

# **DRUGS, WHAT DRUGS?**

DRIVING IMPAIRED

DO WE REALLY NEED TO KNOW WHAT THE DRUG IS?

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**Conflict of Interest Declaration**

**Independent Board Member for the Tomorrow Program**

**[www.cheers.org.nz](http://www.cheers.org.nz)**

# Driver that left Australian actress fighting for life was heading home from methadone clinic

Dan Proudman • 08:21, Dec 29 2017



Jessica Falkholt is fighting f

NEW ZEALAND

## Alcohol or drugs suspected in fatal car crash

16 Dec, 2010 1:32pm

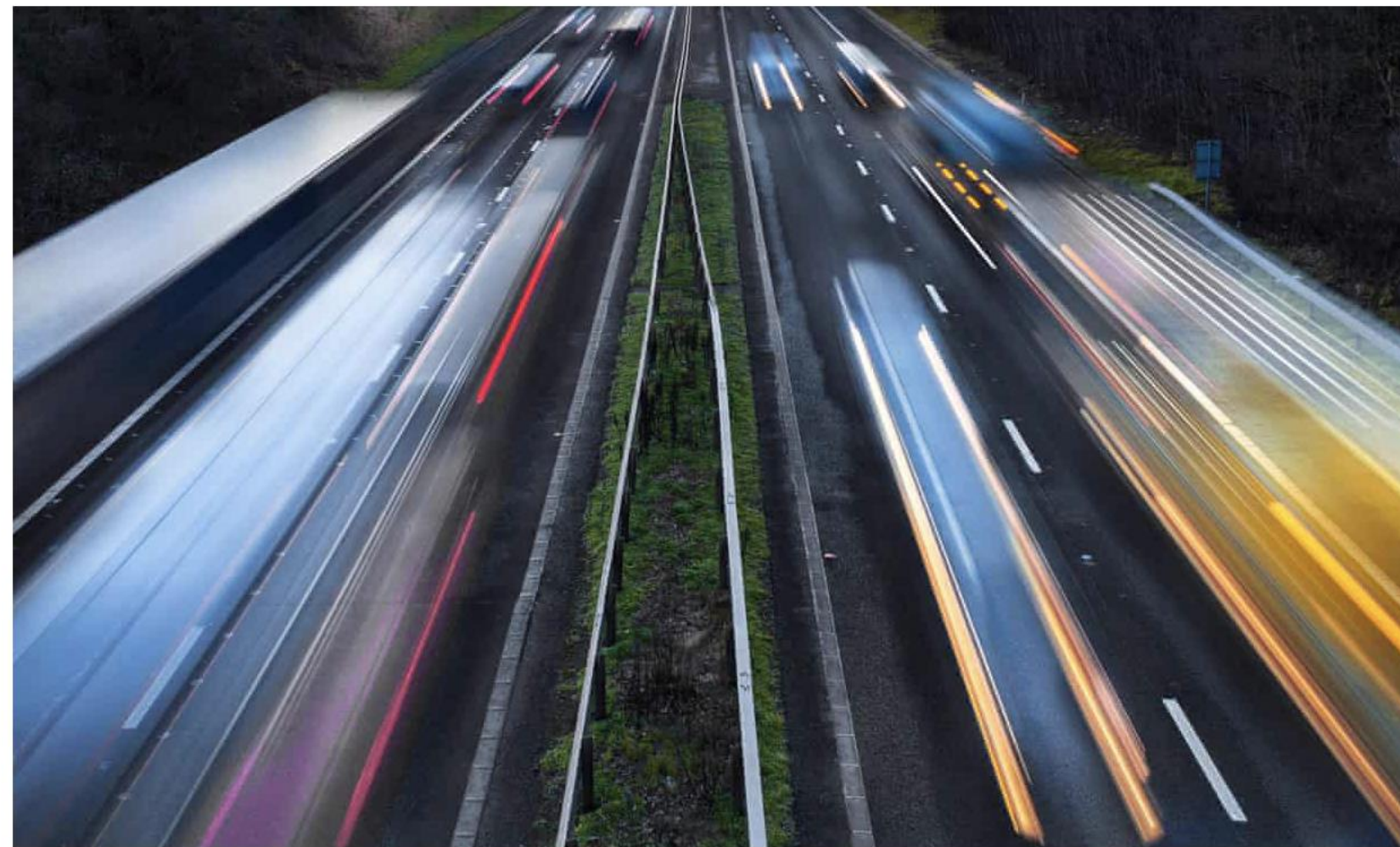


File photo / Martin Sykes

NZPA

## New Zealand drug-driving deaths surpass drink-driving toll for first time

Road association calls for police to be given saliva testing kits to tackle 'silent killer'



▲ In New Zealand last year, 79 fatal crashes involved a driver impaired by drugs, compared with 70 involving an intoxicated driver. Photograph: Wojciech Lorbiecki/Alamy

More people died on New Zealand's roads last year after collisions involving drug-drivers than drink-drivers, new research has shown.



## Drug charges laid against driver in New Year's Eve fatal crash in Nelson

2018



## Traumatic day drug-driver turned man's life upside down

2017 9:48am

6 minutes to read



Lance Carter describes the aftermath of a drug-impaired motorist knocking him over and killing his partner and a good mate while they changed a tyre.

Bay of Plenty Times



# RECREATIONAL DRUG USE

- **From New Zealand Drug Foundation**
- **44% of adult New Zealanders will try an illicit drug at some point**
- **Of regular users**
  - 11% Cannabis
  - 3.2% use Novel Psychoactive's (XTC, LSD, Bath Salts)
  - 1.1 % use Opiates
  - 1% use Methamphetamine
- **Remember these numbers...**
- **93% of New Zealanders will try Alcohol...**

# LEVELS AND IMPAIRMENT

- Only alcohol has an established correlation between blood levels and impairment.
- Other drugs never quantified
- Can't be quantified
  - Difficult to research illicit drugs
- Different levels of impairment at different time frames
- How about tolerance ?
- How about Methamphetamine ?

## HOW DRUNK R THEY?

### When can they go home ?

BAL mg%	BrAC ug/L	Effect of Alcohol	SAFE in...
20 to 30	88 to 131	No loss of coordination, slight euphoria and loss of shyness. Depressant effects are not apparent.	SAFE
40 to 60 NEW LEVEL 50	175 to 263	Feeling of well to being, relaxation, lower inhibitions, and sensation of warmth. Euphoria. Some minor impairment of reasoning and memory, lowering of caution.	SAFE
70 to 90	306 to 394	Slight impairment of balance, speech, vision, reaction time, and hearing. Euphoria. Reduced judgment and self to control. Impaired reasoning, memory, and sense of cautiousness.	TWO Hours
100 to 125 INTOXICATED	438 to 547	Significant impairment of motor coordination and loss of good judgment. Speech may be slurred; balance, vision, reaction time, and hearing will be impaired.	THREE to FOUR hours
130 to 150	569 to 656	Gross motor impairment and lack of physical control. Blurred vision and <b>major loss of balance</b> . Euphoria is reducing and dysphoria is beginning to appear.	FOUR to FIVE hours
160 to 200	700 to 875	Dysphoria predominates, <b>nausea may appear</b> . Has the appearance of a <b>"sloppy drunk."</b> May vomit.	FIVE to SEVEN hours.
250	1094	Needs assistance in walking; total mental confusion. Dysphoria with nausea and <b>vomiting</b> . In <b>YOUTH death</b> has occurred at this level, and it is considered a medical emergency.	TEN HOURS !!
300	1313	Reflexes are depressed (i.e. their pupils do not respond appropriately to changes in light). Amnesia common. They are at risk of <b>HYPOTHERMIA</b> (can't shiver) <b>Loss of Consciousness</b> . (In naive drinkers)	THIRTEEN HOURS !!
> 400	1751	Onset of <b>anaesthetic</b> coma, possible death due to respiratory arrest. (Respiratory Arrest (DEATH) almost uniformly occurs at 600 mg%)	SEVENTEEN+ HOURS !!

