

Brookings Warwick Conference

**“Why Inequality Matters: Lessons for
Policy from the Economics of Happiness”**

The Brookings Institution, Washington

June 5-6, 2003

The Social Gradient in Health and Well-being

Michael Marmot

International Centre for Health and Society

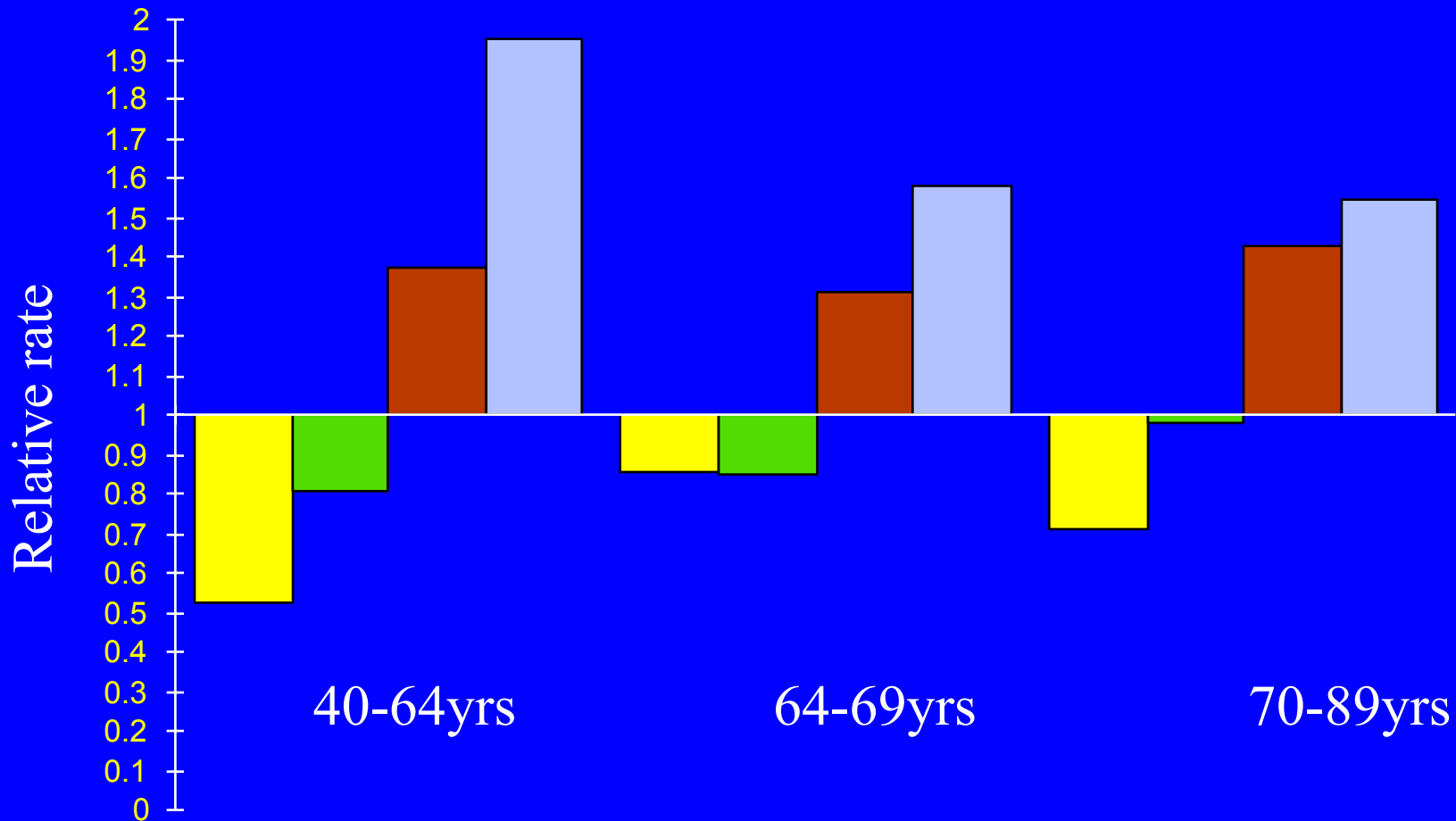
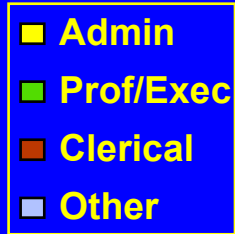
UCL

Why should a health person be interested in happiness?

- ◆ **Health is a measure of well-being of the population**
- ◆ Health is a determinant of well-being
- ◆ Determinants of health may be determinants of well-being

