

Session VII – Part 1

Social class, SES and the Interaction between Job strain and SES

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Social Class and Health

- **Upper class lives longer and are healthier**
- **There is a “health gradient” along social class continuum**
- **Social class a fundamental determinant of population health**
- **Class provides differential exposure to risks for disease**

Pathways from Class to Disease

- Economic deprivation
- Lack of education
- Differential consumption
- Access to health care
- Networks
- Differences in nature of social and work environments

What is class?

- **Not just individual property**
- **Expression of societal forces and a mechanism of inequality**
- **A determiner of work and work environment**
- **Is the psychosocial work environment determined in part by class and is therefore a pathway between class and adverse health outcomes?**

Conceptions of class

- **Positional measures – incremental differences in income, education etc between individuals**
- **Relational measures – based on social structure and the fundamental property and power relations that exist between classes**

Weber

- **Class situation is ultimately a “market situation”**
- **Social class is a grouping of the population with a common identity because of their relative bargaining power on the market and differential ability to acquire material resources**
- **May be inherited**
- **A system of hierarchical stratification**

Weber cont

- one's position in the stratification system is determined by how much one may 'have' of a valued social asset or assets

Common sense class status

- Upper class
- Upper middle class
- Middle class,
- Lower middle class
- Lower class
- Under class

United Kingdom – based on occupational groups

- Social Class I (professional)
- Social Class II (intermediate)
- Social Class IIINM (skilled non-manual)
- Social Class IIIM (skilled manual)
- Social Class IV (partly skilled)
- Social Class V (unskilled)

Marxian Perspective

- Marx emphasized the economic and political *relationship* between dominant and subordinate class groups.
- In contrast to Weber's emphasis on differential access to the 'life chances' of individuals and groups, Marx pinpoints the exploitation of the working class ('labor') by the employing class ('capital') as the key to the understanding of how class formations come into being.
- Marx also emphasized the centrality of work as a key determinant of class, because it is the specific nature of exploitation in the workplace that most clearly expresses the character of the relationship between classes

Marx continued

- For Marx the labor process “determines the relation of domination and servitude, as it emerges directly out of production itself and in turn reacts upon production.”
- Marx argued that exploitation forms the basis of the class system, and upon it is “founded the entire structure of the economic community, which grows up out of the conditions of production itself ...
- It is always the direct relation between the masters of the conditions of production and the direct producers which reveals the innermost secret, the hidden foundation of the entire social edifice”

E.O. Wright

- **a class matrix of 12 categories by applying the following three underlying dimensions of ownership, skill and power [18]:.**
 - ownership of capital assets,
 - control of organizational assets, and
 - possession of skill or credential assets

Social Class and work exposure?

- **Research has shown that hazardous work organization exposures such as piece-rate payment systems, monotonous and repetitive work, long working hours, and low levels of work control -- factors which may also increase risk of illness -- are differentially distributed along class lines**

Differential exposure by class

- **Individuals in lower socioeconomic positions, particularly unskilled manual and lower level service occupations are much more likely to be exposed to these kinds of risk factors than those in professional and managerial jobs**

Do Job strain and ERI vary by class

- For both men and women class I managers and professionals are much less likely to have high job strain than class II and III office, service workers and manual workers.
- Only 8% of male managerial and professional workers report high strain while nearly 20% of class II and III workers report high strain. This difference is even higher in women -- with 37.6% of class III, and 25% of class II workers reporting high strain

Social Class and ERI

- Effort-reward imbalance model has a somewhat inconsistent relationship with social class. This is probably because the 'effort' component of the model increases with higher class position, while the 'reward' component decreases.
- Recent findings from the Whitehall study of British civil servants indicates that those in higher occupational grades have a greater probability of reducing their effort-reward imbalance over time compared to workers in lower grades [47].

