Have changes in coronary risk factors over a 20 year period differed by socioeconomic groups?
A population-based study of British men between 1978-80 and 1998-2000

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On behalf of the British Regional Heart Study

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Background

- Decline in CHD rates since 1970s in the UK and other Western European countries
  - Greater decline in higher socioeconomic groups
- Improvements in established coronary risk factors made a major contribution to decline in CHD

Hardoon et al 2008; Unal et al 2004; Acheson et al 1998

Background

- Patterns of changes in coronary risk factors by SE groups in Britain since the 1980s not well-studied

Aim

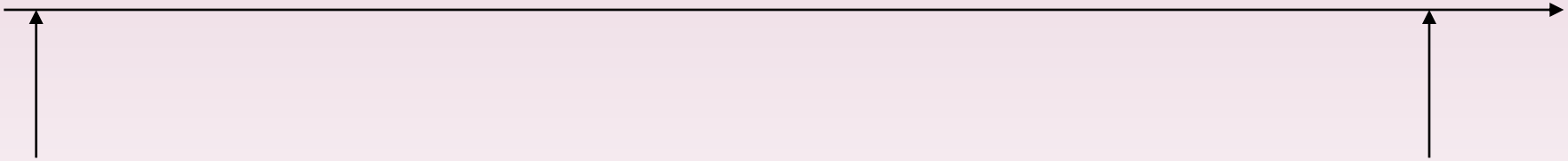
- Have changes in coronary risk factors over 20 years in Britain differed by socioeconomic groups?
  - From 1980 to 2000
  - Coronary risk factors: cigarette smoking, cholesterol, blood pressure, body mass index, physical activity

British Regional Heart Study

- 7735 men aged 40-59 years in 1978-80
- 24 British towns
- Representative sample
- Social class – longest-held occupation at 40-59 years

1978-80
Baseline

1998-2000
20-year
Re-examination



- Physical examination
- Blood samples
- Questionnaires

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Risk factor changes by social class

- Age-adjusted change in risk factors by social class (non-manual and manual)

- Social class*period interaction term to assess:
  - whether the change in risk factor over 20 years differed in social class groups

Results (4252 men; 77% of survivors in 2000)

- Overall risk factor changes from 1980 to 2000:

Favourable

↓ Blood pressure
↓ Total cholesterol
↑ HDL-cholesterol
↓ Cigarette smoking
↑ Physical activity