Mortality by Grade of Employment

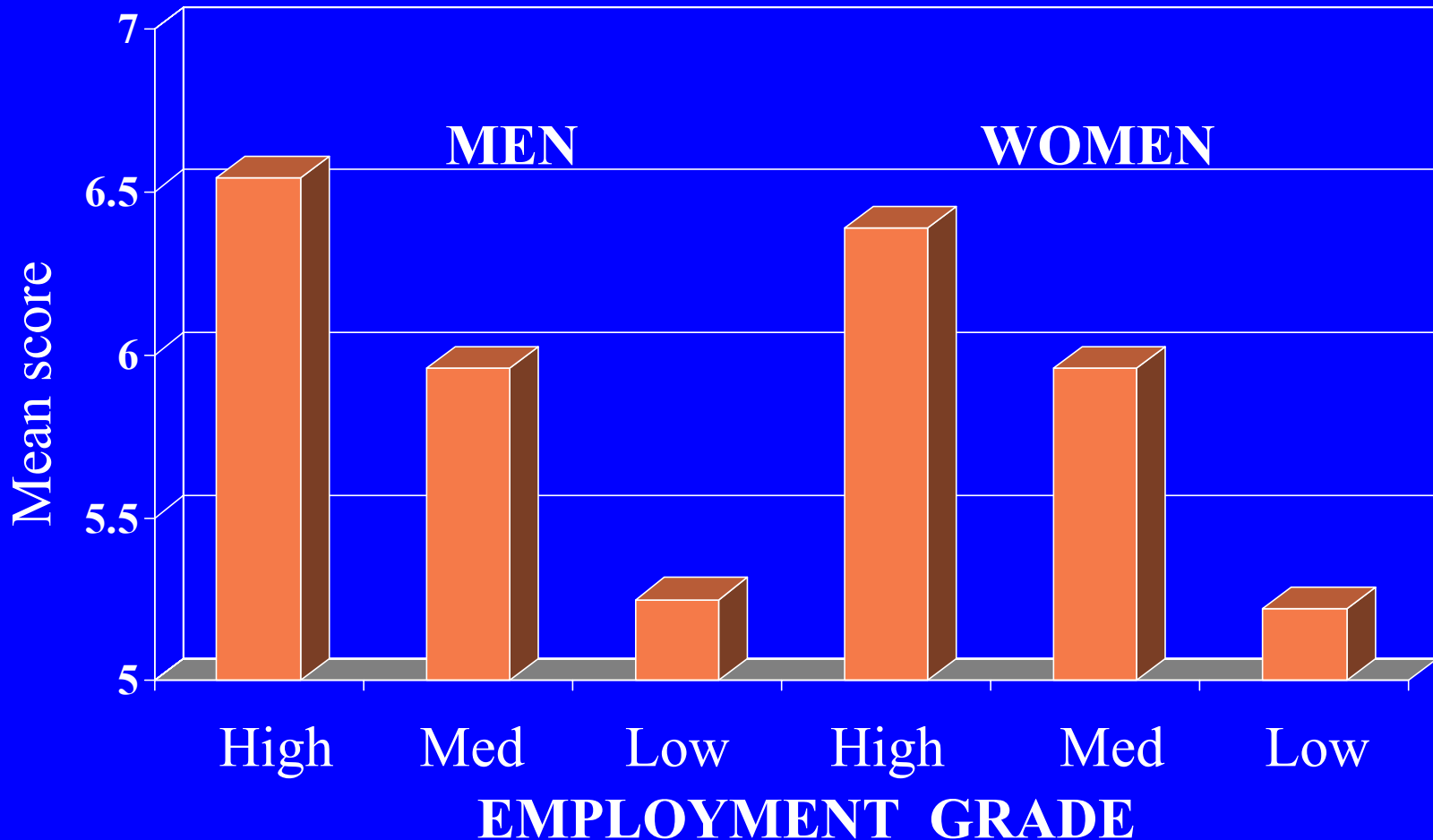
Whitehall Men 25 yr Follow-up



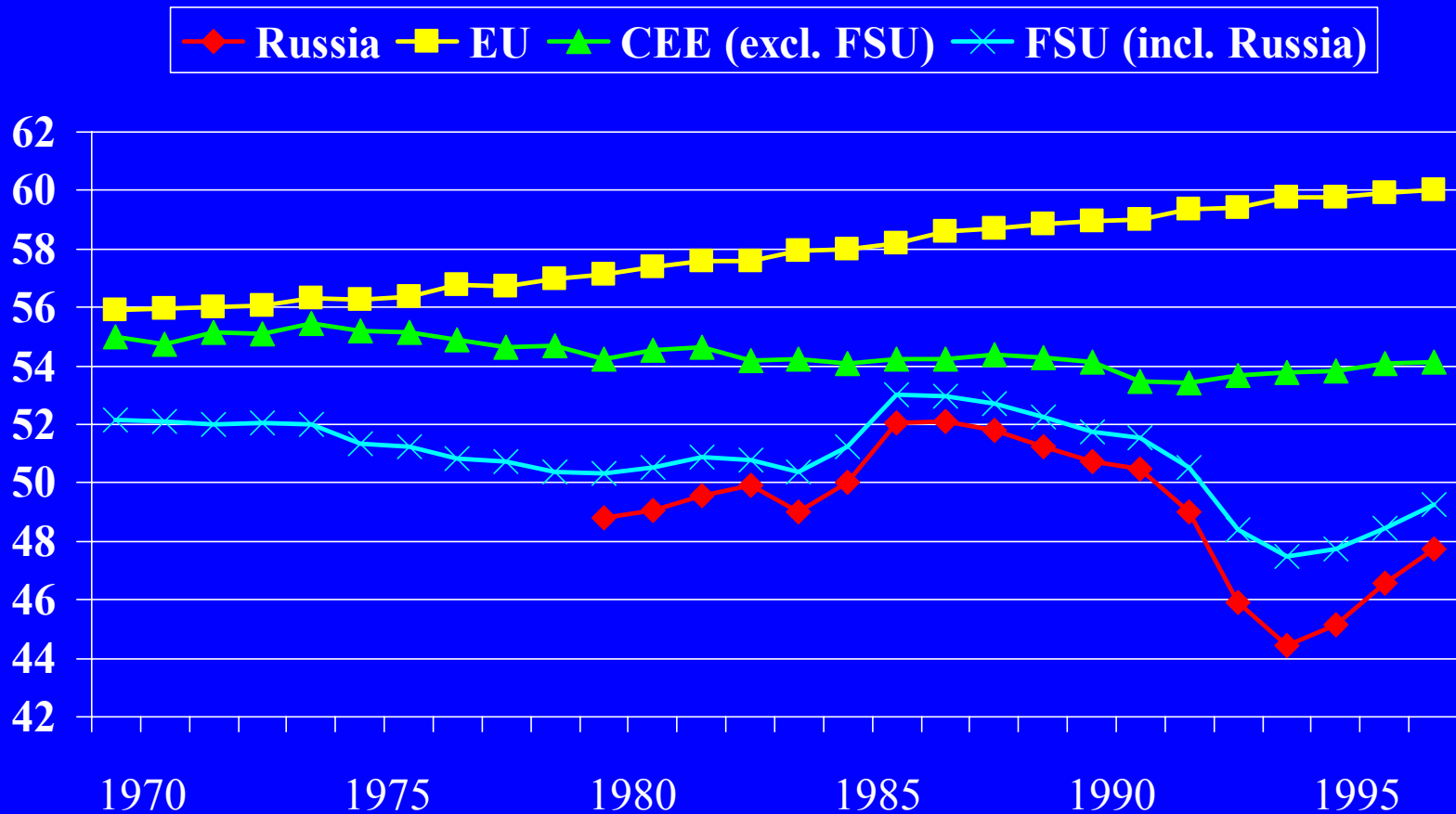
Marmot and Shipley, 1996

Positive Affect by Grade

Whitehall II*



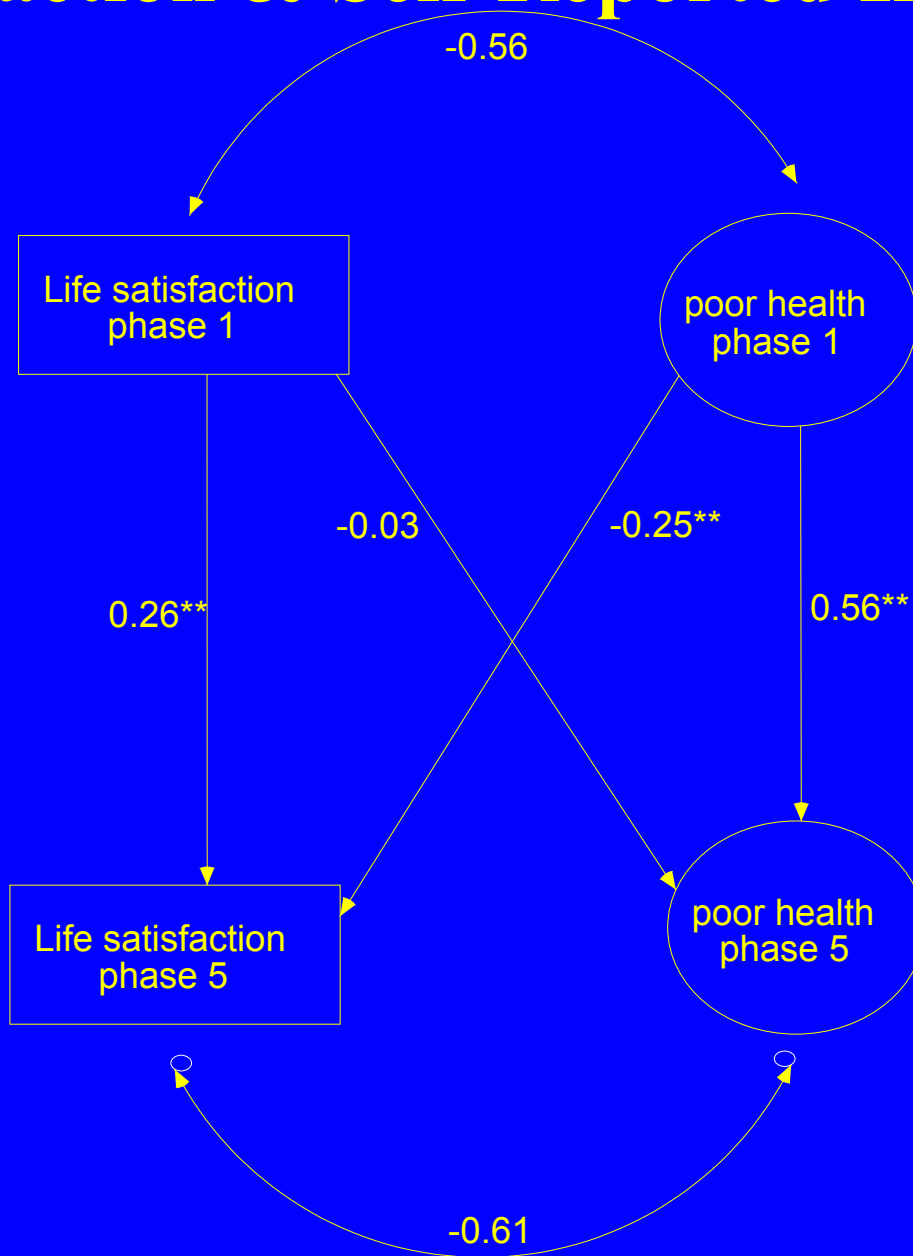
LIFE EXPECTANCY AT AGE 15 YEARS, MALES 1970-97



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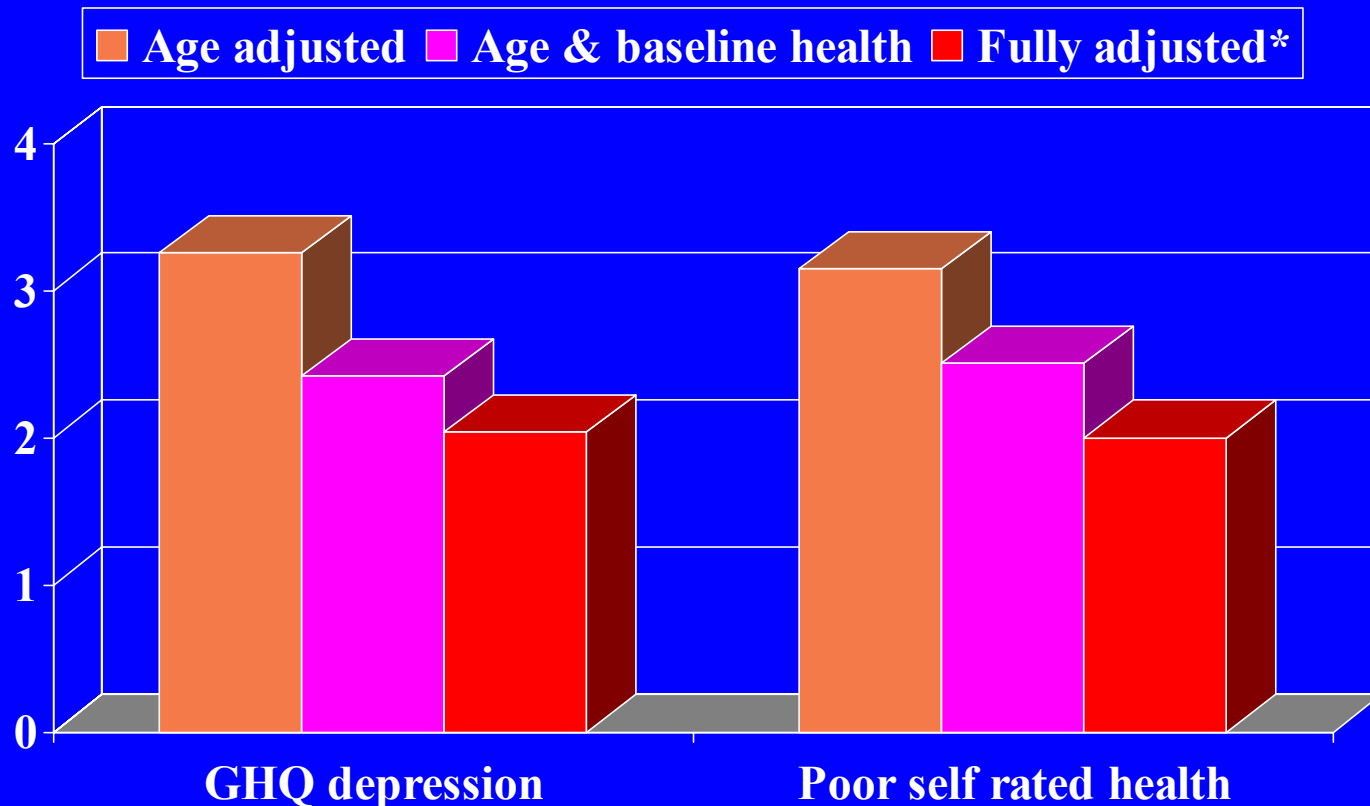
Life Satisfaction & Self-Reported Health Status



Why should a health person be interested in happiness?

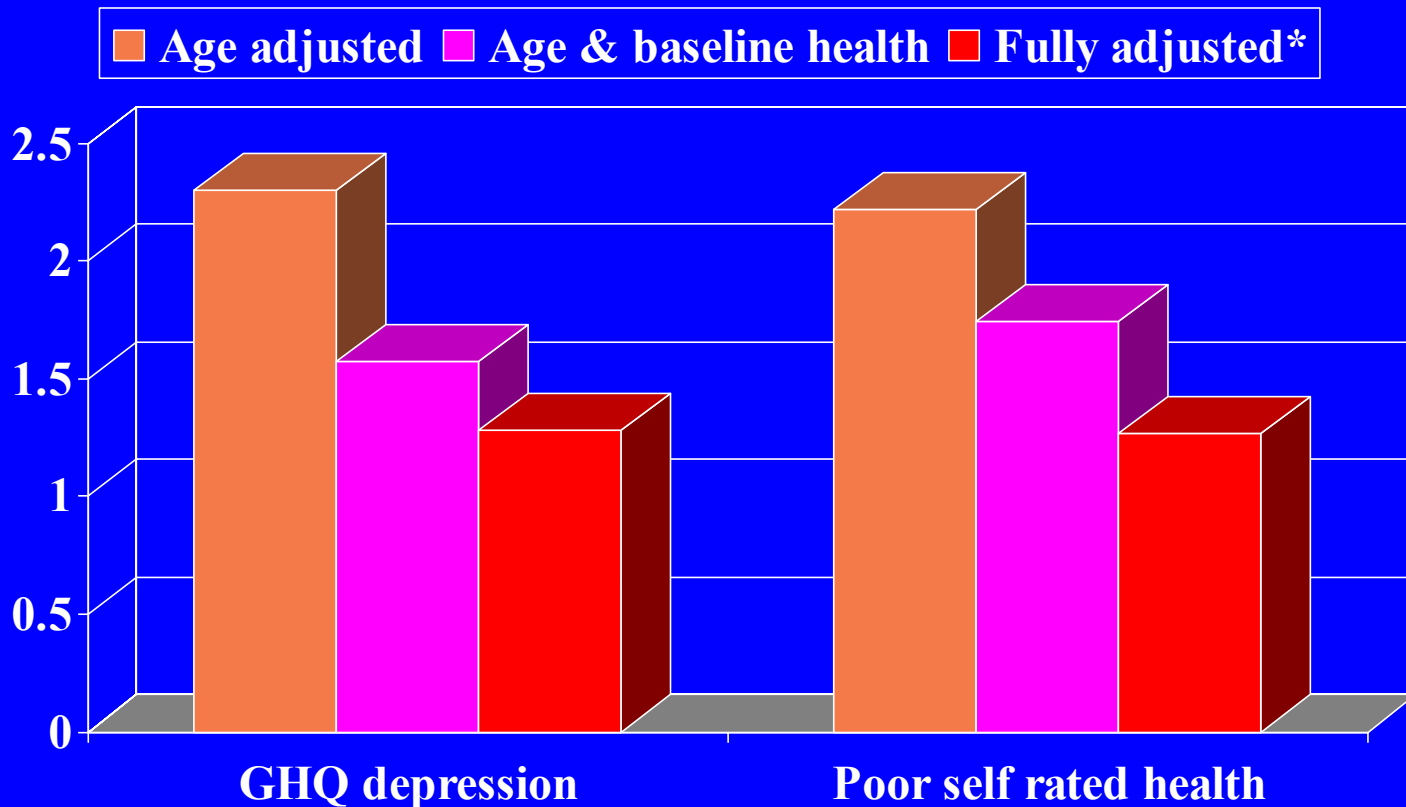
- ◆ Health is a measure of well-being of the population
- ◆ Health is a determinant of well-being
- ◆ **Determinants of health may be determinants of well-being**

