

**Supplementary Table 1:** Gender-stratified models for demands and control, for cognitive tests in which gender-by-exposure interactions were statistically significant at the 0.05 level.

	Demands (continuous)						Control (continuous)					
	$\beta$	Men (SE)	P	$\beta$	Women (SE)	P	$\beta$	Men (SE)	P	$\beta$	Women (SE)	P
<b>Digit Symbol Substitution Test</b>												
M1: age,	0.000	0.025	0.986	-0.005	0.045	0.915	0.123	0.025	<0.001	0.016	0.045	0.714
M2: M1+education, occupation <sup>b</sup>	-0.07	0.025	0.004	-0.023	0.045	0.790	0.033	0.027	0.201	-0.007	0.047	0.877
M3: M2+social, vascular risks <sup>c</sup>	-0.07	0.025	0.010	-0.005	0.046	0.909	0.019	0.027	0.020	0.004	0.049	0.931
<b>FCSRT-Immediate</b>												
M1: age	0.026	0.025	0.295	0.026	0.046	0.567	0.031	0.025	0.22	-0.120	0.045	0.008
M2: M1+education, occupation <sup>b</sup>	0.001	0.026	0.954	0.032	0.046	0.491	-0.005	0.027	0.846	-0.132	0.048	0.006
M3: M2+social, vascular risks <sup>c</sup>	-0.004	0.026	0.882	0.037	0.047	0.424	-0.02	0.028	0.583	-0.160	0.048	0.001

**Supplementary Table 2:** Quadrants of job demands and control, stratified by gender

		Low strain	Passive			Active			High strain		
			$\beta$	SE	P	$\beta$	SE	P	$\beta$	SE	P
<b>Men</b>											
<i>FCSRT-Immediate</i>											
	M1: age <sup>a</sup>	(ref)	-0.04	(0.04)	0.206	0.01	0.03	0.824	-0.02	0.03	0.436
	M2: M1+education, occupation <sup>b</sup>	(ref)	-0.01	0.03	0.658	-0.001	0.03	0.874	-0.01	0.03	0.655
	M3: M2+social, vascular risks <sup>c</sup>	(ref)	-0.01	0.03	0.717	-0.01	0.03	0.742	-0.002	0.03	0.940
<i>FCSRT-Delayed</i>											
	M1: age <sup>a</sup>	(ref)	-0.05	0.03	0.095	-0.03	0.03	0.361	-0.01	0.03	0.363
	M2: M1+education, occupation <sup>b</sup>	(ref)	-0.02	0.03	0.453	-0.04	0.03	0.215	-0.001	0.03	0.947
	M3: M2+social, vascular risks <sup>c</sup>	(ref)	-0.03	0.03	0.406	-0.04	0.03	0.173	-0.001	0.03	0.980
<i>DSST</i>											
	M2: M1+age	(ref)	-0.12	0.03	<.001	-0.02	0.03	0.588	-0.09	0.03	0.001
	M3: M2+educ, occ	(ref)	0.05	0.03	0.082	-0.05	0.3	0.090	-0.07	0.03	0.013
	M4: M3+social, vascular	(ref)	0.06	0.03	0.073	-0.06	0.03	0.059	-0.06	0.03	0.029
<b>Women</b>											
<i>FCSRT-Immediate</i>											
	M1: age <sup>a</sup>	(ref)	0.18	0.07	0.010	0.14	0.06	0.024	0.18	0.07	0.008
	M2: M1+education, occupation <sup>b</sup>	(ref)	0.18	0.07	0.014	0.14	0.06	0.023	0.19	0.07	0.007
	M3: M2+social, vascular risks <sup>c</sup>	(ref)	0.19	0.07	0.008	0.15	0.06	0.012	0.22	0.07	0.001
<i>FCSRT-Delayed</i>											
	M1: age <sup>a</sup>	(ref)	0.19	0.07	0.009	0.15	0.06	0.021	0.16	0.07	0.021
	M2: M1+education, occupation <sup>b</sup>	(ref)	0.17	0.07	0.018	0.15	0.06	0.021	0.15	0.07	0.029
	M3: M2+social, vascular risks <sup>c</sup>	(ref)	0.17	0.07	0.014	0.15	0.06	0.017	0.18	0.07	0.006
<i>DSST</i>											
	M2: M1+age	(ref)	0.003	0.07	0.961	0.10	0.06	0.101	0.05	0.07	0.478
	M3: M2+educ, occ	(ref)	0.02	0.07	0.793	0.10	0.06	0.121	0.06	0.07	0.121
	M4: M3+social, vascular	(ref)	0.04	0.07	0.549	0.14	0.06	0.030	0.06	0.07	0.357

