

Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

Supplementary Materials

Approach-Avoidance Conflict Task Description

The AAC task (**Figure 1**; ^{1,2}) is described more extensively in our prior article. A runway was shown on each trial with a picture of an avatar in a starting position above the runway. Pictures were also shown on each side of the runway, indicating the types of stimuli that could be presented at the end of the trial. Specifically, a sun or cloud represented potential positive or negative affective stimuli, respectively; while the height of red fill in a rectangle signified the number of points that would be received in conjunction. On each trial, participants could press the left or right arrow keys to move the avatar from its starting position to any other position (9 possible locations) on the runway, and they were asked to choose one ending position on each trial. They were told that each ending position corresponded to a specific probability of observing different stimuli at the end of the trial. These stimuli included a positive or negative affective image-sound combination (indicated by the sun or cloud, respectively), and a certain level of reward points (indicated by the height of red fill in the rectangle). The ending position of the avatar determined the probability of each of these outcomes occurring. Before starting the task, participants were told the specific probabilities of observing each stimulus for each runway position, and that these probabilities were stable across the task. From left to right on the runway, the probabilities = [.9/.1, .8/.2, .7/.3, .6/.4, .5/.5, .4/.6, .3/.7, .2/.8, .1/.9], reflecting the probability of observing the stimuli associated with the left/right end of the runway. The starting position of the avatar (middle, left end, or right end) was counterbalanced across trials (for each trial type; see below) to control for its potential influence on the participants' choice. Thus, there was no learning in this task, and no measure of better/worse performance; participants simply indicated their preferred location on the runway (based on the probabilities of each outcome) on each trial.

The affective image-sound combinations were gathered from the International Affective Picture System [IAPS] ³, International Affective Digitized Sounds [IADS] ⁴, and other freely available audio files (see further description in previous reports using this task; ^{1,2}). The “reward” included 0, 2, 4, or 6 points presented along with a trumpet sound. There were five trial types (see **Figure 1**), which were indicated to participants by the images shown on each side of the runway on each trial. Each trial type was named in reference to the behavioral motivation presumably elicited by the negative/positive affective stimuli and/or the reward points:

- (1)** ‘Avoid-threat’ (AV), in which 0 points were offered for both possible stimulus outcomes and thus, the only explicit motivation was to avoid the negative affective stimulus.
- (2)** ‘Approach-reward’ (APP), in which 2 versus 0 points were offered, each with positive affective stimuli. For this condition, the only explicit motivation was to approach the rewarded outcome.
- (3)-(5)** Three levels of ‘Conflict’ in which the negative affective stimulus was presented in addition to winning either 2 (CONF2), 4 (CONF4), or 6 (CONF6) points, while 0 points were offered for the other possible outcome, in which a positive affective stimulus would be presented.

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The task consisted of a total of 60 trials, with 12 of each of the five trial types. After task completion, a screen appeared displaying total points received and an award ribbon. As in previous administrations of the task^{1,5}, points did not correspond to monetary reward. Descriptive behavioral variables consisted of average chosen runway position, within-subject standard deviation in chosen runway position, and response times (RTs; i.e., time to initial button press) during each trial.

After completing all trials, participants filled out a short Likert scale questionnaire about their experiences/behaviors during the task, which is described further below.

Examples of Likelihood Matrices in Computational Model of the Approach-Avoidance Conflict Task

In these matrices, columns (states) from left to right indicate the starting state followed by possible final position states 1 through 9. Rows from top to bottom indicate the possible observations in modality #3 (outcome stimuli). This includes the starting observation (“no stimulus”), followed by observations of: unpleasant stimuli, pleasant stimuli, pleasant stimuli + 2 points, unpleasant stimuli + 2 points, unpleasant stimuli + 4 points, and unpleasant stimuli + 6 points.

$$p(o_{\tau}^{stimuli} | s_{\tau}^{position}, s_{\tau}^{trial\ type=AV}) =$$

$$\begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & .9 & .8 & .7 & .6 & .5 & .4 & .3 & .2 & .1 \\ 0 & .1 & .2 & .3 & .4 & .5 & .6 & .7 & .8 & .9 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$p(o_{\tau}^{stimuli} | s_{\tau}^{position}, s_{\tau}^{trial\ type=CONF2}) =$$

$$\begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & .9 & .8 & .7 & .6 & .5 & .4 & .3 & .2 & .1 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & .1 & .2 & .3 & .4 & .5 & .6 & .7 & .8 & .9 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

Matrices for other trial types were equivalently constructed.

Comparison between previous and current samples

To assess equivalence between the sample in our previous report⁶ and the current sample, we conducted two-sample t-tests comparing each respective diagnostic group between samples on

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demographic, symptom, and computational measures. No significant differences were observed in the two HC samples. The previous DEP/ANX sample was older ($t(466) = 2.14, p = .03, d = .20$; $M = 35.89$ [SD = 11.30] vs. $M = 33.74$ [SD = 10.17]), had higher DAST scores ($t(466) = 2.27, p = .02, d = .21$; $M = 0.67$ [SD = 1.41] vs. $M = 0.41$ [SD = 0.95]), and higher DU values ($t(466) = 2.90, p = .004, d = .27$; $M = 1.21$ [SD = 0.90] vs. $M = 0.95$ [SD = 1.02]). The previous SUD sample had higher WRAT scores ($t(81) = 2.30, p = .02, d = .27$; $M = 58.49$ [SD = 5.65] vs. $M = 56.79$ [SD = 6.78]), and higher DU values ($t(332) = 2.58, p = .004, d = .28$; $M = 1.46$ [SD = 0.89] vs. $M = 1.19$ [SD = 1.01]).

Relationship between model parameters and demographic variables

The EC parameter was positively correlated with WRAT scores ($r = .22, p < .001$) and age ($r = .09, p = .04$); it did not differ by sex. The β parameter was positively correlated with age ($r = .25, p < .001$) and negatively correlated with WRAT scores ($r = -.22, p < .001$); it did not differ by sex.

Relationship between model parameters and symptoms

As in our prior study, we performed post-hoc within-group Pearson correlations between model parameters and symptom severity measures available within the T1000 dataset, including the DAST, PHQ-9, and OASIS, as well as scales from the Patient Reported Outcomes Measurement Information System (PROMIS) assessing depression and anxiety⁷ and the Anxiety Sensitivity Index (ASI)⁸. Consistent with our prior results, we found no significant associations, with the exception of a positive association between DU and OASIS ($r = .18, p = .009$) and PROMIS anxiety ($r = .15, p = .03$) scores within the DEP/ANX group. These results should be treated with caution, however, since they were not found in our prior report.

Comparison of parameters in depression with vs. without co-morbid anxiety

To explore whether any differences might be present between those with depression that did vs. did not have co-morbid anxiety, exploratory (non-pre-registered) t-tests were carried out assessing potential group differences on all study variables. No significant differences were found for any study variable, with the exception of RTs in the APP condition of the AAC task ($t(194) = -2.08, p = 0.04, d = .32$), indicating slower RTs in those without co-morbid anxiety.

Follow-up analyses of model parameters separated by sex

When redoing the ANOVAs above separated by sex, the same pattern emerged as in our previous study. Namely, the pattern of group differences in EC remained significant in females ($F(2,320) = 32.98, p < .001$) but not in males ($F(2,154) = 0.65, p = .52$), and the pattern of group differences in DU remained significant in males ($F(2,154) = 3.63, p = .03$) but not in females ($F(2,320) = 0.91, p = .40$). In females, post-hoc t-tests showed that all three groups were significantly different in EC values (SUDs < DEP/ANX: $t(262) = 6.32, p < .001, d = 0.79$; DEP/ANX < HCs: $t(214) = 2.64, p = .009, d = 0.40$; SUDs < HCs: $t(164) = 8.07, p < .001, d = 1.31$). In males, post-hoc t-tests showed that SUDs had significantly greater DU values than both other groups (SUDs > DEP/ANX: $t(117) = 2.10, p = .038, d = 0.39$; SUDs > HCs: $t(104) = 2.43, p = .02, d = 0.49$).

Secondary analyses of descriptive measures

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Descriptive statistics for all model-free measures, as well as their correlations with model parameters, are provided in **Tables S1-S4** (see **Figures S1-S3**). These results were largely consistent with those found in our previous paper.

Average chosen runway position

Analyses revealed significant group differences in chosen runway position for the AV condition, and all three conflict conditions, when analyzed separately – indicating less avoidance in SUDs than HCs in all cases ($ps < .001$, when accounting for covariates; see **Table S5**). DEP/ANX also showed less avoidance than HCs in all three conflict conditions (CONF2: $t(471) = -1.99$, $p = 0.047$; CONF4: $t(471) = -2.06$, $p = 0.040$; CONF6: $t(471) = -2.20$, $p = 0.029$). For CONF2 and CONF4, there was an interaction between sex and group ($F(2, 471) = 4.48$, $p = 0.012$; $F(2, 471) = 3.44$, $p = 0.033$), indicating that all three groups were significantly different in females (HCs < DEP/ANX < SUDs), but not in males. These results replicated our previous findings in the AV condition; however, our prior report did not find significant group differences in the conflict conditions as found here. When including only those participants with WRAT Reading scores, and adding possible main effects and interactions with WRAT Reading into the ANCOVA model above, each of the above group effects remained significant (see **Supplementary Results 2**).

Standard deviation in chosen runway position

As found in our prior report, ANOVAs revealed a group difference in runway position SDs in the AV and APP conditions ($ps < .001$), which remained significant when accounting for age, sex, and their interactions with group (greater SDs in SUDs than DEP/ANX and HCs, $ps < .001$; see **Table S6**). Our results here did not replicate the significant difference in CONF6 found in our prior report. When including only those participants with WRAT Reading scores, and adding possible main effects and interactions with WRAT Reading into the ANCOVA model above, the group effect only remained significant in the AV condition ($F(2, 383) = 12.48$, $p < 0.001$; see **Supplementary Results 2**).

Response times

ANOVAs also replicated the prior group differences observed in RTs in the AV condition ($F(2, 475) = 16.31$, $p < .001$; **Figure 3**) and a similar trend in the APP condition ($F(2, 476) = 2.99$, $p = .051$). Post-hoc contrasts indicated slower RTs in SUDs than in HCs (AV: $t(475) = -4.98$, $p < .001$; APP: $t(475) = -2.10$, $p = .037$) or DEP/ANX (AV: $t(475) = -4.70$, $p < .001$; APP: $t(475) = -2.05$, $p = .041$). These effects remained when accounting for age, sex, and their interactions with group (see **Table S7**). There was also an interaction between sex and group in the AV condition, indicating significant differences between all groups in females (SUDs > DEP/ANX > HCs) and a partially opposing pattern in males (with DEP/ANX instead showing *faster* RTs than HCs and SUDs). When including only those participants with WRAT Reading scores, and adding possible main effects and interactions with WRAT reading into the ANCOVA model above, the group and group-by-sex interaction effects in the AV condition remained significant (see **Supplementary Results 2**).

Self-report

ANOVAs revealed significant group differences in how enjoyable the positive stimuli were ($F(2, 476) = 3.06$, $p = .048$; lower in SUDs than HCs, $p = .015$), how much individuals tried to move all the way toward the reward points ($F(2, 476) = 6.91$, $p = .001$; higher in SUDs than HCs and DEP/ANX, $p < .001$ and $p = .006$, respectively), how much they tried to move all the way away from the aversive stimuli ($F(2, 470) =$

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8.99, $p < .001$; lower in SUDs than HCs and DEP/ANX, $ps \leq .001$), and the extent to which they used different emotion regulation strategies to minimize the influence of the negative images (Q6, Q7, and Q8 in **Table 4**; lower in SUDs than HCs and DEP/ANX in all cases, $F(2, 476) = 6.04 - 11.74$, $ps < .001$ to $.003$). These results remained significant after accounting for age, sex, and their interactions with group (see **Table S8**). For **Q2** in **Table 4** (how much anxiety the negative images provoked), an interaction between sex and group indicated significantly lower anxiety in SUDs than HCs ($t(470) = 2.42$, $p = 0.016$) and DEP/ANX ($t(470) = 2.32$, $p = 0.021$) in females, but no significant differences in males. Question **Q5** in **Table 4** (how much individuals tried to move all the way from the aversive stimuli) also showed an interaction between sex and group indicating significantly less avoidance in SUDs than HCs ($t(470) = 4.81$, $p < 0.001$) and DEP/ANX ($t(470) = 4.14$, $p < 0.001$) in females, but no significant differences in males. When including only those participants with WRAT reading scores, and adding possible main effects and interactions with WRAT Reading into the ANCOVA model above, effects of group largely remained significant. However, the group difference in how enjoyable the positive stimuli were did not reach significance ($p = .052$; see **Supplementary Results 2**). These results differed from our previous report, in which we only observed group differences for one of the items reflecting use of emotion regulation strategies (i.e., **Q8** in **Table 4**; see **Figure 3**).

Descriptive statistics for secondary measures

Below are descriptive results for all model-free behavioral measures. Statistical analyses comparing these variables by group are reported in **Tables S5-S8**.

Table S1. Summary statistics for mean chosen runway position (Mean (SD))

Chosen Runway Position (Mean)	HCs (N = 97)	DEP/ANX (N = 208)	SUDs (N = 175)
Overall	6.98 (1.92)	7.20 (1.81)	7.51 (1.43)
AV	8.25 (1.44)	8.01 (1.62)	6.78 (2.07)
APP	8.43 (1.33)	8.20 (1.63)	8.01 (1.55)
CONF2	5.75 (3.12)	6.25 (2.94)	7.32 (2.14)
CONF4	6.13 (3.12)	6.63 (2.86)	7.66 (1.91)
CONF6	6.35 (3.26)	6.92 (2.84)	7.78 (2.04)

***Values range from 1 to 9. Higher values always indicate approaching the more positive stimulus in each condition (i.e., approaching the positive image in the Avoid Condition and approaching the points in all other conditions). Note that in previous papers^{6,9} these values were reported on a scale from 2 to 10 (matching the positions as encoded in the computational model).**

Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

Table S2. Summary statistics for within-subject variability (SD) in chosen runway position (Mean (SD))

Chosen Runway Position (SD)	HCs (N = 97)	DEP/ANX (N = 208)	SUDs (N = 175)
Overall	2.09 (1.38)	1.99 (1.32)	2.03 (1.08)
AV	0.83 (1.14)	0.95 (1.16)	1.76 (1.31)
APP	0.61 (1.07)	0.78 (1.17)	1.13 (1.21)
CONF2	1.03 (1.12)	1.24 (1.23)	1.39 (1.35)
CONF4	0.98 (1.15)	1.07 (1.23)	1.30 (1.30)
CONF6	0.80 (1.15)	0.98 (1.19)	1.14 (1.33)

Table S3. Summary statistics for task response times (Mean (SD))

Response times (sec)	HCs (N = 97)	DEP/ANX (N = 208)	SUDs (N = 175)
Overall	1.24 (0.27)	1.25 (0.29)	1.30 (0.33)
AV	1.30 (0.35)	1.35 (0.31)	1.51 (0.35)
APP	1.20 (0.30)	1.22 (0.35)	1.29 (0.40)
CONF2	1.25 (0.31)	1.25 (0.34)	1.26 (0.38)
CONF4	1.19 (0.31)	1.22 (0.37)	1.21 (0.36)
CONF6	1.24 (0.30)	1.23 (0.33)	1.22 (0.37)

Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

Table S4. Task-specific self-report questionnaire summary statistics (Mean (SD))

Post-Task Self-Report Questions (Likert Scale: 1 = not at all; 7 = very much)	HCs (N = 97)	DEP/ANX (N = 208)	SUDs (N = 175)
Q1. I found the positive pictures enjoyable:	5.31 (1.39)	5.05 (1.53)	4.83 (1.66)
Q2. The negative pictures made me feel anxious or uncomfortable:	4.01 (2.01)	4.18 (1.96)	3.80 (1.96)
Q3. I often found it difficult to decide which outcome I wanted:	2.11 (1.66)	2.31 (1.71)	2.45 (1.75)
Q4. I always tried to move all the way towards the outcome with the largest reward points:	4.34 (2.55)	4.70 (2.40)	5.36 (2.08)
Q5. I always tried to move all the way away from the outcome with the negative pictures/sounds:	3.24 (2.37)	3.12 (2.25)	2.33 (1.79)
Q6. When a negative picture and sound were displayed, I kept my eyes open and looked at the picture:	5.13 (2.00)	5.25 (1.92)	5.82 (1.72)
Q7. When a negative picture and sound were displayed, I tried to think about something unrelated	3.14 (2.07)	3.15 (1.93)	2.29 (1.65)

Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

to the picture to distract myself:			
Q8. When a negative picture and sound were displayed, I tried other strategies to manage emotions triggered by the pictures	3.28 (1.92)	3.37 (1.94)	2.51 (1.76)

ANCOVA analyses for secondary measures

Table S5. Results of ANCOVA models examining group differences in mean chosen runway position by trial type, when accounting for main effects and interactions with age and sex.

