



Highlights EUROPREVENT 2009

Cardiovascular epidemiology – public health

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Cardiovascular disease mortality

quo vadis ?

160 years of increasing life-expectancy, will it ever end ? – Ulrich Keil

- Life expectancy : \uparrow 2 years/decade in western countries
- CVD mortality : \downarrow 2-3%/year in western countries
 - WHO MONICA
 - 2/3 due to decrease in CHD incidence
 - 1/3 due to decrease in CHD case fatality
 - IMPACT models
 - 2/3 attributable to primary prevention
 - 1/3 attributable to improvements in treatment

160 years of increasing life-expectancy, will it ever end ? – Ulrich Keil

- Germany
 - Eastern part of Germany : increase by 3.2 years in life-expectancy from 1990-1997 !
 - But still every 5th man (18%) and every 10th woman (10%) are dying before reaching their 65th birthday
- Rising epidemic of obesity and diabetes challenges our optimism regarding an ever increasing life expectancy in the Western world

The party is over: increase in CVD mortality after two decades of good news – Simon Capewell

- CVD trends : mortality can fall or rise
- Recent flattening in young people is real
- Adverse risk factor trends : BMI, SBP, smoking
- Demographic ageing
- Primary prevention : policies for populations, not tablets for individuals

Explaining the massive declines in coronary heart disease mortality rates in Iceland, 1981-2006

- 1981-2006
 - 80% decline in coronary heart disease mortality in men and women aged 25-74 years
- IMPACT mortality model to explain this decrease
 - 25% : attributable to treatments
 - 7% secondary prevention, 6% heart failure treatment, 5% initial treatments of ACS, 1% hypertension treatment
 - 75% : attributable to population risk factor reductions
 - Total serum cholesterol 36%, smoking 20%, systolic blood pressure 25%, physical activity 5%
 - But : adverse trends for diabetes (-5%) and obesity (-4%)

Explaining the continuing decrease in CHD mortality in Ireland:

- 2000-2006
 - Further **45% decline** in coronary heart disease mortality in men and women aged 25-84 years as compared to 1985-2000
- IMPACT mortality model to explain this decrease
 - $\approx 50\%$: attributable to treatments
 - 15% secondary prevention, 12% heart failure treatment, 11% treatments for chronic angina
 - $\approx 50\%$: attributable to population risk factor reductions
 - Total serum cholesterol 25%, smoking 6% (compared to 26% in 1985-2000)
 - Little evidence of an improvement in population blood pressure reduction, or physical activity levels
 - Further deterioration in the rates of diabetes and obesity since 2000

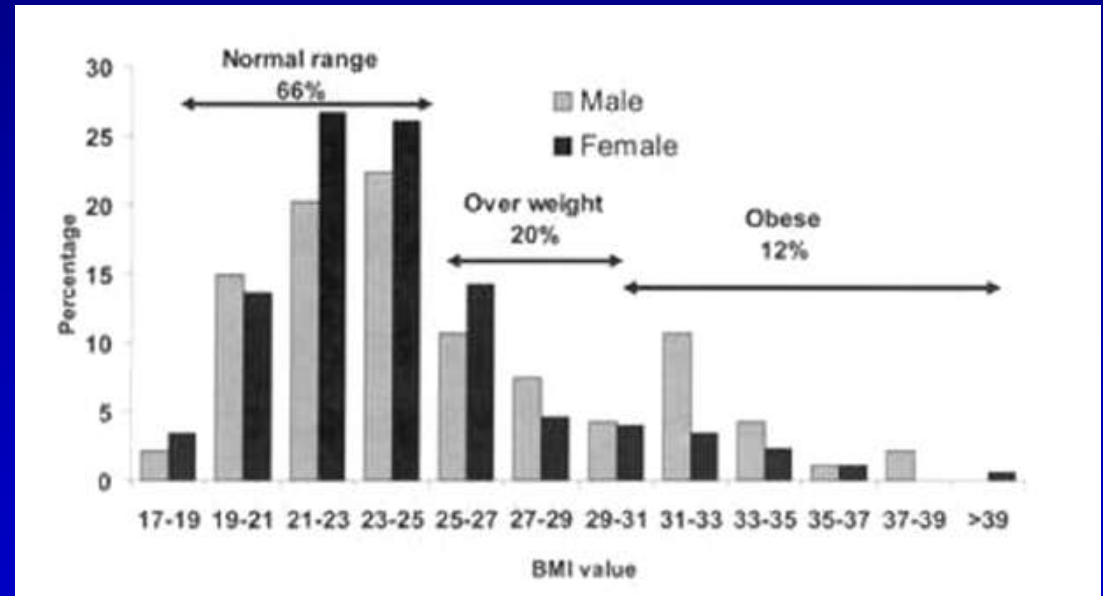
Australian coronary heart disease mortality trends: the decline is now slowing in young adults