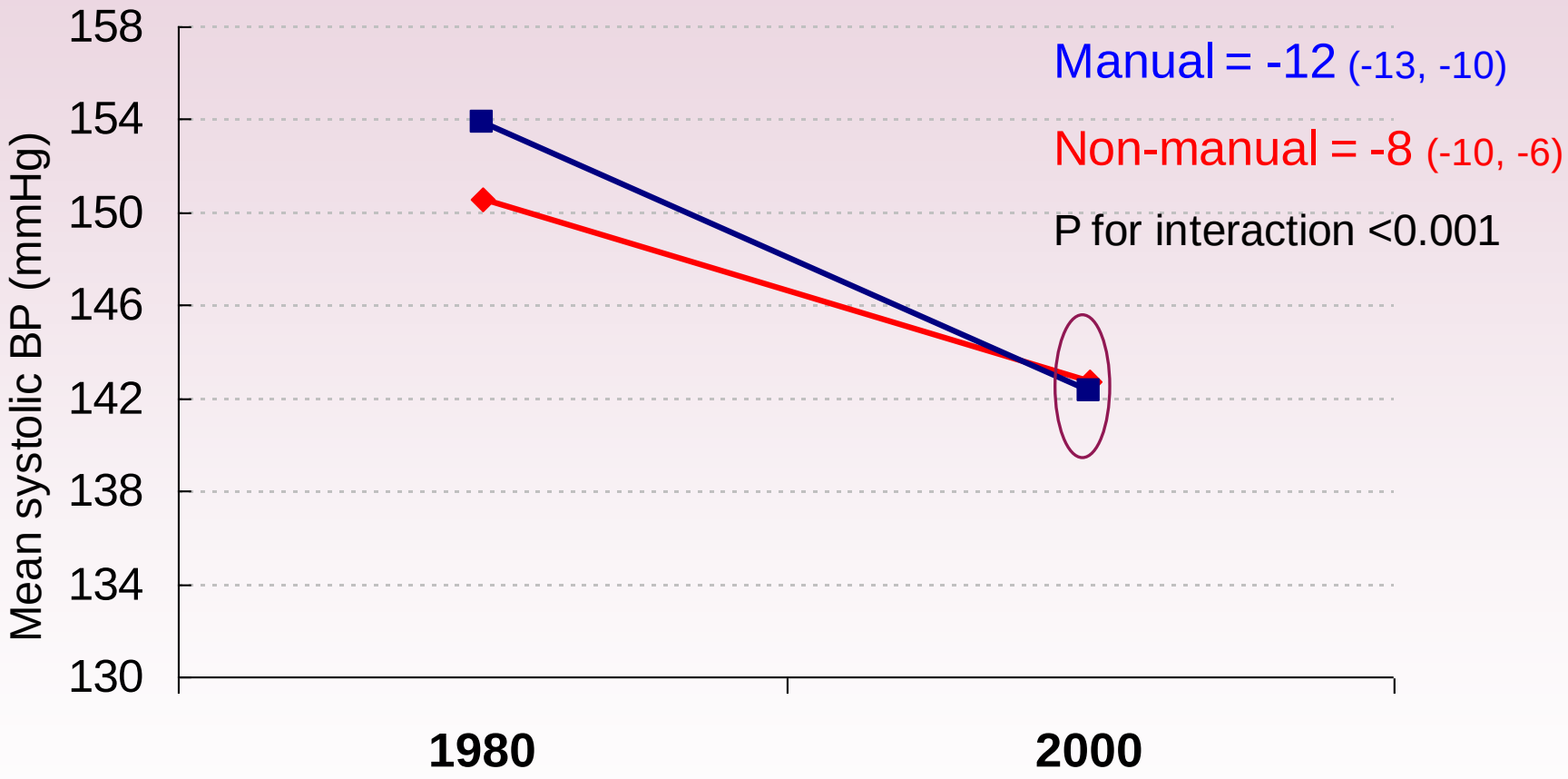
Unfavourable

↑ BMI

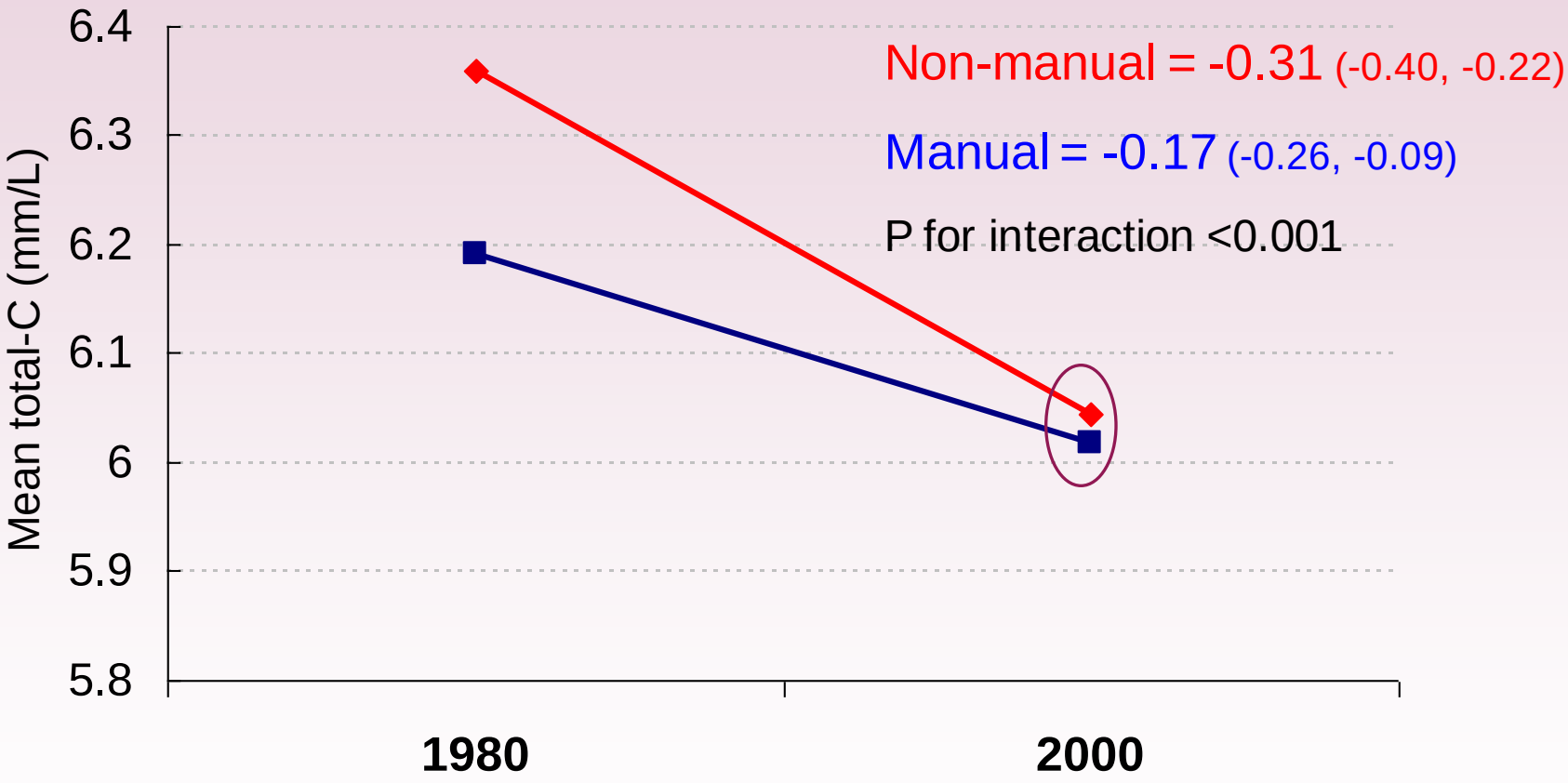
How have these changed by social class groups?

