

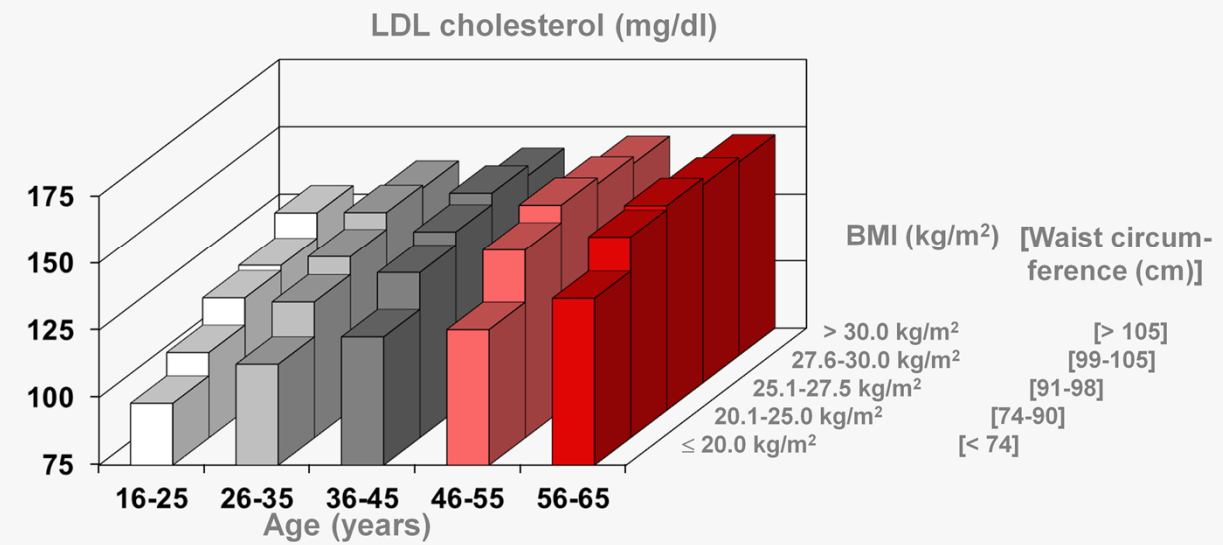
## PROCAM (Münster Heart Study)

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### Body mass index and cardiovascular risk factors

The slides in this slide kit show the relationship between various risk markers and body mass index in each age group of men and women. Note that certain variables such as systolic and diastolic blood pressure both increase with age and with body mass index, whereas other variables such as the cholesterol/HDL-cholesterol ratio increase only with body mass index.

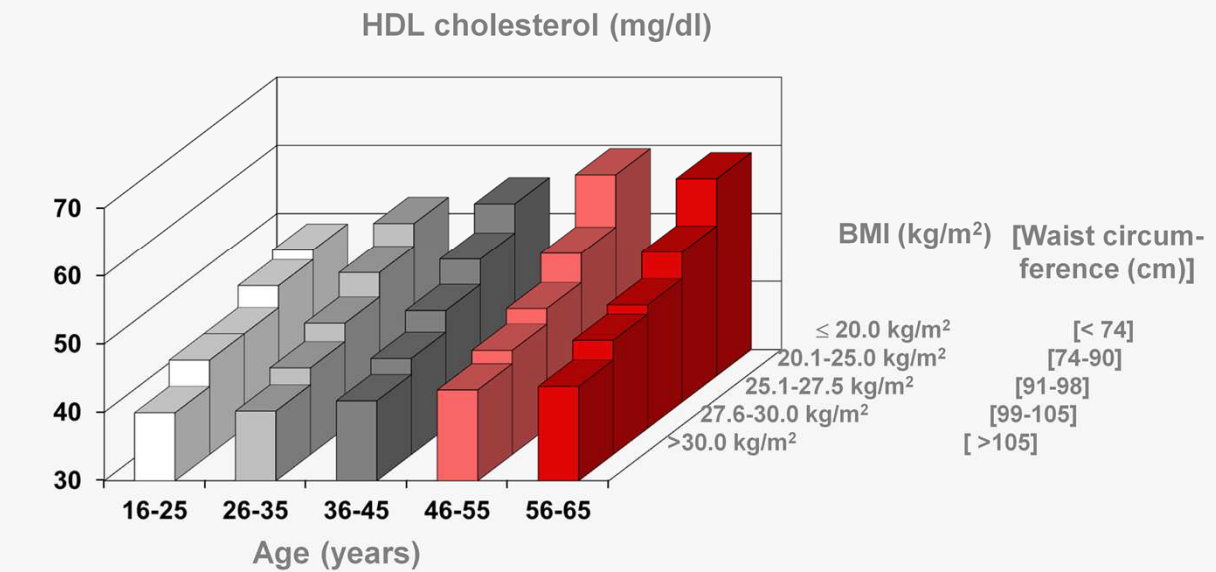
## LDL Cholesterol According to Age and BMI/WC



Men (n=31,376)