- 1979-2001 mortality data
 - Age adjusted mortality rates declined by 60% in men and 47% in women
 - Calculation of estimated annual percentage change (EAPC) of the age adjusted mortality for younger versus older individuals
- Results
 - Overall : steady increase in EAPC
 - men :1979-1981 : -2.4%, 1984-1996 : -4%
 - Women : 1979-1985: -0.9%, 1985-1994:-2.7%, 1994-2001:-4.5%
 - But : slowing in EAPC in both younger men and women
 - Men aged 35-44 years : 1979-1992 : -8.7%, 1992-2001 : -3.1%
 - Men aged 45-54 years : 1987-1993 : -11.7%, 1993-2001 : - 7.2%

About our children, their TV and their PC

Cardiovascular risk factors in the young: a study of Icelandic college students

- 270 students, aged 18-22 years, 35% male
- BMI ≥ 30 kg /m² : 12%
- Waist :
 - Men : >102 cm : 14%
 - Women : > 88 cm : 25%
- Blood pressure
 - > 140 mmHg in 13% of men and 4% of women



Knowledge, attitudes and practices related to healthy lifestyle among 6-18 years old children in Poland : smoking

- Polish 400 cities project 2003-2006
 - 1458 girls and 1474 boys from small towns
 - 272 girls and 296 boys from big cities
- “Smoking as harmful thing for human health”
 - Knowledge :
 - Age 6-9 : 75%; Age 10-13 : 88%; Age 14-18 : 76%
 - Attitudes and practice : “ever smoked ? – regular smoking ?”
 - Girls
 - Age 6-9 : 2.5%; Age 10-13 : 9%; Age 14-18 : 41%
 - Overall : **regular smoking : 20%**
 - Boys
 - Age 6-9 : 3.5%; Age 10-13 : 14%; Age 14-18 : 53%
 - Overall : **regular smoking : 33%**

Knowledge, attitudes and practices related to healthy lifestyle among 6-18 years old children in Poland : physical activity

- Polish 400 cities project 2003-2006
 - 1458 girls and 1474 boys from small towns
 - 272 girls and 296 boys from big cities
- “Lack of physical activity as harmful thing for human health”
 - Knowledge :
 - Age 6-9 : 14%; Age 10-13 : 14%; Age 14-18 : 22%
 - Attitudes and practice : “TV watching ? – in front of PC ?”
 - TV watching > 4 hours daily
 - Age 14-18 : girls 6%, boys 10%
 - In front of PC > 4 hours daily
 - Age 14-18 : girls 18%, boys 29%

Associations between adulthood television viewing and cardiometabolic disease risk

longitudinal study with 21 years follow-up

- 1958 British Birth cohort
 - all births in one week in March 1958
 - TV and sports participation recorded at 23 years (1981) and 44 years (2002)
 - Risk factors measured at 44 years (2002)
- 5073 participants (2533 men)
 - High TV watching (≥ 5 times/week at 23 years and ≥ 2 hours/day at 44 years) associated with higher BMI, waist, blood pressure and triglycerides and lower HDL
 - Associations present in men and women and independent of adulthood physical activity levels

More data and controversies on HDL and triglycerides

HDL cholesterol is an independent protective factor in all ages groups and particularly important in elderly women

Aim : assess the relationship between HDL-C and cardiovascular disease mortality in men and women in the SCORE database with a focus on elderly women

Dataset : SCORE dataset – 7 European cohort studies – 90.000 individuals

Women			Men		
Age group	Number	Hazard ratio (95%CI)	Age group	Number	Hazard ratio (95% CI)
Under 55	29,408	0.62 (0.42 to 0.91)	Under 45	20,506	0.67 (0.47 to 0.96)
55-65	8,448	0.60 (0.55 to 0.87)	45-55	15,275	0.85 (0.73 to 0.99)
Over 65	2,426	0.53 (0.42 to 0.68)	55-65	11,385	0.70 (0.62 to 0.80)
All	40,282	0.60 (0.51 to 0.69)	Over 65	2,545	0.79 (0.64 to 0.98)
All			All	49,711	0.76 (0.70 to 0.83)

*Hazard ratios are per 0.5mmol/l increase in HDL-C adjusted for age, smoking, total cholesterol, systolic blood pressure, diabetes and body mass index; CI: Confidence interval

Conclusion : HDL-C in an independent protective factor in all age groups and particularly in older women

