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## **Web Appendix I**

### **Study design and recruitment of participants in the 14 European studies included in the job strain-leisure-time physical activity analyses. The IPD-Work consortium**

#### *Belstress*

Belstress is a prospective cohort study set up to investigate the associations between work-related stress and health outcomes. Between 1994 and 1998, 21,419 people aged 35-59 were recruited into the study from the payroll records of 25 large companies or public administrations (1, 2). In 2002-2003, 2,821 people from the original Belstress study population were participating in a follow-up study, the Belstress II study (3). Of these, 2,615 had complete data on both work characteristics and physical activity at both baseline and follow-up and were included in our prospective analyses. The ethics committees of the University Hospital of Ghent and the Faculty of Medicine of the Université Libre de Bruxelles approved the Belstress study.

#### *Danish Work Environment Cohort Study (DWECS)*

DWECS is a split panel survey of working age Danish people. The cohort was established in 1990, when a simple random sample of men and women, aged 18-59, was drawn from the Danish population register. The participants have been followed up at five year intervals and data from the year 2000 was used for the IPD-Work. That year 11,437 individuals were invited to participate and 8,583 agreed to do so (4, 5). Of those, 5,606 individuals were gainfully employed. In Denmark, questionnaire- and register-based studies do not require ethics committee approval. DWECS was approved by and registered with the Danish Data protection agency (registration number: 2007-54-0059).

### *Finnish Public Sector study (FPS)*

The Finnish Public Sector study is a prospective cohort study comprising the entire public sector personnel of 10 towns (municipalities) and 21 hospitals in the same geographical areas. Participants recruited from employers' records in 2000-2002 were individuals who were employed in the study organisations at the time of the questionnaire survey (6). 48,592 individuals responded to the questionnaire. Of those, 28,097 participated in a follow-up survey in 2004 and had complete data on work characteristics and physical activity from both baseline and follow-up and were included in our prospective analyses. Ethical approval was obtained from the ethics committee of the Finnish Institute of Occupational Health.

### *Gazel*

Gazel is a prospective cohort study of 20,625 employees (15,011 men and 5,614 women) of France's national gas and electricity company, Electricité de France-Gaz de France (EDF-GDF) (7, 8). Since the study baseline in 1989, when the participants were aged 35–50 years, they have been posted an annual follow-up questionnaire to collect data on health, lifestyle, individual, familial, social, and occupational factors. Job strain was measured in Gazel in 1997, which we treated as a baseline year for our analyses, and 11,448 individuals participated at that time. The GAZEL study received approval from the national commission overseeing ethical data collection in France (Commission Nationale Informatique et Liberté).

### *Health and Social Support (HeSSup)*

The Health and Social Support (HeSSup) study is a prospective cohort study of a stratified random sample of the Finnish population in the following four age groups: 20–24, 30–34, 40–44, and 50–54. The participants were identified from the Finnish population register and posted an invitation to participate, along with a baseline questionnaire, in 1998 (9). Of the 25,898 respondents in 1998, 17,102 were gainfully employed. In 2003, 19,629 of the

participants responded to a follow-up questionnaire (10), of which 14,177 were working. In total, 10,463 were working in both 1998 and 2003 and had complete data on work characteristics and physical activity at both baseline and follow-up, and were included in our prospective analyses. The Turku University Central Hospital Ethics Committee approved the study.

#### *Heinz Nixdorf Recall study (HNR)*

The Heinz Nixdorf Recall Study is a prospective population-based cohort study of individuals randomly selected from the mandatory lists of residence in the metropolitan Ruhr area in Germany. Details of the study methods have been described previously (11, 12). Briefly, 4,814 participants aged 45-75 years were enrolled at study baseline in 2000-2003. Job stress measures and comprehensive medical data were collected during the baseline examination. Baseline job strain measures were available for 1,841 employed men and women. The HNR study was approved by the institutional local ethical committees and a quality management system according to European industrial norms (DIN EN ISO 9001:2000) was applied

#### *Intervention Project on Absence and Well-being (IPAW)*

IPAW is a 5-year psychosocial work environment intervention study including 22 intervention and 30 control work places in three organisations (a large pharmaceutical company, municipal technical services and municipal nursing homes) in Copenhagen, Denmark (13, 14). The baseline questionnaire was posted to all the employees at the selected work-sites between 1996 and 1997. Of the 2,721 employees who worked at the 52 IPAW sites, 2,068 men and women completed the baseline questionnaire. Psychological, social support and other interventions took place at 22 workplaces during 1996-98 at the organisational and interpersonal level. IPAW was approved by and registered with the Danish Data Protection Agency (registration number: 2000-54-0066).

