

Supplementary Note 6: Detailed statistical document of article figures (v 141)

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A repeated measures analysis of variance (ANOVA) was conducted using the MATLAB `ranova` function to examine the effects of within-subject factors, such as sucrose concentration, and between-subject factors, including gender and experimental conditions (baseline vs. food deprivation). To assess the between-subject differences, a two-sample Kolmogorov-Smirnov test was employed with the MATLAB `kstest2` function. Additionally, pairwise comparisons were conducted to further explore the differences between groups using a post-hoc analysis, specifically the Tukey's honestly significant difference method, implemented with the MATLAB `multcompare` function.

1 Figure 2

1.1 Figure 2a: BL Approachavoid (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 12, Male N = 11).

Effect of concentration: d.f. = 3, $F = 118.5268$, $p = 7.3397e-26$.

Effect of gender: d.f. = 1, $F = 3.8265$, $p = 0.0639$.

`kstest2` results: $h=0$, $p=8.2894e-02$, $ks2stat=0.2557$ (overall gender difference)

Post-hoc analysis:

$$0.5\% : p = 0.5994, \quad 2\% : p = 0.0203, \quad 5\% : p = 0.1014, \quad 9\% : p = 0.5338.$$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$$KStest2 : Conc1 : h = 0, p = 0.3032, ks2stat = 0.3788$$

$$RStest : Conc1 : h = 0, p = 0.4049$$

$$KStest2 : Conc2 : h = 1, p = 0.0087, ks2stat = 0.6439$$

$$RStest : Conc2 : h = 1, p = 0.0187$$

$$KStest2 : Conc3 : h = 0, p = 0.2812, ks2stat = 0.3864$$

$$RStest : Conc3 : h = 0, p = 0.1314$$

$$KStest2 : Conc4 : h = 0, p = 0.9465, ks2stat = 0.2045$$

$$RStest : Conc4 : h = 0, p = 0.5156$$

1.2 Figure 2b: BL Effect of cost (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 12, Male N = 11).

p-value for concentration: $2.061e-10$.

p-value for gender: 0.15301 .

`kstest2` results: $h=0$, $p=9.9819e-02$, $ks2stat=0.2481$ (overall gender difference)

Post-hoc analysis:

$$240lux : 1.8263e - 01, \quad 260lux : 5.1534e - 02, \quad 290lux : 8.8968e - 01, \quad 320lux : 3.7194e - 01$$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.5833, ks2stat = 0.3030$
 $RStest : Conc1 : h = 0, p = 0.2815$
 $KStest2 : Conc2 : h = 0, p = 0.2407, ks2stat = 0.4015$
 $RStest : Conc2 : h = 0, p = 0.0602$
 $KStest2 : Conc3 : h = 0, p = 0.6484, ks2stat = 0.2879$
 $RStest : Conc3 : h = 0, p = 1.0000$
 $KStest2 : Conc4 : h = 0, p = 0.7136, ks2stat = 0.2727$
 $RStest : Conc4 : h = 0, p = 0.4235$

1.3 Figure 2c: Safa bar plot

Statistical significance was determined using **Statistical Package for the Social Sciences (SPSS)** package (F = 12, M = 9)

p-value for concentration: <0.0001.

Sex differences across all concentrations p = 0.8.

Post-hoc analysis:

$15Lux\% : p = 0.000627,$ $240Lux\% : p = 0.0000893,$ $260Lux\% : p = 0.0000658,$
 $290Lux\% : p = 0.2045,$ $320Lux\% : p = 0.405.$

1.4 Figure 2d: BL Approach time (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 12, Male N = 11).

Effect of concentration: d.f. = 3, F = 6.4355, p = 7.8859e-04.

Effect of gender: d.f. = 1, F = 0.6365, p = 0.4348.

kstest2 results: h=0, p=3.1096e-01, ks2stat=0.1986 (overall gender difference)

Post-hoc analysis:

$0.5\% : 8.9816e - 01,$ $2\% : 4.5069e - 01,$ $5\% : 5.3396e - 01,$ $9\% : 5.9227e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.7358, ks2stat = 0.2727$
 $RStest : Conc1 : h = 0, p = 0.6458, zval = -0.4597$
 $KStest2 : Conc2 : h = 0, p = 0.4896, ks2stat = 0.3333$
 $RStest : Conc2 : h = 0, p = 0.6682, zval = -0.4286$
 $KStest2 : Conc3 : h = 0, p = 0.8286, ks2stat = 0.2500$
 $RStest : Conc3 : h = 0, p = 0.7169, zval = -0.3627$
 $KStest2 : Conc4 : h = 0, p = 0.7136, ks2stat = 0.2727$
 $RStest : Conc4 : h = 0, p = 0.7350, zval = -0.3385$

1.5 Figure 2e: BL Distance (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 12, Male N = 11).

Effect of concentration: d.f. = 3, F = 2.2699, p = 8.9008e-02.

Effect of gender: d.f. = 1, F = 11.8146, p = 0.0025.

kstest2 results: $h=1$, $p=9.4199e-06$, $ks2stat=0.5019$ (overall gender difference)

Post-hoc analysis:

$$0.5\% : 1.2707e - 03, \quad 2\% : 1.1033e - 02, \quad 5\% : 3.5299e - 03, \quad 9\% : 8.9459e - 03$$

KStest2 and wilcoxon rank sum test Results (complementary to post-hoc analysis)

$$\begin{aligned} KStest2 : Conc1 : h = 1, p = 0.0258, ks2stat = 0.5758 \\ RStest : Conc1 : h = 1, p = 0.0051, zval = 2.8003 \\ KStest2 : Conc2 : h = 1, p = 0.0361, ks2stat = 0.5530 \\ RStest : Conc2 : h = 1, p = 0.0151, zval = 2.4311 \\ KStest2 : Conc3 : h = 1, p = 0.0230, ks2stat = 0.5833 \\ RStest : Conc3 : h = 1, p = 0.0051, zval = 2.8003 \\ KStest2 : Conc4 : h = 1, p = 0.0361, ks2stat = 0.5530 \\ RStest : Conc4 : h = 1, p = 0.0062, zval = 2.7388 \end{aligned}$$

1.6 Figure 2f: BL Fr. of stops (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 12, Male N = 11).

Effect of concentration: d.f. = 3, F = 0.0544, p = 9.8312e-01.

Effect of gender: d.f. = 1, F = 2.1682, p = 0.1557.

kstest2 results: $h=1$, $p=2.5533e-05$, $ks2stat=0.4811$ (overall gender difference)

Post-hoc analysis:

$$0.5\% : 7.9690e - 02, \quad 2\% : 2.5673e - 01, \quad 5\% : 1.4691e - 01, \quad 9\% : 2.0322e - 01$$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$$\begin{aligned} KStest2 : Conc1 : h = 1, p = 0.0067, ks2stat = 0.6591 \\ RStest : Conc1 : h = 1, p = 0.0028, zval = -2.9850 \\ KStest2 : Conc2 : h = 0, p = 0.2604, ks2stat = 0.3939 \\ RStest : Conc2 : h = 0, p = 0.1029, zval = -1.6310 \\ KStest2 : Conc3 : h = 1, p = 0.0323, ks2stat = 0.5606 \\ RStest : Conc3 : h = 1, p = 0.0289, zval = -2.1849 \\ KStest2 : Conc4 : h = 0, p = 0.0915, ks2stat = 0.4848 \\ RStest : Conc4 : h = 0, p = 0.0905, zval = -1.6925 \end{aligned}$$

1.7 Figure 2g: BL Fr. of high sp. runs (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 12, Male N = 11).

Effect of concentration: d.f. = 3, F = 23.4392, p = 2.6239e-10.

Effect of gender: d.f. = 1, F = 12.8352, p = 0.0018.

kstest2 results: $h=1$, $p=3.0470e-05$, $ks2stat=0.4773$ (overall gender difference)

Post-hoc analysis:

$$0.5\% : 1.6629e - 04, \quad 2\% : 2.5835e - 03, \quad 5\% : 5.1037e - 03, \quad 9\% : 6.0776e - 02$$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 1, p = 0.0003, ks2stat = 0.8258$
 $RStest : Conc1 : h = 1, p = 0.0006, zval = -3.4158$
 $KStest2 : Conc2 : h = 1, p = 0.0059, ks2stat = 0.6667$
 $RStest : Conc2 : h = 1, p = 0.0042, zval = -2.8619$
 $KStest2 : Conc3 : h = 1, p = 0.0323, ks2stat = 0.5606$
 $RStest : Conc3 : h = 1, p = 0.0106, zval = -2.5541$
 $KStest2 : Conc4 : h = 0, p = 0.1213, ks2stat = 0.4621$
 $RStest : Conc4 : h = 0, p = 0.1481, zval = -1.4463$

1.8 Figure 2h: BL Time OS feeder (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 12, Male N = 11).

Effect of concentration: d.f. = 3, F = 14.3852, p = 3.0392e-07.

Effect of gender: d.f. = 1, F = 1.5082, p = 0.2330.

kstest2 results: h=0, p=3.3508e-01, ks2stat=0.1913 (overall gender difference)

Post-hoc analysis:

0.5% : $2.6980e - 01$, 2% : $7.5679e - 01$, 5% : $8.5789e - 02$, 9% : $3.0110e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.8067, ks2stat = 0.2500$
 $RStest : Conc1 : h = 0, p = 0.4044, zval = 0.8338$
 $KStest2 : Conc2 : h = 0, p = 0.9982, ks2stat = 0.1515$
 $RStest : Conc2 : h = 0, p = 0.8292, zval = 0.2157$
 $KStest2 : Conc3 : h = 0, p = 0.1006, ks2stat = 0.4773$
 $RStest : Conc3 : h = 1, p = 0.0483, zval = 1.9743$
 $KStest2 : Conc4 : h = 0, p = 0.4595, ks2stat = 0.3333$
 $RStest : Conc4 : h = 0, p = 0.4219, zval = 0.8031$

2 Figure 3

2.1 Figure 3e: Lara fig

Statistical significance was determined by one-way analysis of variance. (group 1 = 60, group 2 = 61, group 3 = 58, group 4 = 64, group 5 = 22, group 6 = 22, group 7 = 25, group 8 = 18)

p-value for significance of difference between the groups (utility): 0.0429.

Post-hoc analysis by Tukey's HSD method:

No group difference is statistically significant.

2.2 Figure 3f: Lara fig

Statistical significance was determined by one-way analysis of variance. (group 1 = 60, group 2 = 61, group 3 = 58, group 4 = 64)

p-value for significance of difference between the groups (concentration): 0.9599.

Post-hoc analysis by Tukey's HSD method:

No group difference is statistically significant.

2.3 Figure 3g: Lara fig

Statistical significance was determined by one-way analysis of variance. (group 1 = 22, group 2 = 22, group 3 = 25, group 4 = 18)

p-value for significance of difference between the groups (concentration): 0.5523.

Post-hoc analysis by Tukey's HSD method:

No group difference is statistically significant.

2.4 Figure 3h: Lara fig

Statistical significance was determined by one-way analysis of variance. (group 1 = 243, group 2 = 87)

p-value for significance of difference between the groups (concentration): 0.0012.

3 Figure 5

3.1 Figure 5a: FD vs BL approachavoid

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 22, FD N = 22).

Effect of concentration: d.f. = 3, F = 281.8850, p = 1.0842e-55.

Effect of Condition: d.f. = 1, F = 19.0789, p = 0.0001. kstest2 results: h=1, p=1.0816e-02, ks2stat=0.2386 (overall difference in BL vs FD)

Post-hoc analysis:

0.5% : 6.8154e - 01, 2% : 5.2118e - 01, 5% : 5.0500e - 04, 9% : 4.8848e - 03

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

KStest2 : Conc1 : h = 0, p = 0.1746, ks2stat = 0.3182

RStest : Conc1 : h = 0, p = 0.3038, zval = 1.0283

KStest2 : Conc2 : h = 0, p = 0.3320, ks2stat = 0.2727

RStest : Conc2 : h = 0, p = 0.3820, zval = 0.8743

KStest2 : Conc3 : h = 1, p = 0.0138, ks2stat = 0.4545

RStest : Conc3 : h = 1, p = 0.0011, zval = -3.2659

KStest2 : Conc4 : h = 1, p = 0.0000, ks2stat = 0.6818

RStest : Conc4 : h = 1, p = 0.0003, zval = -3.6583

3.2 Figure 5b: Safa bar plot (Left)

Statistical significance was determined using SPSS software package (F = 12, M = 9)

p-value for gender: p<0.001)

p-value for acceptance rate: 0.723

3.3 Figure 5b: Safa bar plot (Right)

Statistical significance was determined using **SPSS** software package (F = 12, M = 10)
p-value for gender: 0.873)
p-value for acceptance rate: 0.018

3.4 Figure 5c: Approach time (FD vs BL)

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 22, FD N = 22).

Effect of concentration: d.f. = 3, F = 20.1324, p = 6.3645e-10.

Effect of Condition: d.f. = 1, F = 1.7659, p = 0.1946.

kstest2 results: h=0, p=3.5436e-01, ks2stat=0.1435 (overall difference in BL vs FD)

Post-hoc analysis:

$$0.5\% : 1.0418e - 02, \quad 2\% : 3.2611e - 01, \quad 5\% : 7.3375e - 01, \quad 9\% : 1.0336e - 01$$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

KStest2 : Conc1 : h = 0, p = 0.0647, ks2stat = 0.4286

RStest : Conc1 : h = 1, p = 0.0127, zval = -2.4921

KStest2 : Conc2 : h = 1, p = 0.0395, ks2stat = 0.4286

RStest : Conc2 : h = 0, p = 0.0883, zval = -1.7044

KStest2 : Conc3 : h = 0, p = 0.7388, ks2stat = 0.1991

RStest : Conc3 : h = 0, p = 0.6885, zval = 0.4009

KStest2 : Conc4 : h = 0, p = 0.3320, ks2stat = 0.2727

RStest : Conc4 : h = 0, p = 0.1625, zval = 1.3966

3.5 Figure 5d: Distance (FD vs BL)

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 22, FD N = 22).

Effect of concentration: d.f. = 3, F = 12.6199, p = 2.8777e-07.