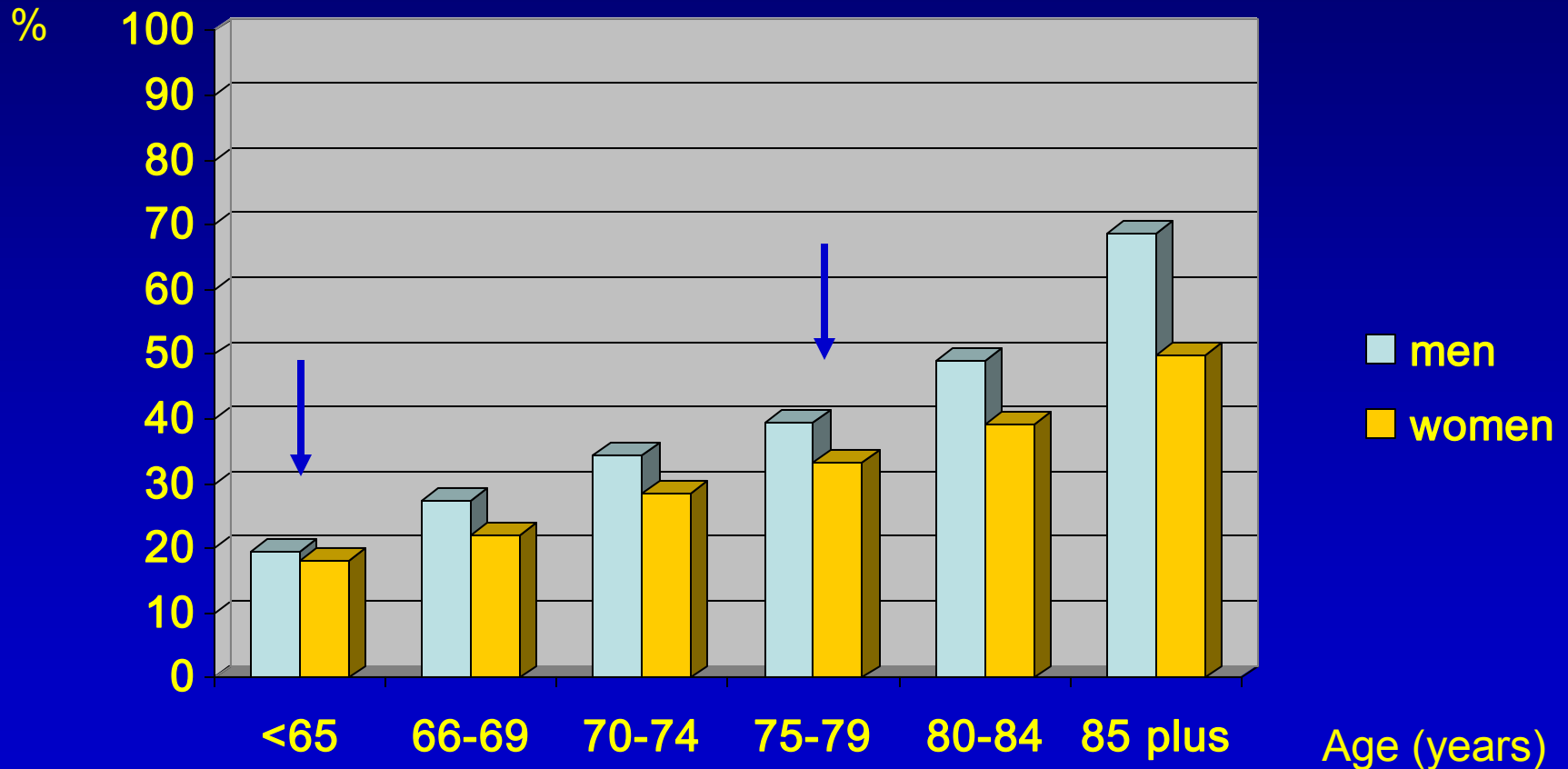
Non-fasting triglycerides are associated with increased risk of cardiovascular deaths in women

- Norwegian counties study
 - 86261 men and women aged 20-50 years
 - Initially free of cardiovascular disease
 - Screening in 3 Norwegian counties (1974-78, 1977-83, 1985-88)
 - Follow-up until 2004 for total death, CVD death, IHD death or stroke death
 - total deaths : 7962 men and 4227 women
- Results
 - Significant age-adjusted HRs across triglycerides quintiles for men and women ($p < 0.001$ for trend), most pronounced for CVD and IHD deaths
 - After adjustment for other risk factors, effect was attenuated for all endpoints for men but remained for women (except for stroke death)



