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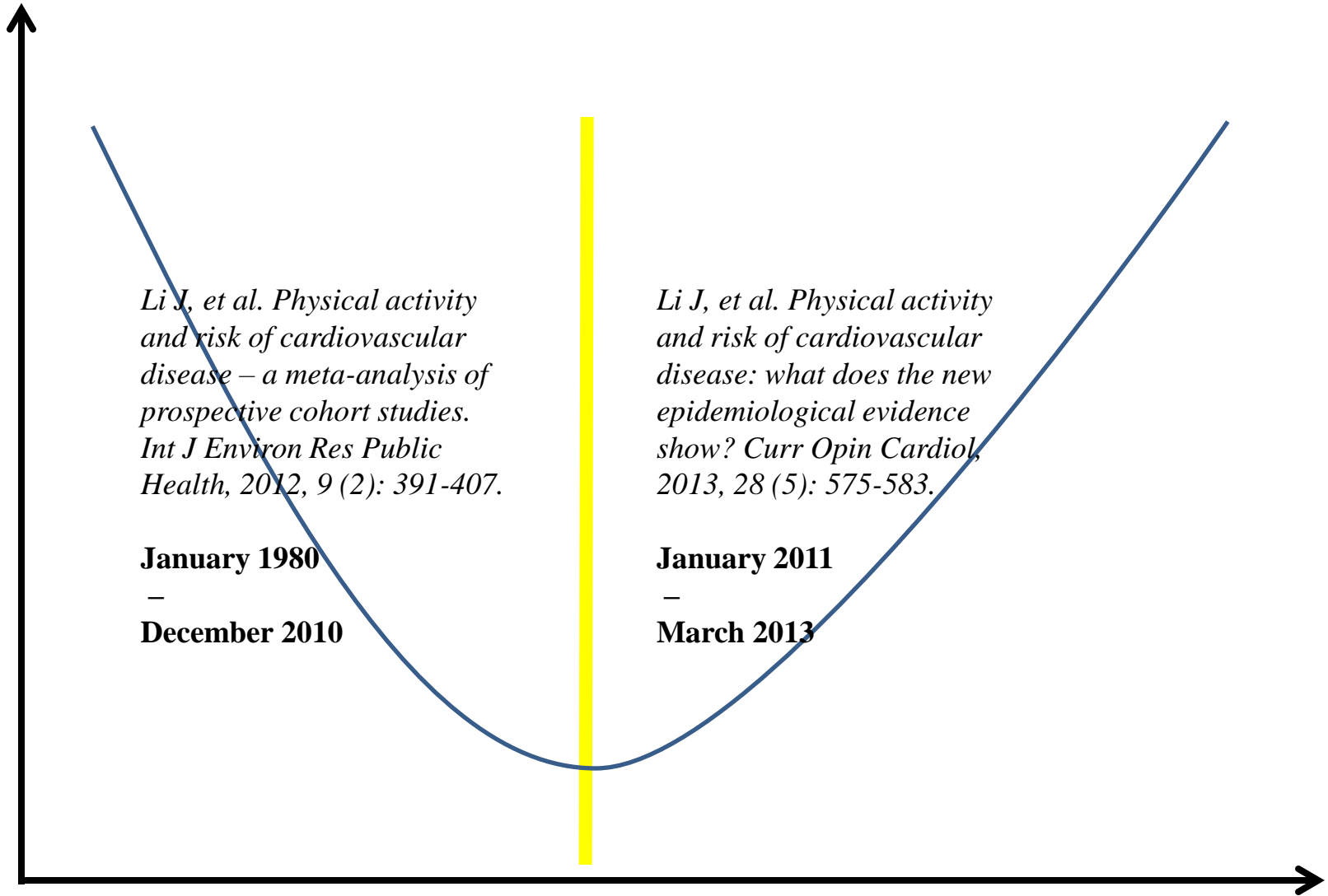
Non-Linear Dose-Response Relationship between OPA/PJD and CVD

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**The 7th ICOH-CVD Pre-Conference Workshop
Occupational Physical Activity and Cardiovascular Disease
– Research Updates and International Collaboration
Varese, Italy, May 3, 2017**

CVD



Li J, et al. Physical activity and risk of cardiovascular disease – a meta-analysis of prospective cohort studies. Int J Environ Res Public Health, 2012, 9 (2): 391-407.

January 1980
–
December 2010

Li J, et al. Physical activity and risk of cardiovascular disease: what does the new epidemiological evidence show? Curr Opin Cardiol, 2013, 28 (5): 575-583.

