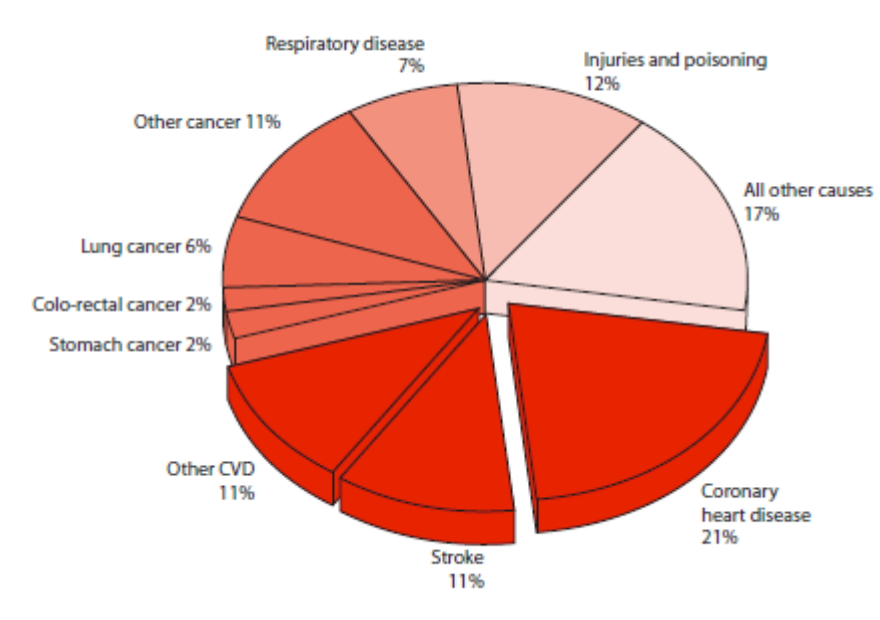
Epidemiology of CV disease in Central and Eastern Europe

Renata Cífková

Center for CV Prevention, Charles University Medical School & Thomayer University Hospital
Department of Medicine II, Charles University Medical School
Department of Preventive Cardiology, IKEM
Prague, Czech Republic

