

# An update on recent research into cannabis


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1

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2

## Overview

- Psychosis/schizophrenia?
- Drugs and psychosis
- Cannabis
- Cannabis and risk for psychosis
- Cannabis and the brain



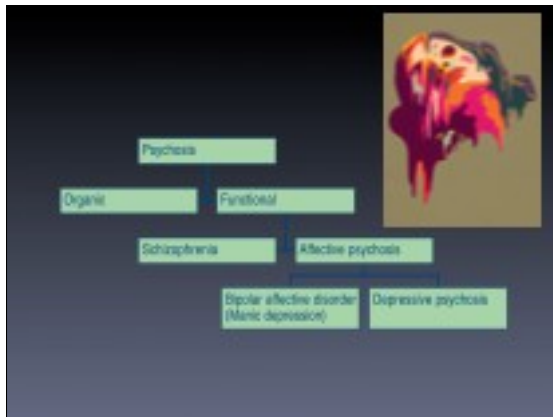
3

## What do we mean by 'psychosis'?

- Gross disturbance in thinking and behaviour
- Delusions
- Hallucinations



4



5

## Positive Symptoms

- Delusions
- Hallucinations
- Bizarre behaviour
- Thought disorder



6

## Bethlem Hospital



7



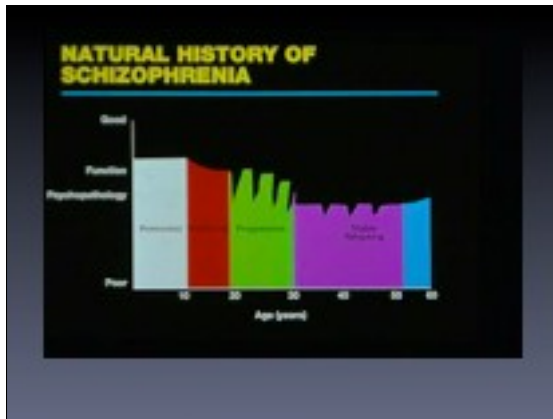
8

## Negative Symptoms

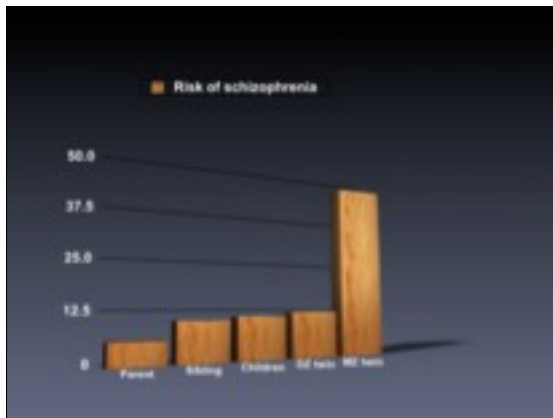
- Apathy
- Social withdrawal
- Blunted affect
- Functional



9



10



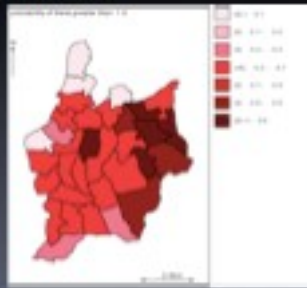
11

- Excess of neonatal insults ( $p < 0.001$ )
- Small for gestational age (OR=2.8;  $p < 0.001$ )
- Hypoxia (OR=6.8;  $p < 0.001$ )

The grid of eight small images shows neonatal infants, likely illustrating the effects of neonatal insults. The images are arranged in two rows of four. The top row shows infants with various physical characteristics, and the bottom row shows infants with different physical characteristics, possibly related to the listed risk factors.

