Agenda

Portfolio Workstreams

From Harm to Hope : 10 Year Drug Strategy

Illegal Gateway Drugs (IGDs)

PCC Checklist

Questions

Drug Classification

CLASS A

Drug: 2CB, Amphetamines, Cocaine, Heroin, LSD, Magic Mushrooms, MDMA – Ecstasy, Mescaline, Methadone, Methamphetamine, Opiates, Opioids and Painkillers, PCP, PMA.

Possession: Up to 7 years in prison, or a fine, or both.

Production or dealing: Up to life in prison, or a fine, or both.

CLASS B

Drug: 2-DPMP, Amphetamines, Cannabis, Codeine, Mephedrone, Methoxetamine or MXE, Naphyrone, Opiates, Opioids and Painkillers, Synthetic Cannabinoids.

Possession: Up to 5 years in prison, or a fine, or both.

Production or dealing: Up to 14 years in prison, or a fine, or both.

CLASS C

Drug: Anabolic Steroids, Gamma hydroxybutyrate, Ketamine, Khat, Phenazepam, Piperazines, Tranquillisers.

Possession: Up to 2 years in prison, or a fine, or both.

Production or dealing: Up to 14 years in prison, or a fine, or both.

Big Business

Drug Market

- £9.4 billion spent on illicit drugs – 2016-17
  England and Wales

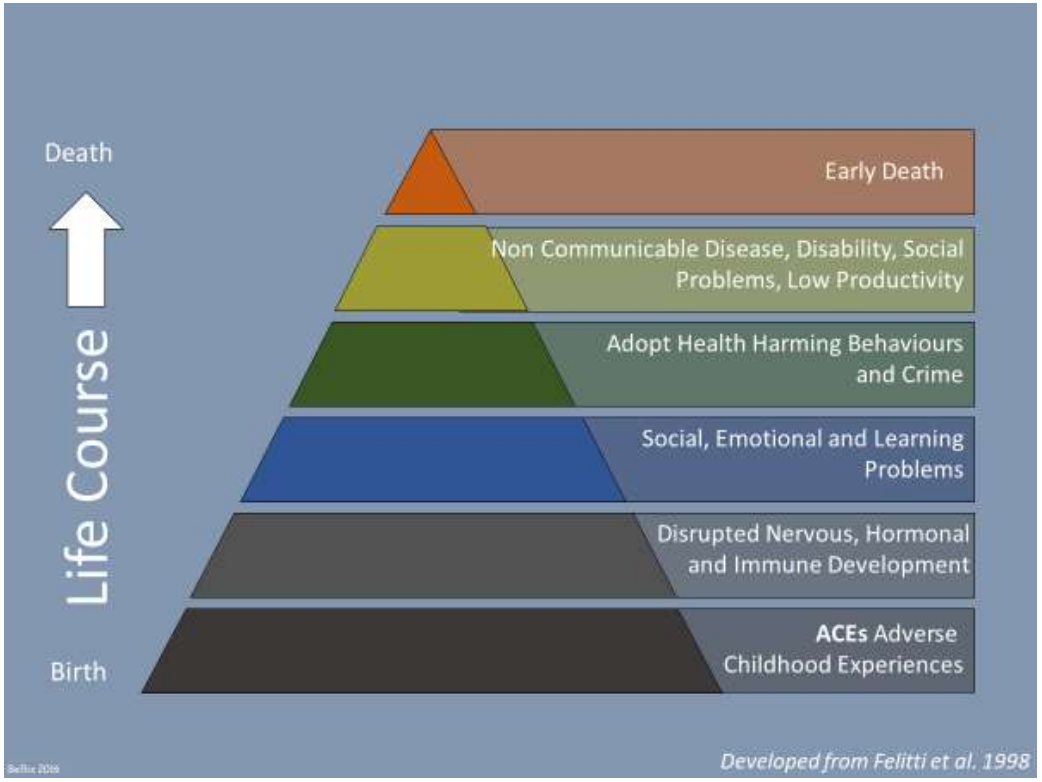
- Larger than the following sectors and companies
  - Tea / Coffee / Pharmaceuticals and Footwear
  - Aldi (£8.7b) / Boots (£6.9b) / Easyjet (£5.0b)

- EU Drug Market - £26 billion

Gateway Business Model

	Average amount consumed per day of use	Cost per day of use	Average days of use per year	Average annual spend per user	Number of users	Total spend
Powder cocaine	0.9 gram	£71	30 days	£2,152	883,000	£1.9 bn
Ecstasy	1.2 pills	£12	7 days	£90	483,000	£0.04 bn
Cannabis	1.2 grams	£12	76 days	£914	2,592,000	£2.4 bn
Crack	0.4 grams	£40	157 days	£6,263	210,000	£1.3 bn
Opiates	0.5 grams	£50	251 days	£12,538	303,000	£3.8 bn