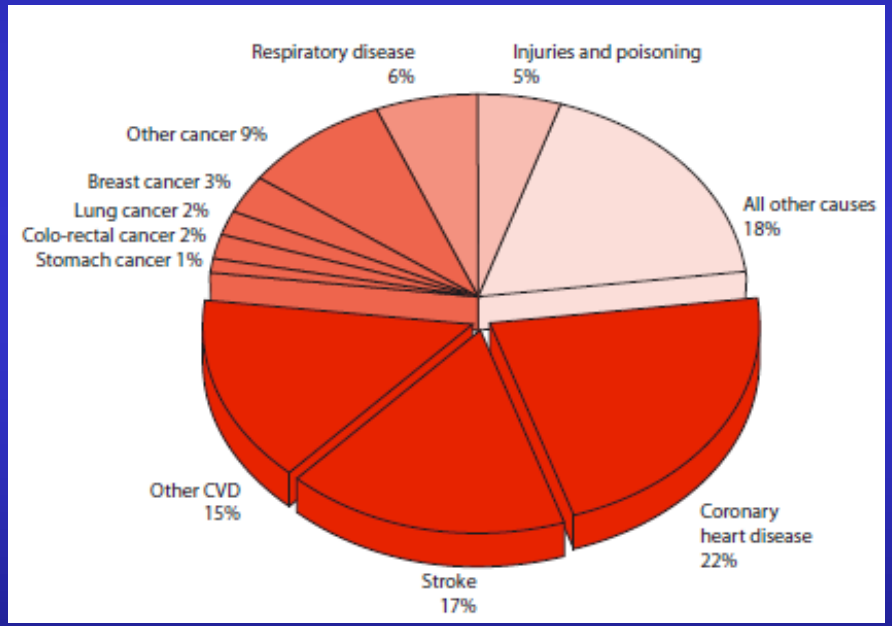
Death by cause
Europe

Men



All CVD deaths 43%

Women

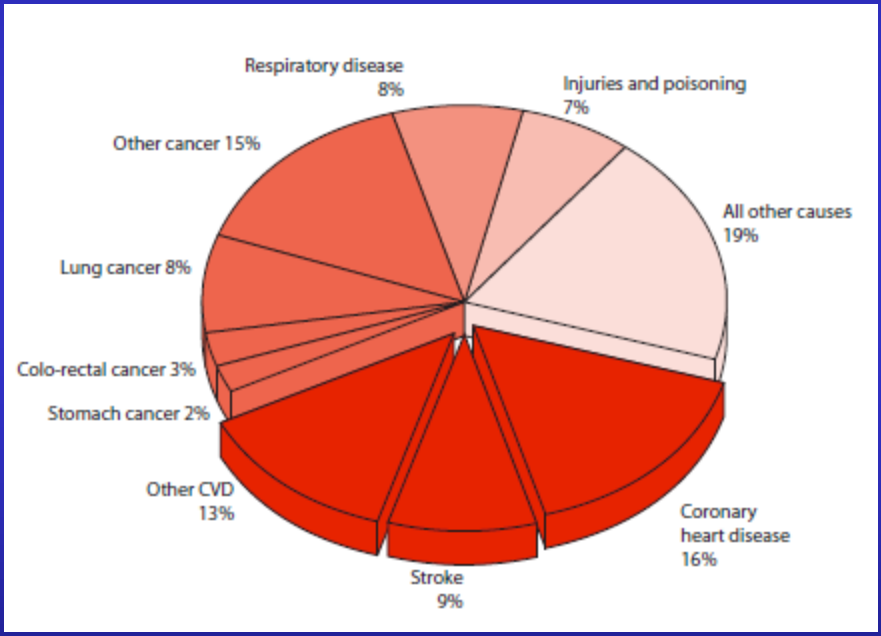


All CVD deaths 54%

European CVD Statistics 2008

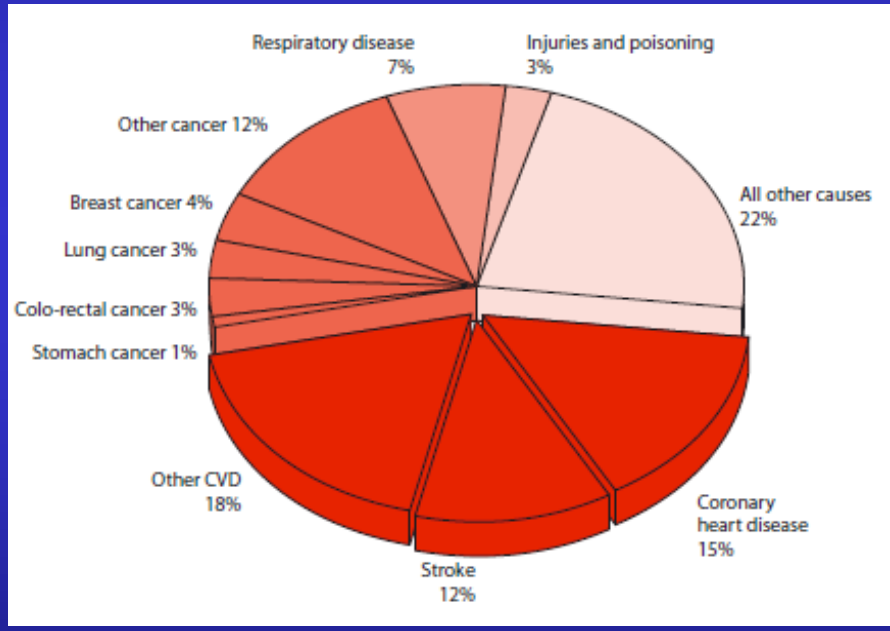
Death by cause
European Union

Men



All CVD deaths 38%

Women

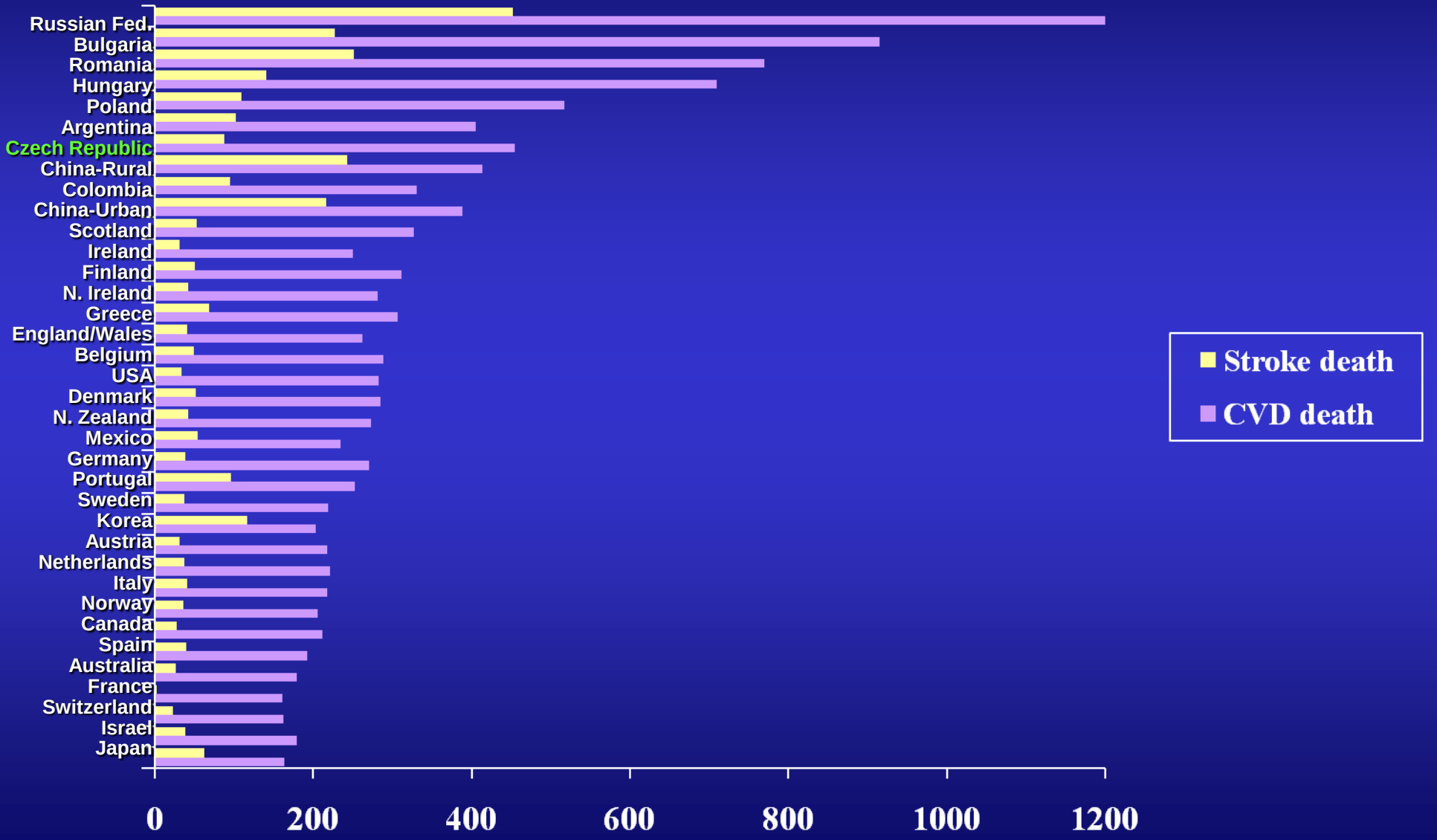


All CVD deaths 45%

European CVD Statistics 2008

Death Rates for CVD and Stroke

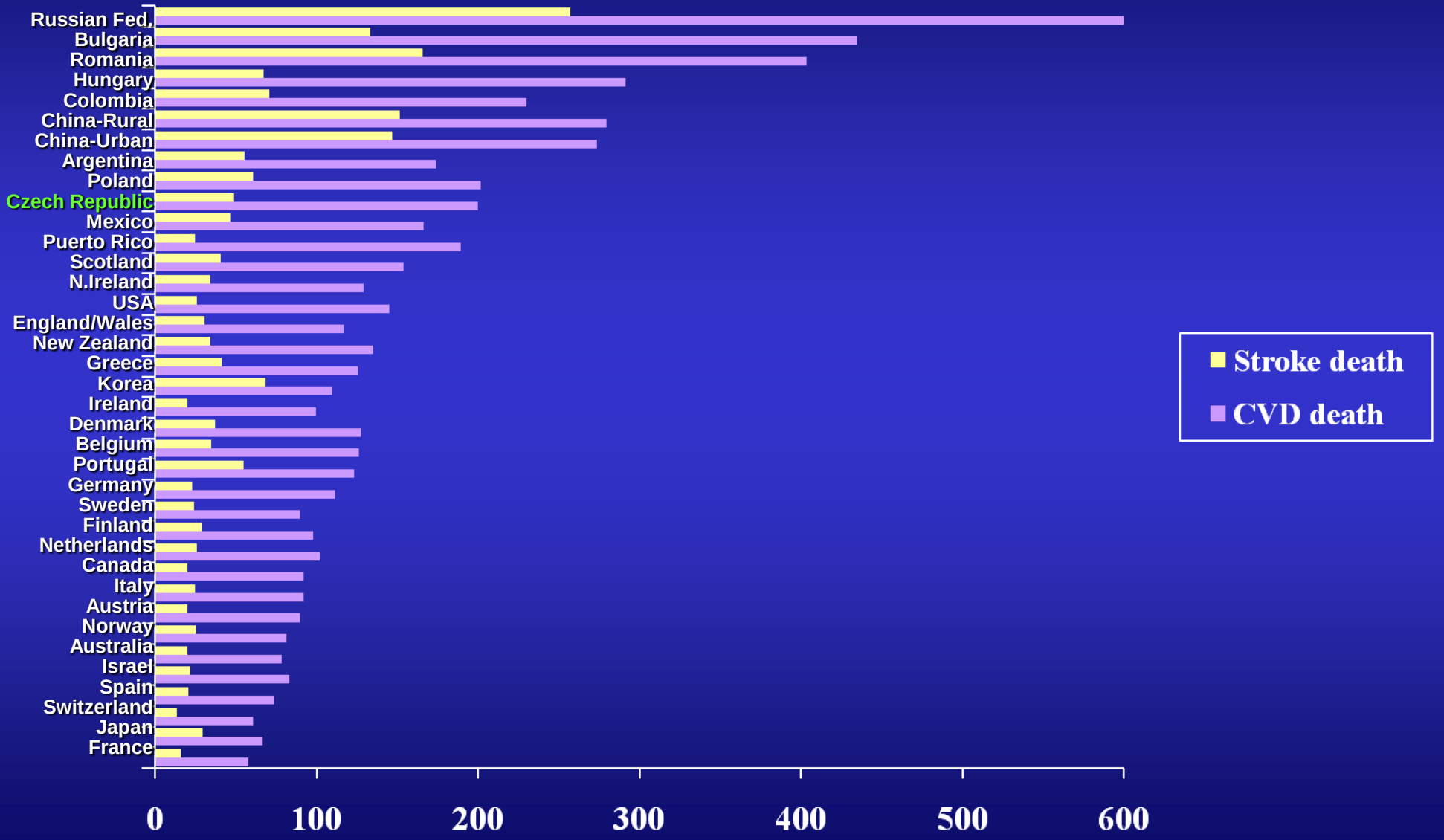
Men, 35-74 yrs



Circulation 2009;119:e21-e181

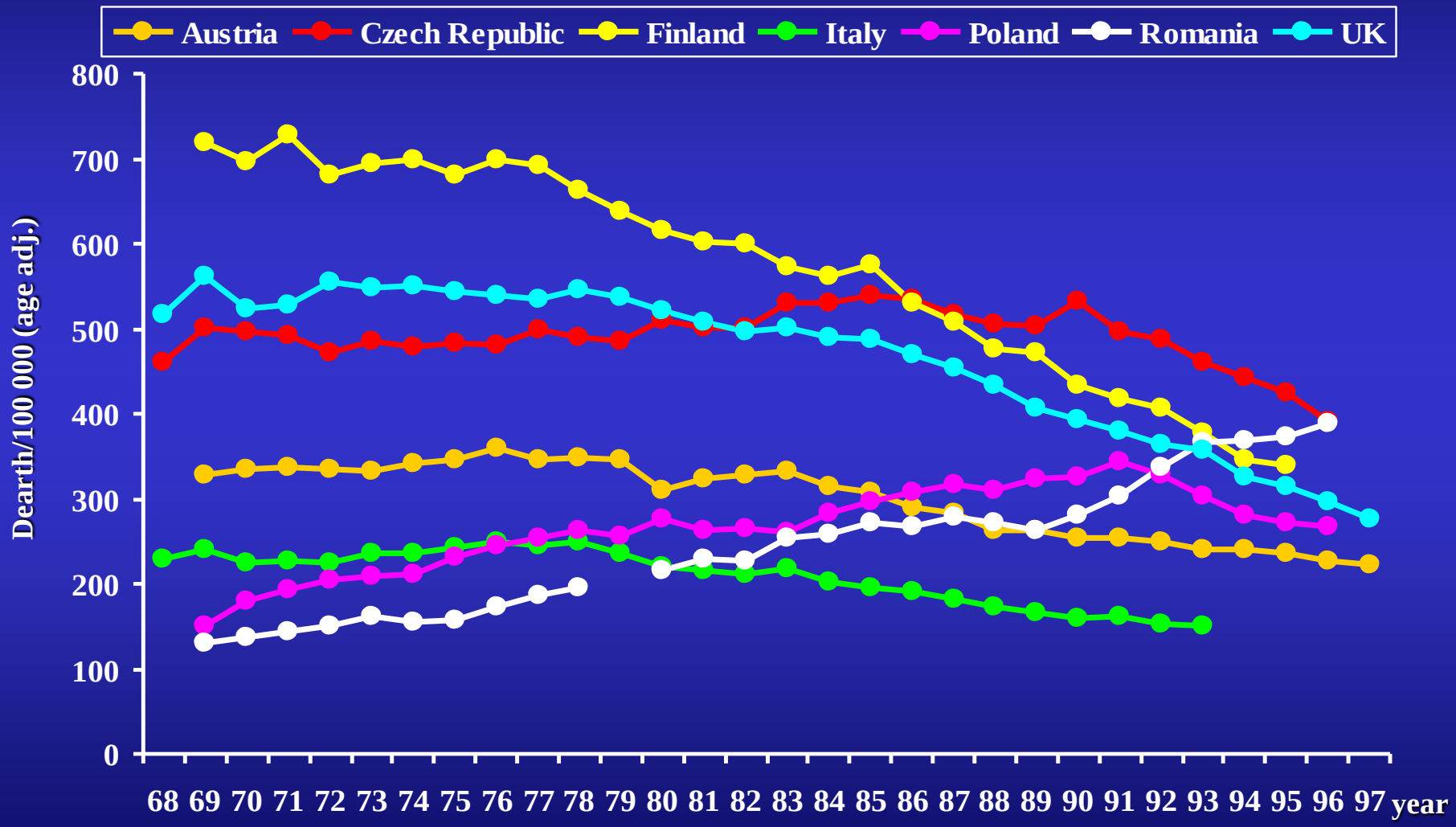
Death Rates for CVD and Stroke

Women, 35-74 yrs

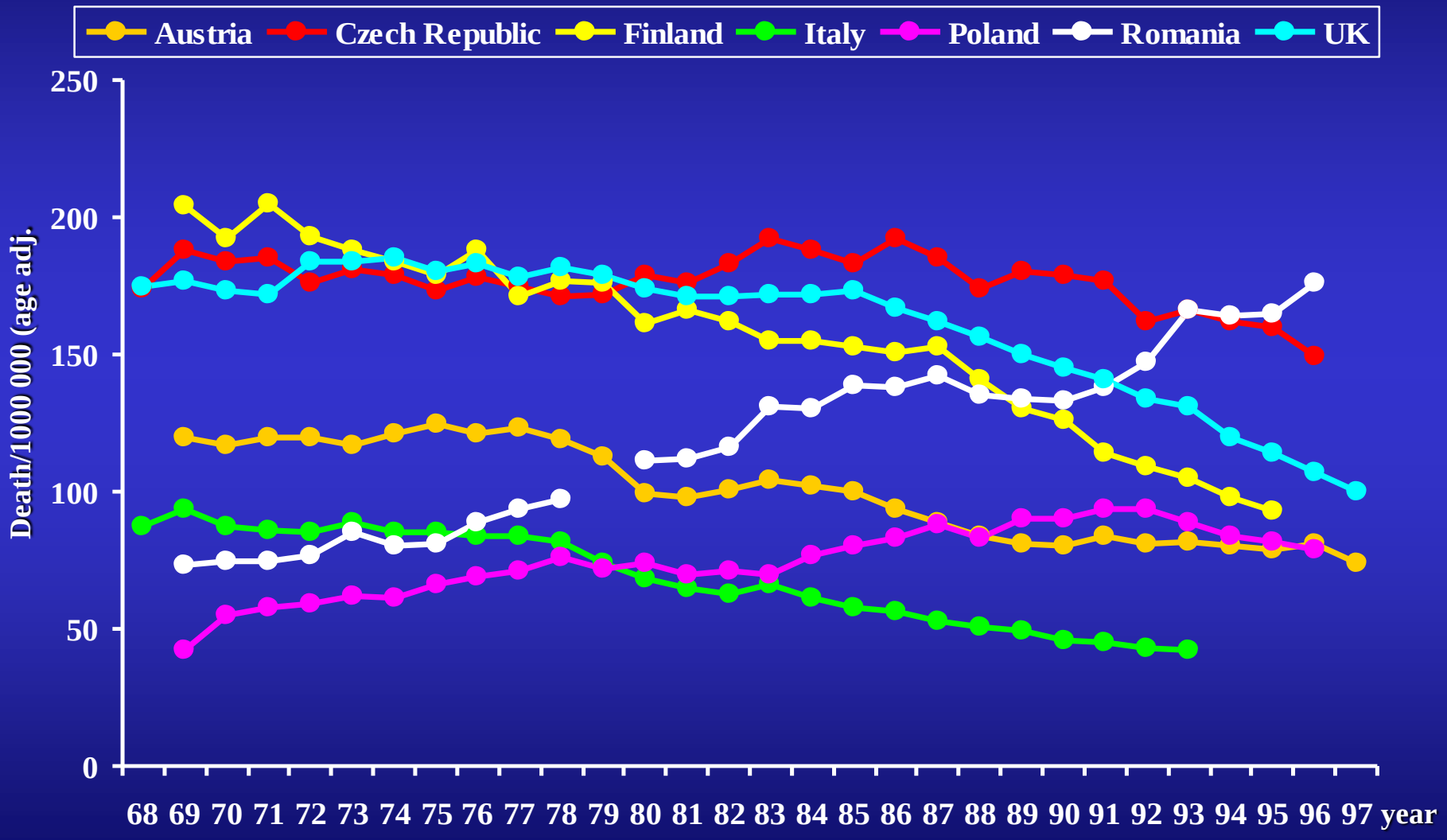


Circulation 2009;119:e21-e181

CV Mortality - *Males*

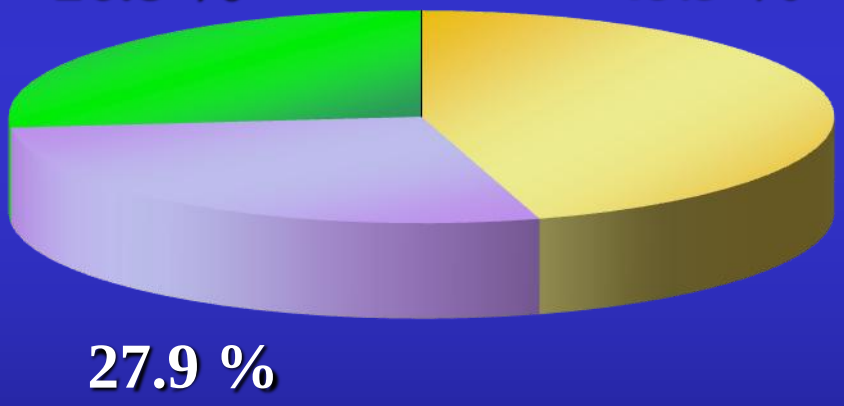


CV Mortality - *Females*

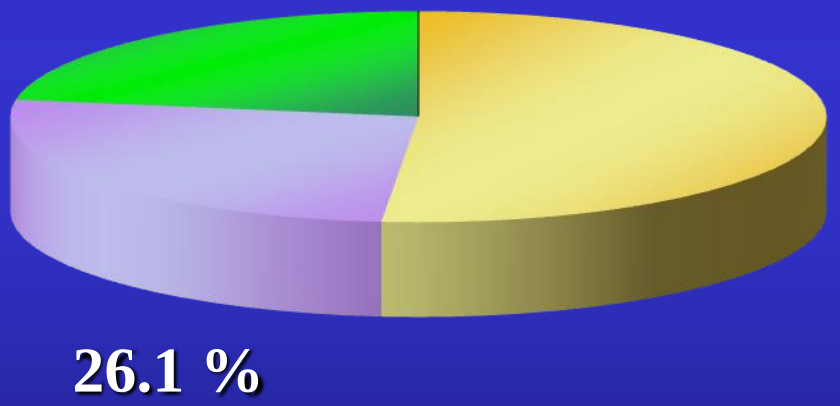


Standardized mortality
Czech Republic, 2009

Males



Females

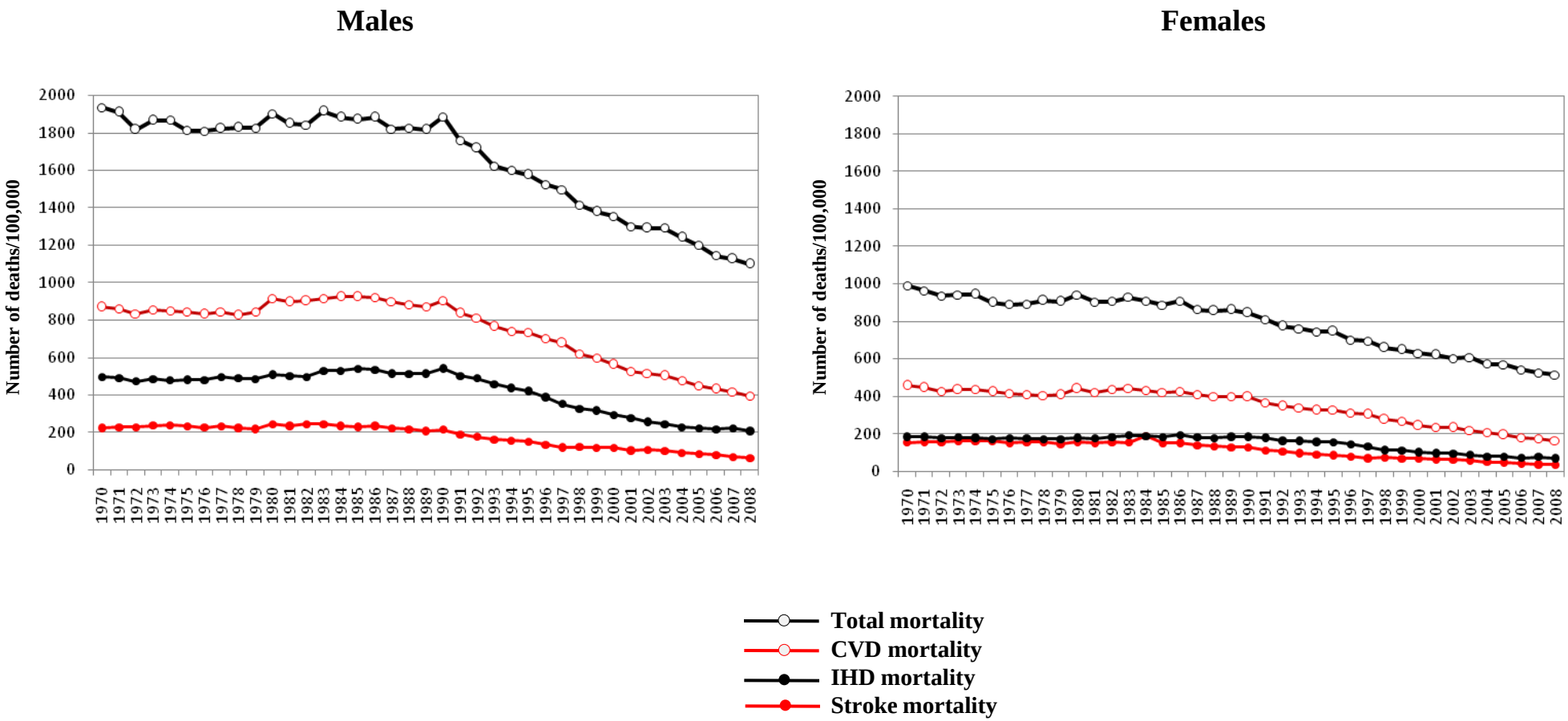


CVD
Malignancies
Other

Age-adjusted death rates/100,000
Czech Republic, 1985-2009

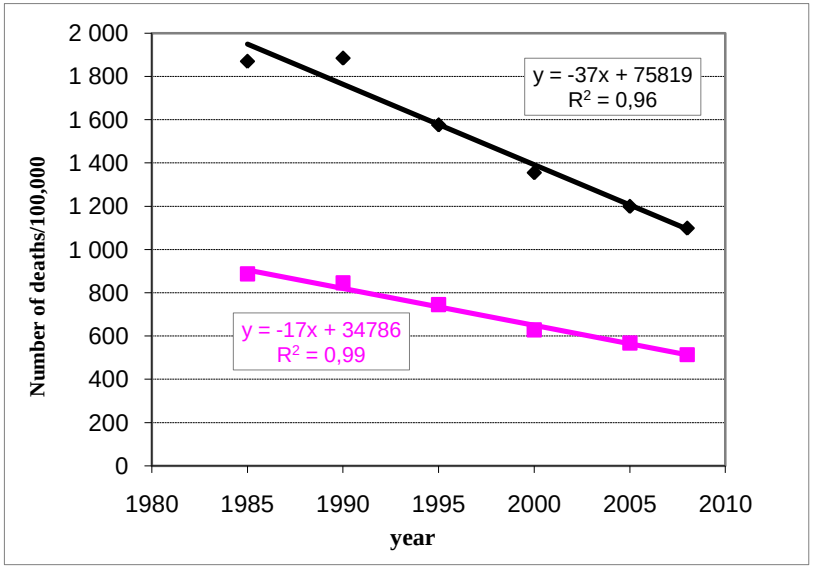
Males	1985	2009	△ %	p
- Total	1581	963	- 38.8	< 0.001
- CVD	844	436	- 48.3	< 0.001
- CHD	436	218	- 47.9	< 0.001
- Stroke	250	89	- 64.4	< 0.001
Females				
- Total	944	577	- 38.9	< 0.001
- CVD	548	296	- 46.0	< 0.001
- CHD	223	134	- 39.9	< 0.001
- Stroke	202	72	- 64.4	< 0.001

Age-stand. total, CVD, IHD, and stroke mortality (age group 35-74 yrs) Czech Republic 1970-2008

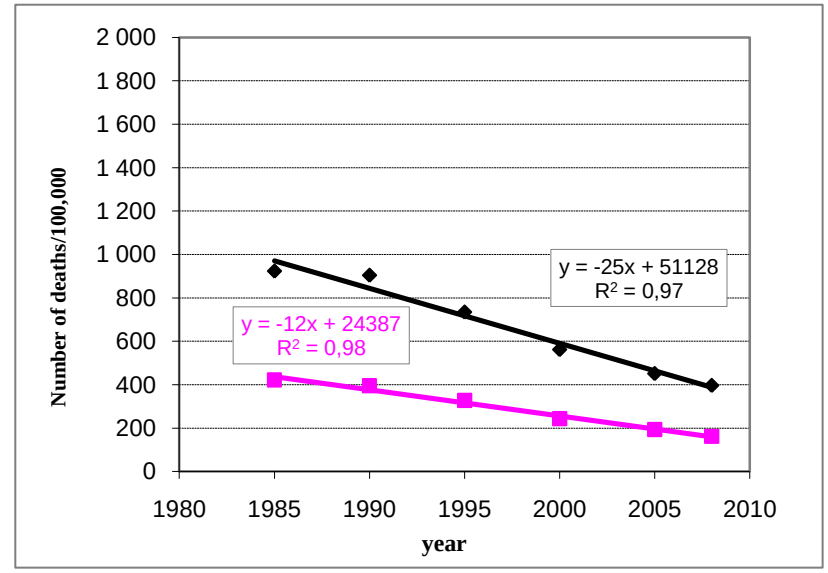


J Hypertens 2010;28:2196-203

Total mortality, age 35-74 years
Males vs Females: p = 0,001

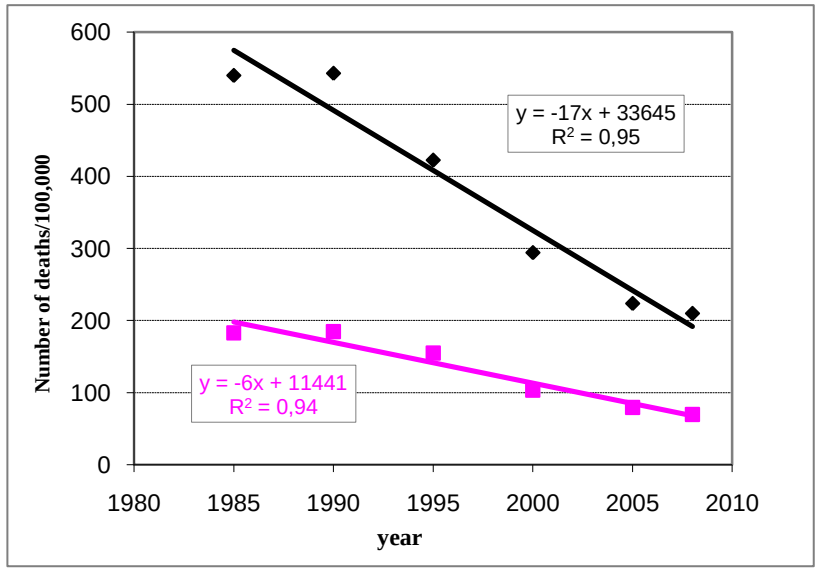


CVD mortality, age 35-74 years
Males vs Females: p = 0,001

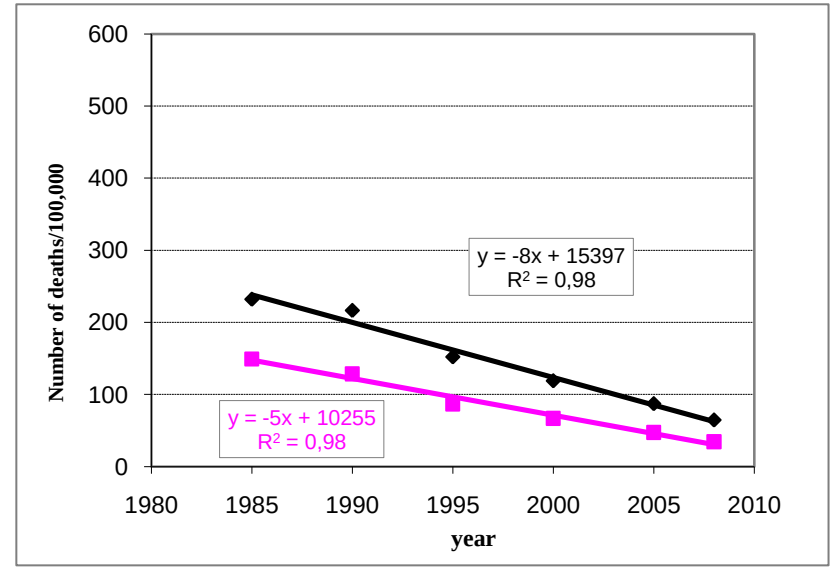


Males
Females

CAD mortality, age 35-74 years
Males vs Females: p = 0,001

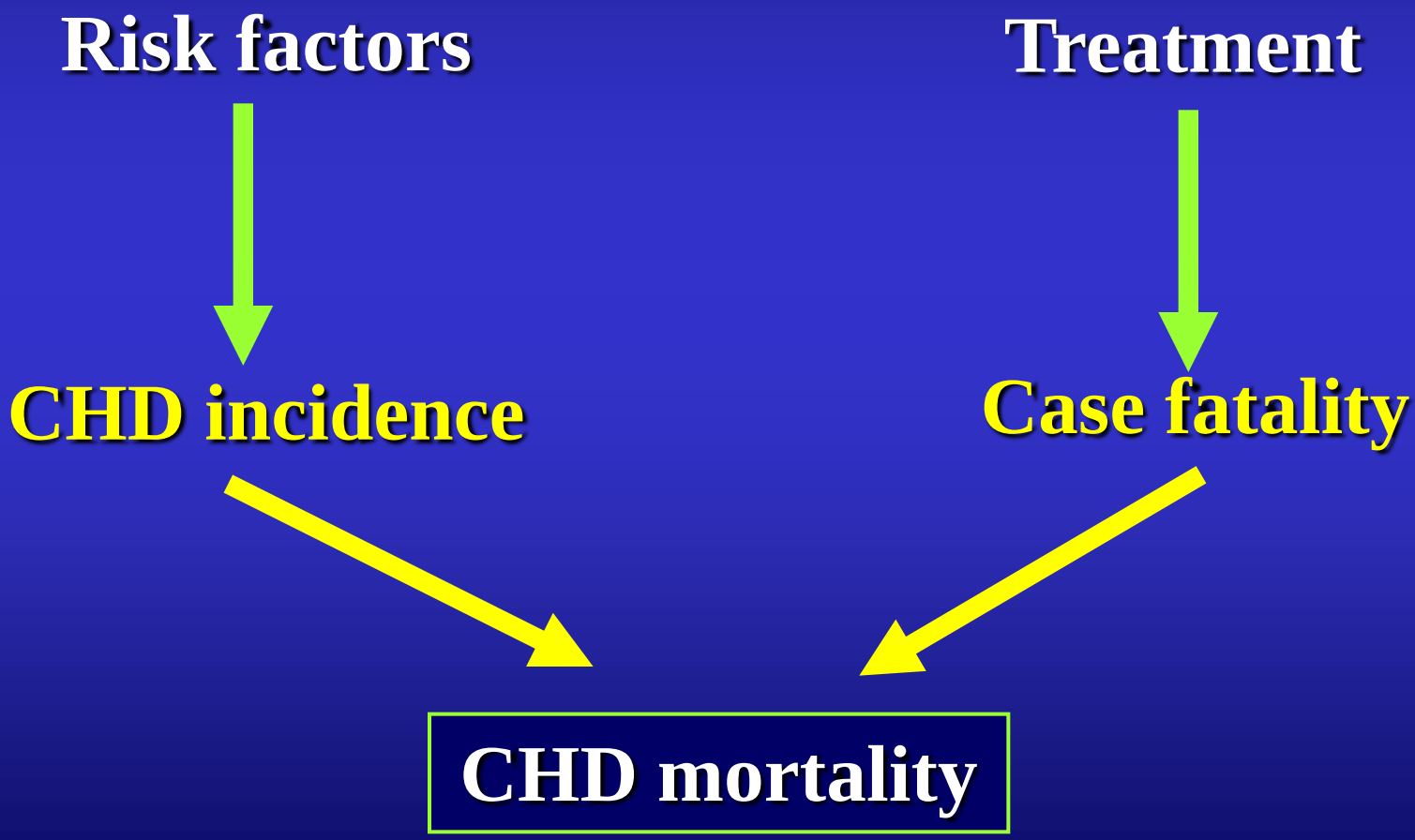


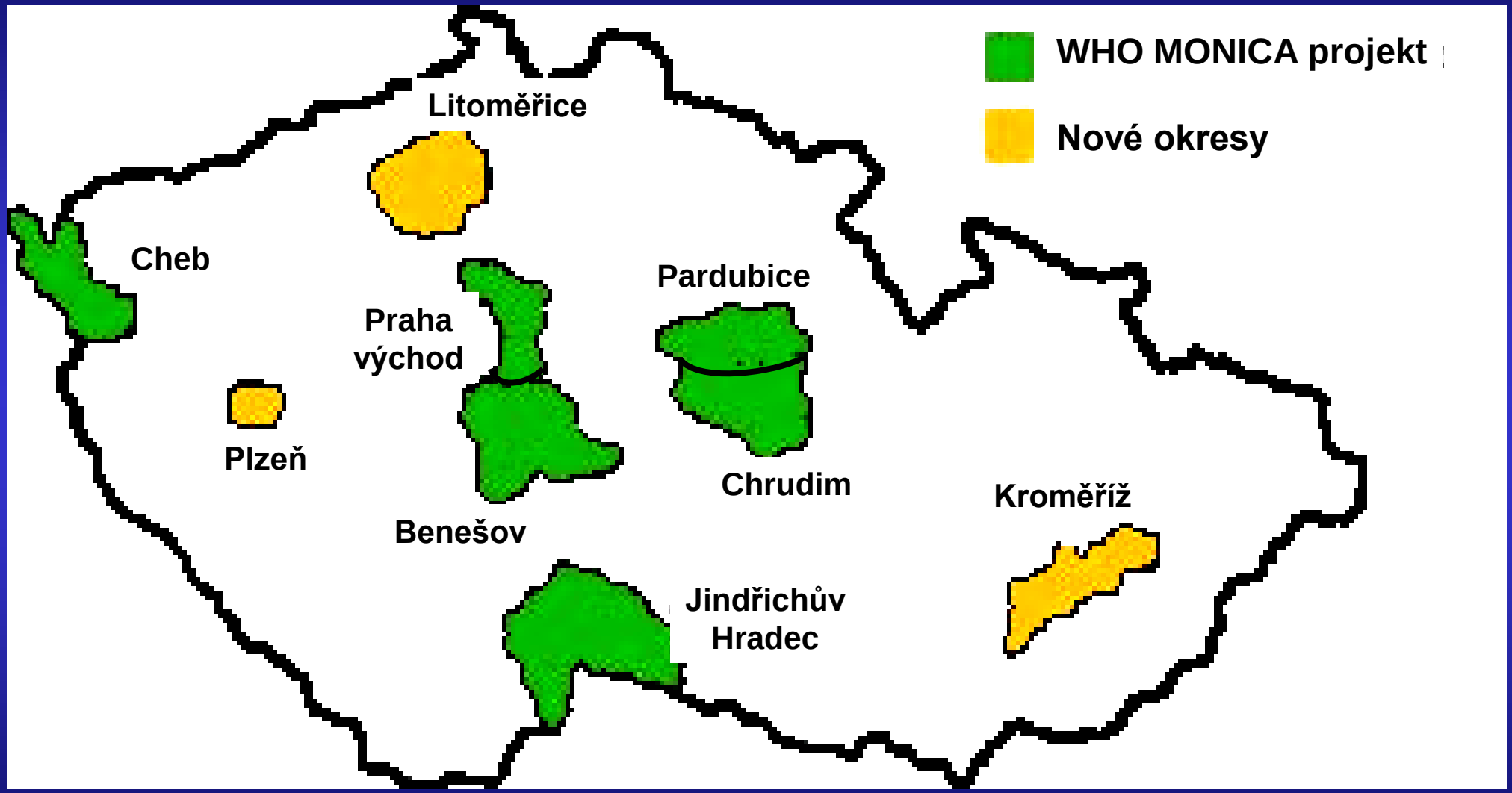
Stroke mortality, age 35-74 years
Males vs Females: p = 0,0041