12

### Variation in the Incidence of Schizophrenia In South London





## Why does methamphetamine

Answer: It increases the release of Dopamine



19

## Other drugs which increase risk of psychosis



20

## Life-time use of cannabis use among 15-16 year olds, 2007



21

## Principal forms of UK 'street' cannabis



Resin

Imported  
'Herbal'

Home-grown  
'Sinsemilla' or  
'Skunk'

From David Potter

22

## Components of cannabis

### THC causes

- Impairment of attention, memory and learning
- Hallucinations and paranoia/illness

### Cannabidiol (CBD)

- Is not hallucinogenic
- Has anxiety-relieving properties
- No adverse effect on cognition



23

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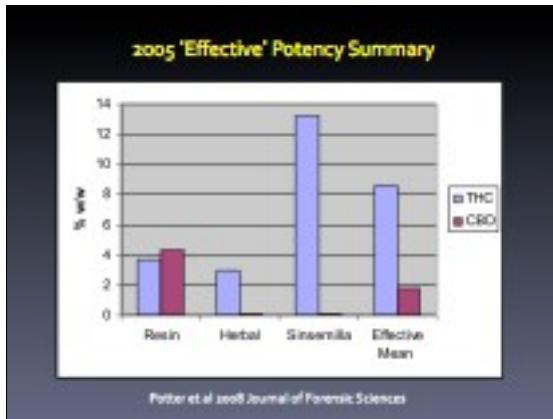
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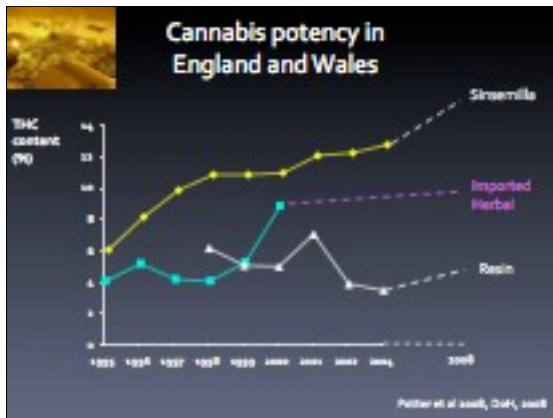


24

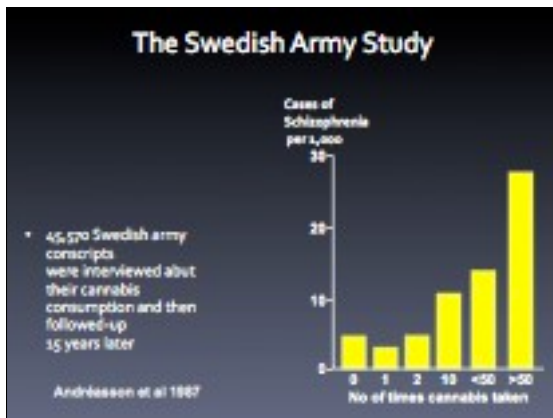




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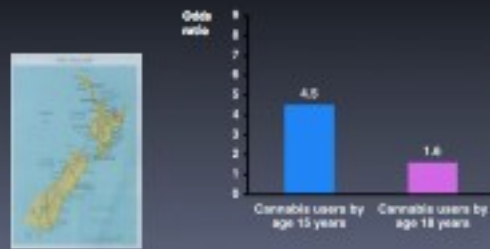


26



27

## Predicting schizophreniform



Arnsperk et al 2009

28

## Cohort studies examining cannabis use and risk of psychosis

Country	n	FU	OR (95% CI)	Outcome
Sweden	55,033	35 yrs	3.1 (2.3, 3.7)	narrow
NL	4,745	3 yrs	3.8 (2.3, 6.3)	brood
NL	4,745	3 yrs	13.0 (3.2, 64.3)	Narrow
NL	18,000	8wks	3.2 (2.4, 4.4)	Narrow
NZ (Chr)	1,215	3 yrs	3.8 (1.2, 11.4)	brood
NZ (Dun)	1,215	15 yrs	3.4 (0.7, 13.3)	narrow
Germany	1,436	4 yrs	1.7 (1.1, 2.5)	Brood
UK	8,500	18 mths	1.5 (1.1, 2.0)	Brood
Australia	3,800	14 years	3.2 (2.3, 4.5)	Narrow