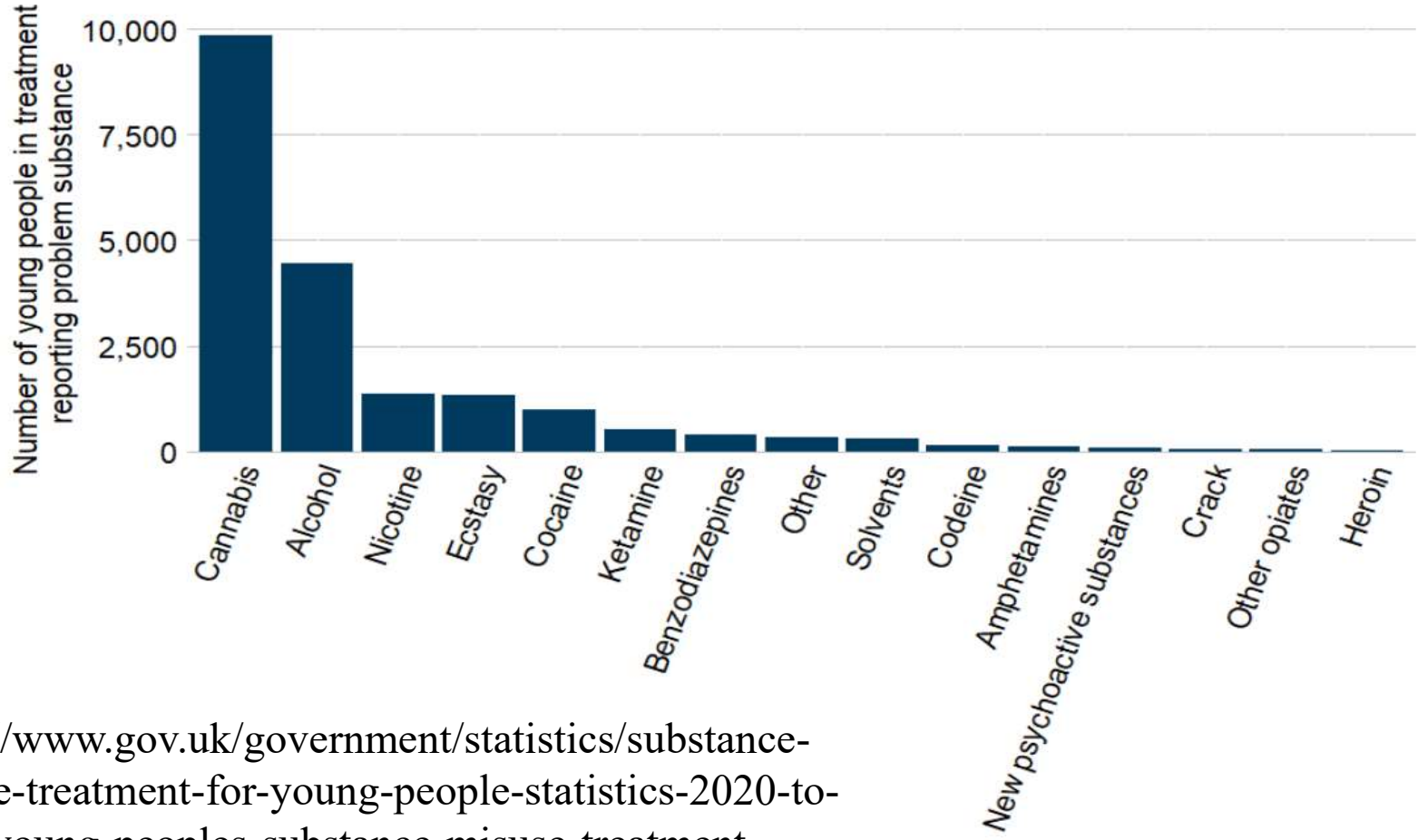
The impact of Trauma / ACE's



Preventing ACE's in England

Bellis et al. 2014

Young People in Treatment



https://www.gov.uk/government/statistics/substance-misuse-treatment-for-young-people-statistics-2020-to-2021/young-peoples-substance-misuse-treatment-statistics-2020-to-2021-report#contents

Illegal Gateway Drugs (IGDs) – “Recreational Drugs”