January 2011
–
March 2013

Low

High

Occupational Physical Activity or Physical Job Demand

MONICA/KORA Augsburg Study

- **Mean follow-up of 17.8 years;**
- **CVD mortality and all-cause mortality;**
- **Measure of PA: Monica Optional Study of Physical Activity (MOSPA)**
 - **Light physical activity (< 3.0 METs)**
 - **Moderate physical activity (3.0 – 6.0 METs)**
 - **Vigorous physical activity (> 6.0 METs)**

Pereira MA, et al A collection of physical activity questionnaires for health-related research: The Monica Optional Study of Physical Activity (MOSPA). Med Sci Sports Exerc 1997, 29 (6 Suppl): S162-S169.

MONICA/KORA Augsburg Study

- Measure of **OPA**: Monica Optional Study of Physical Activity (MOSPA)

Occupational Physical Activity:

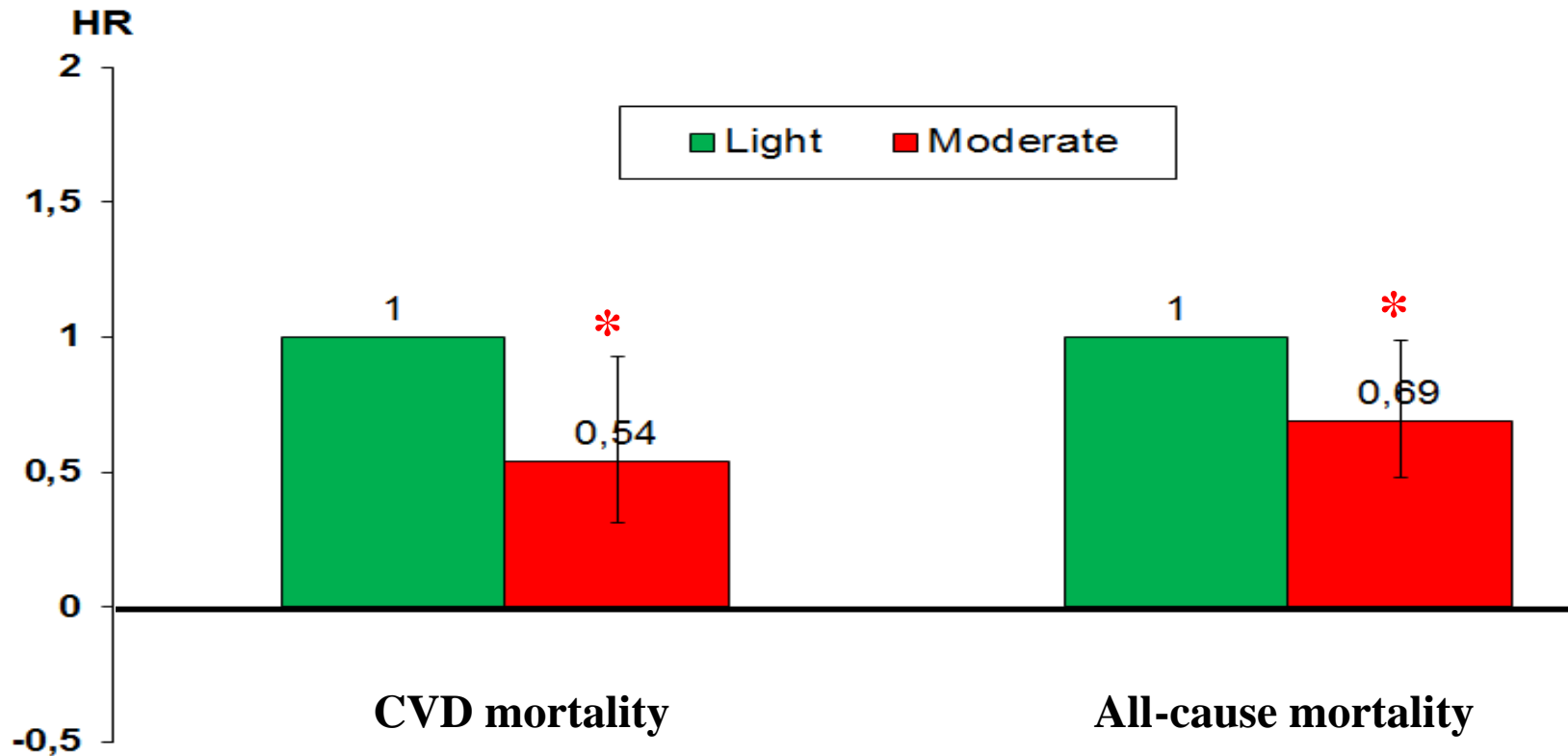
On a typical day at work, how much time do you spend walking? __ hrs __ mins

- Light physical activity (< 3.0 METs)
- Moderate physical activity (3.0 – 6.0 METs)

Pereira MA, et al. A collection of physical activity questionnaires for health-related research: The Monica Optional Study of Physical Activity (MOSPA). Med Sci Sports Exerc 1997, 29 (6 Suppl): S162-S169.