### *Permanent Onderzoek Leefsituatie (POLS)*

Permanent Onderzoek Leefsituatie (POLS) is a series of annual cross-sectional health and lifestyle surveys of Dutch men and women (15). The participants are a representative sample of the Dutch population, drawn from the Municipal Population Register (Gemeentelijke Basis Administratie, GBA). Only those living in a private household were included. Most of the data collection is done using computer assisted personal interviewing. At study baseline in 1997- 2002, 59,441 men and women participated in the surveys. Of these, 24,761 were in paid employment, aged 15-85 and had job strain measure available. POLS was approved by the medical ethics committee of the Netherlands Organisation for Applied Scientific Research.

### *Burnout, Motivation and Job Satisfaction study (Danish acronym: PUMA)*

Burnout, Motivation and Job Satisfaction study (PUMA) is an intervention study of burn-out among employees in the human service sector (16). Selection criteria for the participating organisations were that they had between 200 and 500 employees, that occupational groups within each organisation were willing to participate and that the organisations would commit to the entire five-year study period. Participants gave consent to having their national identity numbers collected and used in later record linkages to Danish hospitalisation and cause of death registries (Hospitalsindlæggelsesregisteret, Dødsårsagsregisteret. At study baseline in 1999-2000, 1,914 participants agreed to take part. PUMA was approved by the Scientific Ethical Committees (Videnskabsetisk Komiteer) in the counties in which the study was conducted and approved by and registered with the Danish Data Protection Agency (registration number: 2000-54-0048).

### *Swedish Longitudinal Occupational Survey of Health (SLOSH)*

Swedish Longitudinal Occupational Survey of Health (SLOSH) is an on-going prospective cohort study following up individuals who participated in the Swedish Work Environment

Survey (SWES) in 2003 or 2005. SWES, conducted biennially by Statistics Sweden, is based on a sample of gainfully employed people aged 16-64 years drawn from the Labour Force Survey (LFS). These individuals were first sampled into LFS through stratification by county, sex, citizenship and inferred employment status.

Data from the 2006 and 2008 data collection waves of SLOSH were used in the IPD-Work cross-sectional analyses. In both years, data were collected using postal self-completion questionnaires. In 2006, 5,985 individuals responded to the questionnaire. Of these, 5,141 people worked at least 30% of full time working hours (17). In 2008, a further 6,751 individuals responded to the questionnaire (18). Of these, 5,895 men and women worked at least 30% of full time working hours. The 2006 participants were also invited to the 2008 data collection wave, and an additional data collection wave was carried out in 2010 where both participants from 2006 and 2008 were invited. In our prospective analyses, we were able to include data from 7,219 people who had baseline data from 2006/2008 and follow-up data from 2008/2010. SLOSH has been approved by the Regional Research Ethics Board in Stockholm.

### *Still Working*

Still Working is an ongoing prospective cohort study. In 1986, the employees (n = 12,173) at all Finnish centres of operation of Enso Gutzeit (a forestry products manufacturer) were invited to participate in a questionnaire survey on demographic, psychosocial and health-related factors (19, 20), and 9,282 individuals participated. Job strain was measured at study baseline in 1986. The study was approved by the ethics committee of the Finnish Institute of Occupational Health.

