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| --- | --- | --- | --- | --- |
| **Supplementary Table 1.** Estimated marginal means and standard errors for neuropsychological tests and off-road driver screening tests adjusting for age and gender. | | | | |
| Variable | Cognitively Normal  (n = 245) | MCI  (n = 57) | p-value | |
| CVLT Delayed Recall | 9.13 (0.19) | 7.06 (0.38) | < 0.001 | |
| Digits Backwards | 4.43 (0.07) | 4.28 (0.15) | 0.003 | |
| BVRT Copy | 9.46 (0.07) | 8.37 (0.14) | <0.001 | |
| COWAT | 42.95 (0.73) | 36.38 (1.52) | <0.001 | |
| Trail Making Test B (s) | 114.83 (5.07) | 151.95 (10.52) | 0.002 | |
| Stroop Colour Word Test (s) | 34.46 (0.98) | 40.59 (1.99) | 0.006 | |
| UFOV® Score (ms) | 133.38 (7.30) | 160.22 (15.14) | 0.008 | |
| Dot Motion (lg deg. arc) | -1.78 (0.01) | -1.70 (0.03) | 0.007 | |
| CARS-RT (ms) | 928 (9.00) | 968 (19.00) | 0.056 | |
| Postural sway (mm) | 362.64 (12.02) | 377.01 (24.40) | 0.598 | |
| Multi-D Risk score (%) | 19.9 (1.60) | 28.6 (3.30) | 0.021 | |
| DriveSafe Score | 89.43 (0.84) | 82.29 (1.75) | <0.001 | |
| DriveSafe Intersections | 6.42 (0.09) | 5.85 (0.18) | 0.004 | |
| 14-Item Road Law | 31.62 (0.26) | 30.89 (0.55) | 0.230 | |
| Maze Test Time (s) | 1.00 (0.01) | 1.00 (0.01) | 0.782 | |

CVLT, California Verbal Learning Test Immediate Recall; BVRT, Benton Visual Retention Test; COWAT, Controlled Oral Word Association Test; UFOV®, Useful Field of View; CARS-RT, Color Choice Reaction Time test; DriveSafe Int, DriveSafe Intersections

**Supplementary Table 2.** Hierarchical Linear regression of neuropsychological tests, off road tests as predictors of the On Road Safety Rating.

|  |  |  |
| --- | --- | --- |
| Predictor | Beta (SE) | p-value |
| Age | -0.06 (0.02) | 0.00 |
| Gender | -0.29 (0.18) | 0.10 |
| Trails | 0.00 (0.00) | 0.72 |
| **Boston** | **0.10 (0.04)** | **0.02** |
| COWAT | 0.00 (0.01) | 0.84 |
| BVRT copy | 0.03 (0.07) | 0.64 |
| **Stroop** | **-0.01 (0.01)** | **0.04** |
| **Digit span** | **0.00 (0.00)** | **0.02** |
| **CVLT** | **0.05 (0.03)** | **0.12** |
| UFOV® | -0.00 (0.00) | 0.34 |
| Drivesafe | 0.01 (0.01) | 0.17 |
| **Drivesafe intersection** | **0.20 (0.06)** | **<0.01** |
| 14-Item road law | 0.03 (0.02) | 0.19 |
| **Multi-D** | **1.33 (0.49)** | **<0.01** |
| Maze test | -0.46 (0.79) | 0.56 |

\*p<0.05, \*\*p<0.01. CVLT, California Verbal Learning Test Immediate Recall; BVRT, Benton Visual Retention Test; COWAT, Controlled Oral Word Association Test; UFOV®, Useful Field of View; DriveSafe Int, DriveSafe Intersections