Andersson et al 2010; Arnsperk et al 2009; Van Os et al 2002; Walker et al, 2003; Zammit et al 2004; Ferguson et al 2003; Henquet et al 2005; McGrath et al, 2000; Scholten et al, 2000

29

## GENETICS and Psychosis (GAP) Study

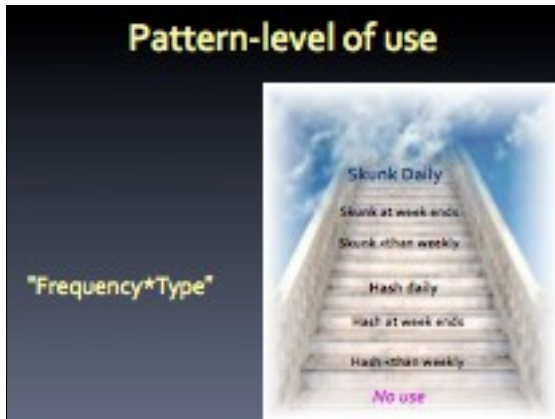
On-going study of First episode psychotic patients in South London and Maudsley NHS Trust

So far cannabis data analysed on 280 subjects in their 1st episode of psychosis. Diagnosis defined using the SCAN

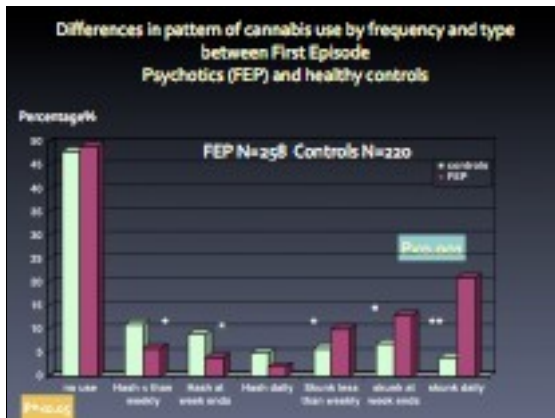
170 matched healthy controls (screened for psychosis)

Di Forti et al, BJPsych Dec 2009

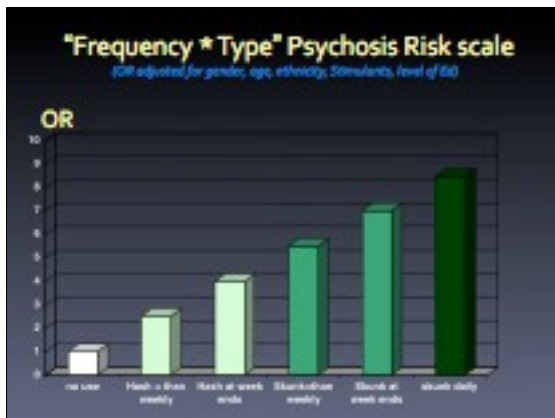
30



31



32



33

# Cannabis use and



"Age at onset of psychosis for cannabis users is 2.70 years younger than for non-users": This suggests a causal role of cannabis for psychosis (Large et al, 2015)

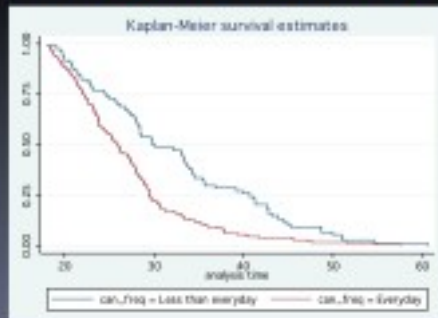
34

	Cases N=159	Controls N=109	Unadjusted Odds Ratio	*Adjusted Odds Ratio
<b>Duration of Cannabis use</b>				
0-5 years	40.8%	62.8%	1	
6 years and above	59.2%	37.3%	2.4	1.8
<b>Weekly frequency</b>				
Only at week-end or < 3 days a week	23.1%	66.7%	1	
Everyday	76.9%	33.3%	6.9	6.6
<b>Type of cannabis used</b>				
Resin (Hash)- Dispersed Herbal	21.6%	62.6%	1	
Shank/Sisalwilla	78.4%	37.4%	8.1	6.1