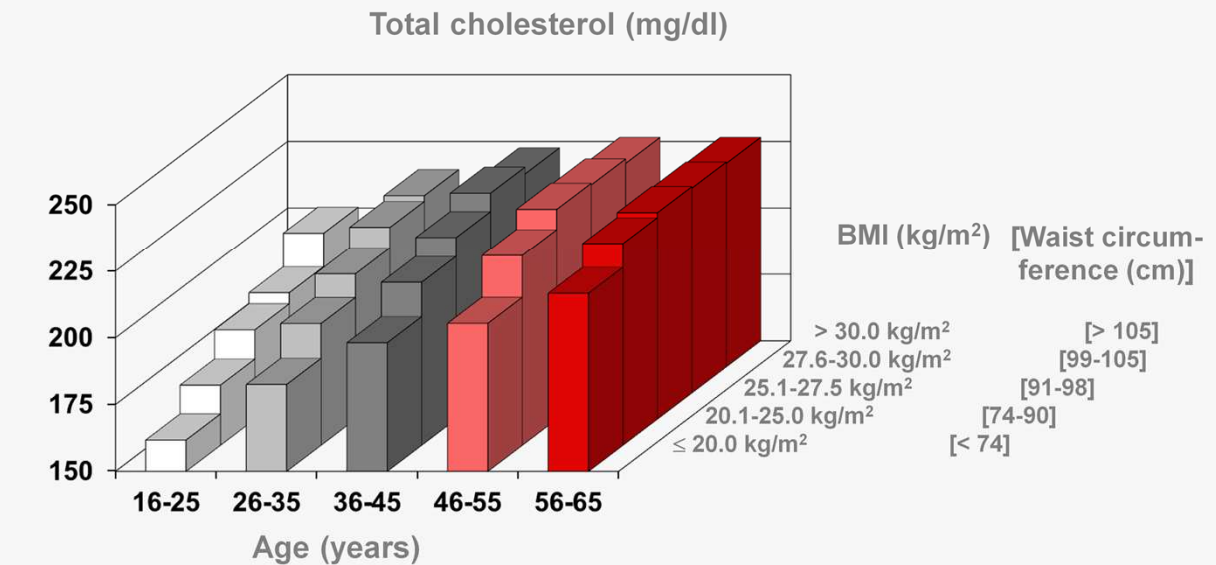
PROCAM

## HDL Cholesterol According to Age and BMI/WC



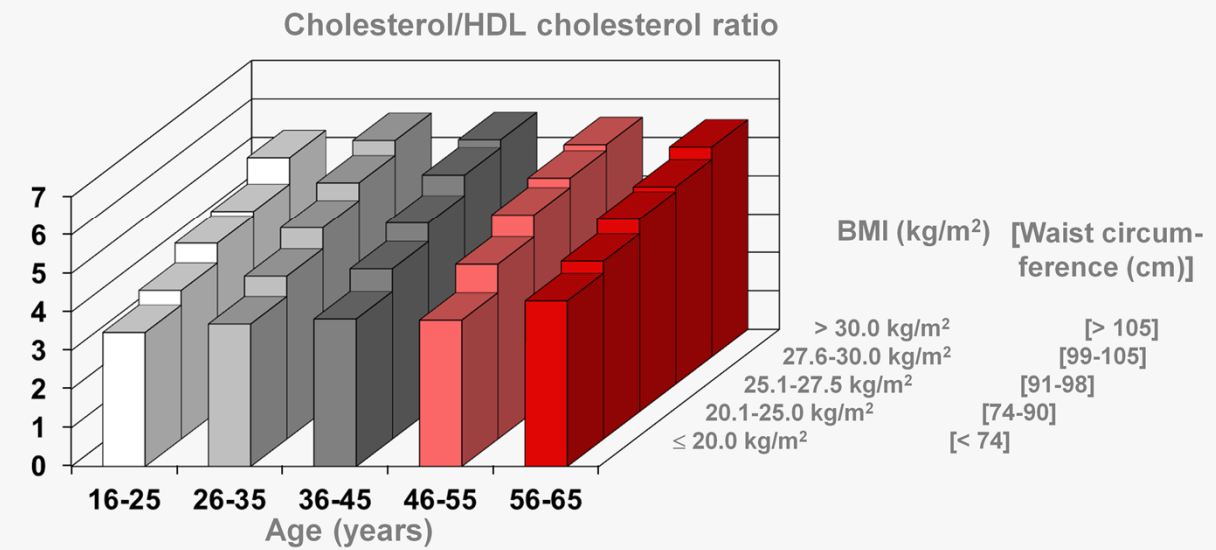
PROCAM

## Total Cholesterol According to Age and BMI/WC



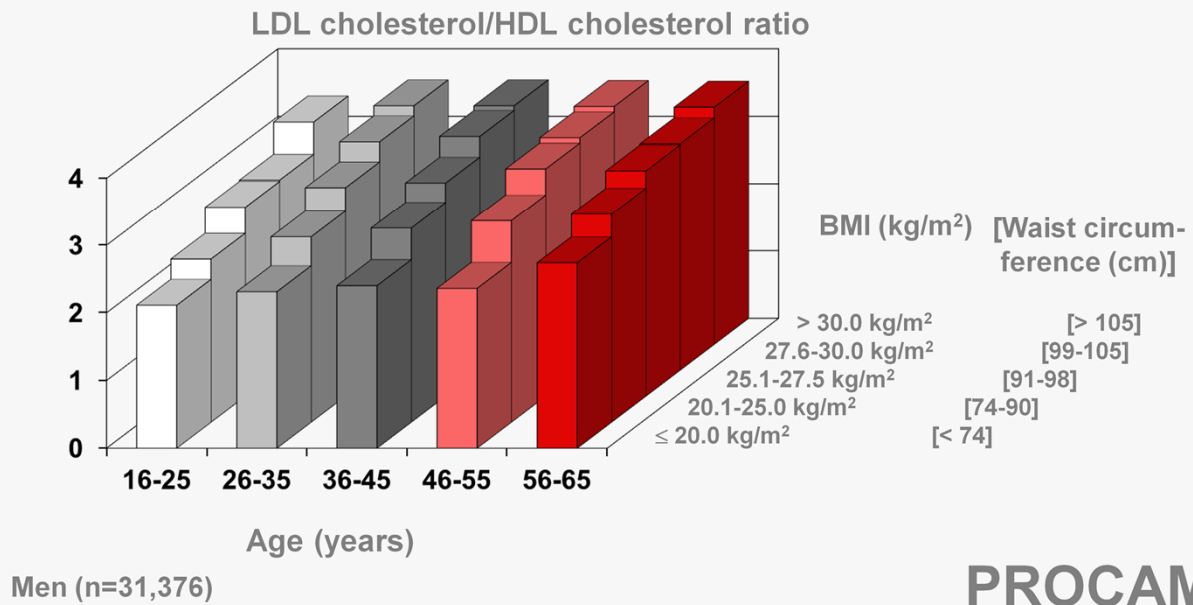