J Hypertens 2010;28:2196-203

Factors affecting CHD mortality



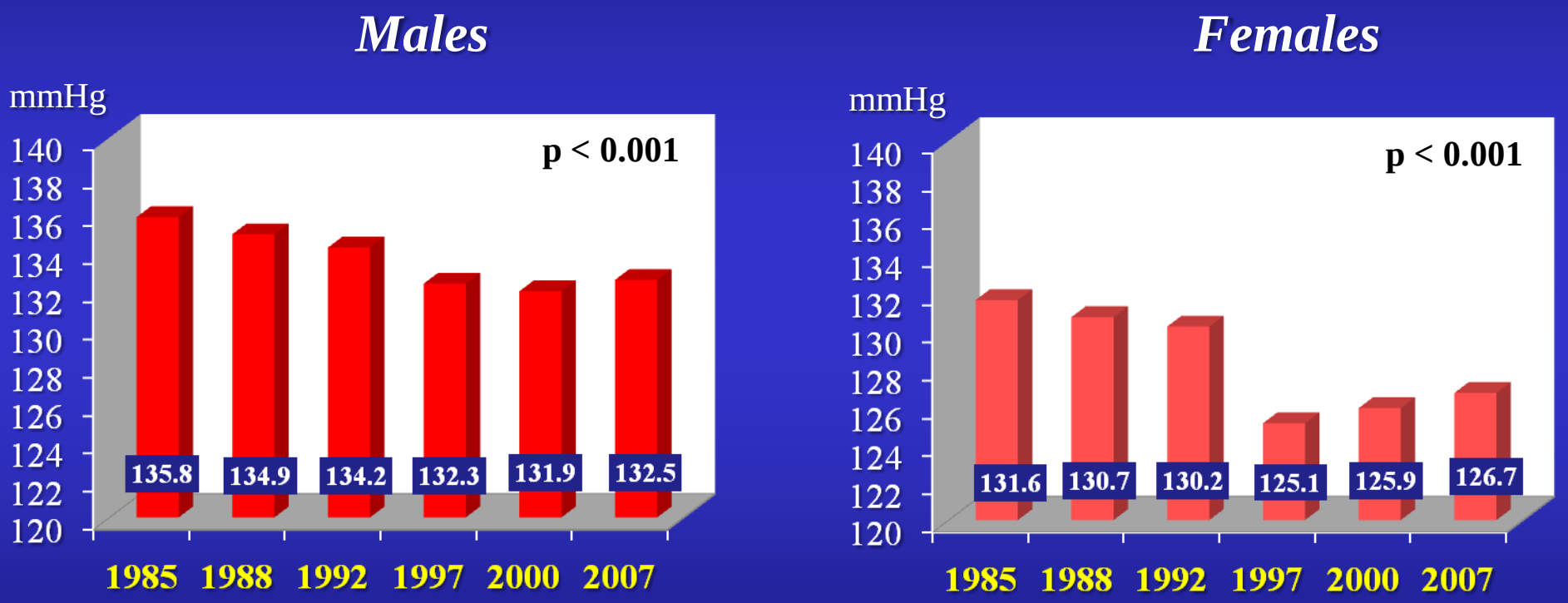

WHO MONICA projekt
Nové okresy
Litoměřice
Cheb
Praha
východ
Pardubice
Plzeň
Chrudim
Kroměříž
Benešov
Jindřichův
Hradec

Sample sizes and response rates

	1985	1988	1992	1997/8	2000/1	2007/8
Total	2570	2768	2343	1990	2055	2246
Males	1253	1357	1134	969	1003	1102
Resp.	*81.5*	*85.5*	*73.2*	*63.2*	*62.0*	*62.7****
Females	1317	1411	1209	1021	1052	1144
Resp.	*85.0*	*88.4*	*76.7*	*66.4*	*63.8*	*63.1****