Cannabis

MDMA

Ketamine

Cannabis – It's Only A Bit Of Weed

Cannabis – CBD v THC

- Cannabidiol CBD
- Delta-9-tetrahydrocannabinol THC

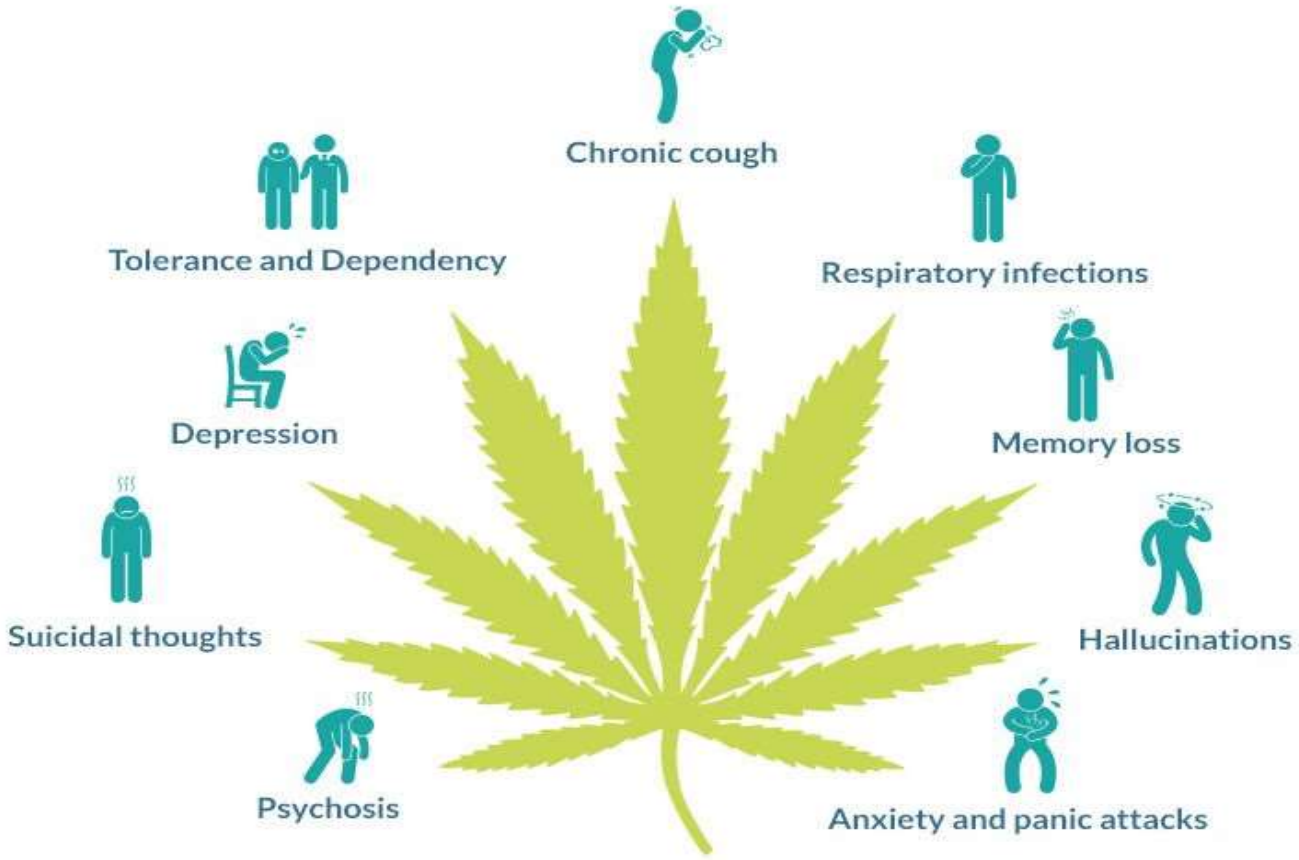
- THC is the psychoactive one
- Concs of THC much higher than in the past
- CBD legal / THC not
- Issue of conflation / facilitation

Cannabis – Legalisation/Decriminalisation

- Satisfaction argument
- Criminality argument
- Illegal Market California – 5x legal mkt
- Not a PCCs role to legislate

- Extremely well funded – Big Pharma / Big Tobacco / Vcaps / (OCGs)

Cannabis – Original View of Harm



Cannabis – New View of Harm

Gateway Drug

Mental Health

Carcinogenicity – Cancer

Teratogenicity – Birth Defects

Premature Aging

Cannabis - Gateway

Market Forces

Neuropathway Evidence

Adolescent **cannabis** exposure alters opiate intake and opioid limbic neuronal populations in adult **rats**
M Ellgren, SM Spano, YL Hurd - Neuropsychopharmacology, 2007 - nature.com

Link of Depenalisation v Hospitalisation Lambeth Study 2014

We found the depenalization of cannabis had significant longer term impacts on hospital admissions related to the use of hard drugs, raising hospital admission rates for men by between 40 and 100% of their pre-policy baseline levels. The impacts are concentrated among men in younger age cohorts.

Concomitant Use

Cannabis – Gateway 2 – Concomitant Use

Cannabis – Risk Knowledge Base

Late 90s – Cannabinoids sought medical licensing as prescription drugs
Failed – teratogenicity / carcinogenicity / s-es

2000 onwards move to legalisation across the world – Portugal 2001 (all drugs)

2004 onwards mental health risk being investigated and acknowledged

2016 Mutation Research – Actual Mechanisms Causing Cancer and Defects
Prof Stuart Reece and Prof Gary Hulse - University of Western Australia

2021 Nature – Population Studies – Legalised V Non-Legalised Areas – Causality
Prof Stuart Reece

Plethora of papers – genetic and population based linking genetoxicity to morbidity