### *Whitehall II*

The Whitehall II study is a prospective cohort study set up to investigate socioeconomic determinants of health. At study baseline in 1985-1988, 10,308 civil service employees (6,895 men and 3,413 women) aged 35-55 and working at 20 civil service departments in London participated in the study (21). Subsequent data collections have since been carried out (22), and in 1991-1994 8,815 participants were included in the third data collection phase. Of these 7,275 had complete data on work characteristics and physical activity from both baseline and follow-up and were included in our prospective analyses. The Whitehall II study protocol was approved by the University College London Medical School committee on the ethics of human research.

### *Work, Lipids, and Fibrinogen (WOLF) Stockholm and Norrland studies*

The WOLF (Work, Lipids, and Fibrinogen) Stockholm study is a prospective cohort study of 5,698 people aged 19-70 and working in companies in Stockholm county (23). WOLF Norrland is a prospective cohort of 4,718 participants aged 19-65 working in companies in Jämtland and Västernorrland counties (24, 25). At study baseline the participants underwent a clinical examination and completed a set of health questionnaires. For WOLF Stockholm, the baseline assessment was undertaken at 20 occupational health units between November 1992 and June 1995 and for WOLF Norrland at 13 occupational health service units in 1996-98. The WOLF Norrland study population was invited to a follow-up study in 2000-2003, where 3,630 of the original study population participated. Of those, 2,861 had complete data on work characteristics and physical activity from both baseline and follow-up and were included in our prospective analyses. The Regional Research Ethics Board in Stockholm, and the ethics committee at Karolinska Institutet, Stockholm, Sweden approved the study.

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## **Web Appendix II**

**Web Table 1.** Cross-sectional Associations Between Job Demands, Job Control and Leisure-Time Physical Inactivity.

**Web Figure 1.** Study specific odds ratios for leisure-time physical inactivity in passive jobs, active jobs, and high strain jobs as compared with low strain jobs.

