

Cannabis and Health

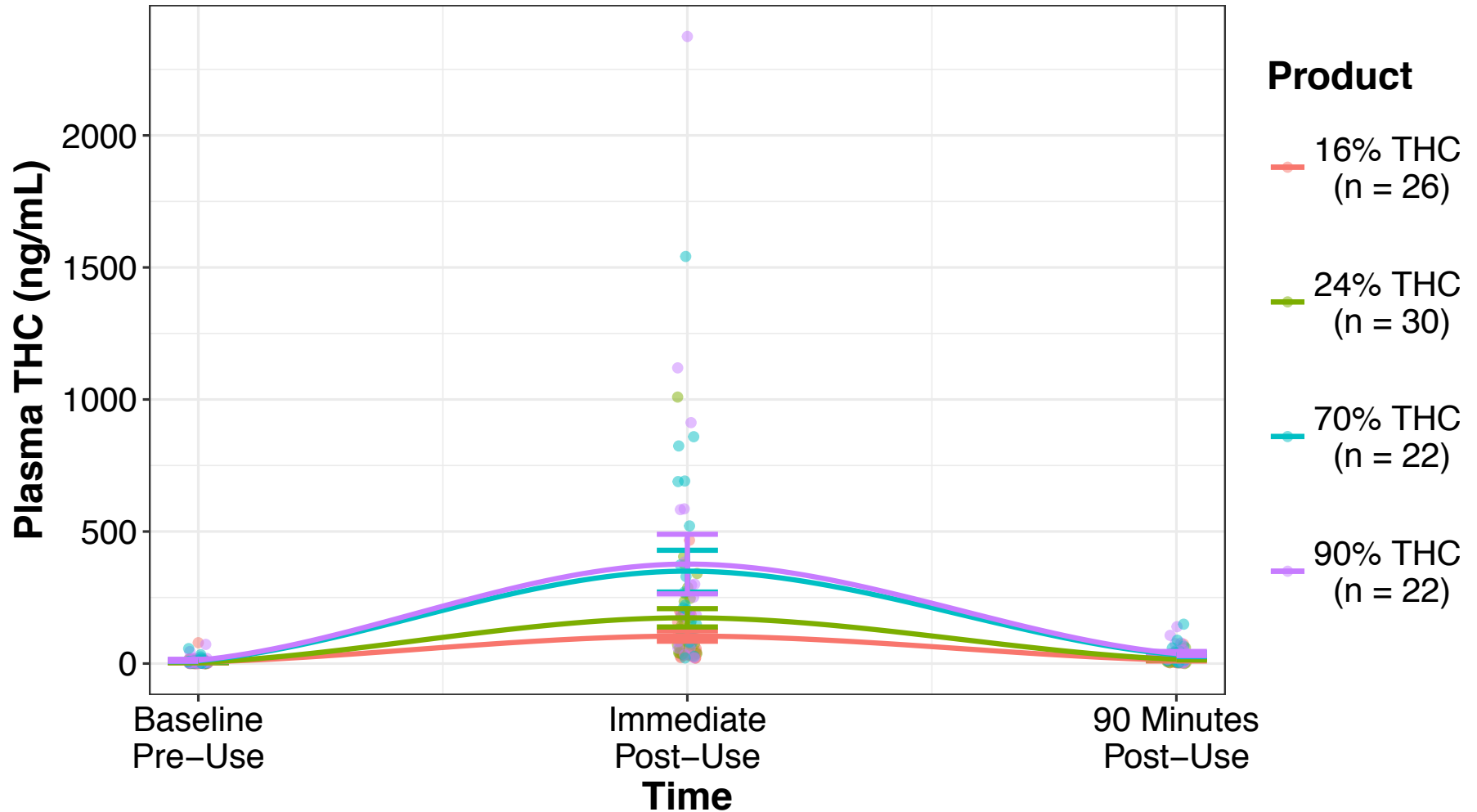
Module 4

Lecture 4: Changes in Potency

How have changes in potency influenced risk?

- THC potency of flower has increased from 1-2% to ~25%
- Concentrates have THC potency of ~90%
- Increasing THC potency has a lot of people worried!
But what do the data suggest?