Hardoon et al 2008

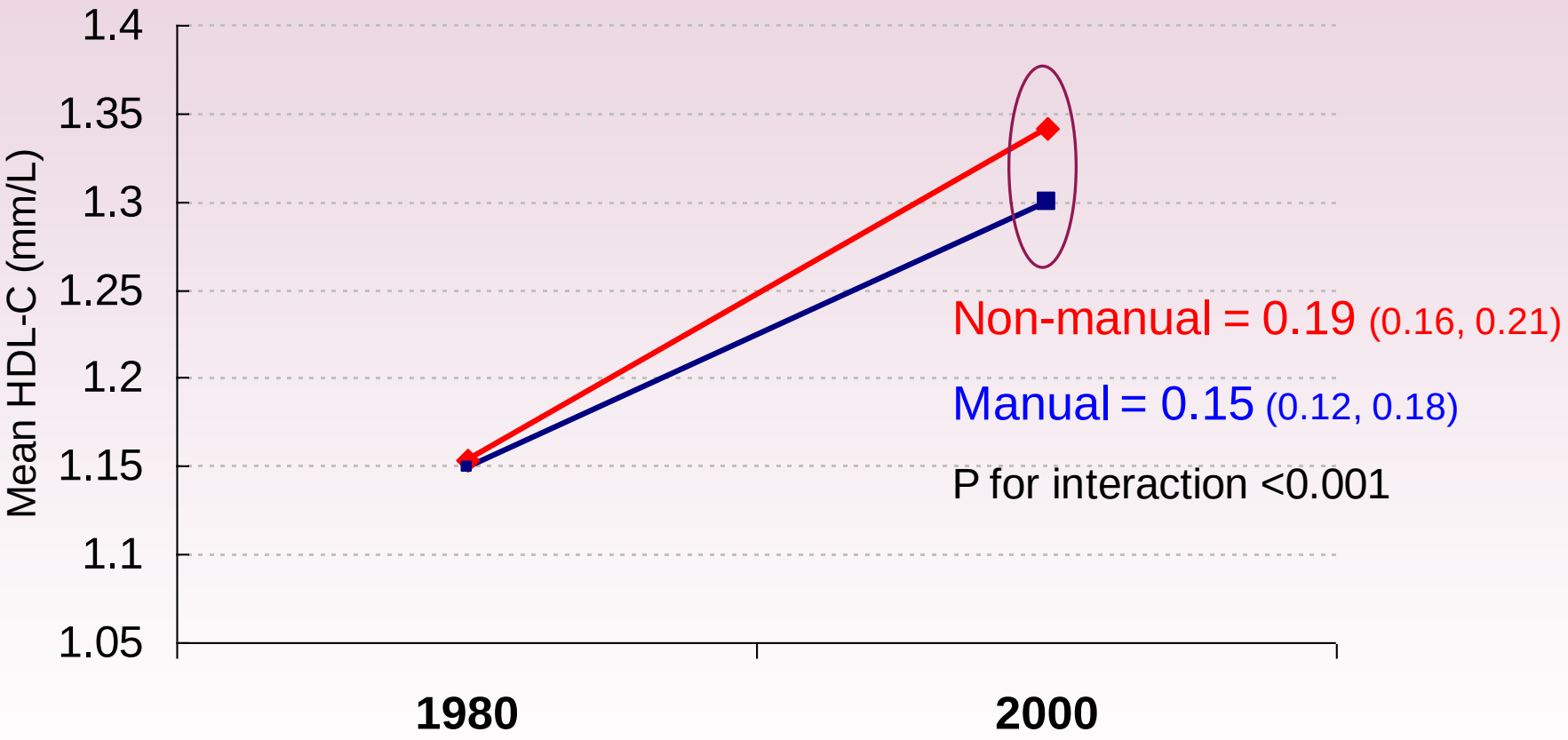
Systolic BP: 20-year social class change