**ASSUMPTIONS**  
It is regarded in most countries that an alcohol level < 50mg% is safe to drive and therefore also legally competent for decision making. This is the level at which these calculations have been made.  
[ NOTE : The BAL for driving in NZ is 50mg% from December 2014 ]  
A metabolism rate of 20 mg%/h is used as the safety calculation. This is for ease of calculation and also represents NZ one standard drink. Actual metabolism may be as slow as 16 mg%/h especially in WOMEN.

# The "Run Crash Run" cycle

Speeding phase

Early Withdrawal phase

Speeding phase

Using ++

Aggression

Using ++

No sleep

Mood swings

No sleep

No food

Irritability

No food

Paranoia

Sleep disorder

Paranoia

?Psychosis

Cravings

?Psychosis

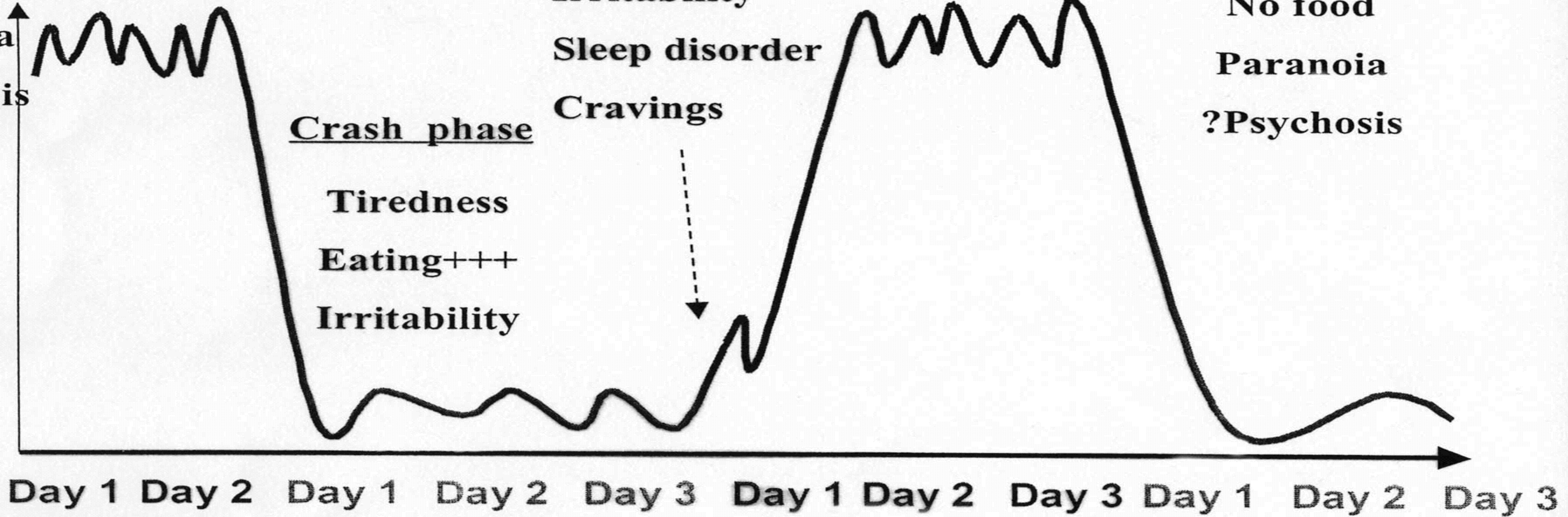
Crash phase

Tiredness

Eating+++

Irritability

Level of arousal



Speeding

Crash phase

Speeding

Crash phase

# MDMA / XTC / ECSTASY

- Does exist !!
- In fact as with all psycho-actives increasing purity and doses.
- **Significantly affects driving**
  - Visual hallucinations / colour spatial distortions
  - Distractible
  - Decreased reaction times
- **User also exhibit concerning habits of consuming BEFORE heading to town, try and get the peak effect when “socialising”**
- **MISTAKE !**



# BATH SALTS

- Not ACTUALLY bath salts.
- Synthetic version of Khat, which contains cathinone.
- PVP-alpha, Mephadrone, Methione, Ethylone.
- Amphetamine like with hallucinogenic properties
- Similar clinical effect to MDMA