Chosen Runway Position (Mean)	Age	Sex	Group	Age*Group	Group*Sex
Overall	F(1, 471) = 18.42 p < 0.001 B [CI]: Age: -0.01 [-0.04, 0.02], p = 0.379	F(1, 471) = 2.49 p = 0.115 B [CI]: Sex: 0.43 [0.09, 0.77], p = 0.013	F(2, 471) = 3.98 p = 0.019 B [CI]: DEP/ANX: 0.21 [-0.22, 0.64], p = 0.340 SUDs: 0.47 [0.04, 0.89], p = 0.033 <u>Post-hoc Contrasts</u> HC - DEP/ANX: -0.32, t(471) = -1.54, p = 0.123 HC - SUDs: -0.62, t(471) = -2.93, p = 0.004 DEP/ANX - SUDs: -0.303, t(471) = -1.75, p = 0.080	F(2, 471) = 2.36 p = 0.095 B [CI]: Age*DEP/ANX: -0.02 [-0.06, 0.02], p = 0.356 Age*SUDs: -0.05 [-0.09, 0], p = 0.032	F(2, 471) = 2.2 p = 0.112 B [CI]: DEP/ANX*Sex: -0.32 [-0.75, 0.11], p = 0.147 SUDs*Sex: -0.46 [-0.89, -0.03], p = 0.037
AV	F(1, 471) = 10.06 p = 0.002	F(1, 471) = 0.04 p = 0.848	F(2, 471) = 30.29 p < 0.001 B [CI]:	F(2, 471) = 0.89 p = 0.409 B [CI]:	F(2, 471) = 1.59 p = 0.205 B [CI]:

Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

	<p>B [CI]: Age: -0.01 [-0.04, 0.02], p = 0.594</p>	<p>B [CI]: Sex: -0.16 [-0.52, 0.19], p = 0.37</p>	<p>DEP/ANX: -0.22 [-0.67, 0.24], p = 0.349 SUDs: -1.36 [-1.81, -0.91], p < 0.001</p> <p><u>Post-hoc Contrasts</u> HC - DEP/ANX: 0.25, t(471) = 1.15, p = 0.253 HC - SUDs: 1.50, t(471) = 6.63, p < 0.001 DEP/ANX - SUDs: 1.24, t(471) = 6.80, p < 0.001</p>	<p>Age*DEP/ANX: -0.02 [-0.06, 0.02], p = 0.277 Age*SUDs: -0.03 [-0.07, 0.02], p = 0.21</p>	<p>DEP/ANX*Sex: 0.1 [-0.36, 0.55], p = 0.681 SUDs*Sex: 0.37 [-0.08, 0.83], p = 0.107</p>
APP	<p>F(1, 471) = 30.15 p < 0.001</p> <p>B [CI]: Age: -0.01 [-0.03, 0.02], p = 0.6</p>	<p>F(1, 471) = 0.6 p = 0.437</p> <p>B [CI]: Sex: 0.07 [-0.24, 0.37], p = 0.665</p>	<p>F(2, 471) = 1.94 p = 0.145</p> <p>B [CI]: DEP/ANX: -0.22 [-0.61, 0.17], p = 0.263 SUDs: -0.39 [-0.77, 0], p = 0.048</p>	<p>F(2, 471) = 3.67 p = 0.026</p> <p>B [CI]: Age*DEP/ANX: -0.04 [-0.08, -0.01], p = 0.01 Age*SUDs: -0.04 [-0.08, 0], p = 0.034</p> <p><u>Post-hoc Contrasts</u> HC - DEP/ANX: 0.04, t(471) = 2.58, p = 0.010 HC - SUDs: 0.04, t(471) = 2.13, p = 0.034 DEP/ANX - SUDs: 0, t(471) = -0.15, p = 0.882</p>	<p>F(2, 471) = 0.23 p = 0.793</p> <p>B [CI]: DEP/ANX*Sex: -0.07 [-0.46, 0.32], p = 0.722 SUDs*Sex: 0.05 [-0.34, 0.43], p = 0.816</p>
CONF2	<p>F(1, 471) = 6.5 p = 0.011</p> <p>B [CI]: Age: 0 [-0.05, 0.04], p = 0.866</p>	<p>F(1, 471) = 2.34 p = 0.126</p> <p>B [CI]: Sex: 0.82 [0.28, 1.37], p = 0.003</p>	<p>F(2, 471) = 13.24 p < 0.001</p> <p>B [CI]: DEP/ANX: 0.47 [-0.22, 1.16], p = 0.183 SUDs: 1.37 [0.69, 2.05], p < 0.001</p> <p><u>Post-hoc Contrasts</u> HC - DEP/ANX: -0.66, t(471) = -1.99,</p>	<p>F(2, 471) = 2.88 p = 0.057</p> <p>B [CI]: Age*DEP/ANX: -0.02 [-0.08, 0.04], p = 0.585 Age*SUDs: -0.08 [-0.15, -0.01], p = 0.025</p>	<p>F(2, 471) = 4.48 p = 0.012</p> <p>B [CI]: DEP/ANX*Sex: - 0.56 [-1.25, 0.13], p = 0.111 SUDs*Sex: -1.04 [-1.73, -0.36], p = 0.003</p> <p><u>Post-hoc Contrasts</u> Male: HC - DEP/ANX:</p>

Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

			<p>p = 0.047 HC - SUDs: -1.73, t(471) = -5.08, p < 0.001 DEP/ANX - SUDs: -1.07, t(472) = -3.87, p < 0.001</p>		<p>0.09, t(471) = 0.16, p = 0.87 HC - SUDs: -0.33, t(471) = - 0.60, p = 0.551 DEP/ANX - SUDs: -0.42, t(471) = - 0.84, p = 0.403</p> <p>Female: HC - DEP/ANX: -1.03, t(471) = - 2.53, p = 0.012 HC - SUDs: -2.42, t(471) = - 5.57, p < 0.001 DEP/ANX - SUDs: -1.39, t(472) = - 4.13, p < 0.001</p>
CONF4	<p>F(1, 471) = 7.43 p = 0.007</p> <p><u>B [CI]:</u> Age: -0.02 [-0.07, 0.02], p = 0.357</p>	<p>F(1, 471) = 2.11 p = 0.147</p> <p><u>B [CI]:</u> Sex: 0.74 [0.21, 1.26], p = 0.006</p>	<p>F(2, 471) = 13.3 p < 0.001</p> <p><u>B [CI]:</u> DEP/ANX: 0.48 [-0.19, 1.15], p = 0.162 SUDs: 1.38 [0.72, 2.04], p < 0.001</p> <p><u>Post-hoc Contrasts</u> HC - DEP/ANX: -0.67, t(471) = -2.06, p = 0.040 HC - SUDs: -1.69, t(471) = -5.11, p < 0.001 DEP/ANX - SUDs: -1.02, t(471) = -3.82, p < 0.001</p>	<p>F(2, 471) = 0.82 p = 0.441</p> <p><u>B [CI]:</u> Age*DEP/ANX: 0 [-0.06, 0.05], p = 0.9 Age*SUDs: -0.04 [-0.1, 0.03], p = 0.26</p>	<p>F(2, 471) = 3.44 p = 0.033</p> <p><u>B [CI]:</u> DEP/ANX*Sex: -0.54 [-1.21, 0.13], p = 0.115 SUDs*Sex: -0.89 [-1.56, -0.22], p = 0.009</p> <p><u>Post-hoc Contrasts</u> Male: HC - DEP/ANX: 0.06, t(471) = 0.12, p = 0.915 HC - SUDs: -0.49, t(471) = - 0.92, p = 0.357 DEP/ANX - SUDs: -0.55, t(471) = - 1.13, p = 0.260</p> <p>Female: HC - DEP/ANX: -1.02, t(471) = - 2.58, p = 0.010 HC - SUDs: -2.27, t(471) = - 5.41, p < 0.001 DEP/ANX - SUDs: -1.25, t(471) = - 3.86, p < 0.001</p>

Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

CONF6	<p>F(1, 471) = 9.33 p = 0.003</p> <p><u>B [CI]:</u> Age: -0.03 [-0.07, 0.02], p = 0.294</p>	<p>F(1, 471) = 2.06 p = 0.152</p> <p><u>B [CI]:</u> Sex: 0.69 [0.15, 1.22], p = 0.013</p>	<p>F(2, 471) = 10.74 p < 0.001</p> <p><u>B [CI]:</u> DEP/ANX: 0.54 [-0.14, 1.23], p = 0.12 SUDs: 1.32 [0.65, 2], p < 0.001</p> <p><u>Post-hoc Contrasts</u> HC - DEP/ANX: -0.72, t(471) = -2.20, p = 0.029 HC - SUDs: -1.59, t(471) = -4.70, p < 0.001 DEP/ANX - SUDs: -0.86, t(471) = -3.15, p = 0.002</p>	<p>F(2, 471) = 1.29 p = 0.276</p> <p><u>B [CI]:</u> Age*DEP/ANX: 0 [-0.06, 0.06], p = 0.96 Age*SUDs: -0.05 [-0.12, 0.02], p = 0.175</p>	<p>F(2, 471) = 2.46 p = 0.087</p> <p><u>B [CI]:</u> DEP/ANX*Sex: -0.52 [-1.2, 0.16], p = 0.136 SUDs*Sex: -0.77 [-1.45, -0.09], p = 0.027</p>
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Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

Table S6. Results of ANCOVA models examining group differences in within-subject variability (SDs) in chosen runway position by trial type, when accounting for main effects and interactions with age and sex.

Chosen Runway Position (SD)	Age	Sex	Group	Age*Group	Group*Sex
Overall	F(1, 471) = 14.72 p < 0.001 <u>B [CI]:</u> Age: 0 [-0.02, 0.03], p = 0.763	F(1, 471) = 3.92 p = 0.048 <u>B [CI]:</u> Sex: -0.25 [-0.5, 0], p = 0.05	F(2, 471) = 0.63 p = 0.531 <u>B [CI]:</u> DEP/ANX: -0.14 [-0.46, 0.17], p = 0.372 SUDs: -0.03 [-0.35, 0.28], p = 0.836	F(2, 471) = 4.19 p = 0.016 <u>B [CI]:</u> Age*DEP/ANX: 0.02 [-0.01, 0.04], p = 0.28 Age*SUDs: 0.05 [0.01, 0.08], p = 0.005 <u>Post-hoc Contrasts</u> HC - DEP/ANX: -0.02, t(471) = -1.08, p = 0.280 HC - SUDs: -0.05, t(471) = -2.83, p = 0.005 DEP/ANX - SUDs: -0.03, t(471) = -2.12, p = 0.034	F(2, 471) = 1.35 p = 0.26 <u>B [CI]:</u> DEP/ANX*Sex: 0.09 [-0.23, 0.4], p = 0.598 SUDs*Sex: 0.25 [-0.07, 0.56], p = 0.123
AV	F(1, 471) = 19.41 p < 0.001 <u>B [CI]:</u> Age: 0.01 [-0.01, 0.03], p = 0.247	F(1, 471) = 0.1 p = 0.755 <u>B [CI]:</u> Sex: 0.16 [-0.08, 0.4], p = 0.202	F(2, 471) = 26.81 p < 0.001 <u>B [CI]:</u> DEP/ANX: 0.11 [-0.19, 0.42], p = 0.471 SUDs: 0.83 [0.52, 1.13], p < 0.001 <u>Post-hoc Contrasts</u> HC - DEP/ANX: -0.13, t(471) = -0.89, p = 0.375 HC - SUDs: -0.93, t(471) = -6.13, p < 0.001 DEP/ANX - SUDs: -0.80, t(471) = -6.50, p < 0.001	F(2, 471) = 1.81 p = 0.165 <u>B [CI]:</u> Age*DEP/ANX: 0.01 [-0.02, 0.04], p = 0.464 Age*SUDs: 0.03 [0, 0.06], p = 0.063	F(2, 471) = 2.58 p = 0.077 <u>B [CI]:</u> DEP/ANX*Sex: -0.05 [-0.36, 0.25], p = 0.736 SUDs*Sex: -0.31 [-0.61, 0], p = 0.05

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APP	<p>F(1, 471) = 39.21 p < 0.001</p> <p><u>B [CI]:</u> Age: 0.01 [-0.01, 0.03], p = 0.313</p>	<p>F(1, 471) = 1.87 p = 0.172</p> <p><u>B [CI]:</u> Sex: 0 [-0.23, 0.22], p = 0.969</p>	<p>F(2, 471) = 7.38 p < 0.001</p> <p><u>B [CI]:</u> DEP/ANX: 0.08 [-0.21, 0.37], p = 0.586 SUDs: 0.47 [0.19, 0.76], p = 0.001</p> <p><u>Post-hoc Contrasts</u> HC - DEP/ANX: -0.12, t(471) = -0.85, p = 0.395 HC - SUDs: -0.50, t(471) = -3.49, p < 0.001 DEP/ANX - SUDs: -0.38, t(471) = -3.28, p = 0.001</p>	<p>F(2, 471) = 3.84 p = 0.022</p> <p><u>B [CI]:</u> Age*DEP/ANX: 0.03 [0, 0.05], p = 0.036 Age*SUDs: 0.04 [0.01, 0.07], p = 0.008</p> <p><u>Post-hoc Contrasts</u> HC - DEP/ANX: -0.03, t(471) = -2.10, p = 0.037 HC - SUDs: -0.04, t(471) = -2.67, p = 0.008 DEP/ANX - SUDs: -0.01, t(471) = -0.94, p = 0.346</p>	<p>F(2, 471) = 0.28 p = 0.753</p> <p><u>B [CI]:</u> DEP/ANX*Sex: -0.11 [-0.4, 0.18], p = 0.455 SUDs*Sex: -0.08 [-0.37, 0.21], p = 0.595</p>
CONF2	<p>F(1, 471) = 21.4 p < 0.001</p> <p><u>B [CI]:</u> Age: 0.01 [-0.01, 0.03], p = 0.503</p>	<p>F(1, 471) = 4.48 p = 0.035</p> <p><u>B [CI]:</u> Sex: -0.09 [-0.34, 0.15], p = 0.463</p>	<p>F(2, 471) = 2.23 p = 0.109</p> <p><u>B [CI]:</u> DEP/ANX: 0.08 [-0.24, 0.39], p = 0.626 SUDs: 0.34 [0.03, 0.65], p = 0.033</p>	<p>F(2, 471) = 6.78 p = 0.001</p> <p><u>B [CI]:</u> Age*DEP/ANX: 0.01 [-0.02, 0.04], p = 0.435 Age*SUDs: 0.05 [0.02, 0.09], p < 0.001</p> <p><u>Post-hoc Contrasts</u> HC - DEP/ANX: -0.01, t(471) = -0.78, p = 0.435 HC - SUDs: -0.05, t(471) = -3.42, p < 0.001 DEP/ANX - SUDs: -0.04, t(471) = -3.09, p = 0.002</p>	<p>F(2, 471) = 1.42 p = 0.243</p> <p><u>B [CI]:</u> DEP/ANX*Sex: -0.16 [-0.47, 0.15], p = 0.309 SUDs*Sex: 0.07 [-0.25, 0.38], p = 0.677</p>
CONF4	<p>F(1, 471) = 9.41 p = 0.002</p> <p><u>B [CI]:</u> Age: 0 [-0.02, 0.03], p = 0.656</p>	<p>F(1, 471) = 1.87 p = 0.173</p> <p><u>B [CI]:</u> Sex: -0.09 [-0.34, 0.15], p = 0.457</p>	<p>F(2, 471) = 2.49 p = 0.084</p> <p><u>B [CI]:</u> DEP/ANX: -0.01 [-0.32, 0.31], p = 0.973 SUDs: 0.31 [0, 0.63],</p>	<p>F(2, 471) = 5.37 p = 0.005</p> <p><u>B [CI]:</u> Age*DEP/ANX: 0 [-0.02, 0.03], p = 0.857 Age*SUDs: 0.04 [0.01, 0.08], p = 0.005</p>	<p>F(2, 471) = 1.27 p = 0.283</p> <p><u>B [CI]:</u> DEP/ANX*Sex: -0.1 [-0.41, 0.22], p = 0.543 SUDs*Sex: 0.12 [-0.19, 0.44], p = 0.44</p>

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			p = 0.055	<u>Post-hoc Contrasts</u> HC - DEP/ANX: 0, t(471) = -0.18, p = 0.857 HC - SUDs: -0.04, t(471) = - 2.81, p = 0.005 DEP/ANX - SUDs: -0.04, t(471) = - 2.99, p = 0.003	
CONF6	F(1, 471) = 8.83 p = 0.003 <u>B [CI]:</u> Age: 0 [-0.02, 0.03], p = 0.674	F(1, 471) = 0.96 p = 0.327 <u>B [CI]:</u> Sex: -0.16 [-0.41, 0.09], p = 0.211	F(2, 471) = 2.04 p = 0.131 <u>B [CI]:</u> DEP/ANX: 0.18 [-0.14, 0.49], p = 0.275 SUDs: 0.34 [0.03, 0.65], p = 0.032	F(2, 471) = 4.85 p = 0.008 <u>B [CI]:</u> Age*DEP/ANX: 0 [-0.02, 0.03], p = 0.833 Age*SUDs: 0.04 [0.01, 0.07], p = 0.007 <u>Post-hoc Contrasts</u> HC - DEP/ANX: 0, t(471) = -0.21, p = 0.833 HC - SUDs: -0.04, t(471) = - 2.69, p = 0.007 DEP/ANX - SUDs: -0.04, t(471) = - 2.83, p = 0.005	F(2, 471) = 0.45 p = 0.64 <u>B [CI]:</u> DEP/ANX*Sex: 0.11 [-0.21, 0.42], p = 0.512 SUDs*Sex: 0.15 [-0.16, 0.46], p = 0.347

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Table S7. Results of ANCOVA models examining group differences in response times by trial type, when accounting for main effects and interactions with age and sex.