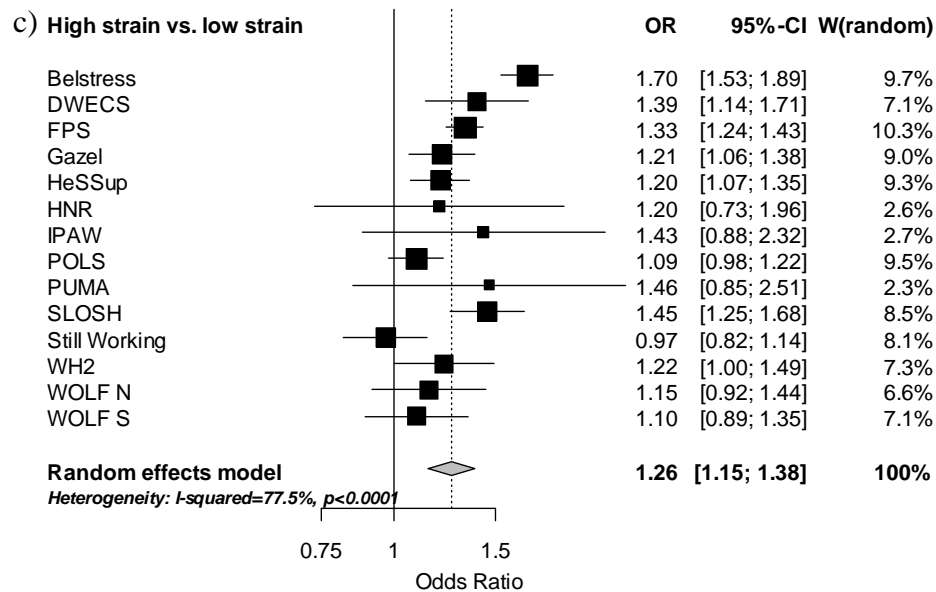
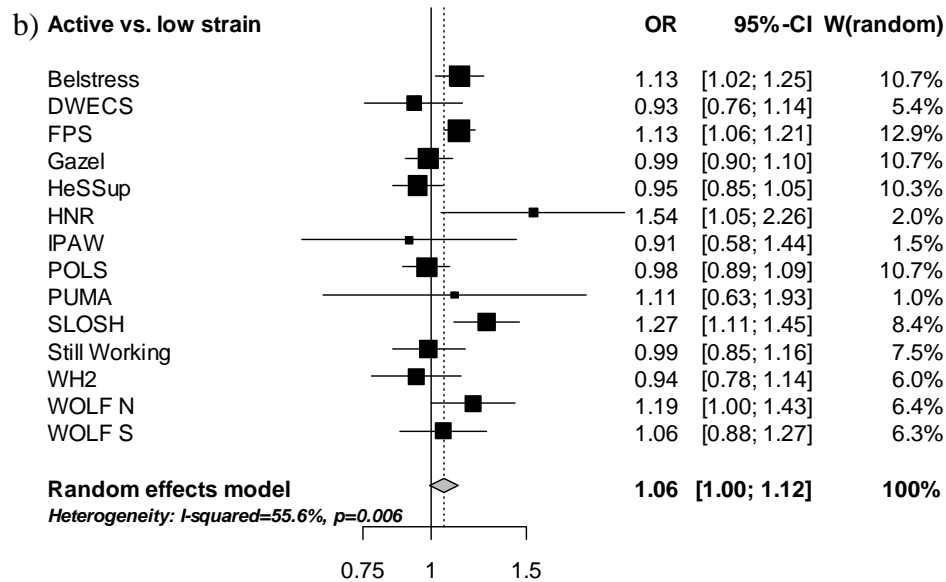
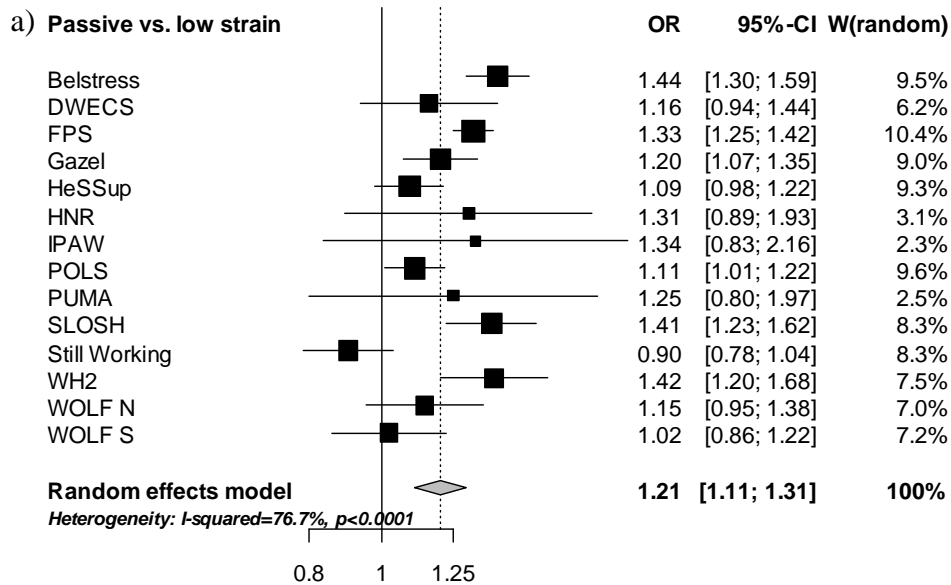
**Web Figure 2.** Estimated Odds Ratios and 95% Confidence Intervals for Leisure-Time Physical Inactivity in Low Strain, Passive, Active, and High Strain Jobs based on Five Different 1% Random Samples (N=1,327) of the Total Sample (N=132,704).

**Web Figure 3.** Estimated Odds Ratios and 95% Confidence Intervals for Leisure-Time Physical Inactivity in Low Strain, Passive, Active, and High Strain Jobs based on Five Different 10% Random Samples (N=13,270) of the Total Sample (N=132,704).