Effect of Condition: d.f. = 1, F = 11.2464, p = 0.0017.

kstest2 results: h=1, p=7.5537e-08, ks2stat=0.4318 (overall difference in BL vs FD)

Post-hoc analysis:

$$0.5\% : 3.7073e - 04, \quad 2\% : 7.5759e - 04, \quad 5\% : 3.3233e - 02, \quad 9\% : 1.3234e - 02$$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

KStest2 : Conc1 : h = 1, p = 0.0015, ks2stat = 0.5455

RStest : Conc1 : h = 1, p = 0.0008, zval = -3.3683

KStest2 : Conc2 : h = 1, p = 0.0356, ks2stat = 0.4091

RStest : Conc2 : h = 1, p = 0.0028, zval = -2.9928

KStest2 : Conc3 : h = 1, p = 0.0138, ks2stat = 0.4545

RStest : Conc3 : h = 1, p = 0.0151, zval = -2.4294

KStest2 : Conc4 : h = 1, p = 0.0356, ks2stat = 0.4091

RStest : Conc4 : h = 1, p = 0.0151, zval = -2.4294

3.6 Figure 5e: Fr. of stops (FD vs BL)

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 22, FD N = 22).

Effect of concentration: d.f. = 3, F = 1.2986, p = 2.7791e-01.

Effect of Condition: d.f. = 1, F = 4.3492, p = 0.0431.

kstest2 results: h=1, p=7.5537e-08, ks2stat=0.4318 (overall difference in BL vs FD)

Post-hoc analysis:

$$0.5\% : 3.9999e - 02, \quad 2\% : 3.3272e - 02, \quad 5\% : 5.5036e - 02, \quad 9\% : 5.9155e - 02$$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$$KStest2 : Conc1 : h = 1, p = 0.0001, ks2stat = 0.6364$$

$$RStest : Conc1 : h = 1, p = 0.0003, zval = 3.6265$$

$$KStest2 : Conc2 : h = 1, p = 0.0138, ks2stat = 0.4545$$

$$RStest : Conc2 : h = 1, p = 0.0028, zval = 2.9928$$

$$KStest2 : Conc3 : h = 0, p = 0.0828, ks2stat = 0.3636$$

$$RStest : Conc3 : h = 1, p = 0.0109, zval = 2.5468$$

$$KStest2 : Conc4 : h = 1, p = 0.0138, ks2stat = 0.4545$$

$$RStest : Conc4 : h = 1, p = 0.0032, zval = 2.9458$$

3.7 Figure 5f: Fr. of high sp. runs (FD vs BL)

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 22, FD N = 22).

Effect of concentration: d.f. = 3, F = 45.2054, p = 6.6926e-20.

Effect of Condition: d.f. = 1, F = 5.4125, p = 0.0249.

kstest2 results: h=1, p=1.0816e-02, ks2stat=0.2386 (overall difference in BL vs FD)

Post-hoc analysis:

$$0.5\% : 7.3584e - 04, \quad 2\% : 1.0250e - 01, \quad 5\% : 2.0052e - 01, \quad 9\% : 1.2278e - 01$$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$$KStest2 : Conc1 : h = 1, p = 0.0015, ks2stat = 0.5455$$

$$RStest : Conc1 : h = 1, p = 0.0012, zval = 3.2275$$

$$KStest2 : Conc2 : h = 0, p = 0.0828, ks2stat = 0.3636$$

$$RStest : Conc2 : h = 0, p = 0.0689, zval = 1.8191$$

$$KStest2 : Conc3 : h = 0, p = 0.3320, ks2stat = 0.2727$$

$$RStest : Conc3 : h = 0, p = 0.4455, zval = 0.7629$$

$$KStest2 : Conc4 : h = 0, p = 0.1746, ks2stat = 0.3182$$

$$RStest : Conc4 : h = 0, p = 0.1424, zval = 1.4670$$

3.8 Figure 5g: Time OS feeder (FD vs BL)

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 22, FD N = 22).

Effect of concentration: d.f. = 3, F = 51.5773, p = 8.1104e-22.

Effect of Condition: d.f. = 1, F = 2.5126, p = 0.1204.

kstest2 results: h=1, p=1.7572e-02, ks2stat=0.2273 (overall difference in BL vs FD)

Post-hoc analysis:

$$0.5\% : 5.6817e - 03, \quad 2\% : 1.9624e - 02, \quad 5\% : 5.4119e - 01, \quad 9\% : 7.4789e - 01$$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$$\begin{aligned} KStest2 : Conc1 : h = 1, p = 0.0049, ks2stat = 0.5000 \\ RStest : Conc1 : h = 1, p = 0.0068, zval = -2.7047 \\ KStest2 : Conc2 : h = 1, p = 0.0356, ks2stat = 0.4091 \\ RStest : Conc2 : h = 1, p = 0.0186, zval = -2.3536 \\ KStest2 : Conc3 : h = 0, p = 0.3320, ks2stat = 0.2727 \\ RStest : Conc3 : h = 0, p = 0.2485, zval = 1.1541 \\ KStest2 : Conc4 : h = 0, p = 0.3320, ks2stat = 0.2727 \\ RStest : Conc4 : h = 0, p = 0.9156, zval = -0.1059 \end{aligned}$$

4 Figure 6

4.1 Figure 6b: BA Approachavoid (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 12, Male N = 10).

Effect of concentration: d.f. = 3, F = 49.9905, p = 2.5457e-16.

Effect of gender: d.f. = 1, F = 0.5183, p = 0.4799.

kstest2 results: h=0, p=8.0438e-01, ks2stat=0.1333 (overall gender difference)

Post-hoc analysis:

$$0.5\% : 8.0114e - 01, \quad 2\% : 8.8708e - 01, \quad 5\% : 5.7254e - 01, \quad 9\% : 5.0164e - 01$$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$$\begin{aligned} KStest2 : Conc1 : h = 0, p = 0.8848, ks2stat = 0.2333 \\ RStest : Conc1 : h = 0, p = 0.8621, zval = 0.1736 \\ KStest2 : Conc2 : h = 0, p = 1.0000, ks2stat = 0.1167 \\ RStest : Conc2 : h = 0, p = 1.0000, zval = -0.0000 \\ KStest2 : Conc3 : h = 0, p = 0.9304, ks2stat = 0.2167 \\ RStest : Conc3 : h = 0, p = 0.9467, zval = 0.0668 \\ KStest2 : Conc4 : h = 0, p = 0.8848, ks2stat = 0.2333 \\ RStest : Conc4 : h = 0, p = 1.0000, zval = -0.0000 \end{aligned}$$

BL vs Initial Task

Female:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 12, Initial Task N = 12).

p-value for BL vs initial task of female: 0.17699.

kstest2 results: h=0, p=4.8027e-01, ks2stat=0.1667.

Post-hoc analysis:

$$0.5\% : 4.7801e - 01, \quad 2\% : 8.2100e - 01, \quad 5\% : 2.6400e - 02, \quad 9\% : 9.4445e - 01$$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.1862, ks2stat = 0.4167$
 $RStest : Conc1 : h = 0, p = 0.5008$
 $KStest2 : Conc2 : h = 0, p = 0.0656, ks2stat = 0.5000$
 $RStest : Conc2 : h = 0, p = 0.3827$
 $KStest2 : Conc3 : h = 0, p = 0.1862, ks2stat = 0.4167$
 $RStest : Conc3 : h = 0, p = 0.0526$
 $KStest2 : Conc4 : h = 0, p = 0.4333, ks2stat = 0.3333$
 $RStest : Conc4 : h = 0, p = 0.7708$

Male:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 11, Initial Task N = 10).

p-value for BL vs initial task of male: 0.066116.

kstest2 results: h=0, p=6.6144e-01, ks2stat=0.1545

Post-hoc analysis:

0.5% : $3.4193e - 01$, 2% : $2.3440e - 01$, 5% : $2.4745e - 02$, 9% : $3.3059e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.2890, ks2stat = 0.4000$
 $RStest : Conc1 : h = 0, p = 0.9153$
 $KStest2 : Conc2 : h = 0, p = 0.6490, ks2stat = 0.3000$
 $RStest : Conc2 : h = 0, p = 0.7219$
 $KStest2 : Conc3 : h = 1, p = 0.0259, ks2stat = 0.6000$
 $RStest : Conc3 : h = 1, p = 0.0150$
 $KStest2 : Conc4 : h = 0, p = 0.2890, ks2stat = 0.4000$
 $RStest : Conc4 : h = 0, p = 0.8039$

3-way ANOVA Results:

Effect of condition: d.f. = 1, F = 5.7305, p = 0.0178.

Effect of concentration: d.f. = 3, F = 137.6882, p = 6.153256e-45.

Effect of gender: d.f. = 1, F = 2.8631, p = 0.0925.

4.2 Figure 6c: PA Approachavoid (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 10, Male N = 10).

Effect of concentration: d.f. = 3, F = 65.1004, p = 6.1134e-18.

Effect of gender: d.f. = 1, F = 6.0131, p = 0.0246.

kstest2 results: h=0, p=3.6131e-01, ks2stat=0.2000 (overall gender difference)

Post-hoc analysis:

0.5% : $8.8484e - 01$, 2% : $1.0123e - 01$, 5% : $7.5526e - 02$, 9% : $3.3494e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.9748, ks2stat = 0.2000$
 $RStest : Conc1 : h = 0, p = 0.5004, zval = 0.6739$
 $KStest2 : Conc2 : h = 0, p = 0.3129, ks2stat = 0.4000$
 $RStest : Conc2 : h = 0, p = 0.1315, zval = 1.5083$
 $KStest2 : Conc3 : h = 0, p = 0.6751, ks2stat = 0.3000$
 $RStest : Conc3 : h = 0, p = 0.1233, zval = 1.5411$
 $KStest2 : Conc4 : h = 0, p = 0.9748, ks2stat = 0.2000$
 $RStest : Conc4 : h = 0, p = 0.4201, zval = 0.8062$

BL vs Late Task

Female:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 12, Late Task N = 10).

p-value for BL vs initial task of female: 0.024429.

kstest2 results: h=0, p=2.2658e-01, ks2stat=0.2167.

Post-hoc analysis:

0.5% : $3.7745e - 01$, 2% : $1.4453e - 01$, 5% : $6.0921e - 02$, 9% : $2.1423e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.5564, ks2stat = 0.3167$
 $RStest : Conc1 : h = 0, p = 0.5960$
 $KStest2 : Conc2 : h = 0, p = 0.0706, ks2stat = 0.5167$
 $RStest : Conc2 : h = 0, p = 0.0703$
 $KStest2 : Conc3 : h = 0, p = 0.1582, ks2stat = 0.4500$
 $RStest : Conc3 : h = 0, p = 0.0688$
 $KStest2 : Conc4 : h = 0, p = 0.0873, ks2stat = 0.5000$
 $RStest : Conc4 : h = 0, p = 0.2595$

Male:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 11, Late Task N = 10).

p-value for BL vs initial task of male: 0.2364.

kstest2 results: h=0, p=3.0854e-01, ks2stat=0.2045

Post-hoc analysis:

0.5% : $5.0440e - 01$, 2% : $4.2998e - 01$, 5% : $2.9060e - 01$, 9% : $5.8461e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.0978, ks2stat = 0.5000$
 $RStest : Conc1 : h = 0, p = 0.3548$
 $KStest2 : Conc2 : h = 0, p = 0.0706, ks2stat = 0.5167$
 $RStest : Conc2 : h = 0, p = 0.0703$
 $KStest2 : Conc3 : h = 0, p = 0.1582, ks2stat = 0.4500$
 $RStest : Conc3 : h = 0, p = 0.0688$
 $KStest2 : Conc4 : h = 0, p = 0.0873, ks2stat = 0.5000$
 $RStest : Conc4 : h = 0, p = 0.2595$

3-way ANOVA Results:

Effect of condition: d.f. = 1, F = 6.8126, p = 0.0099.

Effect of concentration: d.f. = 3, F = 173.9008, p = 5.479031e-50.

Effect of gender: d.f. = 1, F = 10.4186, p = 0.0015.

Initial Task vs Late Task:

Effect of condition: d.f. = 1, F = 0.0013, p = 0.9710. Effect of concentration: d.f. = 3, F = 111.1738, p = 1.904706e-38. Effect of gender: d.f. = 1, F = 4.6943, p = 0.0318.

4.3 Figure 6d: BA Approach time (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 12, Male N = 10).

Effect of concentration: d.f. = 3, F = 3.0746, p = 5.4017e-02.

Effect of gender: d.f. = 1, F = 0.7937, p = 0.4073.

kstest2 results: h=0, p=4.6263e-01, ks2stat=0.2016 (overall gender difference)

Post-hoc analysis:

$$0.5\% : 7.1363e - 01, \quad 2\% : 7.6787e - 01, \quad 5\% : 7.5464e - 02, \quad 9\% : 6.6465e - 01$$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$$KStest2 : Conc1 : h = 0, p = 0.2141, ks2stat = 0.5000$$

$$RStest : Conc1 : h = 0, p = 0.3462$$

$$KStest2 : Conc2 : h = 0, p = 0.3180, ks2stat = 0.5000$$

$$RStest : Conc2 : h = 0, p = 0.3701$$

$$KStest2 : Conc3 : h = 1, p = 0.0032, ks2stat = 0.7167$$

$$RStest : Conc3 : h = 1, p = 0.0192$$

$$KStest2 : Conc4 : h = 0, p = 0.2503, ks2stat = 0.4545$$

$$RStest : Conc4 : h = 0, p = 0.5360$$

BL vs Initial Task

Female:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 12, Late Task N = 12).

p-value for BL vs initial task of female: 0.95393.

kstest2 results: h=0, p=1.0029e-01, ks2stat=0.2570

Post-hoc analysis:

$$0.5\% : 6.0495e - 01, \quad 2\% : 7.3330e - 02, \quad 5\% : 1.0644e - 02, \quad 9\% : 6.9342e - 01$$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$$KStest2 : Conc1 : h = 0, p = 0.0876, ks2stat = 0.5091$$

$$RStest : Conc1 : h = 0, p = 0.5968$$

$$KStest2 : Conc2 : h = 0, p = 0.0799, ks2stat = 0.5833$$

$$RStest : Conc2 : h = 1, p = 0.0320$$

$$KStest2 : Conc3 : h = 0, p = 0.0656, ks2stat = 0.5000$$

$$RStest : Conc3 : h = 0, p = 0.0606$$

$$KStest2 : Conc4 : h = 0, p = 0.2812, ks2stat = 0.3864$$

$$RStest : Conc4 : h = 0, p = 0.3099$$

Male:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 11, Late Task N = 10).

p-value for BL vs initial task of male: 0.3337.

kstest2 results: h=0, p=3.8605e-01, ks2stat=0.2110

Post-hoc analysis:

$$0.5\% : 7.3182e - 01, \quad 2\% : 1.6792e - 01, \quad 5\% : 9.4946e - 01, \quad 9\% : 6.1620e - 01$$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.2290, ks2stat = 0.4848$ $RStest : Conc1 : h = 0, p = 0.2696$ $KStest2 : Conc2 : h = 0, p = 0.2290, ks2stat = 0.4848$

3-way ANOVA Results:

Effect of condition: d.f. = 1, F = 0.5848, p = 0.4457.