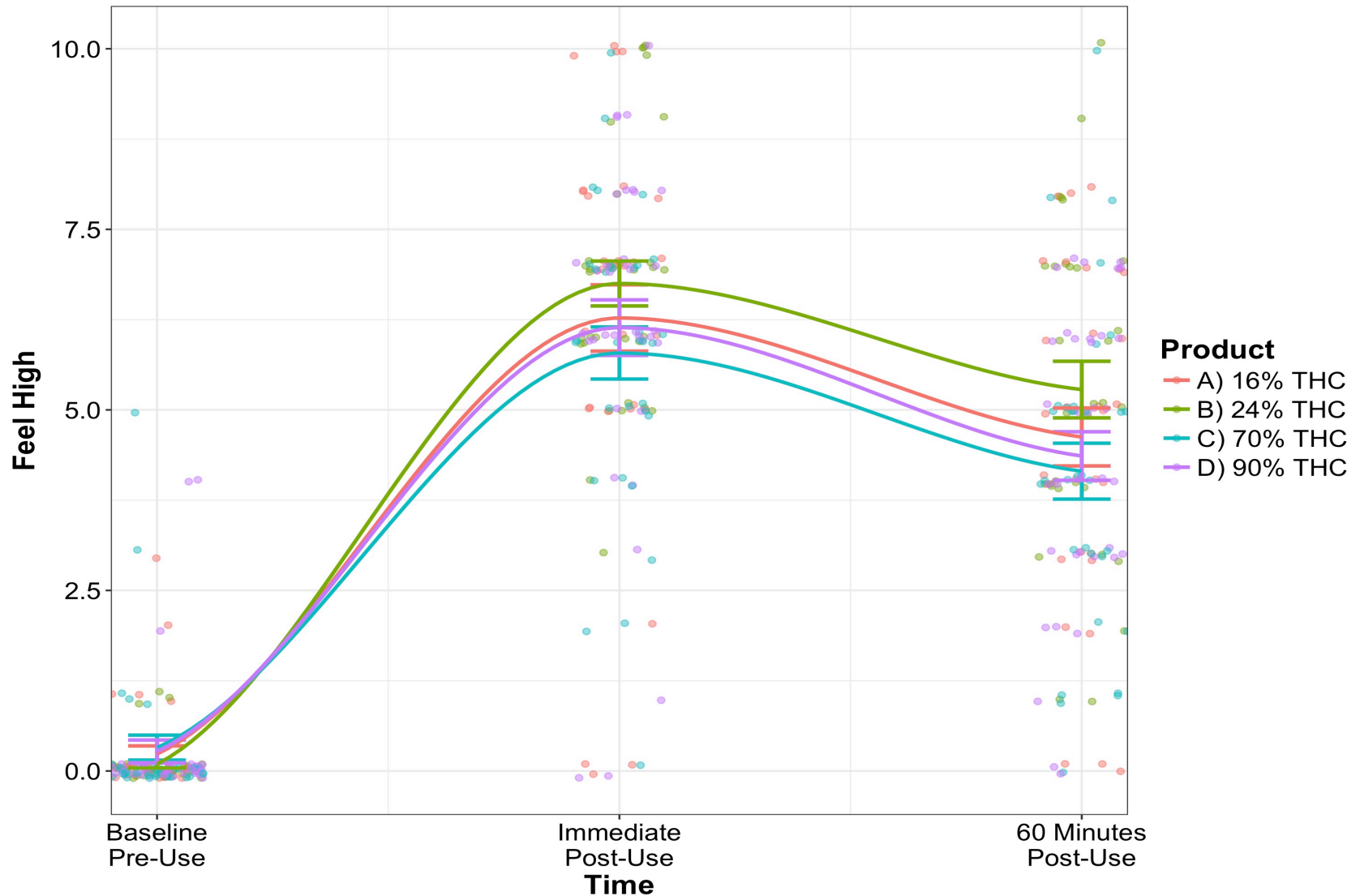
Plasma THC concentrations



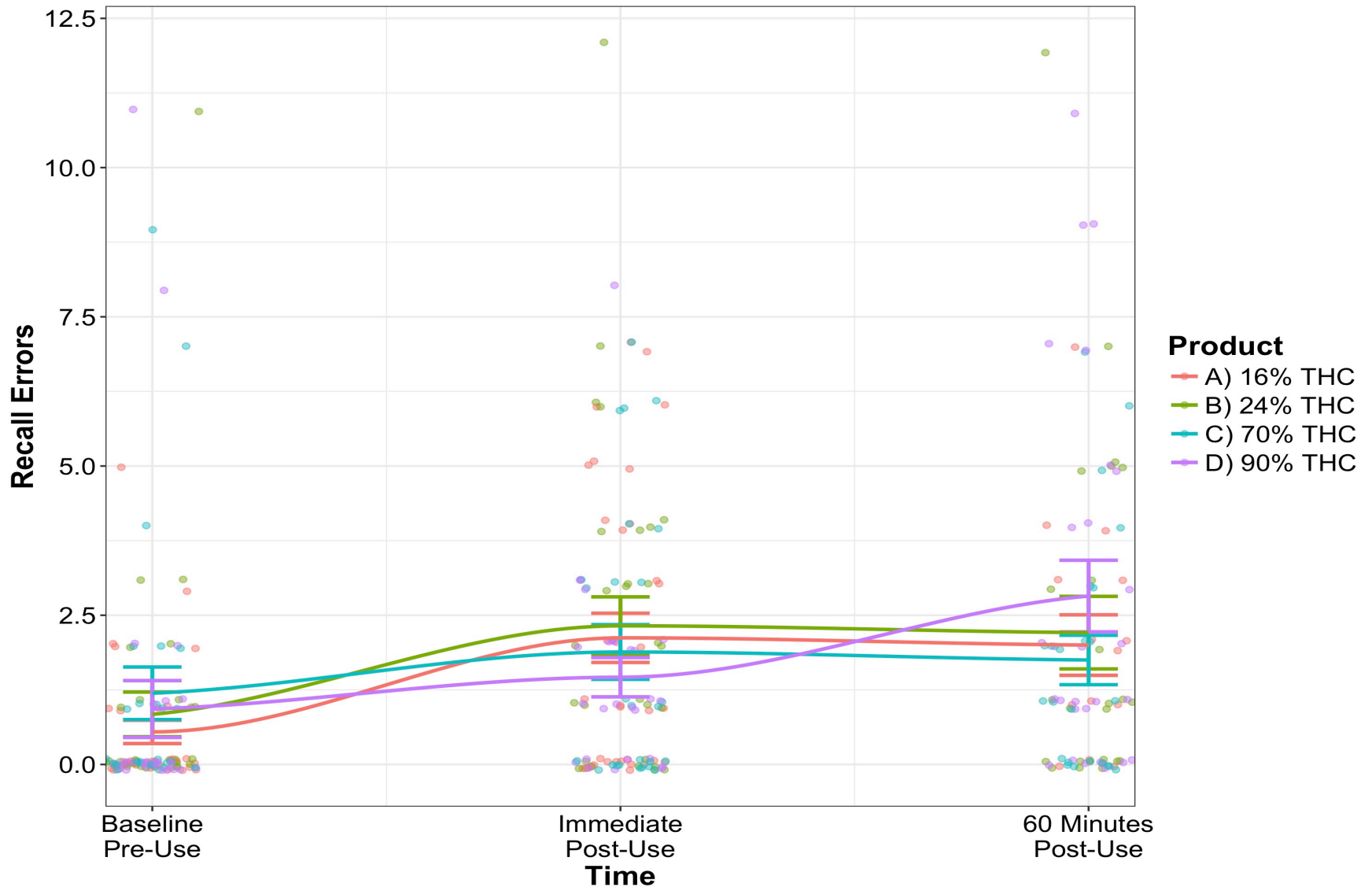
Pause for a minute....

- We are seeing average blood concentrations twice as high as what is typically seen in the literature
- We are seeing some blood levels as high as 400x the legal definition of intoxication
- What do you expect to see in terms of cognitive and subjective intoxication?