PROCAM

## Cholesterol/HDL Cholesterol Ratio According to Age and BMI/WC

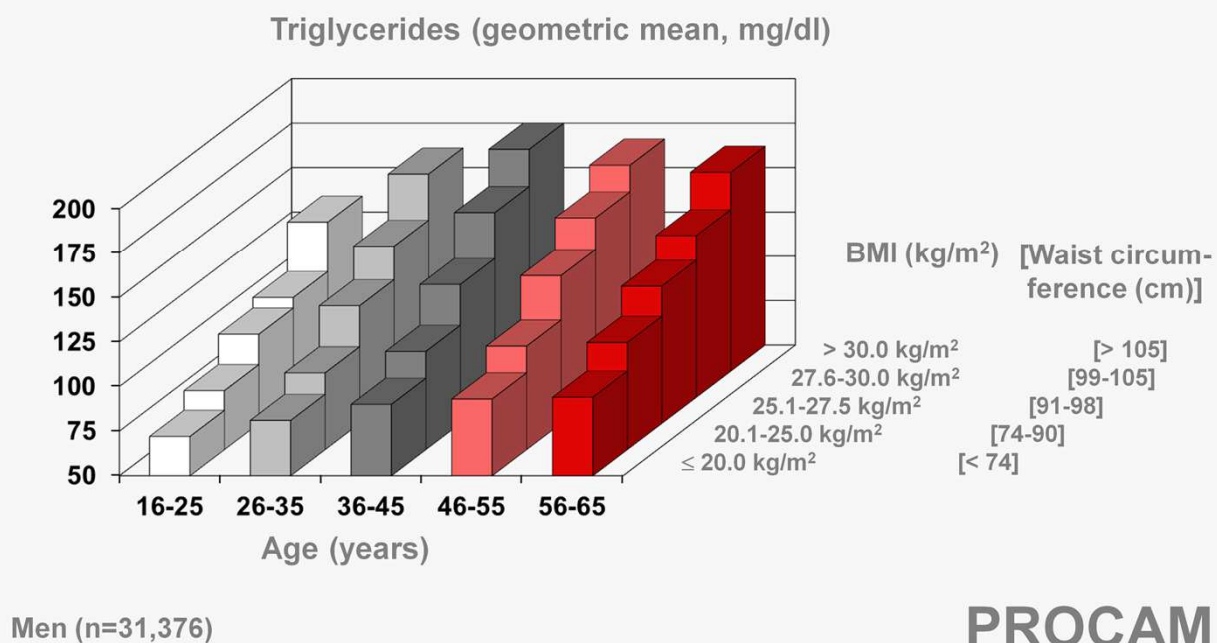


PROCAM

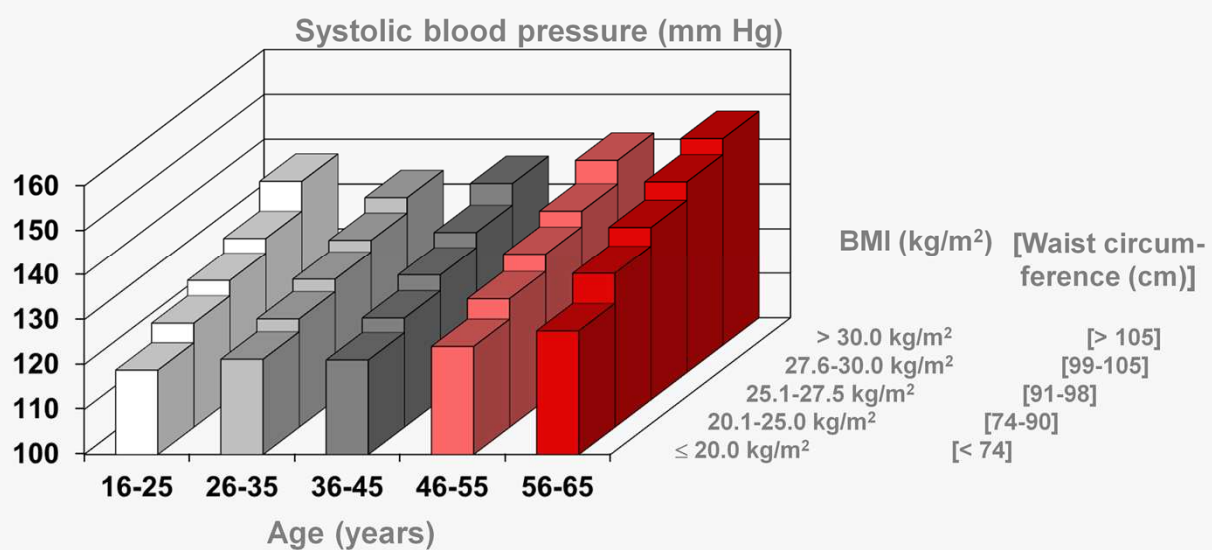