Effect of concentration: d.f. = 3, F = 10.0285, p = 4.818959e-06.

Effect of gender: d.f. = 1, F = 0.0008, p = 0.9775.

4.4 Figure 6e: PA Approach time (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 10, Male N = 10).

Effect of concentration: d.f. = 3, F = 1.0838, p = 3.8602e-01.

Effect of gender: d.f. = 1, F = 0.1609, p = 0.7049.

kstest2 results: h=0, p=1.7336e-01, ks2stat=0.2745 (overall gender difference)

Post-hoc analysis:

0.5% : $5.2868e - 01$, 2% : $4.4209e - 01$, 5% : $5.2319e - 01$, 9% : $4.8906e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 1, p = 0.0204, ks2stat = 0.8000$

$RStest : Conc1 : h = 1, p = 0.0303$

$KStest2 : Conc2 : h = 0, p = 0.5070, ks2stat = 0.4250$

$RStest : Conc2 : h = 0, p = 0.2844$

$KStest2 : Conc3 : h = 0, p = 0.4892, ks2stat = 0.3556$

$RStest : Conc3 : h = 0, p = 0.3562$

$KStest2 : Conc4 : h = 0, p = 0.1076, ks2stat = 0.5417$

$RStest : Conc4 : h = 1, p = 0.0274$

BL vs Late Task

Female:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 12, Late Task N = 10).

p-value for BL vs initial task of female: 0.58585.

kstest2 results: h=0, p=2.9353e-01, ks2stat=0.2134

Post-hoc analysis:

0.5% : $6.6412e - 01$, 2% : $7.3010e - 01$, 5% : $9.4083e - 02$, 9% : $2.9966e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.2503, ks2stat = 0.4545$

$RStest : Conc1 : h = 0, p = 0.4111$

$KStest2 : Conc2 : h = 0, p = 0.9978, ks2stat = 0.1667$

$RStest : Conc2 : h = 0, p = 0.9692$

$KStest2 : Conc3 : h = 0, p = 0.1582, ks2stat = 0.4500$

$RStest : Conc3 : h = 0, p = 0.0698$

$KStest2 : Conc4 : h = 0, p = 0.8520, ks2stat = 0.2500$

$RStest : Conc4 : h = 0, p = 1.0000$

Male:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 11, Late Task N = 10).

p-value for BL vs initial task of male: 0.74017.

kstest2 results: h=0, p=2.2511e-01, ks2stat=0.2487

Post-hoc analysis:

$$0.5\% : 6.3673e - 01, \quad 2\% : 4.9689e - 01, \quad 5\% : 8.2142e - 01, \quad 9\% : 5.9077e - 01$$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$$KStest2 : Conc1 : h = 0, p = 0.1019, ks2stat = 0.6000$$

$$RStest : Conc1 : h = 0, p = 0.1149$$

$$KStest2 : Conc2 : h = 0, p = 0.5402, ks2stat = 0.4000$$

$$RStest : Conc2 : h = 0, p = 0.3710$$

$$KStest2 : Conc3 : h = 0, p = 0.4114, ks2stat = 0.3778$$

$$RStest : Conc3 : h = 0, p = 0.4470$$

$$KStest2 : Conc4 : h = 0, p = 0.2147, ks2stat = 0.4545$$

$$RStest : Conc4 : h = 0, p = 0.1518$$

3-way ANOVA Results:

Effect of condition: d.f. = 1, F = 0.0505, p = 0.8225.

Effect of concentration: d.f. = 3, F = 16.6626, p = 2.758445e-09.

Effect of gender: d.f. = 1, F = 4.5491, p = 0.0347.

4.5 Figure 6f: BA Fr. of high sp. runs (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 12, Male N = 10).

Effect of concentration: d.f. = 3, F = 1.8924, p = 1.4050e-01.

Effect of gender: d.f. = 1, F = 0.8500, p = 0.3675.

kstest2 results: h=0, p=1.2139e-01, ks2stat=0.2458 (overall gender difference)

Post-hoc analysis:

$$0.5\% : 7.7450e - 01, \quad 2\% : 9.1269e - 01, \quad 5\% : 3.6064e - 03, \quad 9\% : 5.6181e - 01$$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$$KStest2 : Conc1 : h = 0, p = 0.9304, ks2stat = 0.2167$$

$$RStest : Conc1 : h = 0, p = 0.7667$$

$$KStest2 : Conc2 : h = 0, p = 0.8286, ks2stat = 0.2500$$

$$RStest : Conc2 : h = 0, p = 0.7667$$

$$KStest2 : Conc3 : h = 1, p = 0.0101, ks2stat = 0.6500$$

$$RStest : Conc3 : h = 1, p = 0.0111$$

$$KStest2 : Conc4 : h = 0, p = 0.1072, ks2stat = 0.4833$$

$$RStest : Conc4 : h = 0, p = 0.3734$$

BL vs Initial Task**Female:**

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 12, Initial

Task N = 12).

p-value for BL vs initial task of female: 0.013.

kstest2 results: h=1, p=4.8054e-02, ks2stat=0.2708

Post-hoc analysis:

0.5% : $8.0719e - 02$, 2% : $1.3341e - 02$, 5% : $3.6748e - 02$, 9% : $7.0275e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

KStest2 : Conc1 : h = 0, p = 0.0656, ks2stat = 0.5000

RStest : Conc1 : h = 1, p = 0.0351

KStest2 : Conc2 : h = 1, p = 0.0191, ks2stat = 0.5833

RStest : Conc2 : h = 1, p = 0.0086

KStest2 : Conc3 : h = 0, p = 0.0656, ks2stat = 0.5000

RStest : Conc3 : h = 1, p = 0.0262

KStest2 : Conc4 : h = 0, p = 0.1862, ks2stat = 0.4167

RStest : Conc4 : h = 0, p = 0.5067

Male:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 11, Initial Task N = 10).

p-value for BL vs initial task of male: 0.49907.

kstest2 results: h=0, p=5.7150e-01, ks2stat=0.1659

Post-hoc analysis:

0.5% : $8.6648e - 01$, 2% : $7.4849e - 01$, 5% : $1.6437e - 02$, 9% : $7.9965e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

KStest2 : Conc1 : h = 0, p = 0.2646, ks2stat = 0.4091

RStest : Conc1 : h = 0, p = 0.5035

KStest2 : Conc2 : h = 0, p = 0.6114, ks2stat = 0.3091

RStest : Conc2 : h = 0, p = 0.6985

KStest2 : Conc3 : h = 1, p = 0.0198, ks2stat = 0.6182

RStest : Conc3 : h = 1, p = 0.0183

KStest2 : Conc4 : h = 0, p = 0.8290, ks2stat = 0.2545

RStest : Conc4 : h = 0, p = 0.9719

3-way ANOVA Results:

Effect of condition: d.f. = 1, F = 9.1971, p = 0.0028.

Effect of concentration: d.f. = 3, F = 4.0014, p = 8.777480e-03.

Effect of gender: d.f. = 1, F = 13.5543, p = 0.0003.

4.6 Figure 6g: PA Fr. of high sp. runs (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 10, Male N = 10).

Effect of concentration: d.f. = 3, F = 0.5016, p = 6.8275e-01.

Effect of gender: d.f. = 1, F = 1.8180, p = 0.1943.

kstest2 results: h=0, p=1.3925e-01, ks2stat=0.2500 (overall gender difference)

Post-hoc analysis:

0.5% : $4.4173e - 01$, 2% : $1.5443e - 01$, 5% : $4.3851e - 01$, 9% : $8.8666e - 02$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.3129, ks2stat = 0.4000$

$RStest : Conc1 : h = 0, p = 0.3075$

$KStest2 : Conc2 : h = 0, p = 0.6751, ks2stat = 0.3000$

$RStest : Conc2 : h = 0, p = 0.1620$

$KStest2 : Conc3 : h = 0, p = 0.6751, ks2stat = 0.3000$

$RStest : Conc3 : h = 0, p = 0.9698$

$KStest2 : Conc4 : h = 0, p = 0.1108, ks2stat = 0.5000$

$RStest : Conc4 : h = 0, p = 0.0890$

BL vs Late Task

Female:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 12, Late Task N = 10).

p-value for BL vs late task of female: 0.062741.

kstest2 results: h=0, p=1.6019e-01, ks2stat=0.2333

Post-hoc analysis:

0.5% : $1.4081e - 01$, 2% : $8.1374e - 03$, 5% : $1.3291e - 02$, 9% : $4.2351e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.6259, ks2stat = 0.3000$

$RStest : Conc1 : h = 0, p = 0.3390$

$KStest2 : Conc2 : h = 1, p = 0.0076, ks2stat = 0.6667$

$RStest : Conc2 : h = 1, p = 0.0062$

$KStest2 : Conc3 : h = 0, p = 0.1902, ks2stat = 0.4333$

$RStest : Conc3 : h = 1, p = 0.0321$

$KStest2 : Conc4 : h = 0, p = 0.2270, ks2stat = 0.4167$

$RStest : Conc4 : h = 0, p = 0.2485$

Male:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 11, Late Task N = 10).

p-value for BL vs late task of male: 0.36436.

kstest2 results: h=0, p=1.1714e-01, ks2stat=0.2523

Post-hoc analysis:

0.5% : $6.9166e - 01$, 2% : $5.0927e - 02$, 5% : $5.4199e - 01$, 9% : $5.5656e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.2646, ks2stat = 0.4091$ $RStest : Conc1 : h = 0, p = 0.4597$ $KStest2 : Conc2 : h = 0, p =$

3-way ANOVA Results:

Effect of condition: d.f. = 1, F = 9.0263, p = 0.0031.

Effect of concentration: d.f. = 3, F = 1.1525, p = 3.298113e-01.

Effect of gender: d.f. = 1, F = 21.8951, p = 0.0000.

4.7 Figure 6j: During Oxy Approachavoid (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 5, Male N = 5).

Effect of concentration: d.f. = 3, F = 3.2073, p = 4.1083e-02.

Effect of gender: d.f. = 1, F = 0.0521, p = 0.8251.

kstest2 results: h=0, p=7.7095e-01, ks2stat=0.2000 (overall gender difference)

Post-hoc analysis:

$$0.5\% : 8.0968e - 01, \quad 2\% : 2.1173e - 01, \quad 5\% : 4.2256e - 01, \quad 9\% : 2.2622e - 01$$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$$KStest2 : Conc1 : h = 0, p = 0.6974, ks2stat = 0.4000$$

$$RStest : Conc1 : h = 0, p = 0.6429$$

$$KStest2 : Conc2 : h = 0, p = 0.2090, ks2stat = 0.6000$$

$$RStest : Conc2 : h = 0, p = 0.2063$$

$$KStest2 : Conc3 : h = 0, p = 0.6974, ks2stat = 0.4000$$

$$RStest : Conc3 : h = 0, p = 0.6349$$

$$KStest2 : Conc4 : h = 0, p = 0.6974, ks2stat = 0.4000$$

$$RStest : Conc4 : h = 0, p = 0.3016$$

BL vs Self admin. Oxy

Female:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 12, Self admin. Oxy N = 5).

p-value for BL vs Self admin. Oxy of female: 0.052962.

kstest2 results: h=0, p=5.1949e-02, ks2stat=0.3458

Post-hoc analysis:

$$0.5\% : 4.0723e - 04, \quad 2\% : 3.0385e - 01, \quad 5\% : 8.8902e - 02, \quad 9\% : 1.2880e - 05$$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$$KStest2 : Conc1 : h = 1, p = 0.0089, ks2stat = 0.8000$$

$$RStest : Conc1 : h = 1, p = 0.0039$$

$$KStest2 : Conc2 : h = 0, p = 0.5074, ks2stat = 0.4000$$

$$RStest : Conc2 : h = 0, p = 0.7757$$

$$KStest2 : Conc3 : h = 0, p = 0.1545, ks2stat = 0.5500$$

$$RStest : Conc3 : h = 0, p = 0.1296$$

$$KStest2 : Conc4 : h = 1, p = 0.0004, ks2stat = 1.0000$$

$$RStest : Conc4 : h = 1, p = 0.0003$$

Male:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 11, Self admin. Oxy N = 5).

p-value for BL vs Self admin. Oxy of male: 0.74837.

kstest2 results: h=0, p=5.2181e-02, ks2stat=0.3500

Post-hoc analysis:

$$0.5\% : 1.1302e - 02, \quad 2\% : 5.2769e - 04, \quad 5\% : 3.4051e - 01, \quad 9\% : 7.5302e - 05$$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 1, p = 0.0313, ks2stat = 0.7091$
 $RStest : Conc1 : h = 1, p = 0.0124$
 $KStest2 : Conc2 : h = 1, p = 0.0079, ks2stat = 0.8182$
 $RStest : Conc2 : h = 1, p = 0.0018$
 $KStest2 : Conc3 : h = 0, p = 0.2005, ks2stat = 0.5273$
 $RStest : Conc3 : h = 0, p = 0.3608$
 $KStest2 : Conc4 : h = 1, p = 0.0005, ks2stat = 1.0000$
 $RStest : Conc4 : h = 1, p = 0.0005$

3-way ANOVA Results:

Effect of condition: d.f. = 1, F = 3.7568, p = 0.0550.

Effect of concentration: d.f. = 3, F = 50.3587, p = 4.372402e-21.

Effect of gender: d.f. = 1, F = 0.6013, p = 0.4396.

4.8 Figure 6k: During Oxy Fr. of stops (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 5, Male N = 5).

Effect of concentration: d.f. = 3, F = 0.3109, p = 8.1732e-01.