Response times	Age	Sex	Group	Age*Group	Sex*Group
Overall	F(1, 470) = 104.31 p < 0.001 <u>B [CI]:</u> Age: 0.01 [0.01, 0.02], p < 0.001	F(1, 470) = 1.16 p = 0.282 <u>B [CI]:</u> Sex: 0.04 [-0.01, 0.1], p = 0.147	F(2, 470) = 1.72 p = 0.18 <u>B [CI]:</u> DEP/ANX: -0.03 [-0.11, 0.04], p = 0.343 SUDs: 0.03 [-0.04, 0.1], p = 0.382	F(2, 470) = 1.67 p = 0.19 <u>B [CI]:</u> Age*DEP/ANX: 0 [0, 0.01], p = 0.461 Age*SUDs: 0.01 [0, 0.01], p = 0.073	F(2, 470) = 2.93 p = 0.055 <u>B [CI]:</u> DEP/ANX*Sex: -0.09 [-0.16, -0.02], p = 0.016 SUDs*Sex: -0.06 [-0.13, 0.01], p = 0.098
AV	F(1, 469) = 87.41 p < 0.001 <u>B [CI]:</u> Age: 0.01 [0.01, 0.02], p < 0.001	F(1, 469) = 0.01 p = 0.913 <u>B [CI]:</u> Sex: 0.11 [0.05, 0.18], p < 0.001	F(2, 469) = 17.28 p < 0.001 <u>B [CI]:</u> DEP/ANX: -0.01 [-0.09, 0.07], p = 0.836 SUDs: 0.16 [0.08, 0.23], p < 0.001 <u>Post-hoc Contrasts</u> HC - DEP/ANX: -0.04, t(469) = -1.04, p = 0.298 HC - SUDs: -0.21, t(469) = -5.38, p < 0.001 DEP/ANX - SUDs: -0.17, t(469) = -5.36, p < 0.001	F(2, 469) = 0.35 p = 0.704 <u>B [CI]:</u> Age*DEP/ANX: 0 [0, 0.01], p = 0.475 Age*SUDs: 0 [0, 0.01], p = 0.447	F(2, 469) = 8.42 p < 0.001 <u>B [CI]:</u> DEP/ANX*Sex: -0.14 [-0.22, -0.06], p < 0.001 SUDs*Sex: -0.16 [-0.23, -0.08], p < 0.001 <u>Post-hoc Contrasts</u> Male: HC - DEP/ANX: 0.148, t(469) = 2.23, p = 0.026 HC - SUDs: 0, t(469) = 0, p = 0.999 DEP/ANX - SUDs: -0.15, t(469) = -2.55, p = 0.011 Female: HC - DEP/ANX: -0.13, t(469) = -2.81, p = 0.005 HC - SUDs: -0.31, t(469) = -6.28, p < 0.001 DEP/ANX - SUDs: -0.18, t(469) = -4.71, p < 0.001

Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

APP	F(1, 470) = 89 p < 0.001 <u>B [CI]:</u> Age: 0.01 [0.01, 0.02], p < 0.001	F(1, 470) = 0.97 p = 0.324 <u>B [CI]:</u> Sex: 0.02 [-0.05, 0.09], p = 0.529	F(2, 470) = 2.99 p = 0.051 <u>B [CI]:</u> DEP/ANX: -0.03 [-0.12, 0.05], p = 0.478 SUDs: 0.07 [-0.02, 0.15], p = 0.113 <u>Post-hoc Contrasts</u> HC - DEP/ANX: 0.01, t(470) = 0.16, p = 0.873 HC - SUDs: -0.08, t(470) = -1.86, p = 0.064 DEP/ANX - SUDs: -0.09, t(470) = -2.48, p = 0.014	F(2, 470) = 0.92 p = 0.399 <u>B [CI]:</u> Age*DEP/ANX: 0.01 [0, 0.01], p = 0.186 Age*SUDs: 0 [0, 0.01], p = 0.325	F(2, 470) = 1.4 p = 0.248 <u>B [CI]:</u> DEP/ANX*Sex: -0.07 [-0.16, 0.02], p = 0.106 SUDs*Sex: -0.03 [-0.11, 0.06], p = 0.502
CONF2	F(1, 470) = 90.06 p < 0.001 <u>B [CI]:</u> Age: 0.01 [0.01, 0.02], p < 0.001	F(1, 470) = 1.84 p = 0.176 <u>B [CI]:</u> Sex: 0.03 [-0.04, 0.1], p = 0.383	F(2, 470) = 0.39 p = 0.678 <u>B [CI]:</u> DEP/ANX: -0.06 [-0.14, 0.02], p = 0.157 SUDs: -0.02 [-0.1, 0.07], p = 0.715	F(2, 470) = 3.38 p = 0.035 <u>B [CI]:</u> Age*DEP/ANX: 0 [-0.01, 0.01], p = 0.802 Age*SUDs: 0.01 [0, 0.02], p = 0.023 <u>Post-hoc Contrasts</u> HC - DEP/ANX: 0, t(470) = -0.25, p = 0.802 HC - SUDs: -0.01, t(470) = -2.28, p = 0.023 DEP/ANX - SUDs: -0.01, t(470) = -2.33, p = 0.020	F(2, 470) = 2.29 p = 0.103 <u>B [CI]:</u> DEP/ANX*Sex: -0.09 [-0.17, -0.01], p = 0.035 SUDs*Sex: -0.04 [-0.13, 0.04], p = 0.296
CONF4	F(1, 470) = 63.92 p < 0.001 <u>B [CI]:</u> Age: 0.01 [0, 0.02], p = 0.003	F(1, 470) = 1.12 p = 0.29 <u>B [CI]:</u> Sex: 0.03 [-0.04, 0.09], p = 0.44	F(2, 470) = 0.05 p = 0.954 <u>B [CI]:</u> DEP/ANX: -0.03 [-0.12, 0.06], p = 0.499 SUDs: -0.01 [-0.1, 0.07],	F(2, 470) = 1.54 p = 0.215 <u>B [CI]:</u> Age*DEP/ANX: 0 [0, 0.01], p = 0.388 Age*SUDs: 0.01 [0, 0.02],	F(2, 470) = 2.36 p = 0.096 <u>B [CI]:</u> DEP/ANX*Sex: -0.09 [-0.18, 0], p = 0.044 SUDs*Sex: -0.03 [-0.11, 0.06],

Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

			p = 0.768	p = 0.081	p = 0.522
CONF6	F(1, 470) = 49.54 p < 0.001 <u>B [CI]:</u> Age: 0.01 [0, 0.02], p = 0.002	F(1, 470) = 1.14 p = 0.286 <u>B [CI]:</u> Sex: 0.02 [-0.04, 0.09], p = 0.514	F(2, 470) = 0.38 p = 0.684 <u>B [CI]:</u> DEP/ANX: -0.05 [-0.13, 0.04], p = 0.266 SUDs: -0.04 [-0.13, 0.04], p = 0.313	F(2, 470) = 2.19 p = 0.113 <u>B [CI]:</u> Age*DEP/ANX: 0 [-0.01, 0.01], p = 0.911 Age*SUDs: 0.01 [0, 0.02], p = 0.096	F(2, 470) = 0.92 p = 0.399 <u>B [CI]:</u> DEP/ANX*Sex: -0.06 [-0.14, 0.03], p = 0.193 SUDs*Sex: -0.05 [-0.13, 0.04], p = 0.269

Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

Table S8. Results of ANCOVA models examining group differences in post-task self-report questions (listed in Table 4), when accounting for main effects and interactions with age and sex.

Self-Report Scale	Age	Sex	Group	Age*Group	Sex*Group
Q1. Enjoyable	F(1, 470) = 1.37 p = 0.243 <u>B [CI]:</u> Age: 0.02 [0, 0.05], p = 0.103	F(1, 470) = 9.92 p = 0.002 <u>B [CI]:</u> Sex: -0.15 [-0.47, 0.16], p = 0.344	F(2, 470) = 3.24 p = 0.04 <u>B [CI]:</u> DEP/ANX: -0.37 [-0.77, 0.03], p = 0.073 SUDs: -0.55 [-0.95, -0.16], p = 0.006 <u>Post-hoc Contrasts</u> HC - DEP/ANX: 0.35, t(470) = 1.80, p = 0.072 HC - SUDs: 0.49, t(470) = 2.48, p = 0.013 DEP/ANX - SUDs: 0.14, t(470) = 0.90, p = 0.371	F(2, 470) = 0.73 p = 0.484 <u>B [CI]:</u> Age*DEP/ANX: -0.02 [-0.05, 0.02], p = 0.273 Age*SUDs: -0.02 [-0.06, 0.02], p = 0.305	F(2, 470) = 0.48 p = 0.622 <u>B [CI]:</u> DEP/ANX*Sex: -0.06 [-0.45, 0.34], p = 0.785 SUDs*Sex: -0.18 [-0.58, 0.21], p = 0.367
Q2. Anxious	F(1, 470) = 0.12 p = 0.727 <u>B [CI]:</u> Age: -0.04 [-0.08, -0.01], p = 0.021	F(1, 470) = 8.13 p = 0.005 <u>B [CI]:</u> Sex: -0.73 [-1.12, -0.33], p < 0.001	F(2, 470) = 1.23 p = 0.294 <u>B [CI]:</u> DEP/ANX: 0.22 [-0.28, 0.72], p = 0.389 SUDs: 0 [-0.5, 0.49], p = 0.985	F(2, 470) = 4.09 p = 0.017 <u>B [CI]:</u> Age*DEP/ANX: 0.04 [0, 0.08], p = 0.069 Age*SUDs: 0.07 [0.02, 0.12], p = 0.005 <u>Post-hoc Contrasts</u> HC - DEP/ANX: -0.04, t(470) = -1.82, p = 0.069 HC - SUDs: -0.07, t(470) = -2.85, p = 0.005 DEP/ANX - SUDs: -0.03, t(470) = -1.41, p = 0.160	F(2, 470) = 4.46 p = 0.012 <u>B [CI]:</u> DEP/ANX*Sex: 0.42 [-0.08, 0.92], p = 0.103 SUDs*Sex: 0.76 [0.26, 1.26], p = 0.003 <u>Post-hoc Contrasts</u> Male: HC - DEP/ANX: -0.64, t(470) = -1.53, p = 0.127 HC - SUDs: -0.75, t(470) = -1.89, p = 0.059 DEP/ANX - SUDs: -0.12, t(470) = -

Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

					0.32, $p = 0.753$ Female: HC - DEP/ANX: 0.20, $t(470) = 0.66$, $p = 0.507$ HC - SUDs: 0.76, $t(470) = 2.42$, $p = \mathbf{0.016}$ DEP/ANX - SUDs: 0.57, $t(470) = 2.32$, $p = \mathbf{0.021}$
Q3. Difficulty	F(1, 470) = 6.31 $p = \mathbf{0.012}$ <u>B [CI]:</u> Age: 0.01 [-0.02, 0.04], $p = 0.617$	F(1, 470) = 3.26 $p = 0.072$ <u>B [CI]:</u> Sex: -0.22 [-0.56, 0.13], $p = 0.217$	F(2, 470) = 1.06 $p = 0.346$ <u>B [CI]:</u> DEP/ANX: 0.11 [-0.33, 0.55], $p = 0.634$ SUDs: 0.34 [-0.09, 0.78], $p = 0.121$	F(2, 470) = 4.08 $p = \mathbf{0.017}$ <u>B [CI]:</u> Age*DEP/ANX: 0 [-0.04, 0.04], $p = 0.929$ Age*SUDs: 0.05 [0.01, 0.09], $p = \mathbf{0.021}$ <u>Post-hoc Contrasts</u> HC - DEP/ANX: 0, $t(470) = 0.09$, $p = 0.929$ HC - SUDs: -0.05, $t(470) = -2.32$, $p = \mathbf{0.021}$ DEP/ANX - SUDs: -0.05, $t(470) = -2.70$, $p = \mathbf{0.007}$	F(2, 470) = 0.68 $p = 0.505$ <u>B [CI]:</u> DEP/ANX*Sex: -0.02 [-0.46, 0.42], $p = 0.918$ SUDs*Sex: 0.19 [-0.25, 0.63], $p = 0.396$
Q4. Approached Points	F(1, 470) = 6.71 $p = \mathbf{0.01}$ <u>B [CI]:</u> Age: -0.01 [-0.06, 0.03], $p = 0.481$	F(1, 470) = 0.35 $p = 0.552$ <u>B [CI]:</u> Sex: 0.32 [-0.15, 0.79], $p = 0.188$	F(2, 470) = 7.47 $p < \mathbf{0.001}$ <u>B [CI]:</u> DEP/ANX: 0.3 [-0.17, 1.03], $p = 0.157$ SUDs: 0.94 [0.35, 1.53], $p = \mathbf{0.002}$ <u>Post-hoc Contrasts</u> HC - DEP/ANX: -0.46, $t(470) = -1.61$,	F(2, 470) = 0.9 $p = 0.408$ <u>B [CI]:</u> Age*DEP/ANX: -0.01 [-0.06, 0.04], $p = 0.767$ Age*SUDs: -0.04 [-0.1, 0.02], $p = 0.212$	F(2, 470) = 2.24 $p = 0.107$ <u>B [CI]:</u> DEP/ANX*Sex: -0.09 [-0.68, 0.51], $p = 0.774$ SUDs*Sex: -0.55 [-1.15, 0.04], $p = 0.069$

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			<p>p = 0.109 HC - SUDs: -1.13, t(470) = -3.82, p < 0.001 DEP/ANX - SUDs: -0.67, t(470) = -2.77, p = 0.006</p>		
Q5. Avoided Negative Images	<p>F(1, 470) = 3.84 p = 0.05 <u>B [CI]:</u> Age: -0.01 [-0.04, 0.03], p = 0.747</p>	<p>F(1, 470) = 1.22 p = 0.27 <u>B [CI]:</u> Sex: -0.65 [-1.08, -0.23], p = 0.003</p>	<p>F(2, 470) = 8.99 p < 0.001 <u>B [CI]:</u> DEP/ANX: -0.05 [-0.59, 0.49], p = 0.854 SUDs: -0.72 [-1.26, -0.19], p = 0.008 <u>Post-hoc Contrasts</u> HC - DEP/ANX: 0.22, t(470) = 0.85, p = 0.397 HC - SUDs: 1.04, t(470) = 3.89, p < 0.001 DEP/ANX - SUDs: 0.818, t(470) = 3.77, p < 0.001</p>	<p>F(2, 470) = 2.35 p = 0.097 <u>B [CI]:</u> Age*DEP/ANX: 0.02 [-0.02, 0.07], p = 0.355 Age*SUDs: 0.06 [0, 0.11], p = 0.033</p>	<p>F(2, 470) = 5.54 p = 0.004 <u>B [CI]:</u> DEP/ANX*Sex: 0.49 [-0.05, 1.03], p = 0.076 SUDs*Sex: 0.91 [0.37, 1.45], p = 0.001 <u>Post-hoc Contrasts</u> Male: HC - DEP/ANX: -0.44, t(470) = -0.98, p = 0.330 HC - SUDs: -0.19, t(470) = -0.43, p = 0.665 DEP/ANX - SUDs: 0.25, t(470) = 0.64, p = 0.520 Female: HC - DEP/ANX: 0.54, t(470) = 1.70, p = 0.090 HC - SUDs: 1.63, t(470) = 4.81, p < 0.001 DEP/ANX - SUDs: 1.09, t(470) = 4.14, p < 0.001</p>
Q6. Kept Eyes Open	<p>F(1, 470) = 1.71 p = 0.191 <u>B [CI]:</u> Age: 0.01 [-0.02, 0.04], p = 0.583</p>	<p>F(1, 470) = 6.63 p = 0.01 <u>B [CI]:</u> Sex: 0.24 [-0.14, 0.62], p = 0.211</p>	<p>F(2, 470) = 5.63 p = 0.004 <u>B [CI]:</u> DEP/ANX: 0.28 [-0.21, 0.76], p = 0.264</p>	<p>F(2, 470) = 1.09 p = 0.337 <u>B [CI]:</u> Age*DEP/ANX: -0.03 [-0.07, 0.01], p = 0.143</p>	<p>F(2, 470) = 1.65 p = 0.194 <u>B [CI]:</u> DEP/ANX*Sex: 0.19 [-0.29, 0.68], p = 0.433</p>

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			<p>SUDs: 0.64 [0.16, 1.2], p = 0.009</p> <p><u>Post-hoc Contrasts</u> HC - DEP/ANX: -0.21, t(470) = - 0.90, p = 0.370 HC - SUDs: -0.71, t(470) = - 2.96, p = 0.003 DEP/ANX - SUDs: -0.50, t(470) = - 2.57, p = 0.011</p>	<p>Age*SUDs: -0.02 [-0.07, 0.02], p = 0.335</p>	<p>SUDs*Sex: -0.19 [-0.68, 0.29], p = 0.428</p>
Q7. Distracted Myself	<p>F(1, 470) = 0 p = 0.973</p> <p><u>B [CI]:</u> Age: -0.01 [-0.05, 0.02], p = 0.395</p>	<p>F(1, 470) = 26.35 p < 0.001</p> <p><u>B [CI]:</u> Sex: -0.6 [-0.98, - 0.23], p = 0.002</p>	<p>F(2, 470) = 9.98 p < 0.001</p> <p><u>B [CI]:</u> DEP/ANX: -0.12 [-0.59, 0.36], p = 0.627 SUDs: -0.78 [-1.24, - 0.31], p = 0.001</p> <p><u>Post-hoc Contrasts</u> HC - DEP/ANX: 0.14, t(470) = 0.61, p = 0.543 HC - SUDs: 0.88, t(470) = 3.75, p < 0.001 DEP/ANX - SUDs: 0.74, t(470) = 3.89, p < 0.001</p>	<p>F(2, 470) = 0.83 p = 0.436</p> <p><u>B [CI]:</u> Age*DEP/ANX: 0.01 [-0.03, 0.06], p = 0.506 Age*SUDs: 0.03 [-0.02, 0.08], p = 0.199</p>	<p>F(2, 470) = 0.91 p = 0.402</p> <p><u>B [CI]:</u> DEP/ANX*Sex: 0.06 [-0.41, 0.53], p = 0.799 SUDs*Sex: 0.29 [-0.18, 0.76], p = 0.232</p>
Q8. Other Emotion Regulation Strategies	<p>F(1, 470) = 1.77 p = 0.184</p> <p><u>B [CI]:</u> Age: 0.02 [-0.02, 0.05], p = 0.337</p>	<p>F(1, 470) = 16.24 p < 0.001</p> <p><u>B [CI]:</u> Sex: -0.56 [-0.94, - 0.19], p = 0.003</p>	<p>F(2, 470) = 9.56 p < 0.001</p> <p><u>B [CI]:</u> DEP/ANX: -0.08 [-0.56, 0.4], p = 0.737 SUDs: -0.7 [-1.17, - 0.23], p = 0.004</p> <p><u>Post-hoc</u></p>	<p>F(2, 470) = 0.2 p = 0.82</p> <p><u>B [CI]:</u> Age*DEP/ANX: -0.01 [-0.05, 0.03], p = 0.624 Age*SUDs: 0 [-0.05, 0.05], p = 0.959</p>	<p>F(2, 470) = 2.6 p = 0.075</p> <p><u>B [CI]:</u> DEP/ANX*Sex: 0.04 [-0.44, 0.52], p = 0.874 SUDs*Sex: 0.46 [-0.02, 0.93], p = 0.061</p>

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			Contrasts HC - DEP/ANX: 0.10, t(470) = 0.42, p = 0.679 HC - SUDs: 0.86, t(470) = 3.64, p < 0.001 DEP/ANX - SUDs: 0.76, t(470) = 3.99, p < 0.001		
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Note: See Table 4 for a reproduction of each question in full associated with Q1-Q8 here.