MONICA/KORA Augsburg Study

Effect of OPA on CVD mortality and all-cause mortality



Adjusted for sex, BMI, systolic blood pressure, total-to-HDL cholesterol ratio, education, smoking status, alcohol consumption, myocardial infarction, stroke, diabetes, cancer, self-reported limited physical activity due to health problems, and other domains of physical activity at baseline.

Cox regression, * $p < 0.05$

Autenrieth CS, et al. Association between domains of physical activity and all-cause, cardiovascular and cancer mortality. Eur J Epidemiol, 2011,26 (2): 91-99.

MONICA/KORA Augsburg Study

- Measure of **PJD**:

Physical Job Demand:

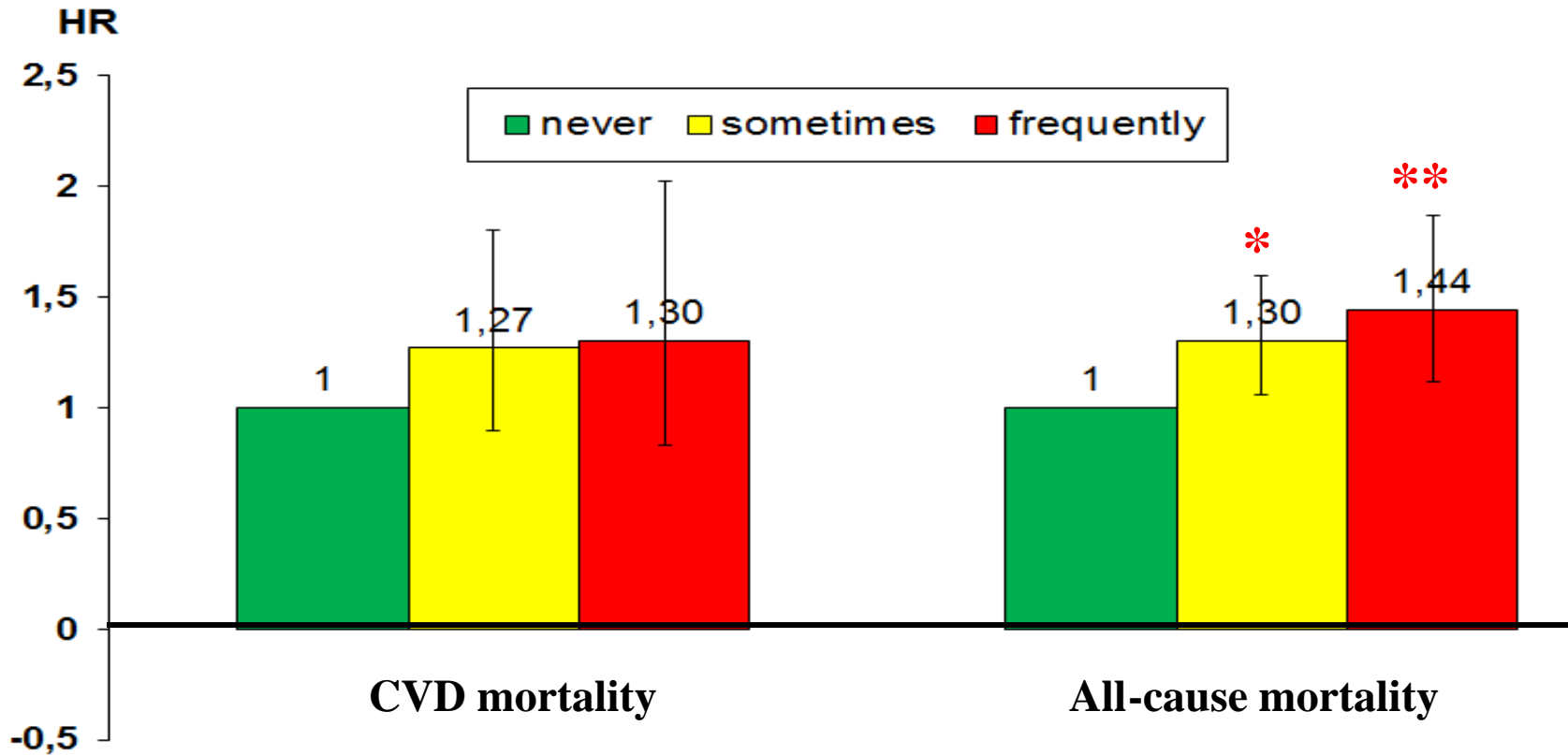
Which of the following working conditions apply to your current job?