**Supplementary Table 3.** Intercorrelations among neuropsychological and off-road driver screening measures.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | CVLT | Digits  Back | BVRT | COWAT | Trails B | Stroop | UFOV | Dot Motion | CARS-RT | Postural Sway | MultiD | Drive  Safe | Drive  Safe Int. | 14-Item Road Law |
| CVLT | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Digits Back | 0.127\* | 1 |  |  |  |  |  |  |  |  |  |  |  |  |
| BVRT copy | 0.178\*\* | 0.146\* | 1 |  |  |  |  |  |  |  |  |  |  |  |
| COWAT | 0.244\*\* | 0.311\*\* | 0.09 | 1 |  |  |  |  |  |  |  |  |  |  |
| Trails B | -0.259\*\* | -0.212\*\* | -0.143\* | -0.194\*\* | 1 |  |  |  |  |  |  |  |  |  |
| Stroop | -0.328\*\* | -0.169\*\* | -0.237\*\* | -0.258\*\* | 0.310\*\* | 1 |  |  |  |  |  |  |  |  |
| UFOV® | -0.321\*\* | -0.314\*\* | -0.198\*\* | -0.258\*\* | 0.252\*\* | 0.313\*\* | 1 |  |  |  |  |  |  |  |
| Dot Motion | -0.282\*\* | -0.102 | -0.209\*\* | -0.164\*\* | 0.237\*\* | 0.238\*\* | 0.354\*\* | 1 |  |  |  |  |  |  |
| CARS-RT | -0.214\*\* | -0.177\*\* | -0.205\*\* | -0.270\*\* | 0.270\*\* | 0.319\*\* | 0.313\*\* | 0.270\*\* | 1 |  |  |  |  |  |
| Sway | -0.1 | 0.029 | 0.044 | 0.075 | 0.139\* | -0.033 | -0.009 | 0.105 | 0.102 | 1 |  |  |  |  |
| MultiD | -0.173\*\* | -0.188\*\* | -0.180\*\* | -0.204\*\* | 0.290\*\* | 0.267\*\* | 0.232\*\* | 0.266\*\* | 0.715\*\* | 0.510\*\* | 1 |  |  |  |
| DriveSafe | 0.357\*\* | 0.214\*\* | 0.208\*\* | 0.234\*\* | -0.299\*\* | -0.308\*\* | -0.372\*\* | -0.312\*\* | -0.308\*\* | -0.053 | -0.339\*\* | 1 |  |  |
| DriveSafe Int | 0.166\*\* | 0.135\* | 0.171\*\* | 0.074 | -0.075 | -0.231\*\* | -0.133\* | -0.151\*\* | -0.194\*\* | -0.055 | -0.232\*\* | 0.175\*\* | 1 |  |
| 14-Item Road | 0.132\* | 0.164\*\* | 0.134\* | 0.08 | -0.215\*\* | -0.298\*\* | -0.182\*\* | -0.145\* | -0.213\*\* | 0.009 | -0.181\*\* | 0.195\*\* | 0.332\*\* | 1 |
| Maze | -0.084 | -0.043 | -0.151\*\* | -0.137\* | 0.174\*\* | 0.154\*\* | 0.153\*\* | 0.119\* | 0.227\*\* | -0.111 | 0.173\*\* | -0.232\*\* | -0.003 | -0.138\* |

\*p<0.05, \*\*p<0.01 CVLT, California Verbal Learning Test Immediate Recall; BVRT, Benton Visual Retention Test; COWAT, Controlled Oral Word Association Test; UFOV®, Useful Field of View; CARS-RT, Color Choice Reaction Time test; DriveSafe Int, DriveSafe Intersections

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| **Supplementary Table 4**. Logistic regression models of neuropsychological tests and driver screening tests as predictors of OT On-Road Test Safety Rating in the non-imputed sample (n=242). | | | | | | | | |
| Models including all variables | | | | | | | | |
|  | | Model 1 | | | | Model 2 | | | |
|  | | Beta | | p-value | | Beta | | p-value | | | |
| CVLT Delayed Recall | | -0.01 (0.10) | | 0.96 | | 0.08 (0.10) | | 0.44 | | | |
| Boston naming | | -0.07 (0.09) | | 0.47 | | -0.07 (0.10) | | 0.44 | | | |
| Digits Backwards | | -0.40 (0.02) | | 0.16 | | 0.09 (0.30) | | 0.77 | | | |
| BVRT (Copy) | | -0.09 (0.16) | | 0.56 | | -0.14 (0.17) | | 0.42 | | | |
| COWAT | | -0.02 (0.02) | | 0.44 | | -0.00 (0.03) | | 0.89 | | | |
| Trail Making Test B (s) | | 0.00 (0.00) | | 0.98 | | 0.00 (0.00) | | 0.91 | | | |
| Stroop Color Word Test (s) | | 0.02 (0.01) | | 0.19 | | 0.01 (0.01) | | 0.57 | | | |
| UFOV® Score (ms) | |  | |  | | 0.00 (0.00) | | 0.13 | | | |
| Multi-D | |  | |  | | **2.30 (0.89)** | | **0.01** | | | |
| DriveSafe Score | |  | |  | | -0.03 (0.02) | | 0.15 | | | |
| DriveSafe Intersections | |  | |  | | -0.22 (0.19) | | 0.25 | | | |
| 14-Item Road Law | |  | |  | | 0.03 (0.07) | | 0.70 | | | |
| Maze Test Time (s) | |  | |  | | -0.82 (2.05) | | 0.70 | | | |
| Forward selection of best fitting model | | | | | | | | |
| DriveSafe Score |  | |  | | **-0.052 (0.02)** | | **0.008** | | | |
| Multi-D |  | |  | | **2.52 (0.77)** | | **0.001** | | | |

\*p<0.05, \*\*p<0.01. Model 1 and 2 Results adjusted for age and gender. Note cut-off on ORT was 1-3/4-10 for unsafe/safe.

CVLT, California Verbal Learning Test Immediate Recall; BVRT, Benton Visual Retention Test; COWAT, Controlled Oral Word Association Test; UFOV®, Useful Field of View