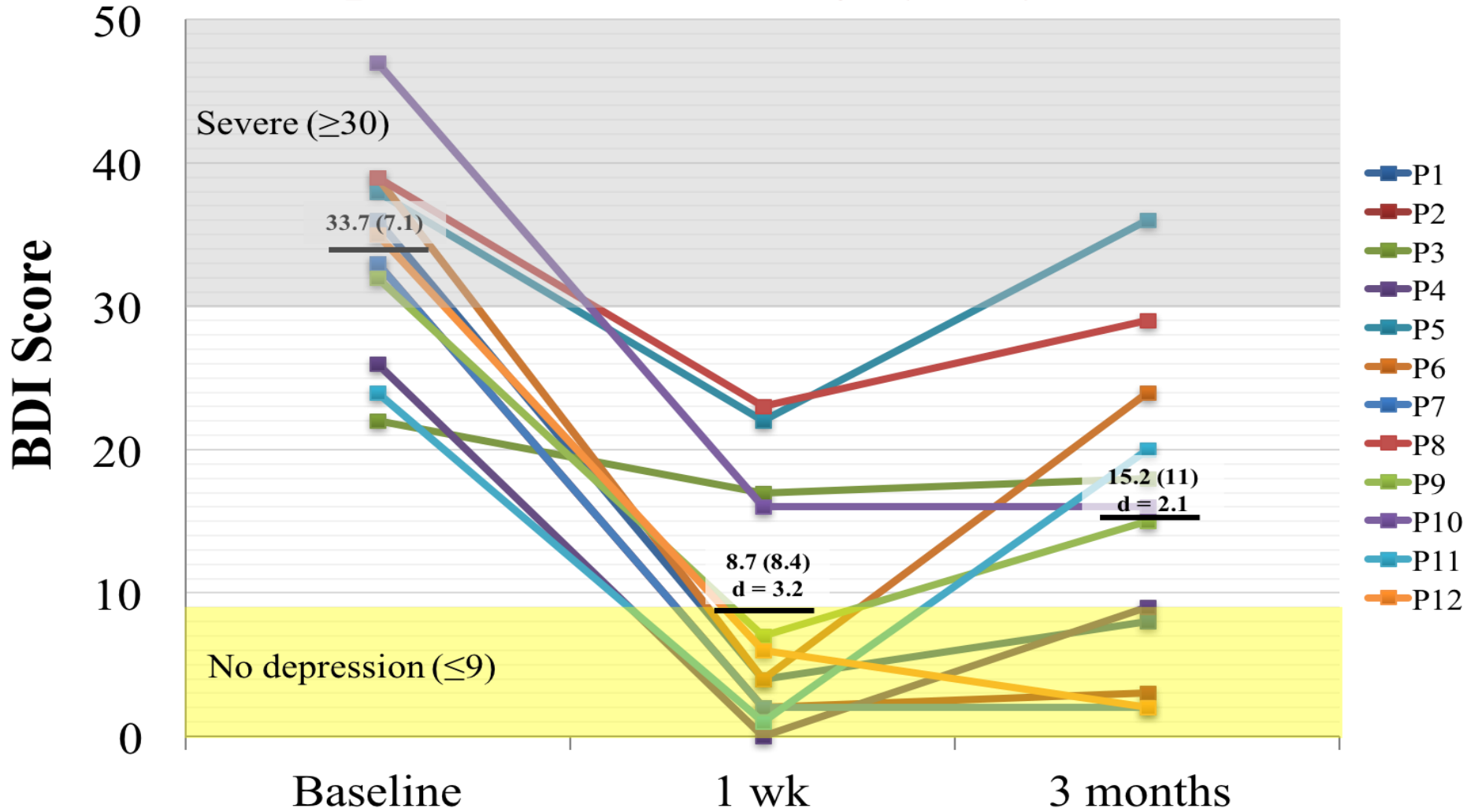


**PCC - SCC functional connectivity predicts rumination**

**Berman et al 2011**

# Psilocybin in treatment resistant depression

## Depression Severity (BDI) vs time



# What next for other psychiatric disorders ?

Recent positive open trials of psilocybin in addiction to

- **Tobacco** (John Hopkins) – double-blind RCT underway
- **Alcohol** (New Mexico)

## Ongoing

- **RCT -v- escitalopram – reporting soon – Imperial College**
- Anorexia –John Hopkins and Imperial College
- OCD - Imperial College
- Planned Heroin addiction (Bristol/Imperial College)
- **And pain syndromes - + cluster headaches**

But illegal status still profoundly limits research and increases costs

# BJPsych

The British Journal of Psychiatry



Making  
a medicine  
out of MDMA  
Elen Sedso  
& David Nutt

Efficacy of  
cognitive bias  
modification  
interventions in  
anxiety and  
depression:  
meta-analysis  
Ioana Cristea et al

Positive  
attributes in  
children and  
reduced risk  
of future  
psychopathology  
Pablo Vidal-Ribas  
et al

Recovery-focused  
cognitive-  
behavioural  
therapy for  
recent-onset  
bipolar disorder:  
randomised  
controlled pilot  
trial  
Steven H. Jones et al

## MDMA

1970s - Sasha Shulgin synthesized MDMA & gave it to himself, his wife and friends who were psychotherapists.