Cannabis – Mental Health 1

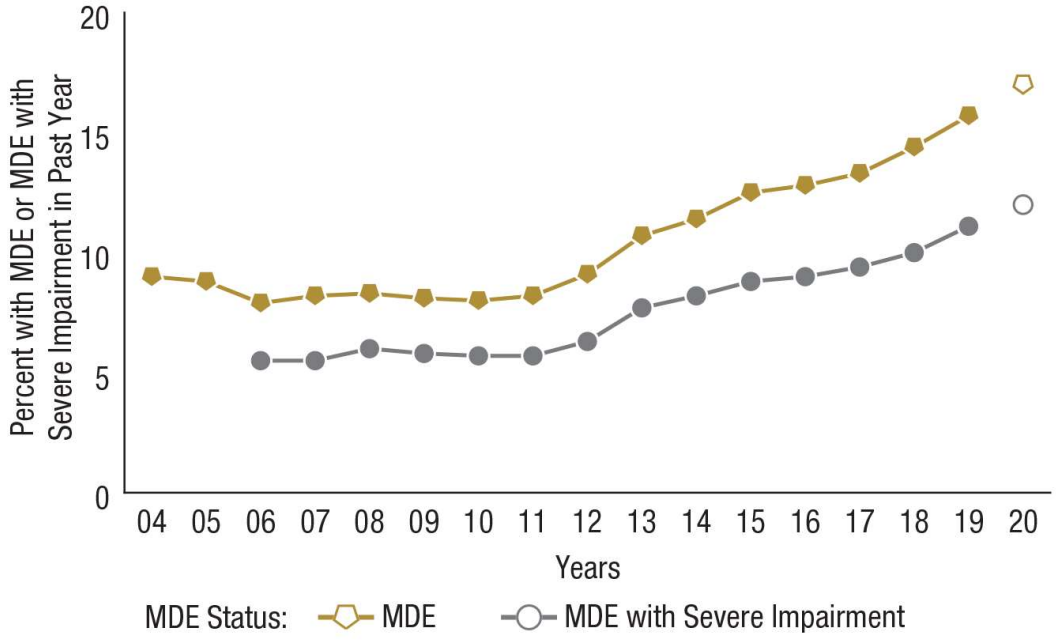
- **Depression Relationship**
- Epidemiological data – Substance Abuse and Mental Health Services Administration (US)

- **Depression Relationship**
- Co-occurrence across time and space of drug- and cannabinoid- exposure and adverse mental health outcomes in the National Survey of Drug Use and Health: combined geotemporospatial and causal inference analysis BMC Public Health **2020 Nov 4;20(1):1655.**
- **Depression and Suicidal Ideation**

- **Autism Spectrum Disorder – 60% excess in legalised states 2030**
- Effect of Cannabis Legalization on US Autism Incidence and Medium Term Projections Clinical Paediatrics

- **Schizophrenia Relationship**
- Development Over Time of the Population-Attributable Risk Fraction for Cannabis Use Disorder in Schizophrenia in Denmark JAMA Psychiatry 2021 Sep 1;78(9):1013-1019

Major Depressive Episode (MDE) and MDE with Severe Impairment in the Past Year: Among Youths Aged 12 to 17; 2004-2020



MDE Status	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
MDE	9.0	8.8	7.9	8.2	8.3	8.1	8.0	8.2	9.1	10.7	11.4	12.5	12.8	13.3	14.4	15.7	*17.0*
MDE with Severe Impairment	N/A	N/A	5.5	5.5	6.0	5.8	5.7	5.7	6.3	7.7	8.2	8.8	9.0	9.4	10.0	11.1	*12.0*

N/A = not available.

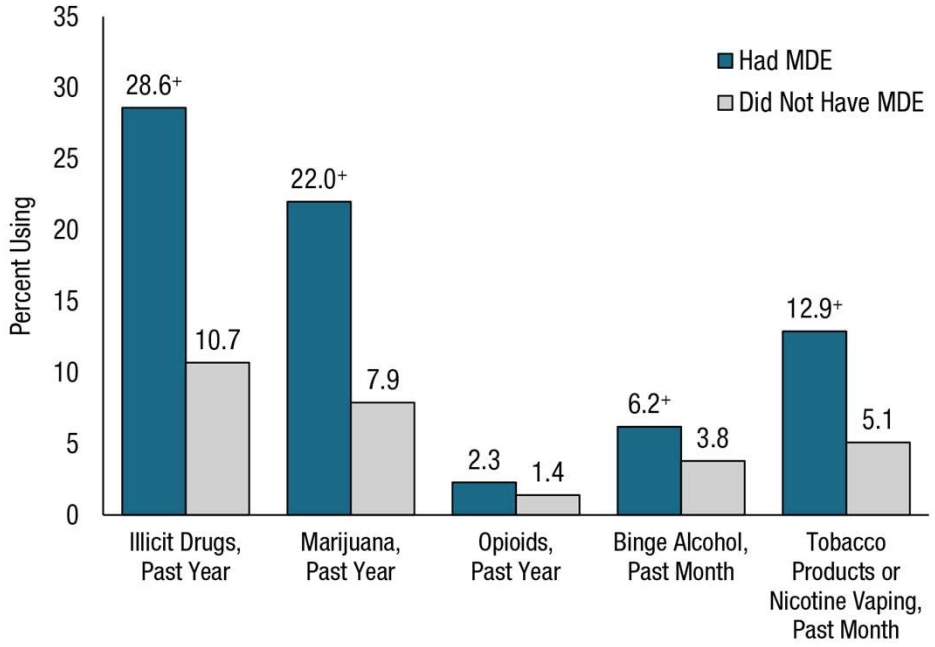
Note: There is no connecting line between 2019 and 2020 to indicate caution should be used when comparing estimates between 2020 and prior years because of methodological changes for 2020. Due to these changes, significance testing between 2020 and prior years was not performed.