Subjective effect - “Feeling High”



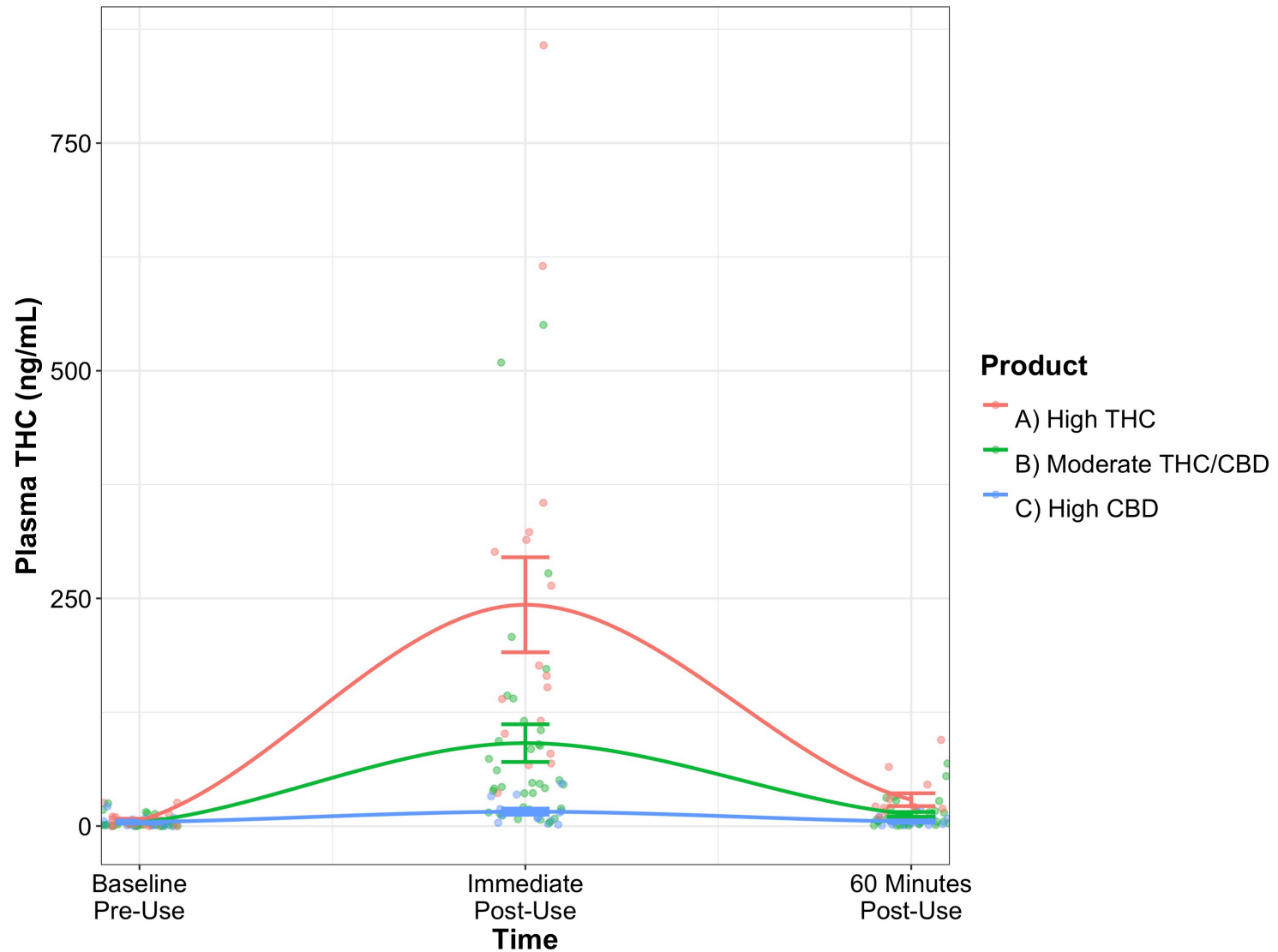
Negative Cognitive Effects



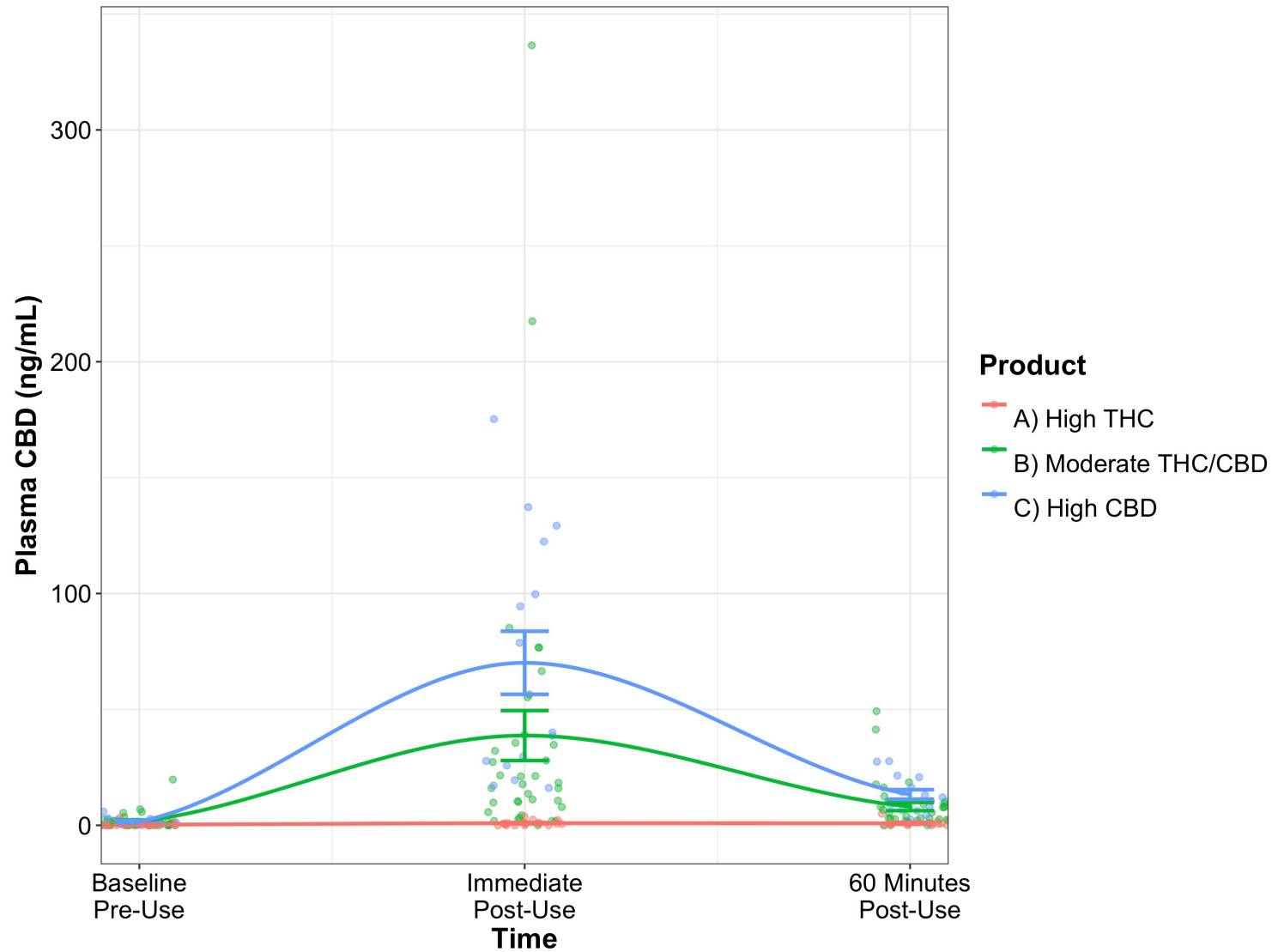
Study 2: Effect of THC and CBD

- How does CBD alter the use and effects of cannabis?
- Comparing flower strains that are High THC, THC+CBD, High CBD
- Sample size $n = 75$
- Same measures and approach using the MPL

