

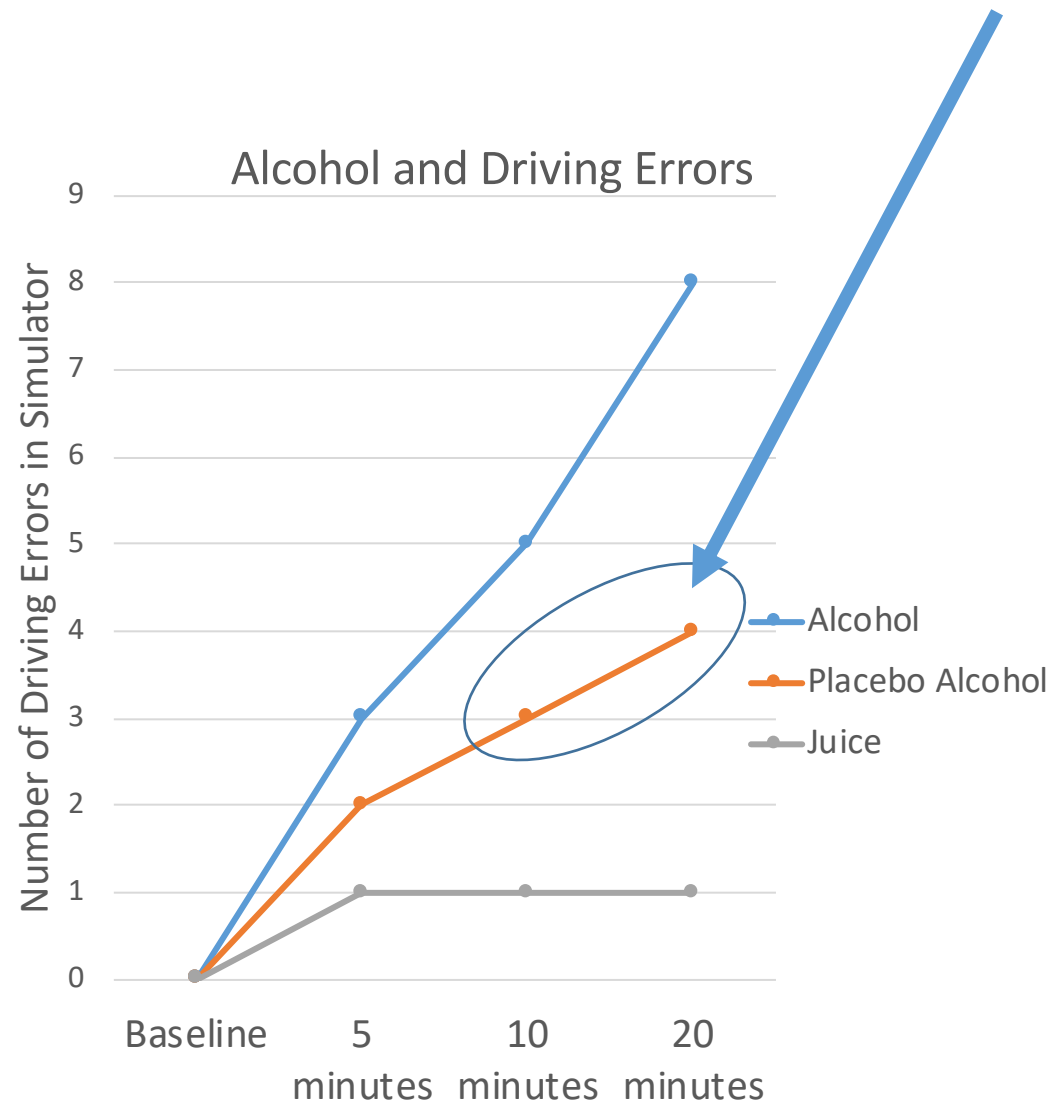
# Cannabis and Health

Module 3

Lecture 5: Placebo Effect

# Placebo Effects

- Placebo Effects – occurs when people do not receive active treatment, but show an effect
- Influenced by the participants' beliefs about the treatment, positive or negative



# Placebo effects

- <http://www.youtube.com/watch?v=yfRVCaA5o18>

# Placebo Effect

- The placebo effect has been measured in thousands of clinical studies
- Studies must show that their new drugs work better than a placebo before the drugs are approved
- Placebos have been shown to affect a range of health conditions
- Color and size of pills can alter the strength of its placebo effect; injection bigger effect than pill
- Bigger effect on self-reported outcomes but also influences biological outcomes
- Can also apply to “sham” surgeries

# How does it work?

- Expectancies that a pill will do something beneficial means you are more likely to report that it does
- Because you expect it to work, you may be less stressed and more likely to feel better
- Effect of anti-depressants may be as much as 50-75% due to placebo effect

# Highest Quality Studies?

- Placebo controlled – meaning there is a placebo condition
  - But best control is active medicine (e.g., benzo as control in ketamine study)
- Single blind – means that only patient is blind to condition, might alleviate expectancies
  - But non-verbal cues can tip off the patient
- Double blind – means that both doctor and patient is blind to what they are getting
  - Would you know if you were getting high THC cannabis?
  - And what would that mean if you could tell the difference?
- Random assignment to condition
  - Pre-existing differences across groups should be minimal

# Our Designs

- Compare CBD only, THC+CBD, THC only
- No placebo
  - Problem is that people know when they are getting THC so it is not a good control
  - In theory, all three conditions have positive expectancies
- Patient cannot be blind (but they wouldn't be anyway)
- Do not randomly assign (because it would trigger FDA review and FDA cannot approve something that is not federally legal)

# How to “grade” evidence – adapted from Oxford Center for EBM

Level	Type of Evidence
1	Randomized controlled trial (RCT) with large sample size ( > 200)
2	Large study (n > 200) with control group but without random assignment to condition (i.e., prospective cohort) OR smaller RCT
3	Smaller study with control conditions
4	Study without control conditions
5	Expert opinion, anecdotal evidence, or evidence solely from biological research (e.g., no humans)

**\*\* Note:** Same grading applies to review articles – reviews of RCTS is the strongest Level of review. Reviews are also better evidence than individual papers.



# Conclusions

- Placebo effect is real and can have a substantial effect
  - True for cannabis and CBD
  - But also true for every “proven” medication
- Placebo helpful to the extent that people cannot distinguish placebo from real medication
- Important to understand how to “grade” studies to understand the strength of the evidence

# Discussion

- How much of a placebo response would you expect with a cannabis trial? Would you expect the placebo response to be equal in CBD only, THC+CBD, and THC only groups? In other words, do you think people have equally high expectations of each of those conditions?
- How much does this matter?