Note: The estimate in 2020 is italicized to indicate caution should be used when comparing estimates between 2020 and prior years because of methodological changes for 2020. Due to these changes, significance testing between 2020 and prior years was not performed.

SAMHSA
Substance Abuse and Mental Health Services Administration

FFR1.34

Substance Use: Among Youths Aged 12 to 17; by Past Year Major Depressive Episode (MDE) Status, 2020



+ Difference between this estimate and the estimate for youths without MDE is statistically significant at the .05 level.
Note: Youth respondents with unknown MDE data were excluded.

SAMHSA
Substance Abuse and Mental Health Services Administration

Cannabis – Mental Health 2

- **UK – The Times – Jan 2022**

https://www.thetimes.co.uk/article/the-times-view-on-the-risks-of-cannabis-dangerous-skunk-xd7cv037h?shareToken=5cb040668a8ca550aad05b454d1d0b05

In Portugal, where cannabis was decriminalised in 2001, the number of hospitalisations because of psychotic disorders and schizophrenia associated with cannabis use rose nearly 30-fold between 2010 and 2015, according to research in the *International Journal of Methods in Psychiatric Research*.

Discusses diversion schemes and the need for caution

Cannabis – Mental Health 3

- **UK – The Sunday Post – Scotland / Mail Online**

  https://www.sundaypost.com/fp/the-eye-has-been-taken-off-the-ball-with-cannabis-we-do-need-to-worry-about-young-people/amp/

  Figures reveal the number of users being hospitalised because of psychiatric issues has climbed by 74% since 2016 when police began warning those caught with the drug for their own use.

  The admissions data has prompted experts to call for a reassessment of the risks posed by cannabis in comparison to Class A drugs and alcohol and urgent action to bolster support for users trying to give up.

Cannabis - Genotoxin

A Genotoxin manifests itself clinically as :

Cancer
Birth Defects
Premature Aging - Individual and Population

Not since 1975 has a known genotoxin been marketed for profit in the world. Indeed the horrific experiences with thalidomide is the reason for our modern drug regulatory system.

More powerful genotoxin than alcohol and tobacco combined.

Cannabis - Issues

Gateway Drug

Mental Health

Carcinogenicity – Cancer

Teratogenicity – Birth Defects / Genetoxin

Premature Aging

Cannabis – Cancer

Why is this an Important Subject???

> Sci Rep. 2021 Jul 6;11(1):13892. doi: 10.1038/s41598-021-93411-5.

Epidemiological overview of multidimensional chromosomal and genome toxicity of cannabis exposure in congenital anomalies and cancer development

Albert Stuart Reece [1,2], Gary Kenneth Hulse [3,4]

Commonest Adult Cancer - Breast Cancer

> BMC Pharmacol Toxicol. 2021 Jul 11;22(1):40. doi: 10.1186/s40360-021-00505-x.

Causal inference multiple imputation investigation of the impact of cannabinoids and other substances on ethnic differentials in US testicular cancer incidence

Albert Stuart Reece [1,2], Gary Kenneth Hulse [3,4]

Drives Doubling Testicular Cancer, Cause of Most Years of Life Lost from Adult Cancer

> BMC Cancer. 2021 Sep 3;21(1):984. doi: 10.1186/s12885-021-08598-7.

Cannabinoid exposure as a major driver of pediatric acute lymphoid Leukaemia rates across the USA: combined geospatial, multiple imputation and causal inference study

Albert Stuart Reece [1,2], Gary Kenneth Hulse [3,4]

Commonest Childhood Cancer - Acute Lymphoid Leukaemia

> BMC Cancer. 2021 Feb 25;21(1):197. doi: 10.1186/s12885-021-07924-3.

A geospatiotemporal and causal inference epidemiological exploration of substance and cannabinoid exposure as drivers of rising US pediatric cancer rates

Albert Stuart Reece [1,2], Gary Kenneth Hulse [3,4]

Driving 50% Rise in Pediatric Cancer

Geotemporospatial and causal inference epidemiological analysis of US survey and overview of cannabis, cannabidiol and cannabinoid genotoxicity in relation to congenital anomalies 2001–2015 Albert Stuart Reece [1,2], Gary Kenneth Hulse [3,4]

35/62 or 56.4% of Birth Defects, Worse than Tobacco and Alcohol Combined

BMC Pediatrics
About to Publish

Cancer

Adult:

1) ***Head & Neck***
2) ***Larynx***
3) ***Lung***
4) ***Leukaemia***
5) ***Prostate***
6) ***Cervix***
7) ***Testes***
8) ***Bladder***

Childhood / Paediatric / Neonatal

1) ***Neuroblastoma***
2) ***Acute Lymphoblastic Leukaemia***
3) ***Acute Myeloid leukaemia***
4) ***Rhabdomyosarcoma***