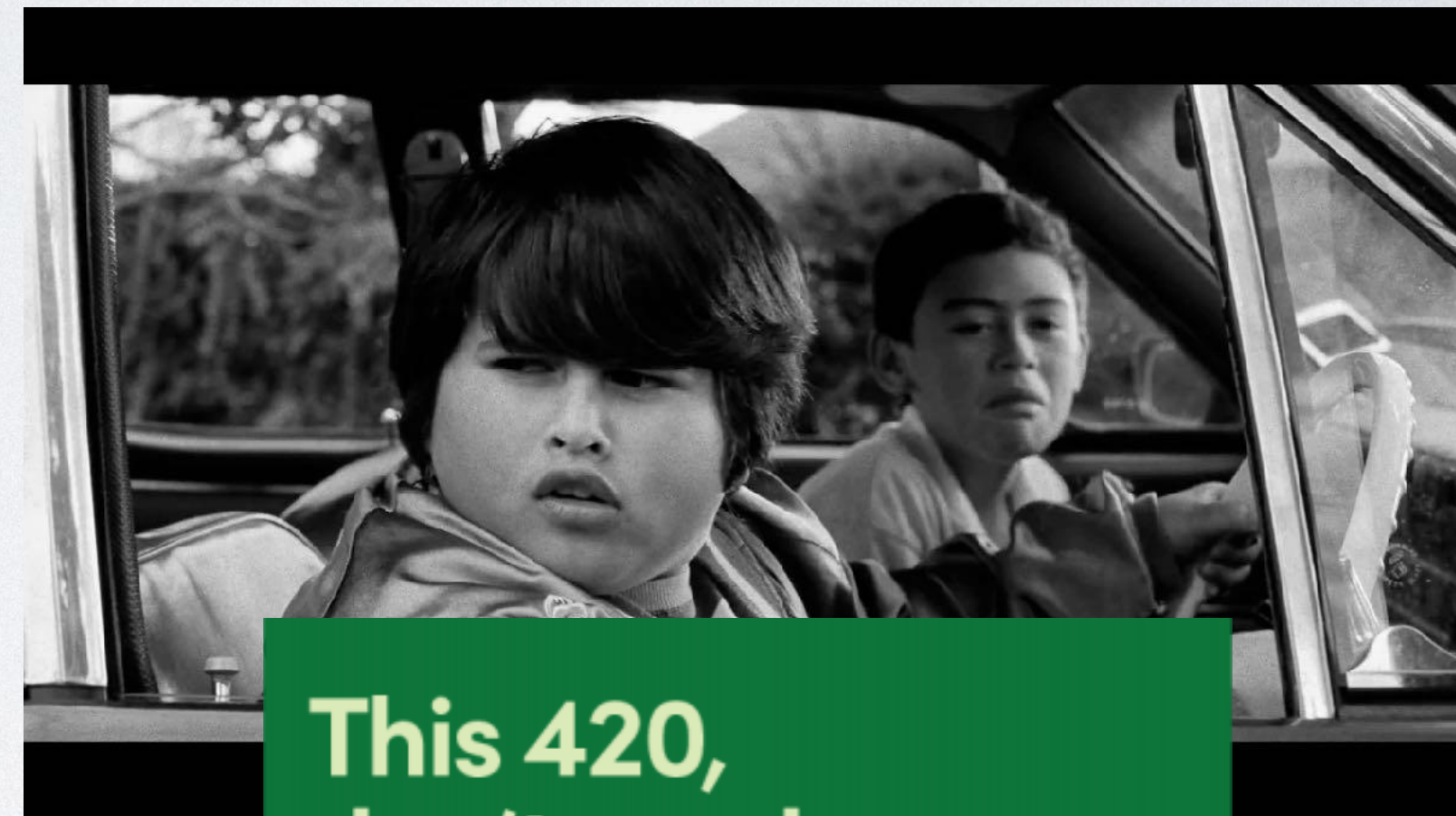
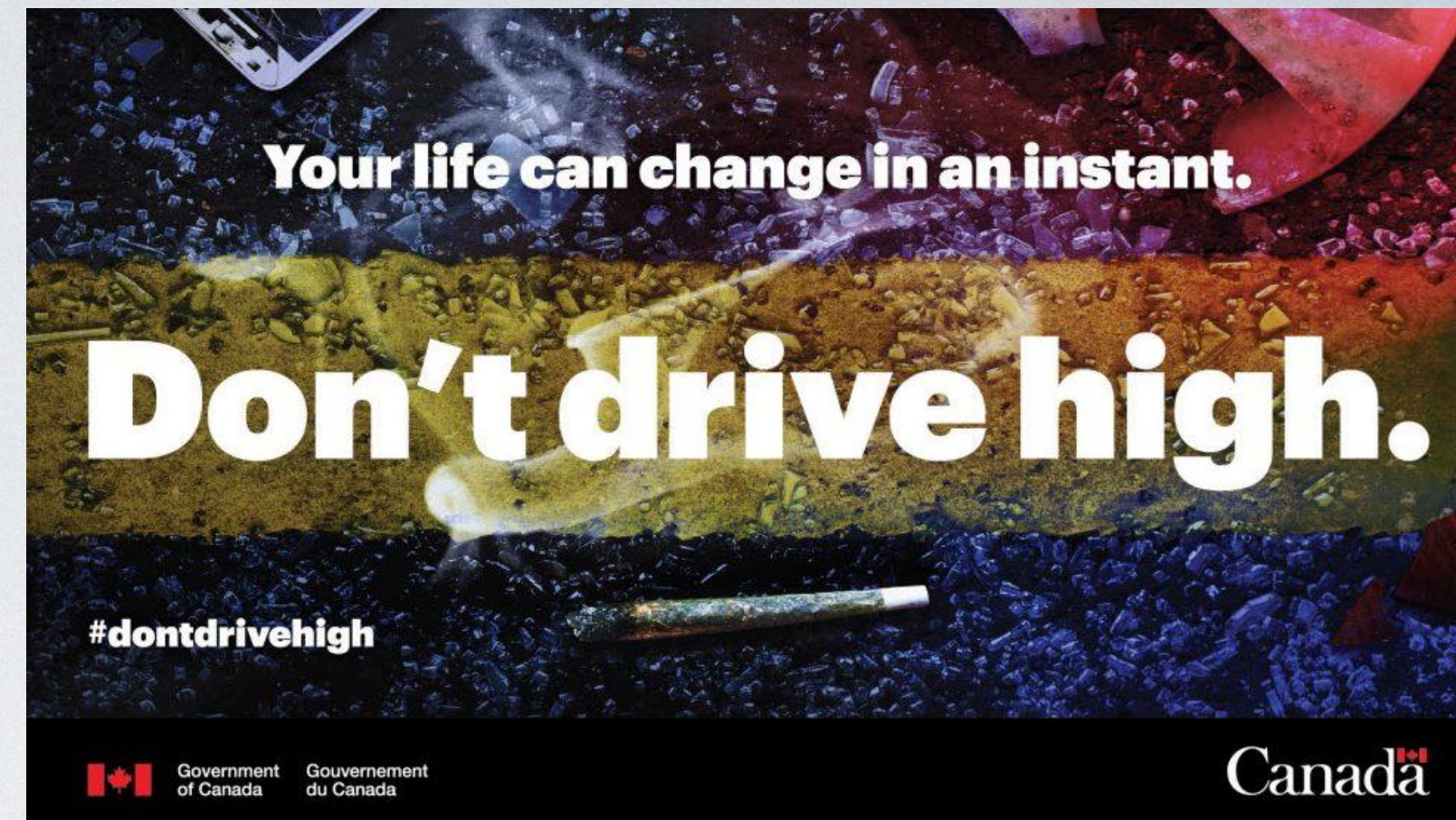
# LSD & 1,25 NBOME

- **LSD is still around and very popular**
  - Rare for users to TAB and drive
- **1,25 NBOME is a synthetic hallucinogen based on the CB series (who knew)**
  - Potent sympathomimetic effects (like amphetamine)
  - Plus hallucinogenic
  - “Crazy with the strength of 10 Men”
- **Most common occurrence with driving would be by “mistake”**



# CANNABIS

- Causes significant impairment of motor function and response times
- Profound effect on short term memory
- **DOUBLES** the risk of an injury crash
  - 30% of driver fatalities had used cannabis 3/4 were responsible for the crash.
- **Accentuated with alcohol**
- **No correlation with levels and impairment established**
- **MAJOR concern of ALL jurisdictions decriminalising and regulating cannabis**
  - Huge public health campaigns not to drive Stoned
- **New Zealand MUST be prepared**
- **Road side impairment testing VERY effective**



**This 420,  
don't smoke  
and drive.**



If you get high,  
ride with Lyft.

USE CODE  
**CANNABISLV**



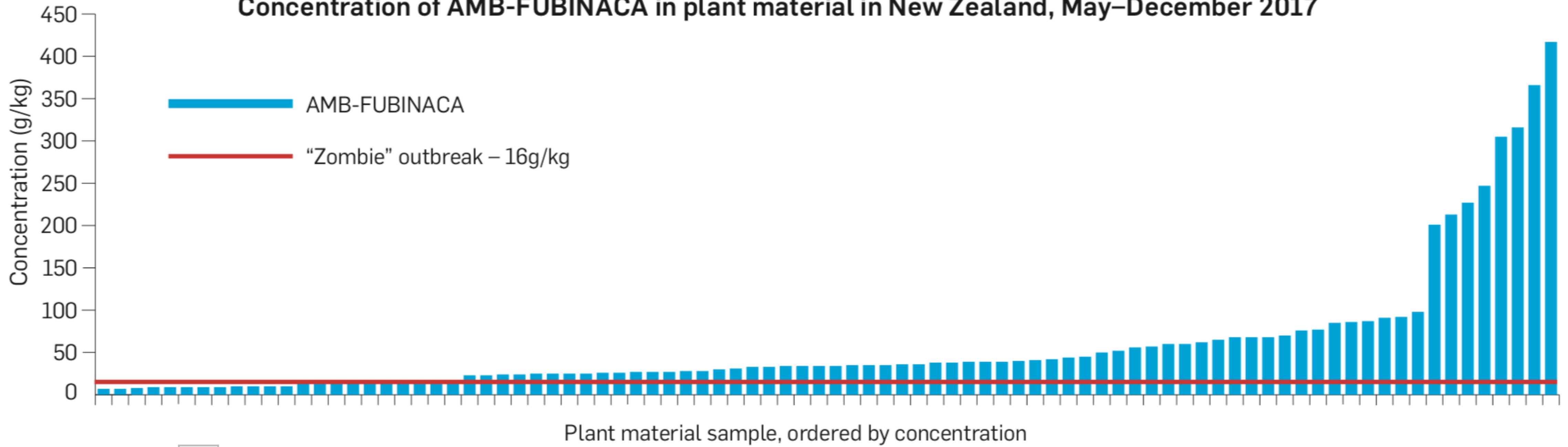
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# SYNTHETIC CANNABINOIDS

- Synthetically made THC analogues
- Currently dose strengths some of the highest in the world.
- Magnitudes of orders stronger than when it was regulated.