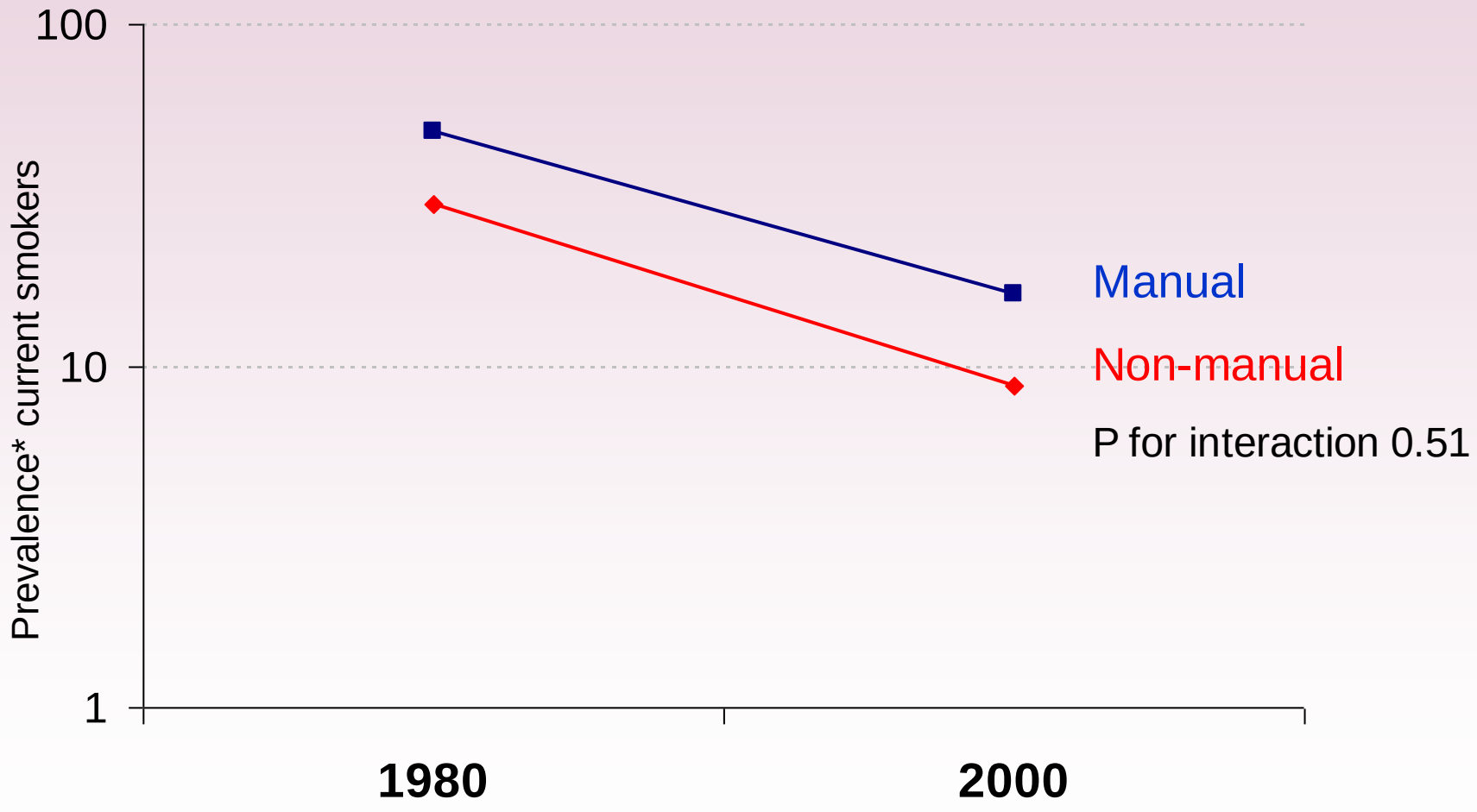
Total cholesterol: 20-year social class change