## LDL Cholesterol/HDL Cholesterol Ratio According to Age and BMI/WC



## Triglycerides According to Age and BMI/WC



## Systolic Blood Pressure According to Age and BMI/WC

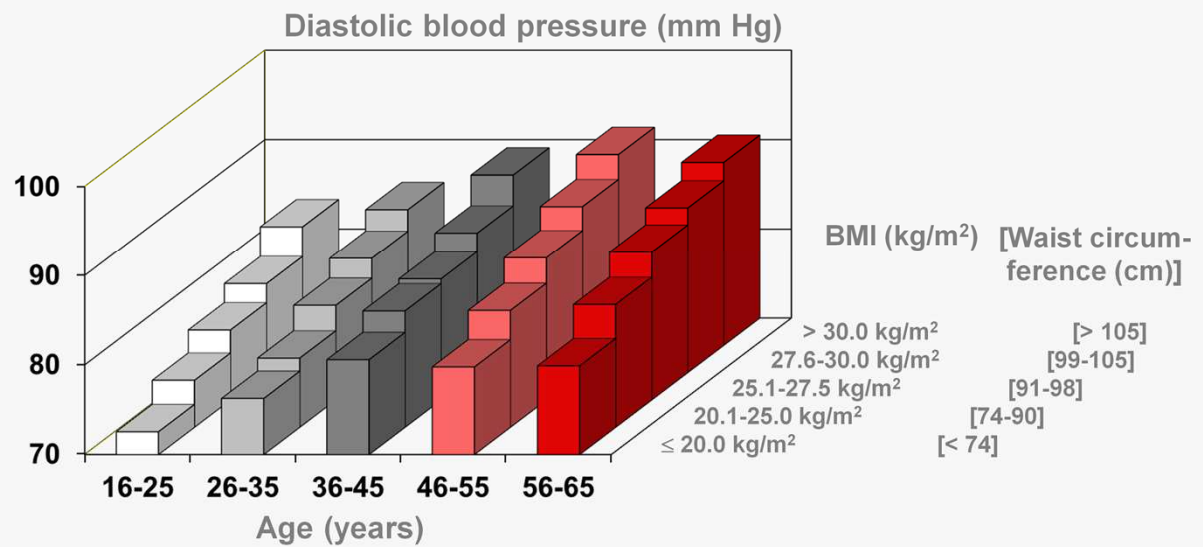


Men (n=31,376)