Concentration of AMB-FUBINACA in plant material in New Zealand, May–December 2017



# SYNTHETIC CANNABINOIDS

- Synthetically made THC analogues
- Currently dose strengths some of the highest in the world.
  - Magnitudes of orders stronger than when it was regulated.
- Imported chemical hand sprayed onto smokable plant material to MIMIC cannabis
- Can be ingested as liquid or vaped
- Responsible for >50 deaths in 18mths
- Unregulated and illicit



# SYNTHETIC CANNABINOIDS

- Significantly more potent than natural cannabis
- Up to 80x stronger with greater receptor affinity
- Can cause 100% agonism of the CB1 receptor
- Causes cataplexy, “zombie state” and complete memory black out
- Responsible for a significant number of road fatalities in Japan
  - Kaneko, S., 2017. Motor vehicle collisions caused by the “super-strength” synthetic cannabinoids, MAM-2201, 5F-PB-22, 5F-AB-PINACA, 5F-AMB and 5F-ADB in Japan experienced from 2012 to 2014. Forensic Toxicology, 35(2), pp.244–25
- **The most dangerous drug on the roads in New Zealand**
- NOT scheduled under MODA, therefore NOT tested for routinely in MVC with associated injury

# OPIATES

- **More commonly on the road with PRESCRIPTION users than ILLICT**
  - Codeine
  - Morphine
  - Fentanyl
  - Methadone
- **Pain control**
  - Injury
  - Chronic pain
  - Cancer
- **Abuse rates in New Zealand very low 1%**
- **But even with “normal” use ...**



# LABEL 1. MEDICATIONS

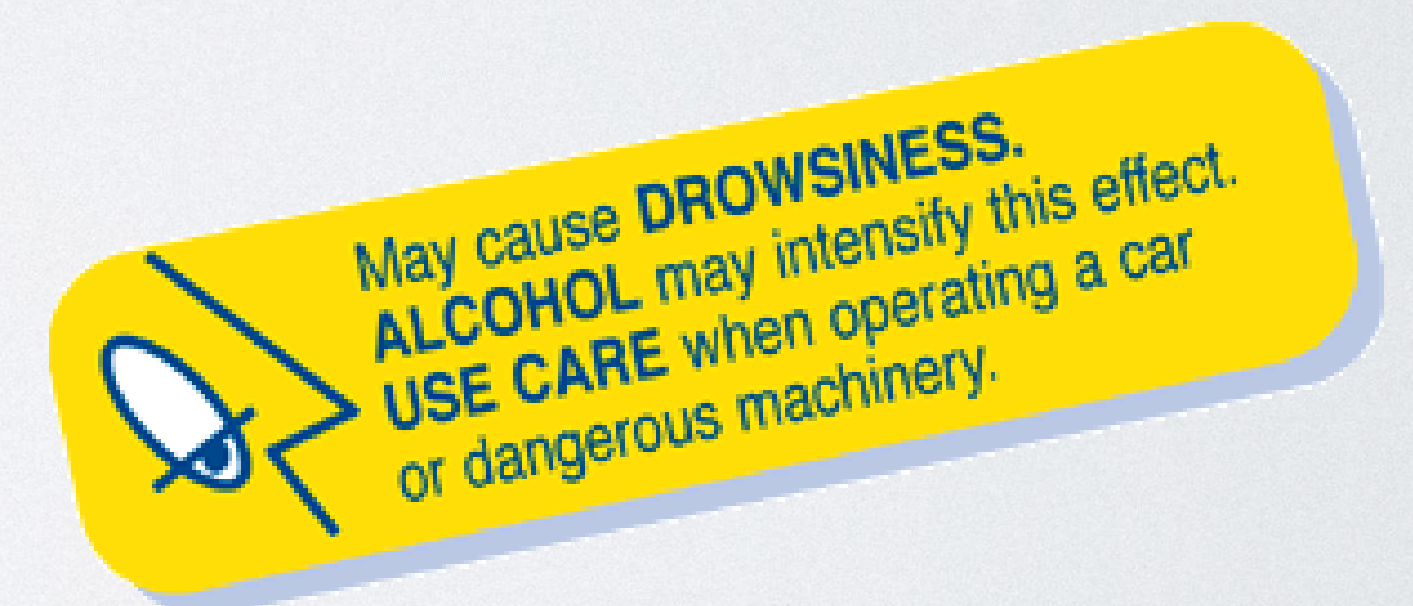
**lorazepam**  
injection  
2 mg/mL  
Lorazepam (Hospira) Section 29 10 vial  
Lorazepam USP (Akorn) Section 29 10 vial  
4 mg/mL  
Ativan C5 Section 29 10 ampoule

tablet  
1 mg full subsidy (restrictions)  
Ativan C5 CALs  
2.5 mg full subsidy (restrictions)  
Ativan C5 CALs

Cautionary and advisory labels (CALs):  
Label 1  
• This medicine may make you sleepy and make it dangerous to drive or operate machinery. Limit alcohol intake.  
source: [Pharmaceutical Society of New Zealand](#)

Medicines  
Constitution  
Information  
Cautionary  
Labels  
Pharmaceutical  
Society of New Zealand  
List  
General  
Pharmaceutical  
Prescription  
Contraindications  
Section 29

- “This medicine may make you sleepy and make it dangerous to drive or operate machinery. Limit alcohol intake.”
- The intent of this label is NOT that people should stop taking the medicine if they intend to drive or operate machinery, **but that they should determine whether or not drowsiness is a problem.** For some medicines it is important to advise that the medicine should always be taken in order to continue being able to drive, but to be aware of the possibility of drowsiness....



# **LABEL 1 MEDICATIONS**

- **Forms part of ESR's screening of 40 Medications that cause impairment.**
- **Benzodiazepines, opiates, sleeping tablets, anti-depressants, anti-psychotics, and antihistamines are on the list.**
- **These also are some of New Zealand most prescribed drugs with the rise anxiety and other mental health conditions.**
- **They SIGNIFICANTLY impair driving.**