HDL-C: 20-year social class change

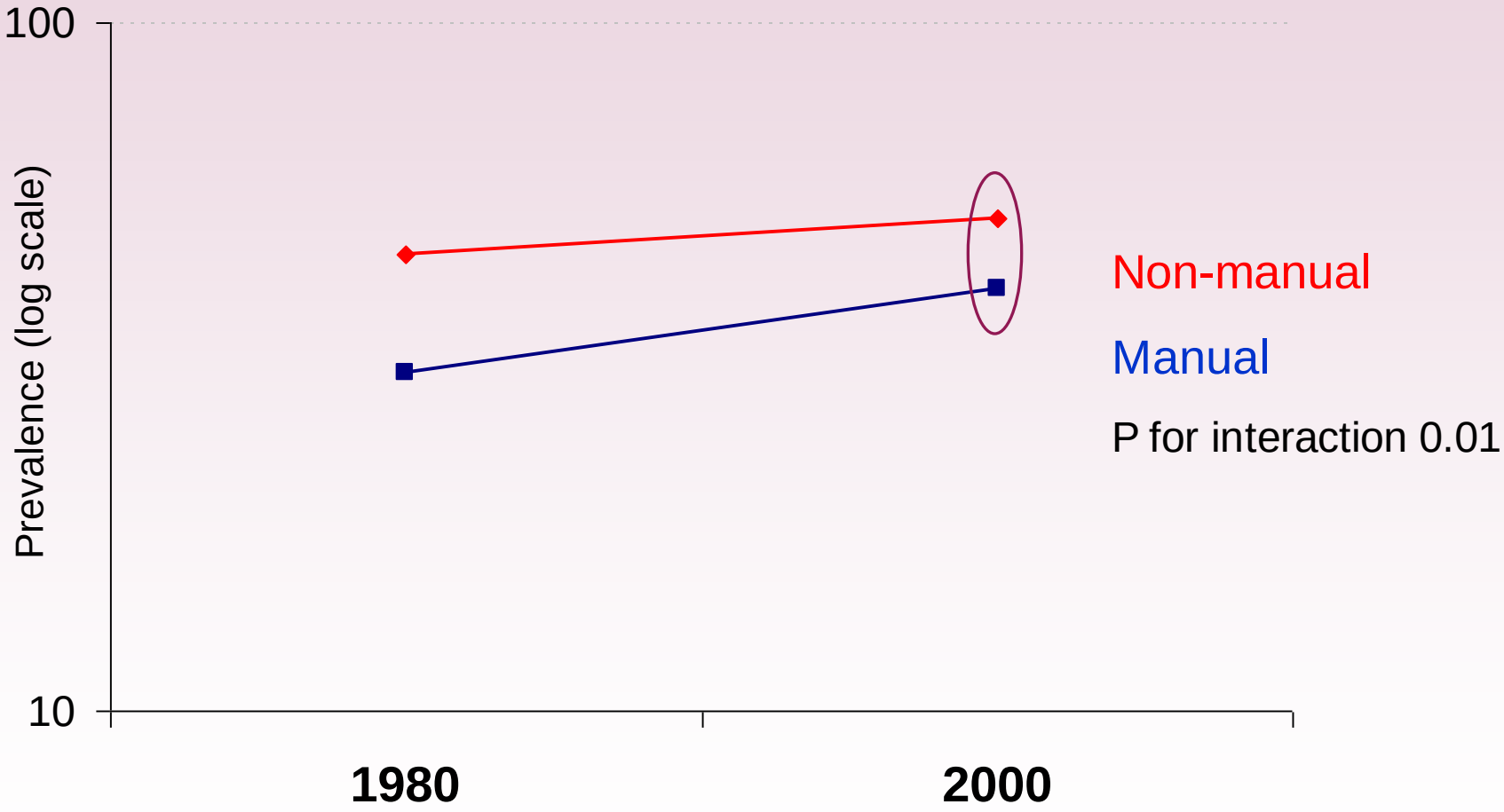


Cigarette smoking: 20-year social class change

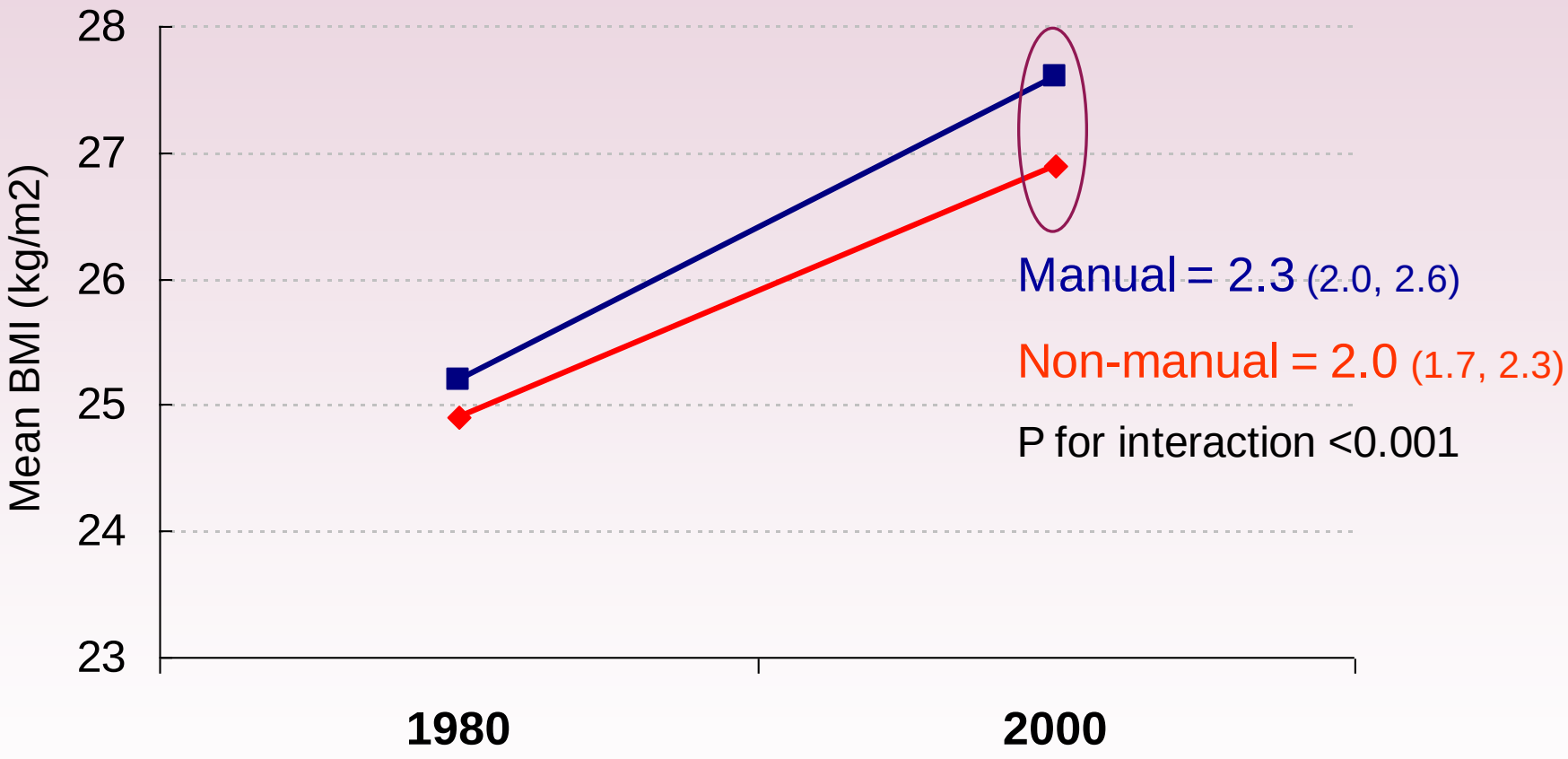


*Prevalence on log scale

Moderate physical activity: 20-year social class change



BMI: 20-year social class change



What are the implications of these changes on socioeconomic differences in risk factors?

Adverse risk factor levels in manual social classes

Attenuated	Increased	Persisted
Systolic BP ↑ decline in manual	HDL C ↑ Increase in non-manual BMI ↑ Increase in manual	Smoking Similar Physical activity ↑ increase in manual

- Adverse risk in non-manual groups: attenuated
  - Total cholesterol: ↑ decline in non-manual groups

Strengths and limitations of this study

- Representative, homogenous cohort

- Limitations:
  - Cohort comprised mostly Caucasian men
  - Survivor bias: may underestimate socioeconomic differences in risk factors

Conclusions

- Socioeconomic inequalities in most risk factors widened or persisted
- Adverse CV risk profile of socially disadvantaged groups needs to be improved
- Social inequalities in CHD are likely to increase

Thank you