Table S9. Means (SDs) for log-transformed model parameter values by specific disorder in combined exploratory and confirmatory sample

Group	EC	DU	EC (log-space)	DU (log-space)
All Participants (N = 958)	2.66 (2.82)	4.64 (4.88)	0.72 (0.80)	1.14 (0.96)
HC (N = 156)	3.50 (3.43)	3.60 (4.09)	0.98 (0.82)	0.93 (0.89)
SUDs (N = 334)	1.90 (2.14)	5.49 (5.42)	0.47 (0.72)	1.32 (0.96)
Alcohol (N = 118)	1.63 (1.78)	5.90 (5.54)	0.40 (0.64)	1.40 (0.97)
Cannabis (N = 158)	2.00 (2.44)	5.01 (5.22)	0.46 (0.77)	1.20 (0.99)
Stimulant (N = 278)	1.83 (2.02)	5.34 (5.40)	0.45 (0.71)	1.28 (0.97)
Only Stimulant (N = 62)	2.17 (2.48)	6.29 (6.30)	0.55 (0.77)	1.41 (1.02)
Sedative (N = 84)	1.36 (1.06)	5.11 (5.07)	0.30 (0.59)	1.27 (0.93)
Opioid (N = 122)	1.69 (1.55)	5.42 (5.34)	0.44 (0.65)	1.33 (0.93)
Hallucinogens (N = 14)	1.69 (0.78)	6.71 (2.50)	0.55 (0.45)	1.90 (0.36)
MDD (N = 193)	1.92 (2.32)	5.31 (5.38)	0.48 (0.71)	1.25 (1.00)
GAD (N = 62)	1.57 (1.49)	4.81 (5.14)	0.41 (0.60)	1.39 (1.01)
SAD (N = 53)	2.14 (2.80)	4.32 (4.85)	0.54 (0.75)	1.10 (0.91)
Panic (N = 31)	2.78 (3.37)	5.82 (5.50)	0.73 (0.84)	1.46 (0.90)
PTSD (N = 43)	2.42 (2.69)	5.74 (5.55)	0.62 (0.80)	1.41 (0.91)
DEP/ANX (N = 468)	2.92 (2.89)	4.38 (4.62)	0.81 (0.81)	1.09 (0.97)
MDD Inclusive (N = 426)	2.87 (2.80)	4.39 (4.67)	0.81 (0.80)	1.09 (0.97)
Only MDD (N = 128)	2.89 (3.21)	4.30 (4.62)	0.79 (0.81)	1.04 (1.01)
GAD Inclusive (N = 215)	2.98 (2.70)	4.22 (4.14)	0.85 (0.81)	1.09 (0.95)
Only GAD (N = 14)	3.39 (2.62)	3.81 (3.06)	1.02 (0.77)	1.15 (0.79)
Anxious Depression (N = 298)	2.87 (2.62)	4.42 (4.70)	0.81 (0.80)	1.12 (0.95)
SAD (N = 111)	2.89 (2.75)	3.56 (4.25)	0.81 (0.80)	0.88 (0.95)
Panic (N = 82)	2.73 (2.79)	4.51 (5.17)	0.73 (0.83)	1.09 (0.99)
PTSD (N = 80)	3.01 (2.91)	4.55 (4.94)	0.84 (0.82)	1.14 (0.95)

Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

Table S10. Logistic regressions in SUDs predicting the presence of specific disorders compared to HCs (N = 156) in combined samples

Substance Use Disorders						
Disorder & Mean (SD)	Effect	Estimate*	SE	z	p	EC*Sex Interaction: B [CI]
Only Stimulant (N = 62)	DU	0.66	0.22	2.96	.003	Non-significant
	EC	-1.37	0.30	-4.56	<.001	
	Sex	-2.73	0.76	-3.61	<.001	
	DU*Sex	0.66	0.49	1.34	.181	
	EC*Sex	0.63	0.66	0.95	.340	
Stimulant (N = 278)	DU	1.18	0.26	4.54	<.001	Female: -1.81, [-2.31, -1.30] Male: -0.52, [-0.97, -0.08]
	EC	-1.81	0.26	-7.01	<.001	
	Sex	-1.15	0.36	-3.17	.002	Female - Male: -1.29 z = -3.74, p < .001
	DU*Sex	0.15	0.26	0.59	.553	
	EC*Sex	1.29	0.34	3.74	<.001	
Opioid (N = 122)	DU	0.71	0.24	2.94	.003	Female: -2.20, [-3.00, -1.40] Male: -0.70, [-1.27, -0.13]
	EC	-2.20	0.41	-5.38	<.001	
	Sex	-0.97	0.47	-2.06	.039	Female - Male: -1.5 z = -2.99, p = .003
	DU*Sex	0.27	0.34	0.78	.434	
	EC*Sex	1.50	0.50	2.99	.003	
Alcohol (N = 118)	DU	0.89	0.28	3.15	.002	Female: -2.22, [-3.11, -1.34] Male: -0.93, [-1.50, -0.35]
	EC	-2.22	0.45	-4.92	<.001	
	Sex	-0.05	0.50	-0.11	.913	Female - Male: -1.3 z = -2.41, p = .016
	DU*Sex	0.01	0.35	0.04	.969	
	EC*Sex	1.30	0.54	2.41	.016	
Cannabis (N = 158)	DU	0.54	0.21	2.57	.010	Female: -1.87, [-2.50, -1.23] Male: -0.39, [-0.86, -0.07]
	EC	-1.87	0.32	-5.77	<.001	
	Sex	-0.83	0.40	-2.08	.037	Female - Male: -1.47 z = -3.68, p < .001
	DU*Sex	0.13	0.29	0.44	.663	
	EC*Sex	1.47	0.40	3.68	<.001	
Sedative (N = 84)	DU	0.64	0.25	2.57	.010	Non-significant
	EC	-2.22	0.42	-5.27	<.001	
	Sex	-1.41	0.53	-2.65	.008	
	DU*Sex	0.52	0.40	1.30	.192	
	EC*Sex	0.87	0.60	1.46	.143	
Hallucinogens (N = 14)	DU	1.72	0.69	2.48	.013	Non-significant
	EC	-2.24	0.92	-2.43	.015	
	Sex	-0.34	1.62	-0.21	.832	
	DU*Sex	0.26	0.95	0.27	.787	
	EC*Sex	1.07	1.20	0.89	.373	
Affective Disorders (within SUDs)						
MDD (N = 193)	DU	0.53	0.19	2.86	.004	Female: -1.74, [-2.30, -1.18] Male: -0.50, [-0.99, -0.02]
	EC	-1.74	0.29	-6.10	<.001	
	Sex	-1.03	0.39	-2.66	.008	Female - Male: -1.24 z = -3.28, p = .001
	DU*Sex	0.23	0.28	0.85	.398	
	EC*Sex	1.24	0.38	3.28	.001	
GAD (N = 62)	DU	0.50	0.27	1.87	.061	Female: -2.18, [-3.07, -1.29] Male: -0.38, [-1.16, -0.39]
	EC	-2.18	0.45	-4.79	<.001	
	Sex	-1.45	0.54	-2.67	.008	Female - Male: -1.79 z = -2.98, p = .003
	DU*Sex	0.04	0.39	0.10	.920	
	EC*Sex	1.79	0.60	2.98	.003	
Social Anxiety (N = 53)	DU	0.51	0.27	1.89	.059	Female: -1.52, [-2.28, -0.76] Male: -0.25, [-0.95, -0.46]
	EC	-1.52	0.39	-3.91	<.001	
	Sex	-0.74	0.55	-1.35	.178	Female - Male: -1.27
	DU*Sex	-0.17	0.41	-0.42	.676	

Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

	EC*Sex	1.27	0.53	2.41	.016	$z = -2.41, p = .016$
Panic (N = 31)	DU	0.79	0.37	2.17	.030	Non-significant
	EC	-1.37	0.48	-2.87	.004	
	Sex	-0.75	0.78	-0.96	.336	
	DU*Sex	0.12	0.52	0.23	.818	
	EC*Sex	1.25	0.64	1.95	.051	
PTSD (N = 43)	DU	0.81	0.30	2.70	.007	Female: -1.65, [-2.53, -0.77] Male: -0.21, [-0.94, 0.51]
	EC	-1.65	0.45	-3.67	<.001	
	Sex	-1.08	0.67	-1.61	.108	Female - Male: -1.44 $z = -2.47, p = .014$
	DU*Sex	-0.00	0.45	-0.01	.992	
	EC*Sex	1.44	0.58	2.47	.013	

* Note that these estimates reflect the change in log-odds of belonging to the target group.

Table S11. Logistic regressions in SUDS (N = 334) predicting each specific disorder compared to all other disorders in combined samples

Substance Use Disorders					
Disorder	Effect	Estimate*	SE	z	p
Only Stimulant (N = 62)	DU	0.01	0.19	0.03	.978
	EC	0.34	0.36	1.33	.183
	Sex	-1.92	0.72	-2.67	.008
	DU*Sex	0.39	0.42	0.93	.354
	EC*Sex	-0.33	0.53	-0.63	.532
Stimulant (N = 278)	DU	-0.13	0.23	-0.54	.588
	EC	-0.43	0.31	-1.42	.156
	Sex	-0.26	0.55	-0.48	.629
	DU*Sex	-0.15	0.34	-0.43	.666
	EC*Sex	0.60	0.45	1.34	.179
Opioid (N = 122)	DU	0.08	0.19	0.41	.684
	EC	-0.27	0.26	-1.02	.308
	Sex	0.62	0.40	1.55	.120
	DU*Sex	-0.01	0.26	-0.05	.960
	EC*Sex	0.14	0.36	0.39	.700
Alcohol (N = 118)	DU	0.29	0.21	1.38	.167
	EC	-0.44	0.30	-1.45	.147
	Sex	1.69	0.43	3.89	<.001
	DU*Sex	-0.08	0.29	-0.29	.769
	EC*Sex	-0.16	0.40	-0.41	.684
Cannabis (N = 158)	DU	-0.22	0.17	-1.26	.207
	EC	-0.21	0.24	-0.88	.378
	Sex	0.63	0.40	1.59	.113
	DU*Sex	-0.18	0.26	-0.69	.491
	EC*Sex	0.61	0.35	1.72	.085
Sedative (N = 84)	DU	0.02	0.20	0.09	.926
	EC	-0.42	0.29	-1.48	.139
	Sex	-0.08	0.45	-0.19	.853
	DU*Sex	0.15	0.30	0.50	.614
	EC*Sex	-0.25	0.43	-0.58	.563
Hallucinogens (N = 14)	DU	1.10	0.62	1.78	.076
	EC	-0.65	0.79	-0.83	.408
	Sex	1.18	1.39	0.85	.396
	DU*Sex	-0.45	0.78	-0.58	.561
	EC*Sex	0.46	0.97	0.47	.640
Affective Disorders					
MDD (N = 193)	DU	-0.26	0.17	-1.52	.128

Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

	EC	0.11	0.24	0.46	.648
	Sex	0.30	0.40	0.76	.448
	DU*Sex	0.03	0.26	0.12	.903
	EC*Sex	0.13	0.35	0.37	.709
GAD (N = 62)	DU	-0.15	0.21	-0.73	.467
	EC	-0.23	0.30	-0.76	.446
	Sex	-0.28	0.48	-0.59	.557
	DU*Sex	-0.18	0.33	-0.54	.591
	EC*Sex	0.52	0.44	1.19	.236
Social Anxiety (N = 53)	DU	-0.17	0.23	-0.77	.443
	EC	0.29	0.31	0.92	.357
	Sex	0.51	0.49	1.04	.299
	DU*Sex	-0.47	0.35	-1.35	.176
	EC*Sex	0.11	0.45	0.25	.799
Panic (N = 31)	DU	0.08	0.31	0.26	.792
	EC	0.33	0.41	0.80	.425
	Sex	0.33	0.69	0.48	.631
	DU*Sex	-0.14	0.42	-0.32	.746
	EC*Sex	0.28	0.55	0.51	.614
PTSD (N = 43)	DU	0.16	0.25	0.62	.534
	EC	0.20	0.34	0.60	.552
	Sex	0.19	0.59	0.32	.747
	DU*Sex	-0.31	0.37	-0.83	.408
	EC*Sex	0.25	0.48	0.51	.610

* Note that these estimates reflect the change in log-odds of belonging to the target group.

Table S12. Logistic regressions in DEP/ANX group predicting the presence of specific disorders compared to HCs (N = 156) in combined samples

Affective Disorders						
Disorder	Effect	Estimate*	SE	z	p	EC*Sex Interaction: B [CI]
Anxious MDD (N = 298)	DU	0.28	0.14	1.96	.050	Non-significant
	EC	-0.59	0.17	-3.51	<.001	
	Sex	-1.33	0.35	-3.78	<.001	
	DU*Sex	0.17	0.26	0.66	.508	
	EC*Sex	0.19	0.30	0.64	.525	
Only MDD (N = 128)	DU	0.26	0.17	1.51	.131	Female: -0.75, [-1.17, -0.33] Male: -0.06, [-0.54, 0.57] Female - Male: -0.81 z = -2.40, p = .016
	EC	-0.75	0.21	-3.50	<.001	
	Sex	-1.16	0.41	-2.80	.005	
	DU*Sex	-0.11	0.29	-0.37	.713	
	EC*Sex	0.81	0.34	2.40	.016	
MDD Inclusive (N = 426)	DU	0.29	0.14	2.12	.034	Non-significant
	EC	-0.64	0.16	-3.97	<.001	
	Sex	-1.25	0.32	-3.86	<.001	
	DU*Sex	0.03	0.23	0.12	.903	
	EC*Sex	0.45	0.26	1.70	.090	
GAD Inclusive (N = 215)	DU	0.22	0.15	1.46	.143	Non-significant
	EC	-0.53	0.17	-3.07	.002	
	Sex	-1.60	0.39	-4.11	<.001	
	DU*Sex	0.19	0.28	0.66	.510	
	EC*Sex	0.25	0.33	0.77	.442	
Only GAD (N = 14)	DU	-0.05	0.36	-0.15	.882	Non-significant
	EC	-0.29	0.42	-0.69	.488	
	Sex	-3.04	1.53	-1.99	.047	

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Social Anxiety (N = 111)	DU*Sex	1.34	0.82	1.62	.105	Non-significant
	EC*Sex	0.30	0.98	0.30	.761	
	DU	-0.10	0.18	-0.56	.576	
	EC	-0.41	0.21	-1.99	.046	
	Sex	-1.03	0.42	-2.44	.015	
	DU*Sex	0.34	0.32	1.08	.280	
Panic (N = 82)	EC*Sex	0.06	0.38	0.15	.879	Non-significant
	DU	0.22	0.19	1.18	.239	
	EC	-0.72	0.22	-3.23	.001	
	Sex	-1.85	0.53	-3.49	<.001	
	DU*Sex	0.46	0.41	1.12	.263	
	EC*Sex	0.05	0.51	0.10	.920	
PTSD (N = 80)	DU	0.35	0.19	1.81	.071	Non-significant
	EC	-0.51	0.23	-2.23	.026	
	Sex	-0.94	0.50	-1.87	.062	
	DU*Sex	0.00	0.38	0.00	.999	
	EC*Sex	-0.03	0.47	-0.07	.948	

* Note that these estimates reflect the change in log-odds of belonging to the target group.

Table S13. Logistic regressions in DEP/ANX group (N = 468) predicting each specific disorder compared to all other disorders in combined samples

Affective Disorders					
Disorder	Effect	Estimate*	SE	z	p
Anxious Depression (N = 298)	DU	0.01	0.13	0.09	.928
	EC	0.05	0.15	0.33	.744
	Sex	-0.28	0.34	-0.83	.405
	DU*Sex	0.22	0.24	0.92	.356
	EC*Sex	-0.33	0.29	-1.15	.249
Only MDD (N = 128)	DU	0.00	0.14	-0.03	.976
	EC	-0.16	0.17	-0.93	.351
	Sex	0.16	0.36	0.44	.661
	DU*Sex	-0.21	0.26	-0.81	.419
	EC*Sex	0.51	0.30	1.68	.094
MDD Inclusive (N = 426)	DU	0.02	0.21	0.097	.922
	EC	-0.22	0.25	-0.88	.377
	Sex	-0.40	0.56	-0.70	.483
	DU*Sex	0.11	0.41	0.26	.795
	EC*Sex	0.35	0.49	0.70	.482
GAD Inclusive (N = 215)	DU	-0.11	0.12	-0.90	.370
	EC	0.14	0.15	0.98	.329
	Sex	-0.66	0.34	-1.93	.054
	DU*Sex	0.22	0.24	0.93	.354
	EC*Sex	-0.19	0.29	-0.67	.500
Only GAD (N = 14)	DU	-0.30	0.35	-0.9	.380
	EC	0.37	0.40	0.91	.361
	Sex	-1.68	1.47	-1.14	.254
	DU*Sex	1.21	0.81	1.50	.133
	EC*Sex	-0.17	0.86	-0.20	.845
Social Anxiety (N = 111)	DU	-0.47	0.15	-3.11	.002
	EC	0.33	0.18	1.85	.064
	Sex	0.32	0.37	0.88	.379
	DU*Sex	0.34	0.27	1.26	.208
	EC*Sex	-0.46	0.32	-1.42	.156

Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

Panic (N = 82)	DU	-0.01	0.15	-0.05	.962
	EC	-0.19	0.19	-0.99	.322
	Sex	-0.69	0.48	-1.46	.146
	DU*Sex	0.27	0.34	0.80	.423
	EC*Sex	-0.13	0.42	-0.31	.759
PTSD (N = 80)	DU	0.07	0.16	0.47	.639
	EC	0.11	0.19	0.59	.557
	Sex	0.29	0.44	0.67	.501
	DU*Sex	-0.08	0.32	-0.24	.808
	EC*Sex	-0.39	0.39	-1.00	.316

* Note that these estimates reflect the change in log-odds of belonging to the target group.