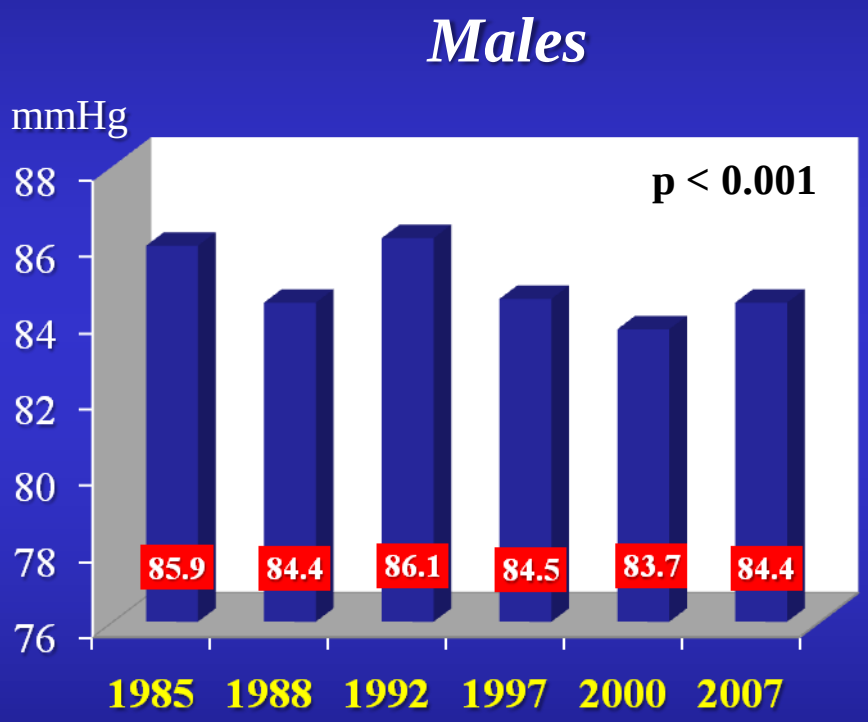
*** $p < 0.001$ for trend

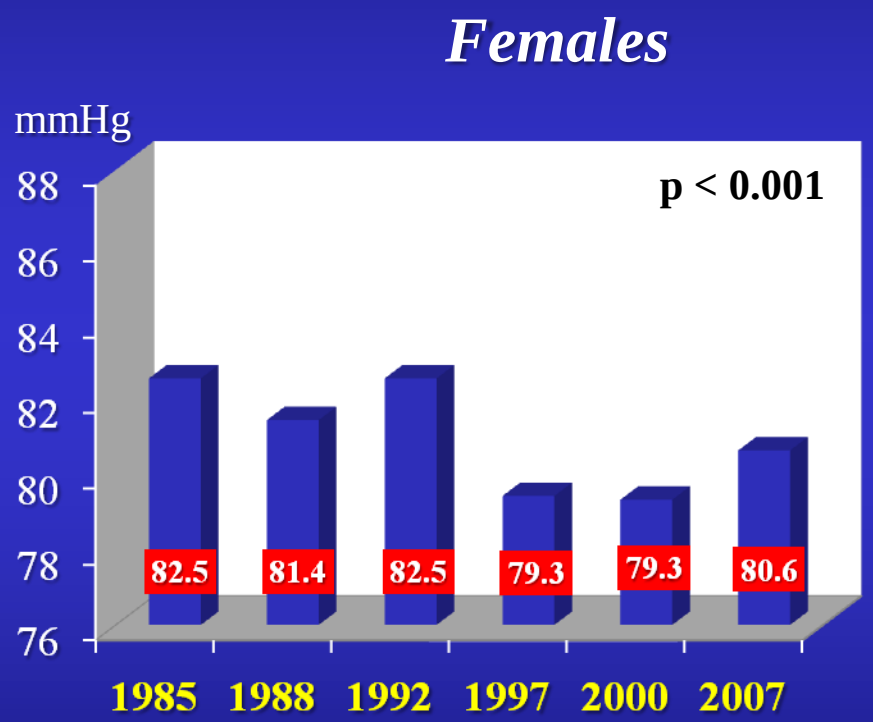
Systolic BP



Atherosclerosis 2010;211:676-81

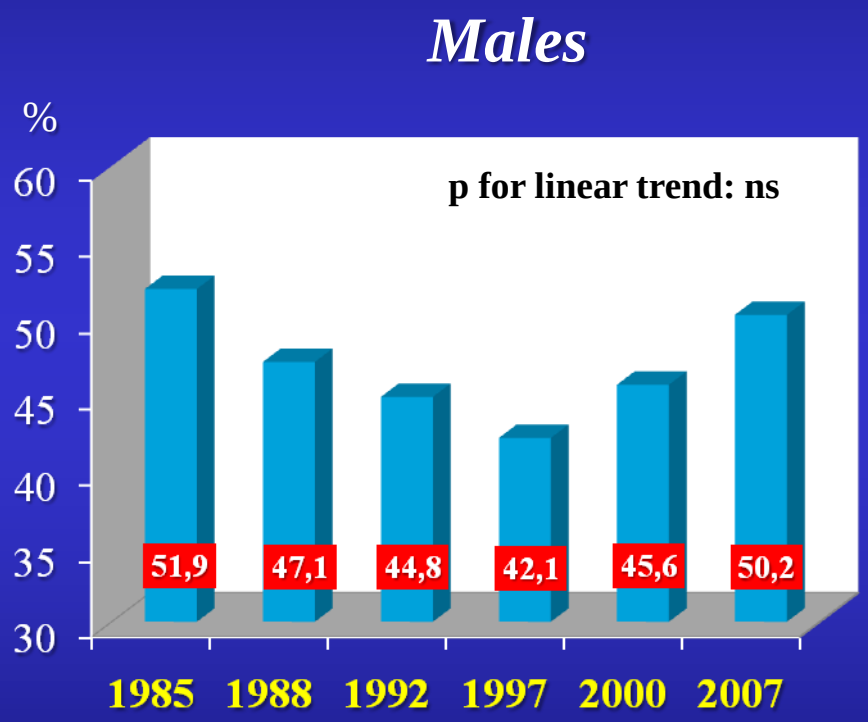
Diastolic BP

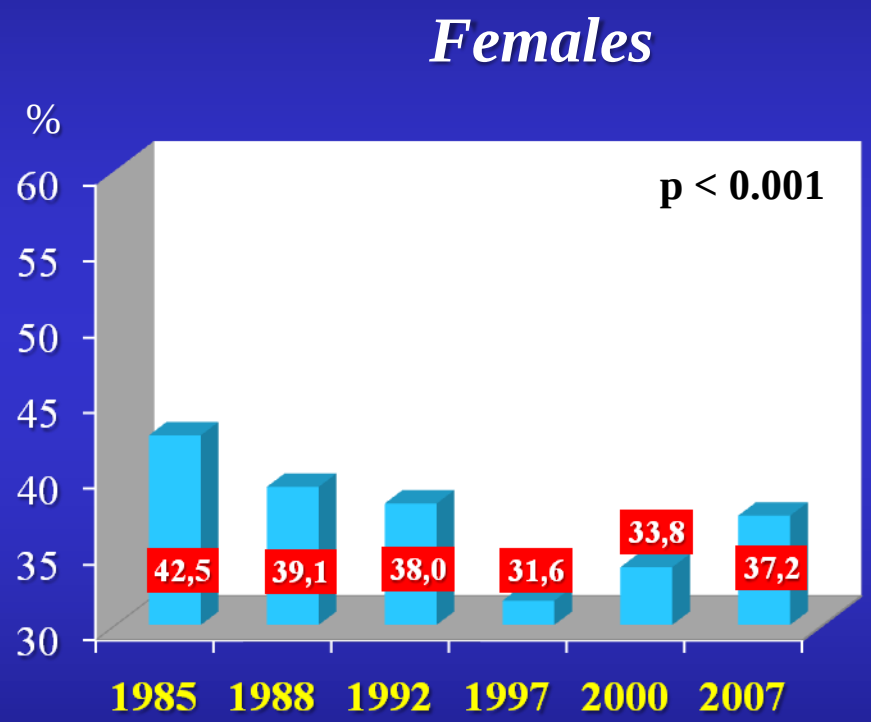




Atherosclerosis 2010;211:676-81

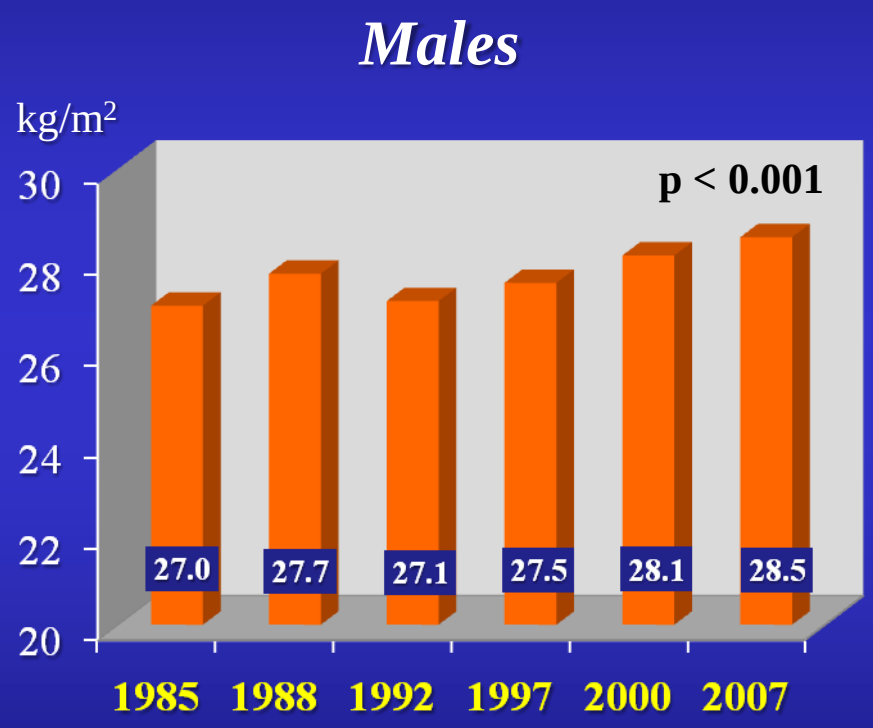
Prevalence of hypertension

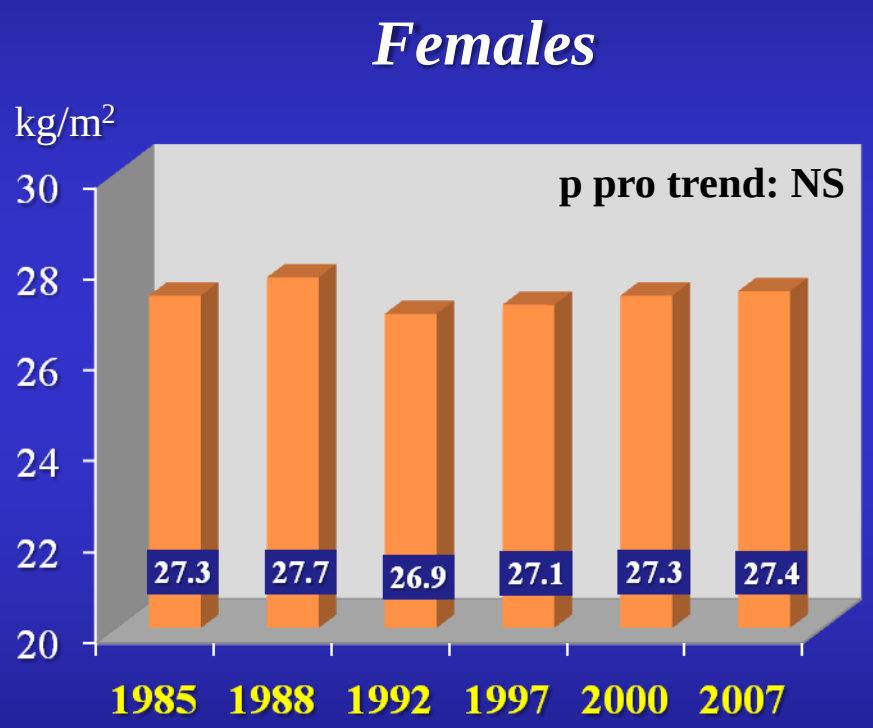




Atherosclerosis 2010;211:676-81

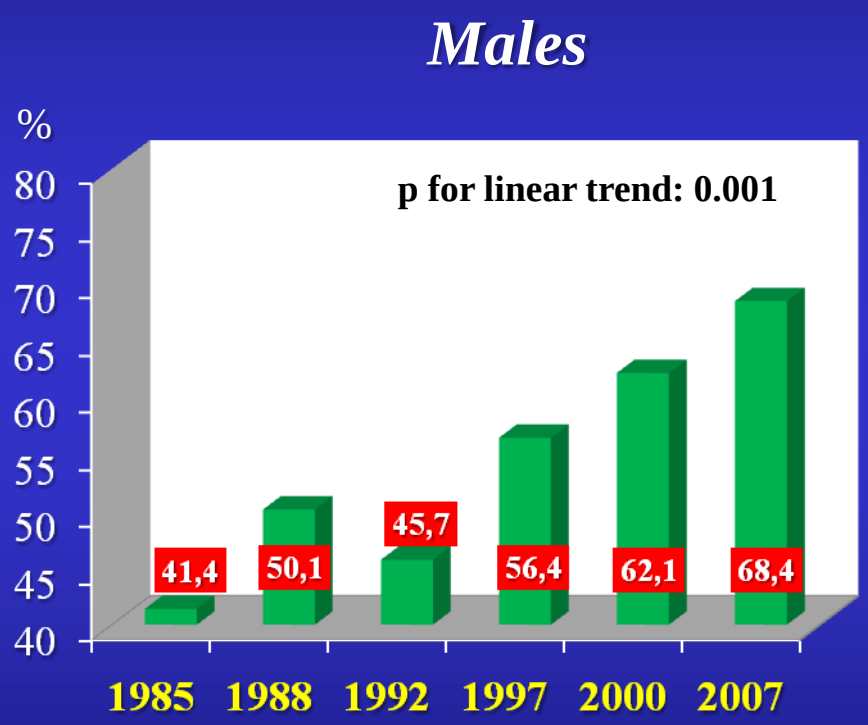
BMI

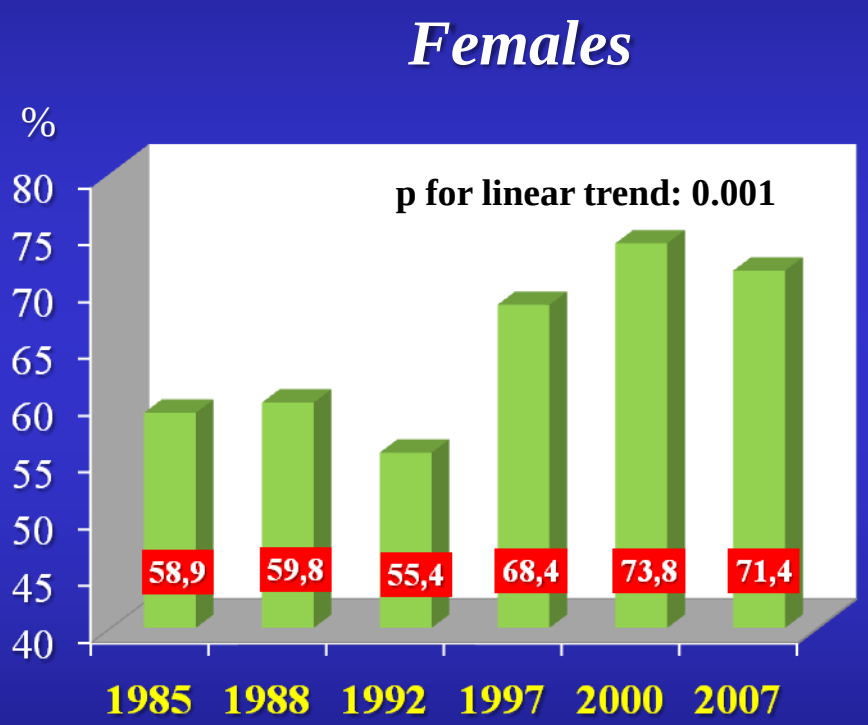




Atherosclerosis 2010;211:676-81

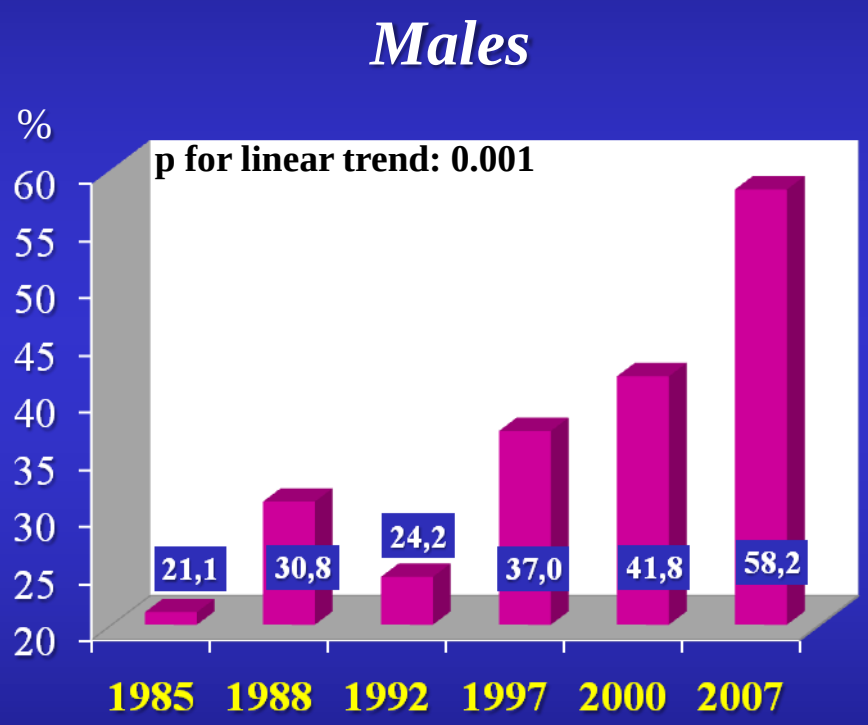
Awareness of hypertension

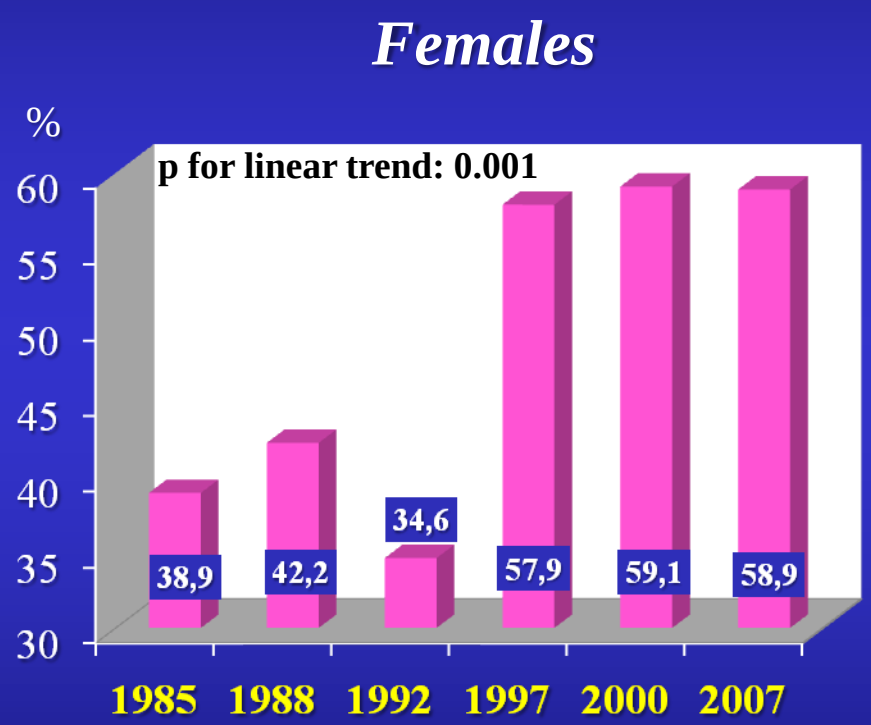




Atherosclerosis 2010;211:676-81

Antihypertensive medication



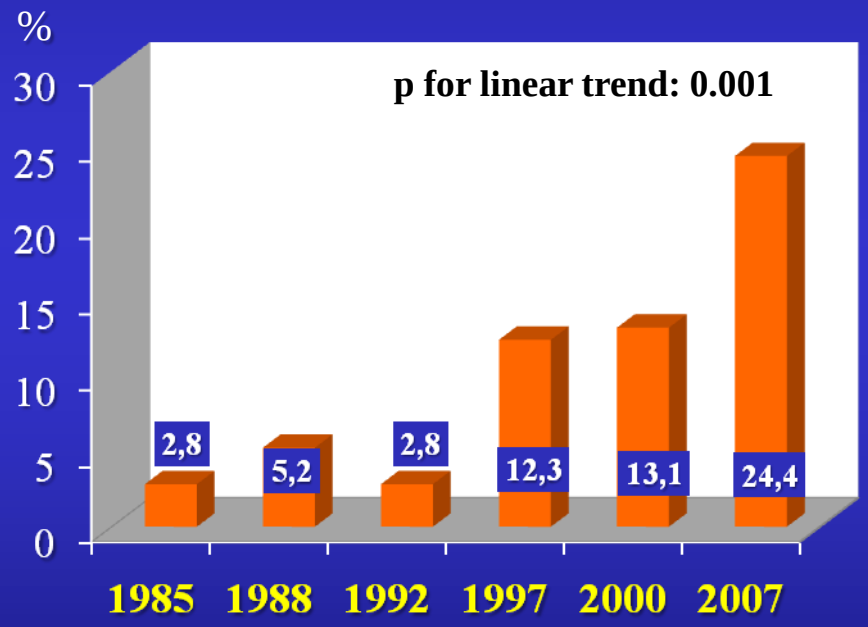


Atherosclerosis 2010;211:676-81

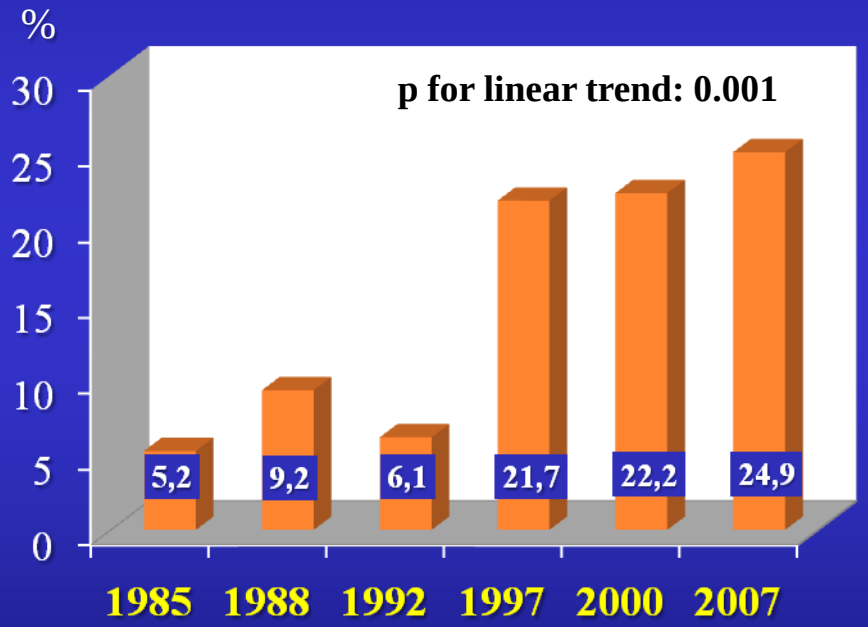
Hypertension control

BP < 140/90 mmHg of all hypertensives

Males

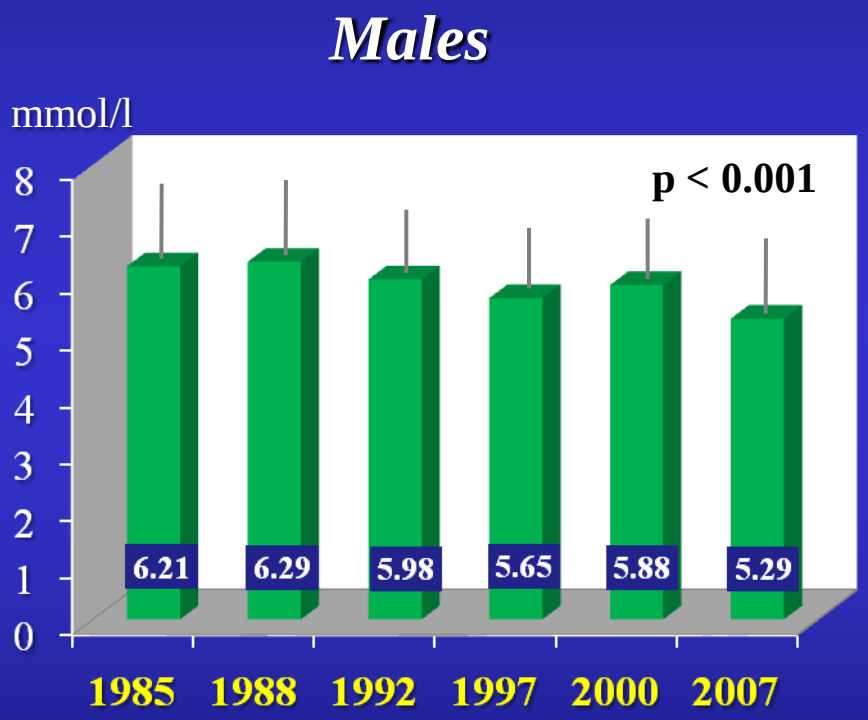


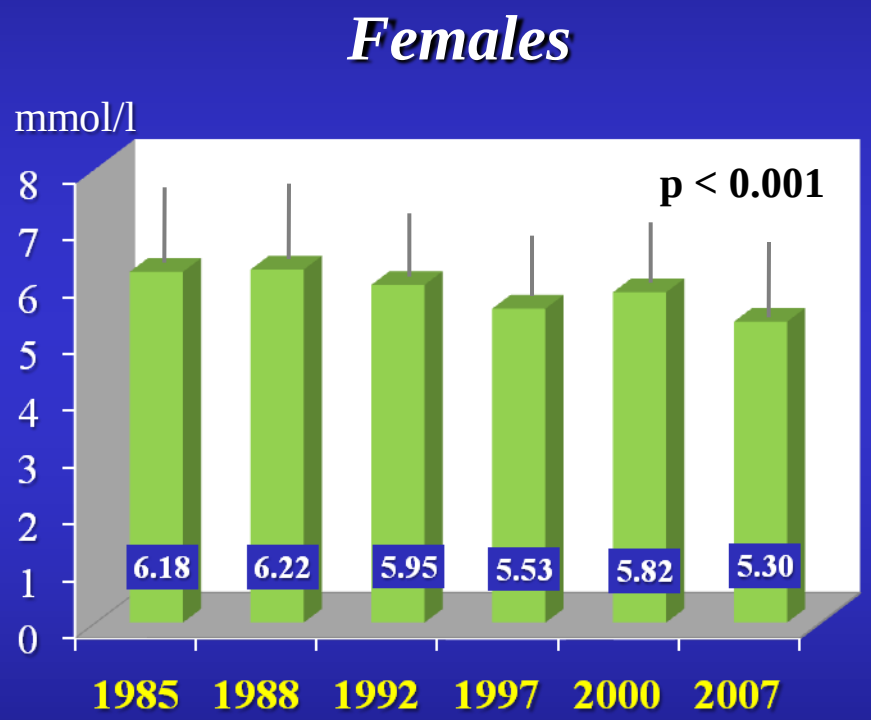
Females



Atherosclerosis 2010;211:676-81

Total cholesterol