Positive reports of MDMA as adjunct to psychotherapy; no controlled trials.

Recreational use – MDMA ('ecstasy') made illicit in US 1985.

# How the world has changed in ten years

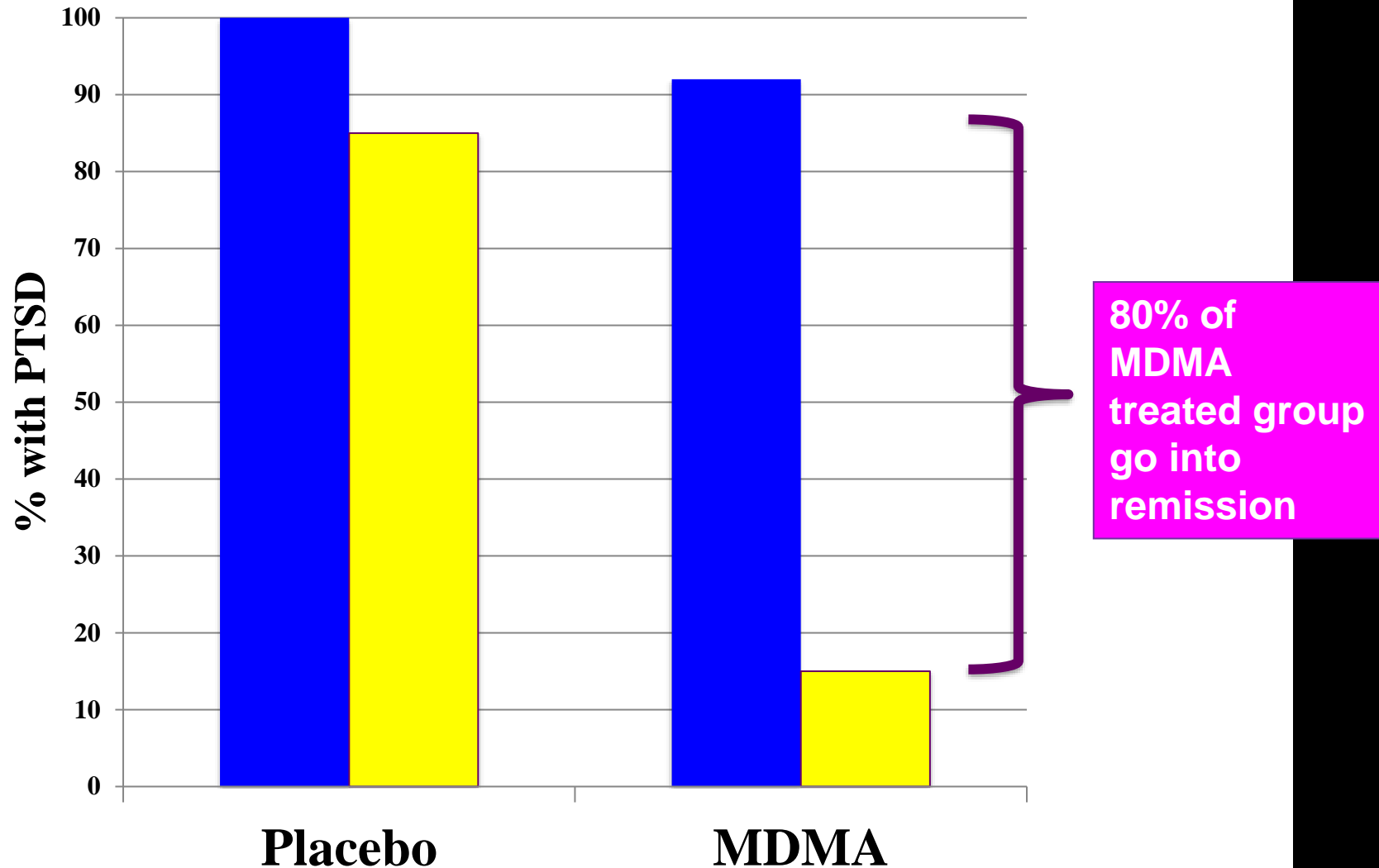
Then → ecstasy causes brain damage

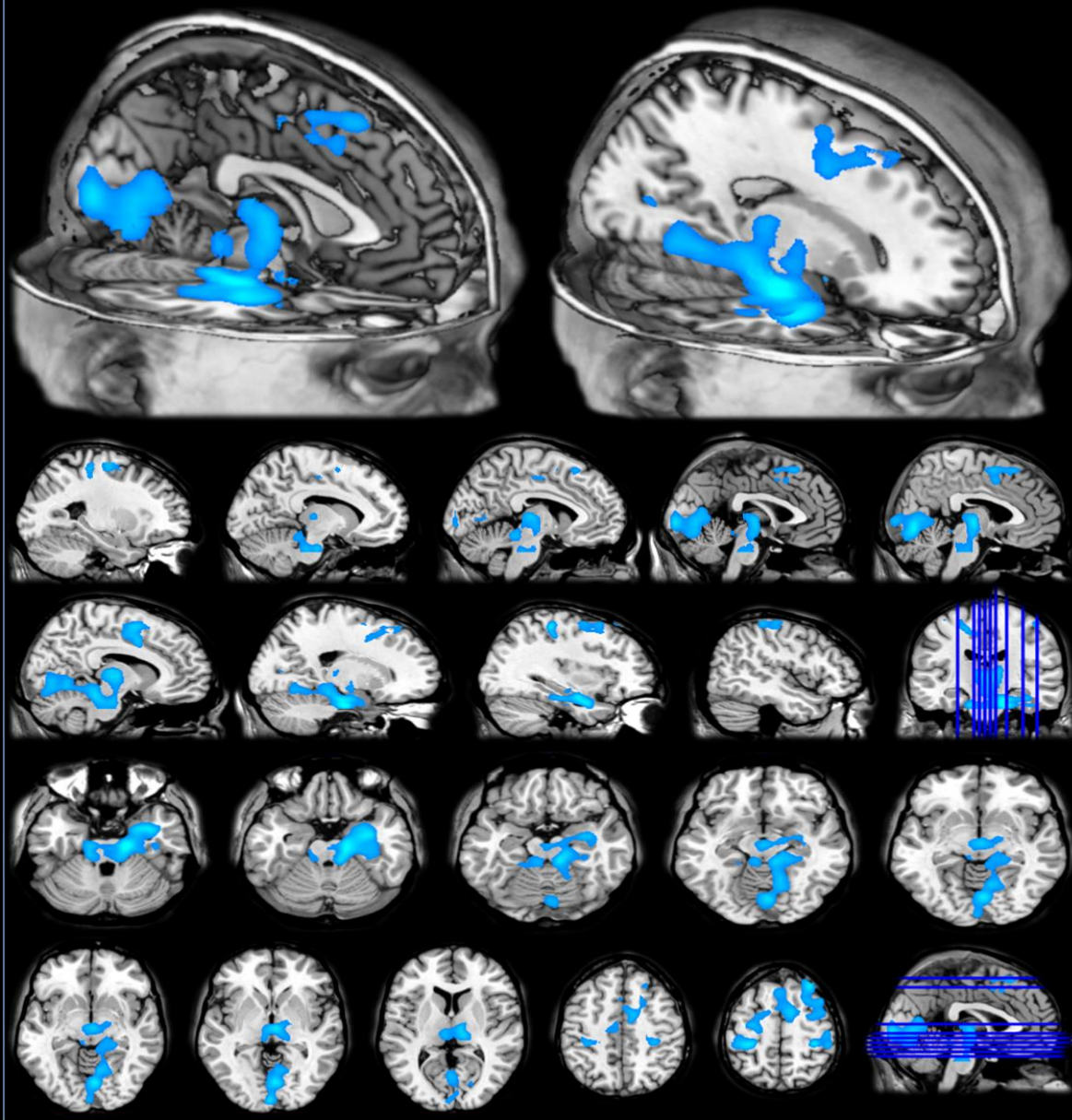
Now → MDMA can heal the brain from trauma



# MDMA-v- placebo for treatment resistant PTSD

% meeting PTSD diagnosis – pre/post





Imaging gives the clue → MDMA reduces brain blood flow

- in hippocampus and amygdala

Which probably explains its utility if PTSD exposure therapy

# Building on MDMA successes in PTSD

## BIMA: Bristol Imperial MDMA Alcoholism study

MDMA for trauma-related alcohol dependence

Modelled on the Mithoefer studies

MDMA 125/62.5 mg sessions 2 weeks apart in a 12 week treatment programme

Dr Ben Sessa = clinical lead

14 patients successfully treated – only 2 returned to prior drinking levels over 6 months [paper in preparation]

# What we need to do now

Much more research especially after covid19 with predicted increase in depression and PTSD

But very difficult on account of Schedule 1 status

So re-Schedule or provide exemptions

→ ACMD, Drug Science and other organizations asking for exemptions for research

→ Can RCPsych support this please? Ideally leading the other Royal Colleges

# Thanks

To the Neuropsychopharmacology team  
&

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