Toward a More Translationally Relevant Preclinical Model of Cannabis Use

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Limitations of Human Studies

• Double-blind, placebo-controlled studies are ethically impractical
• Longitudinal studies are costly and very time- and labor-intensive
• Cross-sectional and quasi-experimental studies offer little control over extraneous variables
• Difficult to untangle the effects of alcohol and other drugs, early life adversity, malnutrition, low socioeconomic status, etc.

Animal models are particularly advantageous in this respect

The Translational Gap

• Cannabis vs. THC vs. Synthetic CB1R agonists
  ▪ Pharmacological profile
  ▪ Different intracellular signaling pathways
  ▪ Entourage effects?

• Route of administration
  ▪ Forced vs. Volitional Exposure

High Times In Washington State

Number of retailers = 515
Number of producers = 1425
Total sales to date = $4.1 B
Total tax revenue = $742 M
WA State Liquor & Cannabis Control Board: "MJ sales currently exceed $4.3 M per day"

MONTHLY EXCISE TAX $
Modeling Cannabis Use in Rodents

Passive Administration of Cannabis Extract

How Does this Compare to Humans?

Ryan McLaughlin, PhD
Cannabis Vapor Self-Administration

Rats Show Strong Preference for Cannabis-Associated Nosepoke

Cannabis Vapor Supports Conditioned Drug Seeking
Rates of Cannabis Vapor Self-Administration Are Physiologically Relevant

Rats Will Work for High THC Cannabis Vapor

Cannabis Use Is Evolving

Ryan McLaughlin, PhD
Mind The Gap!

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