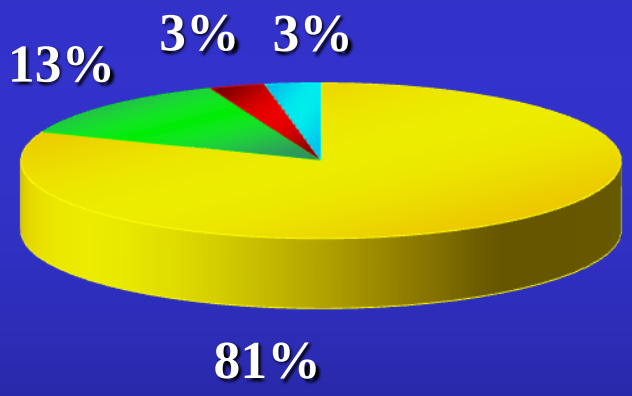




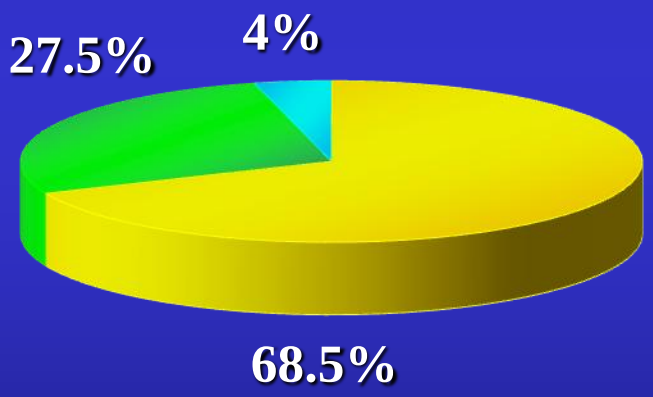
Atherosclerosis 2010;211:676-81

Lipid-lowering drugs

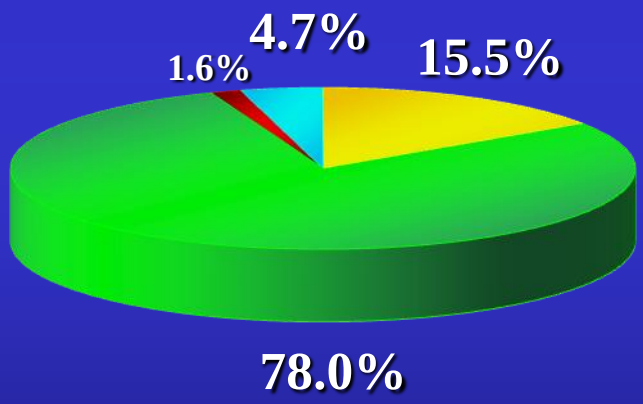
1997/98
n = 130 (3.95%)



2000/01
n = 171 (5.1%)

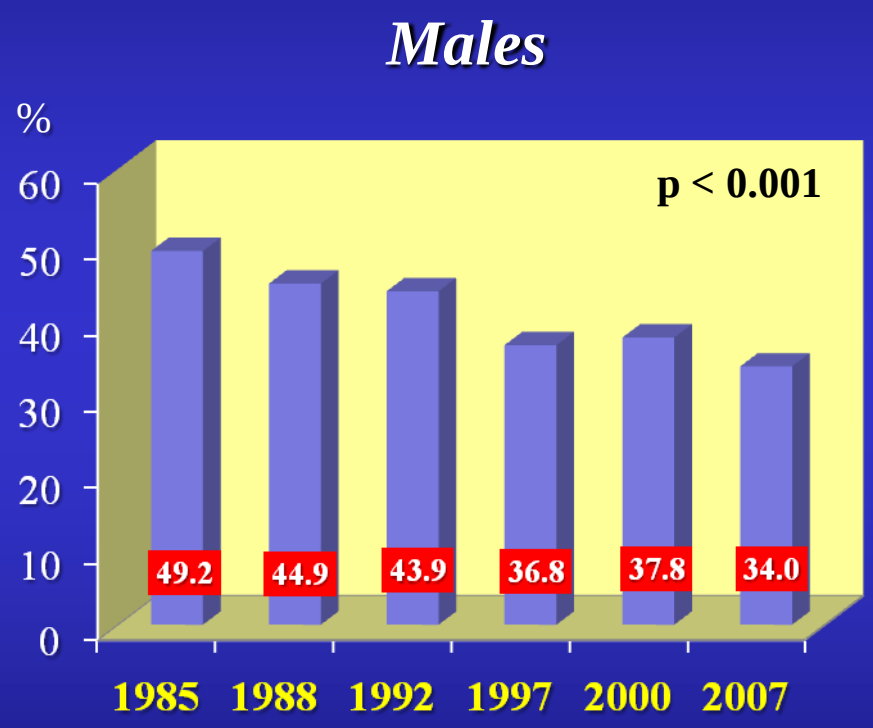


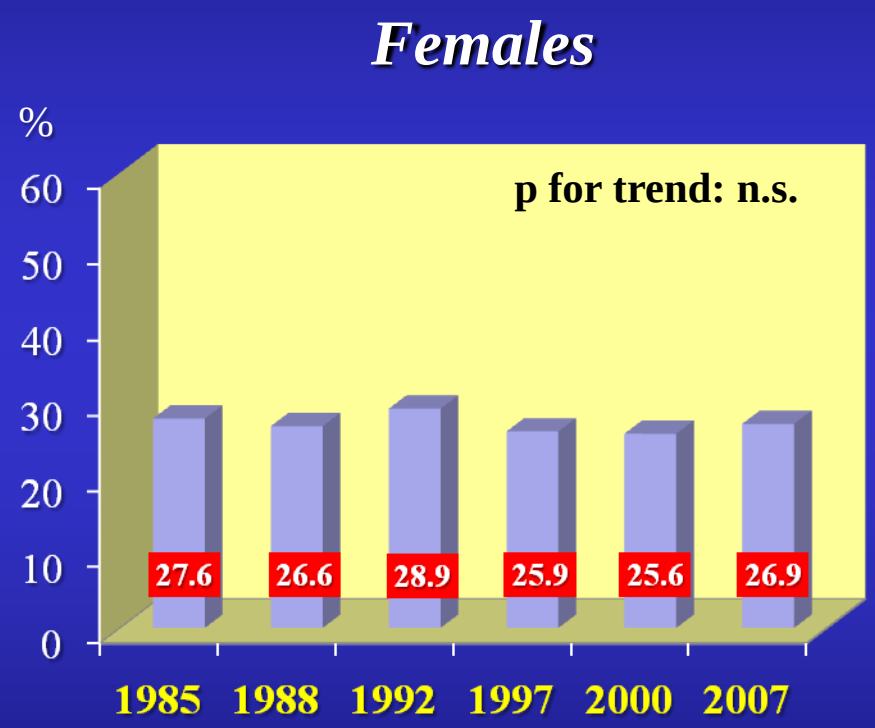
2007/08
n = 386 (10.7%)



Atherosclerosis 2010;211:676-81

Smoking





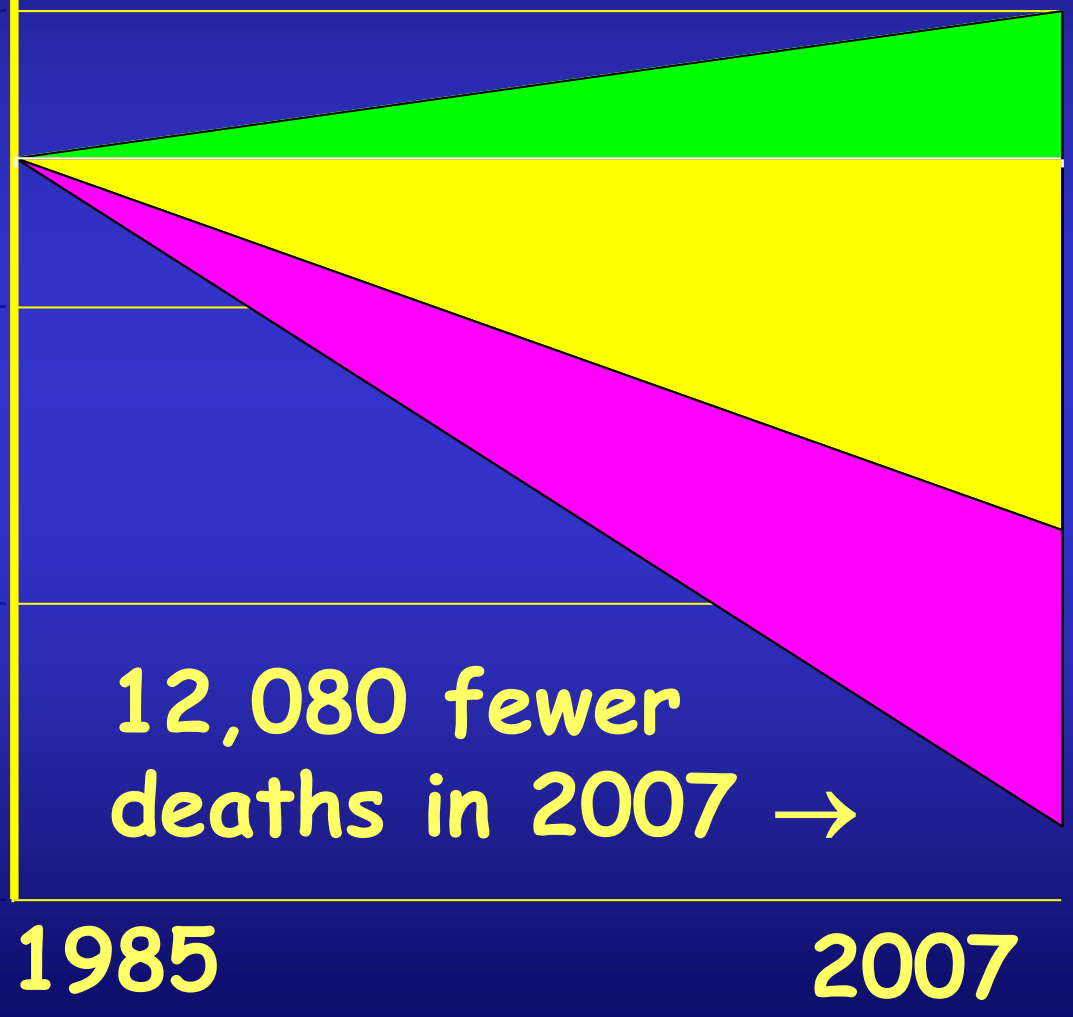
Atherosclerosis 2010;211:676-81

Conclusions

Total and CV mortality is decreasing in the Czech Republic.

The decrease is due to decreasing stroke and CHD mortality rates.

Explaining the CHD mortality fall in the Czech Republic 1985-2007: RESULTS



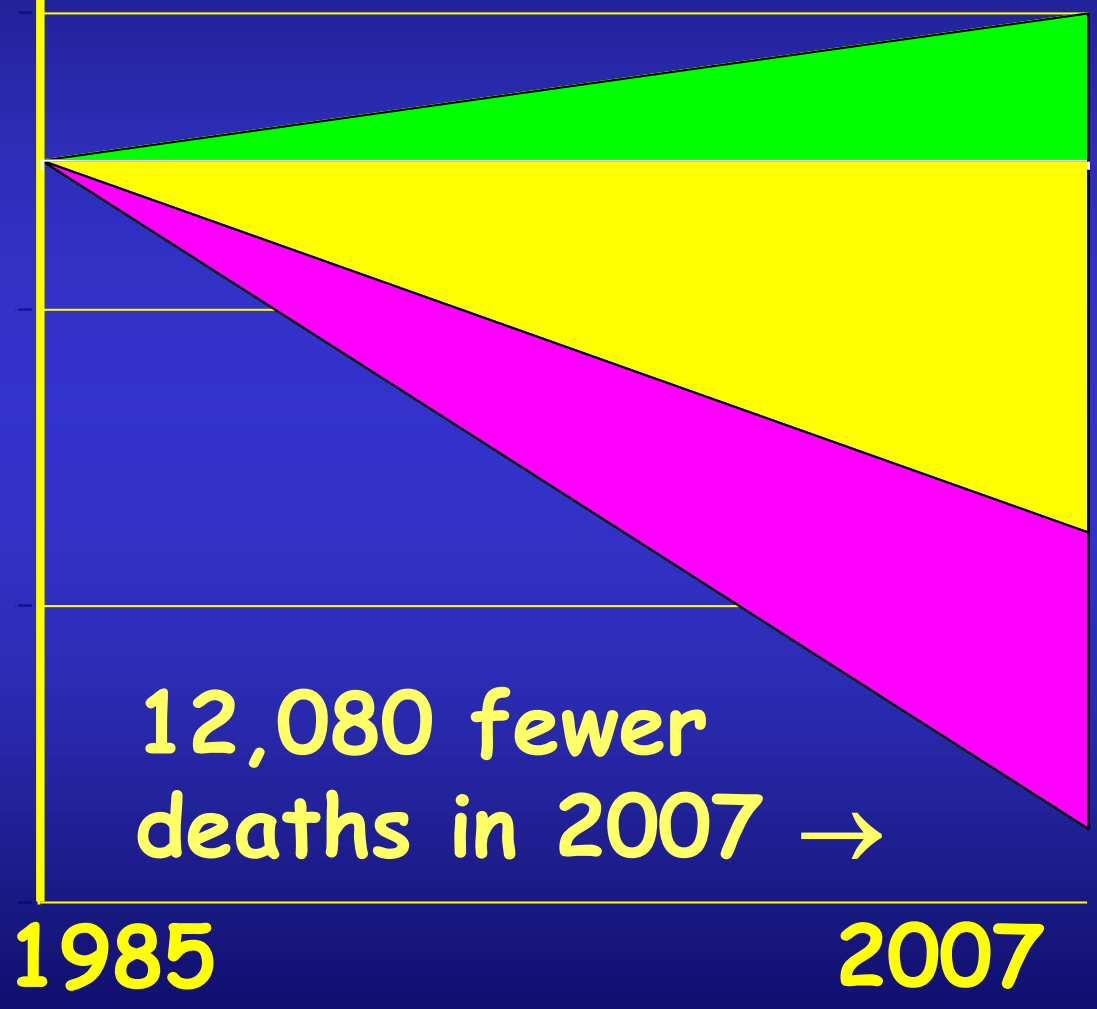
Risk Factors worse + 6%

Risk Factors better - 61%

Treatments - 41%

Unexplained - 4%

Explaining the CHD mortality fall in the Czech Republic 1985-2007: RESULTS



Risk Factors worse +6%

- Obesity (increase) +1%
- Diabetes (increase) +5%

Risk Factors better -61%

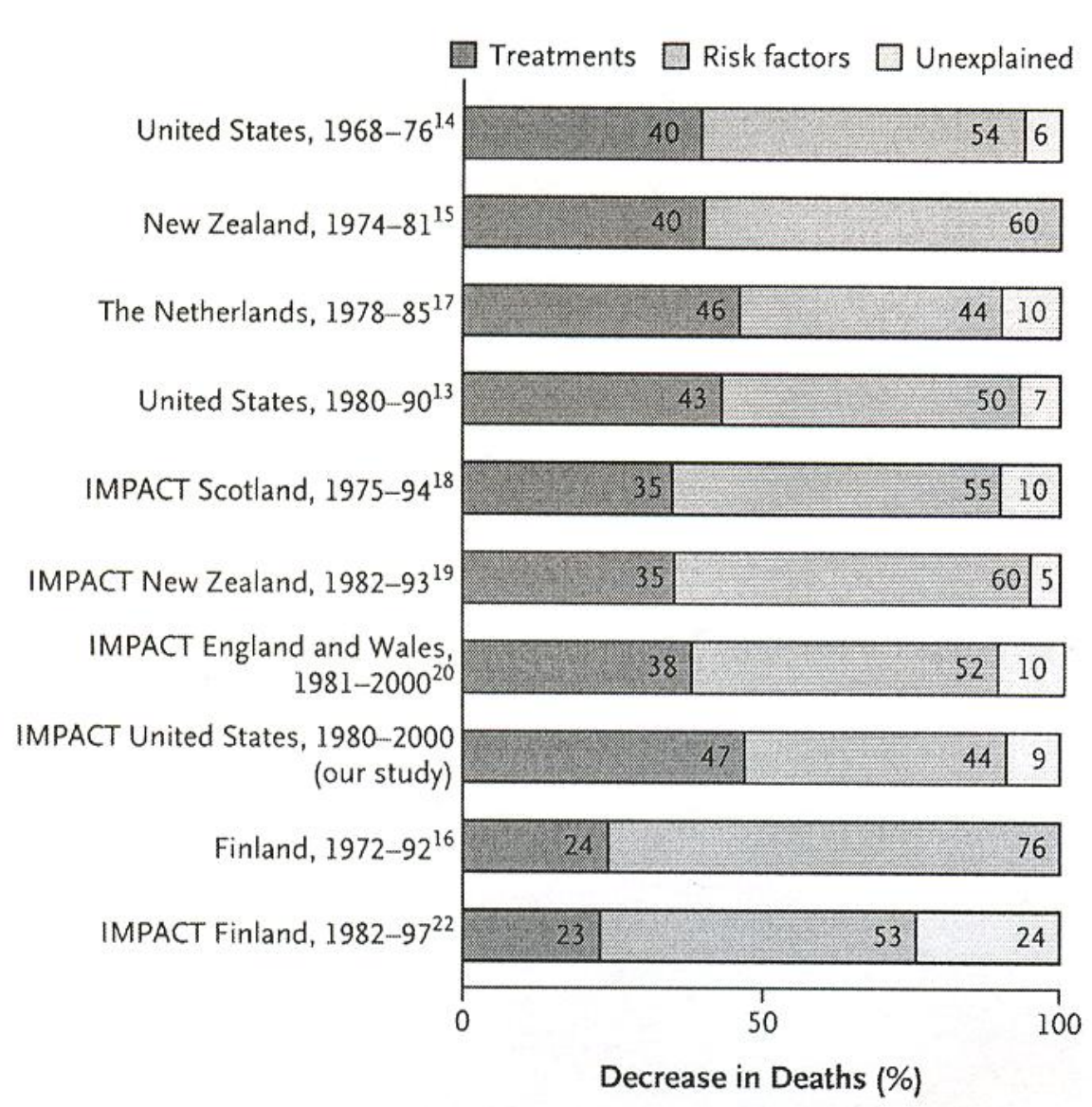
- Population BP fall -15%
- Smoking - 8%
- Cholesterol (diet) -38%

