

Cannabis & Driving Impairment

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Experimental
Data



Population
Data



ISSUES IN CANNABIS AND DRIVING IMPAIRMENT

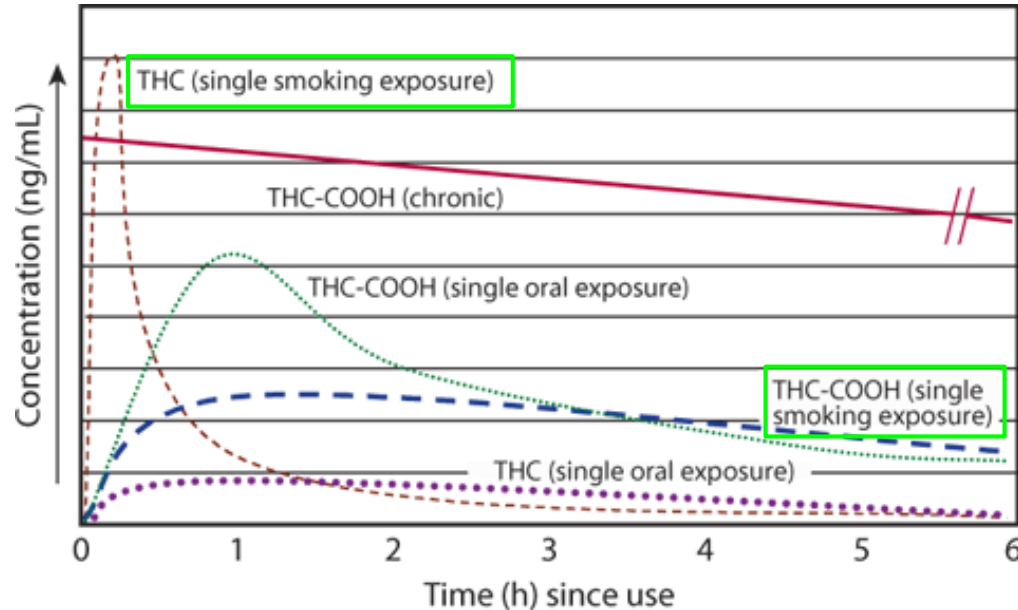
- **Occasional vs chronic use**
 - Tolerance, higher blood THC
- **Low dose vs high dose THC**
 - Use standard NIDA joints
- **THC is not alcohol**
 - Different metabolism, different effects
- **Inhaled vs oral products**

REVIEW OF CANNABIS METABOLISM

- **THC -> 11-OH THC -> THC-COOH**
- **Active: THC & 11-OH THC**
- **Inactive: THC-COOH**

