Supplemental Materials

Supplemental Table 1.

Participant demographic characteristics and video game experience by pattern of cannabis use history

	Non-User (N=32)	Occasional User (N=23)	Daily User (N=31)	Total (N=86)
Age				
Mean (SD)	33.102 (5.054)	31.087 (4.544)	33.794 (5.757)	32.813 (5.248)
Range	25.680 - 42.210	25.050 - 41.250	25.440 - 45.290	25.050 - 45.290
Gender				
Male	13 (40.6%)	13 (56.5%)	17 (54.8%)	43 (50.0%)
Female	19 (59.4%)	10 (43.5%)	14 (45.2%)	43 (50.0%)
Race				
White	28 (87.5%)	22 (95.7%)	25 (80.6%)	75 (87.2%)
American Indian or Alaska Native	1 (3.1%)	0 (0.0%)	1 (3.2%)	2 (2.3%)
More than one race identified	2 (6.2%)	0 (0.0%)	5 (16.1%)	7 (8.1%)
Declined / No Response	1 (3.1%)	1 (4.3%)	0 (0.0%)	2 (2.3%)
Ethnicity				
Hispanic or Latino	4 (12.5%)	2 (8.7%)	6 (19.4%)	12 (14.0%)
Not Hispanic or Latino	28 (87.5%)	20 (87.0%)	25 (80.6%)	73 (84.9%)
Declined / No Response	0 (0.0%)	1 (4.3%)	0 (0.0%)	1 (1.2%)
Video Games Use				
Never	9 (28.1%)	7 (30.4%)	8 (25.8%)	24 (27.9%)
Sometimes	10 (31.2%)	3 (13.0%)	3 (9.7%)	16 (18.6%)
Occasional	6 (18.8%)	6 (26.1%)	8 (25.8%)	20 (23.3%)
Daily	7 (21.9%)	7 (30.4%)	12 (38.7%)	26 (30.2%)

Supplemental Table 2.

Outcome variables used for exploratory factor analysis

Task	Variable	Description	Stages?
Decision-Making	Proportion of False Starts and Timeout Trials **	The number of False Starts and Timeout Trials was summed and divided by the total number of trials presented across all trial stages.	No
	Proportion of Failed Trials***	For each trial stage, the proportion of failed starts was calculated by totaling the number of trials with failed judgment and dividing this by the total number of trials for that trial stage.	1, 2
	Average Time to complete tasks	The average time needed to complete each stage was calculated by summing the judgment time for all usable trials, and dividing by the number of usable trials for that trial stage.	1, 2
Spatial-Motor Control	Total Time Outside the Reticle	For each participant, the total time outside the reticle is calculated by summing their time outside the reticle from each of their three laps	No
	Total Time on Edge	For each participant, the total time spent on the edge is calculated by summing their time on the left edge of the screen with their time on the right edge of the screen from each of their three laps.	No
	Proportion of Objects Hit**	Throughout the task, participants are presented with both fixed and surprise objects to avoid. For each participant a total of 12 objects (fixed + surprise) were presented. Summing the total number of objects hit across the three laps and dividing this number by 12, resulted in the proportion of objects hit for each participant.	No
Reaction Time	Proportion of Correct Reactions**	For each trial stage, the proportion of correct reactions was calculated by summing the number of "Correct" outcomes and dividing by the total number of trials for that trial stage.	1, 2
	Maximum Reaction Time***	For each usable trial stage (i.e. those without a false start, a time out for no response, and an incorrect selection for choice reaction), the maximum reaction time was calculated by identifying the longest time interval needed to hit a button after the GO signal.	1, 2
	Average Reaction Time**	For each trial stage, the average reaction time was calculated by summing the reaction time for all usable trials and dividing by the number of usable trials for that trial stage.	1, 2
Working Memory	Total Replicated Shapes	For each trial stage, the total accurately replicated shapes were calculated by summing the accurately replicated shapes count across all trial numbers within a trial stage. Trials in which there was no response in the allocated time were tabulated as omission errors and were not used.	1 and 2, 3 and 4*
	Average Trial Length	For each trial stage, the average usable trial length was calculated by summing all trial usable lengths and dividing by the total number of trials for each stage, regardless of accuracy. Trials in which there was no response in the allocated time were tabulated as omission errors and were not used.	1 and 2, 3 and 4*

