

# **SUPPLEMENTAL MATERIAL**

**Table S1. Associations between heart rate variability and Exam 5 CASI scores from linear regression models after excluding participants taking beta blocker medication at Exam 1 (n = 247) or Exam 5 (n = 535).**

	CASI			Digit Symbol Coding			Digit Span (total)		
	$\beta$	95% CI	<i>P</i> value	$\beta$	95% CI	<i>P</i> value	$\beta$	95% CI	<i>P</i> value
<b>SDNN</b>									
Exam 1	<b>0.36</b>	<b>0.05, 0.68</b>	<b>0.025</b>	<b>0.94</b>	<b>0.28, 1.60</b>	<b>0.005</b>	0.11	-0.07, 0.30	0.237
Exam 5	<b>0.34</b>	<b>0.04, 0.65</b>	<b>0.029</b>	<b>0.71</b>	<b>0.07, 1.34</b>	<b>0.030</b>	0.15	-0.03, 0.32	0.107
Change	-0.01	-0.27, 0.24	0.920	-0.27	-0.80, 0.27	0.328	0.10	-0.05, 0.25	0.178
<b>RMSSD</b>									
Exam 1	0.18	-0.11, 0.47	0.219	<b>0.61</b>	<b>0.00, 1.12</b>	<b>0.049</b>	0.09	-0.08, 0.26	0.294
Exam 5	0.23	-0.06, 0.52	0.114	<b>0.64</b>	<b>0.04, 1.23</b>	<b>0.037</b>	0.07	-0.10, 0.24	0.413
Change	0.03	-0.23, 0.29	0.830	-0.15	-0.70, 0.40	0.591	0.12	-0.03, 0.27	0.125

$\beta$  represents regression coefficients for log<sub>2</sub>-transformed HRV values adjusted for age, race/ethnicity, sex, education level, systolic blood pressure, CESD score, smoking status, body mass index, physical activity, antihypertensive and antiarrhythmic medication use, diabetes, *APOE* genotype, and incident myocardial infarction, heart failure, and stroke/TIA.

CASI: Cognitive Abilities Screening Instrument; CESD: Center for Epidemiological Studies Depression scale;

CI: confidence interval; RMSSD: root mean square of successive differences; SDNN: standard deviation of normal-normal intervals; TIA: transient ischemic attack.

**Table S2. Associations between heart rate variability and Exam 5 cognitive test scores from linear regression models adjusted for Model 2 covariates and RHR.**

	CASI			Digit Symbol Coding			Digit Span (total)		
	$\beta$	95% CI	<i>P</i> value	$\beta$	95% CI	<i>P</i> value	$\beta$	95% CI	<i>P</i> value
<b>SDNN</b>									
Exam 1	0.29	-0.04, 0.61	0.085	0.44	-0.23, 1.12	0.199	0.05	-0.13, 0.24	0.582
Exam 5	0.16	-0.14, 0.45	0.298	0.22	-0.39, 0.83	0.478	0.16	-0.01, 0.33	0.066
Change	-0.02	-0.27, 0.23	0.864	-0.17	-0.68, 0.34	0.518	0.09	-0.05, 0.23	0.214
<b>RMSSD</b>									
Exam 1	0.07	-0.25, 0.39	0.667	-0.04	-0.70, 0.62	0.898	0.02	-0.17, 0.20	0.854
Exam 5	-0.02	-0.31, 0.27	0.869	0.01	-0.59, 0.61	0.982	0.08	-0.09, 0.25	0.321
Change	0.00	-0.25, 0.25	0.982	-0.04	-0.56, 0.48	0.875	0.11	-0.03, 0.25	0.135

$\beta$  represents regression coefficients for log<sub>2</sub>-transformed HRV values adjusted for age, race/ethnicity, sex, education level, RHR, systolic blood pressure, CESD score, smoking status, body mass index, physical activity, antihypertensive and antiarrhythmic medication use, diabetes, *APOE* genotype, and incident myocardial infarction, heart failure, and stroke/TIA.