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Supplementary Figures

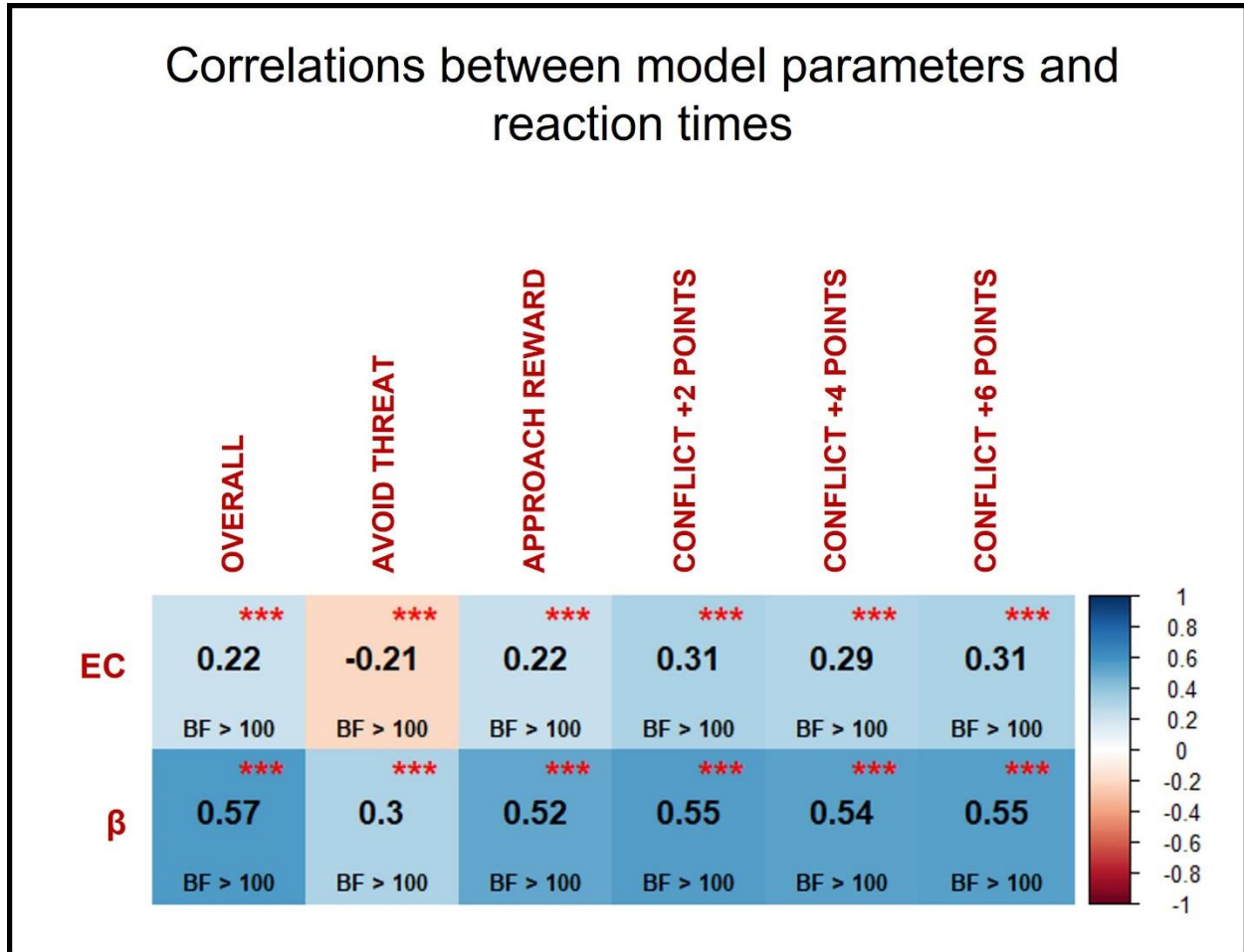


Figure S1. Pearson correlations between model parameter estimates and response times (per task condition). Note that the negative correlation with EC in the AVOID THREAT condition is expected, as more confident avoidance would be expected in the absence of any points on offer.

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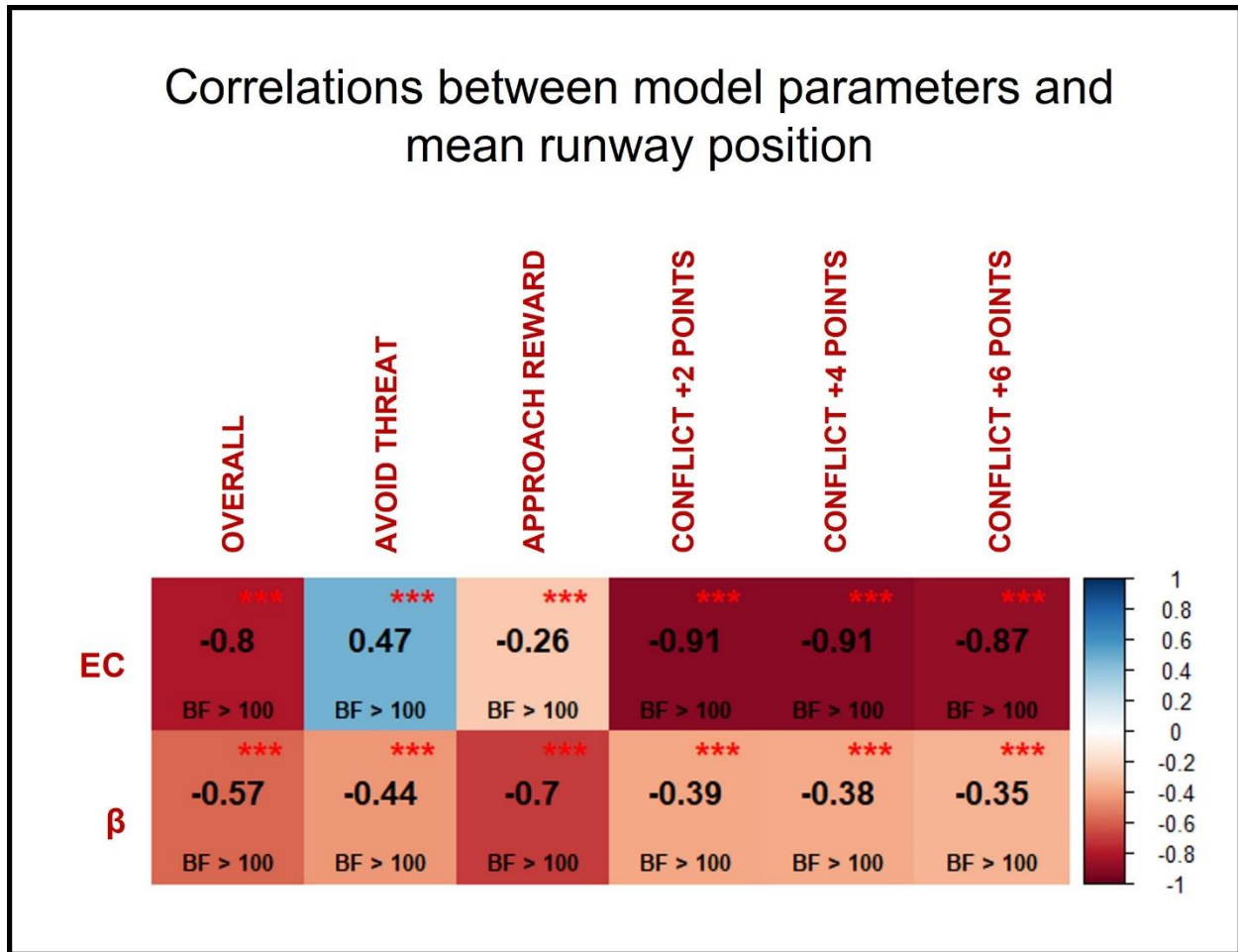


Figure S2. Pearson correlations between model parameter estimates and mean chosen runway position (per task condition). Note that the positive correlation with EC in the AVOID THREAT condition is expected, as higher runway position values always indicate movement toward the more positive stimulus in a given condition, which in this case means movement away from the negative stimulus since no points are on offer (whereas in all other conditions it means movement toward the points).

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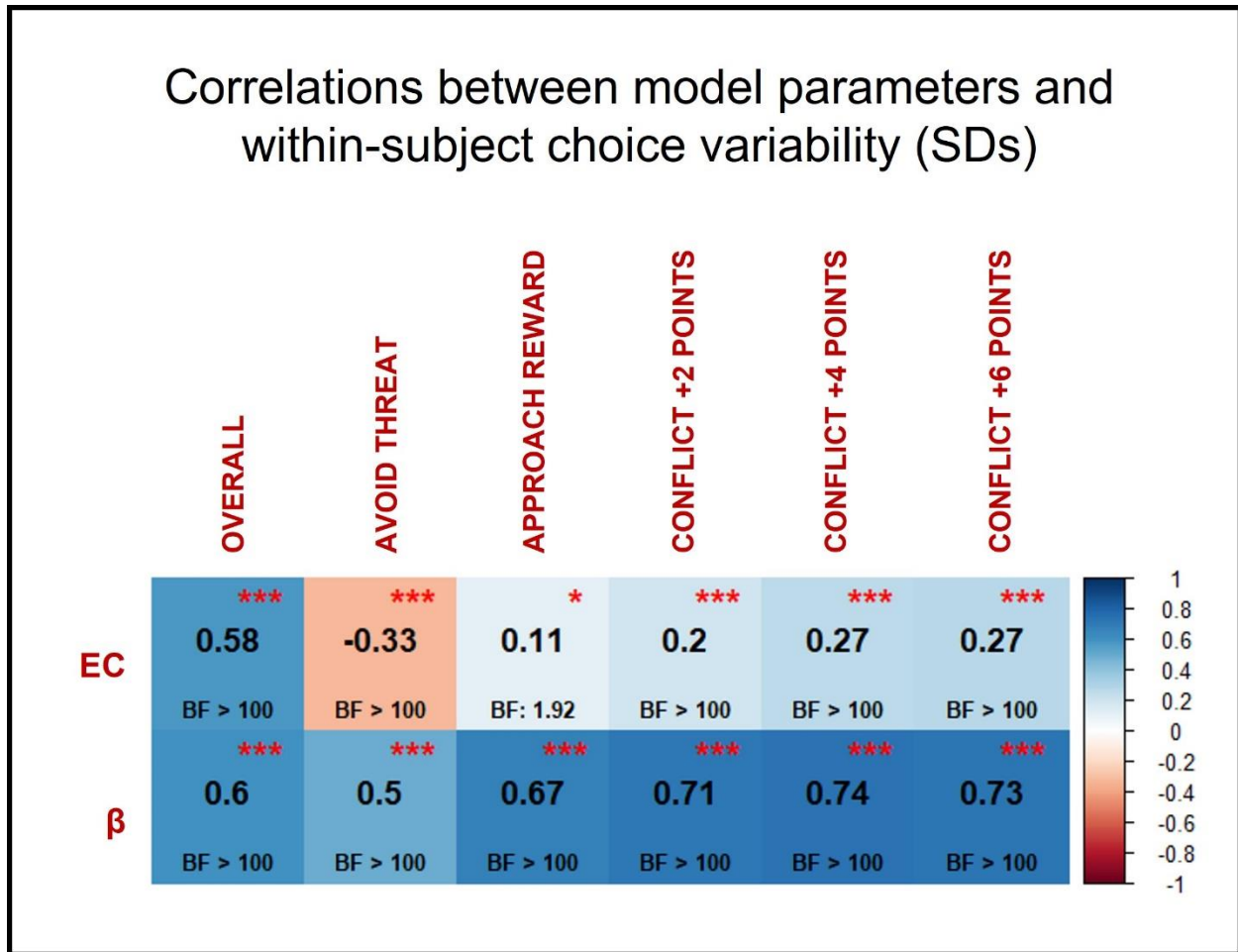


Figure S3. Pearson correlations between model parameter estimates and SD in chosen runway position (per task condition). Note that the negative correlation with EC in the AVOID THREAT condition is expected, as more confident avoidance (less variability) would be expected in the absence of any points on offer.

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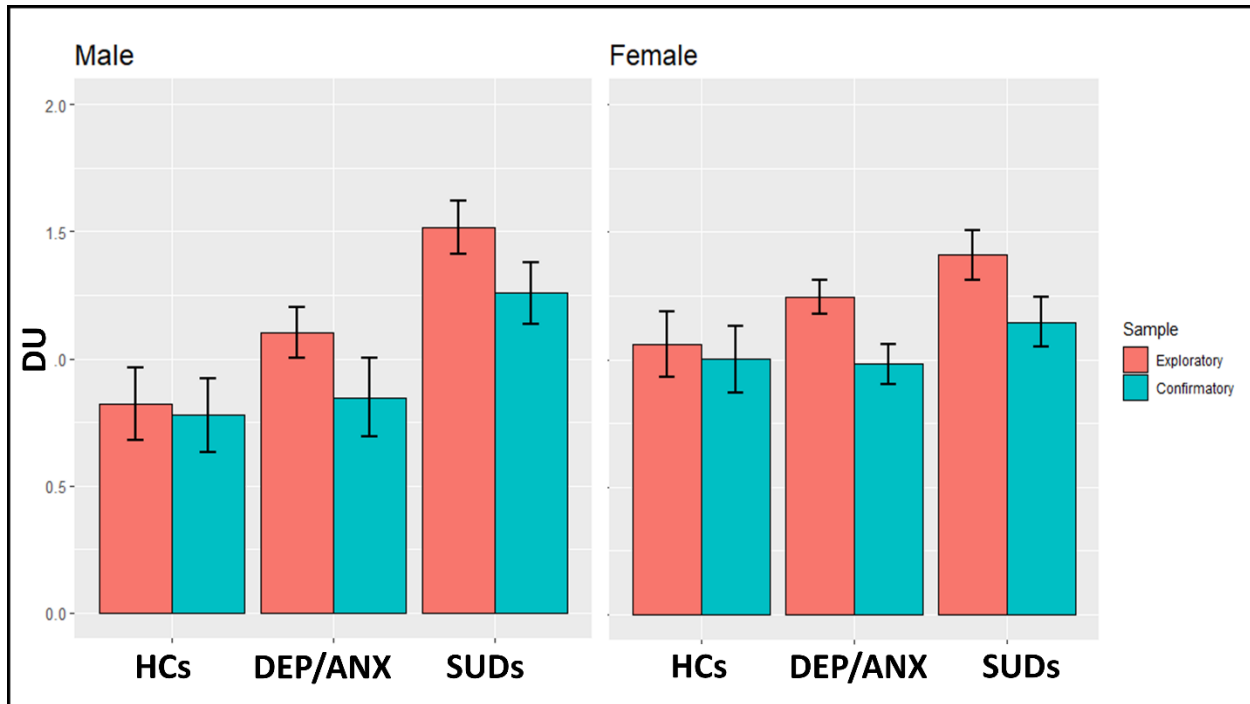


Figure S4. Comparison of results for the DU parameter (Mean/SE) in our previous exploratory sample⁶ and the current sample when separated by clinical group and sex.

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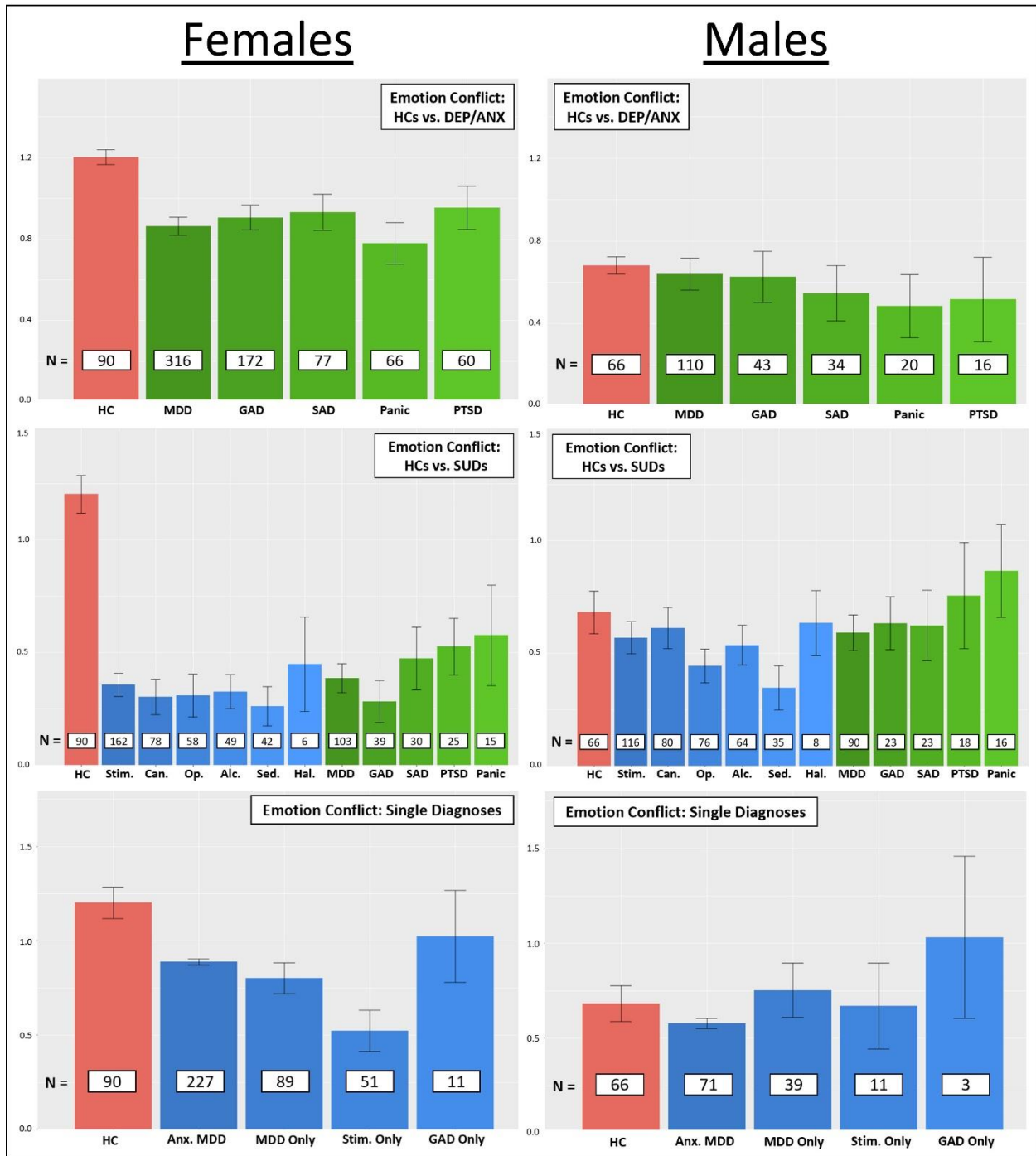


Figure S5. Comparison of EC values within HCs and subsets of individuals with specific SUDs/affective disorders within the combined exploratory and confirmatory samples when separated by sex (sample size per group is indicated within each bar). See **Table S10-S13** for information about sex by parameter interactions. Stim. Only = stimulant use disorders without co-morbidities, Can. = cannabis use disorders, Op. = opioid use disorders, Alc. = alcohol use disorders, Sed. = sedative use disorders, Hal. = hallucinogen use disorders, SAD = social anxiety disorder, PTSD = post-traumatic stress disorders.