Risk – 2-6 times;
Dose-Response Relationship Demonstrated x 4

Cannabis - Issues

Gateway Drug

Mental Health

Carcinogenicity – Cancer

Teratogenicity – Birth Defects

Premature Aging

Cannabis – Birth Defects 1

Journal of Toxicology and Environmental Health, Part A, 70: 7–18, 2007

ISSN: 1528-7394 print / 1087-2620 online
DOI: 10.1080/15287390600748799

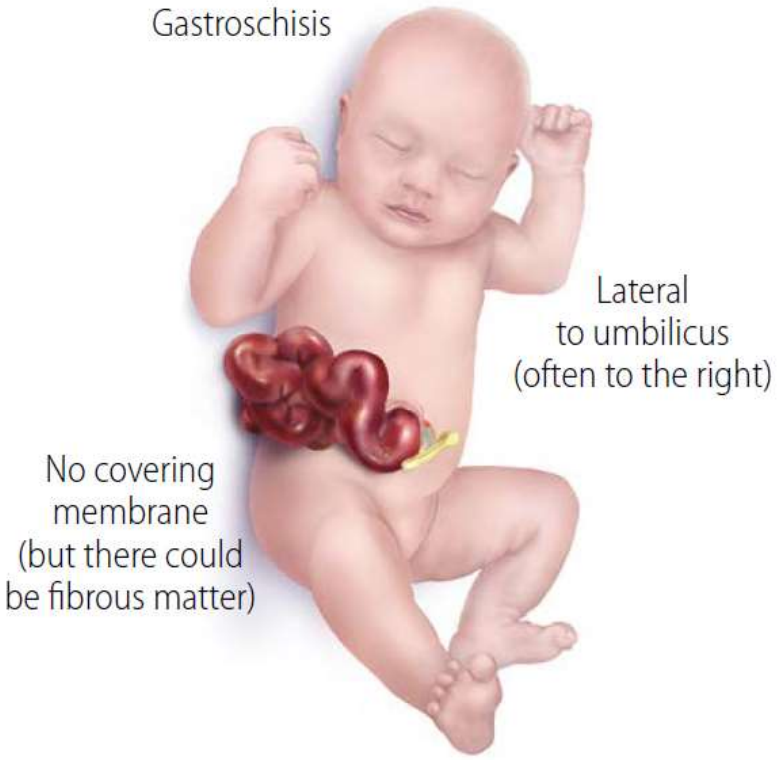
Risk of Selected Birth Defects with Prenatal Illicit Drug Use, Hawaii, 1986–2002

Mathias B. Forrester and Ruth D. Merz
Hawaii Birth Defects Program, Honolulu, Hawaii, USA

Deformity	*Rate Ratio*	*95%C.I.*
Encephalocoele	39.98	9.03-122.29
Hypoplastic Left Heart Syndrome	32.29	3.81-122.65
Syndactyly	24.33	10.40-48.63
Gastroschisis	23.11	4.69-69.34
Reduction Deformity Upper Limbs	21.90	4.45-65.63
Hydrocephly	16.65	6.65-34.66
Cleft Palate	14.73	3.98-38.23
Anotia / Microtia	13.99	1.68-51.66
Tetralogy of Fallot	13.65	1.64-50.37
Pyloric Stenosis	13.17	3.56-34.13
Microcephaly	12.80	4.13-30.17
Pulmonary Valve Atresia / Stenosis	11.46	3.10-29.66
Anal, Rectal, Large Bowel Atresia / Stenosis	10.36	1.25-38.05
Obstructive Genito-Urinary Defect	9.23	2.98-21.69
Polydactyly	8.87	3.24-19.42
Ventricular Septal Defect	8.83	4.82-14.87
Anopthalmia / Microphthalmia	8.31	0.21-47.38
Cleft Lip with / without Cleft Palate	8.19	2.22-21.13
Atrial Septal Defect	6.12	1.98-14.35
Trisomy 21	5.26	1.08-15.46

Data Taken from Table 3 – Re-formatted

Cannabis – Birth Defects 2



Gastroschisis and Autism—Dual Canaries in the Californian Coalmine

Albert Stuart Reece, MBBS (Hons), FRCS (Ed), FRCS (Glas), FRACGP, MD[1,2]; Gary Kenneth Hulse, PhD, BBSc (Hons), MBSc[1,2]

Author Affiliations

JAMA Surg. 2019;154(4):366-367. doi:10.1001/jamasurg.2018.4694

Chronic toxicology of cannabis.**Reece AS.**Clin Toxicol (Phila). 2009 Jul;47(6):517-24. doi: 10.1080/15563650903074507.

Cannabis – Birth Defects 3

Cannabinoid- and Substance- Relationships of European Congenital Anomaly Patterns: A Space-Time Panel Regression and Causal Inferential Study

Environmental Epigenetics

Confirmed data from Australia / Canada / USA / Hawaii / Colorado

Increased prevalence, intensity of daily use and increased THC content all implicated.

Actually thalidomide was described as causing 31 birth defects.