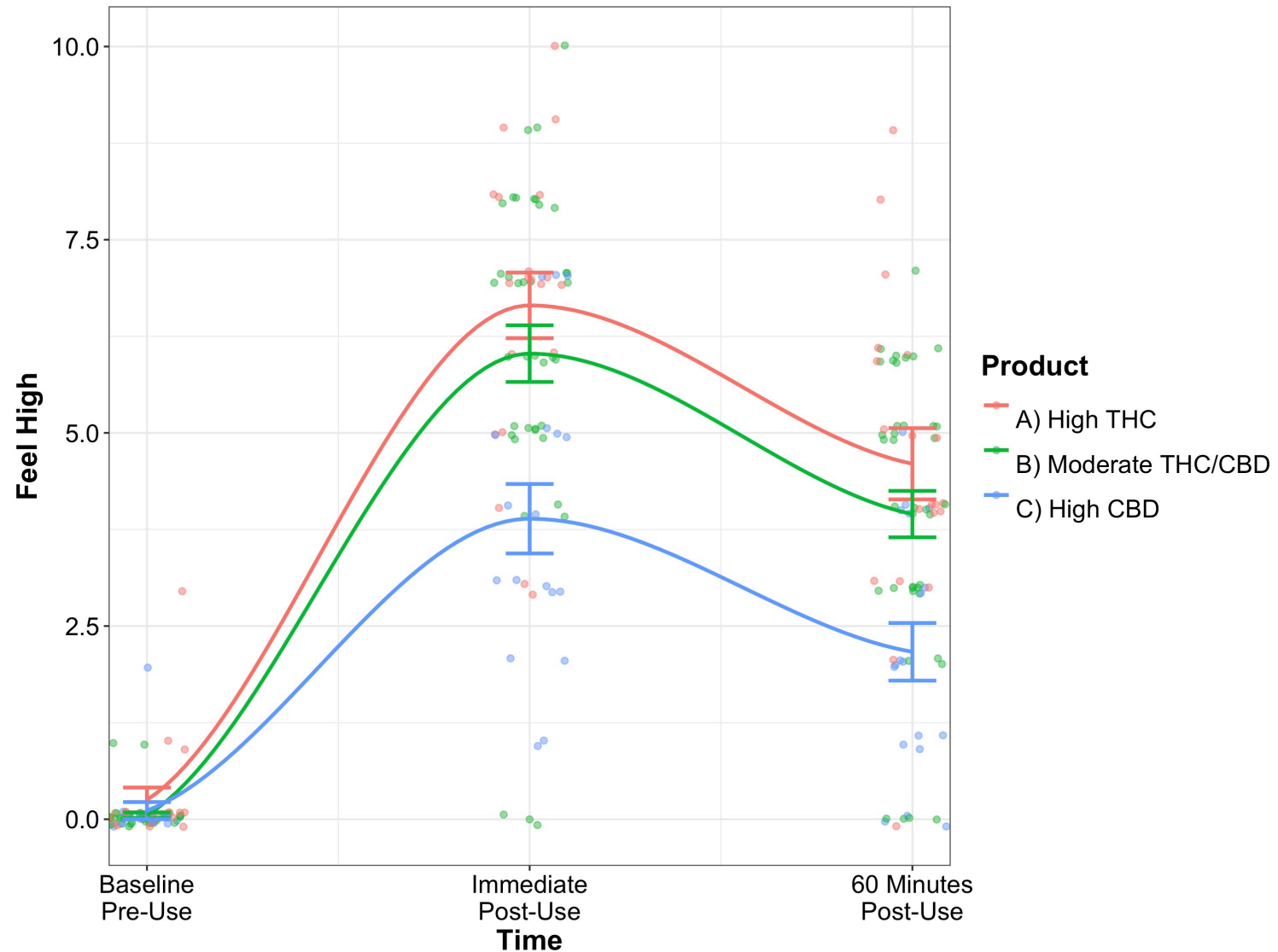
Plasma THC



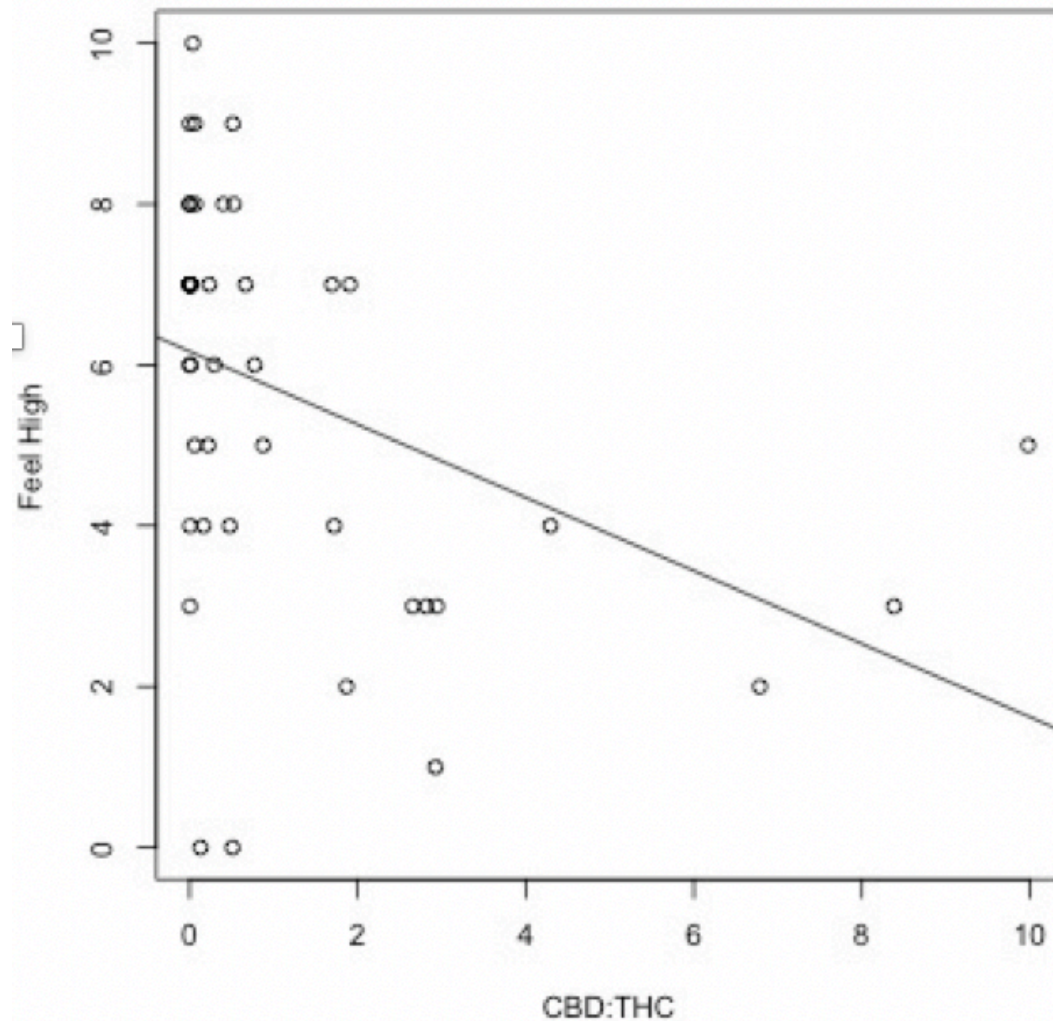
Plasma CBD



Subjective effect - “Feeling High”



Does the ratio of CBD:THC predict effects?