Treatments -41%

- AMI treatments -7%
- Unstable angina -1%
- Secondary prevention post MI and post revasc. -11%
- Heart failure -13%
- Angina: CABG surgery -1.5%
- Angina ASA -1%
- Hypertension therapies -3%
- Statins (primary prevention) -4%

Unexplained -4%

Percentage of the Decrease in Death from CHD Atributed to Treatment and Risk-Factors Changes

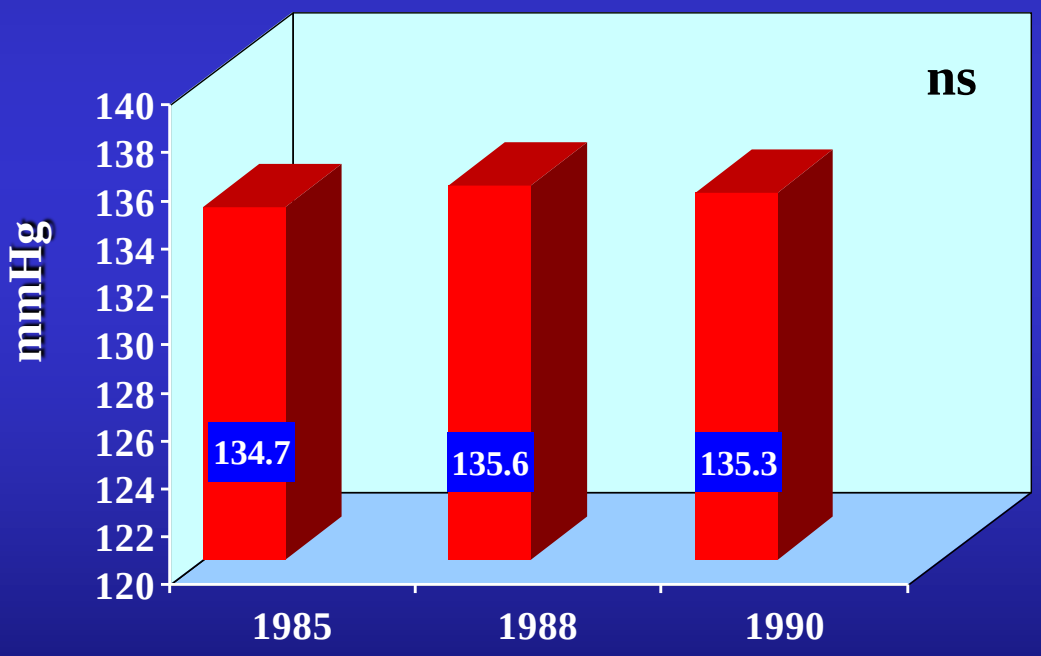


NEJM 2007;356:2388-98

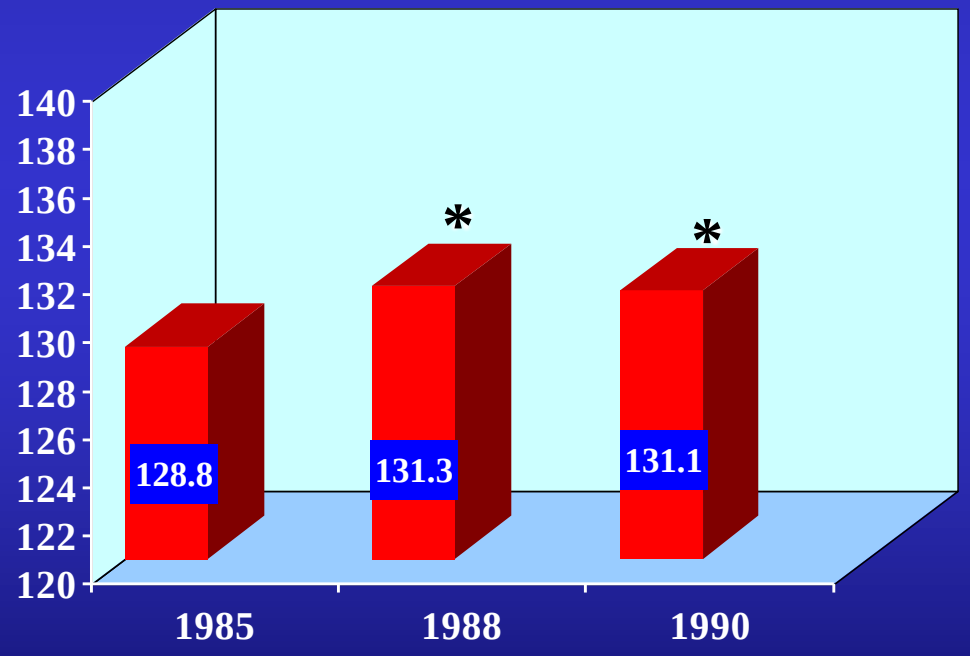
Systolic BP

German CV Prevention Study

Males



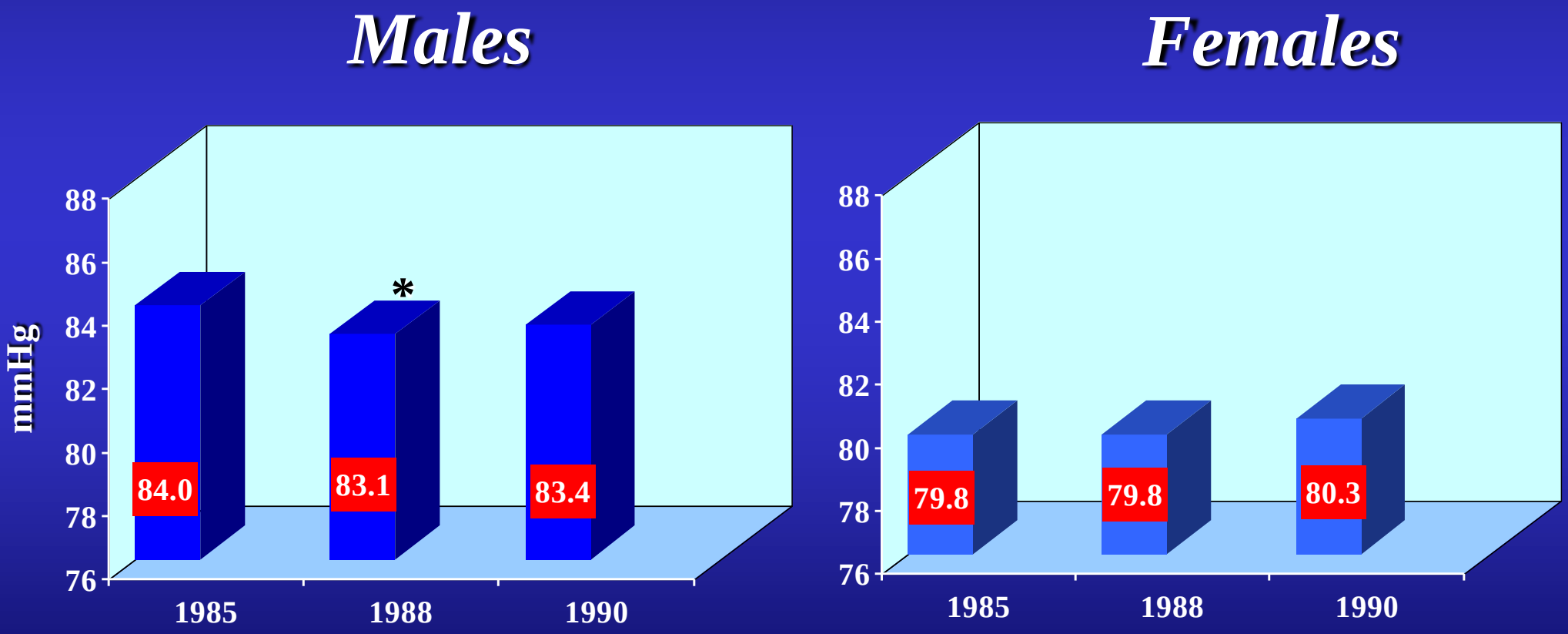
Females



Preventive Medicine 1994;23:197-205

Diastolic BP

German CV Prevention Study

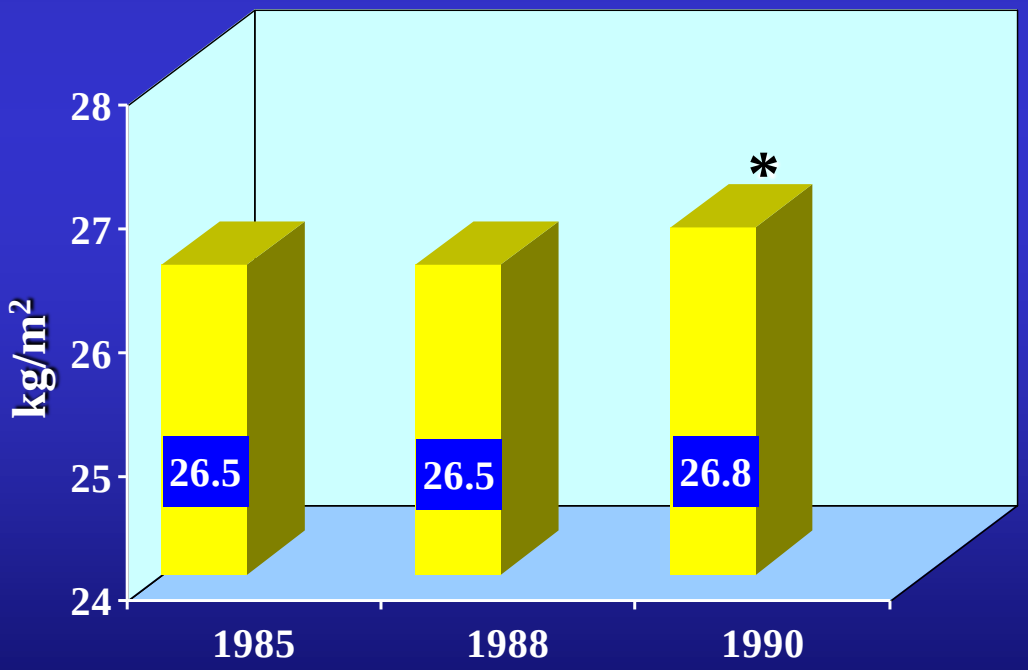


Preventive Medicine 1994;23:197-205

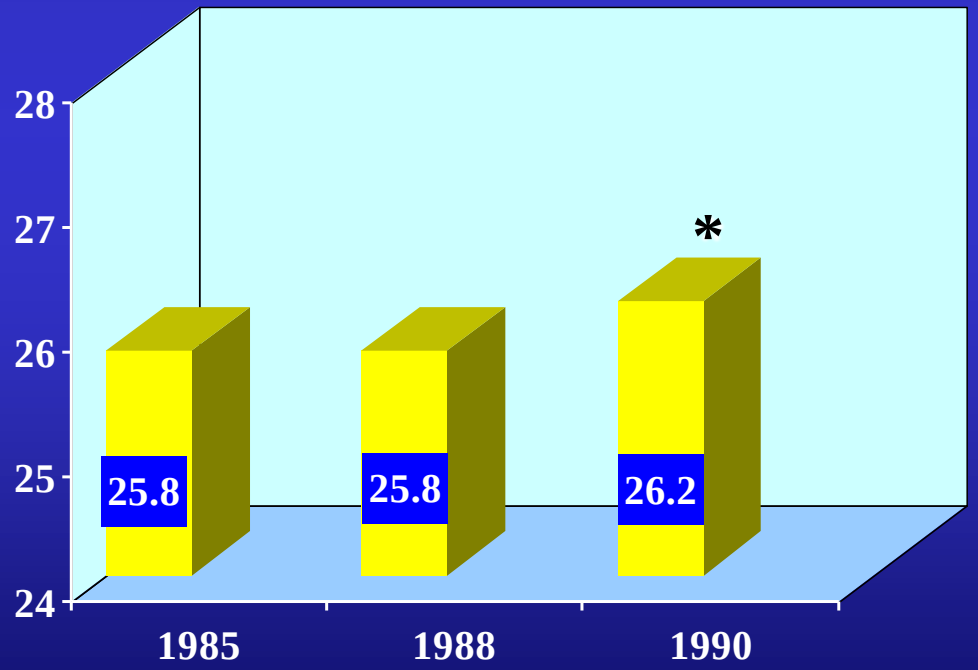
BMI

German CV Prevention Study

Males



Females

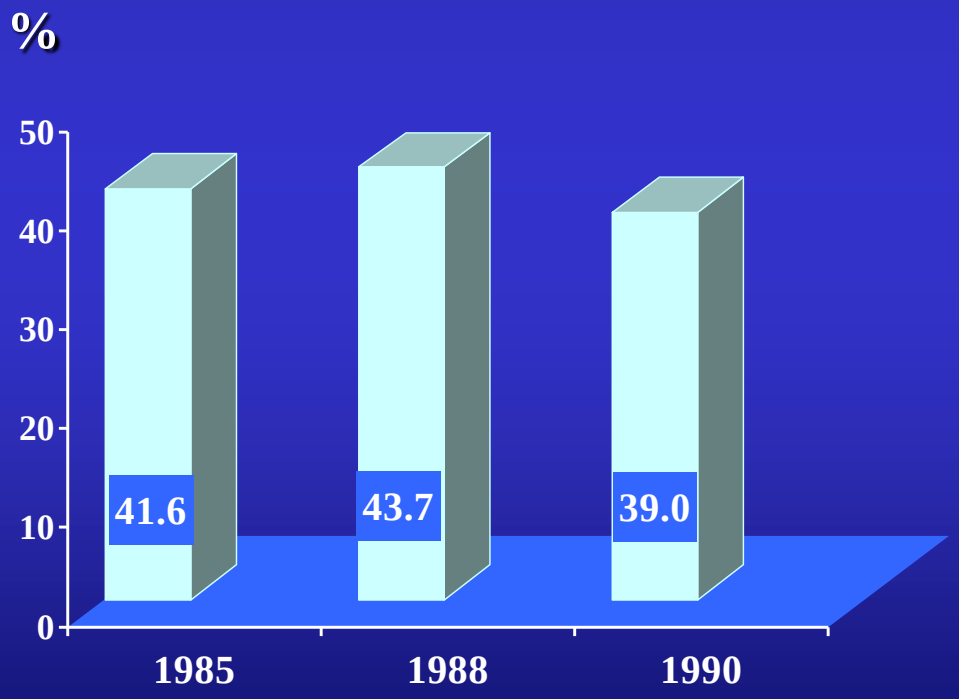


Preventive Medicine 1994;23:197-205

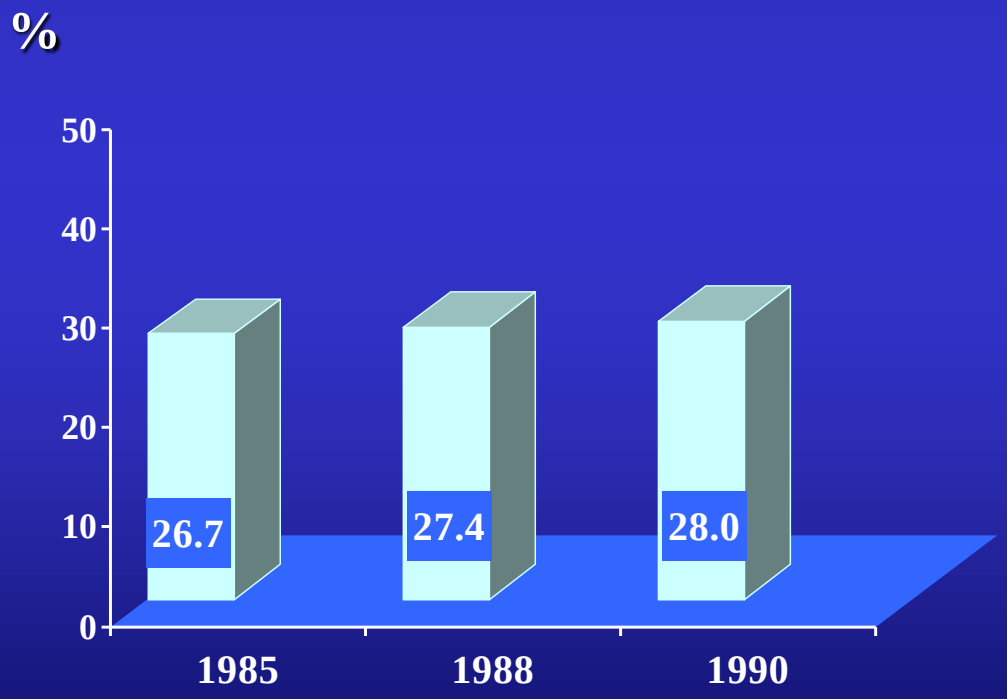
Smoking

German CV Prevention Study

Males



Females

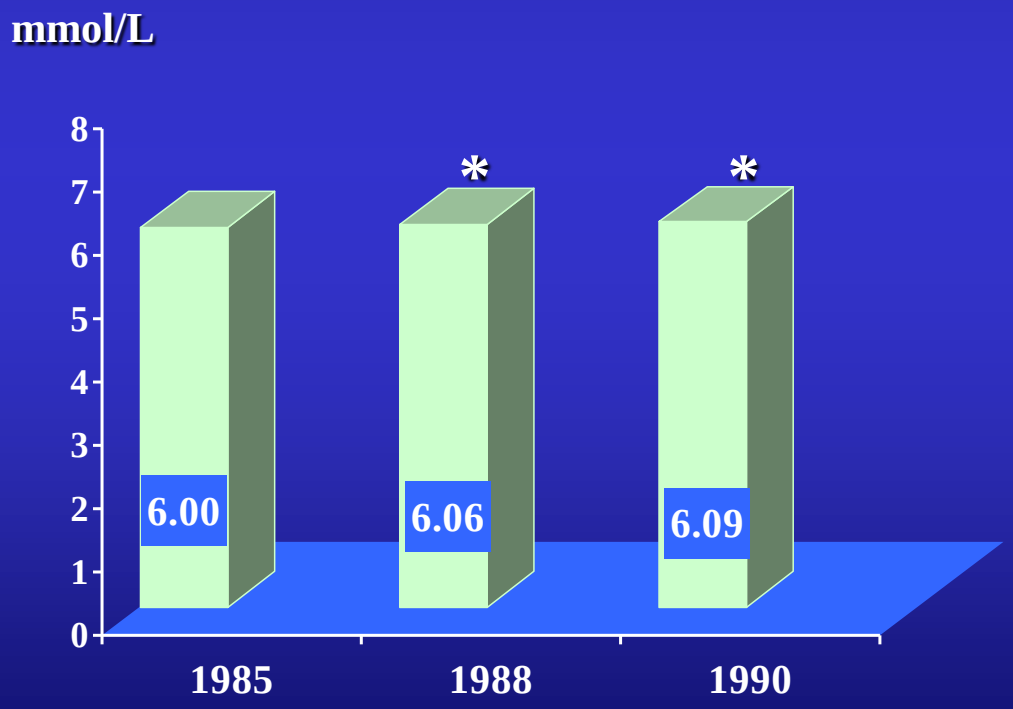


Preventive Medicine 1994;23:197-205

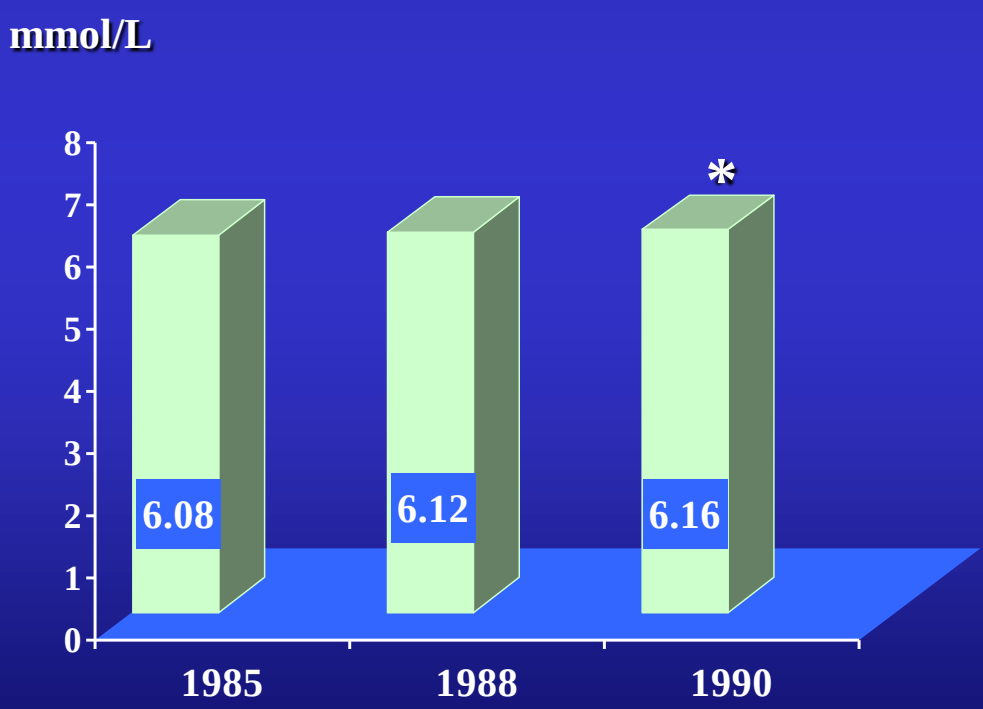
Total Cholesterol

German CV Prevention Study

Males



Females

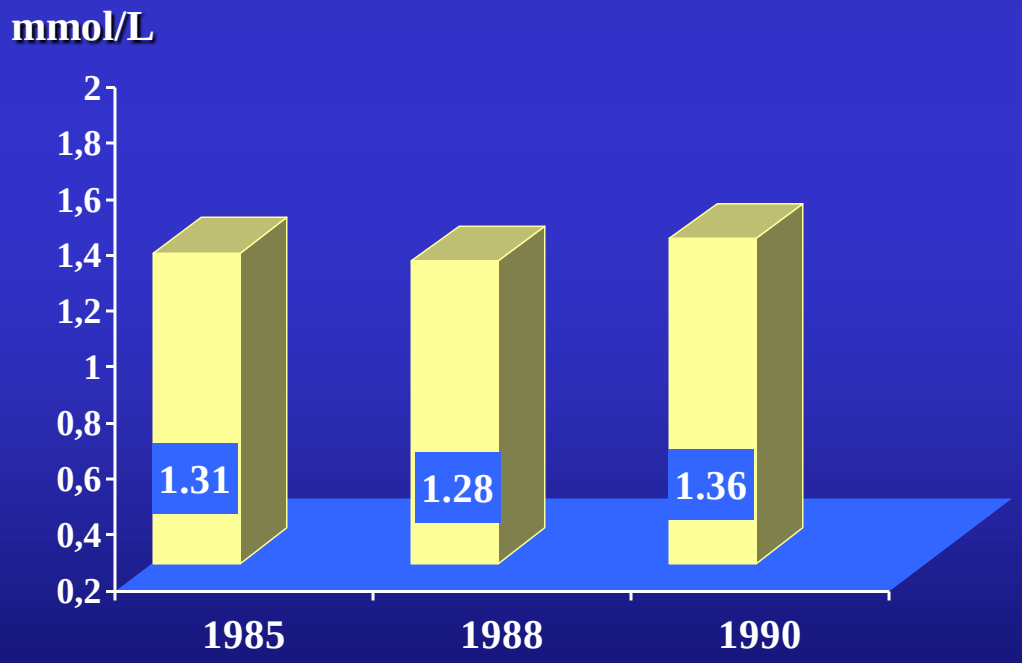


Preventive Medicine 1994;23:197-205

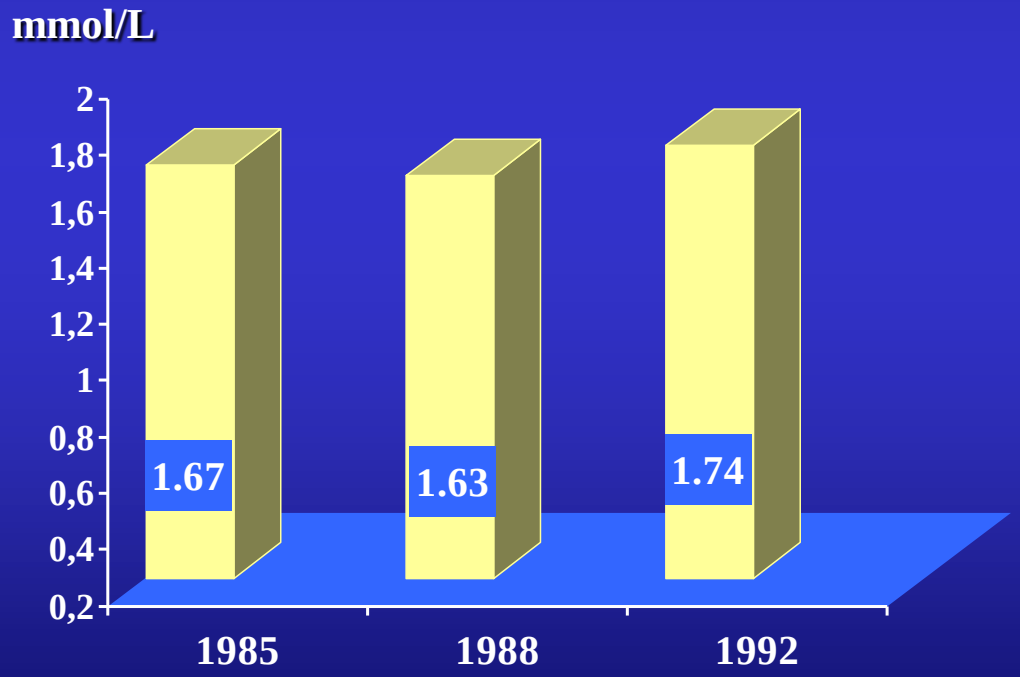
HDL-cholesterol

German CV Prevention Study

Males



Females



Preventive Medicine 1994;23:197-205

Kaunas Population, Lithuania

Age range, 35-64 yrs

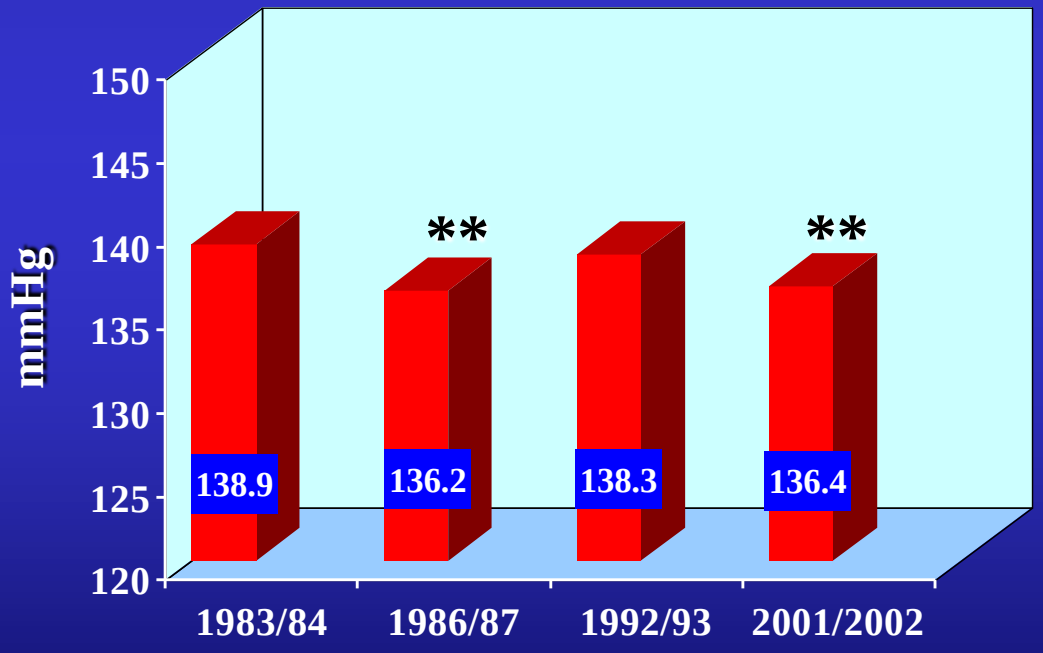
	1983/84	1986/87	1992/93	2001/02
Total	2413	1762	1231	1403
Resp.	*70.2*	*69.6*	*58.6*	*62.4*

Medicina 2003;39:1193-1199

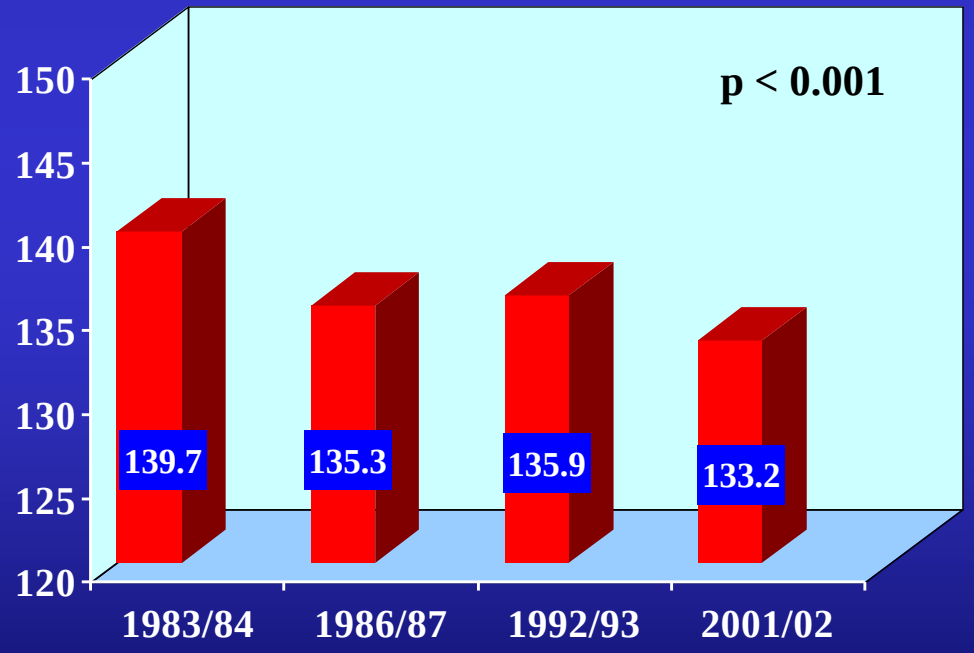
Systolic BP

Kaunas, Lithuania

Males



Females

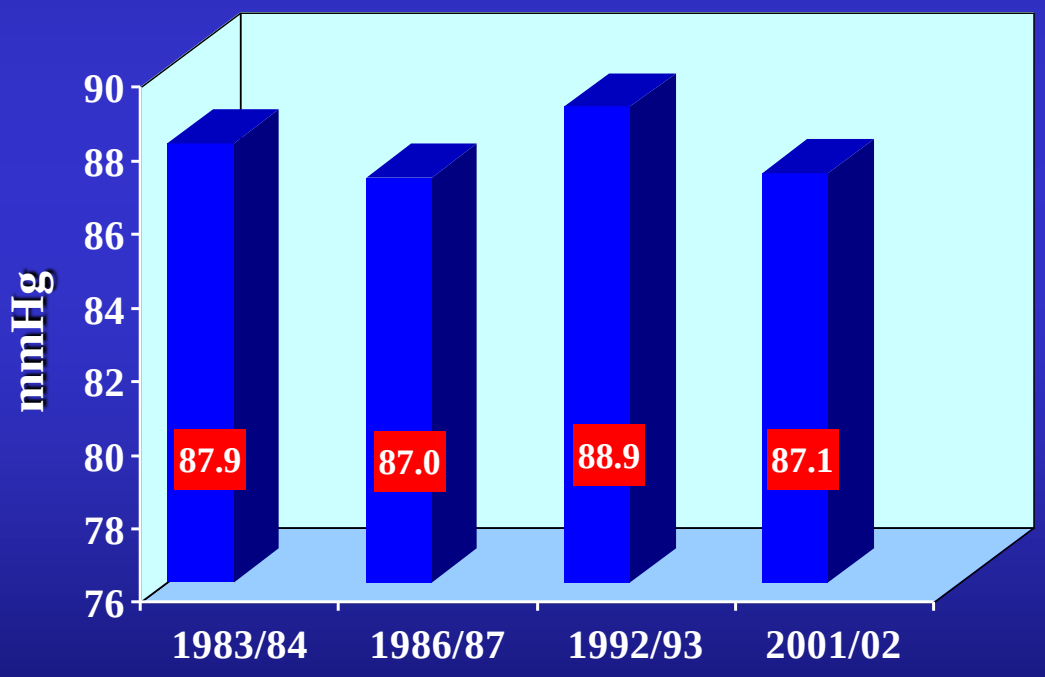


Medicina 2003;39:1193-1199

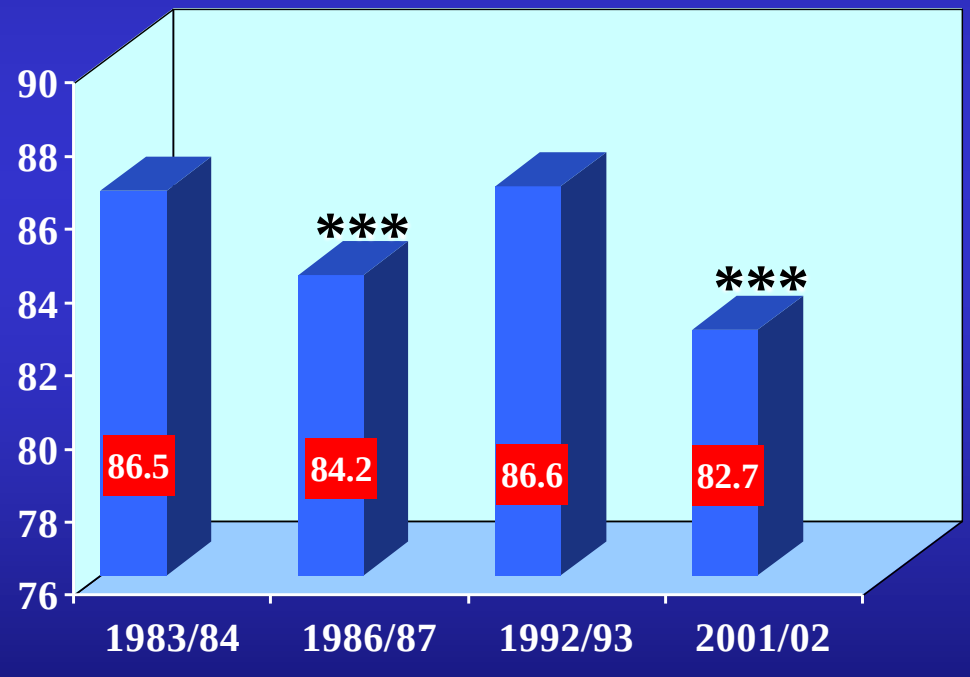
Diastolic BP

Kaunas, Lithuania

Males



Females

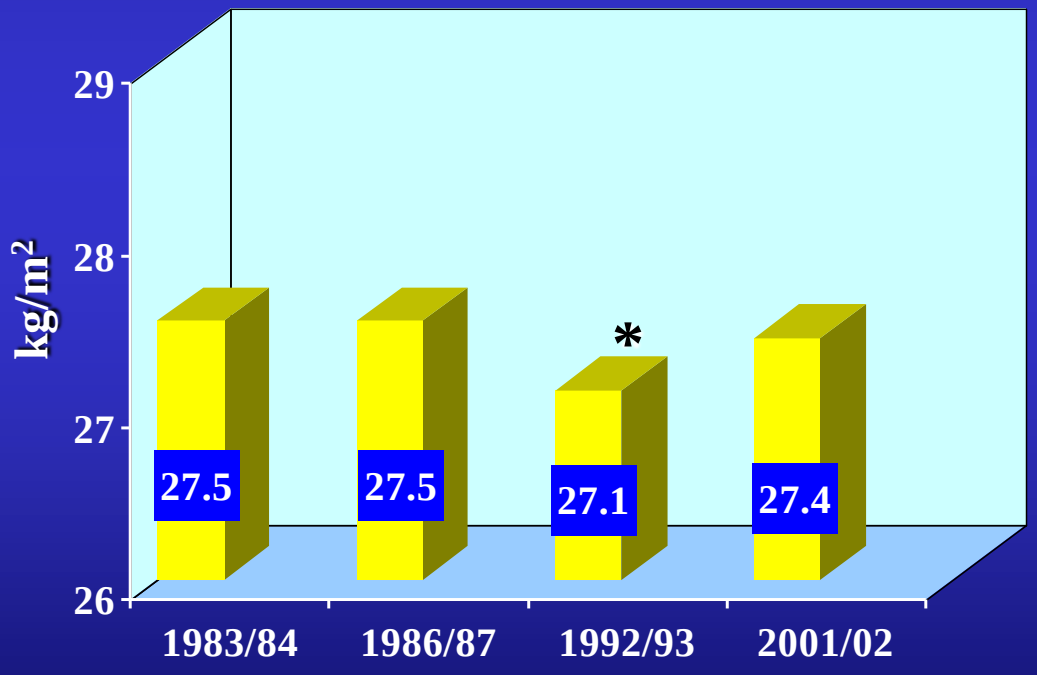


Medicina 2003;39:1193-1199

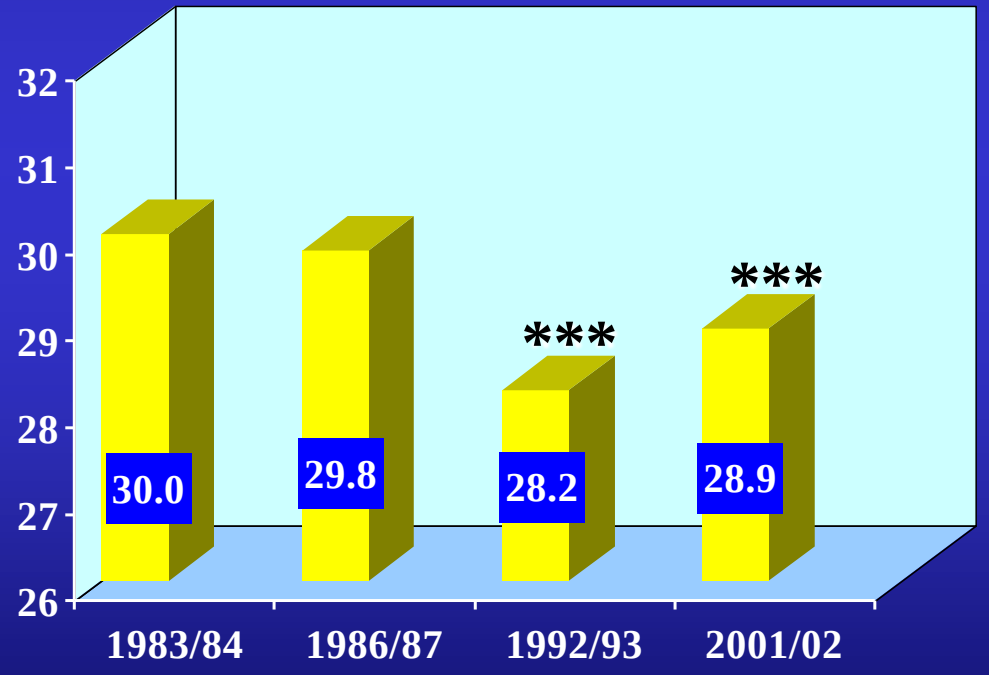
BMI

Kaunas, Lithuania

Males



Females

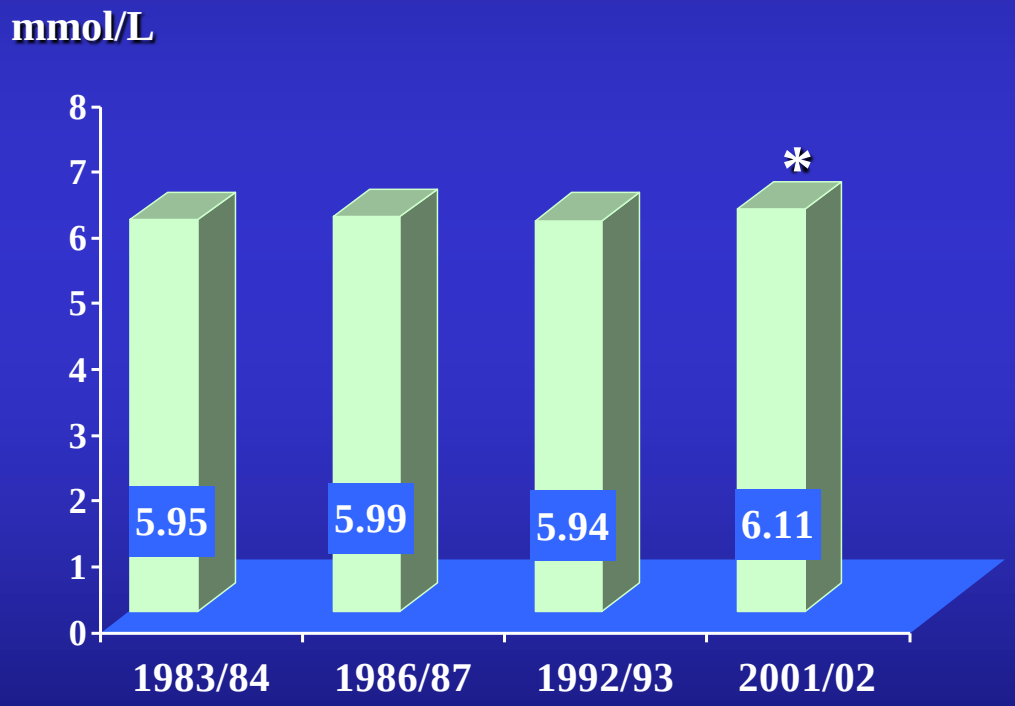


Medicina 2003;39:1193-1199

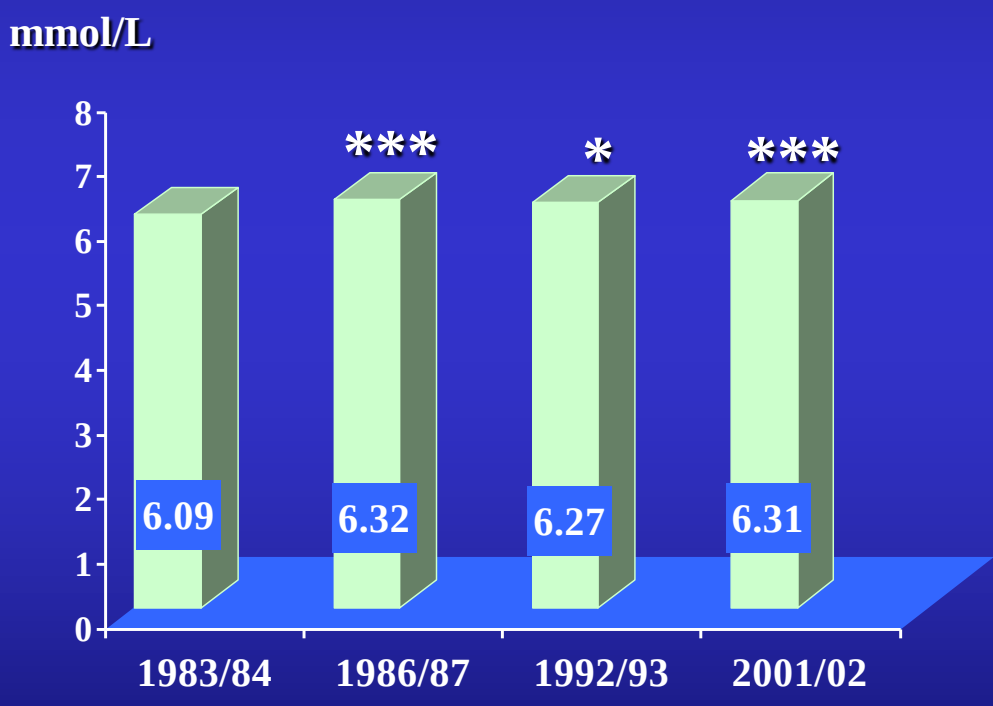
Total Cholesterol

Kaunas, Lithuania

Males



Females



$p < 0.001$

Medicina 2003;39:1193-1199

Hypertension: The East European Experience

Thomas Strasser

Some differences (and similarities) between Eastern Europe and the rest of the Continent are presented regarding the treatment of hypertension. Based on data from the WHO Monitoring Trends and Determinants in Cardiovascular Diseases (MONICA) study, the prevalence of hypertension, and the proportion of uncontrolled hypertension, is clearly higher in Eastern Europe. According to one local long-term observer, a trend for further increases in prevalence is discernable. Comparative drug consumption studies are desirable. Regarding national experiences with hypertension and health care in general, there are also some important sociocultural differences; anecdotal observations are reported that support this assertion. **Am J Hypertens 1998;11:756–758**