Physically demanding work

- **never**
- **sometimes**
- **frequently**

MONICA/KORA Augsburg Study

Effect of PJD on CVD mortality and all-cause mortality



Adjusted for age, sex, surveys, education, marital status, smoking, alcohol consumption, total physical activity (MOSPA), BMI, dyslipidemia, hypertension, and job strain at baseline.

Cox regression, * $p < 0.05$, ** $p < 0.01$

Unpublished materials.

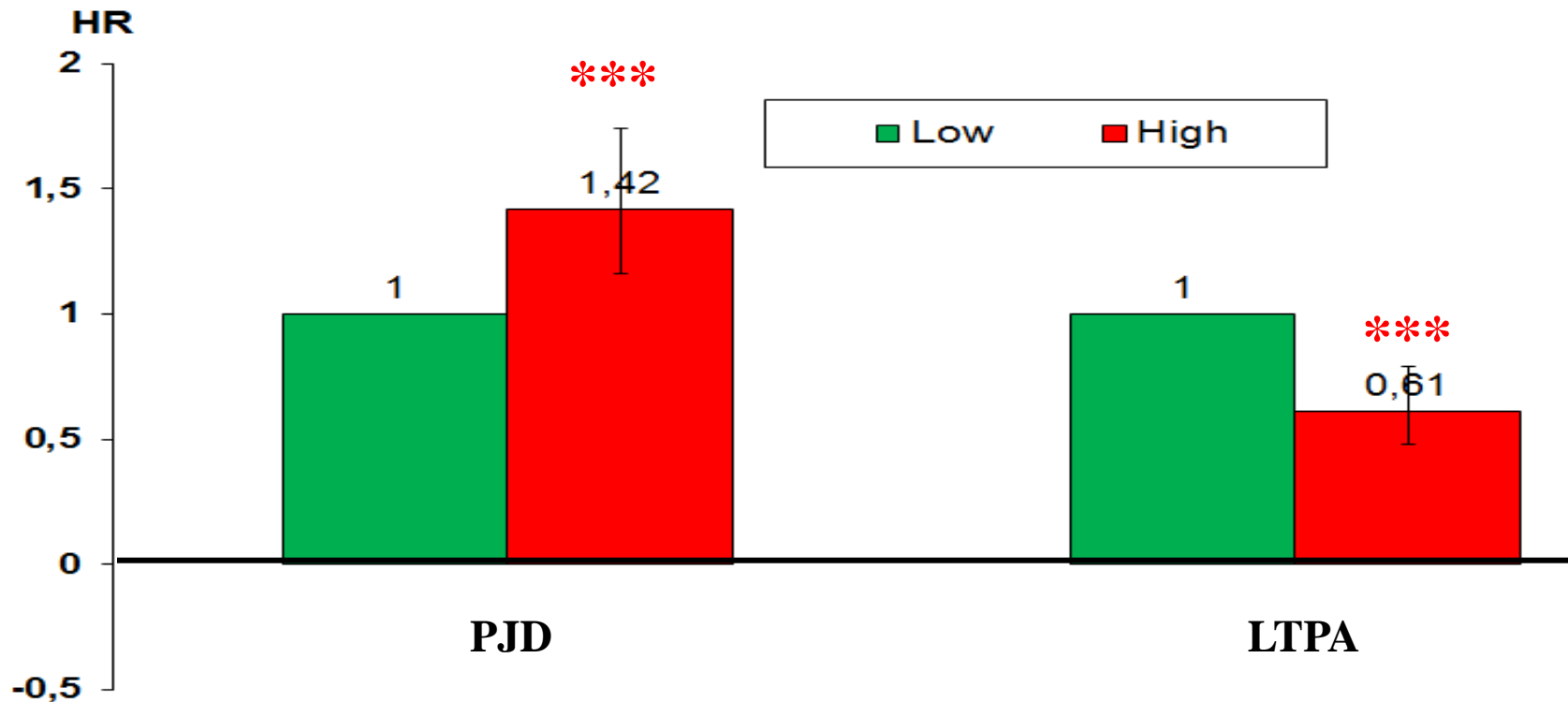
CORDIS Study (Cardiovascular Occupational Risk Factor Determination in Israel Study)