Relative Index of Inequality of Household Wealth on GHQ and Self Rated Health - Whitehall II Men



* Adjusted for age, baseline self-rated health, GHQ score, employment status, economically active adults in household, children, marital status, education and employment grade (*Martikainen et al.*)

Relative Index of Inequality of Household Income on GHQ and Self Rated Health - Whitehall II Men



* Adjusted for age, baseline self-rated health, GHQ score, employment status, economically active adults in household, children, marital status, education and employment grade (*Martikainen et al.*)

LIFE EXPECTANCY AND INCOME

	COSTA RICA	USA BLACK
Median income*	\$6,410	\$26,522
Male LE	75 yrs	66.1 yrs

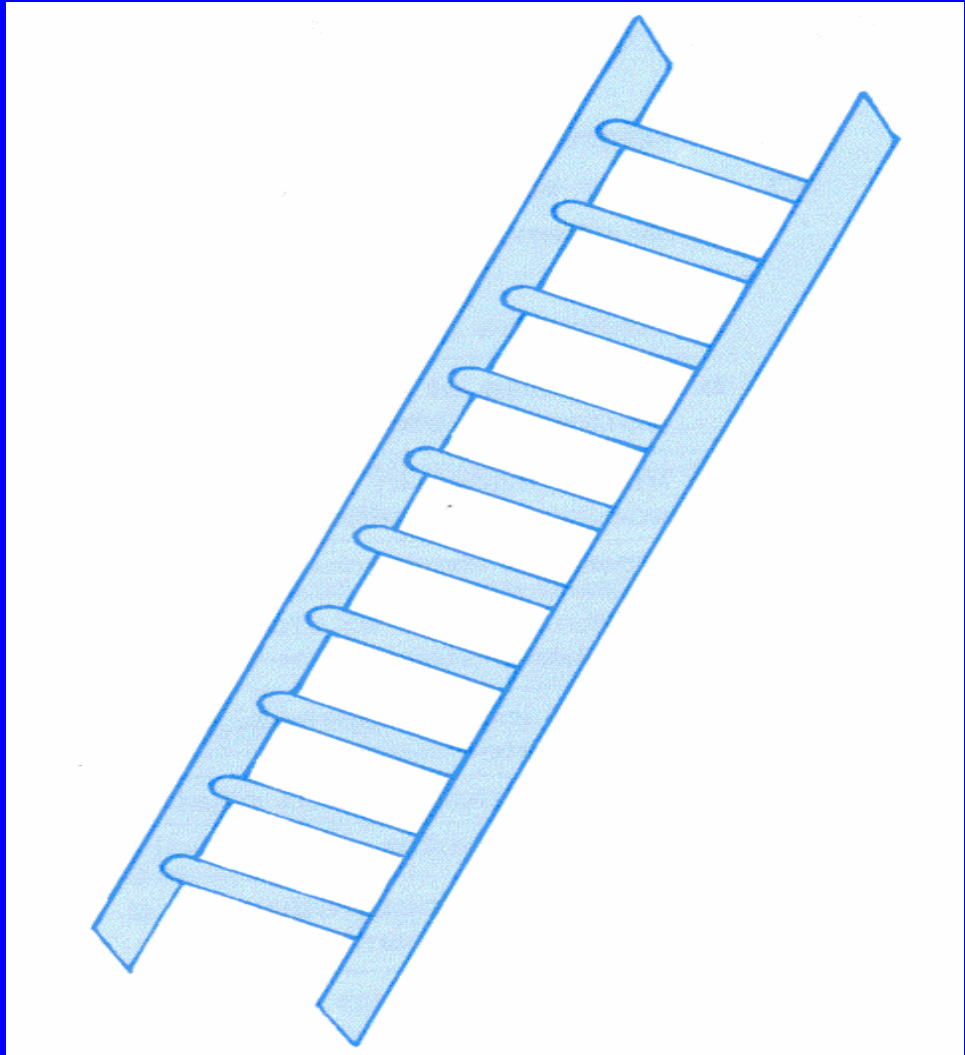
* Costa Rica - GNP per capita purchasing power parities - USA as standard

*“RELATIVE DEPRIVATION IN
THE SPACE OF INCOMES CAN
YIELD ABSOLUTE DEPRIVATION
IN THE SPACE OF CAPABILITIES”*

Amartya Sen, Inequality Re-examined, 1992

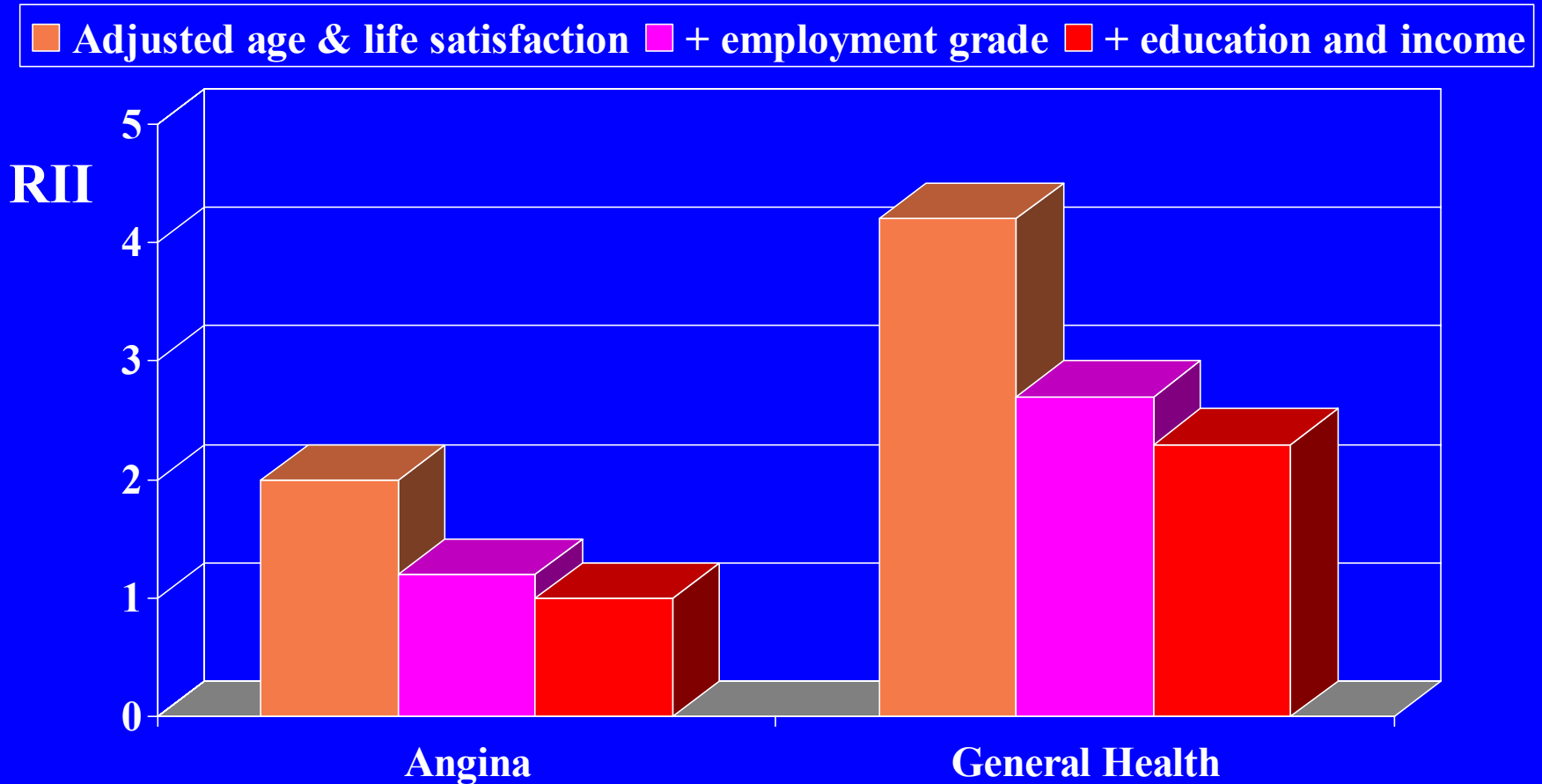
LADDER AS A REPRESENTATION OF WHERE PEOPLE STAND IN OUR SOCIETY

TOP = BEST OFF



BOTTOM = WORST OFF

Subjective Status (Ladder) Adjustments Odds Ratio (RII)



RELATIVE POSITION AND HEALTH

HOW DOES IT OPERATE?