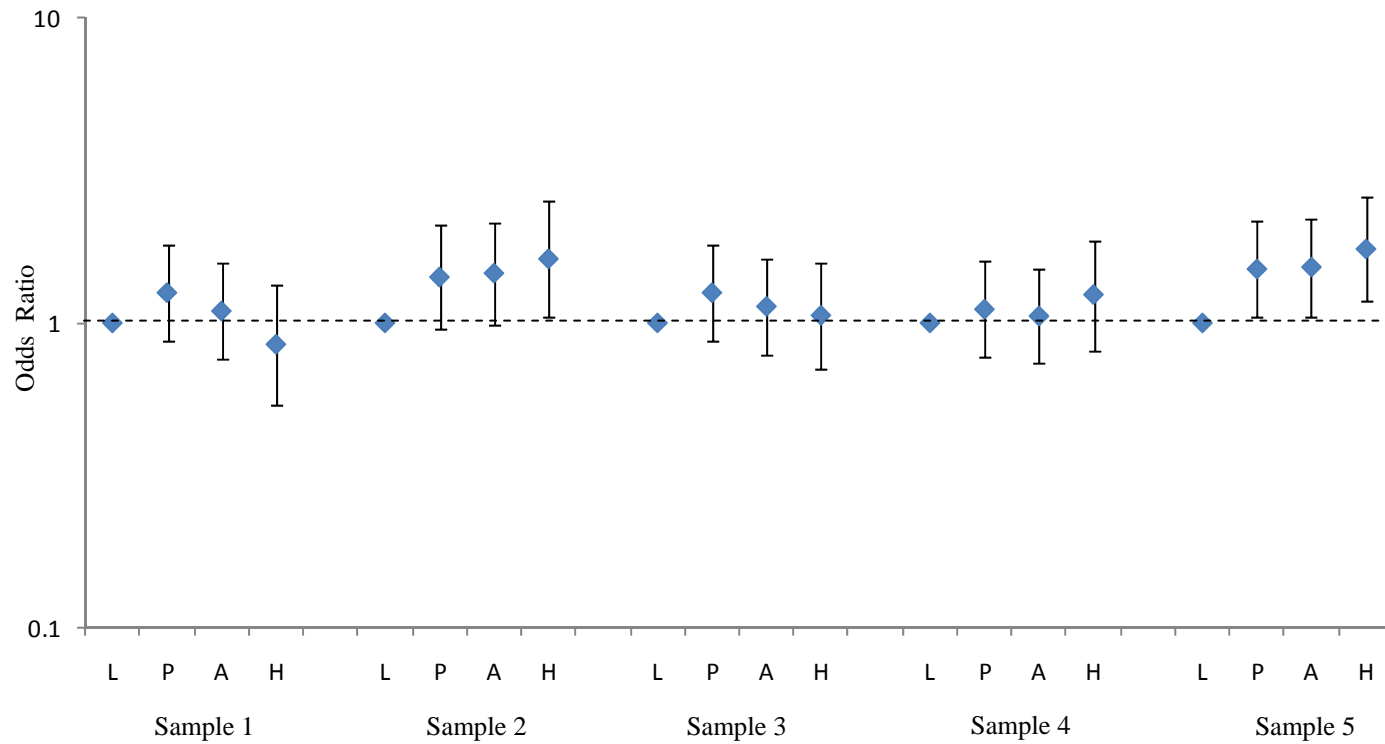
Web Table 1. Cross-sectional Association Between Job Demands, Job Control and Leisure-Time Physical Inactivity. The IPD-Work Consortium. Odds Ratios and 95% Confidence Intervals (95% CI).

	Odds Ratio <sup>1</sup>	95% CI
<b>Job Demands</b>		
Q1, Low demands (reference)	1	
Q2	0.96	0.92, 1.00
Q3	0.99	0.94, 1.03
Q4	0.98	0.94, 1.02
Q5, High demands	1.07	1.03, 1.12
<b>Job Control</b>		
Q5, High control (reference)	1	
Q4	1.07	1.02, 1.11
Q3	1.14	1.09, 1.19
Q2	1.24	1.19, 1.29
Q1, Low control	1.51	1.44, 1.57