Effect of gender: d.f. = 1, F = 2.9124, p = 0.1263.

kstest2 results: h=1, p=8.1617e-03, ks2stat=0.5000 (overall gender difference)

Post-hoc analysis:

0.5% : $2.1755e - 01$, 2% : $9.1185e - 02$, 5% : $1.8516e - 01$, 9% : $9.4228e - 02$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.6974, ks2stat = 0.4000$
 $RStest : Conc1 : h = 0, p = 0.2222$
 $KStest2 : Conc2 : h = 1, p = 0.0361, ks2stat = 0.8000$
 $RStest : Conc2 : h = 1, p = 0.0317$
 $KStest2 : Conc3 : h = 0, p = 0.2090, ks2stat = 0.6000$
 $RStest : Conc3 : h = 0, p = 0.1508$
 $KStest2 : Conc4 : h = 0, p = 0.2090, ks2stat = 0.6000$
 $RStest : Conc4 : h = 0, p = 0.0952$

BL vs Self admin. Oxy

Female:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 12, Self admin. Oxy N = 5).

p-value for BL vs initial task of female: 0.013864.

kstest2 results: h=1, p=1.6985e-04, ks2stat=0.5542

Post-hoc analysis:

0.5% : $6.5797e - 03$, 2% : $2.4568e - 02$, 5% : $3.1498e - 02$, 9% : $1.3492e - 02$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.0950, ks2stat = 0.6000$
 $RStest : Conc1 : h = 1, p = 0.0485$
 $KStest2 : Conc2 : h = 0, p = 0.0671, ks2stat = 0.6333$
 $RStest : Conc2 : h = 1, p = 0.0365$
 $KStest2 : Conc3 : h = 0, p = 0.3153, ks2stat = 0.4667$
 $RStest : Conc3 : h = 0, p = 0.1037$
 $KStest2 : Conc4 : h = 0, p = 0.1545, ks2stat = 0.5500$
 $RStest : Conc4 : h = 0, p = 0.1037$

Male:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 11, Self admin. Oxy N = 5).

p-value for BL vs initial task of male: 0.38653.

kstest2 results: h=1, p=4.2681e-03, ks2stat=0.4545

Post-hoc analysis:

0.5% : $4.9541e - 01$, 2% : $3.2649e - 01$, 5% : $3.7954e - 01$, 9% : $3.6035e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.1019, ks2stat = 0.6000$
 $RStest : Conc1 : h = 0, p = 0.3196$
 $KStest2 : Conc2 : h = 0, p = 0.2342, ks2stat = 0.5091$
 $RStest : Conc2 : h = 0, p = 0.1451$
 $KStest2 : Conc3 : h = 0, p = 0.2005, ks2stat = 0.5273$
 $RStest : Conc3 : h = 0, p = 0.2212$
 $KStest2 : Conc4 : h = 0, p = 0.1019, ks2stat = 0.6000$
 $RStest : Conc4 : h = 0, p = 0.1451$

3-way ANOVA Results:

Effect of condition: d.f. = 1, F = 2.0112, p = 0.1588.

Effect of concentration: d.f. = 3, F = 0.0203, p = 9.960489e-01.

Effect of gender: d.f. = 1, F = 1.5922, p = 0.2095.

4.9 Figure 6l: After Oxy Approachavoid (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 6, Male N = 6).

Effect of concentration: d.f. = 3, F = 19.9665, p = 2.6307e-07.

Effect of gender: d.f. = 1, F = 0.2008, p = 0.6637.

kstest2 results: h=0, p=6.2161e-01, ks2stat=0.2083 (overall gender difference)

Post-hoc analysis:

0.5% : $7.5735e - 01$, 2% : $3.7013e - 01$, 5% : $8.0930e - 01$, 9% : $6.4244e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.8096, ks2stat = 0.3333$
 $RStest : Conc1 : h = 0, p = 1.0000$
 $KStest2 : Conc2 : h = 0, p = 0.3180, ks2stat = 0.5000$
 $RStest : Conc2 : h = 0, p = 0.3095$
 $KStest2 : Conc3 : h = 0, p = 0.8096, ks2stat = 0.3333$
 $RStest : Conc3 : h = 0, p = 0.8182$
 $KStest2 : Conc4 : h = 0, p = 0.3180, ks2stat = 0.5000$
 $RStest : Conc4 : h = 0, p = 0.5887$

BL vs Abstinence

Female:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 12, Abstinence N = 6).

p-value for BL vs initial task of female: 0.18211.

kstest2 results: h=1, p=1.5846e-02, ks2stat=0.3750

Post-hoc analysis:

0.5% : $9.8839e - 05$, 2% : $2.3068e - 04$, 5% : $8.7695e - 01$, 9% : $1.7166e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 1, p = 0.0007, ks2stat = 0.9167$
 $RStest : Conc1 : h = 1, p = 0.0002$
 $KStest2 : Conc2 : h = 1, p = 0.0028, ks2stat = 0.8333$
 $RStest : Conc2 : h = 1, p = 0.0018$
 $KStest2 : Conc3 : h = 0, p = 0.9290, ks2stat = 0.2500$
 $RStest : Conc3 : h = 0, p = 0.9636$
 $KStest2 : Conc4 : h = 0, p = 0.1877, ks2stat = 0.5000$
 $RStest : Conc4 : h = 0, p = 0.4225$

Male:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 11, Abstinence N = 6).

p-value for BL vs initial task of male: 0.033933.

kstest2 results: h=1, p=8.7249e-04, ks2stat=0.4811

Post-hoc analysis:

0.5% : $4.0393e - 05$, 2% : $6.3068e - 04$, 5% : $3.1164e - 01$, 9% : $5.9881e - 03$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 1, p = 0.0002, ks2stat = 1.0000$
 $RStest : Conc1 : h = 1, p = 0.0002$
 $KStest2 : Conc2 : h = 1, p = 0.0033, ks2stat = 0.8333$
 $RStest : Conc2 : h = 1, p = 0.0031$
 $KStest2 : Conc3 : h = 0, p = 0.5232, ks2stat = 0.3788$
 $RStest : Conc3 : h = 0, p = 0.5249$
 $KStest2 : Conc4 : h = 1, p = 0.0042, ks2stat = 0.8182$
 $RStest : Conc4 : h = 1, p = 0.0074$

3-way ANOVA Results:

Effect of condition: d.f. = 1, $F = 10.3954$, $p = 0.0016$.

Effect of concentration: d.f. = 3, $F = 77.2692$, $p = 1.664070e-28$.

Effect of gender: d.f. = 1, $F = 3.0165$, $p = 0.0848$.

4.10 Figure 6m: After Oxy Fr. of stops (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female $N = 6$, Male $N = 6$).

Effect of concentration: d.f. = 3, $F = 0.9612$, $p = 4.2378e-01$.

Effect of gender: d.f. = 1, $F = 1.1444$, $p = 0.3099$.

kstest2 results: $h=1$, $p=9.3124e-04$, $ks2stat=0.5417$ (overall gender difference)

Post-hoc analysis:

0.5% : $3.2581e-01$, 2% : $3.9929e-01$, 5% : $2.7256e-01$, 9% : $2.6367e-01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.0766, ks2stat = 0.6667$

$RStest : Conc1 : h = 0, p = 0.1320$

$KStest2 : Conc2 : h = 1, p = 0.0122, ks2stat = 0.8333$

$RStest : Conc2 : h = 0, p = 0.0649$

$KStest2 : Conc3 : h = 0, p = 0.3180, ks2stat = 0.5000$

$RStest : Conc3 : h = 0, p = 0.3095$

$KStest2 : Conc4 : h = 0, p = 0.3180, ks2stat = 0.5000$

$RStest : Conc4 : h = 0, p = 0.2403$

BL vs Abstinence

Female:

Statistical significance was determined by Repeated measures analysis of variance. (BL $N = 12$, Abstinence $N = 6$).

p-value for BL vs initial task of female: 0.23108.

kstest2 results: $h=0$, $p=4.4421e-01$, $ks2stat=0.2083$

Post-hoc analysis:

0.5% : $2.0036e-01$, 2% : $3.5578e-01$, 5% : $2.1478e-01$, 9% : $1.7829e-01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.9290, ks2stat = 0.2500$

$RStest : Conc1 : h = 0, p = 0.8201$

$KStest2 : Conc2 : h = 0, p = 0.6693, ks2stat = 0.3333$

$RStest : Conc2 : h = 0, p = 0.8201$

$KStest2 : Conc3 : h = 0, p = 0.3842, ks2stat = 0.4167$

$RStest : Conc3 : h = 0, p = 0.2129$

$KStest2 : Conc4 : h = 0, p = 0.6693, ks2stat = 0.3333$

$RStest : Conc4 : h = 0, p = 0.3355$

Male:

Statistical significance was determined by Repeated measures analysis of variance. (BL $N = 11$, Abstinence $N = 6$).

p-value for BL vs initial task of male: 0.38794.
kstest2 results: h=1, p=7.4300e-03, ks2stat=0.4091

Post-hoc analysis:

$$0.5\% : 5.3937e - 01, \quad 2\% : 3.3053e - 01, \quad 5\% : 4.3710e - 01, \quad 9\% : 2.8029e - 01$$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$$KStest2 : Conc1 : h = 0, p = 0.4238, ks2stat = 0.4091$$

$$RStest : Conc1 : h = 0, p = 0.5908$$

$$KStest2 : Conc2 : h = 0, p = 0.4238, ks2stat = 0.4091$$

$$RStest : Conc2 : h = 0, p = 0.2161$$

$$KStest2 : Conc3 : h = 0, p = 0.4238, ks2stat = 0.4091$$

$$RStest : Conc3 : h = 0, p = 0.5249$$

$$KStest2 : Conc4 : h = 0, p = 0.1106, ks2stat = 0.5606$$

$$RStest : Conc4 : h = 0, p = 0.1215$$

3-way ANOVA Results:

Effect of condition: d.f. = 1, F = 7.7409, p = 0.0062.

Effect of concentration: d.f. = 3, F = 0.0335, p = 9.917408e-01.

Effect of gender: d.f. = 1, F = 12.7578, p = 0.0005.

5 Supplemental Figure 1: Safa fig

5.1 Figure S.11

statistical significance was determined by paired t-test using **SPSS** software package (F = 12, M = 11).
p-vale for gender difference: 0.01.

6 Supplemental Figure 2

6.1 Figure S.2i: BL Distance with approach trials (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 12, Male N = 11).

Effect of concentration: d.f. = 3, F = 7.9201, p = 1.6745e-04.

Effect of gender: d.f. = 1, F = 10.8854, p = 0.0038.

kstest2 results: h=1, p=7.1912e-04, ks2stat=0.4103 (overall gender difference)

Post-hoc analysis:

$$0.5\% : 1.2870e - 02, \quad 2\% : 2.5797e - 01, \quad 5\% : 2.5247e - 02, \quad 9\% : 1.7835e - 02$$

KStest2 and wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 1, p = 0.0121, ks2stat = 0.6364$
 $RStest : Conc1 : h = 1, p = 0.0104$
 $KStest2 : Conc2 : h = 0, p = 0.2270, ks2stat = 0.4167$
 $RStest : Conc2 : h = 0, p = 0.3734$
 $KStest2 : Conc3 : h = 1, p = 0.0452, ks2stat = 0.5500$
 $RStest : Conc3 : h = 1, p = 0.0192$
 $KStest2 : Conc4 : h = 1, p = 0.0289, ks2stat = 0.5682$
 $RStest : Conc4 : h = 1, p = 0.0074$

6.2 Figure S.2j: BL Fr. of Stops With approach trials (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 12, Male N = 11).

Effect of concentration: d.f. = 3, F = 5.8431, p = 1.4948e-03.

Effect of gender: d.f. = 1, F = 0.5058, p = 0.4856.

kstest2 results: h=0, p=6.2873e-02, ks2stat=0.2710 (overall gender difference)

Post-hoc analysis:

0.5% : 5.8083e - 02 2% : 8.8005e - 01, 5% : 5.5419e - 01, 9% : 1.6653e - 01

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.1473, ks2stat = 0.4545$
 $RStest : Conc1 : h = 0, p = 0.0878$
 $KStest2 : Conc2 : h = 0, p = 0.4896, ks2stat = 0.3333$
 $RStest : Conc2 : h = 0, p = 0.5310$
 $KStest2 : Conc3 : h = 0, p = 0.2689, ks2stat = 0.4000$
 $RStest : Conc3 : h = 0, p = 0.1985$
 $KStest2 : Conc4 : h = 0, p = 0.0915, ks2stat = 0.4848$
 $RStest : Conc4 : h = 0, p = 0.0905$

6.3 Figure S.2k: BL Fr. of high sp. runs With approach trials (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 12, Male N = 11).

Effect of concentration: d.f. = 3, F = 33.6668, p = 1.1834e-12.

Effect of gender: d.f. = 1, F = 1.6147, p = 0.2192.

kstest2 results: h=0, p=4.3505e-01, ks2stat=0.1793 (overall gender difference)

Post-hoc analysis:

0.5% : 1.9769e - 01, 2% : 5.3803e - 01, 5% : 4.1293e - 01, 9% : 1.8367e - 01

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.3744, ks2stat = 0.3636$
 $RStest : Conc1 : h = 0, p = 0.1486$
 $KStest2 : Conc2 : h = 0, p = 0.8286, ks2stat = 0.2500$
 $RStest : Conc2 : h = 0, p = 0.9212$
 $KStest2 : Conc3 : h = 0, p = 0.4268, ks2stat = 0.3500$
 $RStest : Conc3 : h = 0, p = 0.1985$
 $KStest2 : Conc4 : h = 0, p = 0.1328, ks2stat = 0.4545$
 $RStest : Conc4 : h = 0, p = 0.1661$

6.4 Figure S.2l: BL Time OS feeder With approach trials (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 12, Male N = 11).

Effect of concentration: d.f. = 3, F = 7.3360, p = 3.0532e-04.

Effect of gender: d.f. = 1, F = 0.0233, p = 0.8803.

kstest2 results: h=0, p=7.5063e-01, ks2stat=0.1393 (overall gender difference)

Post-hoc analysis:

0.5% : 6.6119e - 01, 2% : 4.6695e - 01, 5% : 5.8985e - 01, 9% : 6.5657e - 01

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.9852, ks2stat = 0.1818$
 $RStest : Conc1 : h = 0, p = 0.8422$
 $KStest2 : Conc2 : h = 0, p = 0.8848, ks2stat = 0.2333$
 $RStest : Conc2 : h = 0, p = 0.3834$
 $KStest2 : Conc3 : h = 0, p = 0.5564, ks2stat = 0.3167$
 $RStest : Conc3 : h = 0, p = 0.4681$
 $KStest2 : Conc4 : h = 0, p = 0.9610, ks2stat = 0.1970$
 $RStest : Conc4 : h = 0, p = 0.5588$

6.5 Figure S.2m. BL Distance with reject trials (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 12, Male N = 11).

Effect of concentration: d.f. = 3, F = 2.7997, p = 4.7581e-02.