REVIEW OF CANNABIS METABOLISM

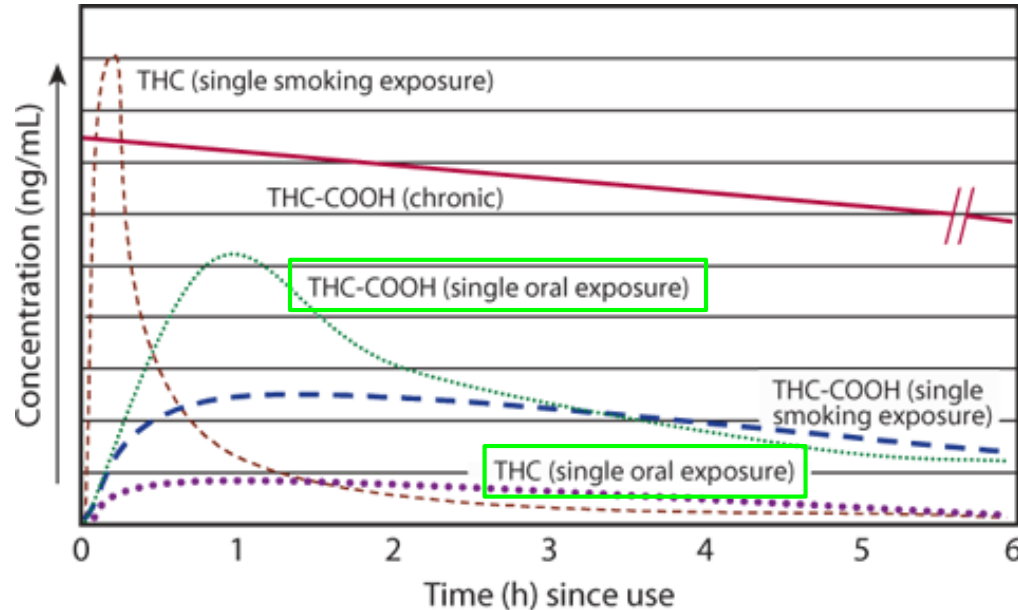
- THC -> 11-OH THC -> THC-COOH



Source: L.S. Nelson, M.A. Howland, N.A. Lewin, S.W. Smith, L.R. Goldfrank, R.S. Hoffman: Goldfrank's Toxicologic Emergencies, Eleventh Edition
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REVIEW OF CANNABIS METABOLISM

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CANNABIS & DRIVING - EXPERIMENTAL

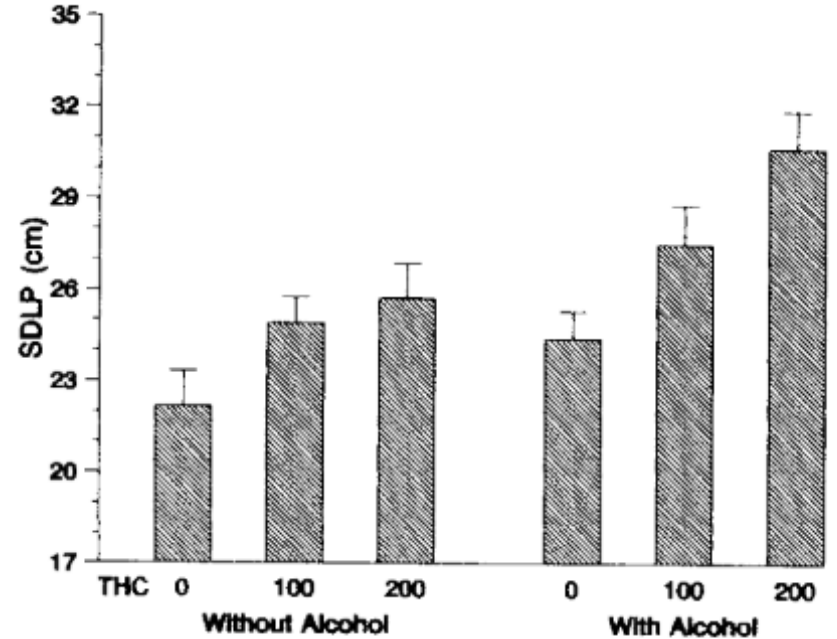
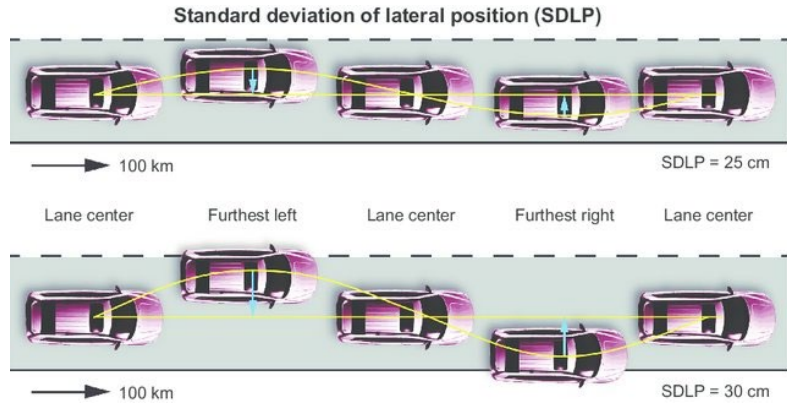


