

Acute Dose-Dependent Mood Effects of Propofol

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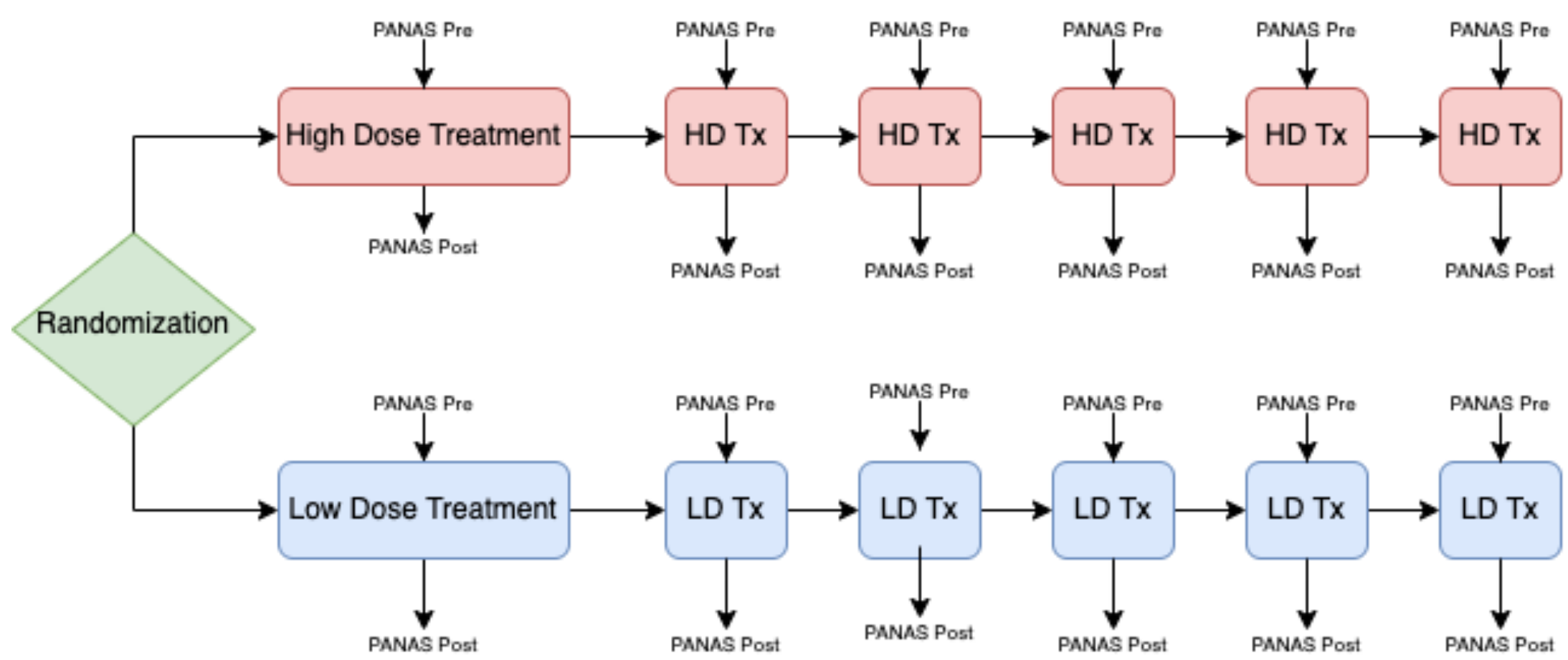


Background

- Propofol, a general anesthetic, is used worldwide and is on the WHO essential medications list.
- Propofol is now being studied as a novel antidepressant at deep general anesthetic doses.
- Propofol has been observed to have positive acute mood effects.
- Previous studies of Propofol's mood effects have significant limitations.
 - No repeated administration studies of Propofol.
 - Mood effects have never been studied in depressed individuals.
 - Mood effects have never been compared across doses.

Study Design

- 6 EEG-guided Propofol treatments at moderate sedation or deep general anesthetic doses.