New hypotheses to be tested

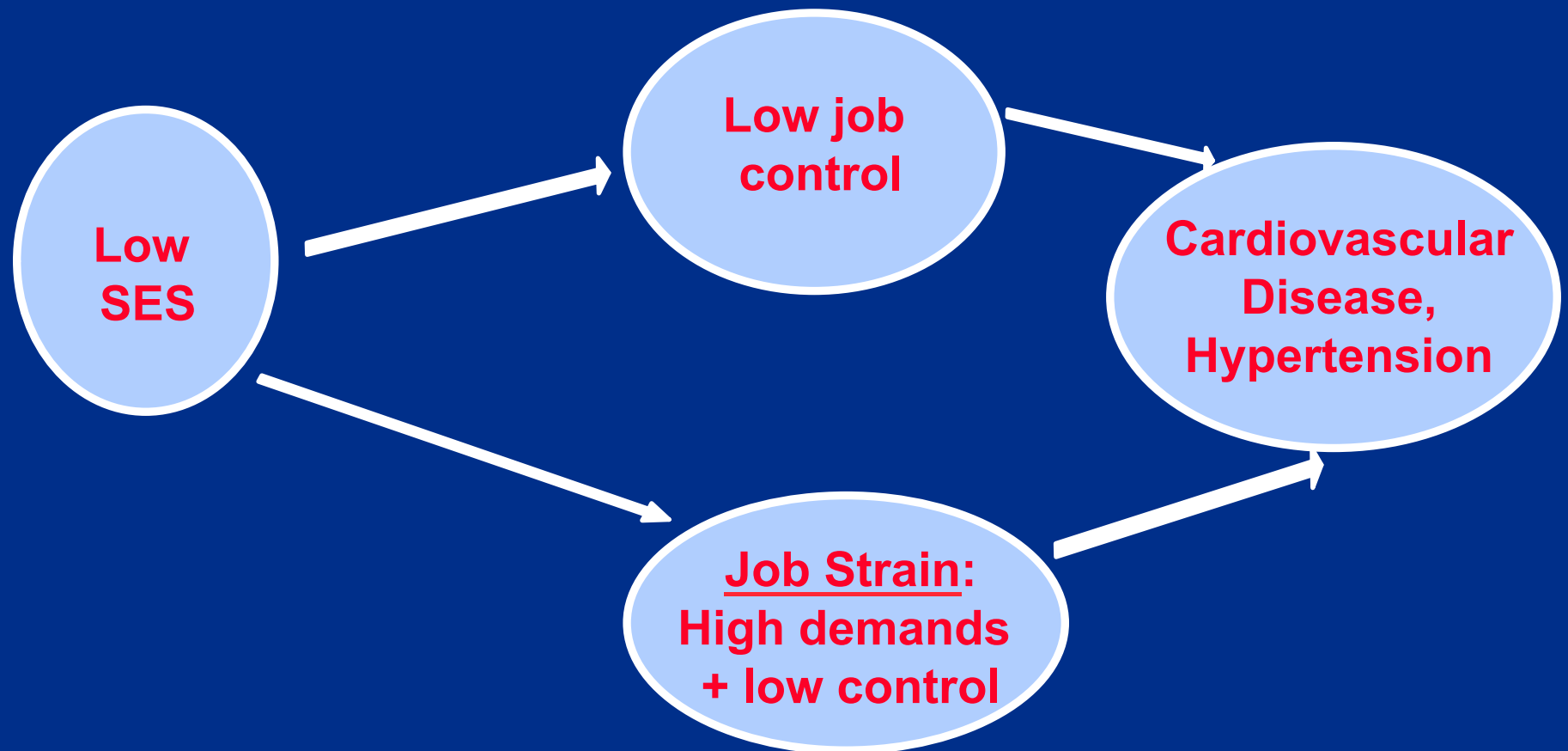
Cumulative exposure (work history substudy)

- H1: The chronic exposure group has a greater history of past job strain than other exposure groups
- H2: Past job strain will be associated with Time 1 BP independent of Time 1 job strain