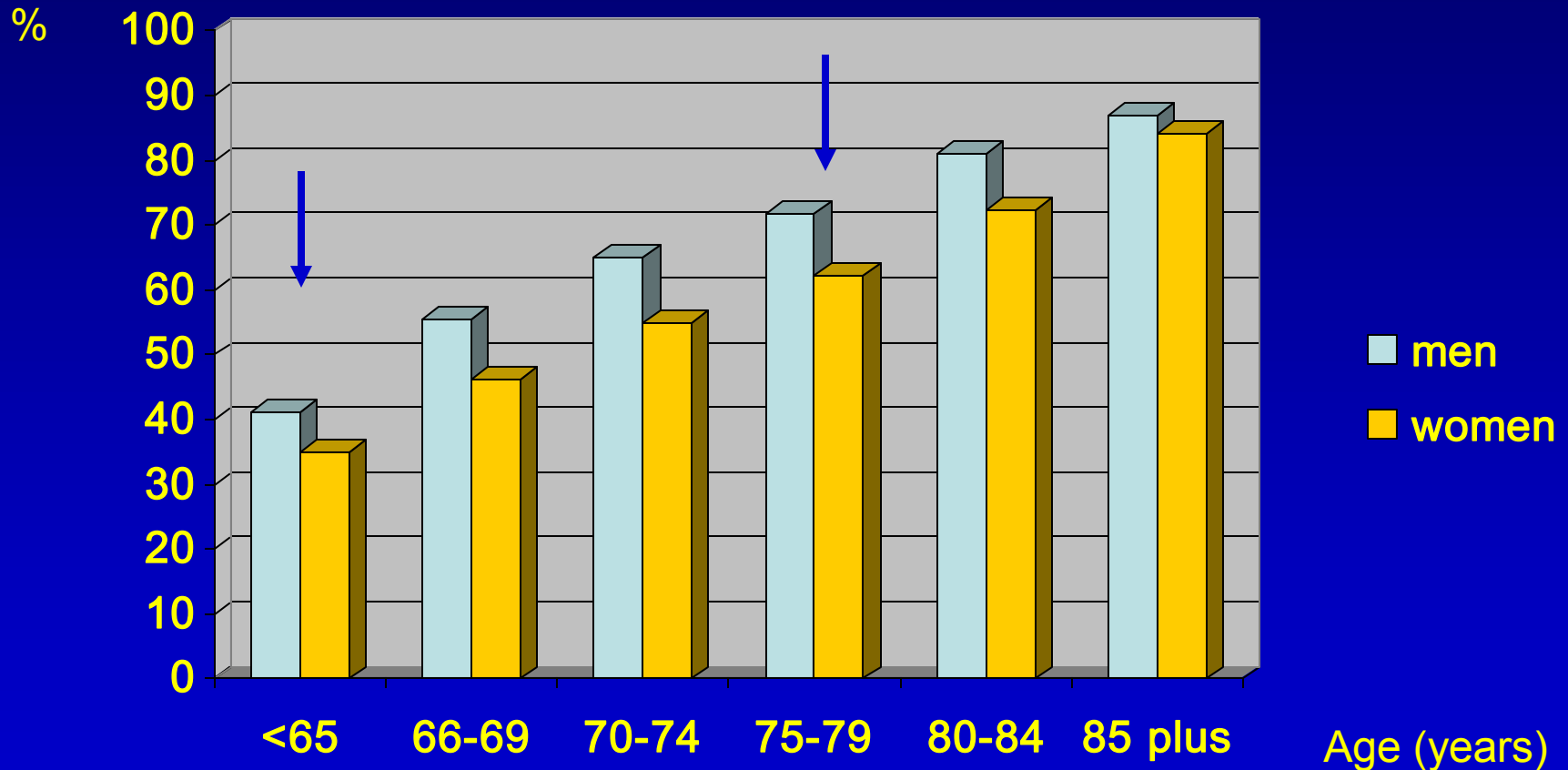
Risk of death after initial admission for heart failure

1 year mortality (14259 men and 14524 women 1997-2000)



Risk of death after initial admission for heart failure

5 years mortality (14259 men and 14524 women 1997-2000)



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HDL cholesterol and risk of stroke

Aim : evaluation of the effect of HDL cholesterol on stroke mortality

Data set : SCORE Database

(7 studies, 107.158 individuals)

high risk versus low risk countries

Results

-High risk countries : figure

-Women : independent graded protective effect of HDL cholesterol

-Men : non-significant U shaped relation

-Low risk countries

-No relationship between HDL cholesterol and stroke mortality