Cannabis causes 21 of them in USA; causes 38-43 birth defects of the 62 tracked longitudinally in USA; and in the European datasets a total of at least 84 of 90 which are tracked longitudinally by health authorities there. Prof Stuart Reece

Cannabis - Issues

Gateway Drug

Mental Health

Carcinogenicity – Cancer

Teratogenicity – Birth Defects

Premature Aging

Cannabis Toxicity Effects:
Generalized Systemic Toxicity - AGING

- Brain – Acute Intoxication
- Brain - Mental Illnesses
- Brain – Impaired Driving
- Aborts Normal Lifetime Trajectory
- Gateway Effect to Other Addictions
- Respiratory System
- Aerodigestive Tract
- Bladder and Kidneys

- **** Reproductive Tract – Male & Female***
- **** Liver – Cirrhosis***
- **** Cancer – x10, 3 in Children***
- **** Congenital Abnormalities***
- **** Arterial System –***
- **** Heart Attacks, Strokes***
- **** Immune System***
- **** Hormones***
- **** Appearance – Hair / Teeth***
- **** Genotoxicity***
  - **** Epigenotoxicity***
  - **** DNA Breaks***
  - **** Telomere Loss***
  - **** Mitotic / Meiotic Errors***

i.e. Cannabis Accelerates the Ageing Process

**** = Age Defining Illnesses***

Cannabis – James

MDMA – Ecstasy = Tragedy

MDMA – The Issues

- There’s no way of telling what’s in ecstasy until you've swallowed it. There may be negative side effects from other drugs and ingredients added to the E.
- Some users report getting colds and sore throats more often, which may be partly caused by staying awake for 24 hours, which can itself affect your immune system.
- The comedown from ecstasy can make people feel lethargic and depressed.
- Evidence suggests long-term users can suffer memory problems and may develop depression and anxiety.
- Using Ecstasy has been linked to liver, kidney and heart problems.