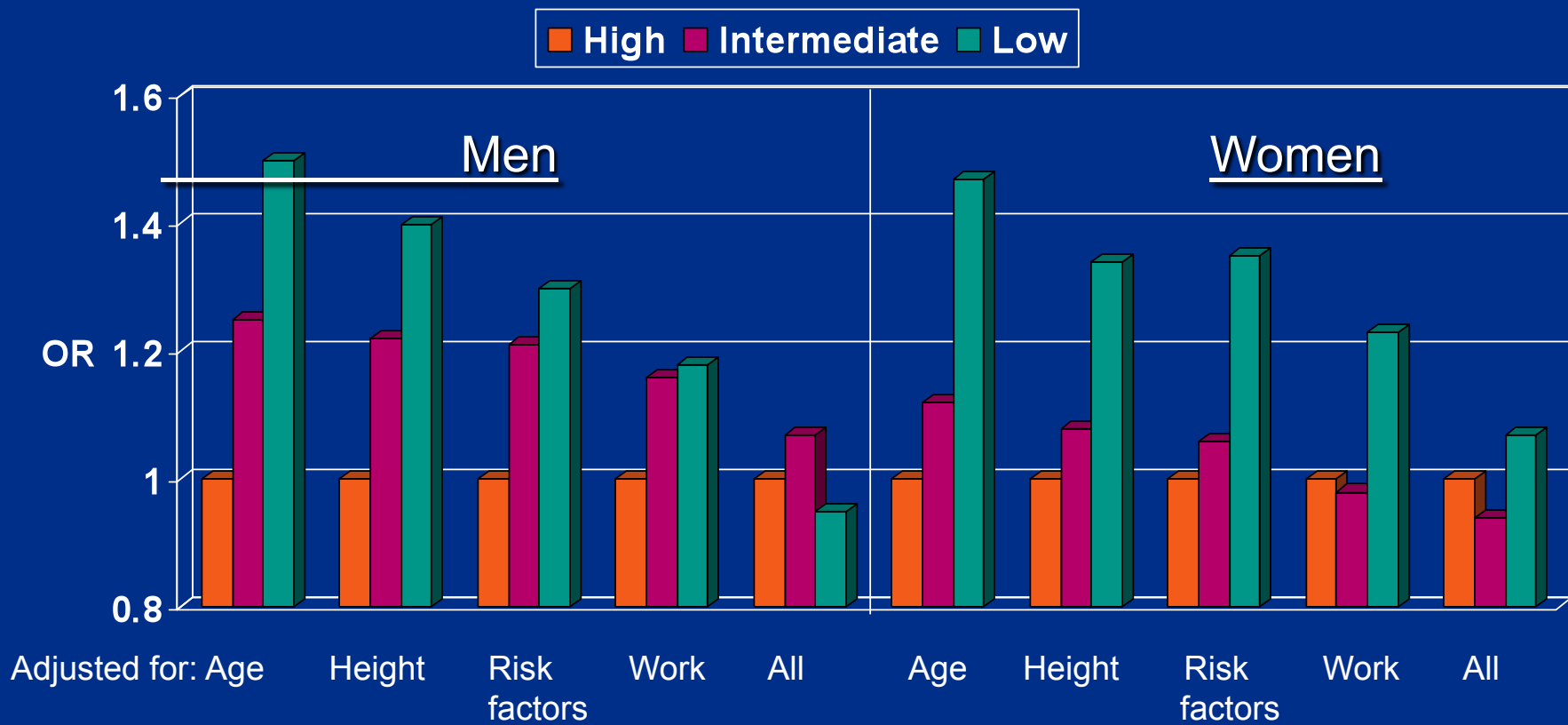
Job strain-SES interaction

- H3: The association between job strain & BP will be greater among lower SES men (blue-collar, lower education or lower income) than higher SES men
- H4: The association of past job strain with Time 1 BP will be greater among lower SES men