**Supplementary Table 3:** Pairwise differences in cognitive performance by job strain quadrant (adjusted for all covariates)

	MMSE	TMT-A	TMT-B	FCSRT-Imm	FCSRT-Delayed	DSST	Lex A	Lex B
<b>Active (ref)</b>								
<b>vs.:</b>								
Low strain	0.005	0.022	-0.001	-0.009	0.024	0.019	0.012	0.012
High strain	0.002	-0.021	0.019	0.014	0.036	-0.029	-0.054*	-0.061*
Passive	-0.002	-0.027	-0.043	-0.002	0.014	-0.024	-0.042	-0.061*
<b>Low strain (ref) vs.:</b>								
Active	-0.005	-0.024	0.001	0.010	-0.025	-0.020	-0.013	-0.013
High strain	-0.003	-0.043	0.020	0.023	0.012	-0.051	-0.067*	-0.073**
Passive	-0.008	-0.052	-0.041	0.010	-0.013	-0.043	-0.055	-0.079**
<b>High strain (ref) vs.:</b>								
Low strain	0.003	0.044	-0.020	-0.023	-0.013	0.044	0.069*	0.075**
Active	-0.002	0.022	-0.020	-0.015	-0.038	0.026	0.058*	0.065*
Passive	-0.004	-0.002	-0.064*	-0.018	-0.023	-0.001	0.021	0.004
<b>Passive (ref) vs.:</b>								
Low strain	0.002	0.047	0.037	-0.008	0.012	0.045	0.049	0.071**
Active	0.007	0.025	0.037	0.001	-0.013	0.027	0.039	0.062*
High strain	0.002	0.002	0.056*	0.015	0.024	0.001	-0.019	-0.004

\* p<0.05

\*\*p<0.01

\*\*\*p<0.001

**Supplementary Table 4:** Association of skill discretion and decision authority (the two components of job control) with multiple cognitive outcomes, adjusting for age, gender, educational attainment, occupational grade at testing, depressive and anxious symptoms, smoking status, alcohol consumption, BMI, high cholesterol, diabetes, history of myocardial infarction, years since retirement at testing, and marital status

	Decision authority (continuous)			Skill discretion (continuous)		
	$\beta$	(SE)	P	$\beta$	(SE)	P
Mini-Mental State Exam	-0.002	0.02	0.913	-0.014	0.02	0.578
Trailmaking Test A	0.040	0.02	0.086	0.050	0.02	0.052
Trailmaking Test B	0.040	0.02	0.085	0.064	0.02	0.009
FCSRT <sup>a</sup> -Immediate	-0.031	0.02	0.189	-0.040	0.02	0.102
FCSRT <sup>a</sup> -Delayed	-0.017	0.02	0.483	-0.008	0.02	0.734
Digit Symbol Substitution Test	0.031	0.02	0.165	-0.001	0.02	0.960
Phonemic fluency	0.051	0.02	0.030	0.072	0.02	0.004
Semantic fluency	0.064	0.02	0.004	0.074	0.02	0.002

<sup>a</sup> Free and Cued Selective Reminding Test