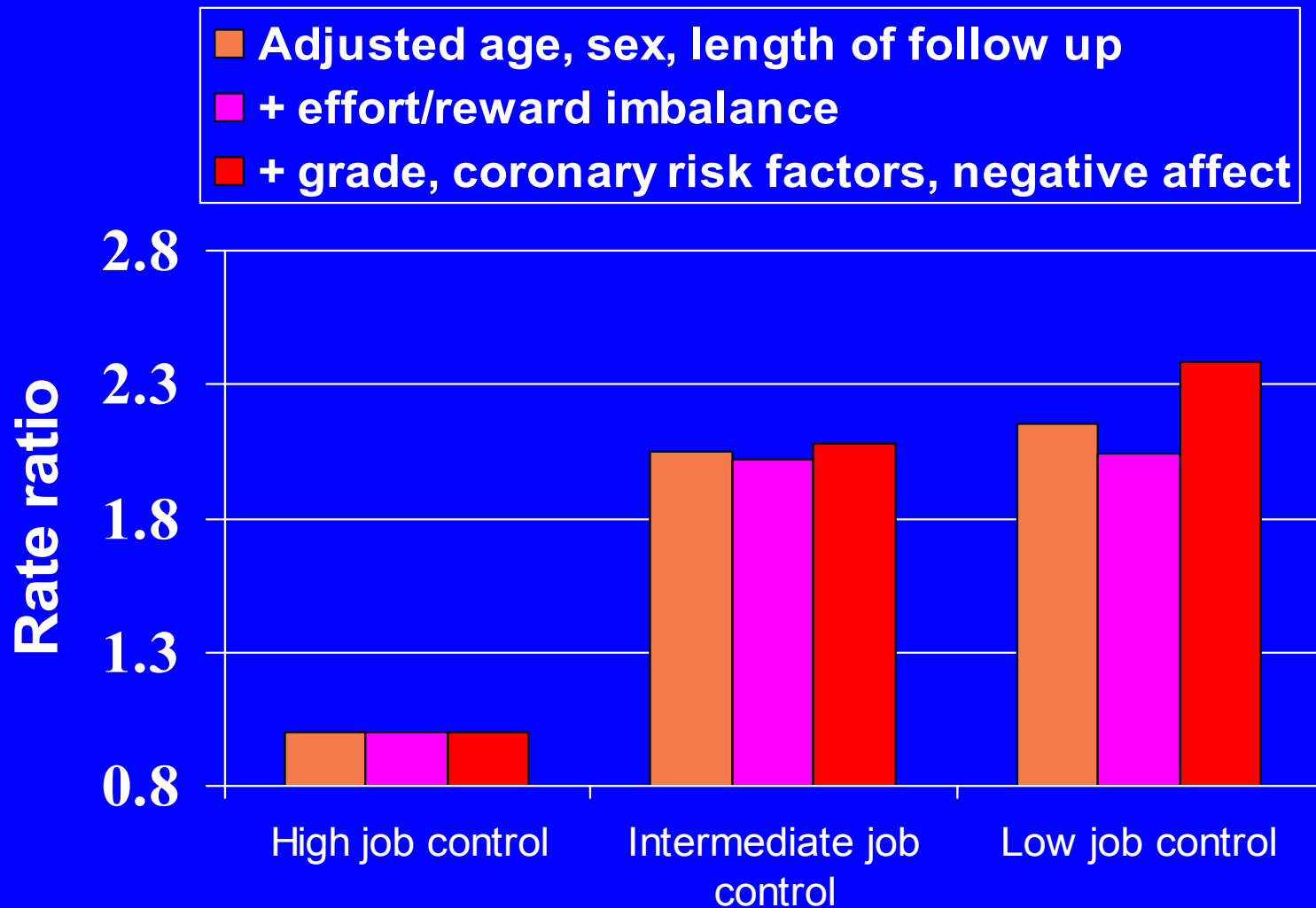
- POWER
- SOCIAL PARTICIPATION
- SOCIAL ENVIRONMENT
- BEHAVIOUR
- EARLY LIFE

RELATIVE POSITION AND HEALTH

HOW DOES IT OPERATE?

- **POWER**
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SELF-REPORTED JOB CONTROL AND CHD INCIDENCE WHITEHALL MEN AND WOMEN



RELATIVE POSITION AND HEALTH

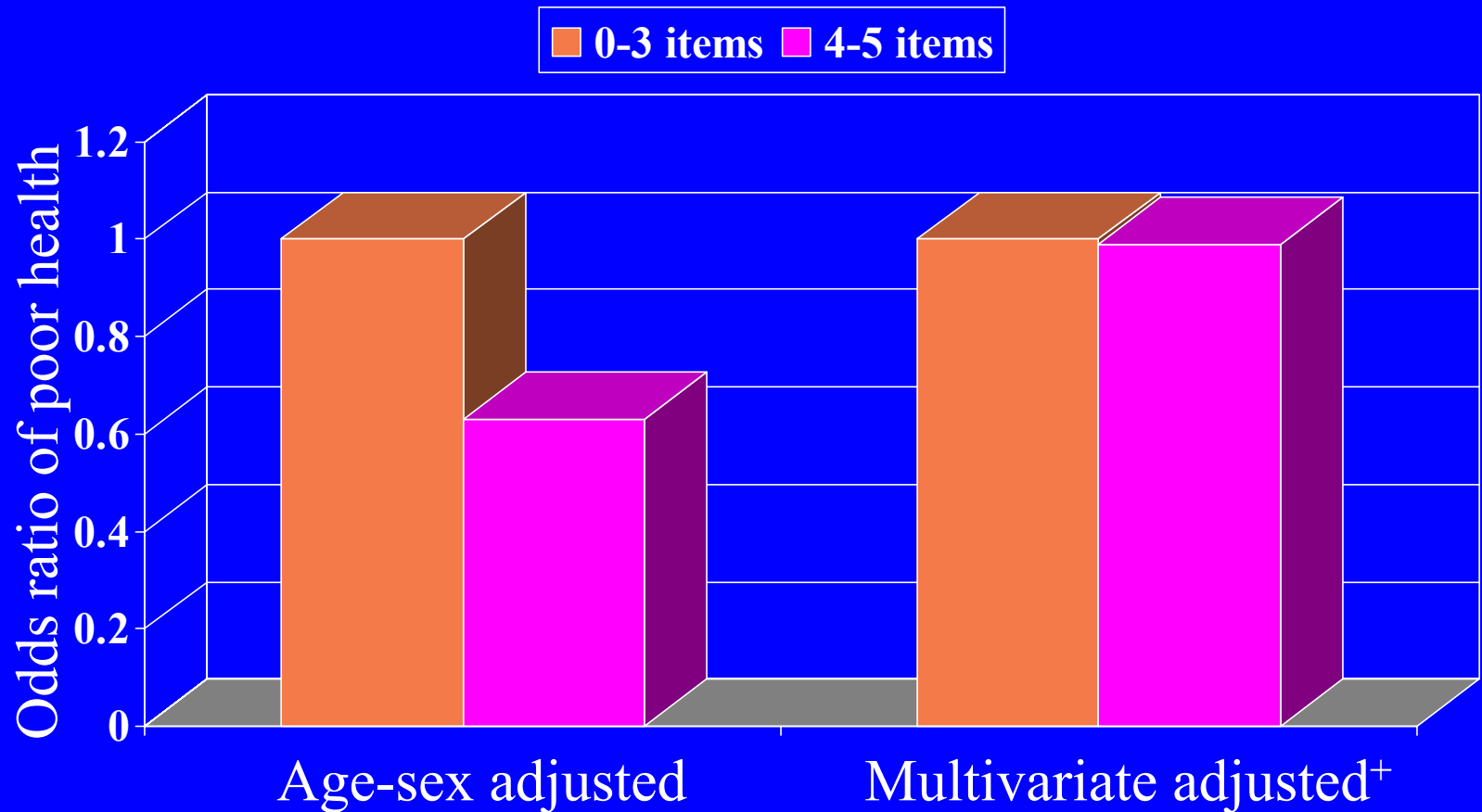
HOW DOES IT OPERATE?

- POWER
- **SOCIAL PARTICIPATION**
- SOCIAL ENVIRONMENT
- BEHAVIOUR
- EARLY LIFE

- ◆ “By necessaries I understand not only the commodities which are indispensably necessary for the support of life, but what ever the customs of the country renders it indecent for creditable people, even the lowest order to be without the poorest person would be ashamed to appear in public without them.”