# TOLERANCE

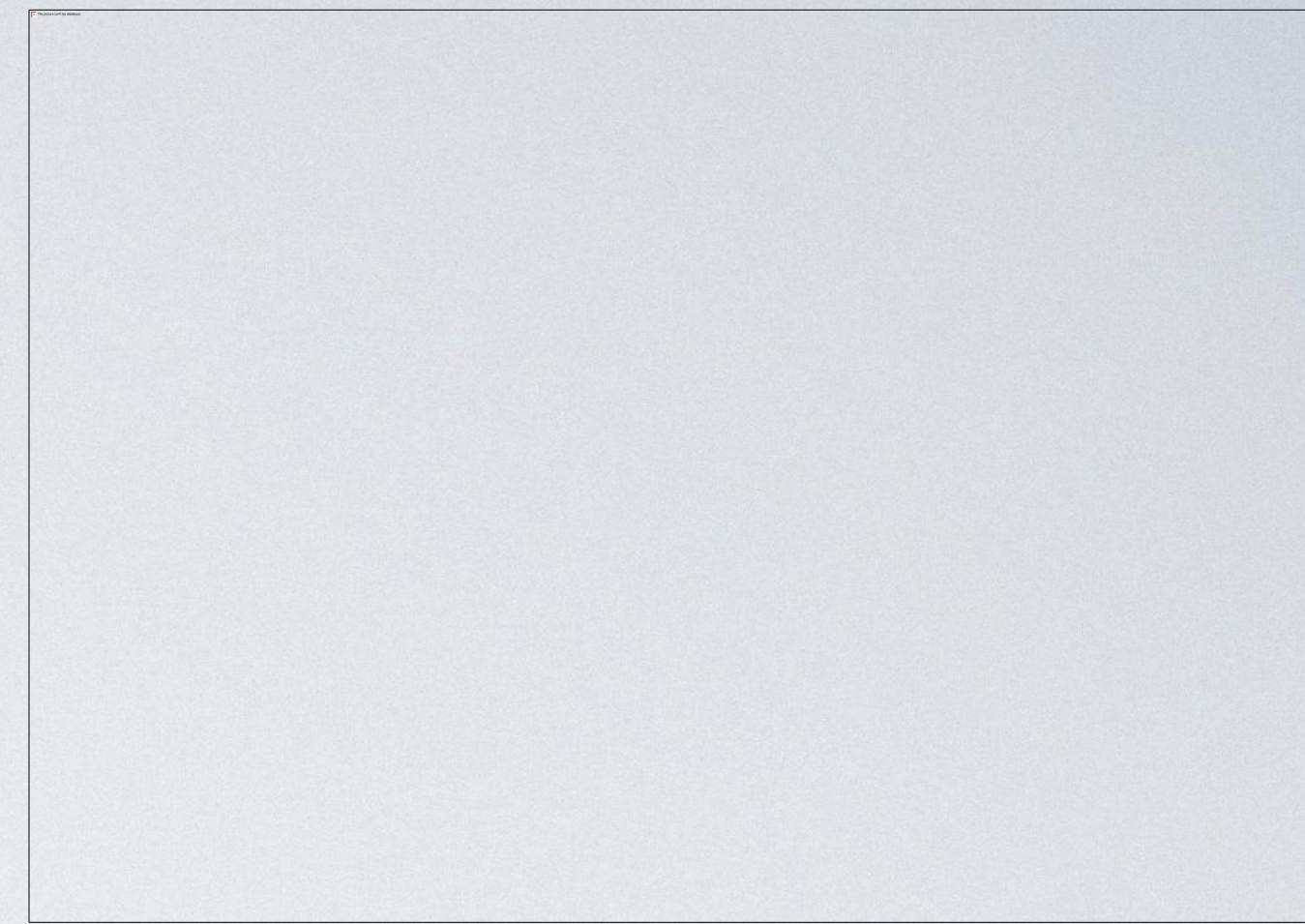
- Tolerance is the physiological adaptation of receptors to the effect of a drug.
- Resetting to a “new normal”
- Used as the leading reason why prescription users return to driving “under the influence”
- Benzodiazepines (potent sedative) and Opiates have both been shown to have significant improvements from tolerance with
  - Outright sedation & cognitive impairment
  - Can return to normal on road-side impairment testing (basic version).

# TOLERANCE MYTH

- **However, in structured driving studies, they still fail**
  - Reaction times for emergencies remain blunted (c.f. normal)
  - They fail, indicator use, lateral movement and sudden stop tests.
- **As one of my Psychiatrist colleagues once stated, “If, as a patient, you find the drug effective and useful then by definition you have not achieved 100% tolerance”**
- **Is detected by computer based reaction and impairment tests.**

# ENFORCEMENT

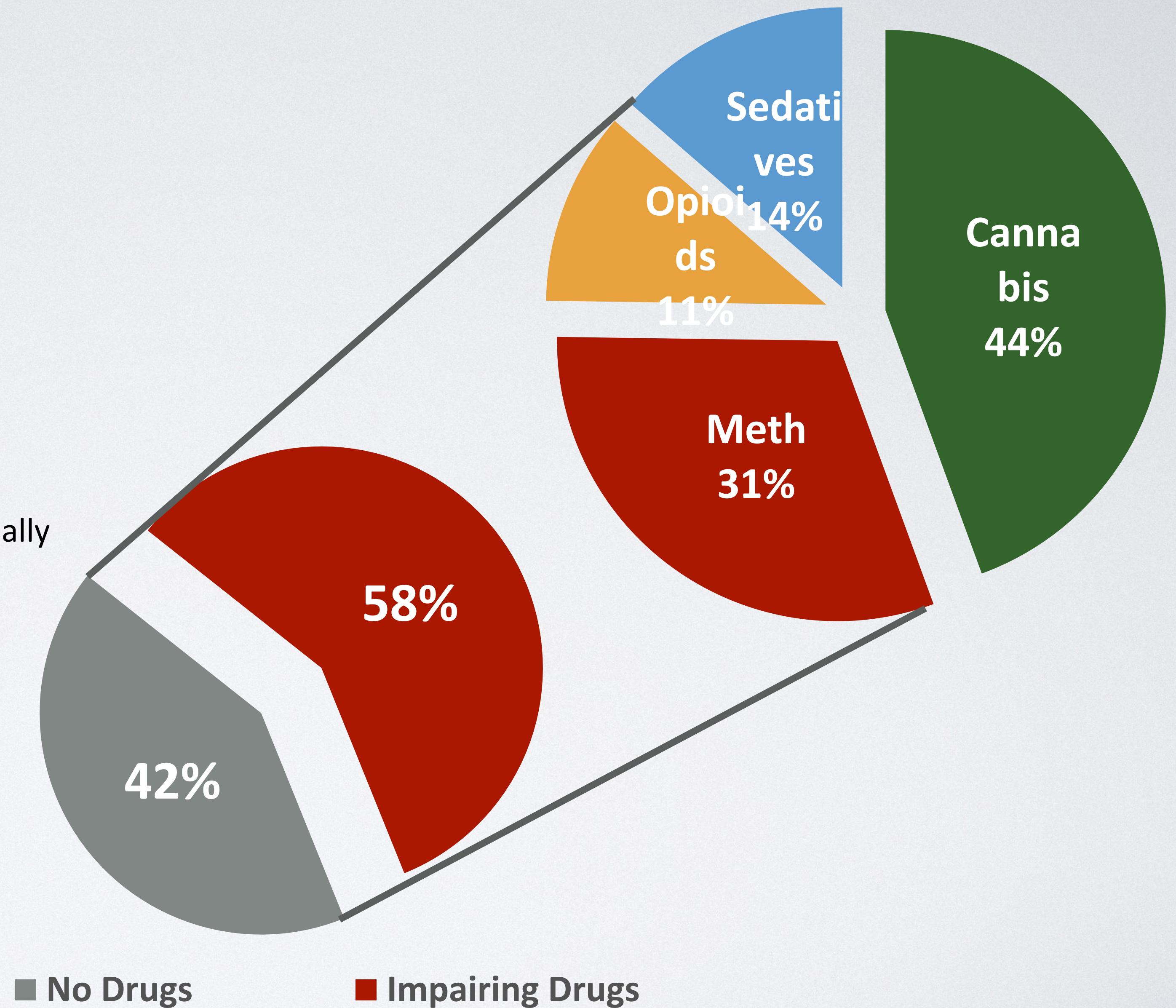
- The “law is an ass”
- In reality we only know a fraction of crashes caused through impairment.
- **2009 Law Change enabled road side testing for impairment if ALCOHOL NEGATIVE**
  - Can't do test —-> blood test
  - Drugs on Misuse of Drugs Schedule or **40** Listed (label 1) Medicines
- **Hospitalised drivers**
  - Blood alcohol and the presence of **Class A** (Schedule 1) MODA drugs **ONLY**
    - **Methamphetamine or Cocaine** are the only drugs in reality covered by this approach.
  - All the other Novel Psychoactive agents are NOT Class A
  - Synthetic Cannabinoids are NOT under the MODA but the PSA and therefore NOT prosecutable