- 22-year follow-up;
- All-cause mortality;
- Measure of **PJD**: “Does your work generally entail physical work?”
- **Low vs. High**
- Measure of **LTPA**: frequency and duration of walking, aerobic exercises, swimming, horse riding, bike riding, hiking, rowing/weight lifting, ball games, surfing or dancing.
- **Low vs. High**

Harari G, et al. Combined association of occupational and leisure-time physical activity with all-cause and coronary heart disease mortality among a cohort of men followed-up for 22 years. Occup Environ Med, 2015, 72 (9): 617-624.

CORDIS Study (Cardiovascular Occupational Risk Factor Determination in Israel Study)

Separate effects of PJD and LTPA on all-cause mortality



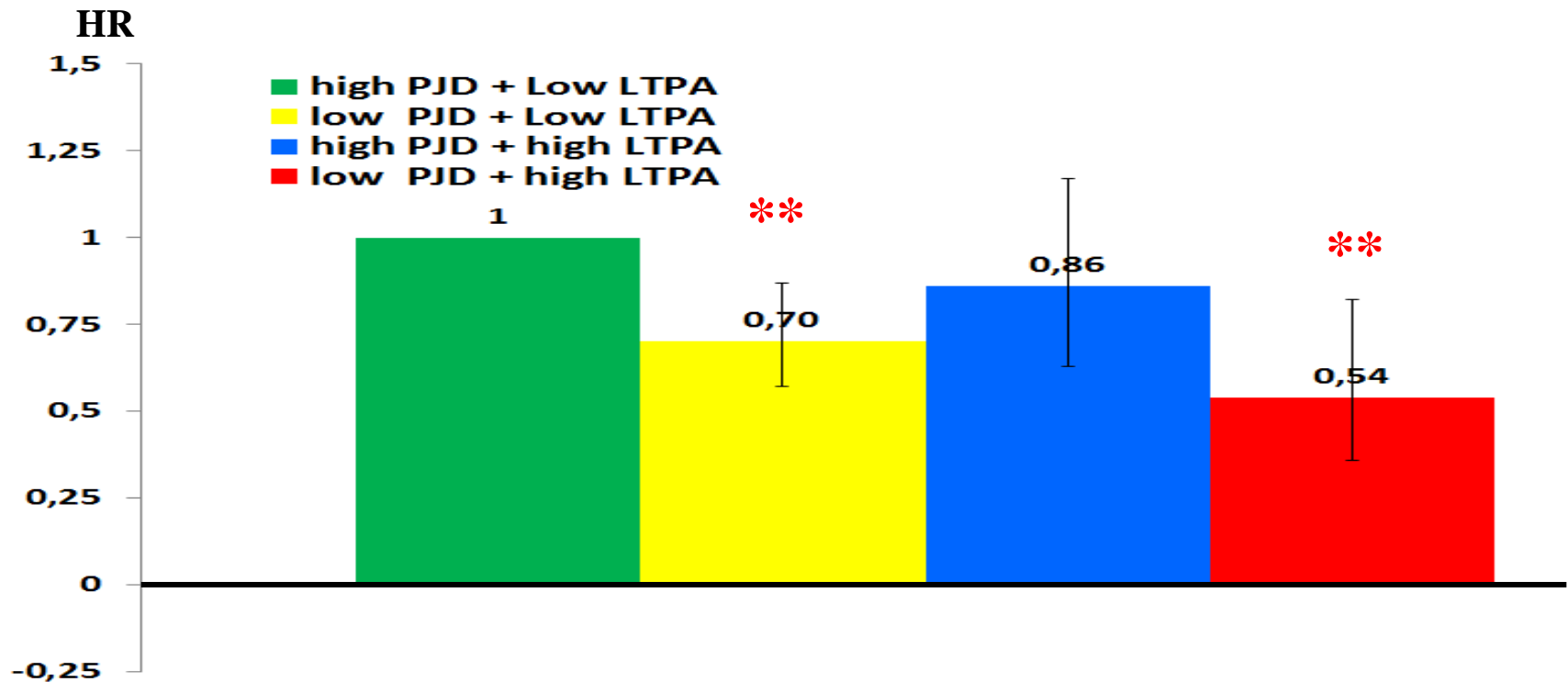
Adjusted for age, socioeconomic status (number of people/room), educational status, father's country of origin, BMI, cholesterol, high-density lipoprotein cholesterol, hypertension, diabetes, smoking, coffee consumption, alcohol consumption, diet, and shift work at baseline.