**PROCAM**

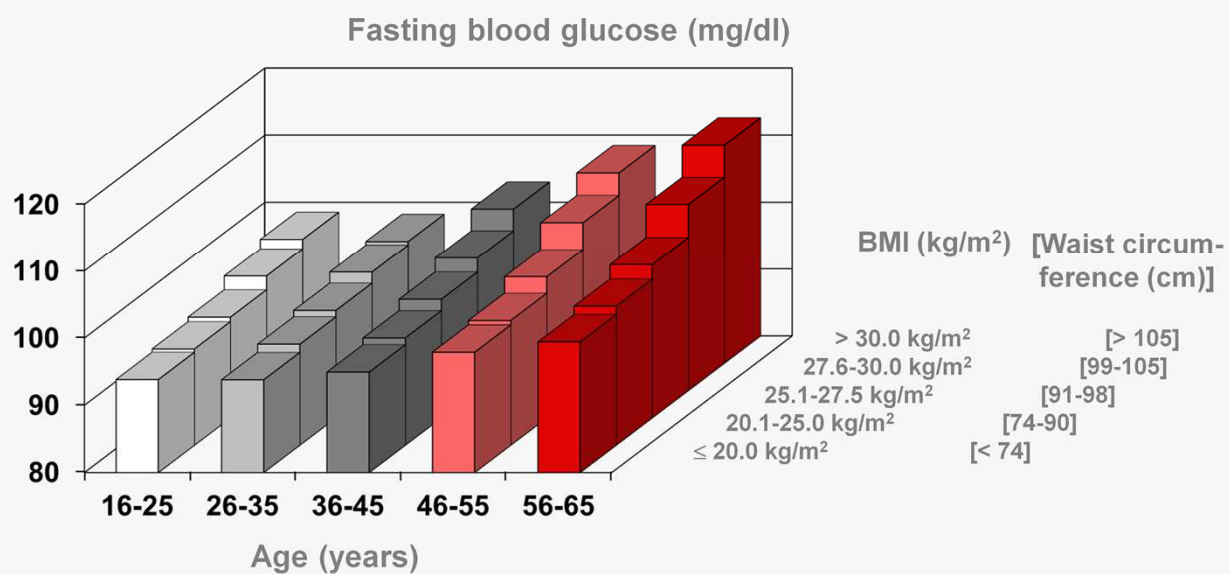


## Diastolic Blood Pressure According to Age and BMI/WC



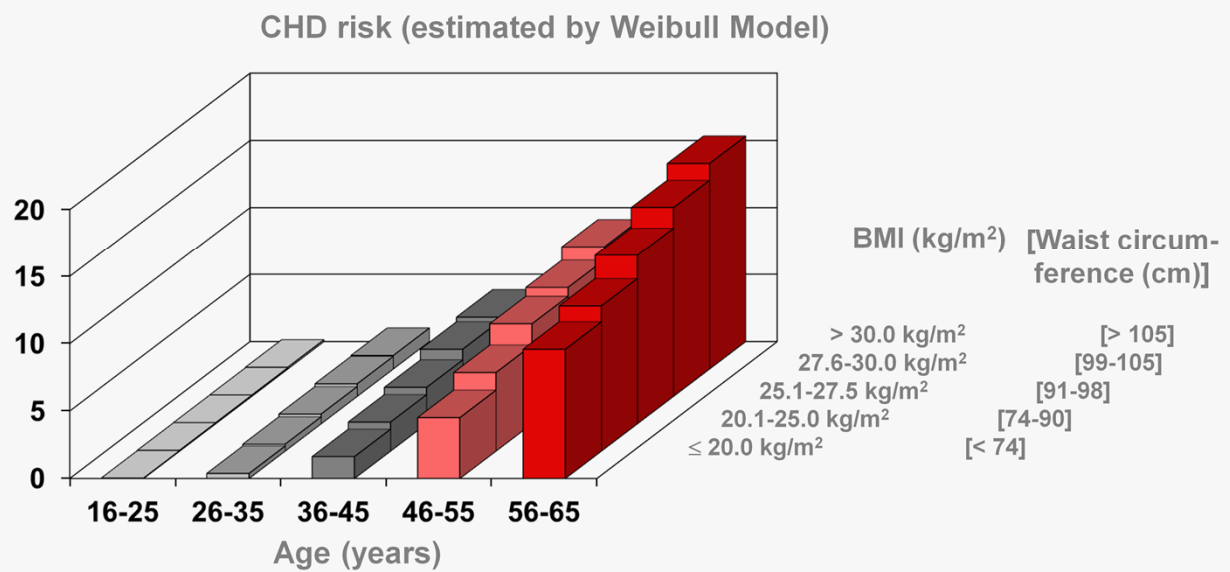
PROCAM

## Fasting Blood Glucose According to Age and BMI/WC



PROCAM

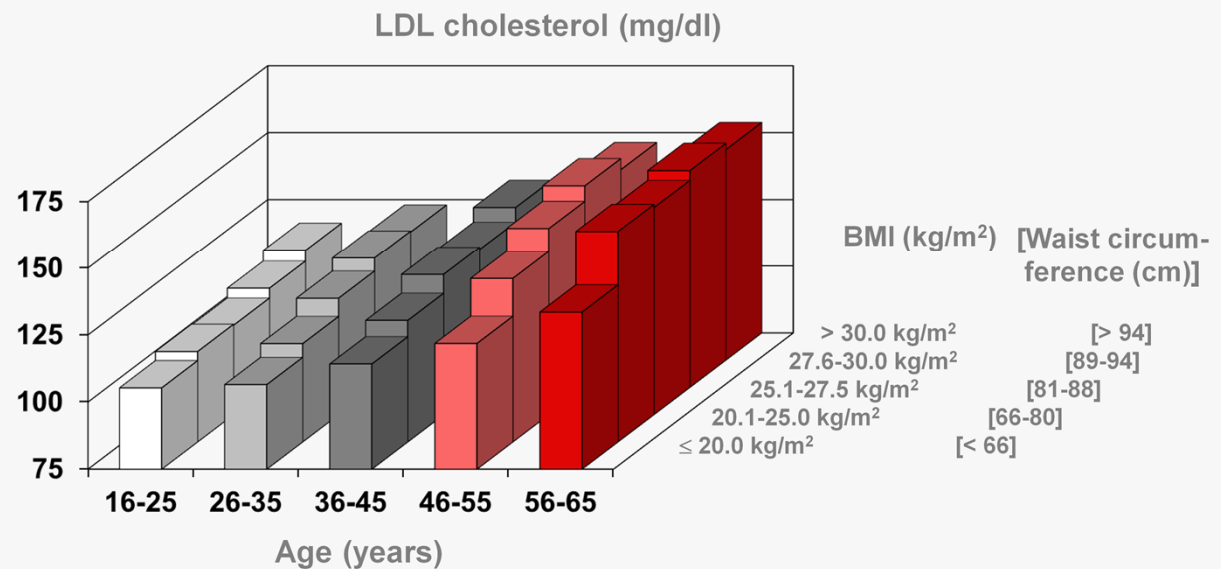
## CHD Risk (estimated by Cox Model) According to BMI/WC