KEY WORDS: **Eastern Europe, prevalence, hypertension.**

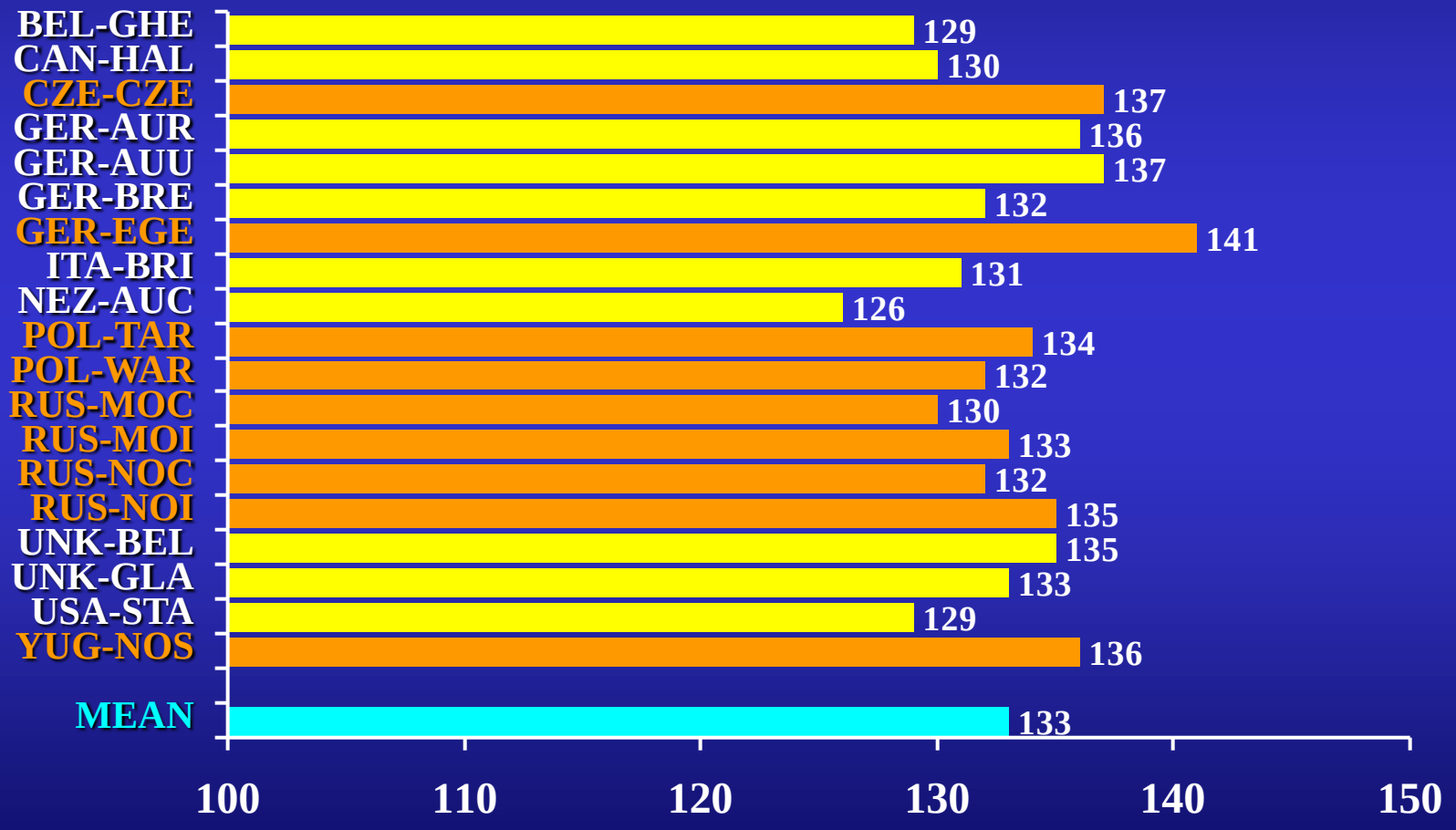
WHO MONICA Project

Multinational MONItoring of Trends and Determinants in CArdiovascular Disease

38 populations in 21 countries

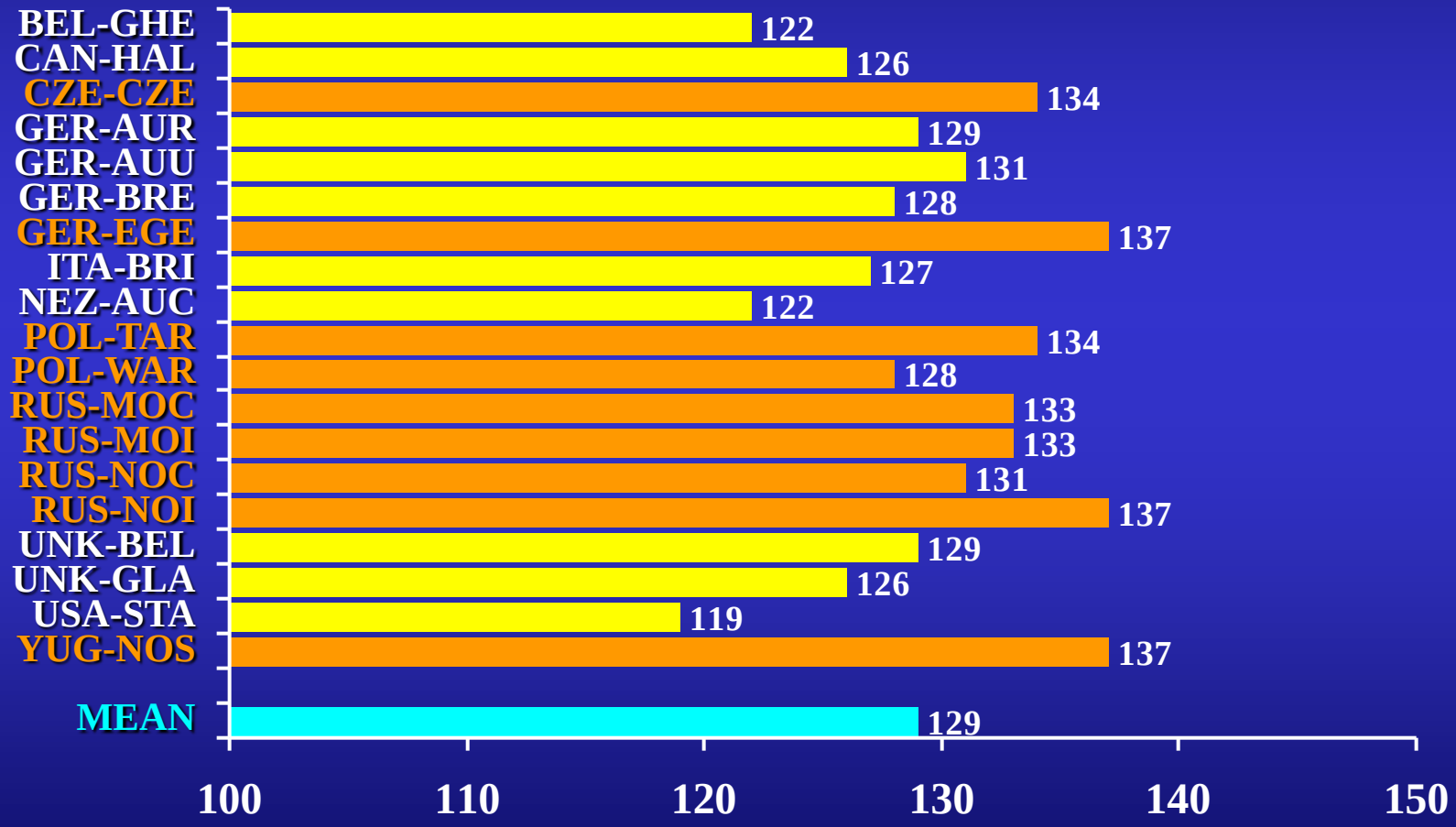
- **monitoring of nonfatal MI and CHD deaths in males and females aged 35-64 years**
- **cross-sectional population surveys of major RF**