Note: For the Working Memory task, information was aggregated to summarize Trial Stages 1 and 2 together, and Trial Stages 3 and 4 together

*** Variables unable to be transformed to Gaussian Distribution*

**** Only Stage 1 Variable was able to be transformed*

Supplemental Table 3.

Pearson correlations between factor scores and SDLP at Pre and Post Timepoints, and the change in the scores (post minus pre)

Baseline								
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	SDLP
Factor 1	1.000	-0.031	-0.053	-0.116	-0.089	0.266	-0.137	0.296
Factor 2	-0.031	1.000	-0.061	0.022	-0.154	-0.168	-0.366	0.036
Factor 3	-0.053	-0.061	1.000	-0.264	0.066	0.015	0.140	0.074
Factor 4	-0.116	0.022	-0.264	1.000	-0.011	0.020	-0.287	-0.119
Factor 5	-0.089	-0.154	0.066	-0.011	1.000	-0.006	0.188	-0.080
Factor 6	0.266	-0.168	0.015	0.020	-0.006	1.000	-0.085	-0.127
Factor 7	-0.137	-0.366	0.140	-0.287	0.188	-0.085	1.000	0.022
SDLP	**0.296**	0.036	0.074	-0.119	-0.080	-0.127	0.022	1.000

Post								
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	SDLP
Factor 1	1.000	-0.066	-0.136	-0.272	-0.170	0.387	-0.132	0.290
Factor 2	-0.066	1.000	-0.060	0.113	-0.275	-0.237	-0.411	-0.069
Factor 3	-0.136	-0.060	1.000	0.040	-0.075	0.170	0.330	0.126
Factor 4	-0.272	0.113	0.040	1.000	0.283	-0.245	-0.164	0.091
Factor 5	-0.170	-0.275	-0.075	0.283	1.000	-0.091	0.186	-0.013
Factor 6	0.387	-0.237	0.170	-0.245	-0.091	1.000	0.089	0.038
Factor 7	-0.132	-0.411	0.330	-0.164	0.186	0.089	1.000	-0.041
SDLP	**0.290**	-0.069	0.126	0.091	-0.013	0.038	-0.041	1.000

Difference								
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	SDLP
Factor 1	1.000	-0.114	-0.241	-0.051	-0.216	0.433	-0.247	0.068
Factor 2	-0.114	1.000	-0.029	0.244	-0.232	-0.171	-0.453	0.057
Factor 3	-0.241	-0.029	1.000	-0.287	-0.114	-0.091	0.110	-0.118
Factor 4	-0.051	0.244	-0.287	1.000	-0.132	0.143	-0.416	0.203
Factor 5	-0.216	-0.232	-0.114	-0.132	1.000	-0.064	0.131	0.079
Factor 6	0.433	-0.171	-0.091	0.143	-0.064	1.000	-0.358	-0.111
Factor 7	-0.247	-0.453	0.110	-0.416	0.131	-0.358	1.000	0.000
SDLP	0.068	0.057	-0.118	**0.203**	0.079	-0.111	0.000	1.000

Note. SDLP = standard deviation of lateral placement. Bolding indciates significance at p<.05

Supplemental Table 4.

