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)					
	Men			Women			Men			Women		
	β	(SE)	P	β	(SE)	P	β	(SE)	P	β	(SE)	P
Digit Symbol Substitution Test												
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[b]	-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[c]	-0.07	0.025	0.010	-0.005	0.046	0.909	0.019	0.027	0.020	0.004	0.049	0.931
FCSRT-Immediate												
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[b]	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[c]	-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		
	β	SE	P	β	SE	P	β	SE	P	β	SE	P
Men												
FCSRT-Immediate												
M1: age[a]	(ref)			-0.04	(0.04)	0.206	0.01	0.03	0.824	-0.02	0.03	0.436
M2: M1+education, occupation[b]	(ref)			-0.01	0.03	0.658	-0.001	0.03	0.874	-0.01	0.03	0.655
M3: M2+social, vascular risks[c]	(ref)			-0.01	0.03	0.717	-0.01	0.03	0.742	-0.002	0.03	0.940
FCSRT-Delayed												
M1: age[a]	(ref)			-0.05	0.03	0.095	-0.03	0.03	0.361	-0.01	0.03	0.363
M2: M1+education, occupation[b]	(ref)			-0.02	0.03	0.453	-0.04	0.03	0.215	-0.001	0.03	0.947
M3: M2+social, vascular risks[c]	(ref)			-0.03	0.03	0.406	-0.04	0.03	0.173	-0.001	0.03	0.980
DSST												
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
Women												
FCSRT-Immediate												
M1: age[a]	(ref)			0.18	0.07	0.010	0.14	0.06	0.024	0.18	0.07	0.008
M2: M1+education, occupation[b]	(ref)			0.18	0.07	0.014	0.14	0.06	0.023	0.19	0.07	0.007
M3: M2+social, vascular risks[c]	(ref)			0.19	0.07	0.008	0.15	0.06	0.012	0.22	0.07	0.001
FCSRT-Delayed												
M1: age[a]	(ref)			0.19	0.07	0.009	0.15	0.06	0.021	0.16	0.07	0.021
M2: M1+education, occupation[b]	(ref)			0.17	0.07	0.018	0.15	0.06	0.021	0.15	0.07	0.029
M3: M2+social, vascular risks[c]	(ref)			0.17	0.07	0.014	0.15	0.06	0.017	0.18	0.07	0.006
DSST												
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
Active (ref) vs.:								
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*
Low strain (ref) vs.:								
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**
High strain (ref) vs.:								
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
Passive (ref) vs.:								
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)		
	β	(SE)	P	β	(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[a]-Immediate	-0.031	0.02	0.189	-0.040	0.02	0.102
FCSRT[a]-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

[a] Free and Cued Selective Reminding Test

Figure A

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┌─────────────────────────────┐
│ 20,625 initial GAZEL         │
│ participants (1989)          │
└─────────────────────────────┘
              │              ┌──────────────────────────────────┐
              │────────────▶ │ 1451 (7%) died 1989-2010         │
              │              │ 413 (2%) lost to follow-up        │
              ▼              │ 1989-2010                         │
┌─────────────────────────────┐  └──────────────────────────────────┘
│ 18,761 (91%) alive and not  │
│ lost to follow-up in 2010   │
└─────────────────────────────┘
              │              ┌──────────────────────────────────┐
              │────────────▶ │ 10,871 (58%) lived outside       │
              │              │ testing center area              │
              ▼              └──────────────────────────────────┘
┌─────────────────────────────┐
│ 7,890 (42%) lived in testing│
│ center catchment area       │
└─────────────────────────────┘
              │              ┌──────────────────────────────────┐
              │────────────▶ │ 4062 (51%) did not respond to    │
              │              │ invitation                       │
              ▼              └──────────────────────────────────┘
┌─────────────────────────────┐
│ 3,828 (49%) initially       │
│ responded to invitation     │
└─────────────────────────────┘
              │              ┌──────────────────────────────────┐
              │────────────▶ │ 866 (23%) dropped out before     │
              │              │ attending testing                │
              ▼              └──────────────────────────────────┘
┌─────────────────────────────┐
│ 2,962 (77%) attended testing│
│ and were over age 55        │
└─────────────────────────────┘
              │              ┌──────────────────────────────────┐
              │────────────▶ │ 43 (2%) were not yet retired at  │
              │              │ testing and so were not eligible │
              ▼              │ for inclusion                    │
┌─────────────────────────────┐  └──────────────────────────────────┘
│ 2,919 (98%) of those tested │
│ were retired and eligible   │
│ for inclusion               │
└─────────────────────────────┘
              │              ┌──────────────────────────────────┐
              │────────────▶ │ 770 (26%) did not have data on   │
              │              │ primary exposure and so were not │
              ▼              │ eligible for inclusion           │
┌─────────────────────────────┐  └──────────────────────────────────┘
│ 2,149 (74%) had exposure    │
│ data and were included in   │
│ analyses                    │
└─────────────────────────────┘
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