Men (n=31,376)

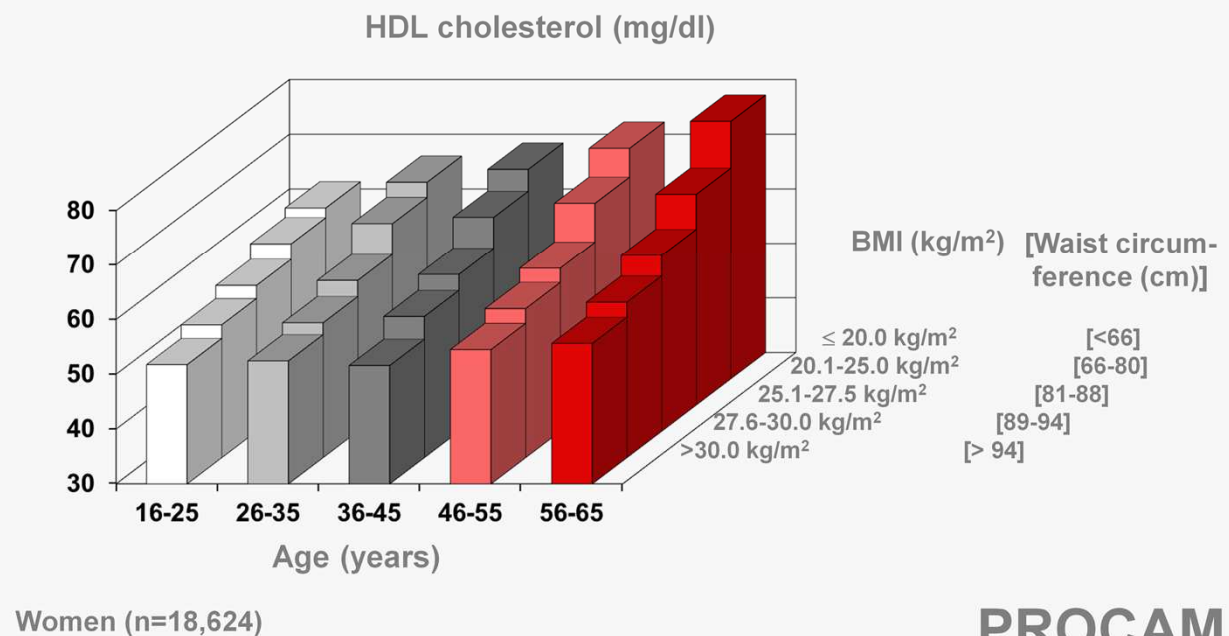
PROCAM

## LDL Cholesterol According to Age and Body Mass Index

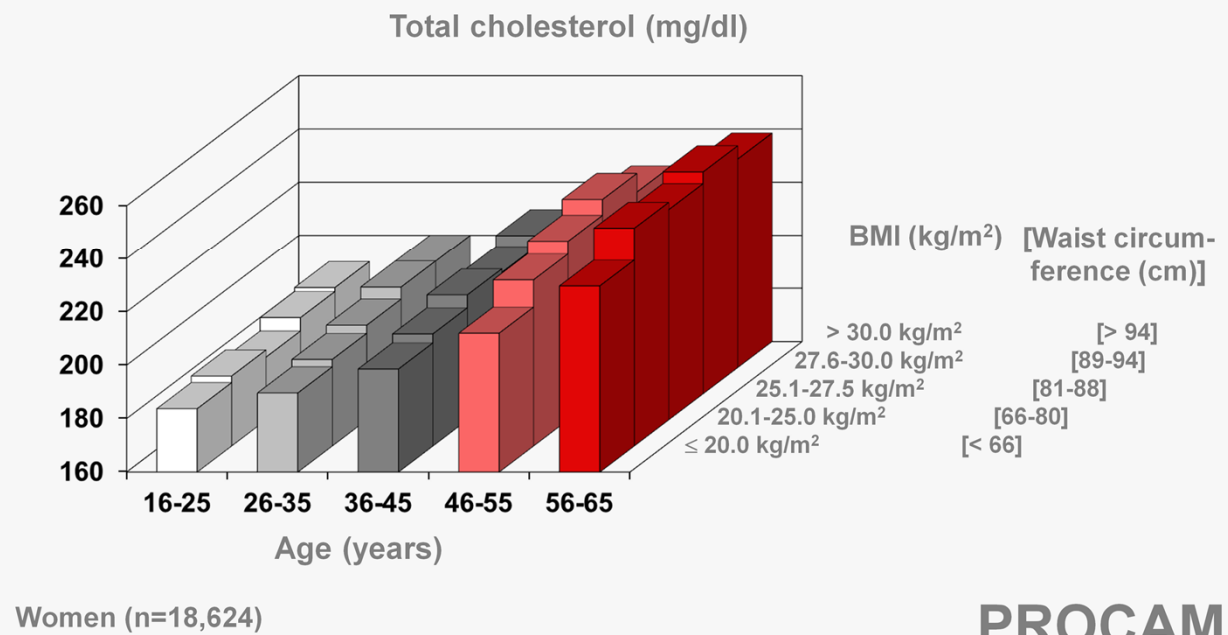


PROCAM

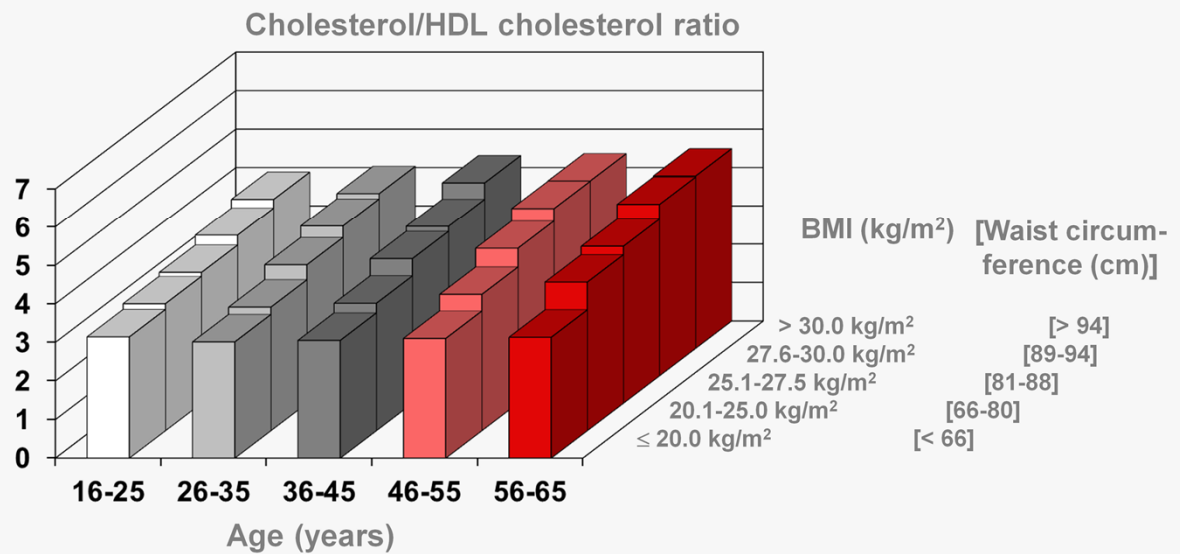