"Pre" Timepoint (Baseline) Factor Scores by Cannabis Use Group

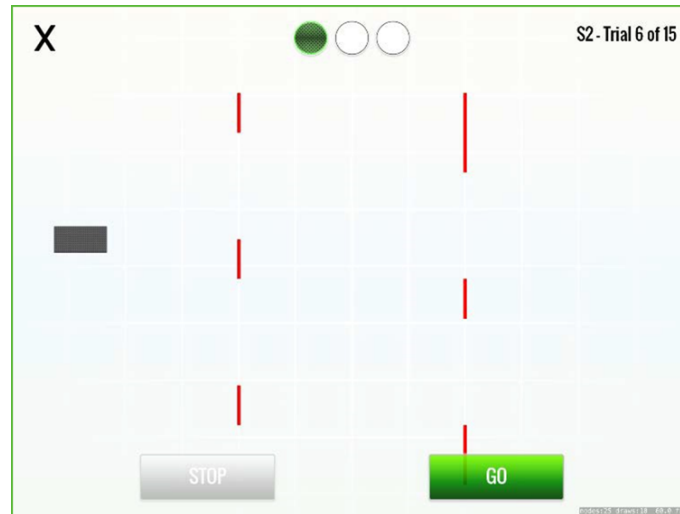|	Non-Use (N=32)	Occasional Use (N=23)	Daily Use (N=31)	Total (N=86)
1. Displaced & Delayed				
Mean (SD)	0.118 (0.916)	0.121 (0.968)	-0.212 (1.046)	-0.000 (0.980)
Range	-1.807 - 1.873	-2.183 - 1.872	-2.217 - 2.089	-2.217 - 2.089
2. Impaired Recall				
Mean (SD)	0.126 (1.102)	-0.038 (0.991)	-0.101 (1.203)	0.000 (1.104)
Range	-1.365 - 2.445	-1.915 - 2.306	-2.023 - 3.054	-2.023 - 3.054
3. Judgment Errors				
Mean (SD)	-0.184 (0.793)	0.002 (0.753)	0.189 (1.039)	-0.000 (0.885)
Range	-2.031 - 1.263	-1.31 - 1.9	-1.961 - 3.823	-2.031 - 3.823
4. Delayed Choice Reaction				
Mean (SD)	0.221 (1.149)	-0.184 (0.845)	-0.092 (1.177)	-0.000 (1.089)
Range	-1.521 - 3.278	-1.649 - 1.524	-3.872 - 1.75	-3.872 - 3.278
5. Delayed Simple Reaction				
Mean (SD)	-0.032 (0.922)	0.036 (1.195)	0.006 (0.824)	-0.000 (0.959)
Range	-1.431 - 2.386	-2.236 - 2.065	-1.521 - 1.574	-2.236 - 2.386
6. Inattentiveness				
Mean (SD)	-0.108 (0.829)	0.071 (0.901)	0.059 (1.022)	-0.000 (0.914)
Range	-1.153 - 2.746	-1.058 - 2.561	-1.239 - 3.079	-1.239 - 3.079
7. Recall and Reaction				
Mean (SD)	-0.012 (0.903)	-0.366 (0.952)	0.283 (1.099)	-0.000 (1.012)
Range	-1.599 - 1.78	-2.53 - 1.938	-2.032 - 4.037	-2.53 - 4.037

Supplemental Table 5.