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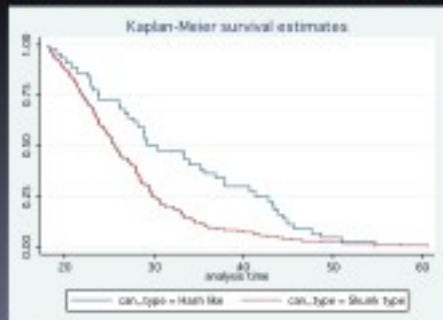
35

## Age of onset by frequency of cannabis use



36

## Age of onset: skunk versus hash



37

Psychosis



Cannabis Use

38

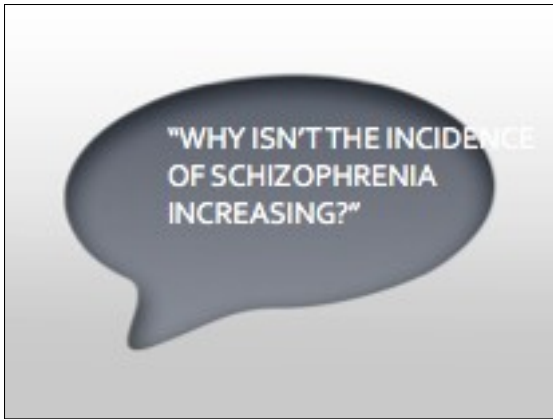
## In people with schizophrenia who



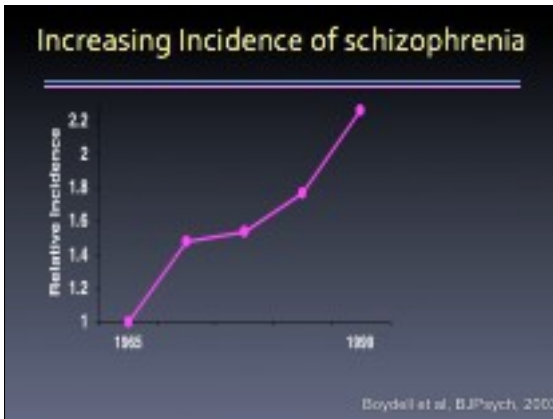
Those still taking  
cannabis 4 years later  
are 3 times more likely  
to have positive  
psychotic symptoms