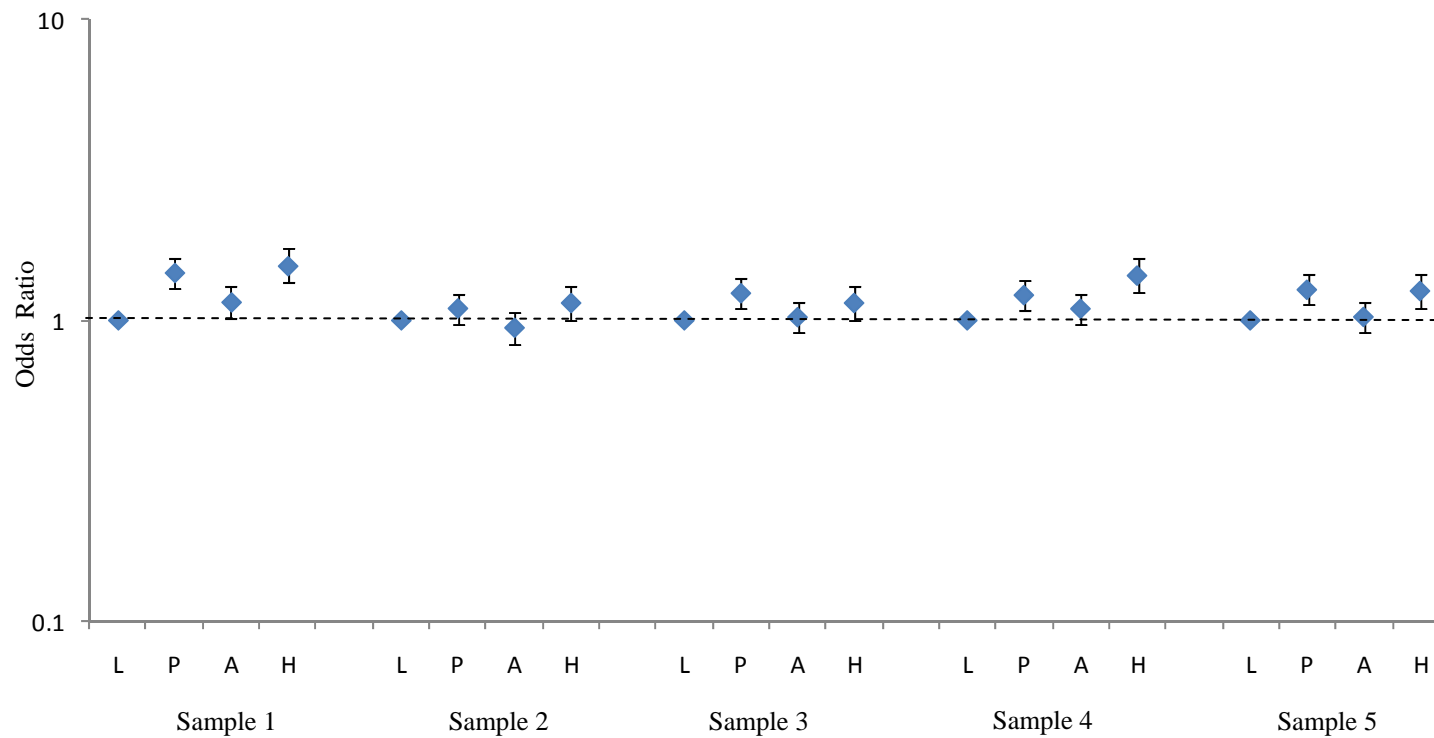
<sup>1</sup>Adjusted for age, sex, SES, and smoking.



Web Figure 1. Study specific odds ratios for leisure-time physical inactivity in a) passive jobs, b) active jobs, and c) high strain jobs as compared with low strain jobs. Adjusted for sex, age, SES and smoking.



Web Figure 2. Estimated odds ratios and 95% confidence intervals for leisure-time physical inactivity in low strain (L), passive (P), active (A), and high strain (H) jobs based on five different 1% random samples (N=1,327) of the total sample (N=132,704). Low strain job set as reference category. The odds ratios are adjusted for sex, age, SES and smoking.



Web Figure 3. Estimated odds ratios and 95% confidence intervals for leisure-time physical inactivity in low strain (L), passive (P), active (A), and high strain (H) jobs based on five different 10% random samples (N=13,270) of the total sample (N=132,704). Low strain job set as reference category. The odds ratios are adjusted for sex, age, SES and smoking.