- 2017 - Hospitalised drivers
- 534 requests for drugs analysis.
- 223 were effectively no drugs detected
- 311 had used potentially impairing drug/s.
  - 199 cannabis,
  - 138 methamphetamine,
  - 50 opioids,
  - 61 sedatives,
- Many with multiple drug use, Also NOT all potentially impairing medicinal drugs just the LCMSMS (40)

**A 60% “hit rate” of drugs in an ED Presentation IS NOT NORMAL**

**Remember population use  
11% Cannabis  
1% Methamphetamine**



# SO HOW ABOUT THAT SPIT / ION TEST ?

- **PRO**

- Fast and easy
- Road side
- Relatively non-invasive
- Can be easy...
  - If positive you're busted

- **CONS**

- Very limited testing range

- Opiates, Benzos, Cannabis, Cocaine, Meth
- NOT Synthetics or other novel psycho-actives.
- NOT EASY...
  - +ve ≠ impairment
  - -ve ≠ safe to drive

# ROAD SIDE IMPAIRMENT TESTS

- **PROS**

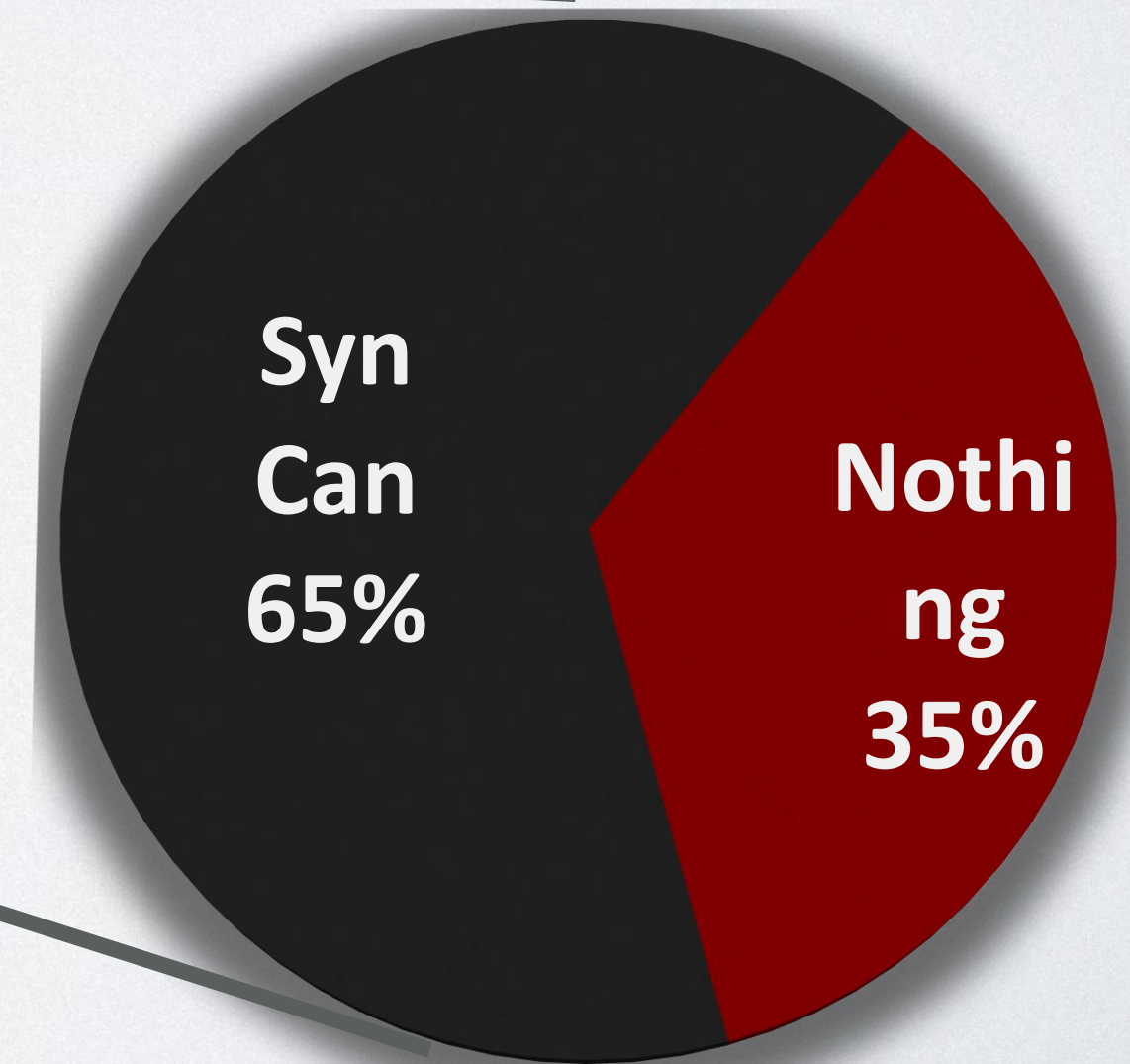
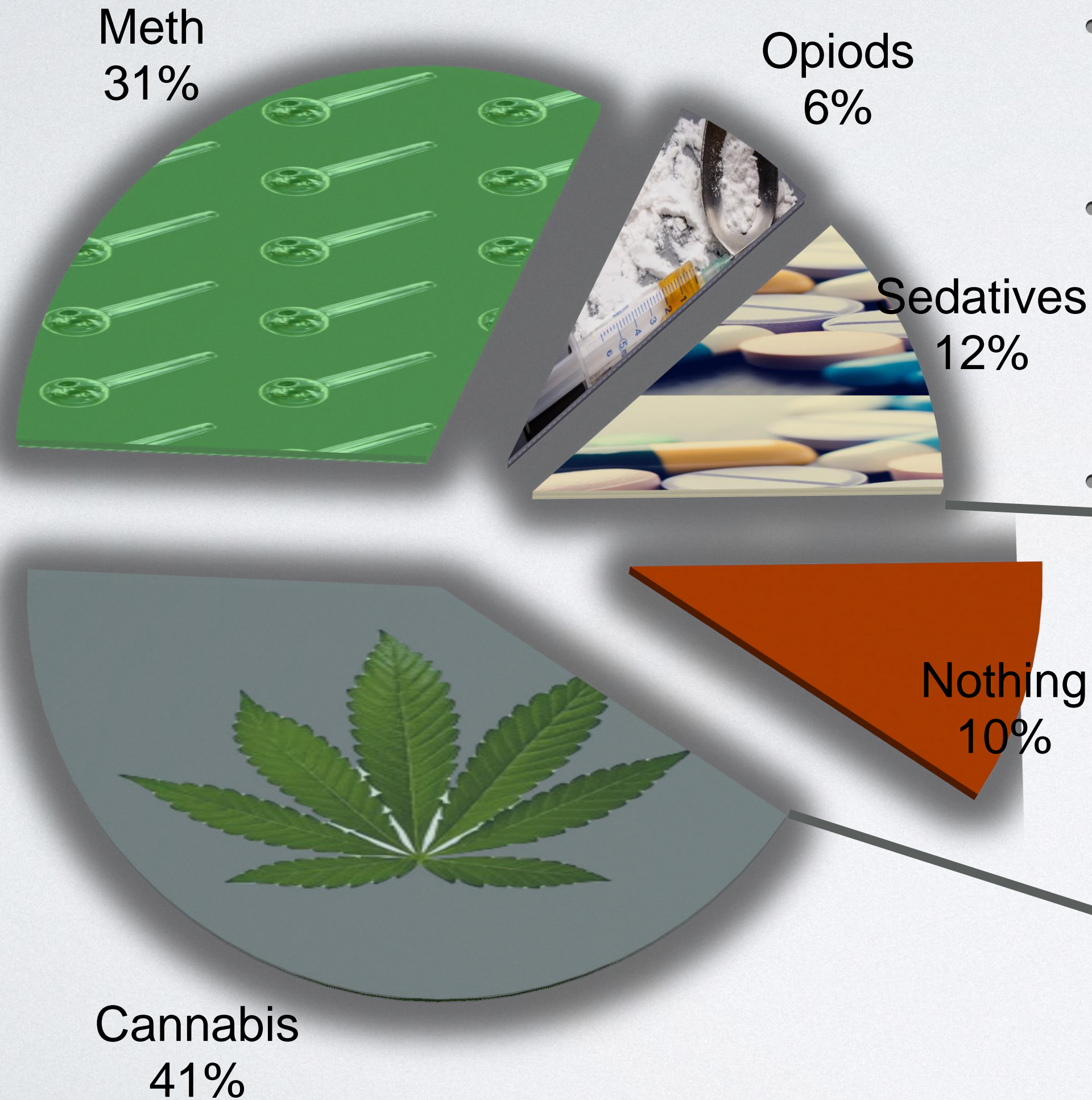
- Repeatable and Non-invasive
- Standardised
- Is DRUG independent
- Impairment is impairment
- Includes FATIGUE
- Internationally and locally proven.