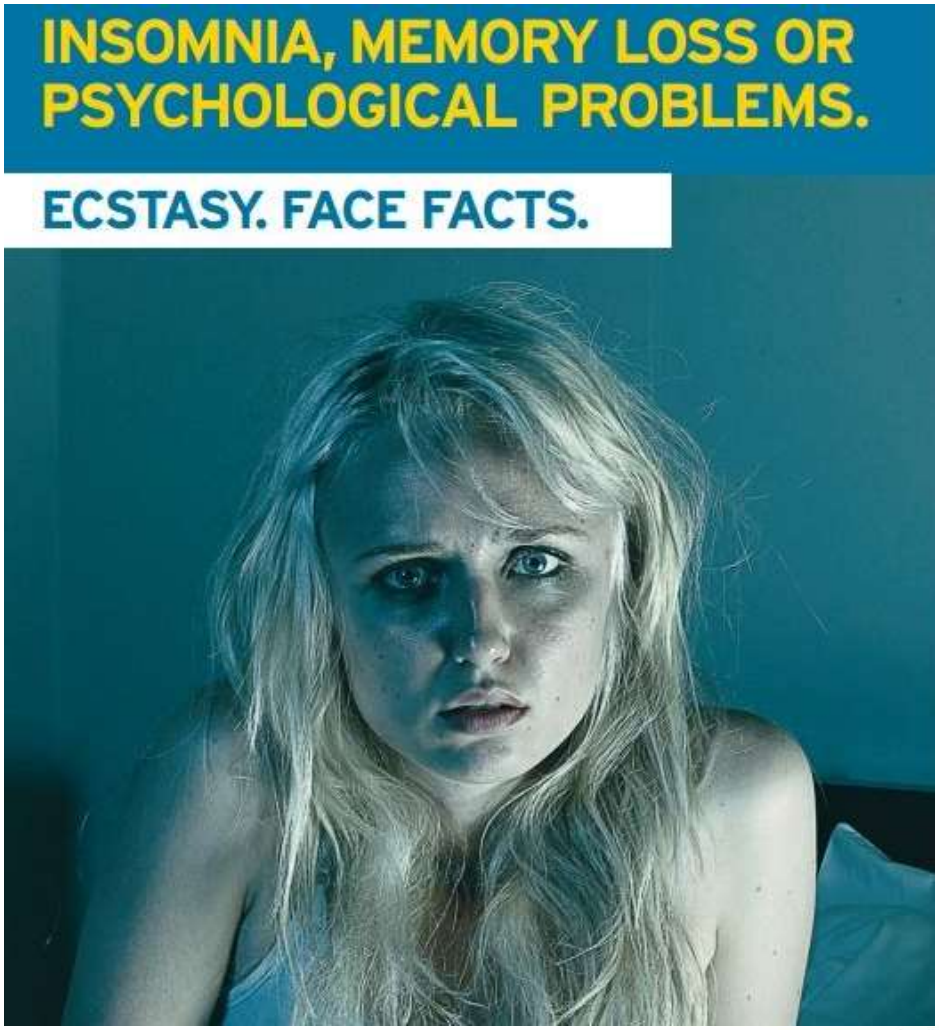
MDMA – The Issues

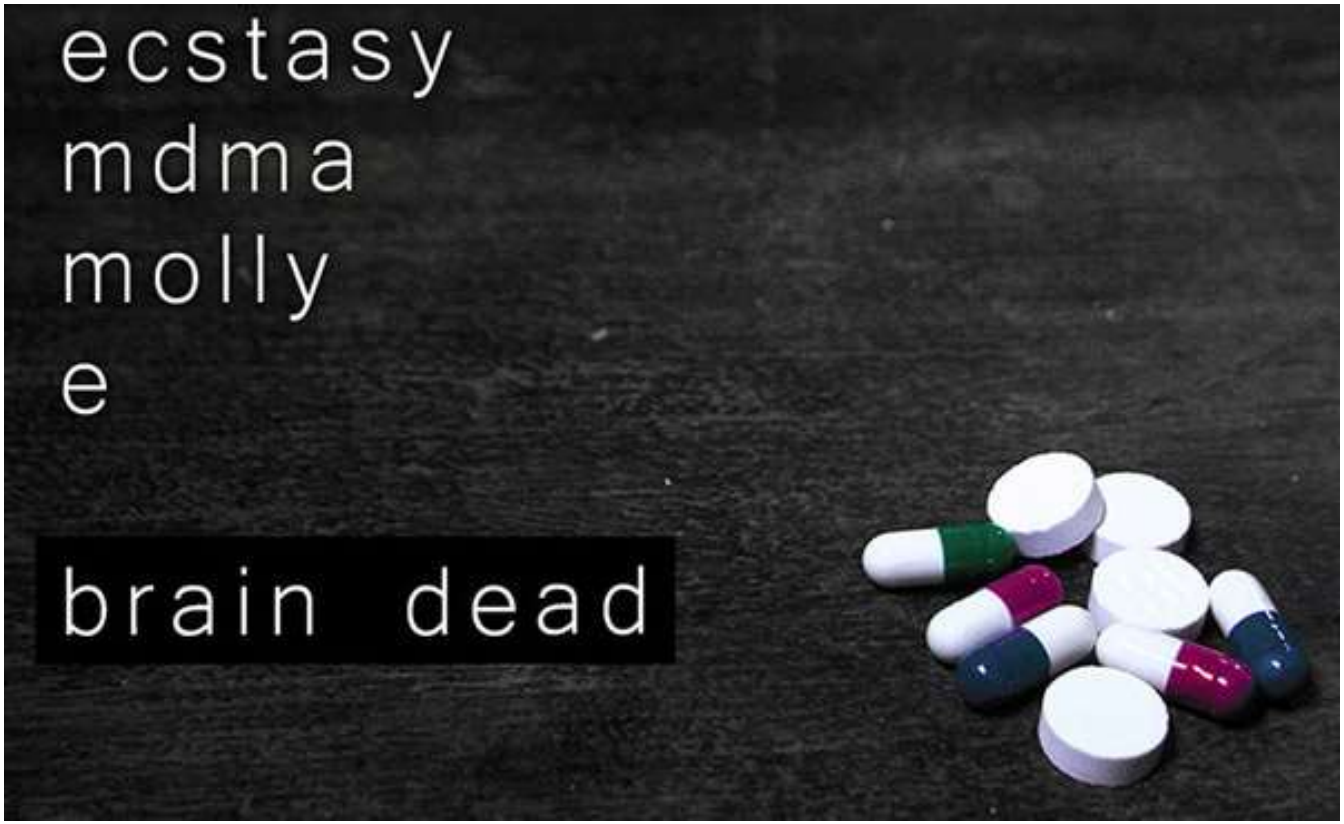
- Anyone with a heart condition, blood pressure problems, epilepsy or asthma can have a very dangerous reaction to the drug.
- There have been many deaths involving Ecstasy. Between 1996 and 2014 in England & Wales there were 670 deaths in which ecstasy/MDMA was recorded on the death certificate.
- Ecstasy affects the body's temperature control. Dancing for long periods in a hot atmosphere, like a club, increases the chances of overheating and dehydration.
- However, drinking too much can also be dangerous. Ecstasy can cause the body to release a hormone which stops it making urine. Drink too quickly and it affects your body's salt balance, which can be as deadly as not drinking enough water

India Thaker

MADE USING DRAIN CLEANER, BATTERY ACID OR EVEN HAIR BLEACH. THEN POPPED IN YOUR MOUTH.

ECSTASY. FACE FACTS.


INSOMNIA, MEMORY LOSS OR PSYCHOLOGICAL PROBLEMS.
ECSTASY. FACE FACTS.


ecstasy
mdma
molly
e
brain dead

Ketamine

Ketamine – The Issues

- Horse Anaesthetic – Quick Acting – Easy to Resuscitate
- Battlefield Anaesthetic

- Chronic Pain Treatment – Under Consultant Supervision

Agenda

Portfolio Workstreams

From Harm to Hope : 10 Year Drug Strategy

Illegal Gateway Drugs (IGDs)

PCC Checklist

Questions

From Harm To Hope : PCC Checklist

- **Tough On Drugs**
  - **Police and Crime Plan**
  - **Regional Response - Scorpion**
  - **County Lines Taskforce / Neighbourhood Enforcement Team / NPT**
  - **VRU**

- **Effective Rehabilitation**
  - **Adder - Map Current Adder Provision and Fill Gaps**
  - **Substance Misuse Funding – Local Implementation Board**
  - **Criminal Justice System Funding - CJB**
  - **Effective Rehabilitation Audit – Addiction and Substance Misuse Portfolio**

- **Cutting Demand**
  - **Reviewing OOCDs**
  - **Maximising Opportunities**
  - **Local Initiatives – Community / Individual / Age Specific**

Any questions?