Effect of gender: d.f. = 1, F = 7.3378, p = 0.0135.

kstest2 results: h=1, p=2.2098e-04, ks2stat=0.4351 (overall gender difference)

Post-hoc analysis:

0.5% : 0.0048, 2% : 0.0168, 5% : 0.0162, 9% : 0.1742

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 1, p = 0.0289, ks2stat = 0.5682$
 $RStest : Conc1 : h = 1, p = 0.0074$
 $KStest2 : Conc2 : h = 1, p = 0.0361, ks2stat = 0.5530$
 $RStest : Conc2 : h = 1, p = 0.0127$
 $KStest2 : Conc3 : h = 1, p = 0.0403, ks2stat = 0.5455$
 $RStest : Conc3 : h = 1, p = 0.0089$
 $KStest2 : Conc4 : h = 0, p = 0.2270, ks2stat = 0.4167$
 $RStest : Conc4 : h = 0, p = 0.2766$

6.6 Figure S.2n. BL Fr. of Stops With reject trials (FvM)

Effect of concentration: d.f. = 3, F = 1.4054, p = 2.5002e-01.

Effect of gender: d.f. = 1, F = 1.5795, p = 0.2233.

kstest2 results: h=1, p=2.3013e-04, ks2stat=0.4341 (overall gender difference)

Post-hoc analysis:

0.5% : 0.0987, 2% : 0.2915, 5% : 0.1825, 9% : 0.3455

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 1, p = 0.0289, ks2stat = 0.5682$
 $RStest : Conc1 : h = 1, p = 0.0062$
 $KStest2 : Conc2 : h = 0, p = 0.1006, ks2stat = 0.4773$
 $RStest : Conc2 : h = 0, p = 0.1316$
 $KStest2 : Conc3 : h = 1, p = 0.0361, ks2stat = 0.5530$
 $RStest : Conc3 : h = 1, p = 0.0089$
 $KStest2 : Conc4 : h = 0, p = 0.3162, ks2stat = 0.3833$
 $RStest : Conc4 : h = 0, p = 0.3390$

6.7 Figure S.2o. BL Fr. of high sp. runs With reject trials (FvM)

Effect of concentration: d.f. = 3, F = 1.7438, p = 1.6766e-01.

Effect of gender: d.f. = 1, F = 12.3666, p = 0.0022.

kstest2 results: h=1, p=4.1576e-07, ks2stat=0.5654 (overall gender difference)

Post-hoc analysis:

0.5% : 0.0003, 2% : 0.0025, 5% : 0.0054, 9% : 0.0742

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 1, p = 0.0003, ks2stat = 0.8258$
 $RStest : Conc1 : h = 1, p = 0.0006$
 $KStest2 : Conc2 : h = 1, p = 0.0059, ks2stat = 0.6667$
 $RStest : Conc2 : h = 1, p = 0.0028$
 $KStest2 : Conc3 : h = 1, p = 0.0098, ks2stat = 0.6364$
 $RStest : Conc3 : h = 1, p = 0.0062$
 $KStest2 : Conc4 : h = 0, p = 0.1902, ks2stat = 0.4333$
 $RStest : Conc4 : h = 0, p = 0.0806$

6.8 Figure S.2p. BL Time OS feeder With reject trials (FvM)

Effect of concentration: d.f. = 3, $F = 1.0197$, $p = 3.9035e-01$.

Effect of gender: d.f. = 1, $F = 1.2575$, $p = 0.2754$.

kstest2 results: $h=0$, $p=6.1613e-02$, $ks2stat=0.2689$ (overall gender difference)

Post-hoc analysis:

0.5% : 0.4147, 2% : 0.7963, 5% : 0.0463, 9% : 0.7952

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.7136, ks2stat = 0.2727$

$RStest : Conc1 : h = 0, p = 0.4060$

$KStest2 : Conc2 : h = 0, p = 0.9094, ks2stat = 0.2197$

$RStest : Conc2 : h = 0, p = 0.7582$

$KStest2 : Conc3 : h = 1, p = 0.0289, ks2stat = 0.5682$

$RStest : Conc3 : h = 1, p = 0.0310$

$KStest2 : Conc4 : h = 0, p = 0.1582, ks2stat = 0.4500$

$RStest : Conc4 : h = 0, p = 0.3551$

7 Supplemental Figure 4: Safa plot

7.1 Figure S.4d

statistical significance was determined by chi-squared test using **SPSS** software package ($F = 12$, $M = 11$).

p-value for Sigmoidal and U-shape for initial 1-3 months: 0.016.

p-value for Sigmoidal and U-shape after a year: 0.0009.

8 Supplemental Figure 5

8.1 Figure S.5a: FD Approachavoid (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female $N = 12$, Male $N = 10$).

Effect of concentration: d.f. = 3, $F = 182.0357$, $p = 4.3911e-30$.

Effect of gender: d.f. = 1, $F = 2.1437$, $p = 0.1587$.

kstest2 results: $h=0$, $p=9.3097e-01$, $ks2stat=0.1125$ (overall gender difference)

Post-hoc analysis:

0.5% : $7.8880e - 01$, 2% : $2.2787e - 01$, 5% : $2.6929e - 01$, 9% : $7.6084e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.9636, ks2stat = 0.2000$
 $RStest : Conc1 : h = 0, p = 0.5631$
 $KStest2 : Conc2 : h = 0, p = 0.8286, ks2stat = 0.2500$
 $RStest : Conc2 : h = 0, p = 0.2840$
 $KStest2 : Conc3 : h = 0, p = 0.6961, ks2stat = 0.2833$
 $RStest : Conc3 : h = 0, p = 0.2892$
 $KStest2 : Conc4 : h = 0, p = 0.8848, ks2stat = 0.2333$
 $RStest : Conc4 : h = 0, p = 0.8391$

BL vs FD

Female:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 12, FD N = 12).

p-value for BL vs FD of female: 0.0042028.

kstest2 results: h=1, p=2.6487e-02, ks2stat=0.2917

Post-hoc analysis:

0.5% : $6.2877e - 01$, 2% : $4.9942e - 01$, 5% : $9.7466e - 03$, 9% : $4.6536e - 02$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.4333, ks2stat = 0.3333$
 $RStest : Conc1 : h = 0, p = 0.4504$
 $KStest2 : Conc2 : h = 0, p = 0.1862, ks2stat = 0.4167$
 $RStest : Conc2 : h = 0, p = 0.3354$
 $KStest2 : Conc3 : h = 0, p = 0.0656, ks2stat = 0.5000$
 $RStest : Conc3 : h = 1, p = 0.0140$
 $KStest2 : Conc4 : h = 1, p = 0.0002, ks2stat = 0.8333$
 $RStest : Conc4 : h = 1, p = 0.0028$

Male:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 11, FD N = 10).

p-value for BL vs FD of male: 0.0027308.

kstest2 results: h=0, p=2.9608e-01, ks2stat=0.2068

Post-hoc analysis:

0.5% : $7.4398e - 01$, 2% : $9.6105e - 01$, 5% : $1.0232e - 02$, 9% : $4.9382e - 02$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.2890, ks2stat = 0.4000$
 $RStest : Conc1 : h = 0, p = 0.3734$
 $KStest2 : Conc2 : h = 0, p = 0.9884, ks2stat = 0.1818$
 $RStest : Conc2 : h = 0, p = 0.9716$
 $KStest2 : Conc3 : h = 0, p = 0.0551, ks2stat = 0.5455$
 $RStest : Conc3 : h = 1, p = 0.0166$
 $KStest2 : Conc4 : h = 0, p = 0.0697, ks2stat = 0.5273$
 $RStest : Conc4 : h = 1, p = 0.0301$

3-way ANOVA Results:

Effect of condition: d.f. = 1, F = 18.1580, p = 0.0000.

Effect of concentration: d.f. = 3, F = 319.2341, p = 6.545945e-69.

Effect of gender: d.f. = 1, F = 4.7591, p = 0.0305.

8.2 Figure S.5b: FD Distance (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 12, Male N = 10).

Effect of concentration: d.f. = 3, F = 12.1087, p = 2.6791e-06.

Effect of gender: d.f. = 1, F = 21.4749, p = 0.0002.

kstest2 results: h=1, p=1.3139e-08, ks2stat=0.6375 (overall gender difference)

Post-hoc analysis:

$$0.5\% : 4.0070e - 04, \quad 2\% : 1.4910e - 05, \quad 5\% : 9.2678e - 03, \quad 9\% : 2.5464e - 03$$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$$KStest2 : Conc1 : h = 1, p = 0.0076, ks2stat = 0.6667$$

$$RStest : Conc1 : h = 1, p = 0.0033$$

$$KStest2 : Conc2 : h = 1, p = 0.0001, ks2stat = 0.9167$$

$$RStest : Conc2 : h = 1, p = 0.0003$$

$$KStest2 : Conc3 : h = 0, p = 0.0567, ks2stat = 0.5333$$

$$RStest : Conc3 : h = 1, p = 0.0229$$

$$KStest2 : Conc4 : h = 1, p = 0.0076, ks2stat = 0.6667$$

$$RStest : Conc4 : h = 1, p = 0.0051$$

BL vs FD

Female:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 12, FD N = 12).

p-value for BL vs FD of female: 0.0011858.

kstest2 results: h=1, p=1.7074e-05, ks2stat=0.4792

Post-hoc analysis:

$$0.5\% : 5.1267e - 04, \quad 2\% : 4.0099e - 05, \quad 5\% : 1.0567e - 01, \quad 9\% : 1.7728e - 02$$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$$KStest2 : Conc1 : h = 1, p = 0.0046, ks2stat = 0.6667$$

$$RStest : Conc1 : h = 1, p = 0.0017$$

$$KStest2 : Conc2 : h = 1, p = 0.0009, ks2stat = 0.7500$$

$$RStest : Conc2 : h = 1, p = 0.0005$$

$$KStest2 : Conc3 : h = 0, p = 0.0656, ks2stat = 0.5000$$

$$RStest : Conc3 : h = 0, p = 0.0531$$

$$KStest2 : Conc4 : h = 0, p = 0.0656, ks2stat = 0.5000$$

$$RStest : Conc4 : h = 1, p = 0.0226$$

Male:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 11, FD N

= 10).

p-value for BL vs FD of male: 0.016738.

kstest2 results: h=1, p=2.1901e-04, ks2stat=0.4523

Post-hoc analysis:

0.5% : $4.2001e-03$, 2% : $8.3414e-02$, 5% : $2.0879e-02$, 9% : $8.0063e-02$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

KStest2 : Conc1 : h = 1, p = 0.0198, ks2stat = 0.6182

RStest : Conc1 : h = 1, p = 0.0067

KStest2 : Conc2 : h = 0, p = 0.2006, ks2stat = 0.4364

RStest : Conc2 : h = 0, p = 0.1300

KStest2 : Conc3 : h = 0, p = 0.0978, ks2stat = 0.5000

RStest : Conc3 : h = 1, p = 0.0317

KStest2 : Conc4 : h = 0, p = 0.2205, ks2stat = 0.4273

RStest : Conc4 : h = 0, p = 0.0845

3-way ANOVA Results:

Effect of condition: d.f. = 1, F = 62.6439, p = 0.0000.

Effect of concentration: d.f. = 3, F = 3.6016, p = 1.475601e-02.

Effect of gender: d.f. = 1, F = 106.6057, p = 0.0000.

8.3 Figure S.5c: FD Fr. of stops (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 12, Male N = 10).

Effect of concentration: d.f. = 3, F = 3.9968, p = 1.1616e-02.

Effect of gender: d.f. = 1, F = 8.8810, p = 0.0074.

kstest2 results: h=1, p=1.8518e-05, ks2stat=0.5000 (overall gender difference)

Post-hoc analysis:

0.5% : $1.8703e-02$, 2% : $4.5455e-04$, 5% : $2.3150e-01$, 9% : $1.1937e-02$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

KStest2 : Conc1 : h = 1, p = 0.0076, ks2stat = 0.6667

RStest : Conc1 : h = 1, p = 0.0111

KStest2 : Conc2 : h = 1, p = 0.0003, ks2stat = 0.8333

RStest : Conc2 : h = 1, p = 0.0014

KStest2 : Conc3 : h = 0, p = 0.2270, ks2stat = 0.4167

RStest : Conc3 : h = 0, p = 0.4098

KStest2 : Conc4 : h = 1, p = 0.0452, ks2stat = 0.5500

RStest : Conc4 : h = 1, p = 0.0092

BL vs FD

Female:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 12, FD N = 12).

p-value for BL vs FD of female: 0.010394.

kstest2 results: $h=1$, $p=4.6080e-05$, $ks2stat=0.4583$

Post-hoc analysis:

0.5% : $3.0300e-03$, 2% : $7.5065e-03$, 5% : $1.1942e-01$, 9% : $1.3927e-02$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

KStest2 : Conc1 : $h = 1, p = 0.0191, ks2stat = 0.5833$

RStest : Conc1 : $h = 1, p = 0.0043$

KStest2 : Conc2 : $h = 1, p = 0.0191, ks2stat = 0.5833$

RStest : Conc2 : $h = 1, p = 0.0024$

KStest2 : Conc3 : $h = 0, p = 0.1862, ks2stat = 0.4167$

RStest : Conc3 : $h = 0, p = 0.2366$

KStest2 : Conc4 : $h = 0, p = 0.0656, ks2stat = 0.5000$

RStest : Conc4 : $h = 1, p = 0.0194$

Male:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 11, FD N = 10).

p-value for BL vs FD of male: 0.1438.

kstest2 results: $h=1$, $p=4.8245e-06$, $ks2stat=0.5386$

Post-hoc analysis:

0.5% : $9.9947e-02$, 2% : $1.9939e-01$, 5% : $1.1572e-01$, 9% : $1.9212e-01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

KStest2 : Conc1 : $h = 1, p = 0.0009, ks2stat = 0.8000$

RStest : Conc1 : $h = 1, p = 0.0022$

KStest2 : Conc2 : $h = 0, p = 0.0697, ks2stat = 0.5273$

RStest : Conc2 : $h = 0, p = 0.0725$

KStest2 : Conc3 : $h = 1, p = 0.0173, ks2stat = 0.6273$

RStest : Conc3 : $h = 1, p = 0.0028$

KStest2 : Conc4 : $h = 1, p = 0.0198, ks2stat = 0.6182$

RStest : Conc4 : $h = 1, p = 0.0448$

3-way ANOVA Results:

Effect of condition: d.f. = 1, $F = 19.5858$, $p = 0.0000$.

Effect of concentration: d.f. = 3, $F = 0.0367$, $p = 9.905584e-01$.

Effect of gender: d.f. = 1, $F = 14.1124$, $p = 0.0002$.

8.4 Figure S.5d: FD Fr. of high sp. runs (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 12, Male N = 10).

Effect of concentration: d.f. = 3, $F = 33.4826$, $p = 7.6444e-13$.