Low SES, CVD and hypertension: Potential workplace pathways

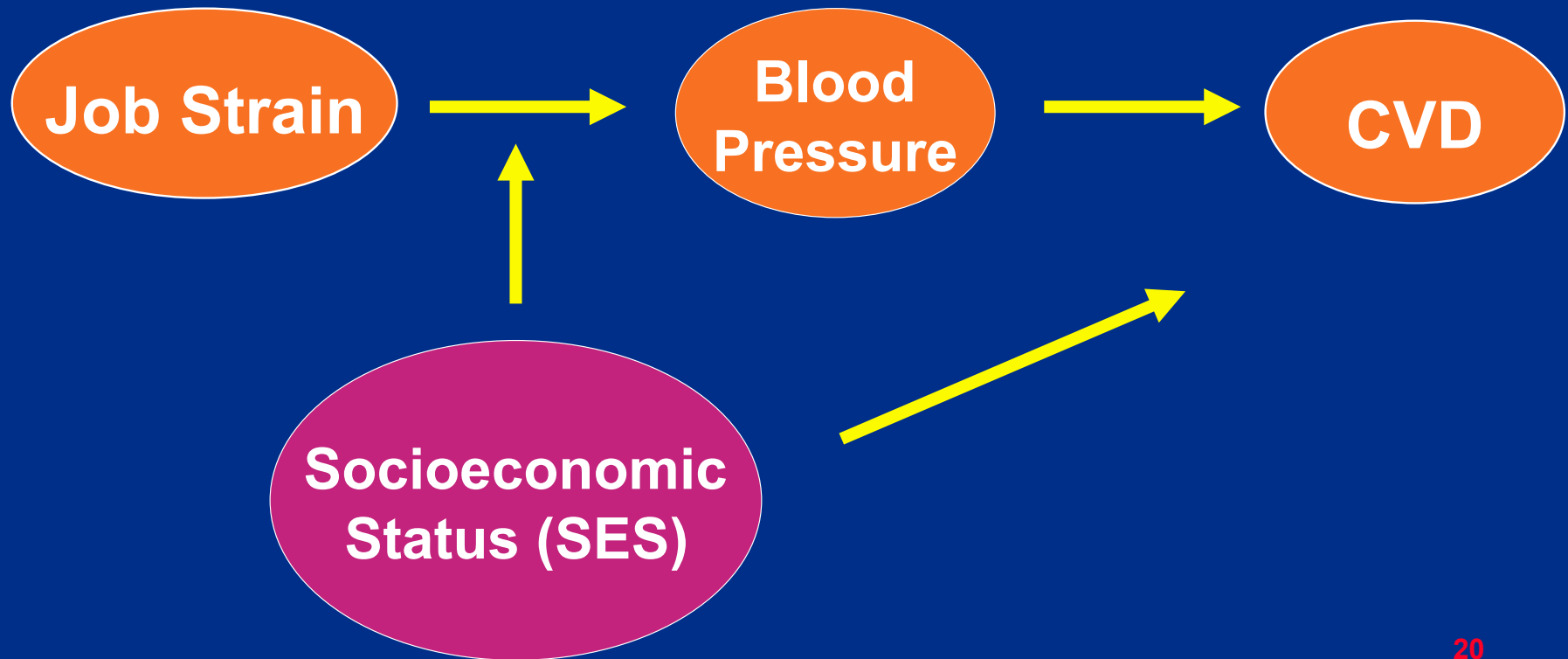


Odds ratios for new CHD in Whitehall II by employment grade



Marmot et al. Lancet 1997;350:235-239.

Does this occur because of effect modification of the job strain-blood pressure relationship?