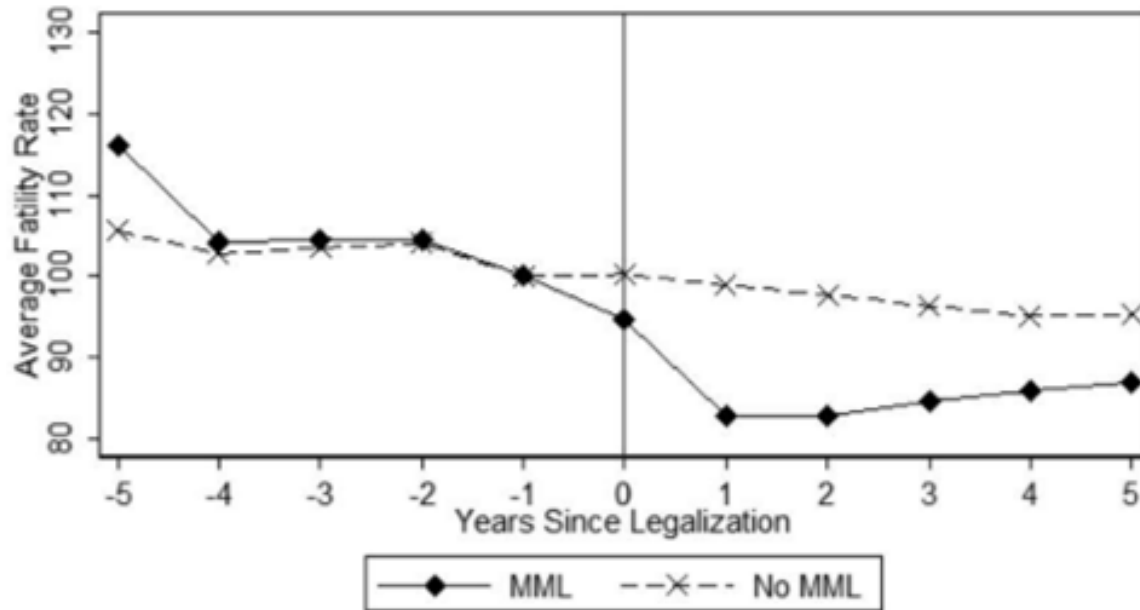
Figure 4. Mean (\pm SE) SDLP in the road-tracking test by THC dose and absence or presence of alcohol (averaged across repetitions)

CANNABIS & DRIVING - AUSTRALIA

Table 4. Statistical summary of cannabis data using logistic model

Parameter	N (percentage of population)	Point estimate (OR)	95% Confidence limits
Drug and alcohol free	1704 (50.1%)	1.0	–
All drugs ^a	907 (26.7%)	1.7 ^b	1.3–2.2
THC-only ^c	58 (1.7%)	2.7 ^b	1.02–7.0
THC-only ^c (≥ 5 ng/ml)	49 (1.4%)	6.6 ^b	1.5–28
THC plus BAC (≥ 0.01 g%) vs. BAC ^d	43 (1.3%)	2.9 ^b	1.1–7.7
THC plus BAC (≥ 0.01 g%) vs. BAC in motor cyclists ^d	33 (5.1%) ^c	2.4	0.5–12

CANNABIS & DRIVING – US NHTSA



CANNABIS, DRIVING, & IMPAIRMENT

- Alcohol – BAC 80 mg/dL (except Utah!)
- THC – no consensus
 - Zero tolerance
 - Per se laws (cutoff like alcohol)
 - “Under the influence”
 - Really complicated

CANNABIS & DRIVING

- **THC impairs driving ability**
- **Alcohol makes it worse**
- **Overall impact may be confounded**
- **Don't drive for 6-8 hours after use**

REFERENCES

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4. Robbe H. Marijuana's impairing effects on driving are moderate when taken alone but severe when combined with alcohol. *Hum Psychopharm Clin*. 1998;13(S2):S70-S8.
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