- **CONS**

- False negatives with low dose Meth, prescribed opiates / benzos (for basic screen)
- Physically disabled

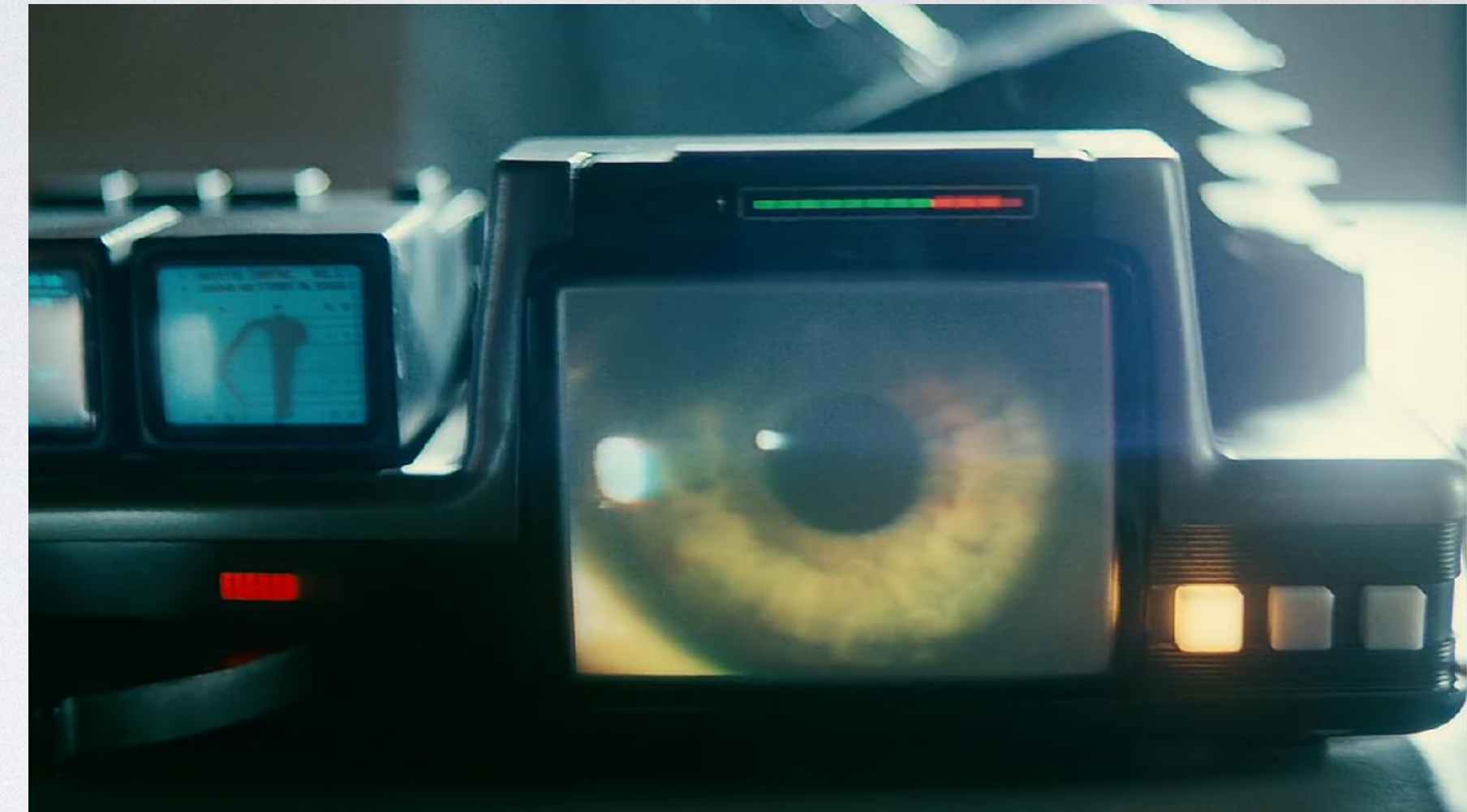
# ROAD SIDE IMPAIRMENT

- 2017
- 418 Impaired Drivers
  - 90 % positive for a DUID agent
- 10% Cases -ve
  - RE-TESTED for Synthetic Cannabinoids
  - 65% +ve
- 95.5 % Detection Rate !



# ROAD SIDE + THE FUTURE

- **New tablet based impairment tests**
  - The “DRUID” app <https://www.druidapp.com>
- **Roadside Pupillometry**
  - <http://www.optalert.com/explore-products/the-blingtm-system/>
- **Currently “experimental” and not entered into “law”**
- **However experimentally increases sensitivity of the traditional test significantly**
  - Low dose meth
  - Opiates and benzodiazepines in “tolerant” users
- **Also effective in detecting the cognitively impaired !!**
- **FATIGUE !!**