Adam Smith, Wealth of Nations 1776

POOR HEALTH IN HUNGARY BY BASIC* HOUSEHOLD ITEMS

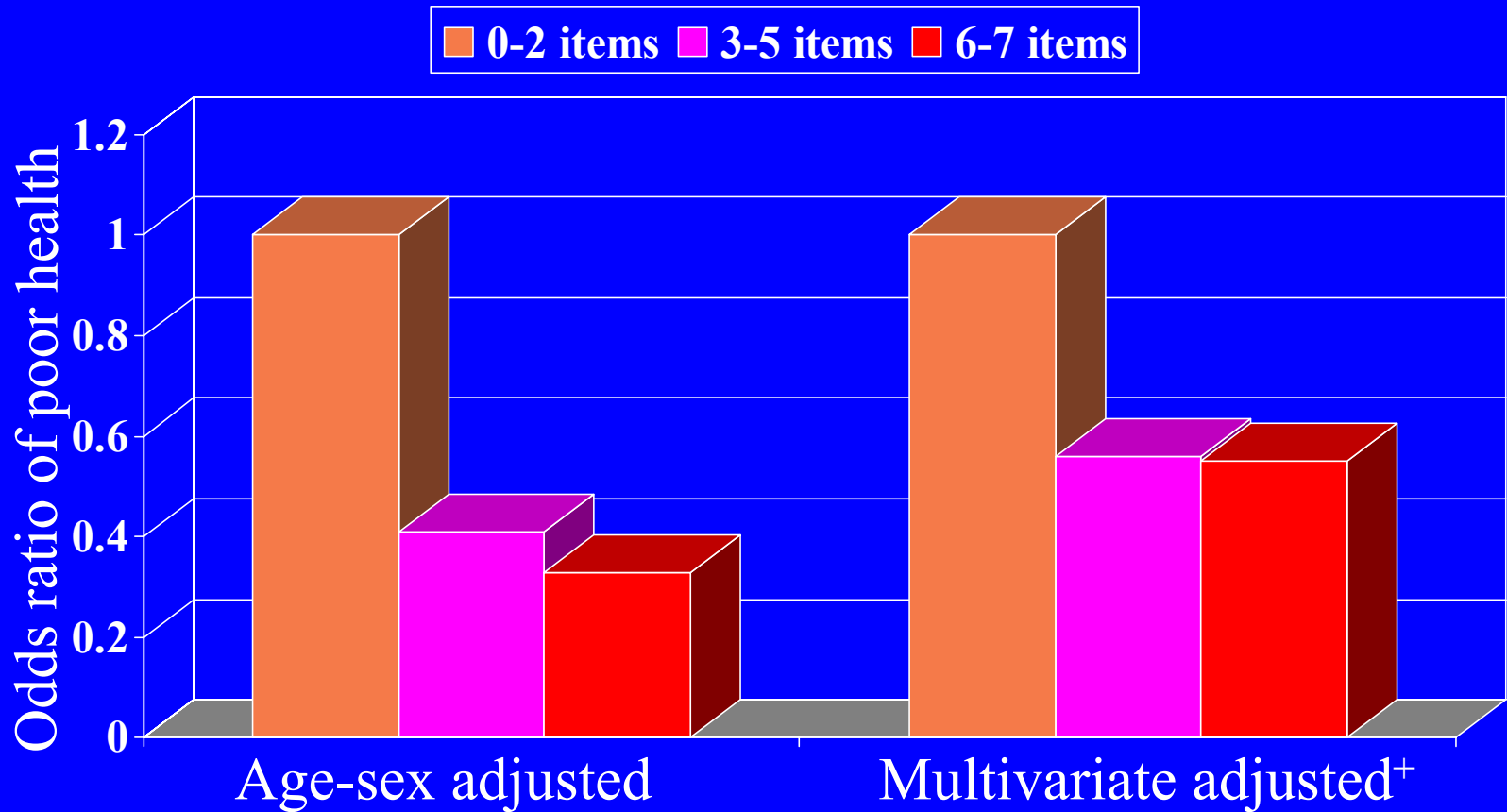


* washing machine, fridge, freezer, microwave, phone

+ age, sex, educ, marital, material deprivation

Pikhart 2000

POOR HEALTH IN HUNGARY BY SOCIALLY* ORIENTED ITEMS

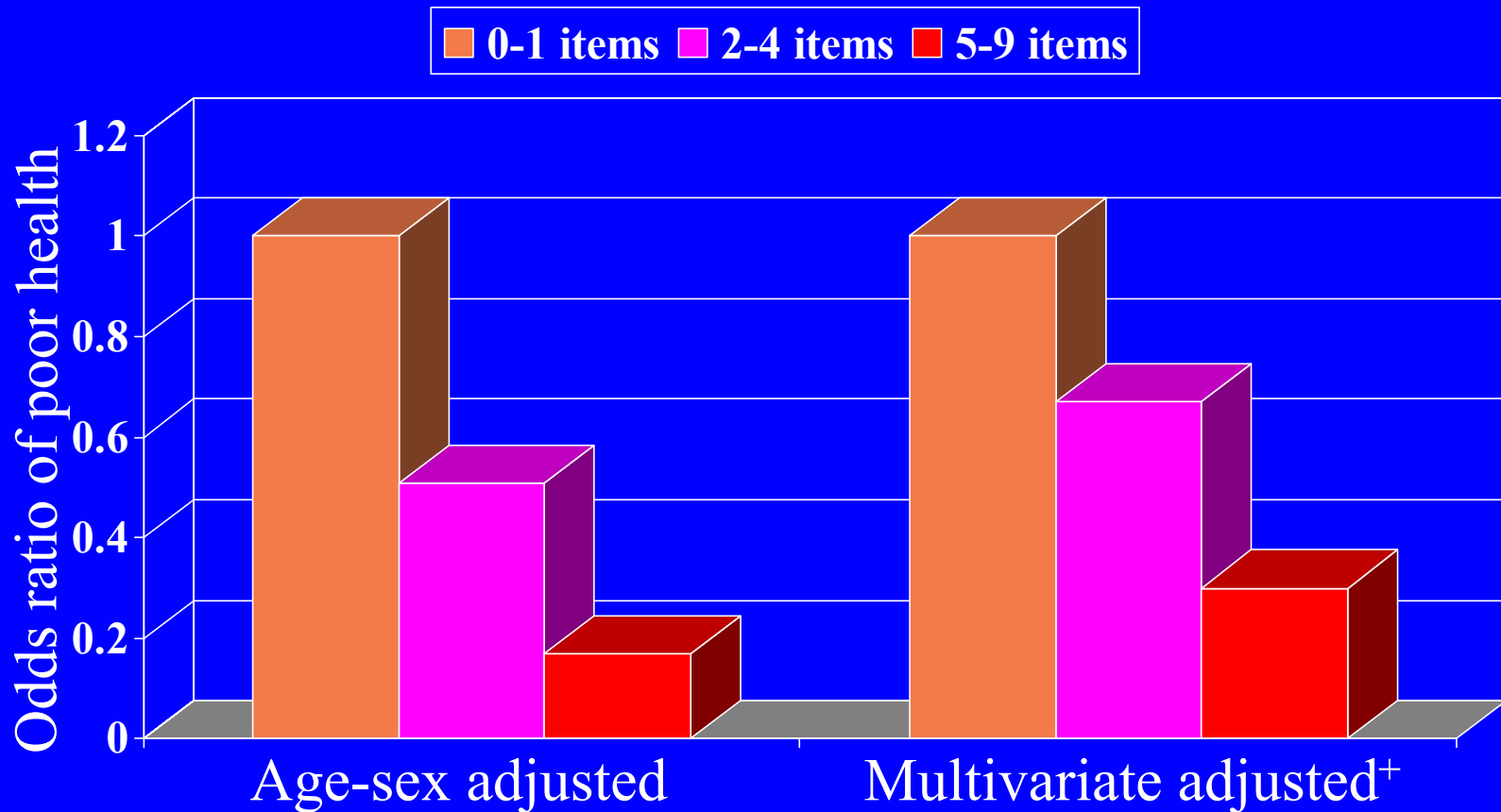


* colour tv, stereo system, motorbike, car, car radio

+ age, sex, educ, marital, material deprivation

Pikhart 2000

POOR HEALTH IN HUNGARY BY LUXURY* ITEMS

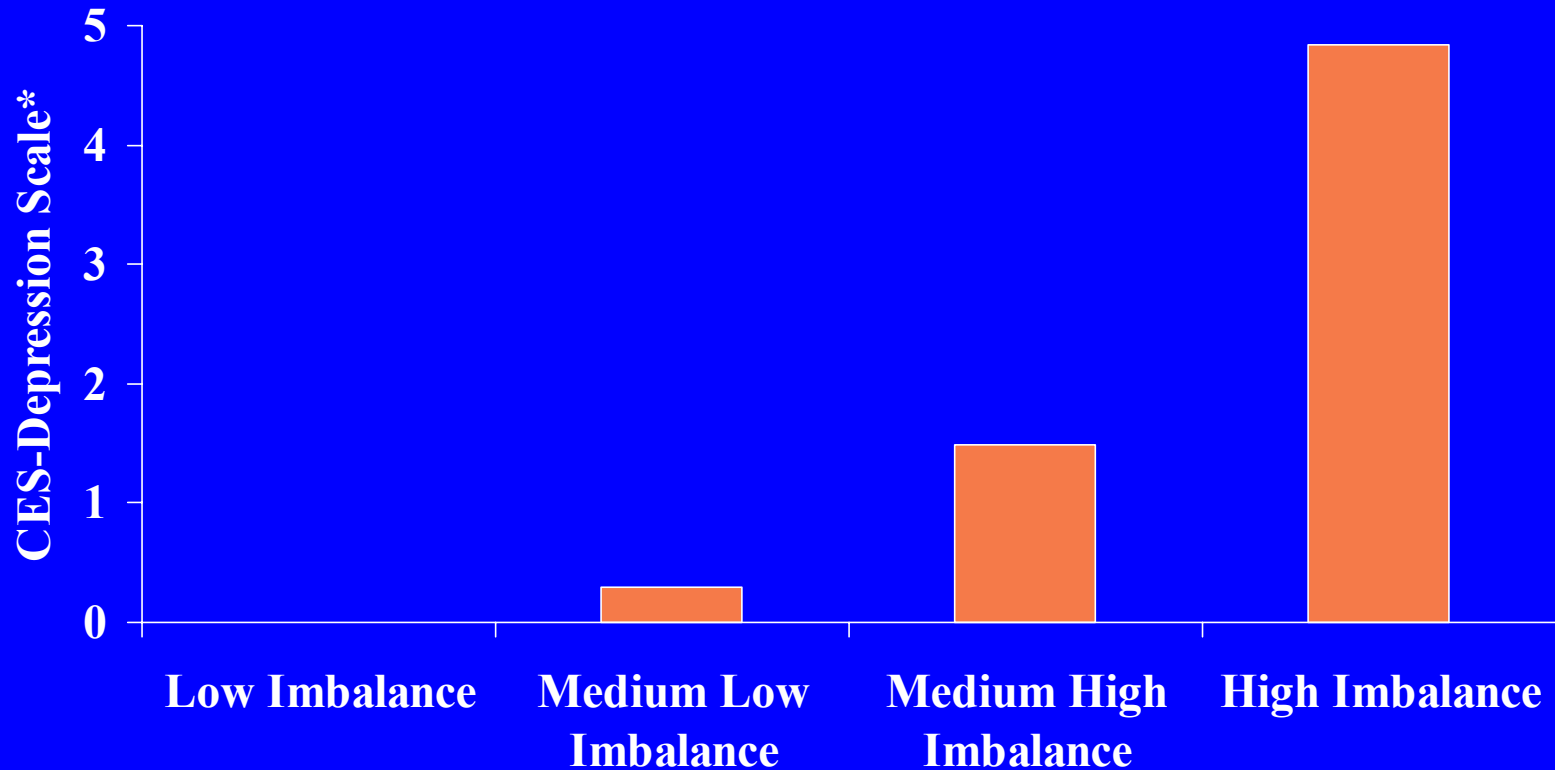


* cable tv, satellite, video record/cam, CD, PC, dishwasher, dacha

+ age, sex, educ, marital, material deprivation

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DEPRESSION AND EFFORT-REWARD IMBALANCE: RUSSIA, POLAND, CZECH



*Adjusted for age, sex and centre

◆ SOCIO-BIOLOGICAL TRANSLATION

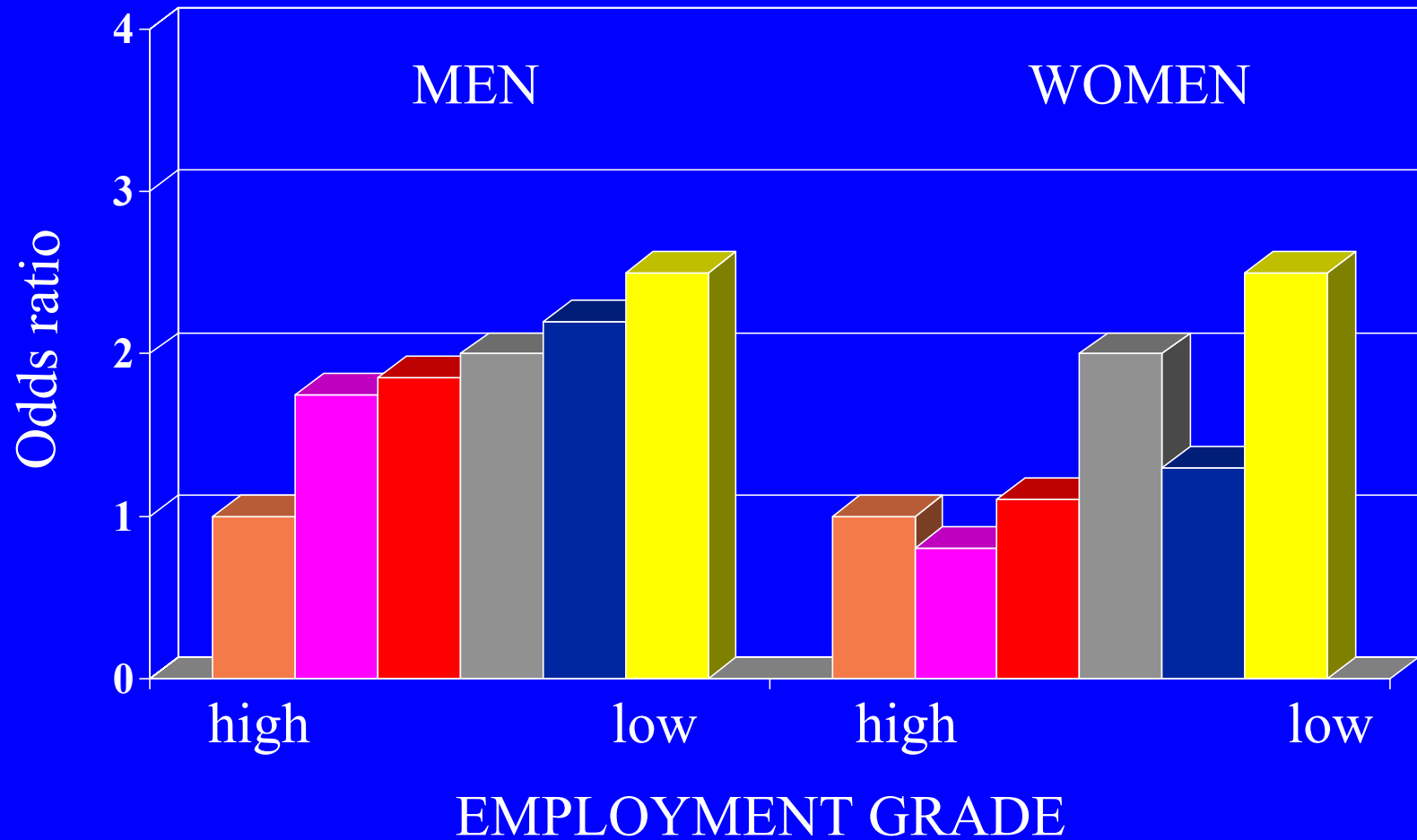
FIBRINOGEN IN UPPER QUINTILE BY EMPLOYMENT GRADE - WHITEHALL II STUDY



Adj. age and menopause (women)