Methods

Participants:

- 23 participants (ages 18-65) from Salt Lake City area
- Current Moderate-Severe Depressive Episode
- 24-Item HDRS score > 18

Assessments:

- Acute Mood States
 - Mood States assessed with Modified 8-subscale Positive and Negative Affect Schedule Survey (PANAS-8)
 - PANAS-8 administered immediately before and after each Propofol treatment
 - 6 subscales analyzed:
 - Sadness, Fear, Joviality, Attentiveness, Fatigue, and Sadness

Statistic Analysis:

- Analysis completed in R using lme4 and emmeans packages

	High Dose	Low Dose	Open Label
Group Size	11	12	8

Results

Figure 1) Acute Mood Effects of Propofol

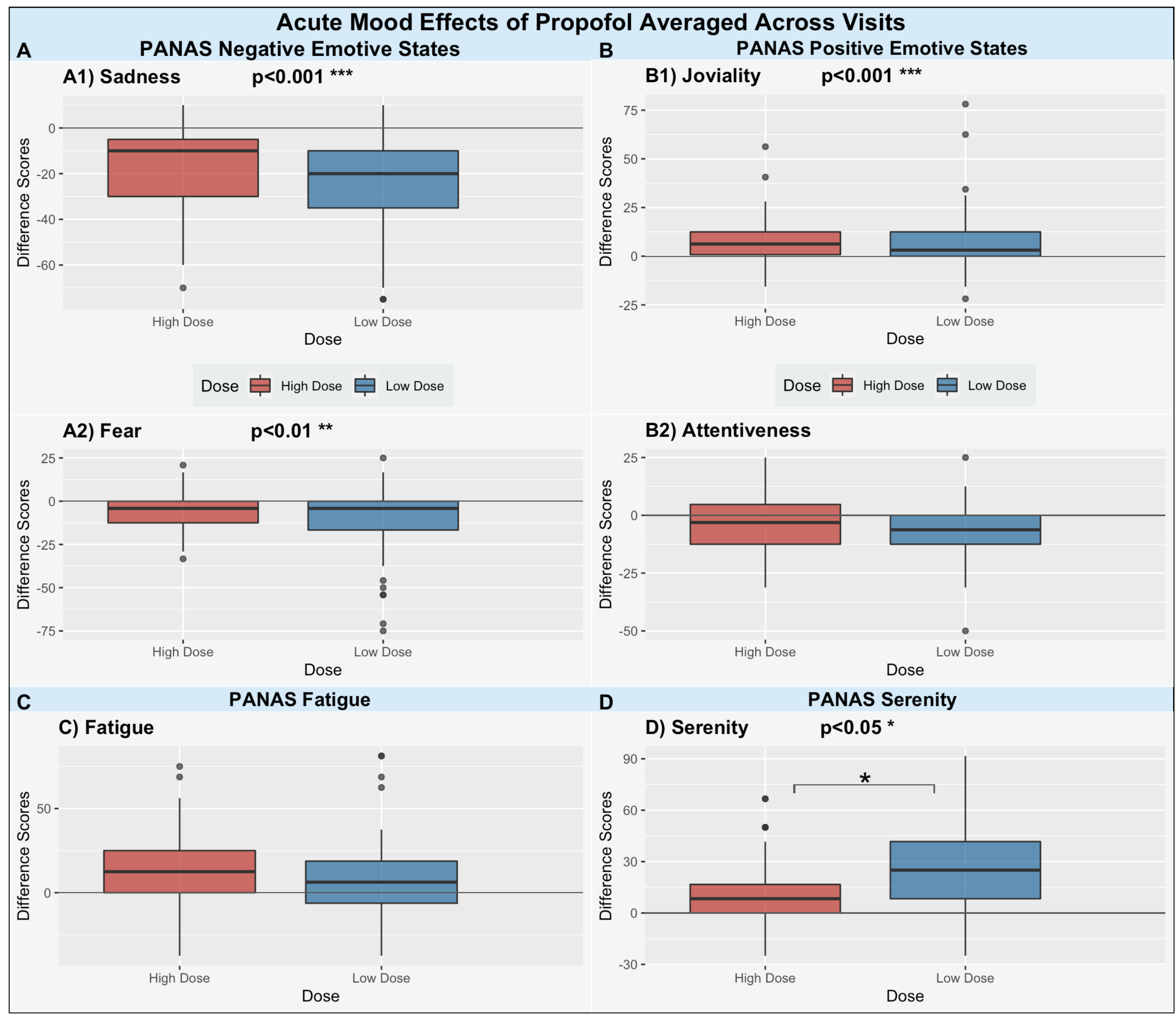
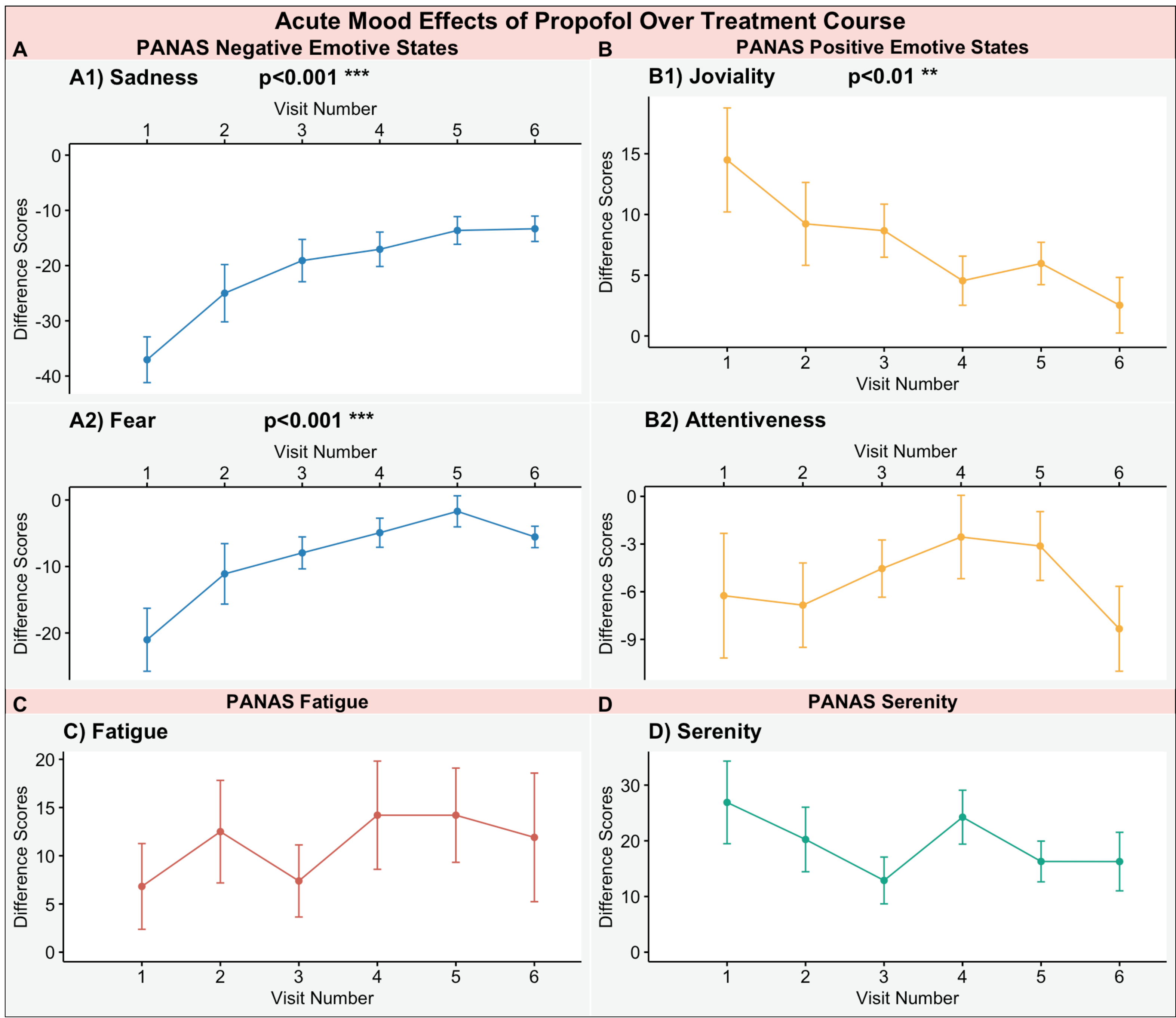