CASI: Cognitive Abilities Screening Instrument; CESD: Center for Epidemiological Studies Depression scale; CI: confidence interval; RHR: resting heart rate; RMSSD: root mean square of successive differences; SDNN: standard deviation of normal-normal intervals; TIA: transient ischemic attack.

**Table S3. Associations between RHR and Exam 5 cognitive test scores from linear regression models.**

	CASI			Digit Symbol Coding			Digit Span (total)		
	$\beta$	95% CI	<i>P</i> value	$\beta$	95% CI	<i>P</i> value	$\beta$	95% CI	<i>P</i> value
Exam 1	<b>-0.29</b>	<b>-0.55, -0.03</b>	<b>0.029</b>	<b>-1.01</b>	<b>-1.55, -0.47</b>	<b>&lt;0.001</b>	-0.13	-0.28, 0.02	0.100
Exam 5	<b>-0.48</b>	<b>-0.75, -0.21</b>	<b>&lt;0.001</b>	<b>-1.22</b>	<b>-1.78, -0.66</b>	<b>&lt;0.001</b>	-0.09	-0.26, 0.07	0.256
Change	-0.25	-0.51, 0.02	0.074	-0.30	-0.86, 0.26	0.290	0.03	-0.13, 0.18	0.733

$\beta$  represents regression coefficients for standardized RHR values adjusted for age, race/ethnicity, sex, education level, systolic blood pressure, CESD score, smoking status, body mass index, physical activity, antihypertensive and antiarrhythmic medication use, diabetes, *APOE* genotype, and incident myocardial infarction, heart failure, and stroke/TIA.

CESD: Center for Epidemiological Studies Depression scale; CI: confidence interval; RHR: resting heart rate;

RMSSD: root mean square of successive differences; SDNN: standard deviation of normal-normal intervals;

TIA: transient ischemic attack.

**Table S4. Associations between heart rate variability and Exam 5 CASI scores from linear regression models after multiple imputation (N = 6,814).**

	CASI			Digit Symbol Coding			Digit Span (total)		
	$\beta$	95% CI	<i>P</i> value	$\beta$	95% CI	<i>P</i> value	$\beta$	95% CI	<i>P</i> value
<b>SDNN</b>									
Exam 1	0.35	-0.00, 0.70	0.051	<b>0.62</b>	<b>0.14, 1.11</b>	<b>0.012</b>	0.08	-0.06, 0.23	0.268
Exam 5	<b>0.43</b>	<b>0.08, 0.78</b>	<b>0.016</b>	<b>0.79</b>	<b>0.21, 1.37</b>	<b>0.009</b>	0.14	-0.02, 0.29	0.084
Change	0.10	-0.19, 0.39	0.505	0.02	-0.47, 0.50	0.942	0.04	-0.07, 0.16	0.442
<b>RMSSD</b>									
Exam 1	0.23	-0.08, 0.54	0.144	0.30	-0.14, 0.74	0.185	0.06	-0.07, 0.20	0.351
Exam 5	<b>0.34</b>	<b>0.02, 0.65</b>	<b>0.038</b>	<b>0.67</b>	<b>0.15, 1.19</b>	<b>0.012</b>	0.10	-0.03, 0.23	0.134
Change	0.09	-0.18, 0.37	0.504	0.11	-0.35, 0.57	0.641	0.06	-0.05, 0.16	0.288

$\beta$  represents regression coefficients for log<sub>2</sub>-transformed HRV values adjusted for age, race/ethnicity, sex, education level, systolic blood pressure, CESD score, smoking status, body mass index, physical activity, antihypertensive and antiarrhythmic medication use, diabetes, *APOE* genotype, and incident myocardial infarction, heart failure, and stroke/TIA.

CASI: Cognitive Abilities Screening Instrument; CESD: Center for Epidemiological Studies Depression scale;

CI: confidence interval; RMSSD: root mean square of successive differences; SDNN: standard deviation of normal-normal intervals; TIA: transient ischemic attack.