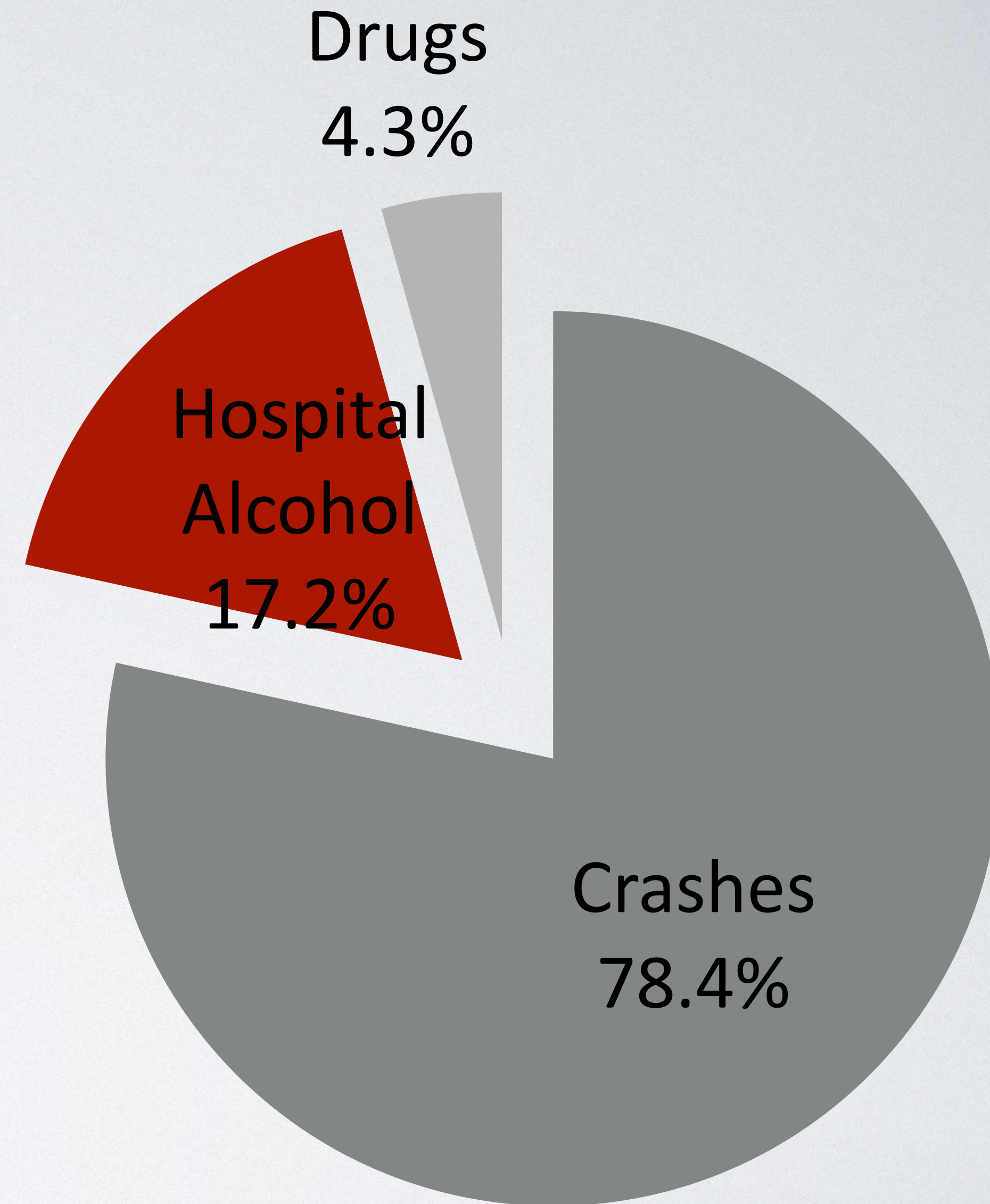




# ENFORCEMENT

- Pointless having any form of restriction / prohibition and testing if it is not enforced
- Even with alcohol currently the chances of actually getting caught are like winning lotto
- Also “booze buses” opportunistic every +ve case only represents a fraction on the road at the same time
- Stopping the impaired driver..... often too late.

- In 2016 there were 9862 crashes resulting in injury.
  - A minimum of 9862 drivers (potentially many more)
- ESR received samples from 1775 hospitalised drivers, <20%
  - All were tested for alcohol.
- Only 448 were tested for drugs
- **MEANING < 5% (PROBABLY SIGNIFICANTLY LESS) OF DRIVERS INVOLVED IN INJURY CRASH HAVE BEEN TESTED FOR DRUGS**



# DRINK DRIVING (DUIA)

- **From Alcohol and Drugs 2017:** <https://www.transport.govt.nz/assets/Uploads/Research/Documents/Alcohol-drugs-2017.pdf>
  - For every 100 alcohol/drug impaired deaths, 37 passengers and 19 sober road users die
  - 47 % were not restrained c.f. 16% of sober deaths
  - In 1990 44% alcohol as a factor resulting 318 casualty fatalities
    - In 2015 the number dropped to 90 alcohol casualty fatalities but ... this still represented 30% of the accidents.
- **Terrifyingly 22% of alcohol related driver fatalities were unlicensed or disqualified.**
- **86% Male and 57% occurring between 2200 - 0600h**
- **Over half had a level greater than 150 mg/100ml (3x the legal limit)**
- **However IF caught there are things that can be done...**

- ▶ On 10 September 2012, section 65A of the Land Transport Act 1998 came into force. New provisions available to the courts where repeat drink drive offenders and first time offenders convicted of driving with blood alcohol levels double the current adult limit could be given an alcohol interlock disqualification. In addition, the zero alcohol licence sanction is available to the courts, which requires drivers to maintain a zero alcohol limit for a fixed period of three years.

**Interlocks WORK**

**USA and NORWEGIAN data show a significant reduction in  
RECIDIVIST arrests**

**This is important**

**How about those +ve for Drug Impairment**

# WORSE BEFORE IT GETS BETTER

- Decriminalisation of drug use / the Portugal Model
- Regulation and legalisation of Cannabis
- New recreational drugs EVERY WEEK
- Need to be proactive and adaptive to protect the rights of the many over the few.



# **PORTUGAL**

- **Manufacturing, trafficking and supply of prohibited drugs STILL against the law.**
- **Personal use decriminalised**
- **Extensive program of Drug Courts and compulsory treatment programs introduced.**
- **Penalties not for personal drug use but where that use affects others.**
- **VERY SUCCESSFUL**

# PREVENTION

- In car automated detection of impairment.
- **Alcohol interlocks are the beginning**
  - In-key breath tests
  - All cars, all the time
- **Pupil reaction time, eyelid blink rates and blink recovery.**
- **Steering wheel sweat detection and analysis**
- **13 year LAG TIME for introduction unless retro-fitting mandated**



# SUMMARY

- **There are impaired driver on our roads**
- **They are responsible for 50% of our fatalities (90% of night) and countless injury crashes**
- **They are impaired by**
  - Alcohol
  - Illicit drugs
  - Prescription drugs
  - Fatigue
- **Post drug use is as dangerous current use (in fact may be more...)**



- **It is impossible to keep up and test for new recreational drugs**
- **Road side IMPAIRMENT testing IS effective and is independent of drug types**
  - Recreational
  - Illicit
  - Prescription
- **Advanced tools using iPads/tablets enable testing in 2 minutes and enhance traditional tests**
  - Repeatable
  - Standardised
  - Detect fatigue and greater range of drug effect.
- **However, road side enforcement ultimately inefficient, reactive not proactive.**

- **All alcohol DUI —> Interlock**
  - Ultimately universal Interlocks
- **Significant increase in enforcement numbers**
  - Roadside impairment testing
  - Alcohol +ve also get drug testing and a more significant penalty
- **Impairment is impairment, remove Class A requirements for illicit drugs**
- **Be just as tough on any “restricted” prescription medications**
- **Increased use of Drug Courts and compulsory treatment programs for those found DRUG driving**
  - Significant penalties and restriction from driving (Zero Alcohol Licence)

# PRO-ACTIVE

- **Societal acceptance of a ZERO tolerance program for IMPAIRED driving including,**
  - Recreational AND Prescription drugs
- **In CAR preventive measures**
  - Universal alcohol interlocks
  - Sweat, Pupillometry and Blink Rate detectors
  - Accelerated adoption / retro fitting due to New Zealand's ageing car fleet.
- **The ultimate prevention**
  - No driver

THANK YOU