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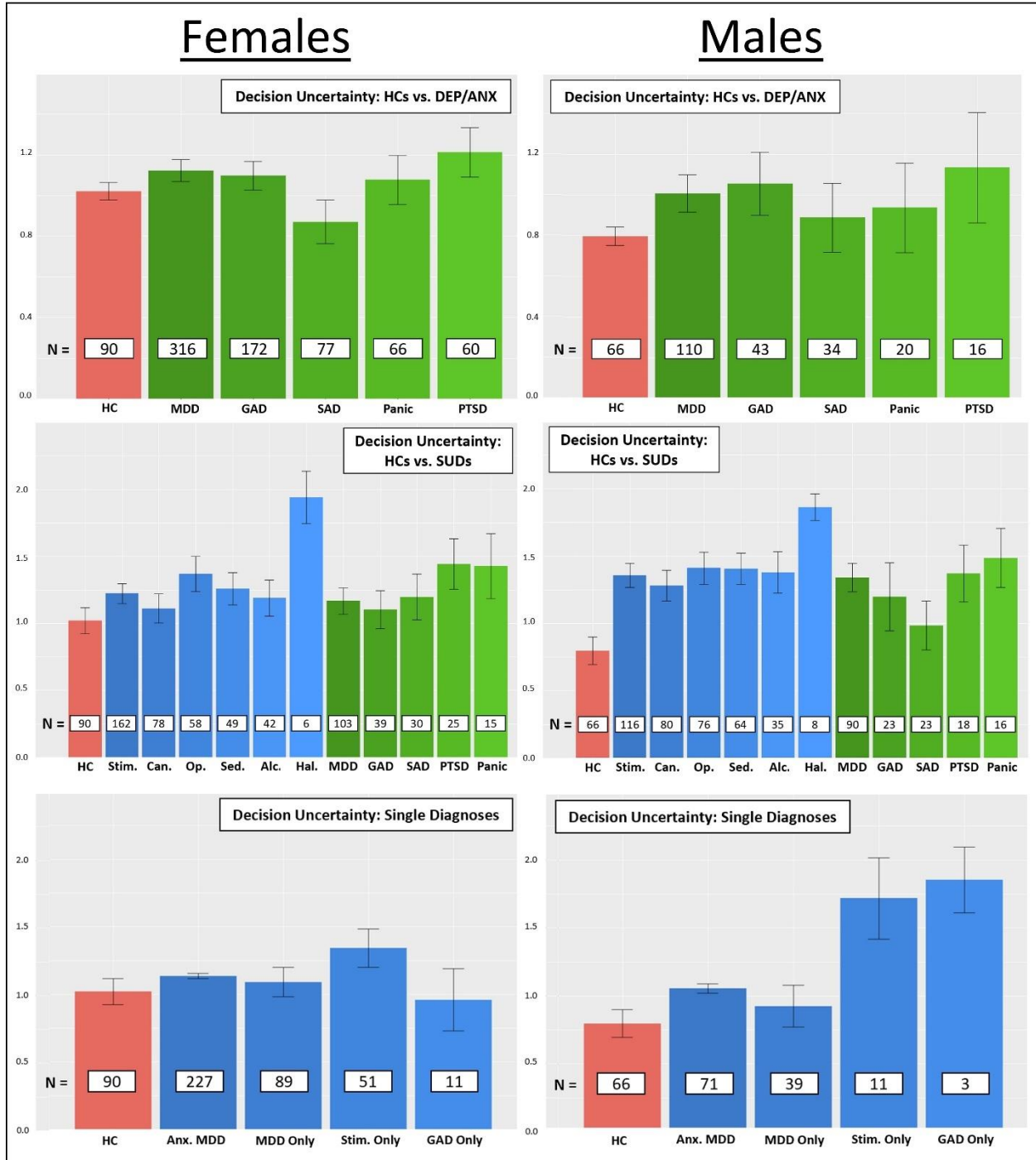


Figure S6. Comparison of DU values within HCs and subsets of individuals with specific SUDs/affective disorders within the combined exploratory and confirmatory samples when separated by sex (sample size per group is indicated within each bar). See **Table S10-S13** for information about sex by parameter interactions. Stim. Only = stimulant use disorders without co-morbidities, Can. = cannabis use disorders,

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Op. = opioid use disorders, Alc. = alcohol use disorders, Sed. = sedative use disorders, Hal. = hallucinogen use disorders, SAD = social anxiety disorder, PTSD = post-traumatic stress disorders.

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Supplementary Results 2:

Full statistical results for all ANCOVA analyses including the subset of participants with available WRAT Reading scores

Main Effects

(see below for interactions)

	Age	Sex	Group	WRAT
Parameters				
Emotion Conflict	<p>F(1, 383) = 5.49 p = 0.02</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> Age: 0 [-0.01, 0.02], p = 0.905 	<p>F(1, 383) = 8.02 p = 0.005</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> Sex: -0.31 [-0.47, -0.16], p < 0.001 	<p>F(2, 383) = 19.17 p < 0.001</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> DEP/ANX: -0.21 [-0.42, 0.01], p = 0.062 SUDs: -0.58 [-0.83, -0.34], p < 0.001 <p>Post-hoc Contrasts</p> <ul style="list-style-type: none"> HC - DEP/ANX: c = 0.31, t(383) = 2.93, p = 0.004 HC - SUDs: c = 0.77, t(383) = 6.60, p < 0.001 DEP/ANX - SUDs: c = 0.46, t(383) = 4.89, p < 0.001 	<p>F(1, 383) = 3.03 p = 0.082</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> WRAT: 0.01 [-0.02, 0.04], p = 0.451

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Decision Uncertainty	F(1, 383) = 25.92 p < 0.001 Betas [CI] • Age: 0.01 [-0.01, 0.03], p = 0.577	F(1, 383) = 3.04 p = 0.082 Betas [CI] • Sex: -0.18 [-0.39, 0.02], p = 0.085	F(2, 383) = 0.11 p = 0.893 Betas [CI] • DEP/ANX: -0.04 [-0.32, 0.24], p = 0.763 • SUDs: 0.16 [-0.16, 0.48], p = 0.336	F(1, 383) = 13.79 p < 0.001 Betas [CI] • WRAT: -0.05 [-0.09, -0.01], p = 0.007
Self-Reports	Age	Sex	Group	WRAT
Q1. Enjoyable	F(1, 382) = 1.88 p = 0.172 Betas [CI] • Age: 0.04 [0.01, 0.07], p = 0.007	F(1, 382) = 4.1 p = 0.044 Betas [CI] • Sex: -0.22 [-0.55, 0.11], p = 0.199	F(2, 382) = 2.98 p = 0.052 Betas [CI] • DEP/ANX: -0.47 [-0.91, -0.02], p = 0.042 • SUDs: -0.61 [-1.12, -0.1], p = 0.019	F(1, 382) = 2.68 p = 0.103 Betas [CI] • WRAT: -0.05 [-0.12, 0.01], p = 0.099
Q2. Anxious	F(1, 382) = 0.01 p = 0.941 Betas [CI] • Age: -0.04 [-0.08, 0], p = 0.04	F(1, 382) = 13.17 p < 0.001 Betas [CI] • Sex: -0.81 [-1.24, -0.38], p < 0.001	F(2, 382) = 1.82 p = 0.163 Betas [CI] • DEP/ANX: 0.31 [-0.27, 0.9], p = 0.292 • SUDs: -0.14 [-0.81, 0.52], p = 0.671	F(1, 382) = 0.84 p = 0.359 Betas [CI] • WRAT: 0.08 [0, 0.16], p = 0.058

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<p>Q3. Difficulty</p>	<p>F(1, 382) = 4.55 p = 0.034</p> <p>Betas [CI] • Age: 0 [-0.04, 0.03], p = 0.793</p>	<p>F(1, 382) = 2 p = 0.158</p> <p>Betas [CI] • Sex: -0.15 [-0.53, 0.23], p = 0.446</p>	<p>F(2, 382) = 0.74 p = 0.478</p> <p>Betas [CI] • DEP/ANX: 0.17 [-0.34, 0.69], p = 0.514 • SUDs: 0.46 [-0.13, 1.04], p = 0.126</p>	<p>F(1, 382) = 0.03 p = 0.872</p> <p>Betas [CI] • WRAT: 0.01 [-0.06, 0.09], p = 0.732</p>
<p>Q4. Approached Points</p>	<p>F(1, 382) = 8.79 p = 0.003</p> <p>Betas [CI] • Age: -0.02 [-0.07, 0.03], p = 0.404</p>	<p>F(1, 382) = 2.29 p = 0.131</p> <p>Betas [CI] • Sex: 0.53 [0.03, 1.03], p = 0.04</p>	<p>F(2, 382) = 8.35 p < 0.001</p> <p>Betas [CI] • DEP/ANX: 0.74 [0.06, 1.41], p = 0.034 • SUDs: 1.23 [0.46, 2], p = 0.002</p> <p>Post-hoc Contrasts • HC - DEP/ANX: c = -0.83, t(382) = -2.51, p = 0.013 • HC - SUDs: c = -1.69, t(382) = -4.58, p < 0.001 • DEP/ANX - SUDs: c = -0.86, t(382) = -2.86, p = 0.004</p>	<p>F(1, 382) = 0.8 p = 0.37</p> <p>Betas [CI] • WRAT: 0.06 [-0.03, 0.16], p = 0.207</p>

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<p>Q5. Avoided Negative Images</p>	<p>F(1, 382) = 6.96 p = 0.009</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age: 0 [-0.04, 0.04], p = 0.963 	<p>F(1, 382) = 5.67 p = 0.018</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Sex: -0.76 [-1.21, -0.3], p = 0.001 	<p>F(2, 382) = 10.48 p < 0.001</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX: -0.22 [-0.84, 0.39], p = 0.478 • SUDs: -0.98 [-1.69, -0.28], p = 0.007 <p>Post-hoc Contrasts</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = 0.46, t(382) = 1.50, p = 0.134 • HC - SUDs: c = 1.46, t(382) = 4.34, p < 0.001 • DEP/ANX - SUDs: c = 1.01, t(382) = 3.69, p = 0.003 	<p>F(1, 382) = 0.07 p = 0.784</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • WRAT: 0.01 [-0.08, 0.1], p = 0.858
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Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

Q6. Kept Eyes Open	<p>F(1, 382) = 5.19 p = 0.023</p> <p>Betas [CI] • Age: 0 [-0.04, 0.03], p = 0.811</p>	<p>F(1, 382) = 6.26 p = 0.013</p> <p>Betas [CI] • Sex: 0.3 [-0.11, 0.71], p = 0.156</p>	<p>F(2, 382) = 5.45 p = 0.005</p> <p>Betas [CI] • DEP/ANX: 0.49 [-0.06, 1.05], p = 0.083 • SUDs: 0.84 [0.21, 1.48], p = 0.009</p> <p>Post-hoc Contrasts • HC - DEP/ANX: c = -0.43, t(382) = -1.57, p = 0.116 • HC - SUDs: c = -1.01, t(382) = -3.34, p = 0.001 • DEP/ANX - SUDs: c = -0.58, t(382) = -2.36, p = 0.019</p>	<p>F(1, 382) = 0.19 p = 0.661</p> <p>Betas [CI] • WRAT: 0.01 [-0.07, 0.09], p = 0.806</p>
Q7. Distracted Myself	<p>F(1, 382) = 0.03 p = 0.852</p> <p>Betas [CI] • Age: -0.02 [-0.06, 0.02], p = 0.376</p>	<p>F(1, 382) = 20.1 p < 0.001</p> <p>Betas [CI] • Sex: -0.67 [-1.08, -0.26], p = 0.001</p>	<p>F(2, 382) = 8.34 p < 0.001</p> <p>Betas [CI] • DEP/ANX: -0.03 [-0.58, 0.53], p = 0.928 • SUDs: -0.84 [-1.47, -0.21], p = 0.009</p> <p>Post-hoc Contrasts • HC - DEP/ANX: c = 0.10, t(382) = 0.37, p = 0.709 • HC - SUDs: c = 1.04, t(382) = 3.48, p = 0.001 • DEP/ANX - SUDs: c = 0.94, t(382) = 3.88, p < 0.001</p>	<p>F(1, 382) = 0.06 p = 0.803</p> <p>Betas [CI] • WRAT: 0.06 [-0.01, 0.14], p = 0.112</p>

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<p>Q8. Other Emotion Regulation Strategies</p>	<p>F(1, 382) = 2.67 p = 0.103</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age: 0.02 [-0.02, 0.06], p = 0.403 	<p>F(1, 382) = 15.66 p < 0.001</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Sex: -0.57 [-0.98, -0.16], p = 0.007 	<p>F(2, 382) = 4.37 p = 0.013</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX: -0.2 [-0.76, 0.35], p = 0.476 • SUDs: -0.63 [-1.26, 0], p = 0.052 <p>Post-hoc Contrasts</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = 0.21, t(382) = 0.77, p = 0.444 • HC - SUDs: c = 0.88, t(382) = 2.91, p = 0.004 • DEP/ANX - SUDs: c = 0.67, t(382) = 2.73, p = 0.007 	<p>F(1, 382) = 2.52 p = 0.113</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • WRAT: 0.03 [-0.04, 0.11], p = 0.395
<p>Mean Runway Position</p>	<p>Age</p>	<p>Sex</p>	<p>Group</p>	<p>WRAT</p>

Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

Overall	<p>F(1, 383) = 21.58 p < 0.001</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age: -0.02 [-0.05, 0.02], p = 0.377 	<p>F(1, 383) = 6.66 p = 0.01</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Sex: 0.63 [0.27, 0.99], p < 0.001 	<p>F(2, 383) = 6.58 p = 0.002</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX: 0.37 [-0.12, 0.85], p = 0.14 • SUDs: 0.7 [0.15, 1.25], p = 0.014 <p>Post-hoc Contrasts</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = -0.57, t(383) = -2.40, p = 0.017 • HC - SUDs: c = -1.06, t(383) = -4.03, p < 0.001 • DEP/ANX - SUDs: c = -0.49, t(383) = -2.30, p = 0.022 	<p>F(1, 383) = 1.85 p = 0.175</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • WRAT: 0.04 [-0.03, 0.11], p = 0.274
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AV	<p>F(1, 383) = 11.48 p < 0.001</p> <p>Betas [CI] • Age: -0.02 [-0.05, 0.02], p = 0.285</p>	<p>F(1, 383) = 0.14 p = 0.71</p> <p>Betas [CI] • Sex: -0.13 [-0.5, 0.24], p = 0.485</p>	<p>F(2, 383) = 12.97 p < 0.001</p> <p>Betas [CI] • DEP/ANX: -0.15 [-0.65, 0.35], p = 0.551 • SUDs: -1.27 [-1.84, -0.7], p < 0.001</p> <p>Post-hoc Contrasts • HC - DEP/ANX: c = 0.23, t(383) = 0.95, p = 0.345 • HC - SUDs: c = 1.31, t(383) = 4.82, p < 0.001 • DEP/ANX - SUDs: c = 1.07, t(383) = 4.89, p < 0.001</p>	<p>F(1, 383) = 27.22 p < 0.001</p> <p>Betas [CI] • WRAT: 0.12 [0.05, 0.19], p = 0.001</p>
APP	<p>F(1, 383) = 24.55 p < 0.001</p> <p>Betas [CI] • Age: 0 [-0.03, 0.03], p = 0.888</p>	<p>F(1, 383) = 1.49 p = 0.223</p> <p>Betas [CI] • Sex: 0.18 [-0.15, 0.5], p = 0.284</p>	<p>F(2, 383) = 0.55 p = 0.575</p> <p>Betas [CI] • DEP/ANX: -0.24 [-0.68, 0.19], p = 0.273 • SUDs: -0.06 [-0.55, 0.44], p = 0.817</p>	<p>F(1, 383) = 10.64 p = 0.001</p> <p>Betas [CI] • WRAT: 0.05 [-0.01, 0.11], p = 0.102</p>

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CONF2	<p>F(1, 383) = 8 p = 0.005</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age: 0 [-0.06, 0.05], p = 0.959 	<p>F(1, 383) = 8.02 p = 0.005</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Sex: 1.13 [0.56, 1.71], p < 0.001 	<p>F(2, 383) = 11.94 p < 0.001</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX: 0.69 [-0.09, 1.47], p = 0.084 • SUDs: 1.59 [0.71, 2.48], p < 0.001 <p>Post-hoc Contrasts</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = -1.06, t(383) = -2.77, p = 0.006 • HC - SUDs: c = -2.26, t(383) = -5.32, p < 0.001 • DEP/ANX - SUDs: c = -1.20, t(383) = -3.48, p = 0.001 	<p>F(1, 383) = 0.61 p = 0.437</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • WRAT: -0.01 [-0.13, 0.1], p = 0.793
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Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

CONF4	<p>F(1, 383) = 10.75 p = 0.001</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age: -0.02 [-0.08, 0.03], p = 0.355 	<p>F(1, 383) = 6.47 p = 0.011</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Sex: 1.01 [0.45, 1.57], p < 0.001 	<p>F(2, 383) = 12.93 p < 0.001</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX: 0.74 [-0.02, 1.49], p = 0.057 • SUDs: 1.67 [0.81, 2.53], p < 0.001 <p>Post-hoc Contrasts</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = -1.07, t(383) = -2.90, p = 0.004 • HC - SUDs: c = -2.28, t(383) = -5.55, p < 0.001 • DEP/ANX - SUDs: c = -1.21, t(383) = -3.63, p < 0.001 	<p>F(1, 383) = 0.01 p = 0.913</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • WRAT: 0.02 [-0.09, 0.12], p = 0.761
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CONF6	<p>F(1, 383) = 12.27 p < 0.001</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> Age: -0.03 [-0.08, 0.03], p = 0.299 	<p>F(1, 383) = 5.21 p = 0.023</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> Sex: 0.96 [0.38, 1.53], p = 0.001 	<p>F(2, 383) = 10.18 p < 0.001</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> DEP/ANX: 0.8 [0.02, 1.57], p = 0.045 SUDs: 1.55 [0.66, 2.43], p < 0.001 <p>Post-hoc Contrasts</p> <ul style="list-style-type: none"> HC - DEP/ANX: c = -1.12, t(383) = -2.96, p = 0.003 HC - SUDs: c = -2.12, t(383) = -5.04, p < 0.001 DEP/ANX - SUDs: c = -1.00, t(383) = -2.93, p = 0.004 	<p>F(1, 383) = 0 p = 0.964</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> WRAT: 0.02 [-0.09, 0.13], p = 0.698
Standard Deviation (SD) Runway Position	Age	Sex	Group	WRAT