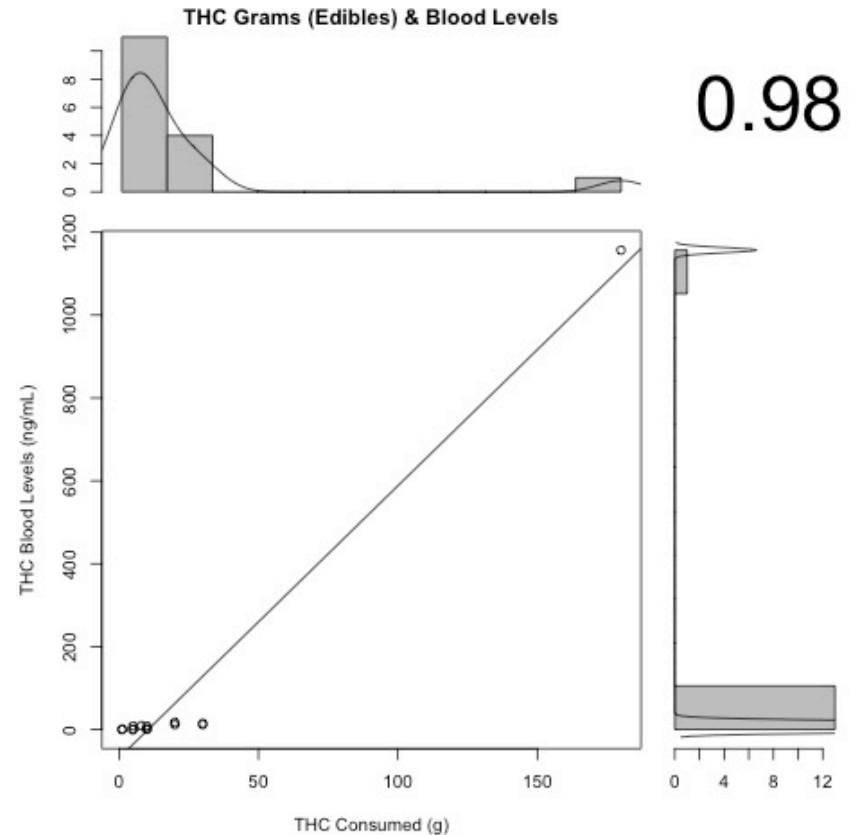
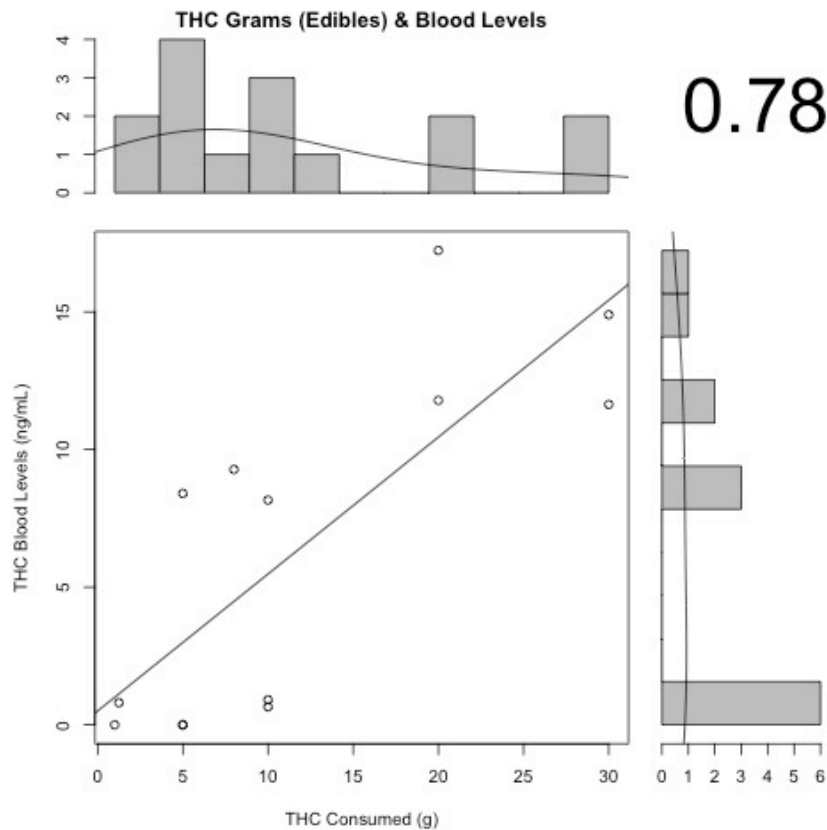


Preliminary Data on Edibles

- Patients use edibles because effect last longer
- Naïve users like edibles because of ease of use and no need to inhale
- Studies on pain, opiate use, and anxiety involve edibles



What is the relationship between dose and blood levels (n=12)?



Cannabis Withdrawal

- Drug withdrawal is clinically relevant—related to:
 - Daily functioning
 - Problematic use
 - Relapse/difficulty abstaining
- Withdrawal not as great as other drugs (see 1999 IOM report)
- DSM-IV stated: “Symptoms of possible cannabis withdrawal . . . have been described in association with the use of very high doses, but their clinical significance is uncertain.”
 - Symptoms include restlessness, irritability, mild agitation, insomnia, sleep disturbance, nausea

Cannabis Withdrawal

- Withdrawal may be more common in adolescents
 - Reported for 65–90% of adolescents receiving treatment for cannabis use disorder (vs. 55% - 100% of adults).
 - In comparison, 10% of adolescents with alcohol use disorder report alcohol withdrawal (vs. 45–70% adults)
 - 50% of adolescent cigarette smokers report withdrawal (vs. 85% adults)
- Women are more likely than men to report withdrawal
- The high blood levels among concentrate users raise a question about whether withdrawal may be more severe when these users quit?

Conclusions

- Preliminary data suggest that people who use concentrates show greater blood levels
- Blood levels are not associated with degree of intoxication – note implications for DUI test
- Frequent users who quit may experience withdrawal
- Withdrawal not as bad as with other drugs
- However, no studies have examined withdrawal after heavy concentrate users quit