Effect of gender: d.f. = 1, $F = 5.9221$, $p = 0.0245$.

kstest2 results: $h=1$, $p=6.8336e-03$, $ks2stat=0.3500$ (overall gender difference)

Post-hoc analysis:

0.5% : $1.1326e - 02$, 2% : $1.2677e - 04$, 5% : $9.3261e - 01$, 9% : $1.6538e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 1, p = 0.0358, ks2stat = 0.5667$

$RStest : Conc1 : h = 1, p = 0.0111$

$KStest2 : Conc2 : h = 1, p = 0.0001, ks2stat = 0.9167$

$RStest : Conc2 : h = 1, p = 0.0003$

$KStest2 : Conc3 : h = 0, p = 0.9989, ks2stat = 0.1500$

$RStest : Conc3 : h = 0, p = 0.9212$

$KStest2 : Conc4 : h = 0, p = 0.5564, ks2stat = 0.3167$

$RStest : Conc4 : h = 0, p = 0.2485$

BL vs FD

Female:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 12, FD N = 12).

p-value for BL vs FD of female: 0.13035.

kstest2 results: h=0, p=8.3415e-02, ks2stat=0.2500

Post-hoc analysis:

0.5% : $1.5506e - 02$, 2% : $1.7542e - 02$, 5% : $5.6165e - 01$, 9% : $1.9334e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 1, p = 0.0191, ks2stat = 0.5833$

$RStest : Conc1 : h = 1, p = 0.0194$

$KStest2 : Conc2 : h = 1, p = 0.0046, ks2stat = 0.6667$

$RStest : Conc2 : h = 1, p = 0.0102$

$KStest2 : Conc3 : h = 0, p = 0.7864, ks2stat = 0.2500$

$RStest : Conc3 : h = 0, p = 0.5834$

$KStest2 : Conc4 : h = 0, p = 0.4333, ks2stat = 0.3333$

$RStest : Conc4 : h = 0, p = 0.2145$

Male:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 11, FD N = 10).

p-value for BL vs FD of male: 0.025096.

kstest2 results: h=1, p=3.0081e-03, ks2stat=0.3818

Post-hoc analysis:

0.5% : $4.9411e - 04$, 2% : $4.0639e - 01$, 5% : $1.5711e - 02$, 9% : $2.2641e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 1, p = 0.0046, ks2stat = 0.7091$
 $RStest : Conc1 : h = 1, p = 0.0028$
 $KStest2 : Conc2 : h = 0, p = 0.5376, ks2stat = 0.3273$
 $RStest : Conc2 : h = 0, p = 0.3418$
 $KStest2 : Conc3 : h = 0, p = 0.0551, ks2stat = 0.5455$
 $RStest : Conc3 : h = 1, p = 0.0448$
 $KStest2 : Conc4 : h = 0, p = 0.4339, ks2stat = 0.3545$
 $RStest : Conc4 : h = 0, p = 0.2178$

3-way ANOVA Results:

Effect of condition: d.f. = 1, F = 25.5890, p = 0.0000.

Effect of concentration: d.f. = 3, F = 18.7077, p = 1.645782e-10.

Effect of gender: d.f. = 1, F = 52.8710, p = 0.0000.

8.5 Figure S.5e: FD Time OS feeder (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 12, Male N = 10).

Effect of concentration: d.f. = 3, F = 45.0059, p = 2.3011e-15.

Effect of gender: d.f. = 1, F = 0.7749, p = 0.3892.

kstest2 results: h=0, p=2.6677e-01, ks2stat=0.2083 (overall gender difference)

Post-hoc analysis:

0.5% : $2.8309e - 01$, 2% : $1.3761e - 02$, 5% : $8.4288e - 01$, 9% : $5.6653e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.4896, ks2stat = 0.3333$
 $RStest : Conc1 : h = 0, p = 0.3891$
 $KStest2 : Conc2 : h = 0, p = 0.0567, ks2stat = 0.5333$
 $RStest : Conc2 : h = 1, p = 0.0149$
 $KStest2 : Conc3 : h = 0, p = 0.9636, ks2stat = 0.2000$
 $RStest : Conc3 : h = 0, p = 0.8940$
 $KStest2 : Conc4 : h = 0, p = 0.3689, ks2stat = 0.3667$
 $RStest : Conc4 : h = 0, p = 0.5716$

BL vs FD

Female:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 12, FD N = 12).

p-value for BL vs FD of female: 0.23688.

kstest2 results: h=1, p=4.8054e-02, ks2stat=0.2708

Post-hoc analysis:

0.5% : $2.8018e - 02$, 2% : $8.2300e - 03$, 5% : $3.6018e - 01$, 9% : $7.4730e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.1862, ks2stat = 0.4167$
 $RStest : Conc1 : h = 1, p = 0.0399$
 $KStest2 : Conc2 : h = 0, p = 0.0656, ks2stat = 0.5000$
 $RStest : Conc2 : h = 1, p = 0.0163$
 $KStest2 : Conc3 : h = 0, p = 0.1862, ks2stat = 0.4167$
 $RStest : Conc3 : h = 0, p = 0.1651$
 $KStest2 : Conc4 : h = 0, p = 0.7864, ks2stat = 0.2500$
 $RStest : Conc4 : h = 0, p = 0.4510$

Male:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 11, FD N = 10).

p-value for BL vs FD of male: 0.19499.

kstest2 results: h=0, p=7.2583e-02, ks2stat=0.2727

Post-hoc analysis:

0.5% : $5.5760e - 02$, 2% : $4.2774e - 01$, 5% : $6.6086e - 01$, 9% : $2.2116e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 1, p = 0.0227, ks2stat = 0.6091$
 $RStest : Conc1 : h = 1, p = 0.0342$
 $KStest2 : Conc2 : h = 0, p = 0.4339, ks2stat = 0.3545$
 $RStest : Conc2 : h = 0, p = 0.2872$
 $KStest2 : Conc3 : h = 0, p = 0.8603, ks2stat = 0.2455$
 $RStest : Conc3 : h = 0, p = 0.6961$
 $KStest2 : Conc4 : h = 0, p = 0.0876, ks2stat = 0.5091$
 $RStest : Conc4 : h = 0, p = 0.1675$

3-way ANOVA Results:

Effect of condition: d.f. = 1, F = 9.3414, p = 0.0026.

Effect of concentration: d.f. = 3, F = 20.1509, p = 3.395296e-11.

Effect of gender: d.f. = 1, F = 6.1638, p = 0.0140.

8.6 Figure S.5f. BL vs FD Distance traveled (Approach trials)

Effect of condition: d.f. = 1, F = 10.2599, p = 0.0033.

8.7 Figure S.5g. BL vs FD Number of stopping points (Approach trials)

Effect of condition: d.f. = 1, F = 5.9745, p = 0.0208.

8.8 Figure S.5h. BL vs FD Number of high speed runs (Approach trials)

Effect of condition: d.f. = 1, F = 0.6510, p = 0.4263.

8.9 Figure S.5i. BL vs FD Proportion of trials outside all reward zone (Approach trials)

Effect of condition: d.f. = 1, F = 3.2717, p = 0.0809.

8.10 Figure S.5j. BL vs FD Distance traveled (Reject trials)

Effect of condition: d.f. = 1, $F = 17.8994$, $p = 0.0002$.

8.11 Figure S.5k. BL vs FD Number of stopping points (Reject trials)

Effect of condition: d.f. = 1, $F = 2.2523$, $p = 0.1424$.

8.12 Figure S.5l. BL vs FD Number of high speed runs (Reject trials)

Effect of condition: d.f. = 1, $F = 9.8747$, $p = 0.0034$.

8.13 Figure S.5m. BL vs FD Proportion of trials outside all reward zone (Reject trials)

Effect of condition: d.f. = 1, $F = 7.0077$, $p = 0.0121$.

9 Supplemental Figure 6

9.1 Figure S.6a: BA Distance (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female $N = 12$, Male $N = 10$).

Effect of concentration: d.f. = 3, $F = 2.4366$, $p = 7.3371e-02$.

Effect of gender: d.f. = 1, $F = 17.9034$, $p = 0.0004$.

kstest2 results: $h=1$, $p=2.4759e-06$, $ks2stat=0.5417$ (overall gender difference)

Post-hoc analysis:

$$0.5\% : 1.2714e - 02, \quad 2\% : 5.9126e - 02, \quad 5\% : 8.5187e - 04, \quad 9\% : 1.1225e - 03$$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$$KStest2 : Conc1 : h = 1, p = 0.0220, ks2stat = 0.6000$$

$$RStest : Conc1 : h = 1, p = 0.0092$$

$$KStest2 : Conc2 : h = 0, p = 0.0567, ks2stat = 0.5333$$

$$RStest : Conc2 : h = 0, p = 0.0806$$

$$KStest2 : Conc3 : h = 1, p = 0.0076, ks2stat = 0.6667$$

$$RStest : Conc3 : h = 1, p = 0.0022$$

$$KStest2 : Conc4 : h = 1, p = 0.0076, ks2stat = 0.6667$$

$$RStest : Conc4 : h = 1, p = 0.0041$$

BL vs Initial Task

Female:

Statistical significance was determined by Repeated measures analysis of variance. (BL $N = 12$, Initial Task $N = 12$).

p-value for BL vs initial task of female: 0.01429.

kstest2 results: $h=1$, $p=4.6080e-05$, $ks2stat=0.4583$

Post-hoc analysis:

$$0.5\% : 6.7266e - 02, \quad 2\% : 1.6070e - 02, \quad 5\% : 3.1394e - 01, \quad 9\% : 9.0362e - 03$$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.0656, ks2stat = 0.5000$
 $RStest : Conc1 : h = 0, p = 0.0999$
 $KStest2 : Conc2 : h = 1, p = 0.0191, ks2stat = 0.5833$
 $RStest : Conc2 : h = 1, p = 0.0304$
 $KStest2 : Conc3 : h = 0, p = 0.0656, ks2stat = 0.5000$
 $RStest : Conc3 : h = 0, p = 0.1749$
 $KStest2 : Conc4 : h = 0, p = 0.0656, ks2stat = 0.5000$
 $RStest : Conc4 : h = 1, p = 0.0086$

Male:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 11, Initial Task N = 10).

p-value for BL vs initial task of male: 0.013586.

kstest2 results: h=1, p=1.3560e-03, ks2stat=0.4045

Post-hoc analysis:

0.5% : $1.3573e - 02$, 2% : $3.4304e - 02$, 5% : $4.5088e - 02$, 9% : $5.5697e - 02$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.0782, ks2stat = 0.5182$
 $RStest : Conc1 : h = 1, p = 0.0221$
 $KStest2 : Conc2 : h = 1, p = 0.0259, ks2stat = 0.6000$
 $RStest : Conc2 : h = 1, p = 0.0265$
 $KStest2 : Conc3 : h = 0, p = 0.2006, ks2stat = 0.4364$
 $RStest : Conc3 : h = 0, p = 0.0528$
 $KStest2 : Conc4 : h = 0, p = 0.2418, ks2stat = 0.4182$
 $RStest : Conc4 : h = 0, p = 0.1300$

3-way ANOVA Results:

Effect of condition: d.f. = 1, F = 35.7328, p = 0.0000.

Effect of concentration: d.f. = 3, F = 1.6025, p = 1.907367e-01.

Effect of gender: d.f. = 1, F = 75.0599, p = 0.0000.

9.2 Figure S.6b: PA Distance (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 10, Male N = 10).

Effect of concentration: d.f. = 3, F = 0.7077, p = 5.5161e-01.

Effect of gender: d.f. = 1, F = 4.6430, p = 0.0450.

kstest2 results: h=1, p=1.0793e-02, ks2stat=0.3500 (overall gender difference)

Post-hoc analysis:

0.5% : $9.3255e - 02$, 2% : $8.9902e - 02$, 5% : $5.4953e - 01$, 9% : $6.7305e - 03$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 1, p = 0.0310, ks2stat = 0.6000$
 $RStest : Conc1 : h = 0, p = 0.0890$
 $KStest2 : Conc2 : h = 0, p = 0.3129, ks2stat = 0.4000$
 $RStest : Conc2 : h = 0, p = 0.1212$
 $KStest2 : Conc3 : h = 0, p = 0.3129, ks2stat = 0.4000$
 $RStest : Conc3 : h = 0, p = 0.6232$
 $KStest2 : Conc4 : h = 1, p = 0.0069, ks2stat = 0.7000$
 $RStest : Conc4 : h = 1, p = 0.0113$

BL vs Late Task

Female:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 12, Late Task N = 10).

p-value for BL vs late task of female: 0.72859.

kstest2 results: h=0, p=3.6205e-01, ks2stat=0.1917

Post-hoc analysis:

0.5% : $8.6636e - 01$, 2% : $5.2765e - 01$, 5% : $4.3035e - 01$, 9% : $2.4643e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.7647, ks2stat = 0.2667$
 $RStest : Conc1 : h = 0, p = 0.6682$
 $KStest2 : Conc2 : h = 0, p = 0.6259, ks2stat = 0.3000$
 $RStest : Conc2 : h = 0, p = 0.5310$
 $KStest2 : Conc3 : h = 0, p = 0.4896, ks2stat = 0.3333$
 $RStest : Conc3 : h = 0, p = 0.5752$
 $KStest2 : Conc4 : h = 0, p = 0.3689, ks2stat = 0.3667$
 $RStest : Conc4 : h = 0, p = 0.1985$

Male:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 11, Late Task N = 10).

p-value for BL vs late task of male: 0.13682.

kstest2 results: h=1, p=1.1240e-02, ks2stat=0.3409

Post-hoc analysis:

0.5% : $9.0183e - 02$, 2% : $5.1266e - 01$, 5% : $9.7800e - 02$, 9% : $2.6146e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.0876, ks2stat = 0.5091$
 $RStest : Conc1 : h = 0, p = 0.0845$
 $KStest2 : Conc2 : h = 0, p = 0.2890, ks2stat = 0.4000$
 $RStest : Conc2 : h = 0, p = 0.5035$
 $KStest2 : Conc3 : h = 0, p = 0.0978, ks2stat = 0.5000$
 $RStest : Conc3 : h = 0, p = 0.2178$
 $KStest2 : Conc4 : h = 0, p = 0.5742, ks2stat = 0.3182$
 $RStest : Conc4 : h = 0, p = 0.4181$

3-way ANOVA Results:

Effect of condition: d.f. = 1, $F = 4.8163$, $p = 0.0296$.

Effect of concentration: d.f. = 3, $F = 0.5512$, $p = 6.480692e-01$.

Effect of gender: d.f. = 1, $F = 46.8601$, $p = 0.0000$.

