

# Supplementary Material

## Do Cardiovascular Risk Factors and Cardiovascular Disease Explain Sex Differences in Cognitive Functioning in Old Age?

**Supplementary Table 1.** Multiple mediator model for information processing speed (LDL sub sample)

	Direct effect		<i>a</i> path		<i>b</i> path		Indirect effect	
	B (SE)	<i>p</i>	B (SE)	<i>p</i>	B (SE)	<i>p</i>	B	(95% CI)
Smoking	1.10 (0.47)	0.02	-0.22 (0.03)	<0.01	-0.05 (0.49)	0.92	0.01	(-0.19 to 0.22)
Systolic blood pressure	1.10 (0.47)	0.02	0.12 (1.69)	0.95	0.02 (0.01)	0.01	0.00	(-0.07 to 0.07)
Diabetes mellitus	1.10 (0.47)	0.02	-0.00 (0.01)	0.82	-1.68 (0.98)	0.01	0.01	(-0.07 to 0.04)
Obesity	1.10 (0.47)	0.02	0.10 (0.02)	<0.01	-0.90 (0.46)	0.05	-0.09	(-0.20 to 0.01)
Physical activity	1.10 (0.47)	0.02	0.31 (0.06)	<0.01	-0.17 (0.26)	0.50	-0.05	(-0.25 to 0.10)
Depressive symptoms	1.10 (0.47)	0.02	3.73 (0.49)	<0.01	-0.06 (0.02)	0.01	-0.22	(-0.41 to -0.08)
LDL	1.10 (0.47)	0.02	0.27 (0.06)	<0.01	-0.05 (0.24)	0.82	-0.01	(-0.15 to 0.10)

The mediator model included a sex-by-time interaction (0.10 (0.04),  $p < 0.01$ ) and mediator-by-time interactions for diabetes mellitus, systolic blood pressure and physical activity.

**Supplementary Table 2.** Multiple mediator model for episodic memory (LDL sub sample)

	Direct effect		<i>a</i> path		<i>b</i> path		Indirect effect	
	B (SE)	<i>p</i>	B (SE)	<i>p</i>	B (SE)	<i>p</i>	B (95% CI)	
Smoking	1.51 (0.17)	<0.01	-0.22 (0.03)	<0.01	-0.06 (0.18)	0.74	0.01 (-0.07 - 0.09)	
Systolic blood pressure	1.51 (0.17)	<0.01	0.12 (1.69)	0.95	0.01 (0.00)	0.09	0.00 (-0.02 - 0.02)	
Diabetes mellitus	1.51 (0.17)	<0.01	-0.00 (0.01)	0.82	-0.30 (0.29)	0.30	0.00 (-0.02 - 0.01)	
Obesity	1.51 (0.17)	<0.01	0.10 (0.02)	<0.01	0.00 (0.20)	0.98	0.00 (-0.04 - 0.04)	
Physical activity	1.51 (0.17)	<0.01	0.31 (0.06)	<0.01	0.23 (0.09)	0.01	0.07 (0.01 - 0.14)	
Depressive symptoms	1.51 (0.17)	<0.01	3.73 (0.49)	<0.01	-0.01 (0.01)	0.42	-0.04 (-0.11 - 0.05)	
LDL	1.51 (0.17)	<0.01	0.27 (0.06)	<0.01	-0.05 (0.08)	0.52	-0.01 (-0.10 - 0.04)	

The mediator model included a mediator-by-time interaction for systolic blood pressure.