"Post" Timepoint Factor Scores by Cannabis Use Group

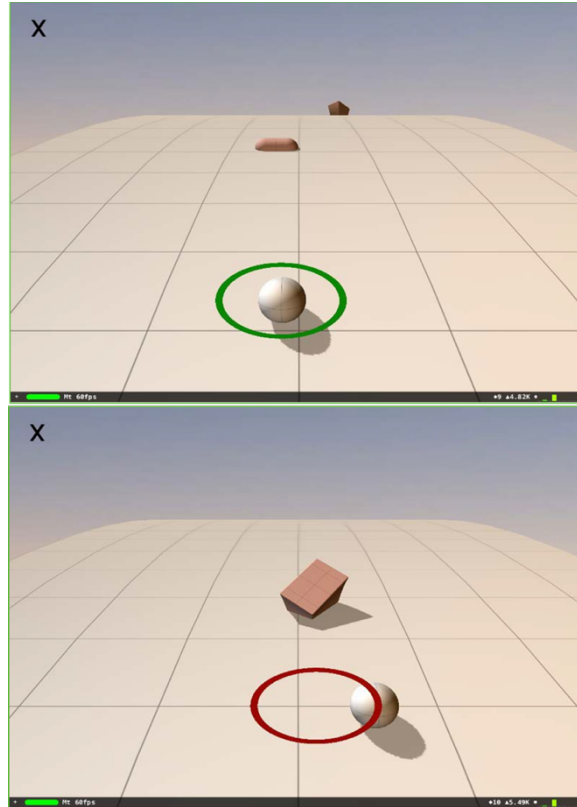|	No Use (N=32)	Occasional Use (N=23)	Daily Use (N=31)	Total (N=86)
1. Displaced & Delayed				
Mean (SD)	-0.101 (1.038)	-0.177 (1.062)	0.236 (0.913)	-0.000 (1.006)
Range	-2.65 - 1.755	-2.691 - 2.025	-1.021 - 2.183	-2.691 - 2.183
2. Impaired Recall				
Mean (SD)	0.087 (0.921)	-0.147 (1.284)	0.019 (1.199)	-0.000 (1.119)
Range	-1.505 - 2.078	-2.267 - 3.45	-2.001 - 3.013	-2.267 - 3.45
3. Judgment Errors				
Mean (SD)	0.033 (0.749)	-0.017 (0.558)	-0.021 (0.808)	0.000 (0.718)
Range	-1.138 - 1.532	-0.719 - 1.487	-1.017 - 2.341	-1.138 - 2.341
4. Delayed Choice Reaction				
Mean (SD)	-0.116 (0.977)	0.032 (0.737)	0.096 (1.297)	-0.000 (1.045)
Range	-2.327 - 2.492	-1.452 - 1.689	-1.971 - 4.439	-2.327 - 4.439
5. Delayed Simple Reaction				
Mean (SD)	-0.068 (0.821)	0.235 (1.098)	-0.105 (0.941)	-0.000 (0.944)
Range	-1.306 - 1.882	-1.161 - 2.024	-1.966 - 1.901	-1.966 - 2.024
6. Inattentiveness				
Mean (SD)	-0.016 (0.582)	-0.152 (0.761)	0.129 (1.249)	-0.000 (0.914)
Range	-1.087 - 1.204	-1.215 - 1.412	-1.836 - 5.332	-1.836 - 5.332
7. Recall and Reaction				
Mean (SD)	-0.127 (0.695)	0.240 (1.138)	-0.047 (0.896)	0.000 (0.904)
Range	-1.474 - 1.149	-1.584 - 2.811	-1.662 - 2.499	-1.662 - 2.811

Supplemental Figure 1

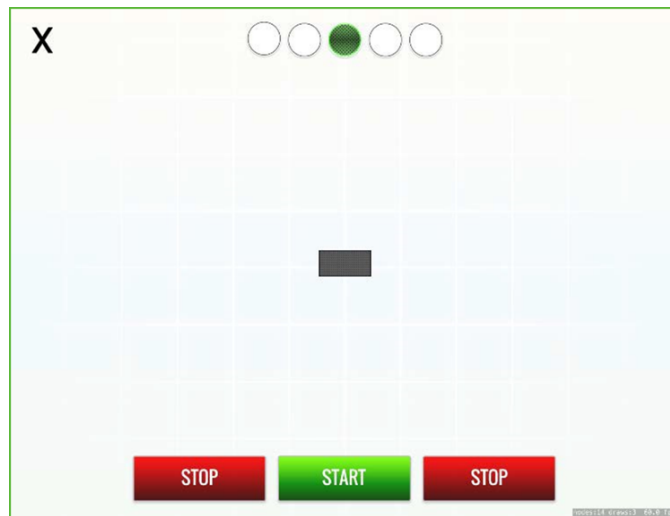*Screen from the decision-making task in Vitals Mobile by Impirica*