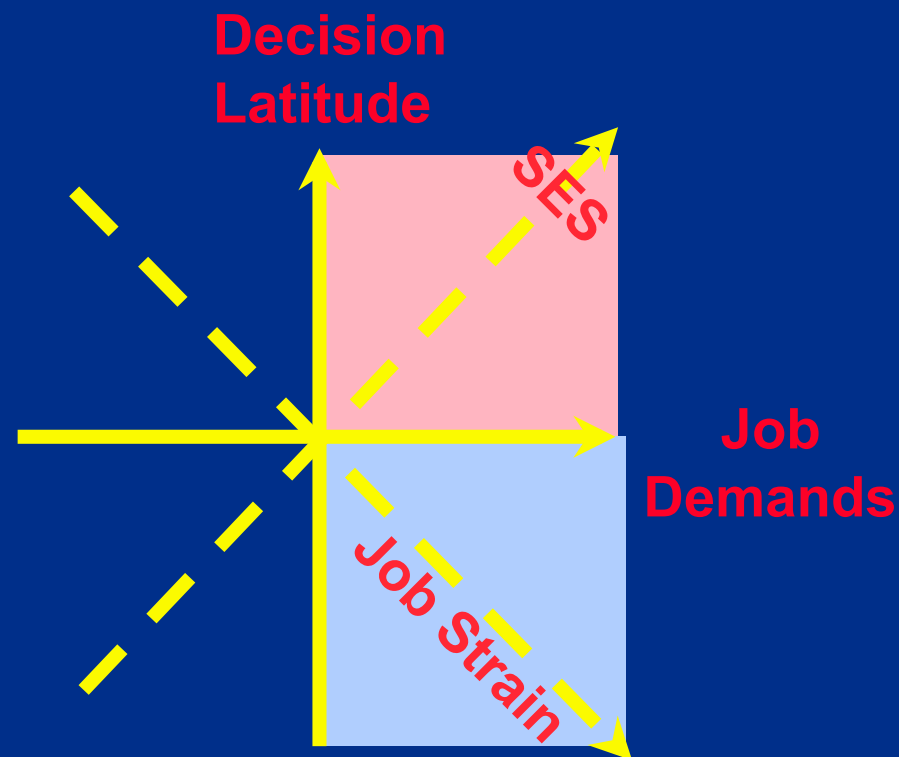


Correlation between job characteristics and SES measures (283 men, time 1)

	<u>Latitude</u>	<u>Demands</u>		
Education	.37	.32		
Occupational status	.36	.36		
Personal income	.45	.31		
Family income	.39	.28		
	<u>Occupational status</u>	<u>Personal Income</u>	<u>Family Income</u>	
Education	.57	.50	.51	
Occupational status		.53	.58	
Personal income			.84	

Job Strain

Definition: The combination of HIGH Job Demands and LOW Decision Latitude (decision authority + skill use)



Job strain and SES: variables

	<u>Time 1 (n=283)</u>		<u>Time 1-2 (n=195)</u>
	<u>Mean</u>	<u>Range</u>	<u>r</u>
Job decision latitude	35.8	17-48	.64
Psychological workload demands	31.8	14-48	.64
Age (yrs)	44.3	30-60	--
Education (yrs)	14.3	6-18	--
Occupational status	72.0	15-95	.92
Personal income (\$)	46,085	15-100,000+	.84
Family income (\$)	54,390	15-100,000+	.82

	<u>%</u>	
Job strain	22%	.29
(high job demands + low job decision latitude)		

Work Site BP²³ Study

Typical job titles (283 men, time 1)

WHITE-COLLAR (46%)

Vice President, Director, Manager, Personnel specialist,
Budget officer, Senior systems analyst

CLERICAL, TECHNICAL, ADMINISTRATIVE (33%)

Electronic publishing technician, Billing clerk, Data
entry clerk, Staff assistant, Personnel supervisor,
Claims examiner, Computer programmer

BLUE-COLLAR (21%)