**Supplementary Table 3.** Multiple mediator model for information processing speed, stratified for age

	Direct effect		<i>a</i> path		<i>b</i> path		Indirect effect	
	B (SE)	<i>p</i>	B (SE)	<i>p</i>	B (SE)	<i>p</i>	B	(95% CI)
<b>Respondents under 75 years of age (n=2269)</b>								
Smoking			-0.13 (0.02)	<0.01				
Men	1.98 (0.29)	<0.01			-0.61 (0.39)	0.12	0.08	(-0.02 to 0.18)
Women	1.79 (0.30)	<0.01			0.84 (0.40)	0.04	-0.11	(-0.20 to -0.01)
Systolic blood pressure	1.58 (0.35)	<0.01	-5.52 (0.91)	<0.01	-0.01 (0.01)	0.18	0.04	(-0.02 to 0.13)
Diabetes mellitus	1.58 (0.35)	<0.01	-0.01 (0.01)	0.18	0.17 (0.55)	0.75	-0.00	(-0.01 to 0.01)
Obesity	1.58 (0.35)	<0.01	0.04 (0.01)	<0.01	-0.29 (0.30)	0.33	-0.01	(-0.04 to 0.01)
Physical activity	1.58 (0.35)	<0.01	0.42 (0.03)	<0.01	0.06 (0.16)	0.69	0.03	(-0.12 to 0.16)
Depressive symptoms	1.58 (0.35)	<0.01	2.46 (0.31)	<0.01	-0.12 (0.02)	<0.01	-0.29	(-0.42 to -0.19)
<b>Respondents aged 75 years and over (n=445)</b>								
Smoking	0.58 (0.72)	0.42	-0.21 (0.04)	<0.01	-0.71 (0.66)	0.28	0.15	(-0.13 to 0.47)
Systolic blood pressure	0.58 (0.72)	0.42	2.68 (2.53)	0.29	0.01 (0.01)	0.23	0.03	(-0.04 to 0.17)
Diabetes mellitus	0.58 (0.72)	0.42	0.02 (0.02)	0.40	-2.30 (0.96)	0.02	-0.05	(-0.23 to 0.05)
Obesity	0.58 (0.72)	0.42	0.13 (0.03)	<0.01	-0.45 (0.69)	0.52	-0.06	(-0.28 to 0.11)
Physical activity			0.20 (0.01)	0.02				
Men	0.58 (0.72)	0.42			-0.48 (0.44)	0.27	-0.10	(-0.41 to 0.10)
Women	-0.94 (0.75)	0.21			0.45 (0.52)	0.38	0.09	(-0.12 to 0.36)
Depressive symptoms	0.58 (0.72)	0.42	3.44 (0.71)	<0.01	-0.05 (0.04)	0.14	-0.19	(-0.43 to 0.02)

Under 75: the total effect of sex: 1.78 (95% C.I.: 1.23-2.34,  $p < 0.01$ ). The sex-by-time interaction was 0.04 (0.03),  $p = 0.10$ . The mediation model also includes a mediator-by-time interaction term for smoking, systolic blood pressure, and diabetes mellitus.

75 and over: the total effect of sex: 0.43 (95% C.I.: -0.91-1.76,  $p = 0.53$ ). The sex-by-time interaction was 0.14 (0.07),  $p = 0.06$ . The mediation model also includes a mediator-by-time interaction term for physical activity.

**Supplementary Table 4.** Multiple mediator model for episodic memory, stratified for age

	direct effect		<i>a</i> path		<i>b</i> path		indirect effect	
	B (SE)	<i>p</i>	B (SE)	<i>p</i>	B (SE)	<i>p</i>	B	(95% CI)
<b>Respondents under 75 years of age (n=2269)</b>								
Smoking	1.57 (0.11)	<0.01	-0.13 (0.02)	<0.01	-0.14 (0.11)	0.20	0.02	(-0.01 - 0.05)
Systolic blood pressure	1.57 (0.11)	<0.01	-5.52 (0.91)	<0.01	-0.00 (0.00)	0.06	0.02	(-0.00 - 0.05)
Diabetes mellitus	1.57 (0.11)	<0.01	-0.01 (0.01)	0.12	-0.46 (0.19)	0.02	0.00	(-0.00 - 0.01)
Obesity	1.57 (0.11)	<0.01	0.04 (0.01)	0.01	-0.17 (0.12)	0.16	-0.01	(-0.02 - 0.00)
Physical activity	1.57 (0.11)	<0.01	0.42 (0.03)	<0.01	0.06 (0.06)	0.32	0.03	(-0.03 - 0.08)
Depressive symptoms	1.57 (0.11)	<0.01	2.46 (0.31)	<0.01	-0.00 (0.01)	0.82	-0.00	(-0.06 - 0.04)
<b>Respondents aged 75 years and over (n=445)</b>								
Smoking	0.98 (0.25)	<0.01	-0.21 (0.04)	<0.01	-0.37 (0.27)	0.17	0.08	(-0.03 - 0.20)
Systolic blood pressure	0.98 (0.25)	<0.01	2.68 (2.53)	0.29	0.00 (0.00)	0.24	0.01	(-0.02 - 0.06)
Diabetes mellitus	0.98 (0.25)	<0.01	0.02 (0.02)	0.40	-0.18 (0.40)	0.66	-0.00	(-0.04 - 0.02)
Obesity	0.98 (0.25)	<0.01	0.13 (0.03)	<0.01	0.06 (0.28)	0.84	0.01	(-0.06 - 0.07)
Physical activity	0.98 (0.25)	<0.01	0.20 (0.09)	0.02	0.38 (0.12)	<0.01	0.08	(0.01 - 0.17)
Depressive symptoms	0.98 (0.25)	<0.01	3.44 (0.71)	<0.01	-0.02 (0.02)	0.32	-0.05	(-0.16 - 0.05)

Under 75: the total effect of sex: 1.60 (95% C.I.: 1.41-1.79,  $p < 0.01$ ). The mediation model also includes mediator-by-time interaction terms for systolic blood pressure and depressive symptoms.  
 75 and over: the total effect of sex: 1.11 (95% C.I.: 0.66-1.55,  $p < 0.01$ ).