Supplemental Figure 2

Screens from the spatial-motor control task in the Vitals Mobile by Impirica illustrating correct versus incorrect positioning in relation to the reticle
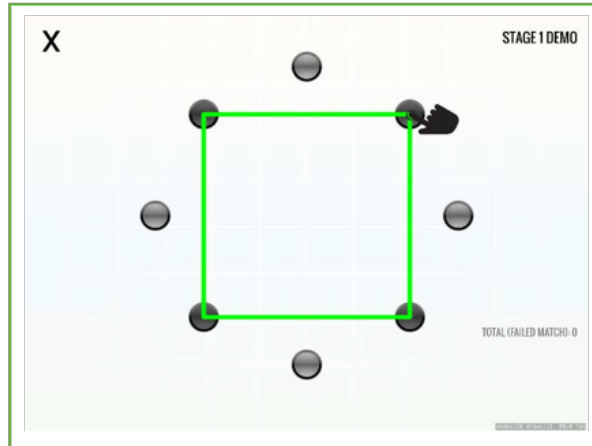
Supplemental Figure 3

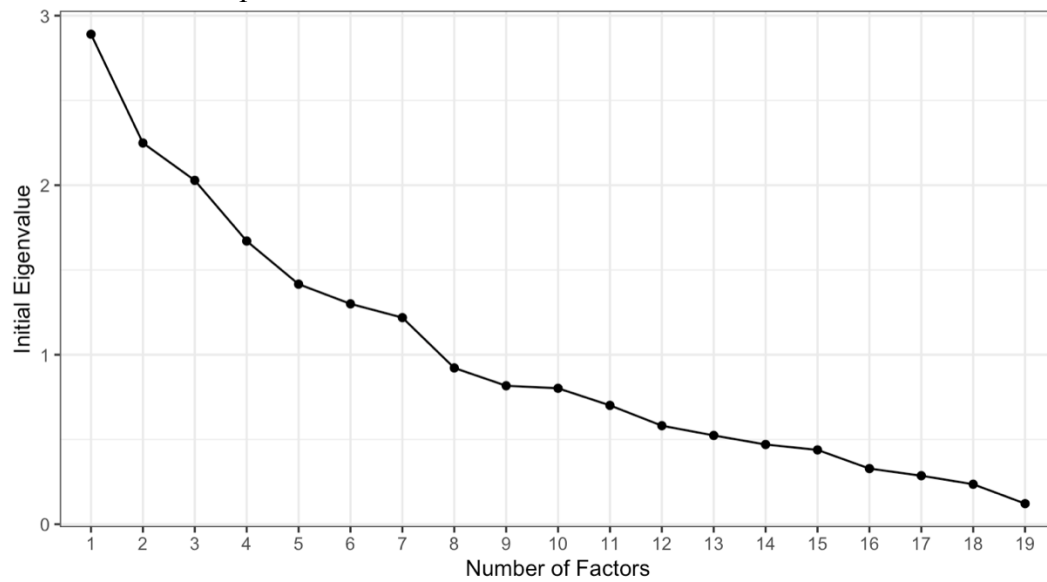*Screen from the choice reaction time task in Vitals Mobile by Impirica*

Supplemental Figure 4

Screen from the demonstration of the working memory task in Vitals Mobile by Impirica illustrating how to trace the shape that was just shown, using the simple example of a square

Supplemental Figure 5

Full data set scree plot, based on the unreduced correlation matrix

Factor Retention and Variance Explained								
# Factors	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Eigenvalue	2.891	2.249	2.028	1.671	1.416	1.300	1.219	0.922
Prop. Variance Explained	0.105	0.091	0.087	0.080	0.077	0.067	0.061	-
Cumulative Prop. Variance Explained	0.105	0.196	0.283	0.362	0.439	0.506	0.567	-