

Supplementary Materials: The Influence of Sleep Quality, Vigilance, and Sleepiness on Driving-Related Cognitive Abilities: A Comparison between Young and Older Adults

Table S1. Results of multiple regression model with the control for gender. Results of multiple regressions (the α -value after FDR procedure was adjusted to a critic $p=0.019$) considering driving-related cognitive abilities (COG, ATAVT, WRB-TV) as criterion variables and gender, age, TST, PSQI, KSS, ESS, Median PVT, 10% slowest RTs PVT, 10% fastest RTs PVT as predictors. After the correction for multiple comparisons by using FDR, each result remains statistically significant.

Dependent Variables	Predictors	Beta	Coefficients of Partial Correlation	<i>t</i>	<i>p</i> -level
COG mean time correct rejections R= 0.777; adjusted $R^2=0.554$; $F_{9,70} =11.887$; $P<0.001$	Gender	-0.024	-0.036	-0.304	0.762
	Age	-0.758	-0.715	-8.549	$p<0.001$
	PSQI	-0.099	-0.138	-1.165	0.248
	TST	0.114	0.173	1.466	0.147
	KSS	-0.026	-0.037	-0.310	0.758
	ESS	-0.046	-0.068	-0.569	0.571
	Median PVT	0.053	0.026	0.214	0.831
	10% slowest RTs PVT	-0.084	-0.069	-0.580	0.564
	10% fastest RTs PVT	0.003	0.002	0.018	0.986
COG total working time R=0.778; adjusted $R^2=0.554$; $F_{9,70} =11.889$; $P<0.001$	Gender	-0.036	-0.056	-0.466	0.643
	Age	0.767	0.719	8.653	$p<0.001$
	PSQI	0.058	0.081	0.679	0.499
	TST	-0.106	-0.161	-1.366	0.176
	KSS	0.039	0.055	0.462	0.645
	ESS	0.026	0.038	0.316	0.753
	Median PVT	0.026	0.012	0.103	0.918
	10% slowest RTs PVT	0.079	0.065	0.548	0.585
	10% fastest RTs PVT	-0.054	-0.035	-0.289	0.773
ATAVT performance R=0.633; adjusted $R^2=0.293$; $F_{9,50} =3.722$; $P=0.001$	Gender	-0.240	-0.286	-2.111	0.040
	Age	-0.552	-0.535	-4.483	$p<0.001$
	PSQI	-0.014	-0.016	-0.116	0.908
	TST	0.191	0.224	1.625	0.111
	KSS	-0.089	-0.100	-0.710	0.481
	ESS	0.014	0.017	0.120	0.905
	Median PVT	-0.247	-0.121	-0.865	0.391
	10% slowest RTs PVT	-0.002	-0.002	-0.011	0.991
	10% fastest RTs PVT	-0.024	-0.017	-0.117	0.908
ATAVT total working time	Gender	-0.029	-0.036	-0.255	0.800
	Age	0.601	0.571	4.914	$p<0.001$
	PSQI	-0.139	-0.165	-1.184	0.242
	TST	0.056	0.068	0.483	0.631

R=0.640; adjusted R ² =0.304; $F_{9,50} = 3.863$; P=0.001	KSS	-0.068	-0.077	-0.546	0.588
	ESS	-0.079	-0.095	-0.673	0.504
	Median PVT	0.207	0.103	0.729	0.469
	10% slowest RTs PVT	0.030	0.023	0.165	0.869
	10% fastest RTs PVT	-0.357	-0.236	-1.716	0.092
WRB-TV R=0.487; adjusted R ² =0.139; $F_{9,70} = 2.420$; P=0.019	Gender	0.018	0.020	0.168	0.867
	Age	0.385	0.350	3.127	0.003
	PSQI	0.062	0.062	0.522	0.603
	TST	-0.025	-0.028	-0.231	0.818
	KSS	-0.034	-0.034	-0.285	0.776
	ESS	-0.160	-0.169	-1.430	0.157
	Median PVT	0.107	0.037	0.307	0.760
	10% slowest RTs PVT	-0.315	-0.185	-1.571	0.121
10% fastest RTs PVT	0.073	0.034	0.283	0.778	

Table S2. Results of multiple regression model with the control for gender, excluding the age predictor. Results of the multiple regression considering the performance in the selective attention test (COG mean time correct rejection) as criterion variable and gender, TST, PSQI, KSS, ESS, Median PVT, 10% slowest RTs PVT, 10% fastest RTs PVT as predictors. After the correction for multiple comparisons by using FDR, the result does not remain statistically significant.

Dependent Variables	Predictors	Beta	Coefficients of Partial Correlation	<i>t</i>	<i>p</i> -level
COG mean time correct rejections R= 0.438; adjusted R ² =0.100; $F_{8,71} = 2.103$; P=0.047	Gender	-0.004	-0.005	-0.040	0.968
	PSQI	-0.254	-0.248	-2.153	0.035
	TST	0.004	0.004	0.035	0.973
	KSS	0.231	0.235	2.037	0.045
	ESS	-0.005	-0.006	-0.046	0.963
	Median PVT	0.710	0.242	2.101	0.039
	10% slowest RTs PVT	-0.391	-0.228	-1.970	0.053
10% fastest RTs PVT	-0.503	-0.232	-2.012	0.048	