WHO MONICA
Age-standardized SBP
Men, 35-64 years



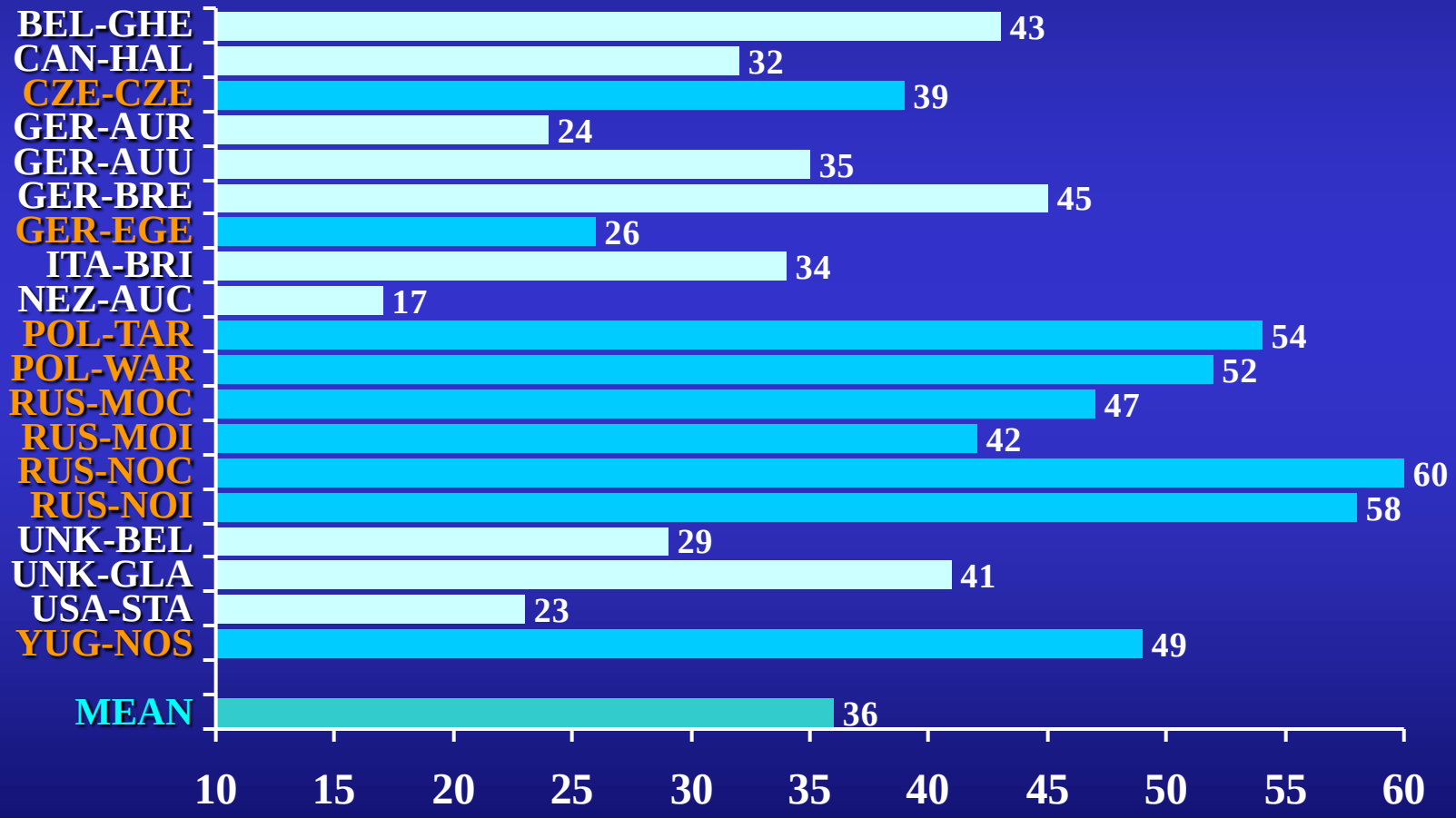
Lancet 2000; 355:675-87

WHO MONICA
Age-standardized SBP
Women, 35-64 years



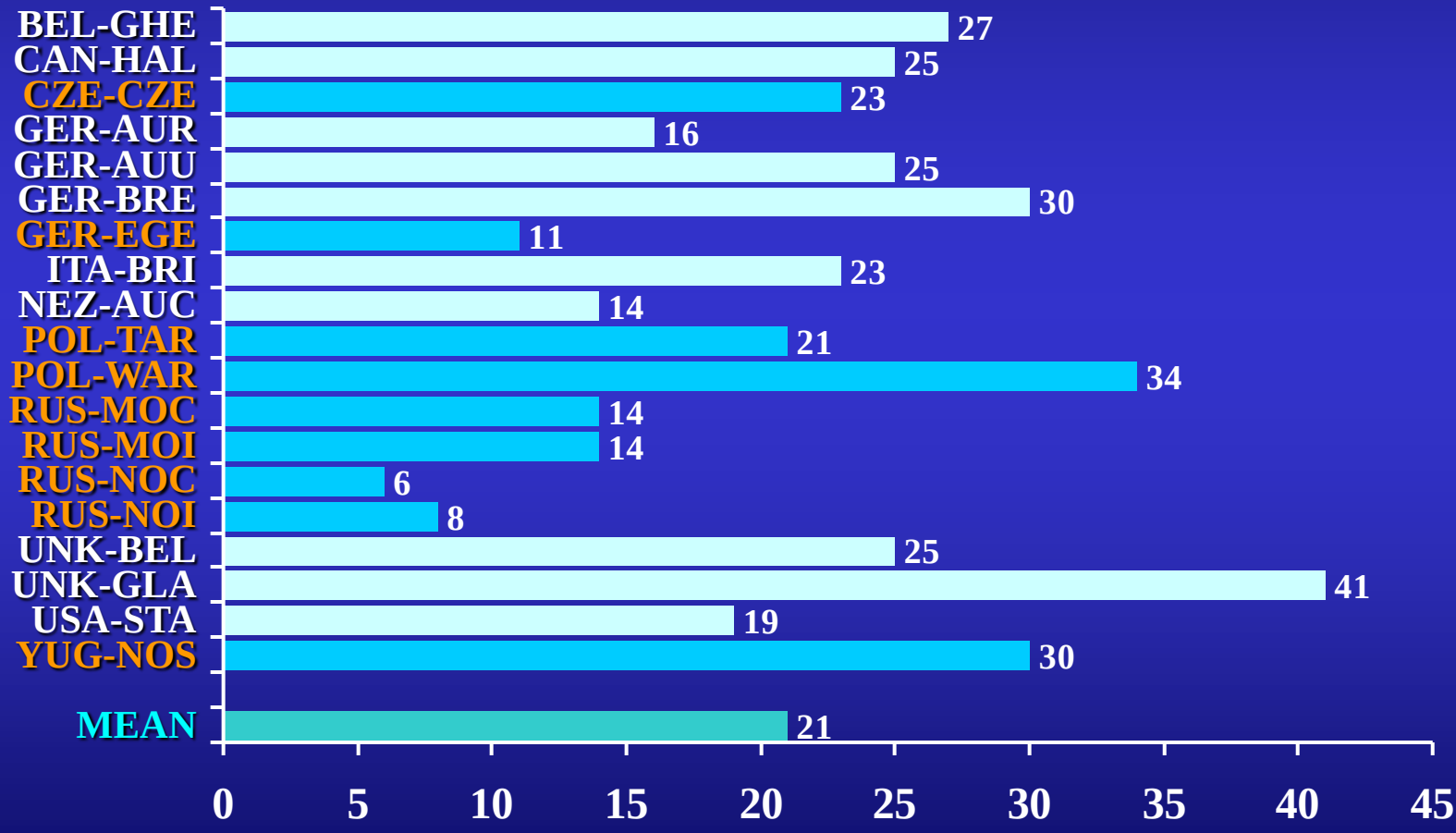
Lancet 2000; 355:675-87

WHO MONICA
Smokers
Men, 35-64 years



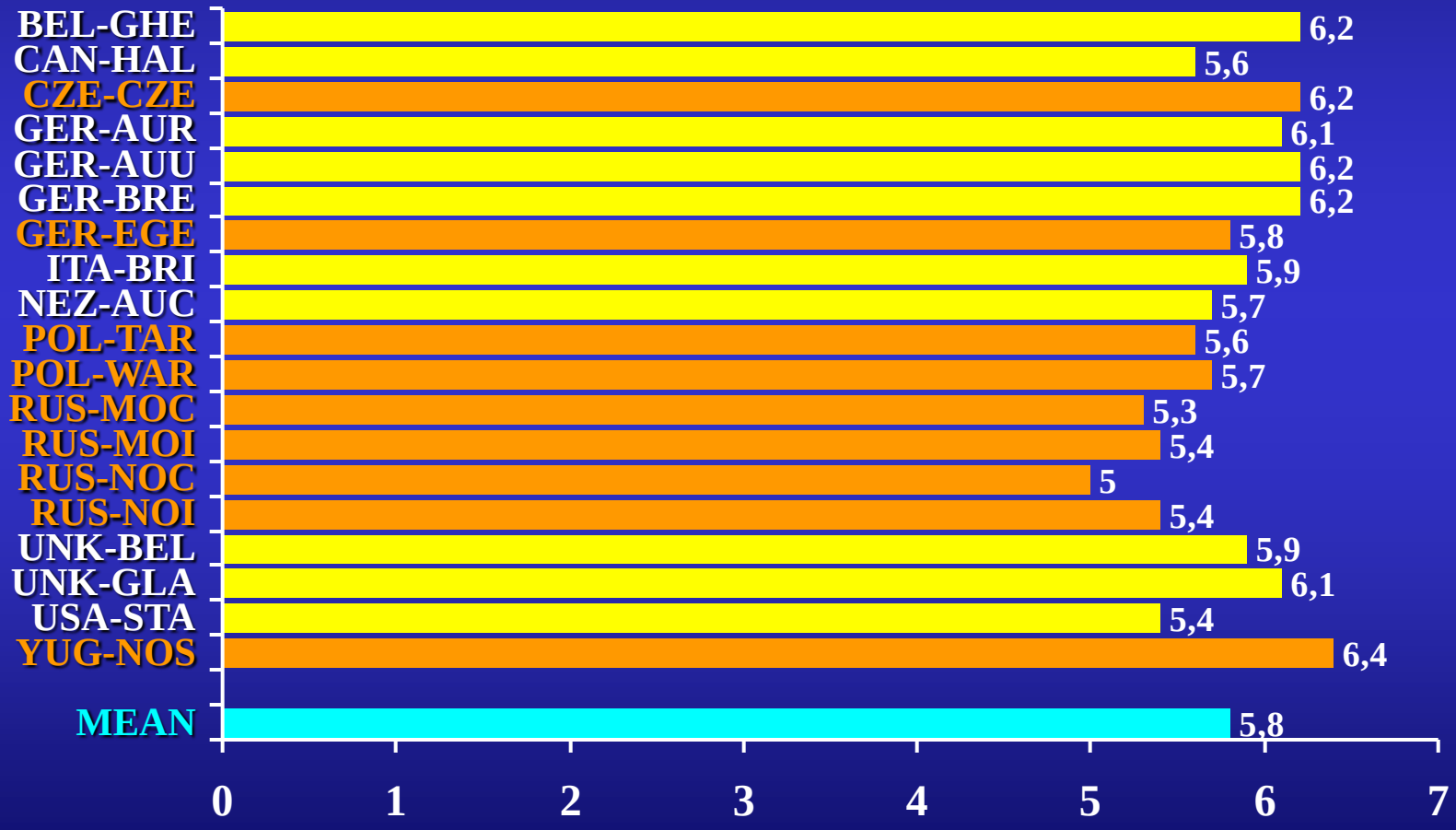
Lancet 2000; 355:675-87

WHO MONICA
Smokers
Women, 35-64 years



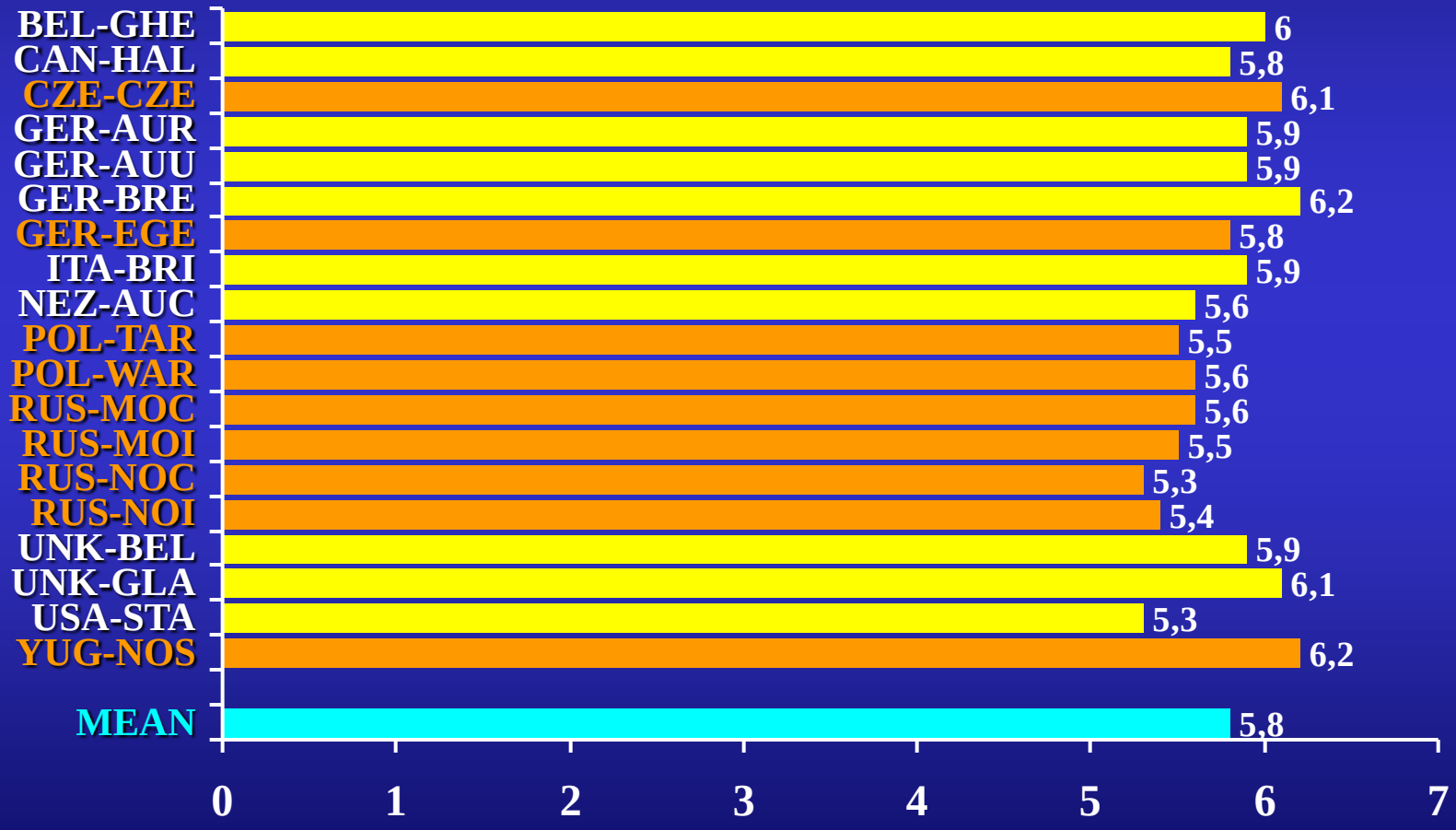
Lancet 2000; 355:675-87

WHO MONICA
Total cholesterol
Men, 35-64 years



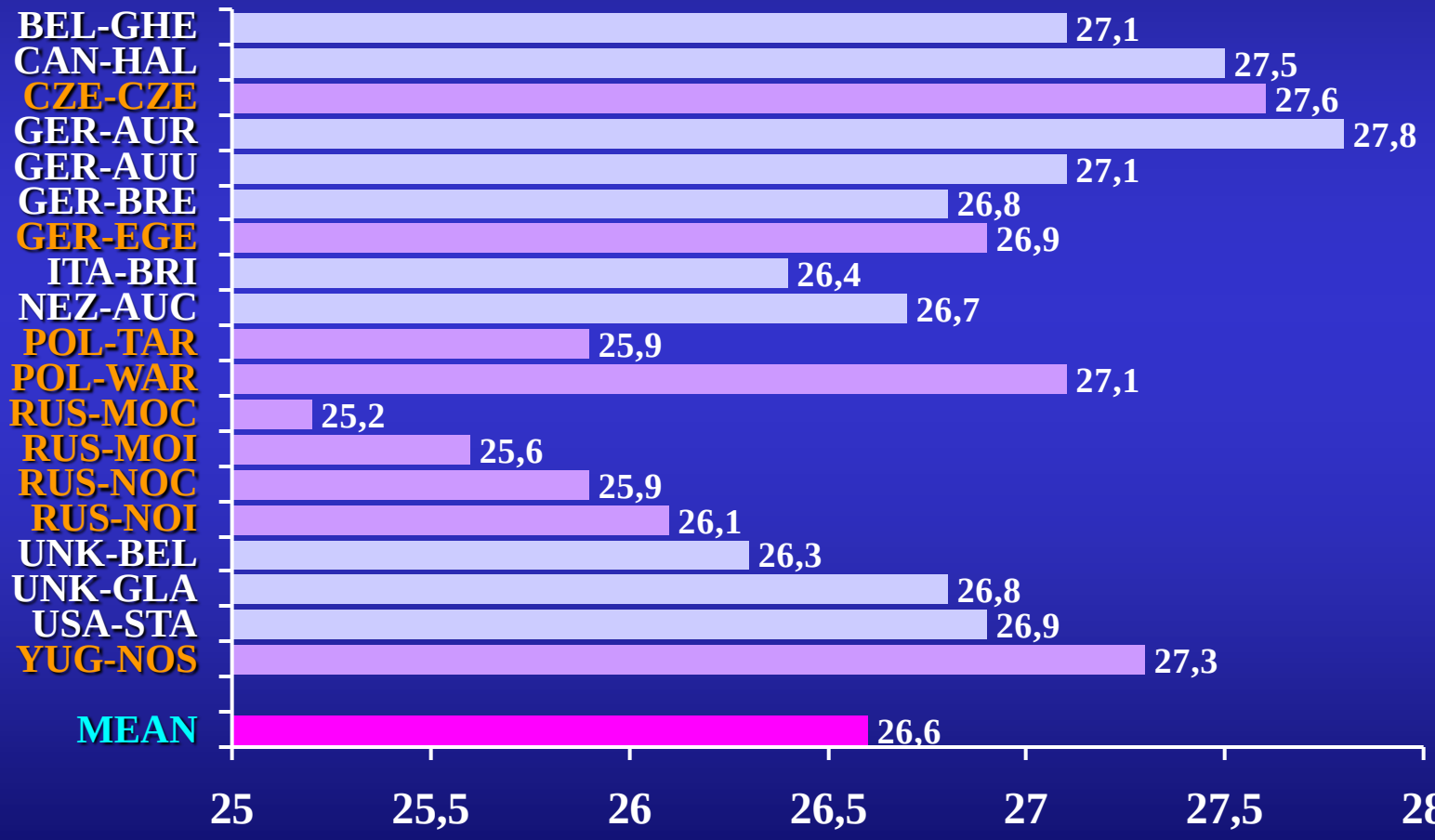
Lancet 2000; 355:675-87

WHO MONICA
Total cholesterol
Women, 35-64 years



Lancet 2000; 355:675-87

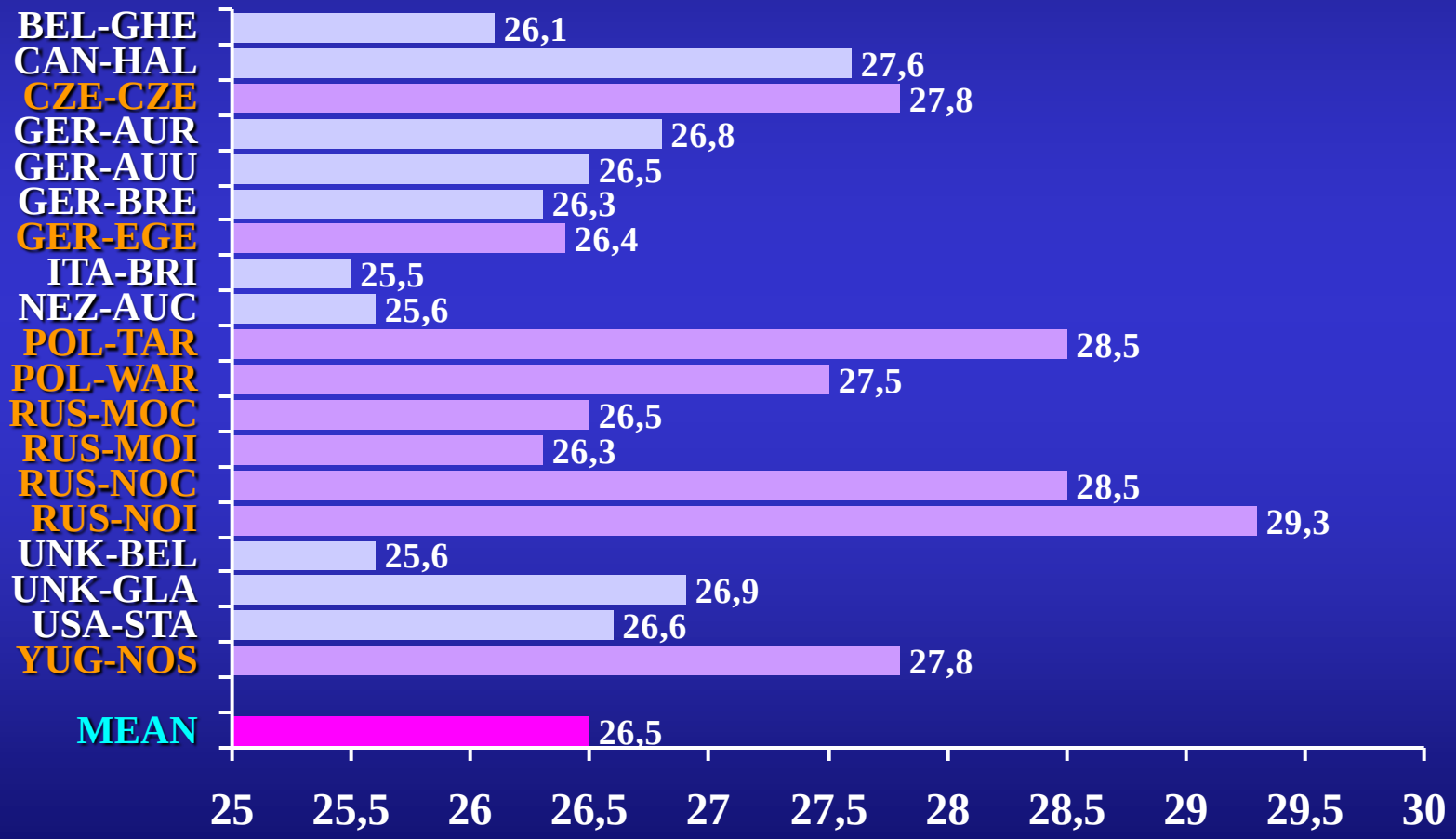
WHO MONICA
BMI
Men, 35-64 years



Lancet 2000; 355:675-87

WHO MONICA
BMI

Women, 35-64 years



Lancet 2000; 355:675-87

Conclusions

- CVD mortality in all European post-Communist countries is the highest in Europe.
- In fact, CVD mortality rates continue to rise in most post-Communist countries in Europe except for the Czech Republic, Poland, and Slovenia.

Conclusions, cont'd

In most of the countries, there is a lack of recent CVD risk factor data on representative populations. Longitudinal trends are available only for the Czech Republic, Germany and Lithuania. *Improvement in the CV risk profile* was seen in the *Czech Republic* (BP, lipids, smoking in males); *a smaller improvement* was found *in Kaunas*, mostly in females (BP, BMI). Most of the *major risk factors increased* slightly *in Germany* over the study period.

Conclusions, cont'd

Therefore, the best comparable data are still provided by the WHO-coordinated MONICA study confirming a poor CV risk profile in most of the European post-Communist countries (particularly for smoking, BP, and BMI).

CV RISK ASSESSMENT IN POLAND IN 2002

DESIGN AND METHODS:

BP, BMI, laboratory tests
Representative sample of 3051 adults in Poland
Age range18-94 years

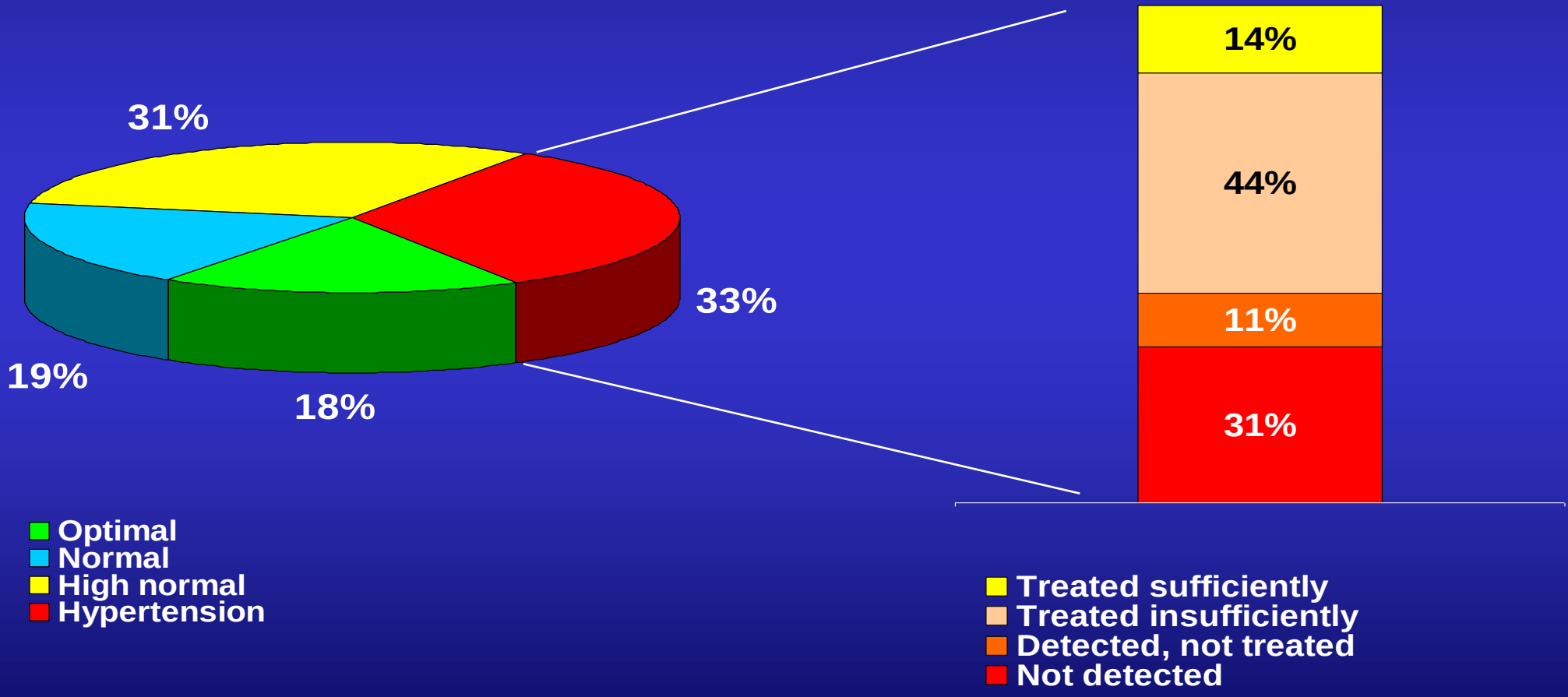
304 territorial clusters, three-stage stratified sampling procedure

The diagnosis of hypertension was based on three separate visits (BP>=140/90 mmHg or medication)

Response rate for BP and anthropometric measurements 78%, for laboratory tests 62%
95% confidence interval ± 2%

T. Zdrojewski et al.,J Hum Hypertens 2004;18:557-62

Prevalence and control of arterial hypertension in Poland (age range 30-70)



T. Zdrojewski et al., J Hum Hypertens 2004;18:557-62

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Higher prevalence of type 2 diabetes, metabolic syndrome and cardiovascular diseases in gypsies than in non-gypsies in Slovakia

Barbora Vozarova de Courten[a,b,*], Maximilian de Courten[c], Robert L. Hanson[a], Alena Zahorakova[d], Henry P. Egyenes[d], P. Antonio Tataranni[a], Peter H. Bennett[a], Juraj Vozar[d]

[a] *Clinical Diabetes and Nutrition Section, National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health, 4212 N, 16th Street, Rm. 5-41, Phoenix, AZ 85016, USA*
[b] *3rd Department of Internal Medicine, Medical Faculty, Comenius University, Limbova 5, Bratislava, Slovakia*
[c] *Office of the WHO Representative for the South Pacific, Suva, Fiji*
[d] *Specialized Outpatient Center of Internal Medicine, Diabetology, Metabolic Diseases, Endocrinology, Cardiology and Rehabilitation, Hlavna ulica 1, Samorin, Slovakia*

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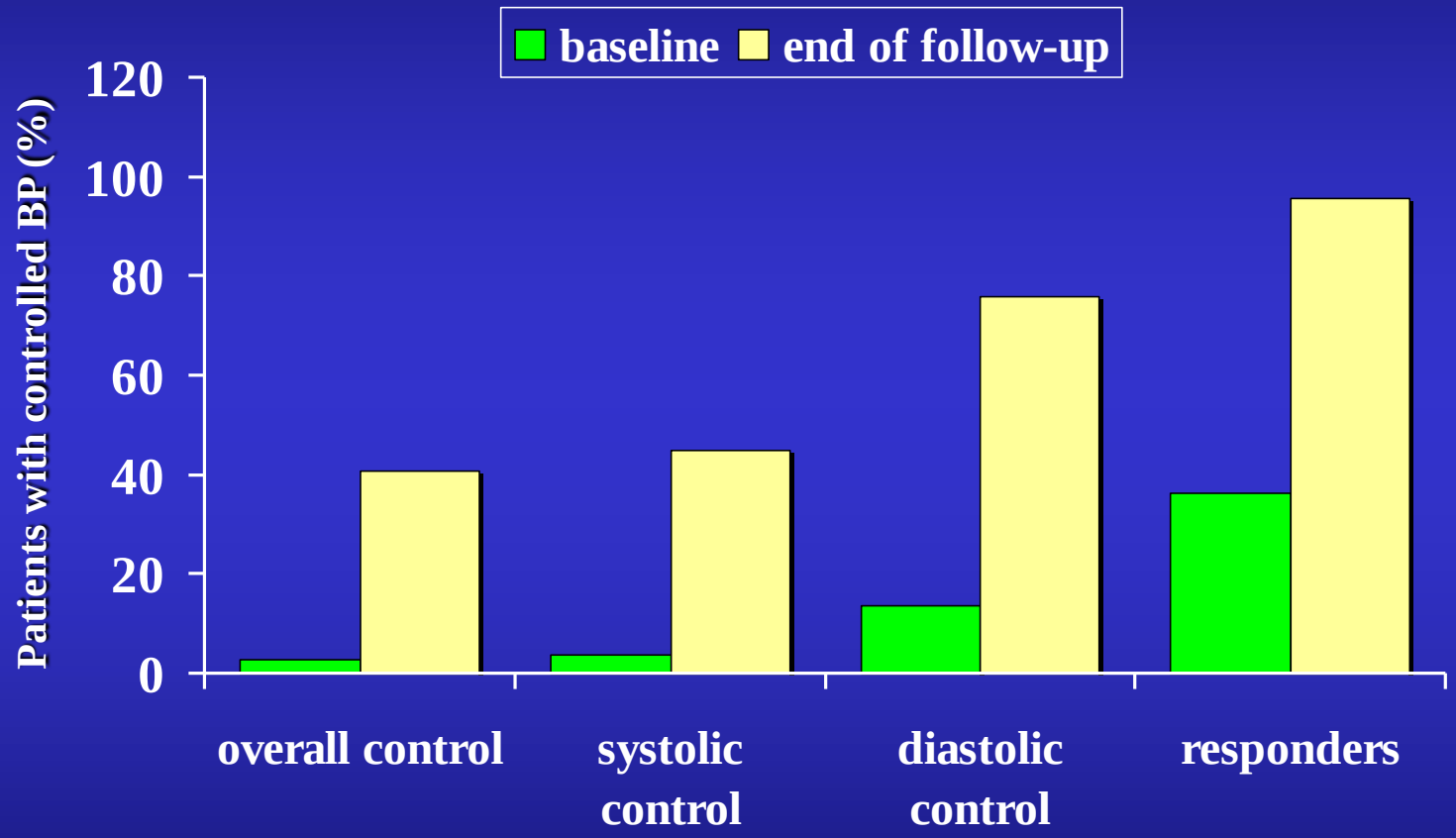
Age- and sex-adjusted prevalence

	Gypsies	*Non-Gypsies*	*p*
Number	**156**	**501**	
Response, %	**28**	**53**	
Hypertension	**49**	**43**	**ns**
Undiagnosed hypertension	**16**	**23**	**ns**
Obesity	**65**	**30**	**0.0001**
Central obesity	**38**	**20**	**0.04**
Metabolic syndrome	**20**	**4**	**0.0001**
CVD	**35**	**26**	**0.04**

“Manage it well!“ program: blood pressure control rates



overall control: <140/90 mmHg, systolic control: <140 mmHg, diastolic control: <90 mmHg
responders: ≤140 or ≤90 mmHg

L. Szirmai, J Hypertens 2005;23:203-211

Limitations of hypertension studies in primary care

- Not dealing with population random samples (involving mostly individuals with a disease), predominantly elderly populations
- Most of the studies are based on a questionnaire completed by GPs with no review of source data
- No review of patient selection according to the protocol