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Overall	<p>F(1, 383) = 15.72 p < 0.001</p> <p>Betas [CI] • Age: 0 [-0.02, 0.03], p = 0.739</p>	<p>F(1, 383) = 7.02 p = 0.008</p> <p>Betas [CI] • Sex: -0.35 [-0.61, -0.09], p = 0.009</p>	<p>F(2, 383) = 1.75 p = 0.175</p> <p>Betas [CI] • DEP/ANX: -0.26 [-0.62, 0.1], p = 0.153 • SUDs: -0.15 [-0.56, 0.25], p = 0.463</p>	<p>F(1, 383) = 3.97 p = 0.047</p> <p>Betas [CI] • WRAT: -0.03 [-0.08, 0.02], p = 0.195</p>
AV	<p>F(1, 383) = 12.66 p < 0.001</p> <p>Betas [CI] • Age: 0.01 [-0.01, 0.03], p = 0.373</p>	<p>F(1, 383) = 1.76 p = 0.186</p> <p>Betas [CI] • Sex: 0.16 [-0.1, 0.41], p = 0.226</p>	<p>F(2, 383) = 12.48 p < 0.001</p> <p>Betas [CI] • DEP/ANX: 0.14 [-0.2, 0.48], p = 0.416 • SUDs: 0.77 [0.38, 1.16], p < 0.001</p> <p>Post-hoc Contrasts • HC - DEP/ANX: c = -0.18, t(383) = -1.08, p = 0.279 • HC - SUDs: c = -0.83, t(383) = -4.45, p < 0.001 • DEP/ANX - SUDs: c = -0.65, t(383) = -4.29, p < 0.001</p>	<p>F(1, 383) = 19.32 p < 0.001</p> <p>Betas [CI] • WRAT: -0.05 [-0.1, -0.01], p = 0.029</p>
APP	<p>F(1, 383) = 29.06 p < 0.001</p> <p>Betas [CI] • Age: 0.01 [-0.01, 0.03], p = 0.323</p>	<p>F(1, 383) = 2.66 p = 0.104</p> <p>Betas [CI] • Sex: -0.05 [-0.3, 0.19], p = 0.664</p>	<p>F(2, 383) = 0.71 p = 0.492</p> <p>Betas [CI] • DEP/ANX: 0.01 [-0.32, 0.34], p = 0.938 • SUDs: 0.21 [-0.16, 0.58], p = 0.272</p>	<p>F(1, 383) = 14.98 p < 0.001</p> <p>Betas [CI] • WRAT: -0.06 [-0.11, -0.02], p = 0.009</p>

Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

CONF2	<p>F(1, 383) = 12.55 p < 0.001</p> <p>Betas [CI] • Age: 0 [-0.02, 0.03], p = 0.836</p>	<p>F(1, 383) = 4.11 p = 0.043</p> <p>Betas [CI] • Sex: -0.14 [-0.4, 0.12], p = 0.302</p>	<p>F(2, 383) = 0.39 p = 0.679</p> <p>Betas [CI] • DEP/ANX: 0.04 [-0.32, 0.4], p = 0.822 • SUDs: 0.18 [-0.22, 0.59], p = 0.382</p>	<p>F(1, 383) = 9.21 p = 0.003</p> <p>Betas [CI] • WRAT: -0.06 [-0.11, -0.01], p = 0.028</p>
CONF4	<p>F(1, 383) = 6.01 p = 0.015</p> <p>Betas [CI] • Age: 0 [-0.03, 0.02], p = 0.985</p>	<p>F(1, 383) = 1.62 p = 0.203</p> <p>Betas [CI] • Sex: -0.13 [-0.4, 0.13], p = 0.325</p>	<p>F(2, 383) = 0.35 p = 0.707</p> <p>Betas [CI] • DEP/ANX: -0.03 [-0.39, 0.33], p = 0.857 • SUDs: 0.24 [-0.17, 0.65], p = 0.252</p>	<p>F(1, 383) = 6.13 p = 0.014</p> <p>Betas [CI] • WRAT: -0.06 [-0.11, -0.01], p = 0.017</p>
CONF6	<p>F(1, 383) = 6.66 p = 0.01</p> <p>Betas [CI] • Age: 0 [-0.02, 0.03], p = 0.97</p>	<p>F(1, 383) = 0.07 p = 0.791</p> <p>Betas [CI] • Sex: -0.17 [-0.44, 0.09], p = 0.201</p>	<p>F(2, 383) = 1.11 p = 0.329</p> <p>Betas [CI] • DEP/ANX: 0.16 [-0.2, 0.52], p = 0.373 • SUDs: 0.35 [-0.06, 0.76], p = 0.091</p>	<p>F(1, 383) = 8.56 p = 0.004</p> <p>Betas [CI] • WRAT: -0.07 [-0.12, -0.02], p = 0.01</p>

Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

Response time	Age	Sex	Group	WRAT
Overall	<p>F(1, 382) = 85.02 p < 0.001</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age: 0.01 [0, 0.02], p < 0.001 	<p>F(1, 382) = 0.25 p = 0.621</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Sex: 0.05 [-0.01, 0.11], p = 0.133 	<p>F(2, 382) = 0.33 p = 0.72</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX: -0.07 [-0.16, 0.01], p = 0.074 • SUDs: -0.01 [-0.1, 0.09], p = 0.88 	<p>F(1, 382) = 0.97 p = 0.326</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • WRAT: -0.01 [-0.02, 0], p = 0.057

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AV	<p>F(1, 381) = 65.12 p < 0.001</p> <p>Betas [CI] • Age: 0.01 [0, 0.02], p < 0.001</p>	<p>F(1, 381) = 1.98 p = 0.161</p> <p>Betas [CI] • Sex: 0.14 [0.07, 0.2], p < 0.001</p>	<p>F(2, 381) = 9.08 p < 0.001</p> <p>Betas [CI] • DEP/ANX: -0.04 [-0.13, 0.05], p = 0.432 • SUDs: 0.12 [0.02, 0.22], p = 0.025</p> <p>Post-hoc Contrasts • HC - DEP/ANX: c = -0.04, t(381) = -0.93, p = 0.353 • HC - SUDs: c = -0.189, t(381) = -3.83, p < 0.001 • DEP/ANX - SUDs: c = -0.147, t(381) = -3.68, p < 0.001</p>	<p>F(1, 381) = 1.82 p = 0.178</p> <p>Betas [CI] • WRAT: -0.01 [-0.02, 0], p = 0.166</p>
APP	<p>F(1, 382) = 76.7 p < 0.001</p> <p>Betas [CI] • Age: 0.01 [0.01, 0.02], p < 0.001</p>	<p>F(1, 382) = 0.51 p = 0.476</p> <p>Betas [CI] • Sex: 0.03 [-0.04, 0.1], p = 0.408</p>	<p>F(2, 382) = 0.48 p = 0.617</p> <p>Betas [CI] • DEP/ANX: -0.08 [-0.17, 0.02], p = 0.131 • SUDs: 0.02 [-0.1, 0.13], p = 0.783</p>	<p>F(1, 382) = 2.96 p = 0.086</p> <p>Betas [CI] • WRAT: -0.01 [-0.03, 0], p = 0.041</p>

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CONF2	<p>F(1, 382) = 69.14 p < 0.001</p> <p>Betas [CI] <ul style="list-style-type: none"> • Age: 0.01 [0, 0.02], p = 0.001 </p>	<p>F(1, 382) = 0.93 p = 0.334</p> <p>Betas [CI] <ul style="list-style-type: none"> • Sex: 0.03 [-0.04, 0.11], p = 0.342 </p>	<p>F(2, 382) = 0.42 p = 0.658</p> <p>Betas [CI] <ul style="list-style-type: none"> • DEP/ANX: -0.1 [-0.2, 0], p = 0.048 • SUDs: -0.06 [-0.17, 0.05], p = 0.26 </p>	<p>F(1, 382) = 0.02 p = 0.895</p> <p>Betas [CI] <ul style="list-style-type: none"> • WRAT: -0.01 [-0.02, 0.01], p = 0.474 </p>
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CONF4	<p>F(1, 382) = 58.14 p < 0.001</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age: 0.01 [0, 0.02], p = 0.01 	<p>F(1, 382) = 0.41 p = 0.52</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Sex: 0.03 [-0.04, 0.1], p = 0.394 	<p>F(2, 382) = 0.17 p = 0.846</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX: -0.08 [-0.18, 0.02], p = 0.122 • SUDs: -0.03 [-0.14, 0.08], p = 0.598 	<p>F(1, 382) = 0.01 p = 0.918</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • WRAT: -0.01 [-0.03, 0], p = 0.102
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Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

CONF6	<p>F(1, 382) = 40.57 p < 0.001</p> <p>Betas [CI] <ul style="list-style-type: none"> • Age: 0.01 [0, 0.02], p = 0.014 </p>	<p>F(1, 382) = 0.9 p = 0.344</p> <p>Betas [CI] <ul style="list-style-type: none"> • Sex: 0.01 [-0.06, 0.08], p = 0.825 </p>	<p>F(2, 382) = 0.6 p = 0.548</p> <p>Betas [CI] <ul style="list-style-type: none"> • DEP/ANX: -0.09 [-0.19, 0], p = 0.062 • SUDs: -0.08 [-0.19, 0.03], p = 0.158 </p>	<p>F(1, 382) = 0.69 p = 0.406</p> <p>Betas [CI] <ul style="list-style-type: none"> • WRAT: -0.02 [-0.03, 0], p = 0.013 </p>
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Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

Interaction Effects

	Age*Group	Group*Sex	GROUP*WRAT
Parameters			
Emotion Conflict	<p>F(2, 383) = 0.78 p = 0.457</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age*DEP/ANX: 0.01 [-0.01, 0.03], p = 0.22 • Age*SUDs: 0.01 [-0.01, 0.03], p = 0.375 	<p>F(2, 383) = 5.11 p = 0.006</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*Sex: 0.21 [0.01, 0.41], p = 0.04 • SUDs*Sex: 0.38 [0.15, 0.62], p = 0.002 <p>Post-hoc Contrasts</p> <p>Male:</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = -0.01, t(383) = -0.04, p = 0.971 • HC - SUDs: c = 0.20, t(383) = 1.01, p = 0.314 • DEP/ANX - SUDs: c = 0.21, t(383) = 1.11, p = 0.267 <p>Female:</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = 0.42, t(383) = 3.35, p < 0.001 • HC - SUDs: c = 0.97, t(383) = 7.00, p < 0.001 • DEP/ANX - SUDs: c = 0.55, t(383) = 5.05, p < 0.001 	<p>F(2, 383) = 6.6 p = 0.002</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*WRAT: 0.03 [-0.01, 0.06], p = 0.143 • SUDs*WRAT: -0.03 [-0.06, 0.01], p = 0.172 <p>Post-hoc Contrasts</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = -0.03, t(383) = -1.47, p = 0.143 • HC - SUDs: c = 0.03, t(383) = 1.37, p = 0.172 • DEP/ANX - SUDs: c = 0.05, t(383) = 3.63, p < 0.001

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Decision Uncertainty	F(2, 383) = 2.83 p = 0.06 Betas [CI] • Age*DEP/ANX: 0.03 [0, 0.05], p = 0.035 • Age*SUDs: 0.03 [0, 0.06], p = 0.038	F(2, 383) = 1.79 p = 0.168 Betas [CI] • DEP/ANX*Sex: 0.04 [-0.22, 0.3], p = 0.766 • SUDs*Sex: 0.27 [-0.03, 0.58], p = 0.083	F(2, 383) = 1.38 p = 0.252 Betas [CI] • DEP/ANX*WRAT: 0.04 [-0.01, 0.09], p = 0.115 • SUDs*WRAT: 0.02 [-0.03, 0.06], p = 0.465
Self-Reports	Age*Group	Group*Sex	GROUP*WRAT
Q1. Enjoyable	F(2, 382) = 2.73 p = 0.066 Betas [CI] • Age*DEP/ANX: -0.04 [-0.08, 0], p = 0.035 • Age*SUDs: -0.05 [-0.09, 0], p = 0.046	F(2, 382) = 0.12 p = 0.887 Betas [CI] • DEP/ANX*Sex: 0.08 [-0.34, 0.5], p = 0.706 • SUDs*Sex: -0.02 [-0.51, 0.47], p = 0.949	F(2, 382) = 0.89 p = 0.413 Betas [CI] • DEP/ANX*WRAT: 0.02 [-0.05, 0.1], p = 0.523 • SUDs*WRAT: 0.05 [-0.03, 0.12], p = 0.2
Q2. Anxious	F(2, 382) = 2.89 p = 0.057 Betas [CI] • Age*DEP/ANX: 0.05 [0, 0.1], p = 0.038 • Age*SUDs: 0.07 [0.01, 0.13], p = 0.031	F(2, 382) = 2.35 p = 0.097 Betas [CI] • DEP/ANX*Sex: 0.47 [-0.07, 1.02], p = 0.089 • SUDs*Sex: 0.66 [0.03, 1.3], p = 0.042	F(2, 382) = 2.3 p = 0.102 Betas [CI] • DEP/ANX*WRAT: -0.05 [-0.15, 0.05], p = 0.33 • SUDs*WRAT: -0.1 [-0.2, 0], p = 0.041

Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

Q3. Difficulty	<p>F(2, 382) = 2.41 p = 0.091</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age*DEP/ANX: 0.02 [-0.02, 0.07], p = 0.321 • Age*SUDs: 0.06 [0.01, 0.11], p = 0.03 	<p>F(2, 382) = 0.72 p = 0.487</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*Sex: -0.1 [-0.59, 0.38], p = 0.675 • SUDs*Sex: 0.21 [-0.35, 0.77], p = 0.466 	<p>F(2, 382) = 0.12 p = 0.884</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*WRAT: -0.01 [-0.09, 0.08], p = 0.908 • SUDs*WRAT: -0.02 [-0.11, 0.07], p = 0.669
Q4. Approached Points	<p>F(2, 382) = 0.31 p = 0.735</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age*DEP/ANX: -0.02 [-0.08, 0.04], p = 0.479 • Age*SUDs: -0.02 [-0.09, 0.05], p = 0.499 	<p>F(2, 382) = 3.46 p = 0.032</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*Sex: -0.2 [-0.84, 0.43], p = 0.535 • SUDs*Sex: -0.95 [-1.69, -0.2], p = 0.013 <p>Post-hoc Contrasts</p> <p>Male:</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = -0.53, t(382) = -0.98, p = 0.329 • HC - SUDs: c = -0.28, t(382) = -0.44, p = 0.659 • DEP/ANX - SUDs: c = 0.25, t(382) = 0.42, p = 0.677 <p>Female:</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = -0.93, t(382) = -2.39, p = 0.018 • HC - SUDs: c = -2.18, t(382) = -4.99, p < 0.001 • DEP/ANX - SUDs: c = -1.24, t(382) = -3.60, p < 0.001 	<p>F(2, 382) = 4.42 p = 0.013</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*WRAT: -0.12 [-0.24, 0], p = 0.042 • SUDs*WRAT: 0.01 [-0.11, 0.12], p = 0.889 <p>Post-hoc Contrasts</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = -0.12, t(382) = 2.04, p = 0.042 • HC - SUDs: c = -0.01, t(382) = -0.14, p = 0.889 • DEP/ANX - SUDs: c = -0.13, t(382) = -2.81, p = 0.005

Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

<p>Q5. Avoided Negative Images</p>	<p>F(2, 382) = 1.3 p = 0.274</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age*DEP/ANX: 0.04 [-0.01, 0.09], p = 0.123 • Age*SUDs: 0.04 [-0.02, 0.1], p = 0.218 	<p>F(2, 382) = 4.04 p = 0.018</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*Sex: 0.47 [-0.11, 1.05], p = 0.111 • SUDs*Sex: 0.98 [0.3, 1.66], p = 0.005 <p>Post-hoc Contrasts</p> <p>Male:</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = -0.25, t(382) = -0.50, p = 0.619 • HC - SUDs: c = -0.0, t(382) = -0.0, p = 0.998 • DEP/ANX - SUDs: c = 0.25, t(382) = 0.45, p = 0.653 <p>Female:</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = 0.70, t(382) = 1.94, p = 0.053 • HC - SUDs: c = 1.96, t(382) = 4.94, p < 0.001 • DEP/ANX - SUDs: c = 1.27, t(382) = 4.05, p < 0.001 	<p>F(2, 382) = 0.8 p = 0.448</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*WRAT: 0.01 [-0.09, 0.12], p = 0.839 • SUDs*WRAT: -0.04 [-0.14, 0.06], p = 0.449
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Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

<p>Q6. Kept Eyes Open</p>	<p>F(2, 382) = 1.71 p = 0.182</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age*DEP/ANX: -0.04 [-0.08, 0.01], p = 0.137 • Age*SUDs: 0 [-0.05, 0.06], p = 0.933 	<p>F(2, 382) = 1.43 p = 0.242</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*Sex: 0.13 [-0.39, 0.66], p = 0.614 • SUDs*Sex: -0.34 [-0.95, 0.27], p = 0.274 	<p>F(2, 382) = 2.35 p = 0.097</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*WRAT: -0.05 [-0.14, 0.05], p = 0.345 • SUDs*WRAT: 0.04 [-0.06, 0.13], p = 0.457
<p>Q7. Distracted Myself</p>	<p>F(2, 382) = 0.66 p = 0.519</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age*DEP/ANX: 0.03 [-0.02, 0.07], p = 0.297 • Age*SUDs: 0.03 [-0.03, 0.08], p = 0.332 	<p>F(2, 382) = 0.92 p = 0.399</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*Sex: 0.15 [-0.36, 0.67], p = 0.559 • SUDs*Sex: 0.42 [-0.19, 1.02], p = 0.178 	<p>F(2, 382) = 2.64 p = 0.072</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*WRAT: -0.06 [-0.15, 0.04], p = 0.243 • SUDs*WRAT: -0.11 [-0.2, -0.01], p = 0.026

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<p>Q8. Other Emotion Regulation Strategies</p>	<p>F(2, 382) = 0.05 p = 0.949</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age*DEP/ANX: 0 [-0.05, 0.05], p = 0.926 • Age*SUDs: -0.01 [-0.06, 0.05], p = 0.837 	<p>F(2, 382) = 1.82 p = 0.163</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*Sex: 0.01 [-0.51, 0.53], p = 0.962 • SUDs*Sex: 0.51 [-0.1, 1.12], p = 0.102 	<p>F(2, 382) = 1.87 p = 0.155</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*WRAT: 0.03 [-0.07, 0.12], p = 0.545 • SUDs*WRAT: -0.04 [-0.14, 0.05], p = 0.368
<p>Mean Runway Position</p>	<p>Age*Group</p>	<p>Group*Sex</p>	<p>GROUP*WRAT</p>

Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

Overall	<p>F(2, 383) = 1.47 p = 0.231</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age*DEP/ANX: -0.03 [-0.08, 0.01], p = 0.111 • Age*SUDs: -0.04 [-0.09, 0.01], p = 0.16 	<p>F(2, 383) = 3.88 p = 0.021</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*Sex: -0.42 [-0.87, 0.04], p = 0.071 • SUDs*Sex: -0.75 [-1.28, -0.22], p = 0.006 <p>Post-hoc Contrasts</p> <p>Male:</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = 0.05, t(383) = 0.14, p = 0.893 • HC - SUDs: c = 0.05, t(383) = 0.11, p = 0.912 • DEP/ANX - SUDs: c = -0.0, t(383) = -0.0, p = 0.997 <p>Female:</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = -0.78, t(383) = -2.80, p = 0.005 • HC - SUDs: c = -1.44, t(383) = -4.64, p < 0.001 • DEP/ANX - SUDs: c = -0.66, t(383) = -2.69, p = 0.008 	<p>F(2, 383) = 2.5 p = 0.083</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*WRAT: -0.06 [-0.14, 0.02], p = 0.16 • SUDs*WRAT: 0.01 [-0.07, 0.09], p = 0.786
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AV	<p>F(2, 383) = 0.71 p = 0.494</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age*DEP/ANX: -0.01 [-0.05, 0.03], p = 0.671 • Age*SUDs: -0.03 [-0.08, 0.02], p = 0.247 	<p>F(2, 383) = 0.24 p = 0.786</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*Sex: 0.16 [-0.3, 0.63], p = 0.496 • SUDs*Sex: 0.07 [-0.48, 0.62], p = 0.8 	<p>F(2, 383) = 3.77 p = 0.024</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*WRAT: 0 [-0.09, 0.08], p = 0.981 • SUDs*WRAT: -0.08 [-0.17, 0], p = 0.047 <p>Post-hoc Contrasts</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = 0.0, t(383) = 0.02, p = 0.981 • HC - SUDs: c = 0.08, t(383) = 1.99, p = 0.047 • DEP/ANX - SUDs: c = 0.08, t(383) = 2.50, p = 0.013
APP	<p>F(2, 383) = 4.31 p = 0.014</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age*DEP/ANX: -0.06 [-0.09, -0.02], p = 0.004 • Age*SUDs: -0.04 [-0.08, 0.01], p = 0.119 <p>Post-hoc Contrasts</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = -0.06, t(383) = 2.94, p = 0.004 • HC - SUDs: c = 0.04, t(383) = 1.56, p = 0.119 • DEP/ANX - SUDs: c = -0.02, t(383) = -1.01, p = 0.312 	<p>F(2, 383) = 0.3 p = 0.742</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*Sex: -0.14 [-0.55, 0.27], p = 0.5 • SUDs*Sex: -0.01 [-0.49, 0.47], p = 0.967 	<p>F(2, 383) = 0.12 p = 0.891</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*WRAT: -0.02 [-0.09, 0.06], p = 0.677 • SUDs*WRAT: 0 [-0.08, 0.07], p = 0.907

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<p>CONF2</p>	<p>F(2, 383) = 1.37 p = 0.256</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age*DEP/ANX: -0.05 [-0.11, 0.02], p = 0.162 • Age*SUDs: -0.06 [-0.14, 0.02], p = 0.132 	<p>F(2, 383) = 4.98 p = 0.007</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*Sex: -0.76 [-1.49, -0.03], p = 0.043 • SUDs*Sex: -1.37 [-2.22, -0.51], p = 0.002 <p>Post-hoc Contrasts</p> <p>Male:</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = 0.07, t(383) = 0.11, p = 0.914 • HC - SUDs: c = -0.23, t(383) = -0.31, p = 0.758 • DEP/ANX - SUDs: c = -0.30, t(383) = -0.43, p = 0.669 <p>Female:</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = -1.45, t(383) = -3.21, p = 0.002 • HC - SUDs: c = -2.96, t(383) = -5.90, p < 0.001 • DEP/ANX - SUDs: c = -1.51, t(383) = -3.82, p < 0.001 	<p>F(2, 383) = 4.16 p = 0.016</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*WRAT: -0.08 [-0.22, 0.05], p = 0.214 • SUDs*WRAT: 0.07 [-0.06, 0.2], p = 0.316 <p>Post-hoc Contrasts</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = 0.08, t(383) = 1.25, p = 0.214 • HC - SUDs: c = -0.07, t(383) = -1.00, p = 0.316 • DEP/ANX - SUDs: c = -0.15, t(383) = -2.88, p = 0.004
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Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

<p>CONF4</p>	<p>F(2, 383) = 0.44 p = 0.645</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age*DEP/ANX: -0.03 [-0.1, 0.03], p = 0.351 • Age*SUDs: -0.02 [-0.09, 0.06], p = 0.655 	<p>F(2, 383) = 4.42 p = 0.013</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*Sex: -0.69 [-1.39, 0.02], p = 0.058 • SUDs*Sex: -1.25 [-2.07, -0.42], p = 0.003 <p>Post-hoc Contrasts</p> <p>Male:</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = -0.05, t(383) = -0.09, p = 0.932 • HC - SUDs: c = -0.43, t(383) = -0.60, p = 0.55 • DEP/ANX - SUDs: c = -0.37, t(383) = -0.56, p = 0.575 <p>Female:</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = -1.42, t(383) = -3.26, p = 0.001 • HC - SUDs: c = -2.92, t(383) = -6.02, p < 0.001 • DEP/ANX - SUDs: c = -1.49, t(383) = -3.91, p < 0.001 	<p>F(2, 383) = 3.85 p = 0.022</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*WRAT: -0.1 [-0.23, 0.03], p = 0.141 • SUDs*WRAT: 0.04 [-0.08, 0.17], p = 0.507 <p>Post-hoc Contrasts</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = 0.10, t(383) = 1.48, p = 0.141 • HC - SUDs: c = -0.04, t(383) = -0.66, p = 0.507 • DEP/ANX - SUDs: c = -0.14, t(383) = -2.75, p = 0.006
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Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

CONF6	<p>F(2, 383) = 0.39 p = 0.676</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age*DEP/ANX: -0.03 [-0.09, 0.04], p = 0.456 • Age*SUDs: -0.03 [-0.11, 0.05], p = 0.418 	<p>F(2, 383) = 3.8 p = 0.023</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*Sex: -0.67 [-1.39, 0.06], p = 0.072 • SUDs*Sex: -1.18 [-2.03, -0.33], p = 0.007 <p>Post-hoc Contrasts</p> <p>Male:</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = -0.13, t(383) = -0.21, p = 0.838 • HC - SUDs: c = -0.36, t(383) = -0.50, p = 0.619 • DEP/ANX - SUDs: c = -0.24, t(383) = -0.35, p = 0.73 <p>Female:</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = -1.47, t(383) = -3.27, p = 0.001 • HC - SUDs: c = -2.73, t(383) = -5.48, p < 0.001 • DEP/ANX - SUDs: c = -1.26, t(383) = -3.22, p = 0.001 	<p>F(2, 383) = 3.37 p = 0.036</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*WRAT: -0.1 [-0.23, 0.03], p = 0.147 • SUDs*WRAT: 0.04 [-0.09, 0.17], p = 0.594 <p>Post-hoc Contrasts</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = 0.10, t(383) = 1.45, p = 0.147 • HC - SUDs: c = -0.04, t(383) = -0.53, p = 0.594 • DEP/ANX - SUDs: c = -0.13, t(383) = -2.56, p = 0.011
Standard Deviation (SD) Runway Position	Age*Group	Group*Sex	GROUP*WRAT
Overall	<p>F(2, 383) = 2.4 p = 0.092</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age*DEP/ANX: 0.02 [-0.01, 0.05], p = 0.126 • Age*SUDs: 0.04 [0, 0.08], p = 0.032 	<p>F(2, 383) = 2.84 p = 0.06</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*Sex: 0.11 [-0.23, 0.44], p = 0.526 • SUDs*Sex: 0.46 [0.06, 0.85], p = 0.023 	<p>F(2, 383) = 0.91 p = 0.402</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*WRAT: 0.03 [-0.03, 0.09], p = 0.333 • SUDs*WRAT: 0 [-0.06, 0.06], p = 0.998

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AV	<p>F(2, 383) = 1.19 p = 0.307</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age*DEP/ANX: 0.01 [-0.02, 0.04], p = 0.514 • Age*SUDs: 0.03 [-0.01, 0.06], p = 0.129 	<p>F(2, 383) = 0.19 p = 0.823</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*Sex: -0.08 [-0.4, 0.24], p = 0.622 • SUDs*Sex: -0.11 [-0.49, 0.26], p = 0.558 	<p>F(2, 383) = 0.12 p = 0.883</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*WRAT: 0.01 [-0.05, 0.06], p = 0.842 • SUDs*WRAT: 0.01 [-0.04, 0.07], p = 0.641
APP	<p>F(2, 383) = 2.06 p = 0.129</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age*DEP/ANX: 0.03 [0, 0.06], p = 0.055 • Age*SUDs: 0.03 [-0.01, 0.06], p = 0.11 	<p>F(2, 383) = 0.17 p = 0.847</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*Sex: -0.09 [-0.4, 0.22], p = 0.566 • SUDs*Sex: -0.05 [-0.41, 0.31], p = 0.794 	<p>F(2, 383) = 0.6 p = 0.547</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*WRAT: 0.03 [-0.03, 0.08], p = 0.376 • SUDs*WRAT: 0.03 [-0.02, 0.09], p = 0.279

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CONF2	<p>F(2, 383) = 4.75 p = 0.009</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age*DEP/ANX: 0.02 [-0.02, 0.05], p = 0.332 • Age*SUDs: 0.06 [0.02, 0.09], p = 0.003 <p>Post-hoc Contrasts</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = -0.02, t(383) = -0.97, p = 0.332 • HC - SUDs: c = -0.06, t(383) = -2.97, p = 0.003 • DEP/ANX - SUDs: c = -0.04, t(383) = -2.47, p = 0.014 	<p>F(2, 383) = 1.56 p = 0.212</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*Sex: -0.12 [-0.45, 0.22], p = 0.497 • SUDs*Sex: 0.2 [-0.19, 0.59], p = 0.31 	<p>F(2, 383) = 0.72 p = 0.485</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*WRAT: 0.04 [-0.02, 0.1], p = 0.234 • SUDs*WRAT: 0.02 [-0.04, 0.08], p = 0.479
CONF4	<p>F(2, 383) = 2.28 p = 0.103</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age*DEP/ANX: 0.01 [-0.02, 0.04], p = 0.369 • Age*SUDs: 0.04 [0, 0.08], p = 0.035 	<p>F(2, 383) = 2.71 p = 0.068</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*Sex: -0.08 [-0.42, 0.26], p = 0.632 • SUDs*Sex: 0.34 [-0.06, 0.73], p = 0.096 	<p>F(2, 383) = 1.99 p = 0.138</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*WRAT: 0.06 [0, 0.12], p = 0.058 • SUDs*WRAT: 0.03 [-0.03, 0.09], p = 0.373
CONF6	<p>F(2, 383) = 2.21 p = 0.112</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age*DEP/ANX: 0.01 [-0.02, 0.04], p = 0.354 • Age*SUDs: 0.04 [0, 0.08], p = 0.038 	<p>F(2, 383) = 2.6 p = 0.076</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*Sex: 0.1 [-0.23, 0.44], p = 0.544 • SUDs*Sex: 0.44 [0.04, 0.83], p = 0.03 	<p>F(2, 383) = 1.53 p = 0.218</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*WRAT: 0.05 [-0.01, 0.12], p = 0.083 • SUDs*WRAT: 0.03 [-0.03, 0.09], p = 0.291

Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

Response time	Age*Group	Group*Sex	GROUP*WRAT
Overall	<p>F(2, 382) = 1.05 p = 0.351</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> Age*DEP/ANX: 0 [0, 0.01], p = 0.276 Age*SUDs: 0.01 [0, 0.01], p = 0.162 	<p>F(2, 382) = 3.56 p = 0.029</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> DEP/ANX*Sex: -0.1 [-0.18, -0.02], p = 0.011 SUDs*Sex: -0.03 [-0.12, 0.06], p = 0.49 <p>Post-hoc Contrasts</p> <p>Male:</p> <ul style="list-style-type: none"> HC - DEP/ANX: c = 0.18, t(382) = 2.66, p = 0.008 HC - SUDs: c = 0.04, t(382) = 0.50, p = 0.615 DEP/ANX - SUDs: c = -0.14, t(382) = -1.88, p = 0.061 <p>Female:</p> <ul style="list-style-type: none"> HC - DEP/ANX: c = -0.03, t(382) = -0.52, p = 0.595 HC - SUDs: c = -0.02, t(382) = -0.47, p = 0.642 DEP/ANX - SUDs: c = 0, t(382) = 0.02, p = 0.985 	<p>F(2, 382) = 3.52 p = 0.031</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> DEP/ANX*WRAT: 0.02 [0, 0.03], p = 0.019 SUDs*WRAT: 0.01 [-0.01, 0.02], p = 0.448 <p>Post-hoc Contrasts</p> <ul style="list-style-type: none"> HC - DEP/ANX: c = -0.02, t(382) = -2.36, p = 0.019 HC - SUDs: c = -0.01, t(382) = -0.576, p = 0.448 DEP/ANX - SUDs: c = 0.01, t(382) = 2.08, p = 0.038

Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

AV	<p>F(2, 381) = 0.42 p = 0.657</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age*DEP/ANX: 0 [0, 0.01], p = 0.47 • Age*SUDs: 0 [-0.01, 0.01], p = 0.384 	<p>F(2, 381) = 7.27 p < 0.001</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*Sex: -0.16 [-0.24, -0.07], p < 0.001 • SUDs*Sex: -0.14 [-0.24, -0.04], p = 0.005 <p>Post-hoc Contrasts</p> <p>Male:</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = 0.20, t(381) = 2.68, p = 0.008 • HC - SUDs: c = 0.03, t(381) = 0.31, p = 0.760 • DEP/ANX - SUDs: c = -0.17, t(381) = -2.12, p = 0.035 <p>Female:</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = -0.12, t(381) = -2.34, p = 0.020 • HC - SUDs: c = -0.26, t(381) = -4.50, p < 0.001 • DEP/ANX - SUDs: c = -0.14, t(381) = -3.04, p = 0.003 	<p>F(2, 381) = 1.02 p = 0.363</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*WRAT: 0.01 [-0.01, 0.03], p = 0.203 • SUDs*WRAT: 0 [-0.01, 0.02], p = 0.672
APP	<p>F(2, 382) = 1.02 p = 0.363</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age*DEP/ANX: 0.01 [0, 0.01], p = 0.174 • Age*SUDs: 0 [-0.01, 0.01], p = 0.684 	<p>F(2, 382) = 2.2 p = 0.112</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*Sex: -0.09 [-0.18, 0], p = 0.06 • SUDs*Sex: -0.01 [-0.12, 0.09], p = 0.818 	<p>F(2, 382) = 1.72 p = 0.181</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*WRAT: 0.02 [0, 0.03], p = 0.073 • SUDs*WRAT: 0.01 [-0.01, 0.02], p = 0.352

Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

<p>CONF2</p>	<p>F(2, 382) = 1.97 p = 0.14</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age*DEP/ANX: 0 [-0.01, 0.01], p = 0.569 • Age*SUDs: 0.01 [0, 0.02], p = 0.058 	<p>F(2, 382) = 2.68 p = 0.07</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*Sex: -0.1 [-0.19, -0.01], p = 0.03 • SUDs*Sex: -0.03 [-0.13, 0.08], p = 0.629 	<p>F(2, 382) = 3.51 p = 0.031</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*WRAT: 0.01 [0, 0.03], p = 0.087 • SUDs*WRAT: 0 [-0.02, 0.01], p = 0.79 <p>Post-hoc Contrasts</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = -0.01, t(382) = -1.71, p = 0.087 • HC - SUDs: c = 0.0, t(382) = 0.27, p = 0.790 • DEP/ANX - SUDs: c = 0.02, t(382) = 2.55, p = 0.011
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<p>CONF4</p>	<p>F(2, 382) = 1.14 p = 0.32</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age*DEP/ANX: 0.01 [0, 0.01], p = 0.179 • Age*SUDs: 0.01 [0, 0.02], p = 0.188 	<p>F(2, 382) = 4.02 p = 0.019</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*Sex: -0.1 [-0.2, -0.01], p = 0.028 • SUDs*Sex: 0.02 [-0.09, 0.13], p = 0.739 <p>Post-hoc Contrasts</p> <p>Male:</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = 0.20, t(382) = 2.56, p = 0.011 • HC - SUDs: c = 0.09, t(382) = 0.98, p = 0.327 • DEP/ANX - SUDs: c = -0.11, t(382) = -1.28, p = 0.202 <p>Female:</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = -0.0, t(382) = -0.05, p = 0.961 • HC - SUDs: c = 0.04, t(382) = 0.60, p = 0.549 • DEP/ANX - SUDs: c = 0.04, t(382) = 0.82, p = 0.415 	<p>F(2, 382) = 3.67 p = 0.026</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*WRAT: 0.02 [0, 0.04], p = 0.015 • SUDs*WRAT: 0.01 [-0.01, 0.02], p = 0.383 <p>Post-hoc Contrasts</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = -0.02, t(382) = -2.45, p = 0.015 • HC - SUDs: c = -0.01, t(382) = -0.87, p = 0.383 • DEP/ANX - SUDs: c = 0.01, t(382) = 2.06, p = 0.040
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Appendix 1 to Smith R, Lavalley CA, Taylor S, et al. Elevated decision uncertainty and reduced avoidance drives in depression, anxiety and substance use disorders during approach–avoidance conflict: a replication study. *J Psychiatry Neurosci* 2023. doi: 10.1503/jpn.220226. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at cmajgroup@cmaj.ca. Online appendices are unedited and posted as supplied by the authors.

CONF6	<p>F(2, 382) = 0.93 p = 0.396</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • Age*DEP/ANX: 0 [-0.01, 0.01], p = 0.614 • Age*SUDs: 0.01 [0, 0.02], p = 0.183 	<p>F(2, 382) = 0.94 p = 0.392</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*Sex: -0.06 [-0.15, 0.04], p = 0.235 • SUDs*Sex: 0 [-0.11, 0.1], p = 0.956 	<p>F(2, 382) = 3.87 p = 0.022</p> <p>Betas [CI]</p> <ul style="list-style-type: none"> • DEP/ANX*WRAT: 0.02 [0.01, 0.04], p = 0.006 • SUDs*WRAT: 0.01 [0, 0.03], p = 0.103 <p>Post-hoc Contrasts</p> <ul style="list-style-type: none"> • HC - DEP/ANX: c = -0.02, t(382) = -2.76, p = 0.006 • HC - SUDs: c = -0.01, t(382) = -1.63, p = 0.103 • DEP/ANX - SUDs: c = 0.01, t(382) = 1.49, p = 0.137
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