## HDL Cholesterol According to Age and Body Mass Index



## Total Cholesterol According to Age and Body Mass Index



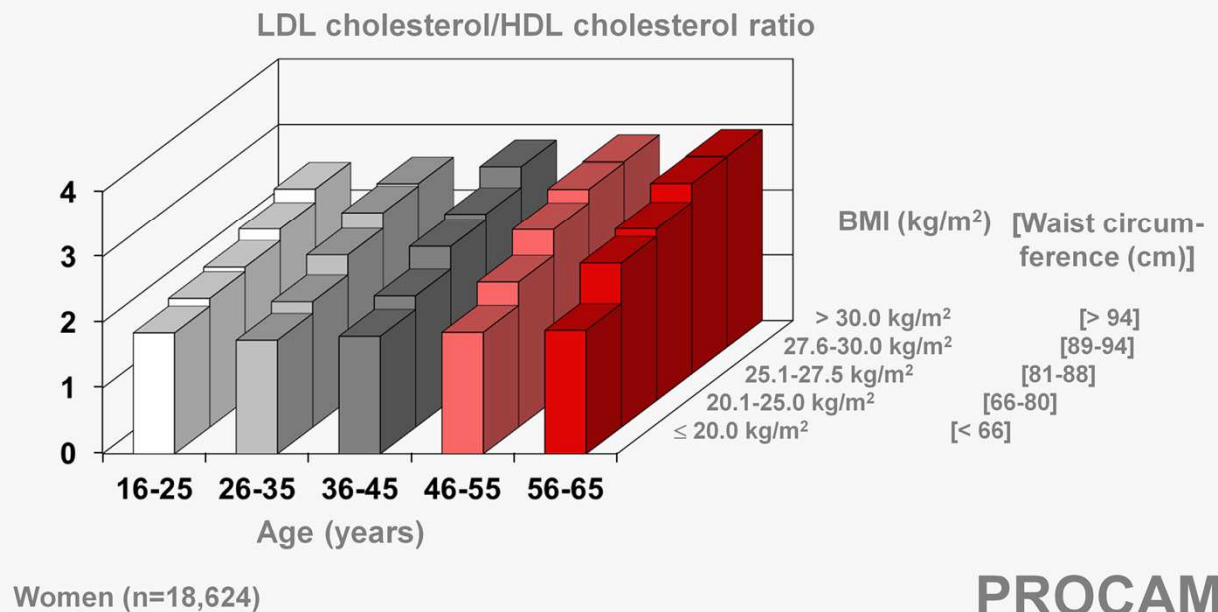
## Cholesterol/HDL Cholesterol Ratio According to Age and Body Mass Index