Brunner et al, 1997

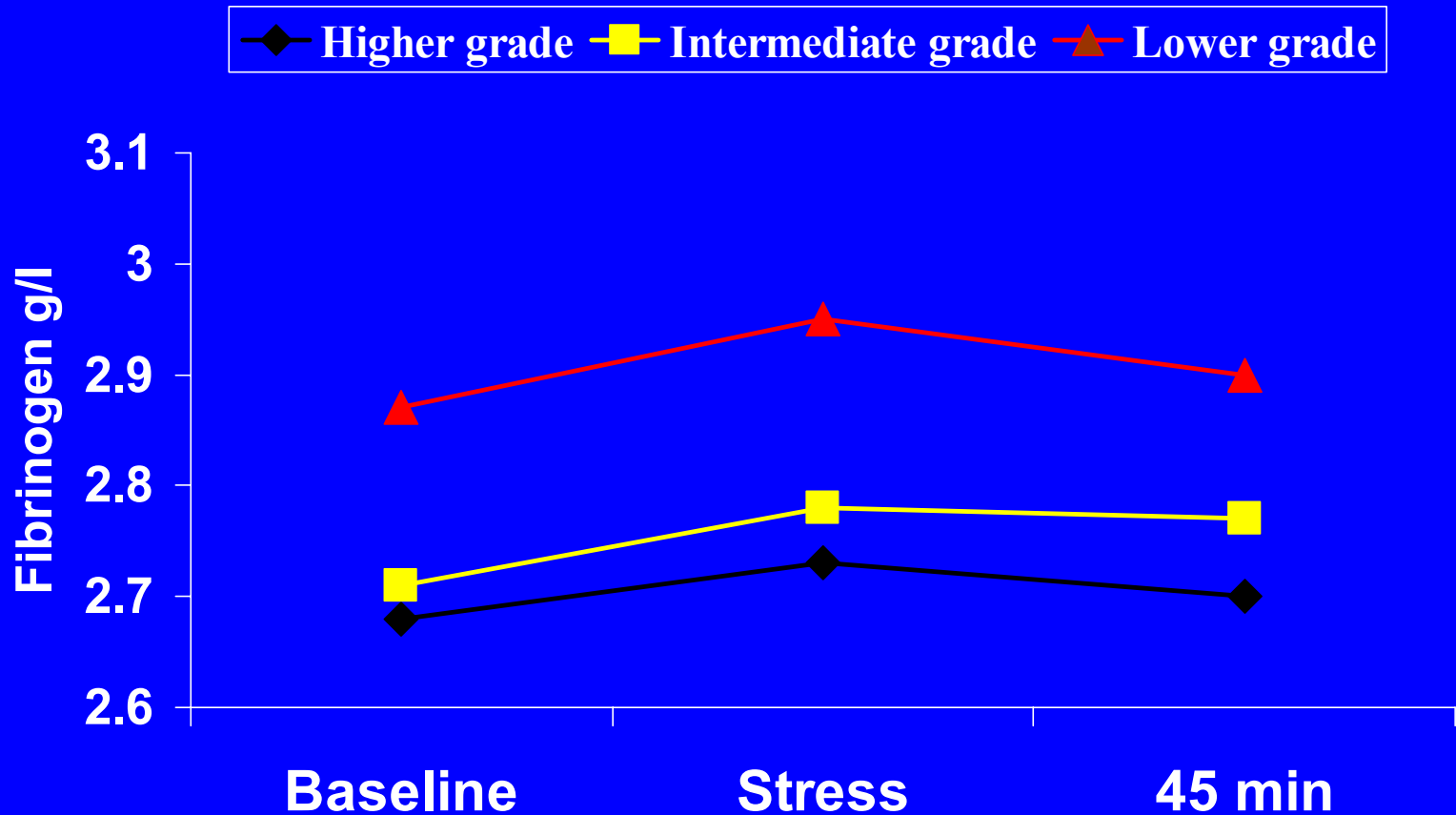
METABOLIC SYNDROME BY EMPLOYMENT GRADE - WHITEHALL II STUDY



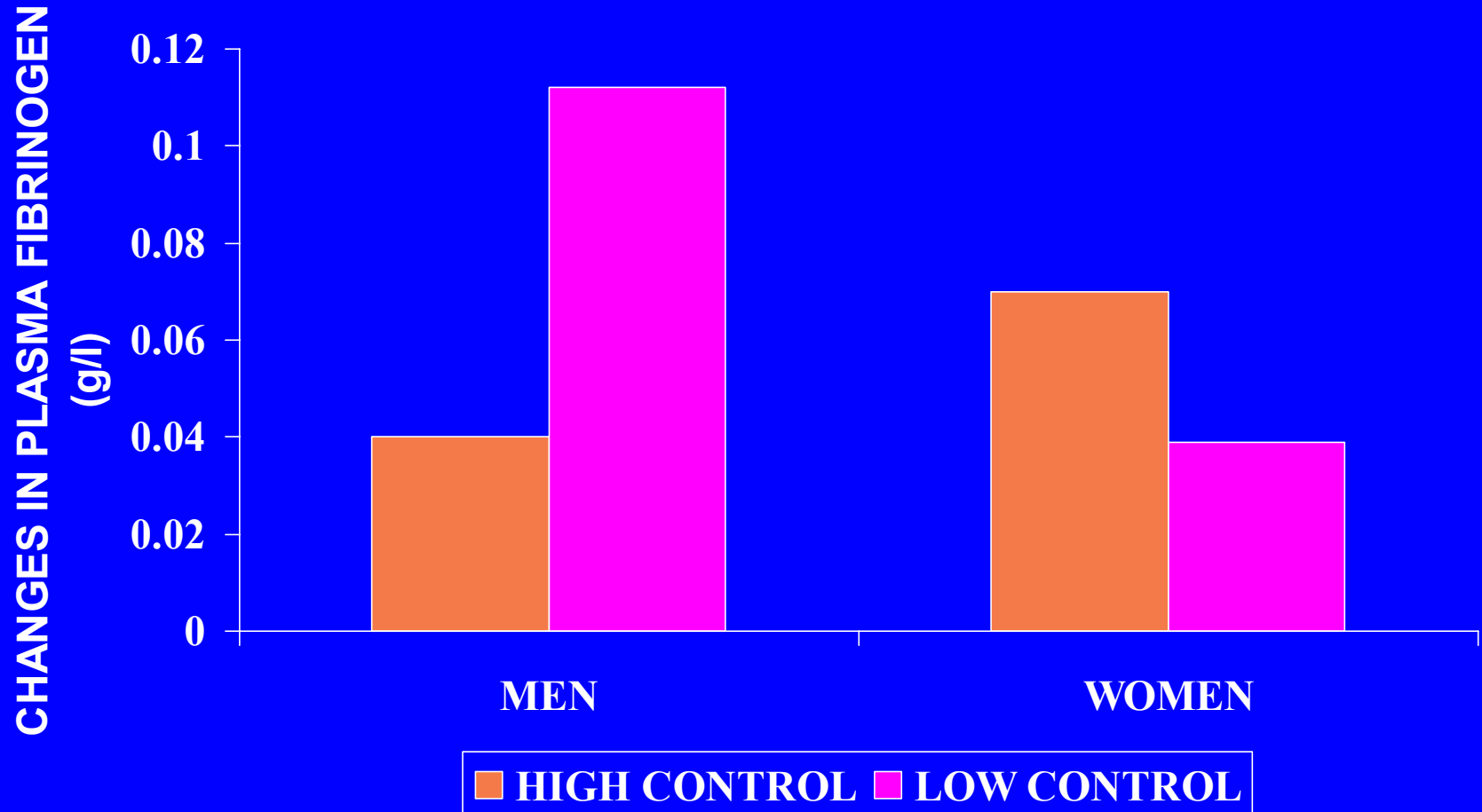
Adj. age and menopause (women)

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FIBRINOGEN RESPONSES TO STRESS IN MEN