Cox regression, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Harari G, et al. Combined association of occupational and leisure-time physical activity with all-cause and coronary heart disease mortality among a cohort of men followed-up for 22 years. Occup Environ Med, 2015, 72 (9): 617-624.

CORDIS Study (Cardiovascular Occupational Risk Factor Determination in Israel Study)

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Cox regression, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

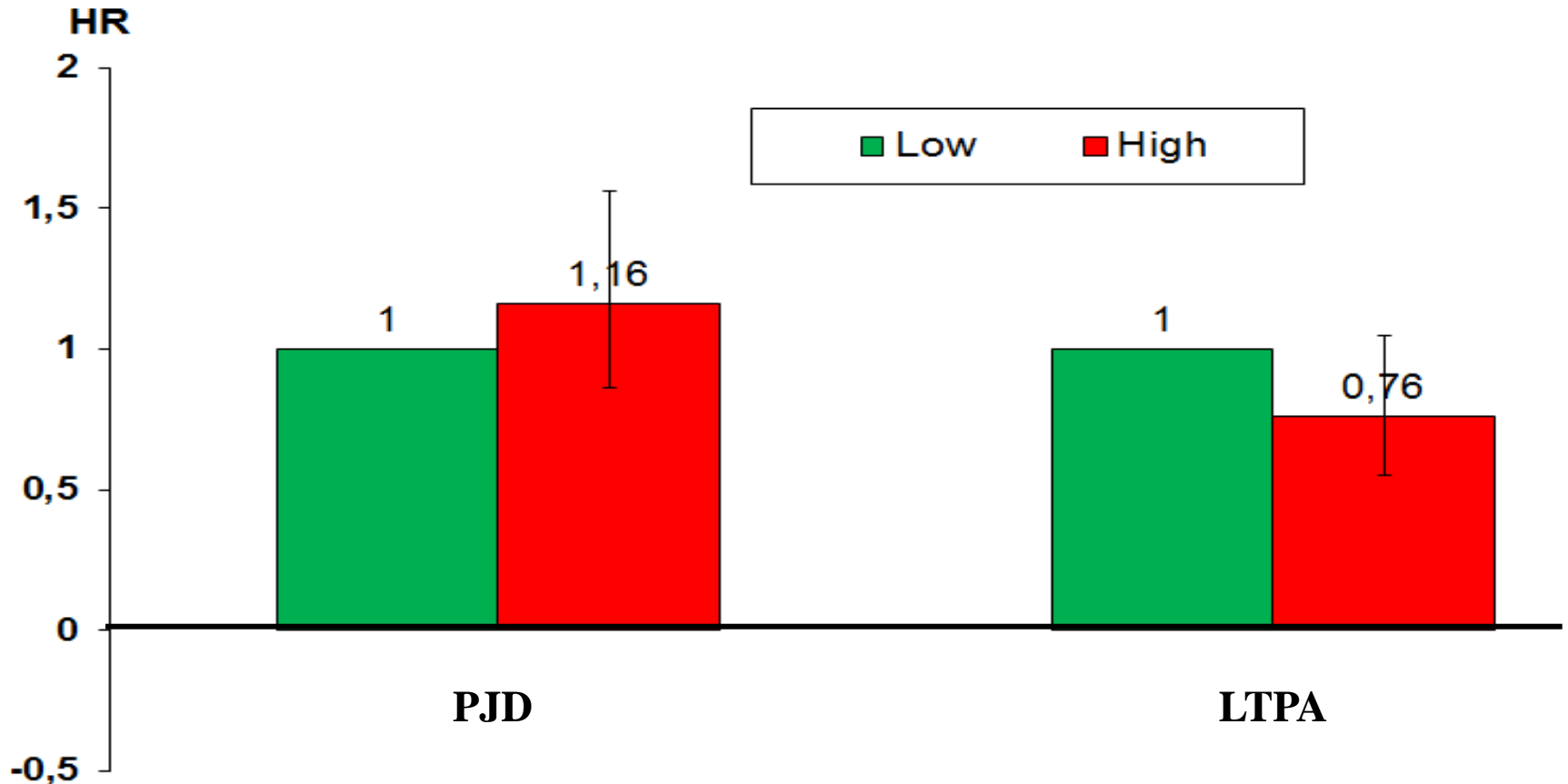
Harari G, et al. Combined association of occupational and leisure-time physical activity with all-cause and coronary heart disease mortality among a cohort of men followed-up for 22 years. Occup Environ Med, 2015, 72 (9): 617-624.

