"highness" ratings (p = .56). For both analyses, males and females did not differ in BMI (both p > .7).
Conclusions: When male/female cannabis users are well-matched on use history, we find no significant differences in cannabinoid concentrations following a mean of 5 days of abstinence, suggesting that there are no clear biological differences in carryover residual effects. We also find no significant sex differences following *ad libitum* smoking in driving performance, subjective ratings of "highness," nor whole blood THC and metabolite concentrations, indicating that there are no biological differences in acute response to THC. This improves upon previous research by closely matching participants over a wider range of use intensity variables, although the small sample size precludes definitive conclusions.

Categories:
Neuropsychiatry/Psychopharmacology
Keyword 1: cannabis
Keyword 2: driving
Keyword 3: psychopharmacology
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63 Sex-Dependent Effects in Dopaminergic Modulation of Risky Decision-Making in Rats

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Objective: Determining neurobiological mechanisms underlying risk-taking behavior is paramount toward developing targeted therapeutics for psychiatric conditions with such behavioral deficits. Therapies are urgently needed given risk-taking is strongly linked to suicidal behavior. Risk-taking is often assessed in tasks of varied rewards and losses, complicating the interpretation of chasing rewards vs. avoiding punishments. A novel task in rats was designed which utilizes varying rewards only, so as to determine mechanisms contributing to 'chasing' higher rewards. This task was used to determine that the high reward (risk) preference of male rats was increased by pramipexole treatment [a dopamine D2 receptor-(D2R) family agonist] and decreased by optogenetic inhibition of D2R expressing neurons. The impact of D2R antagonists and sex-dependent differences were not examined however and remains unclear. Here, we trained female and male rats in the task to determine sex-differences in risk preference at baseline and in response to pharmacological challenges of pramipexole, the D2R antagonist sulpiride, and the dopamine transporter inhibitor GBR-12909.
Participants and Methods: In operant boxes animals could choose from one of two nose-pokes, one that delivered a 50 µl strawberry milkshake reward (safe-option), and the other a 10 µl reward with 75% probability and 170 µl reward with 25% probability (risky-option). Once trained to a stable baseline of risk preference, rats were treated with pramipexole (0.15- or 0.3-mg/kg; Experiment 1) or sulpiride (30-mg/kg; Experiment 2) for 3 days, each separated by a saline washout. Animals were once again trained to a stable baseline, then injected with GBR-12909 (5- or 16-mg/kg; Experiment 3)
Results: Baseline: females were less risk-adverse/more risk-prone than males.
Experiment 1: there was a main effect of drug on percent risk choice (%RC) change from baseline [$F(1,18)=10.5$, $p<0.01$], with pramipexole increasing %RC. When analyzed across each testing day, a main effect of session [$F(6,108)=3.6$, $p<0.005$] was observed, as was a session*sex*drug interaction [$F(6,108)=2.2$, $p<0.05$]. Post hoc analyses revealed females differed from males in the timing of their response to pramipexole based on dose.
Experiment 2: there was a main effect of drug on %RC change from baseline [$F(1,6)=20$, $p<0.01$], with sulpiride decreasing %RC. There was also evidence for a drug*sex interaction [$F(1,6)=3.6$, $p=0.11$], with more pronounced attenuation by sulpiride in females. A similar pattern was observed when analyzed across testing days.
Experiment 3: there was a main effect of drug on %RC change from baseline [$F(2,26)=4.0$, $p<0.05$], with the high dose of GBR-12909 (16-mg/kg) increasing %RC compared to VEH ($p<0.05$) and low dose (5-mg/kg).
Conclusions: Together these data indicate a sex-specific modulation of baseline risk preferences as measured explicitly via reward-

https://doi.org/10.1017/S1355617723010494 Published online by Cambridge University Press

seeking behaviors. Additionally, female rats may be more sensitive to D2R manipulations on such risky decision-making behavior, highlighting the necessity of tracking sex-based differences in such tasks. Ongoing studies will determine whether D2R activity reveal a similar sex-specific change during such reward-seeking risk-preference. Furthermore, ongoing studies will determine the link of such behavior to effortful decision making and more traditional measures of risk-taking behavior, such as the Iowa Gambling Task used both in rodents and humans.

Categories:
Neuropsychiatry/Psychopharmacology
Keyword 1: decision-making
Keyword 2: psychopharmacology
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64 Reduced Generation of Specific Future Events in Veterans with PTSD

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Objective: When asked to imagine future events, individuals with PTSD provide narratives with limited event-specific details, suggesting an impairment in event elaboration. Here we examined whether future thinking in PTSD is also associated with an impairment in the initial stage of event construction, by using a future-event fluency task that makes no demands on event elaboration (MacLeod, A. K., & Salaminiou, E. (2001). Reduced positive future-thinking in depression: Cognitive and affective factors. *Cognition & Emotion*, *15*(1), 99-107).
Participants and Methods: Thirty-five veterans (6 female, 29 male; aged 27-51), assigned on the basis of structured diagnostic interviews to PTSD-only (n = 15), PTSD + depression (n = 9), or psychopathology-free control groups (n = 11), were asked to generate, in one minute, as many events as possible that they expected to happen in the future, across four conditions that varied in valence (positive, negative) and temporal framework (1 month, 10 years). Two independent raters classified each event generated as being specific (i.e., a unique, time-limited event), generic (i.e., ongoing or recurring events), or a repetition.
Results: Results of linear mixed modeling carried out on the number of specific events generated showed that diagnostic group and event valence contributed significantly to the overall model fit. All participants generated more positive than negative events (β = 1.014, SE = 0.330, $t(105) = 3.07$ p = 0.003), and both PTSD groups generated fewer specific events than controls (PTSD-only (β = -2.203, SE = 0.744, $t(35) = -2.96$, p = 0.005); PTSD + depression (β = -1.859, SE = 0.842, $t(35) = -2.21$, p = 0.034). Adding the interaction between group and valence did not improve the model fit, suggesting that the PTSD groups were not differentially impaired in the generation of positive and negative events. When including scores on an emotionally neutral phonemic fluency task (FAS) as a covariate to account for verbal fluency, the PTSD-only group still generated significantly fewer events than the controls (β = -1.667, SE = 0.733, $t(34) = -2.27$, p = 0.030). After adjusting for FAS, the group effect was marginal for the PTSD + depression group (β = -1.600, SE = 0.801, $t(34) = -2.00$, p = 0.054).
Conclusions: These results suggest that the impairment in future thinking in PTSD concerns not only the elaboration of future events but also the processes involved in initial event specification, such as those involved in the search and selection of a specific event. Moreover, these findings highlight a distinction between the future thinking abnormalities in PTSD, characterized by reduced generation of both positive and negative future events, compared to depression, which has been associated with reduced generation of positive future events only (MacLeod & Salaminiou, 2001).

Categories: Psychiatric Disorders
Keyword 1: post-traumatic stress disorder
Keyword 2: fluency
Keyword 3: cognitive neuroscience
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65 The Impact of PTSD and Mild Cognitive Impairment on Resting State

https://doi.org/10.1017/S1355617723010494 Published online by Cambridge University Press