FIBRINOGEN RESPONSES TO STRESS

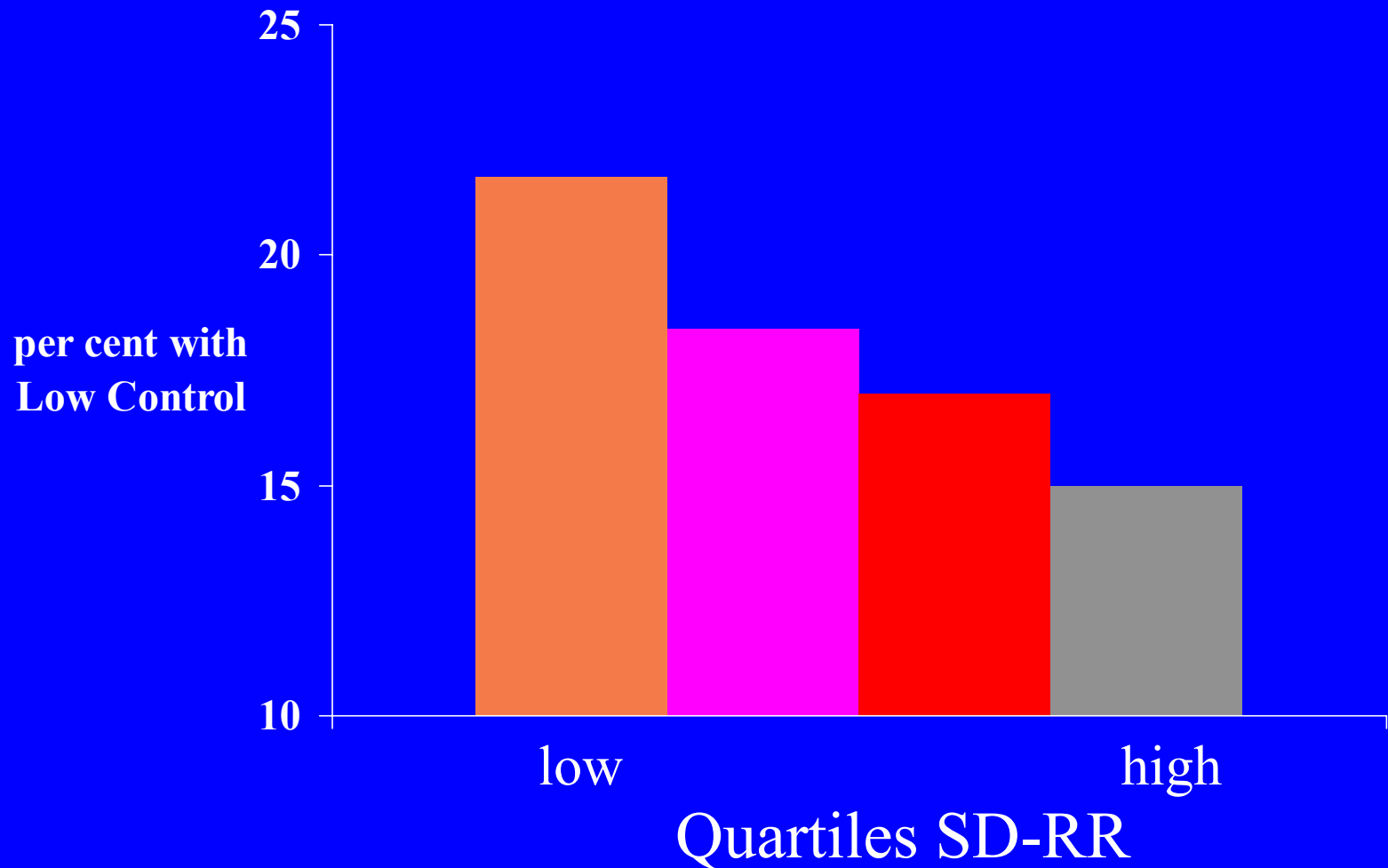


Employment Grade, Heart rate and Heart rate variability Whitehall II - men

Grade	Heart rate	SD-RR
High	67.9	34.7
Medium	70.0	33.5
Low	71.1	30.8
Test for trend	$p < 0.001$	$p = 0.004$

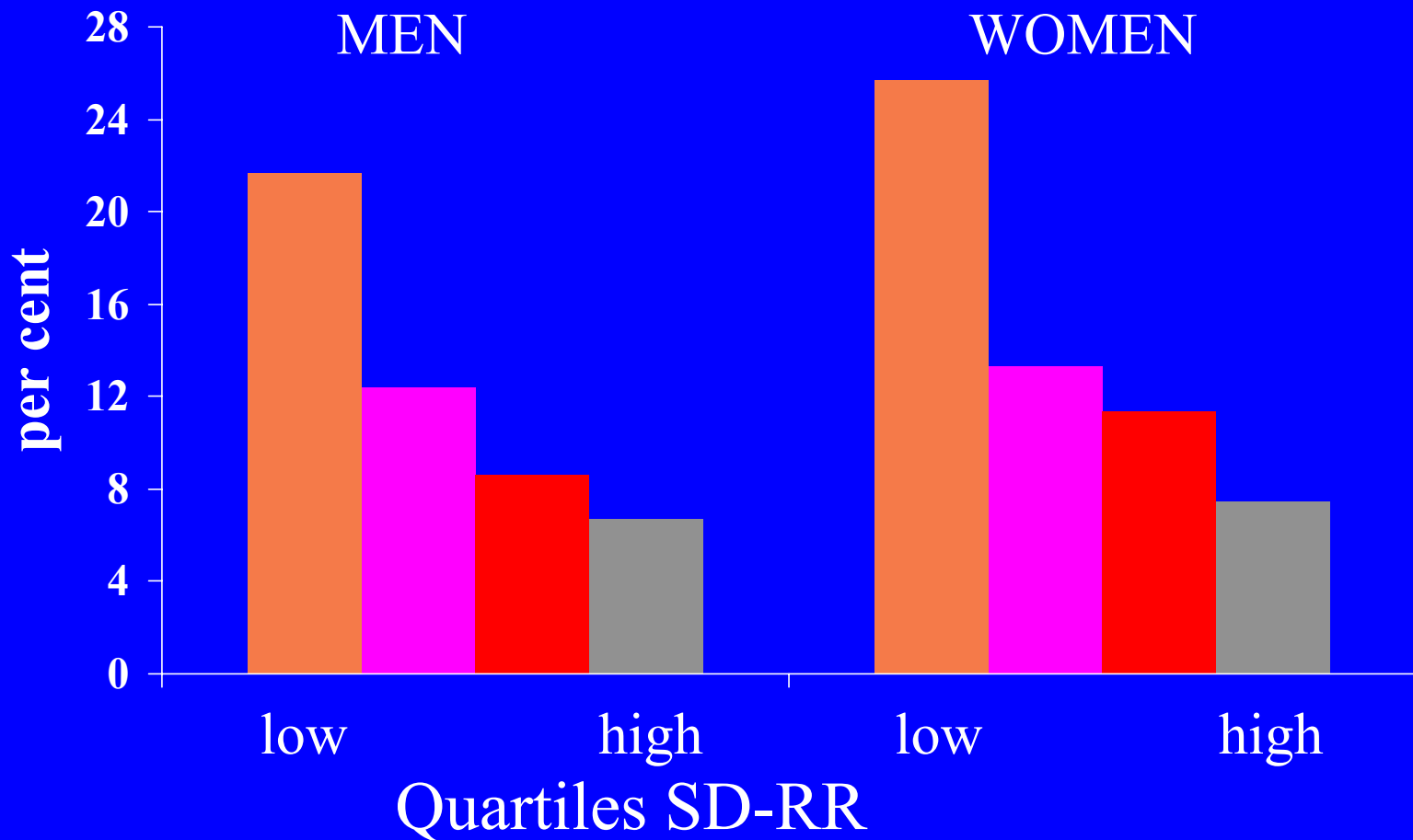
Job Control and HRV

Whitehall II - men



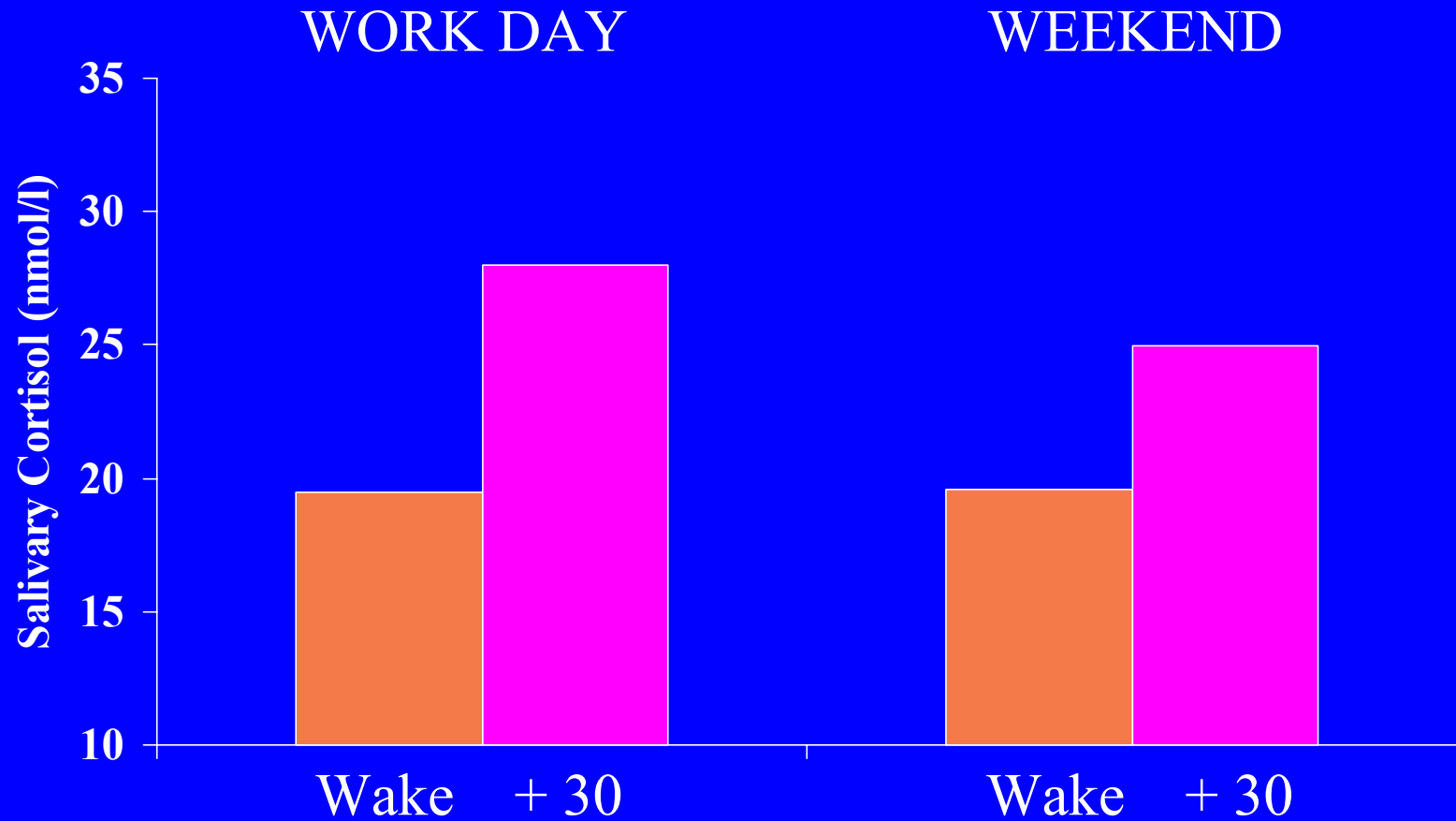
Hemingway et al.