Figure 2) Impacts of Treatment Course on Propofol Mood Effects



Results Cont.

Figure 1:

• Mood Effects

– Propofol induced significant pre/post-treatment changes in sadness, fear, joviality, and serenity mood scales.

• Dose

– Serenity was the only dose-differentiated scale
– There were no main effects of dose on negative, fear, joviality, attentiveness, nor fatigue scores.

Figure 2:

• Treatment Course Impacts on Mood Effects

– There was a main effect of time over the treatment course on sadness fear, and joviality scores.
– Attentiveness, fatigue, and serenity scores were not impacted by time over the treatment course.

• Dose-Time Interaction

– There were no significant interactions between dose and visit number for all 6 PANAS difference scores.

Conclusions

- Positive and negative mood scores, but not cognitively-oriented mood states, are improved by Propofol treatments.
- High vs low dose Propofol does not differentiate majority of acute mood ratings.
- Sadness, fear, and joviality pre-post treatment mood improvement size decays over the treatment course.
- Fatigue ratings do not show significant pre-post treatment changes, nor does treatment-related fatigue significantly increase over treatment course.

Implications

- Both high and low dose Propofol are well tolerated over treatment course.
- Mood effect ratings show substantial variation among participants receiving Propofol treatments.
 - Warrants future research in individual acute responses to Propofol as predictors for treatment outcome.