SOEP Study (German Socio-Economic Panel)

- **10-year follow-up;**
- **All-cause mortality;**
- **Measure of PJD: “Do you have to do hard manual work at your job?”**
- **Low vs. High**
- **Measure of LTPA: “Do you take part in doing sports during your free time?”**
- **Low vs. High**

SOEP Study (German Socio-Economic Panel)

Separate effects of PJD and LTPA on all-cause mortality



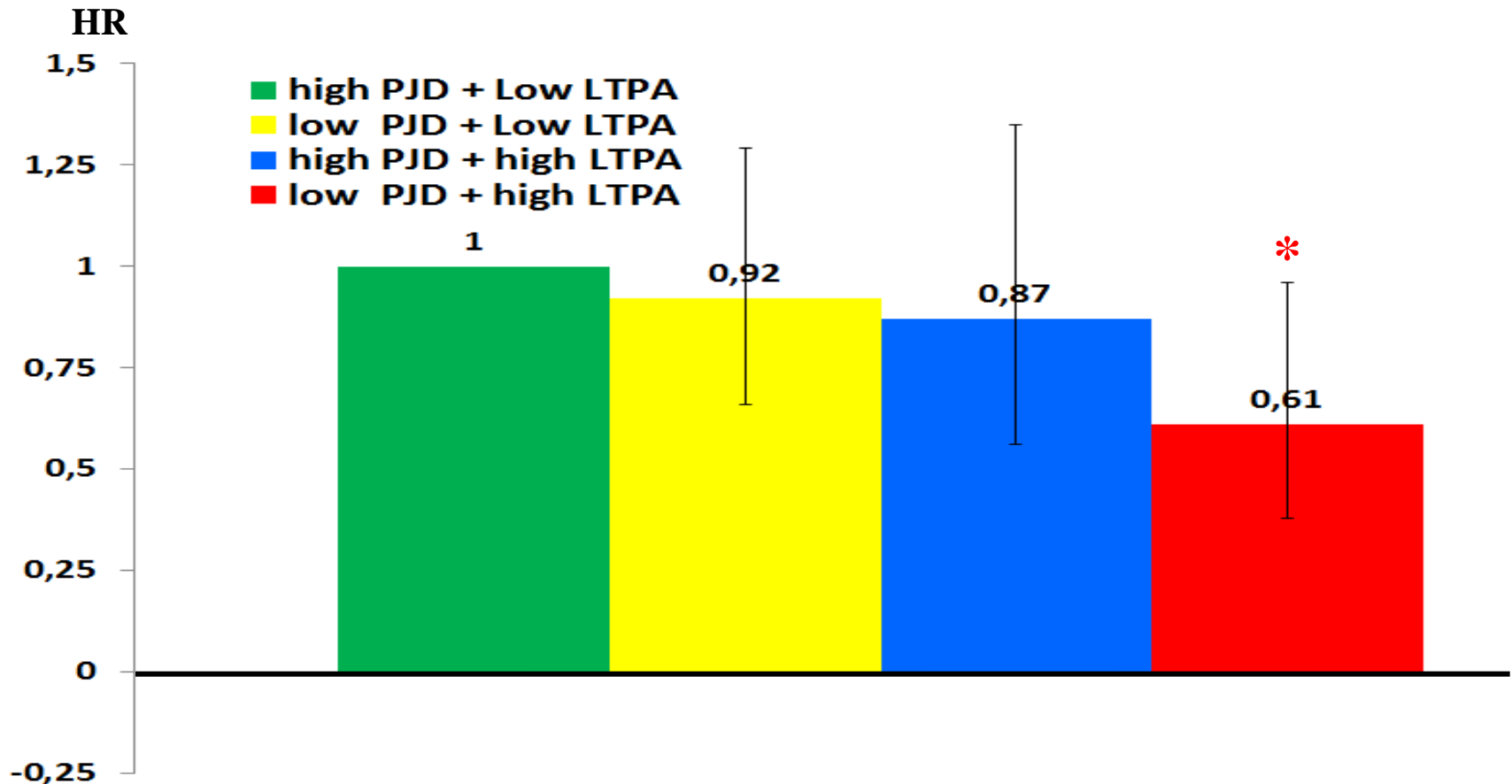
Adjusted for age, sex, marital status, education, income, and self-rated health at baseline.