9.3 Figure S.6c: Fraction of sigmoid

Statistical significance was determined by one-way analysis of variance. (Female BL = 10, Male BL = 10, Female Oxy = 5, Male Oxy = 5, Female Incub = 6, Male Incub = 6, Female PA = 10, Male PA = 10)

p-value for significance of difference between the groups: $1.0469e-09$.

Post-hoc analysis by Tukey's HSD method:

FemaleBLandMaleBL : 0.9981

FemaleBLandFemalePA : 0.9993

MaleBLandMalePA : 0.3631

9.4 Figure S.6d: During Oxy Approach time (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 5, Male N = 5).

Effect of concentration: d.f. = 3, $F = 2.4534$, $p = 8.7784e-02$.

Effect of gender: d.f. = 1, $F = 6.7698$, $p = 0.0315$.

kstest2 results: $h=1$, $p=2.3213e-02$, $ks2stat=0.4500$ (overall gender difference)

Post-hoc analysis:

0.5% : $3.1246e-03$, 2% : $5.8901e-01$, 5% : $3.6169e-02$, 9% : $9.2633e-01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

KStest2 : Conc1 : $h = 1, p = 0.0038, ks2stat = 1.0000$

RStest : Conc1 : $h = 1, p = 0.0079$

KStest2 : Conc2 : $h = 0, p = 0.9996, ks2stat = 0.2000$

RStest : Conc2 : $h = 0, p = 0.6905$

KStest2 : Conc3 : $h = 1, p = 0.0361, ks2stat = 0.8000$

RStest : Conc3 : $h = 0, p = 0.0556$

KStest2 : Conc4 : $h = 0, p = 0.6974, ks2stat = 0.4000$

RStest : Conc4 : $h = 0, p = 1.0000$

BL vs Self admin. Oxy

Female:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 12, Self admin. Oxy N = 5).

p-value for BL vs Self admin. Oxy of female: 0.95625.

kstest2 results: $h=0$, $p=8.3454e-01$, $ks2stat=0.1596$

Post-hoc analysis:

0.5% : $2.0591e-01$, 2% : $9.2070e-01$, 5% : $6.9608e-01$, 9% : $1.7620e-01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.1707, ks2stat = 0.5455$
 $RStest : Conc1 : h = 0, p = 0.2674$
 $KStest2 : Conc2 : h = 0, p = 0.9887, ks2stat = 0.2167$
 $RStest : Conc2 : h = 0, p = 0.7990$
 $KStest2 : Conc3 : h = 0, p = 0.4046, ks2stat = 0.4333$
 $RStest : Conc3 : h = 0, p = 0.6461$
 $KStest2 : Conc4 : h = 0, p = 0.5074, ks2stat = 0.4000$
 $RStest : Conc4 : h = 0, p = 0.3284$

Male:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 11, Self admin. Oxy N = 5).

p-value for BL vs Self admin. Oxy of male: 0.11333.

kstest2 results: h=0, p=6.9831e-02, ks2stat=0.3381

Post-hoc analysis:

0.5% : $2.1225e - 01$, 2% : $2.2855e - 01$, 5% : $7.6955e - 02$, 9% : $5.4354e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.6450, ks2stat = 0.3636$
 $RStest : Conc1 : h = 0, p = 0.3773$
 $KStest2 : Conc2 : h = 0, p = 0.5402, ks2stat = 0.4000$
 $RStest : Conc2 : h = 0, p = 0.4396$
 $KStest2 : Conc3 : h = 1, p = 0.0388, ks2stat = 0.7000$
 $RStest : Conc3 : h = 0, p = 0.0553$
 $KStest2 : Conc4 : h = 0, p = 0.4648, ks2stat = 0.4182$
 $RStest : Conc4 : h = 0, p = 0.4409$

3-way ANOVA Results:

Effect of condition: d.f. = 1, F = 1.6963, p = 0.1954.

Effect of concentration: d.f. = 3, F = 6.5884, p = 3.762867e-04.

Effect of gender: d.f. = 1, F = 4.8286, p = 0.0300.

9.5 Figure S.6e: During Oxy Time OS Feeder (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 5, Male N = 5).

Effect of concentration: d.f. = 3, F = 0.5016, p = 6.8473e-01.

Effect of gender: d.f. = 1, F = 2.4942, p = 0.1529.

kstest2 results: h=1, p=2.3213e-02, ks2stat=0.4500 (overall gender difference)

Post-hoc analysis:

0.5% : $3.2600e - 01$, 2% : $1.2515e - 01$, 5% : $3.5598e - 01$, 9% : $1.0995e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.2090, ks2stat = 0.6000$
 $RStest : Conc1 : h = 0, p = 0.3095$
 $KStest2 : Conc2 : h = 0, p = 0.2090, ks2stat = 0.6000$
 $RStest : Conc2 : h = 0, p = 0.2222$
 $KStest2 : Conc3 : h = 0, p = 0.2090, ks2stat = 0.6000$
 $RStest : Conc3 : h = 0, p = 0.3968$
 $KStest2 : Conc4 : h = 0, p = 0.2090, ks2stat = 0.6000$
 $RStest : Conc4 : h = 0, p = 0.2222$

BL vs Self admin. Oxy

Female:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 12, Self admin. Oxy N = 5).

p-value for BL vs Self admin. Oxy of female: 0.096217.

kstest2 results: h=1, p=4.6360e-03, ks2stat=0.4458

Post-hoc analysis:

0.5% : $2.1543e - 01$, 2% : $3.5559e - 02$, 5% : $2.7408e - 01$, 9% : $2.8956e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.3153, ks2stat = 0.4667$
 $RStest : Conc1 : h = 0, p = 0.1542$
 $KStest2 : Conc2 : h = 1, p = 0.0259, ks2stat = 0.7167$
 $RStest : Conc2 : h = 1, p = 0.0343$
 $KStest2 : Conc3 : h = 0, p = 0.7348, ks2stat = 0.3333$
 $RStest : Conc3 : h = 0, p = 0.6299$
 $KStest2 : Conc4 : h = 0, p = 0.0671, ks2stat = 0.6333$
 $RStest : Conc4 : h = 0, p = 0.1503$

Male:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 11, Self admin. Oxy N = 5).

p-value for BL vs Self admin. Oxy of male: 0.2521.

kstest2 results: h=0, p=1.3724e-01, ks2stat=0.3000

Post-hoc analysis:

0.5% : $3.6395e - 01$, 2% : $5.1022e - 01$, 5% : $1.7972e - 01$, 9% : $3.6020e - 02$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.7677, ks2stat = 0.3273$
 $RStest : Conc1 : h = 0, p = 0.7628$
 $KStest2 : Conc2 : h = 0, p = 0.7072, ks2stat = 0.3455$
 $RStest : Conc2 : h = 0, p = 0.4592$
 $KStest2 : Conc3 : h = 0, p = 0.4648, ks2stat = 0.4182$
 $RStest : Conc3 : h = 0, p = 0.2088$
 $KStest2 : Conc4 : h = 1, p = 0.0101, ks2stat = 0.8000$
 $RStest : Conc4 : h = 0, p = 0.0641$

3-way ANOVA Results:

Effect of condition: d.f. = 1, $F = 0.2763$, $p = 0.6001$.

Effect of concentration: d.f. = 3, $F = 1.4758$, $p = 2.246270e-01$.

Effect of gender: d.f. = 1, $F = 1.7476$, $p = 0.1887$.

9.6 Figure S.6f: During Oxy Fr. of high sp. runs

Statistical significance was determined by Repeated measures analysis of variance. (Female $N = 5$, Male $N = 5$).

Effect of concentration: d.f. = 3, $F = 0.5993$, $p = 6.2169e-01$.

Effect of gender: d.f. = 1, $F = 3.7946$, $p = 0.0873$.

kstest2 results: $h=1$, $p=8.1617e-03$, $ks2stat=0.5000$ (overall gender difference)

Post-hoc analysis:

$$0.5\% : 1.9249e - 01, \quad 2\% : 1.3288e - 01, \quad 5\% : 5.9820e - 02, \quad 9\% : 5.9578e - 02$$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$$KStest2 : Conc1 : h = 0, p = 0.6974, ks2stat = 0.4000$$

$$RStest : Conc1 : h = 0, p = 0.2222$$

$$KStest2 : Conc2 : h = 0, p = 0.6974, ks2stat = 0.4000$$

$$RStest : Conc2 : h = 0, p = 0.2222$$

$$KStest2 : Conc3 : h = 0, p = 0.2090, ks2stat = 0.6000$$

$$RStest : Conc3 : h = 0, p = 0.0952$$

$$KStest2 : Conc4 : h = 0, p = 0.2090, ks2stat = 0.6000$$

$$RStest : Conc4 : h = 0, p = 0.0952$$

BL vs Self admin. Oxy

Female:

Statistical significance was determined by Repeated measures analysis of variance. (BL $N = 12$, Self admin. Oxy $N = 5$).

p-value for BL vs Self admin. Oxy of female: 0.026023.

kstest2 results: $h=1$, $p=1.3666e-02$, $ks2stat=0.4042$

Post-hoc analysis:

$$0.5\% : 2.8828e - 02, \quad 2\% : 2.3955e - 02, \quad 5\% : 8.6383e - 02, \quad 9\% : 6.4387e - 02$$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$$KStest2 : Conc1 : h = 0, p = 0.2086, ks2stat = 0.5167$$

$$RStest : Conc1 : h = 0, p = 0.1296$$

$$KStest2 : Conc2 : h = 0, p = 0.2406, ks2stat = 0.5000$$

$$RStest : Conc2 : h = 0, p = 0.0637$$

$$KStest2 : Conc3 : h = 0, p = 0.2086, ks2stat = 0.5167$$

$$RStest : Conc3 : h = 0, p = 0.2786$$

$$KStest2 : Conc4 : h = 0, p = 0.5074, ks2stat = 0.4000$$

$$RStest : Conc4 : h = 0, p = 0.3284$$

Male:

Statistical significance was determined by Repeated measures analysis of variance. (BL $N = 11$, Self

admin. Oxy N = 5).
p-value for BL vs Self admin. Oxy of male: 0.0071297.
kstest2 results: h=1, p=1.6397e-05, ks2stat=0.6273

Post-hoc analysis:

0.5% : $1.6520e - 02$, 2% : $1.9696e - 02$, 5% : $2.7185e - 03$, 9% : $1.8464e - 02$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

KStest2 : Conc1 : h = 1, p = 0.0313, ks2stat = 0.7091
RStest : Conc1 : h = 0, p = 0.0687
KStest2 : Conc2 : h = 0, p = 0.1019, ks2stat = 0.6000
RStest : Conc2 : h = 1, p = 0.0380
KStest2 : Conc3 : h = 1, p = 0.0252, ks2stat = 0.7273
RStest : Conc3 : h = 1, p = 0.0055
KStest2 : Conc4 : h = 0, p = 0.0848, ks2stat = 0.6182
RStest : Conc4 : h = 1, p = 0.0380

3-way ANOVA Results:

Effect of condition: d.f. = 1, F = 0.0009, p = 0.9763.
Effect of concentration: d.f. = 3, F = 1.8354, p = 1.444206e-01.
Effect of gender: d.f. = 1, F = 3.4630, p = 0.0652.

9.7 Figure S.6g: During Oxy Distance (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 5, Male N = 5).

Effect of concentration: d.f. = 3, F = 0.8971, p = 4.5703e-01.

Effect of gender: d.f. = 1, F = 4.6420, p = 0.0633.

kstest2 results: h=1, p=7.2529e-04, ks2stat=0.6000 (overall gender difference)

Post-hoc analysis:

0.5% : $1.7344e - 01$, 2% : $9.6526e - 02$, 5% : $5.1225e - 02$, 9% : $4.6853e - 02$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

KStest2 : Conc1 : h = 0, p = 0.2090, ks2stat = 0.6000
RStest : Conc1 : h = 0, p = 0.2222
KStest2 : Conc2 : h = 0, p = 0.2090, ks2stat = 0.6000
RStest : Conc2 : h = 0, p = 0.0952
KStest2 : Conc3 : h = 1, p = 0.0361, ks2stat = 0.8000
RStest : Conc3 : h = 0, p = 0.0556
KStest2 : Conc4 : h = 0, p = 0.2090, ks2stat = 0.6000
RStest : Conc4 : h = 0, p = 0.0952

BL vs Self admin. Oxy

Female:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 12, Self admin. Oxy N = 5).

p-value for BL vs Self admin. Oxy of female: 0.044575.

kstest2 results: $h=1$, $p=7.5094e-04$, $ks2stat=0.5083$

Post-hoc analysis:

0.5% : $9.0352e-02$, 2% : $3.8910e-02$, 5% : $8.9572e-02$, 9% : $3.1966e-02$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

KStest2 : Conc1 : $h = 0, p = 0.3153, ks2stat = 0.4667$
RStest : Conc1 : $h = 0, p = 0.1946$
KStest2 : Conc2 : $h = 0, p = 0.0950, ks2stat = 0.6000$
RStest : Conc2 : $h = 0, p = 0.1037$
KStest2 : Conc3 : $h = 0, p = 0.2086, ks2stat = 0.5167$
RStest : Conc3 : $h = 0, p = 0.0818$
KStest2 : Conc4 : $h = 0, p = 0.0671, ks2stat = 0.6333$
RStest : Conc4 : $h = 1, p = 0.0365$

Male:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 11, Self admin. Oxy N = 5).

p-value for BL vs Self admin. Oxy of male: 0.0032032.

kstest2 results: $h=1$, $p=6.9107e-06$, $ks2stat=0.6500$

Post-hoc analysis:

0.5% : $5.9931e-03$, 2% : $2.1350e-02$, 5% : $1.3194e-03$, 9% : $9.8642e-03$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

KStest2 : Conc1 : $h = 1, p = 0.0313, ks2stat = 0.7091$
RStest : Conc1 : $h = 1, p = 0.0275$
KStest2 : Conc2 : $h = 0, p = 0.0703, ks2stat = 0.6364$
RStest : Conc2 : $h = 0, p = 0.0517$
KStest2 : Conc3 : $h = 1, p = 0.0252, ks2stat = 0.7273$
RStest : Conc3 : $h = 1, p = 0.0087$
KStest2 : Conc4 : $h = 0, p = 0.0848, ks2stat = 0.6182$
RStest : Conc4 : $h = 1, p = 0.0275$

3-way ANOVA Results:

Effect of condition: d.f. = 1, $F = 0.1576$, $p = 0.6921$.

Effect of concentration: d.f. = 3, $F = 0.3760$, $p = 7.704671e-01$.