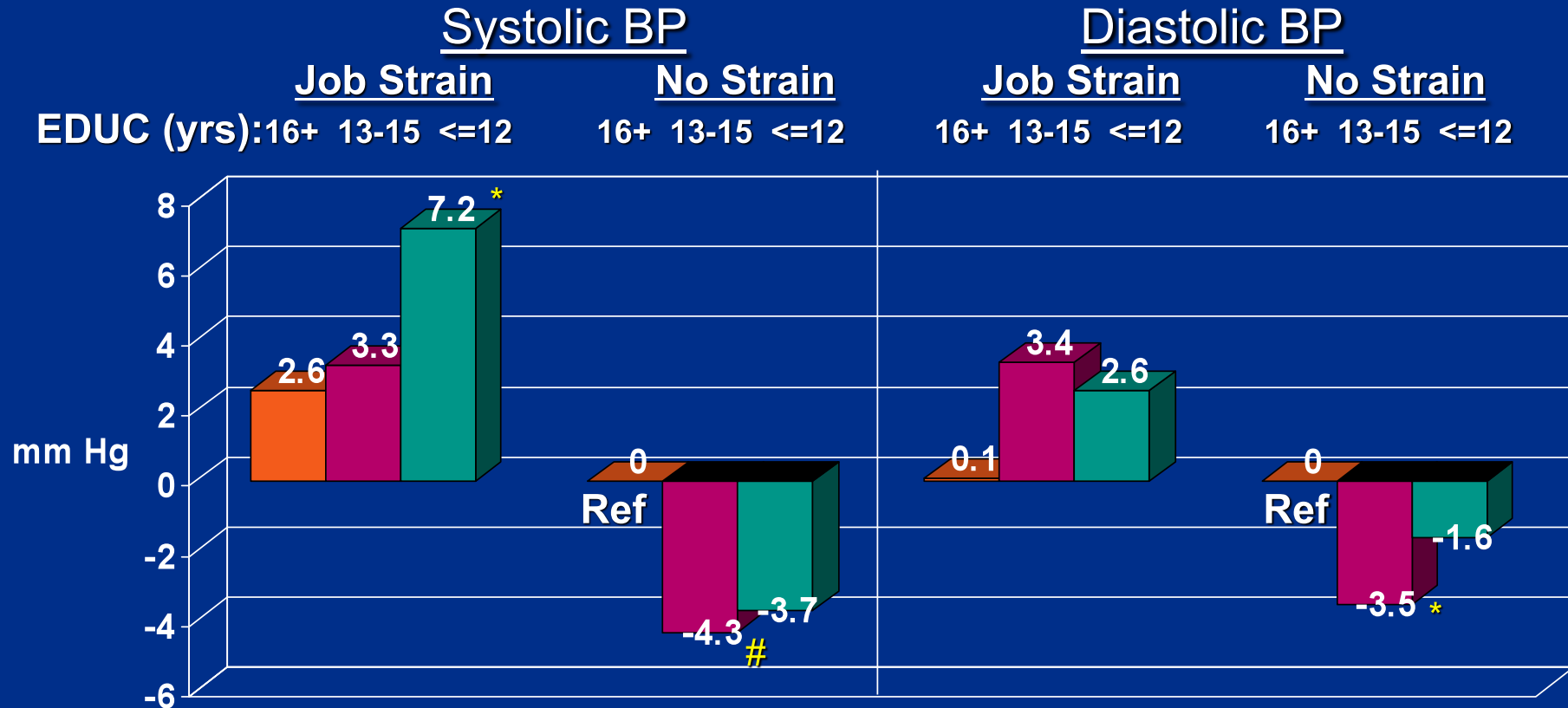
Auto mechanic, Electrician, Elevator operator,
Machinist, Welder

Association between SES and job strain (high job demands + low job decision latitude) (283 men, time 1)

	<u>Job strain</u>	<u>No strain</u>	<u>p</u>
Education (yrs)	14.4	14.3	ns
Occupational status	74.2	71.4	ns
Personal income (\$)	44,304	46,577	ns
Family income (\$)	52,828	54,820	ns

	<u>Job strain</u>	<u>Latitude</u>	<u>Demands</u>
White-collar	24%	38.3	34.5
Clerical, technical	22%	33.7	29.6
Blue-collar	15%	33.8	29.1
	(ns)	(<.001)	(<.001)

Job Strain and Work Ambulatory BP by Education (n=283 men, Time 1)