Gred et al 2005

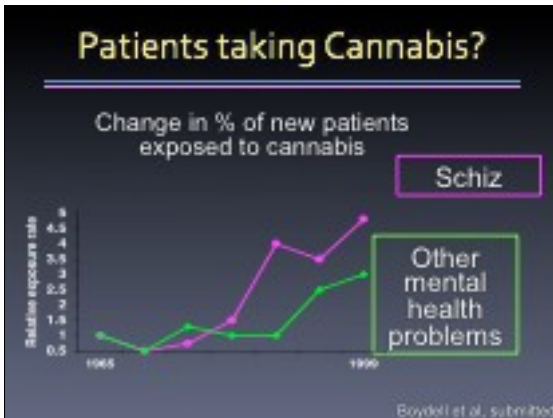
39



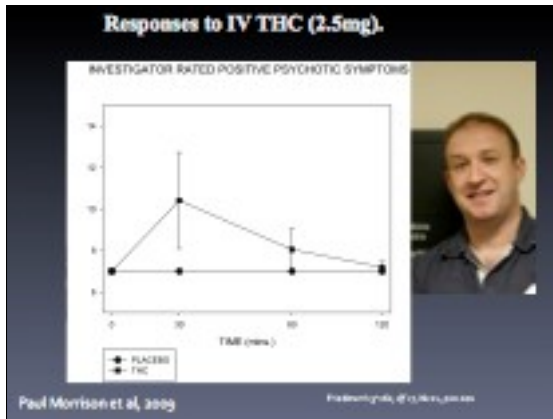
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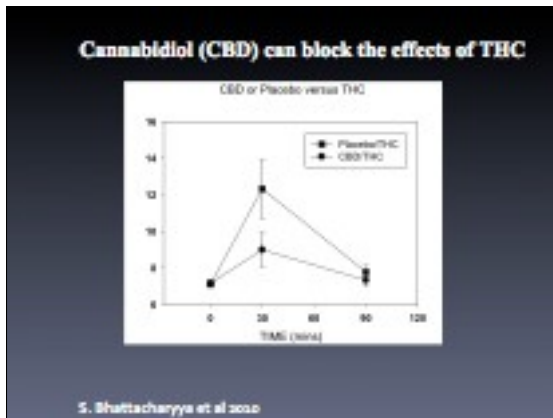
41



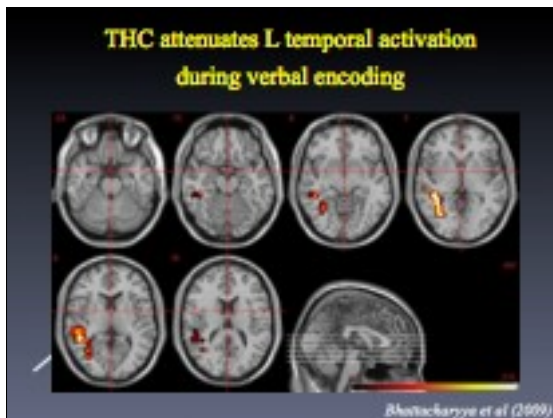
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43



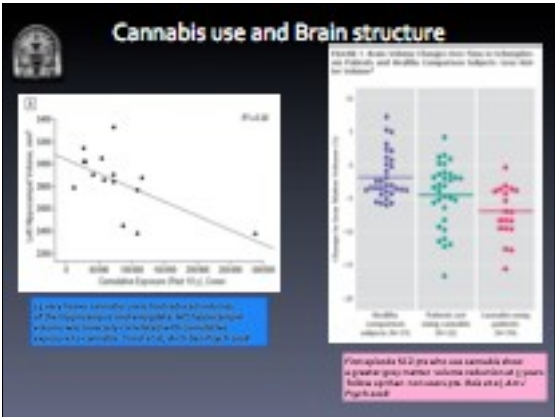
44



45



46



47

- ### Bradford Hill Criteria
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- Consistency of association
  - Strength of association
  - Temporal of sequence
  - Dose-response
  - Biological Plausibility

48



 Most people who use cannabis  
don't develop problems



49

## National Psychosis Unit

- National NHS Service
- Open to anyone in UK - referral from psychiatrist or GP

50

## Who are we?



- 3 consultants
- 1 Specialist Trainee
- 1 Core Trainee
- 2 pharmacists
- 2 Psychologists plus 2 trainees

51

## Outpatient assessments

- Second opinion on diagnosis
- Review of treatment
- Assessment for admission
- CBT/Family work
- 1-2 hour assessment
- Review by expert panel



52

## Who is our service for

- Unsure about diagnosis
- In conflict with local team
- Medication not helping or causing side effects
- Drug misuse
- "Revolving door"

53

## How to contact us

- <http://www.national.slam.nhs.uk/services/adult-services/psychosis/>
- james.maccabe@kd.ac.uk
- National Psychosis Service  
Bethlem Royal Hospital  
Monks Orchard Road  
Beckenham BR3 3BX
- Tel: 020 3228 4322 (inpatients)  
Tel: 020 3228 4438 (outpatients)

54