Effect of gender: d.f. = 1, $F = 0.0742$, $p = 0.7858$.

9.8 Figure S.6h: After Oxy Approach time (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 6, Male N = 6).

Effect of concentration: d.f. = 3, $F = 8.5277$, $p = 3.0232e-04$.

Effect of gender: d.f. = 1, $F = 0.5135$, $p = 0.4900$.

kstest2 results: $h=0$, $p=8.6076e-01$, $ks2stat=0.1667$ (overall gender difference)

Post-hoc analysis:

0.5% : $6.9253e - 01$, 2% : $6.3994e - 01$, 5% : $6.0961e - 01$, 9% : $7.4470e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

KStest2 : Conc1 : $h = 0, p = 0.8096, ks2stat = 0.3333$

RStest : Conc1 : $h = 0, p = 0.5887$

KStest2 : Conc2 : $h = 0, p = 0.8096, ks2stat = 0.3333$

RStest : Conc2 : $h = 0, p = 0.6991$

KStest2 : Conc3 : $h = 0, p = 0.3180, ks2stat = 0.5000$

RStest : Conc3 : $h = 0, p = 0.4848$

KStest2 : Conc4 : $h = 0, p = 0.8096, ks2stat = 0.3333$

RStest : Conc4 : $h = 0, p = 0.8182$

BL vs Abstinence

Female:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 12, Abstinence N = 6).

p-value for BL vs initial task of female: 0.8104.

kstest2 results: $h=0$, $p=5.1065e-01$, $ks2stat=0.1986$

Post-hoc analysis:

0.5% : $9.1448e - 01$, 2% : $8.9431e - 01$, 5% : $7.9708e - 01$, 9% : $6.4577e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

KStest2 : Conc1 : $h = 0, p = 0.2971, ks2stat = 0.4545$

RStest : Conc1 : $h = 0, p = 0.7325$

KStest2 : Conc2 : $h = 0, p = 0.9290, ks2stat = 0.2500$

RStest : Conc2 : $h = 0, p = 0.7503$

KStest2 : Conc3 : $h = 0, p = 0.9290, ks2stat = 0.2500$

RStest : Conc3 : $h = 0, p = 0.8916$

KStest2 : Conc4 : $h = 0, p = 0.9290, ks2stat = 0.2500$

RStest : Conc4 : $h = 0, p = 0.6820$

Male:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 11, Abstinence N = 6).

p-value for BL vs initial task of male: 0.8535.

kstest2 results: $h=0$, $p=7.5068e-01$, $ks2stat=0.1667$

Post-hoc analysis:

0.5% : $8.1127e - 01$, 2% : $9.0195e - 01$, 5% : $9.8759e - 01$, 9% : $7.9737e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.7395, ks2stat = 0.3182$
 $RStest : Conc1 : h = 0, p = 0.4623$
 $KStest2 : Conc2 : h = 0, p = 0.8163, ks2stat = 0.3000$
 $RStest : Conc2 : h = 0, p = 0.7925$
 $KStest2 : Conc3 : h = 0, p = 0.4725, ks2stat = 0.4000$
 $RStest : Conc3 : h = 0, p = 0.7925$
 $KStest2 : Conc4 : h = 0, p = 0.2971, ks2stat = 0.4545$
 $RStest : Conc4 : h = 0, p = 0.6605$

3-way ANOVA Results:

Effect of condition: d.f. = 1, F = 0.2225, p = 0.6379.

Effect of concentration: d.f. = 3, F = 11.7345, p = 8.060344e-07.

Effect of gender: d.f. = 1, F = 1.4499, p = 0.2308.

9.9 Figure S.6i: After Oxy Time OS Feeder (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 6, Male N = 6).

Effect of concentration: d.f. = 3, F = 7.6904, p = 5.9005e-04.

Effect of gender: d.f. = 1, F = 2.5630, p = 0.1405.

kstest2 results: h=0, p=2.1598e-01, ks2stat=0.2917 (overall gender difference)

Post-hoc analysis:

0.5% : 3.2825e - 01, 2% : 4.1626e - 01, 5% : 5.1375e - 02, 9% : 3.6430e - 01

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.3180, ks2stat = 0.5000$
 $RStest : Conc1 : h = 0, p = 0.3939$
 $KStest2 : Conc2 : h = 0, p = 0.8096, ks2stat = 0.3333$
 $RStest : Conc2 : h = 0, p = 0.5887$
 $KStest2 : Conc3 : h = 0, p = 0.0766, ks2stat = 0.6667$
 $RStest : Conc3 : h = 0, p = 0.0649$
 $KStest2 : Conc4 : h = 0, p = 0.8096, ks2stat = 0.3333$
 $RStest : Conc4 : h = 0, p = 0.4848$

BL vs Abstinence

Female:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 12, Abstinence N = 6).

p-value for BL vs initial task of female: 0.42819.

kstest2 results: h=0, p=6.9487e-02, ks2stat=0.3125

Post-hoc analysis:

0.5% : 3.6147e - 01, 2% : 8.1315e - 01, 5% : 5.1536e - 01, 9% : 4.0850e - 01

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.6693, ks2stat = 0.3333$
 $RStest : Conc1 : h = 0, p = 0.3731$
 $KStest2 : Conc2 : h = 0, p = 0.6693, ks2stat = 0.3333$
 $RStest : Conc2 : h = 0, p = 0.9462$
 $KStest2 : Conc3 : h = 0, p = 0.1877, ks2stat = 0.5000$
 $RStest : Conc3 : h = 0, p = 0.2579$
 $KStest2 : Conc4 : h = 0, p = 0.3842, ks2stat = 0.4167$
 $RStest : Conc4 : h = 0, p = 0.3704$

Male:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 11, Abstinence N = 6).

p-value for BL vs initial task of male: 0.50339.

kstest2 results: h=0, p=4.1694e-01, ks2stat=0.2159

Post-hoc analysis:

0.5% : $3.3679e - 01$, 2% : $8.9578e - 01$, 5% : $4.9842e - 01$, 9% : $3.3823e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.4722, ks2stat = 0.3939$
 $RStest : Conc1 : h = 0, p = 0.2455$
 $KStest2 : Conc2 : h = 0, p = 0.9857, ks2stat = 0.2121$
 $RStest : Conc2 : h = 0, p = 0.8641$
 $KStest2 : Conc3 : h = 0, p = 0.1106, ks2stat = 0.5606$
 $RStest : Conc3 : h = 0, p = 0.1708$
 $KStest2 : Conc4 : h = 0, p = 0.4722, ks2stat = 0.3939$
 $RStest : Conc4 : h = 0, p = 0.3108$

3-way ANOVA Results:

Effect of condition: d.f. = 1, F = 3.0791, p = 0.0817.

Effect of concentration: d.f. = 3, F = 8.0279, p = 6.104453e-05.

Effect of gender: d.f. = 1, F = 7.7287, p = 0.0063.

9.10 Figure S.6j: After Oxy Fr. of high sp. runs

Statistical significance was determined by Repeated measures analysis of variance. (Female N = 6, Male N = 6).

Effect of concentration: d.f. = 3, F = 6.9387, p = 1.1029e-03.

Effect of gender: d.f. = 1, F = 1.0006, p = 0.3408.

kstest2 results: h=0, p=5.0588e-02, ks2stat=0.3750 (overall gender difference)

Post-hoc analysis:

0.5% : $5.1260e - 01$, 2% : $3.1392e - 01$, 5% : $2.5092e - 01$, 9% : $3.6439e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 1.0000, ks2stat = 0.1667$
 $RStest : Conc1 : h = 0, p = 0.8182$
 $KStest2 : Conc2 : h = 0, p = 0.3180, ks2stat = 0.5000$
 $RStest : Conc2 : h = 0, p = 0.2403$
 $KStest2 : Conc3 : h = 0, p = 0.3180, ks2stat = 0.5000$
 $RStest : Conc3 : h = 0, p = 0.1797$
 $KStest2 : Conc4 : h = 1, p = 0.0122, ks2stat = 0.8333$
 $RStest : Conc4 : h = 1, p = 0.0411$

BL vs Abstinence

Female:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 12, Abstinence N = 6).

p-value for BL vs initial task of female: 0.81023.

kstest2 results: h=0, p=1.0713e-01, ks2stat=0.2917

Post-hoc analysis:

0.5% : $7.6146e - 01$, 2% : $3.6133e - 01$, 5% : $5.3077e - 01$, 9% : $4.9879e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.9994, ks2stat = 0.1667$
 $RStest : Conc1 : h = 0, p = 0.8916$
 $KStest2 : Conc2 : h = 0, p = 0.6693, ks2stat = 0.3333$
 $RStest : Conc2 : h = 0, p = 0.4371$
 $KStest2 : Conc3 : h = 0, p = 0.3842, ks2stat = 0.4167$
 $RStest : Conc3 : h = 0, p = 0.5532$
 $KStest2 : Conc4 : h = 0, p = 0.0799, ks2stat = 0.5833$
 $RStest : Conc4 : h = 0, p = 0.1025$

Male:

Statistical significance was determined by Repeated measures analysis of variance. (BL N = 11, Abstinence N = 6).

p-value for BL vs initial task of male: 0.36093.

kstest2 results: h=1, p=6.6954e-03, ks2stat=0.4129

Post-hoc analysis:

0.5% : $8.8333e - 02$, 2% : $6.2386e - 01$, 5% : $1.2699e - 01$, 9% : $5.0279e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 1, p = 0.0125, ks2stat = 0.7424$
 $RStest : Conc1 : h = 1, p = 0.0477$
 $KStest2 : Conc2 : h = 0, p = 0.9495, ks2stat = 0.2424$
 $RStest : Conc2 : h = 0, p = 0.8075$
 $KStest2 : Conc3 : h = 0, p = 0.1106, ks2stat = 0.5606$
 $RStest : Conc3 : h = 0, p = 0.0983$
 $KStest2 : Conc4 : h = 0, p = 0.5232, ks2stat = 0.3788$
 $RStest : Conc4 : h = 0, p = 0.4623$

3-way ANOVA Results:

Effect of condition: d.f. = 1, $F = 3.0081$, $p = 0.0853$.

Effect of concentration: d.f. = 3, $F = 4.3876$, $p = 5.656823e-03$.

Effect of gender: d.f. = 1, $F = 26.0124$, $p = 0.0000$.

9.11 Figure S.6k: After Oxy Distance (FvM)

Statistical significance was determined by Repeated measures analysis of variance. (Female $N = 6$, Male $N = 6$).

Effect of concentration: d.f. = 3, $F = 16.2563$, $p = 1.8477e-06$.

Effect of gender: d.f. = 1, $F = 1.0727$, $p = 0.3247$.

kstest2 results: $h=0$, $p=2.1598e-01$, $ks2stat=0.2917$ (overall gender difference)

Post-hoc analysis:

0.5% : $4.5320e - 01$, 2% : $4.5178e - 01$, 5% : $3.0428e - 01$, 9% : $2.1404e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.8096, ks2stat = 0.3333$

$RStest : Conc1 : h = 0, p = 0.4848$

$KStest2 : Conc2 : h = 0, p = 0.8096, ks2stat = 0.3333$

$RStest : Conc2 : h = 0, p = 0.4848$

$KStest2 : Conc3 : h = 0, p = 0.0766, ks2stat = 0.6667$

$RStest : Conc3 : h = 0, p = 0.3939$

$KStest2 : Conc4 : h = 0, p = 0.3180, ks2stat = 0.5000$

$RStest : Conc4 : h = 0, p = 0.2403$

BL vs Abstinence

Female:

Statistical significance was determined by Repeated measures analysis of variance. (BL $N = 12$, Abstinence $N = 6$).

p-value for BL vs initial task of female: 0.44479.

kstest2 results: $h=0$, $p=1.0713e-01$, $ks2stat=0.2917$

Post-hoc analysis:

0.5% : $1.4870e - 01$, 2% : $2.5012e - 01$, 5% : $9.4955e - 01$, 9% : $9.9174e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

$KStest2 : Conc1 : h = 0, p = 0.6693, ks2stat = 0.3333$

$RStest : Conc1 : h = 0, p = 0.1797$

$KStest2 : Conc2 : h = 0, p = 0.6693, ks2stat = 0.3333$

$RStest : Conc2 : h = 0, p = 0.3355$

$KStest2 : Conc3 : h = 0, p = 0.1877, ks2stat = 0.5000$

$RStest : Conc3 : h = 0, p = 0.4371$

$KStest2 : Conc4 : h = 0, p = 0.9290, ks2stat = 0.2500$

$RStest : Conc4 : h = 0, p = 0.7503$

Male:

Statistical significance was determined by Repeated measures analysis of variance. (BL $N = 11$, Abstinence $N = 6$).

p-value for BL vs initial task of male: 0.0092961.
kstest2 results: h=1, p=1.2593e-04, ks2stat=0.5379

Post-hoc analysis:

0.5% : $1.2197e - 03$, 2% : $1.8008e - 02$, 5% : $2.3136e - 02$, 9% : $1.0416e - 01$

KStest2 and Wilcoxon rank sum test Results (complementary to post-hoc analysis)

KStest2 : Conc1 : h = 1, p = 0.0125, ks2stat = 0.7424

RStest : Conc1 : h = 1, p = 0.0071

KStest2 : Conc2 : h = 0, p = 0.1997, ks2stat = 0.5000

RStest : Conc2 : h = 1, p = 0.0365

KStest2 : Conc3 : h = 1, p = 0.0480, ks2stat = 0.6364

RStest : Conc3 : h = 0, p = 0.0616

KStest2 : Conc4 : h = 1, p = 0.0401, ks2stat = 0.6515

RStest : Conc4 : h = 0, p = 0.0616

3-way ANOVA Results:

Effect of condition: d.f. = 1, F = 21.5238, p = 0.0000.

Effect of concentration: d.f. = 3, F = 3.6650, p = 1.418832e-02.

Effect of gender: d.f. = 1, F = 27.9576, p = 0.0000.

9.12 Figure S.6m: Fraction of sigmoid

Statistical significance was determined by one-way analysis of variance. (Female BL = 10, Male BL = 10, Female Oxy = 5, Male Oxy = 5, Female Incub = 6, Male Incub = 6, Female PA = 10, Male PA = 10)

p-value for significance of difference between the groups: 1.0469e-09.

Post-hoc analysis by Tukey's HSD method:

FemaleBLandMaleBL : 0.9981

FemaleBLandFemaleOxy : 6.5947e - 06

FemaleBLandFemaleIncub : 0.0132

MaleBLandMaleOxy : 4.0017e - 06

MaleBLandMaleIncub : 3.3984e - 04