Cox regression, * $p < 0.05$

Unpublished materials.

SOEP Study (German Socio-Economic Panel)

Combined effects of PJD and LTPA on all-cause mortality

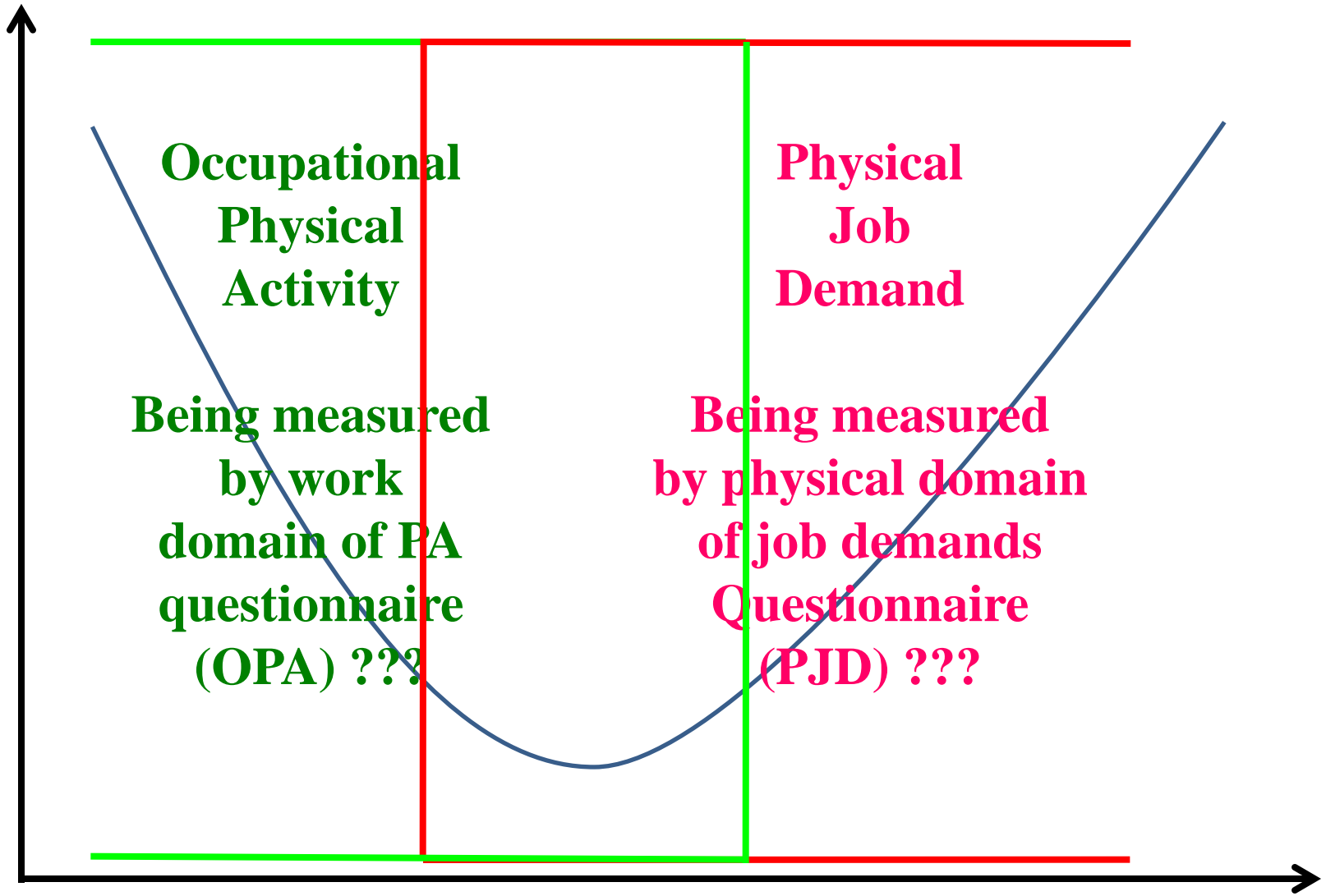


Adjusted for age, sex, marital status, education, income, and self-rated health at baseline.

Cox regression, * $p < 0.05$

Unpublished materials.

CVD



**Occupational
Physical
Activity**

**Physical
Job
Demand**

**Being measured
by work
domain of PA
questionnaire
(OPA) ???**

**Being measured
by physical domain
of job demands
Questionnaire
(PJD) ???**

Low

High