INTERACTION TERM: $p=.08$

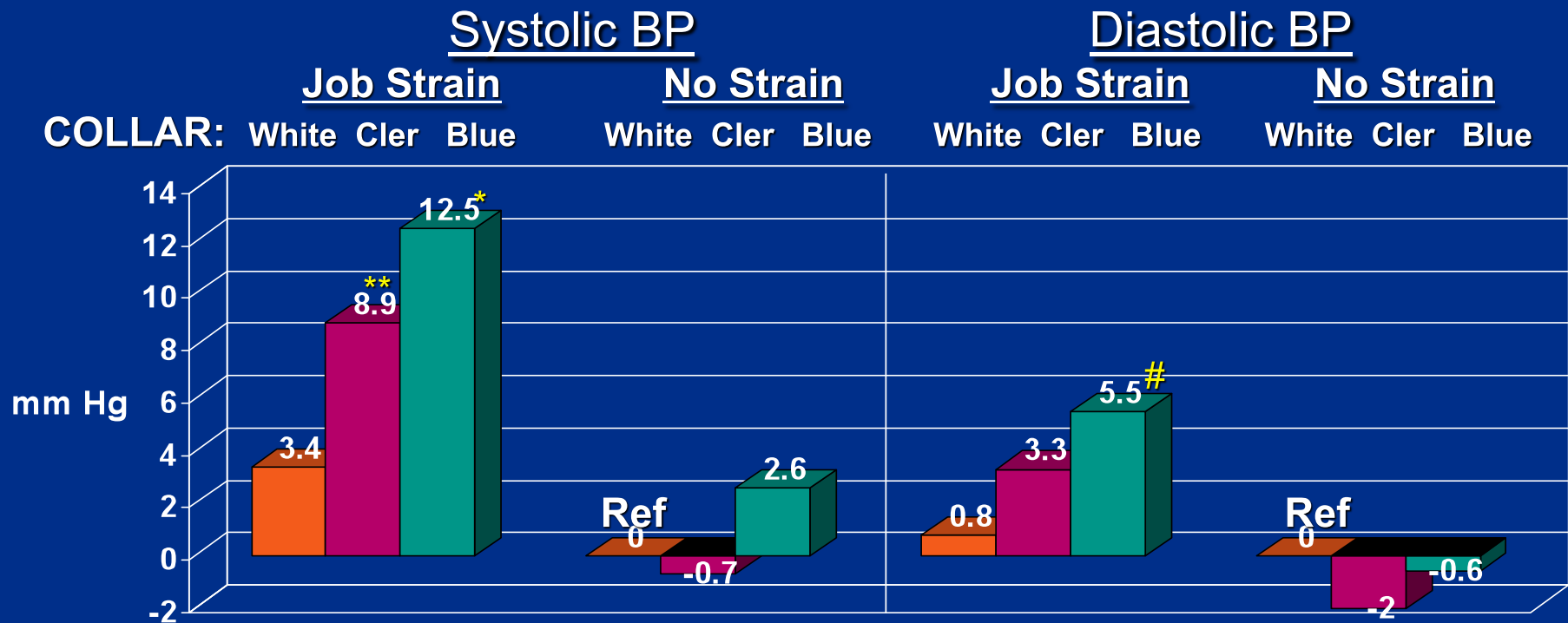
$p=.15$

controlling for age, body mass index, race, smoking, alcohol use and work site

$p<.10$, * $p<.05$, ** $p<.01$, *** $p<.001$ (vs Ref group)

Job Strain and Work Ambulatory BP by Occupational Status

(n=283 men, Time 1)



INTERACTION TERM: $p=.23$

$p=.10$

controlling for age, body mass index, race, smoking, alcohol use and work site

$p<.10$, * $p<.05$, ** $p<.01$, *** $p<.001$ (vs Ref group)

Why synergy between job strain and SES? Possible explanations:

**Interaction of 2 powerful main effects (as with SRF)
Measurement of job demands**

- **Too non-specific for white-collar workers?**

Job strain model not as applicable to white-collar work

- **White-collar demands = challenging, mentally active work (protective effect of “active” work in some CHD studies)**
- **Blue-collar demands = for fast-paced performance**
- **Able to exercise control in other areas of life?**

Study strengths and limitations

Strengths

- New technology improves validity of BP measurement
- Widely-used valid exposure measure (JCQ)
- Variance in exposure
- Good measurement and control of confounders
- Assessment of changes in exposure
 - Fair reliability and validity of work history questionnaire
 - Decent power for analyses of recent work history

Limitations

- Potential participation bias
- Initial Cross-sectional analysis
- Limited N, power -- for interaction, analyses of distal work history
- Limits to validity of work history questionnaire
- Excludes highest exposure groups, severe hypertensives