Metabolic Syndrome and Heart Rate Variability in the Whitehall II Study

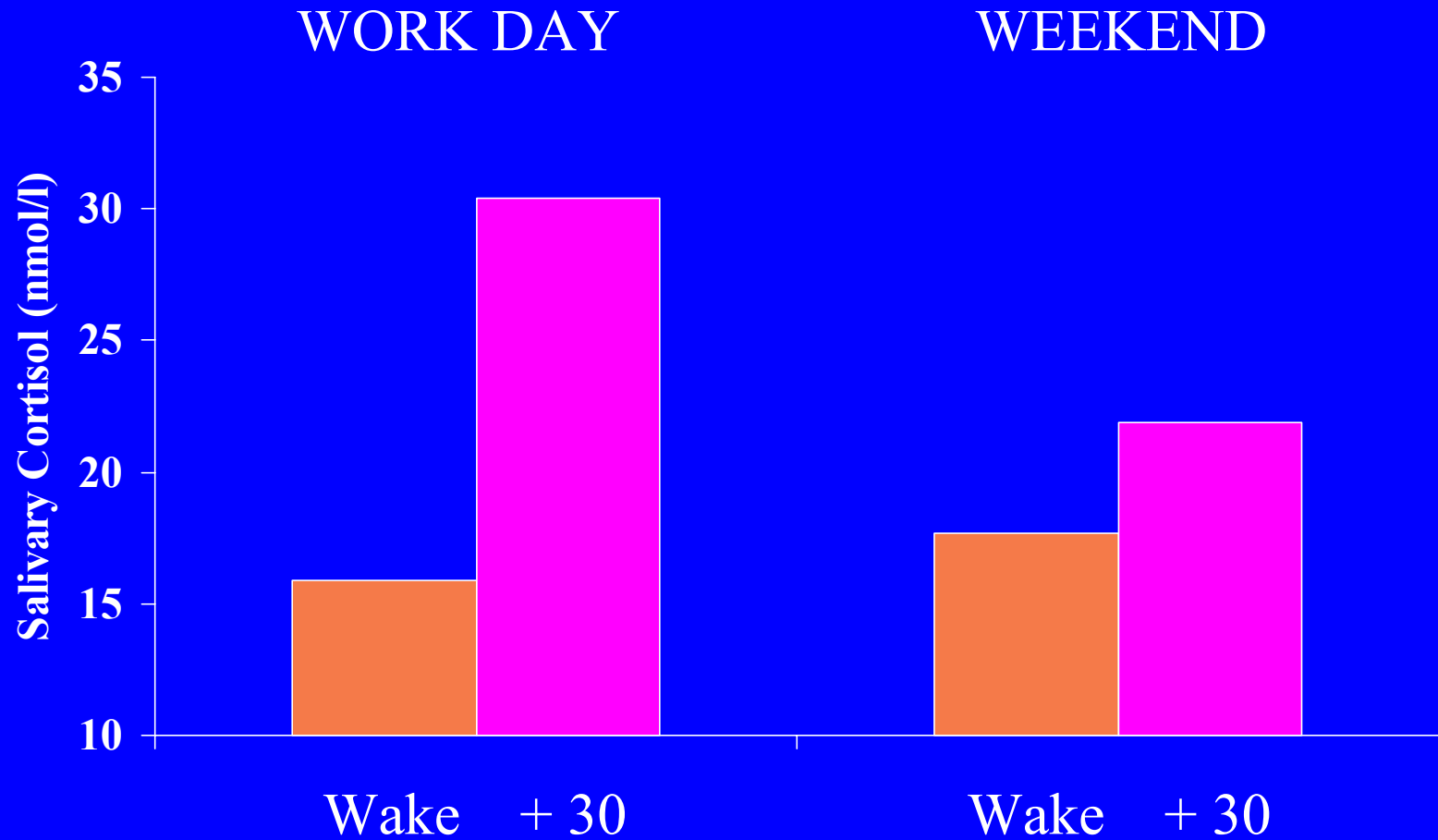


Hemingway et al.

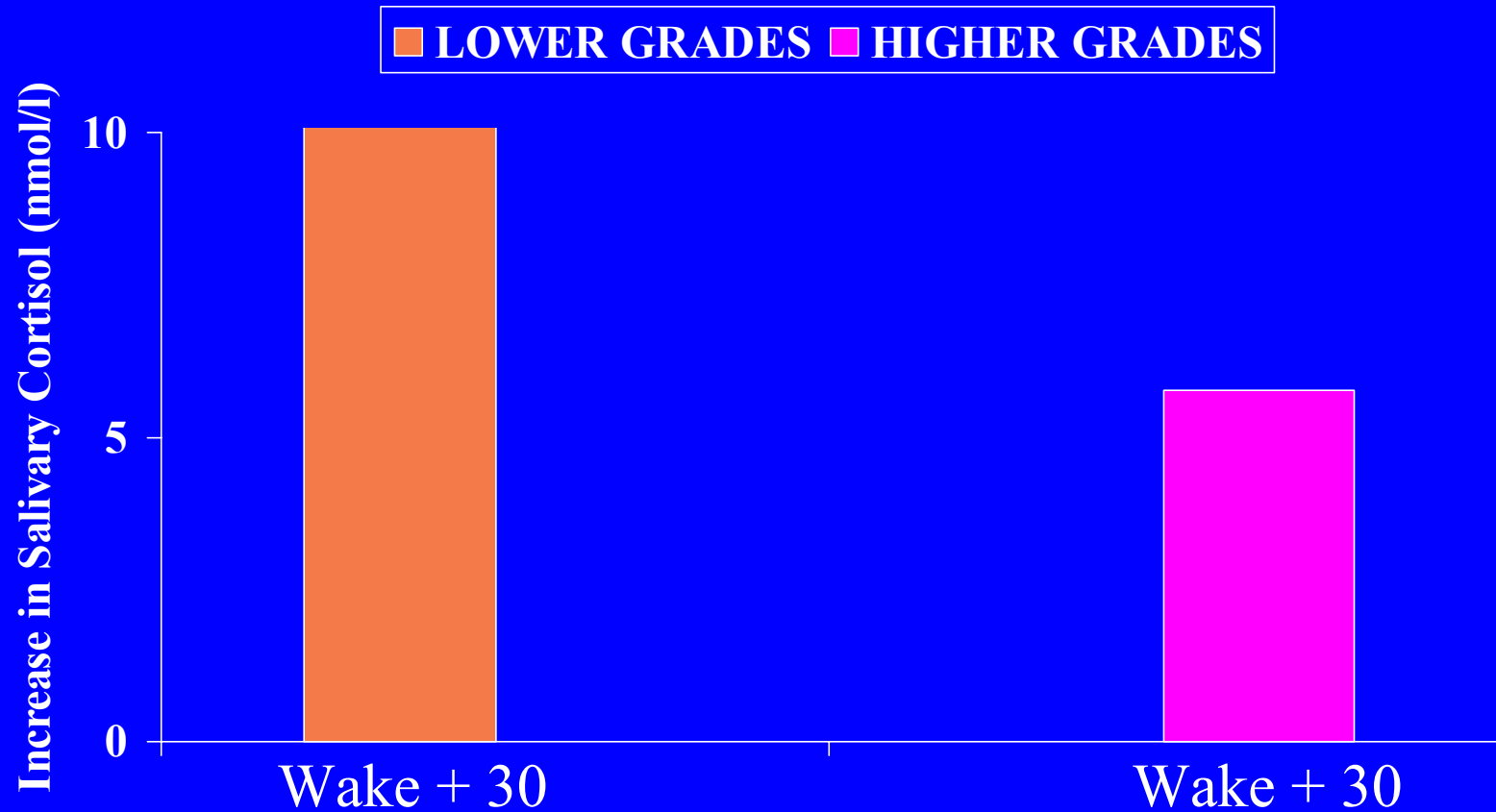
CORTISOL ON WORK AND WEEKEND DAYS - WHITEHALL II MEN



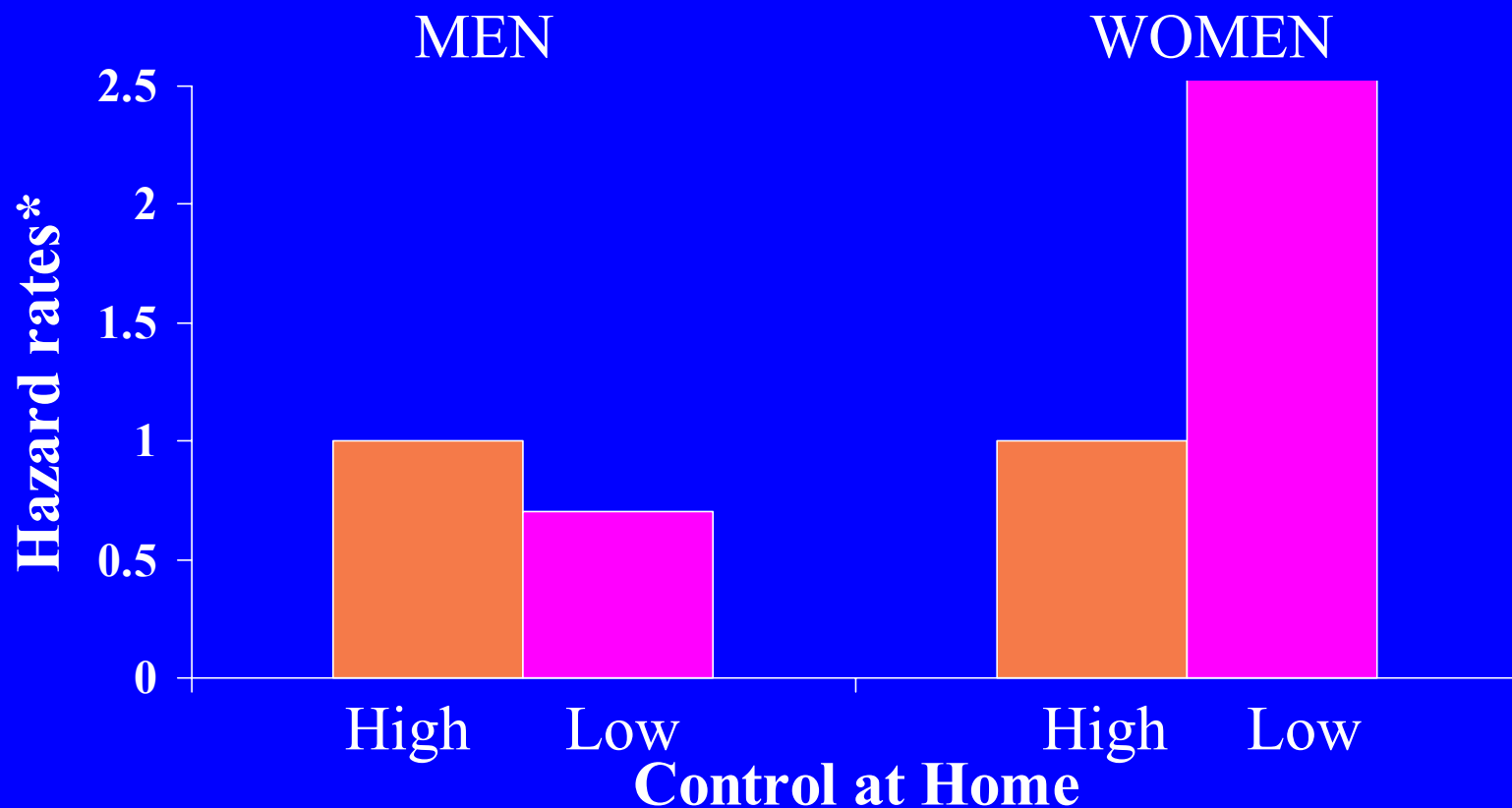
CORTISOL ON WORK AND WEEKEND DAYS - WHITEHALL II WOMEN



CORTISOL AWAKENING RESPONSE AND EMPLOYMENT GRADE - WHITEHALL II



CORONARY HEART DISEASE AND CONTROL AT HOME - WHITEHALL II



*Adjusted for age, control at home, household social position & CHD risk factors

