New Approaches to Assessing Driving Performance and Workplace Impairment in Cannabis Users

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Workplace impairment from employee marijuana use could potentially contribute to increased accidents and decreased performance

Consider transportation accidents as an example:

- Employment as a driver is among the most prevalent job for an American male

- Roadway crashes are the number one cause of occupational fatalities

Will marijuana use by drivers increase the risk of roadway crashes?

Will tolerance to the effects of cannabis enable chronic daily users of marijuana to drive safely?

Observational Study of Driving Impairment in Occasional Versus Heavy Marijuana Users

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Primary Aim

Compare driving impairment in occasional vs. heavy marijuana users, before and after smoked marijuana

- Driving simulator
- Ocular Scan of Eye and Pupillary Movement
- iPad-based neurocognitive test battery

Balanced cross-over design: each subject compared to their personal baseline
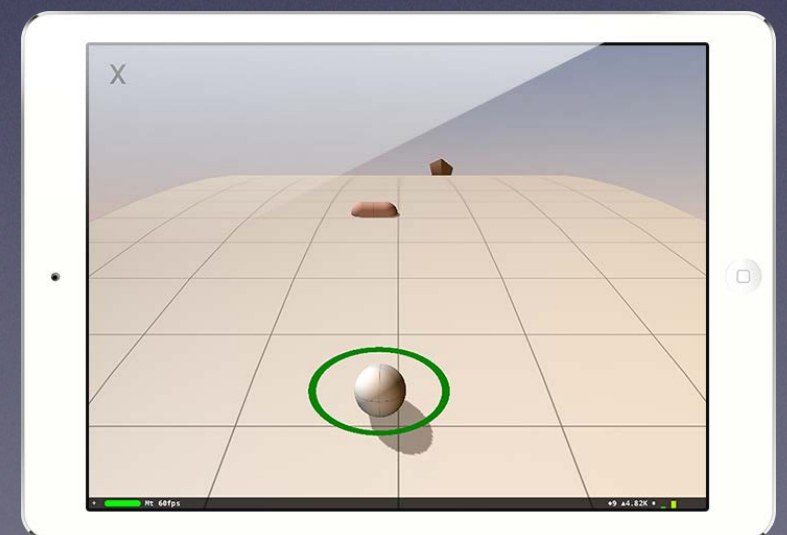
Participants

- 3 groups, 30 in each, with different marijuana use histories

  - Daily – at least 1x per day, past 30 days

  - Occasional – between 1-2 times per week, past 30 days

  - Non-users – have used, but not in last 30 days

Single-blind, balanced, cross-over design

- Online screening

- Visit 1: confirm eligibility; consent; sim-sickness screen

- Visit 2: Simulator

Blood Draw
Baseline assessments
[Simulator, Ocular Scan,
Ipad Neurocognitive]

Smoking session
Or Rest Session
(controls)

Blood Draw
Post assessments
[Simulator, Ocular Scan,
Ipad Neurocognitive