Women (n=18,624)

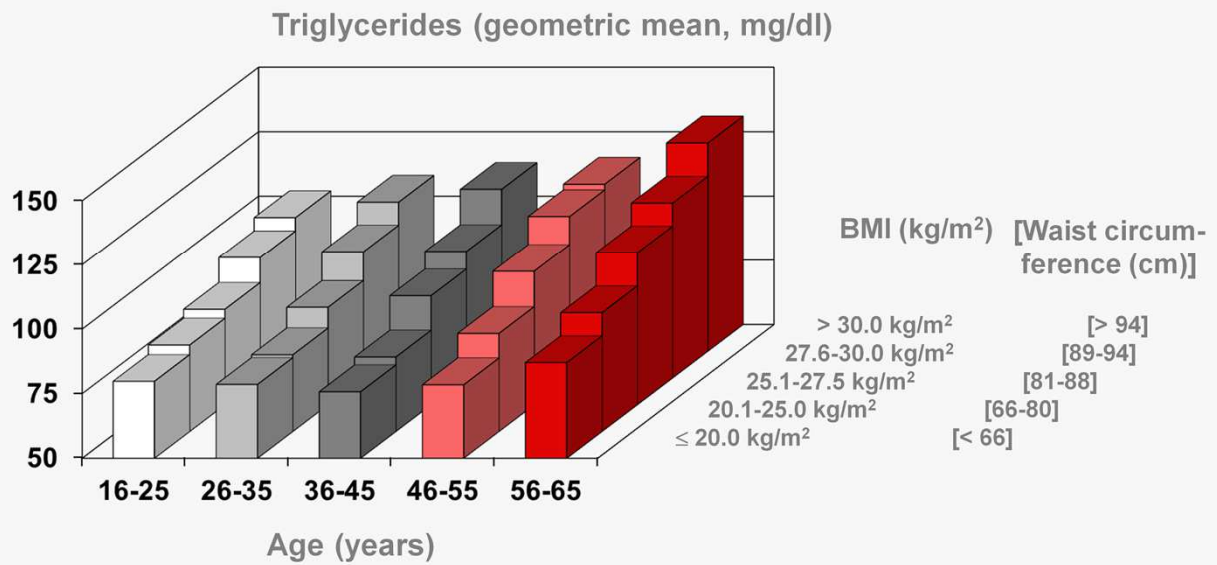
PROCAM

## LDL Cholesterol/HDL Cholesterol Ratio According to Age and Body Mass Index



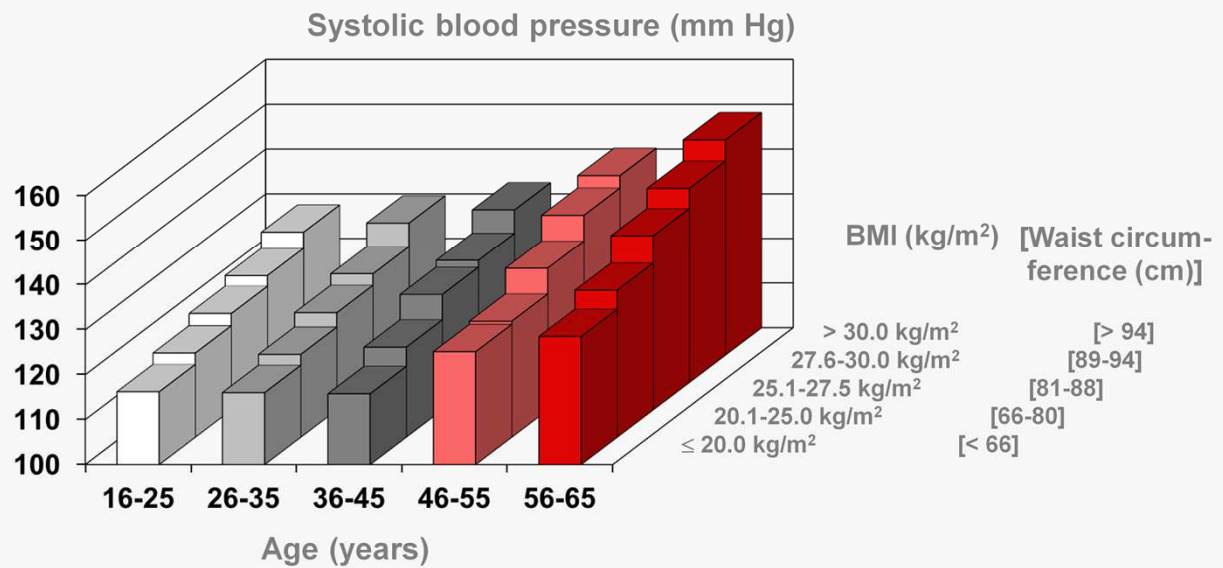


## Triglycerides According to Age and Body Mass Index



PROCAM

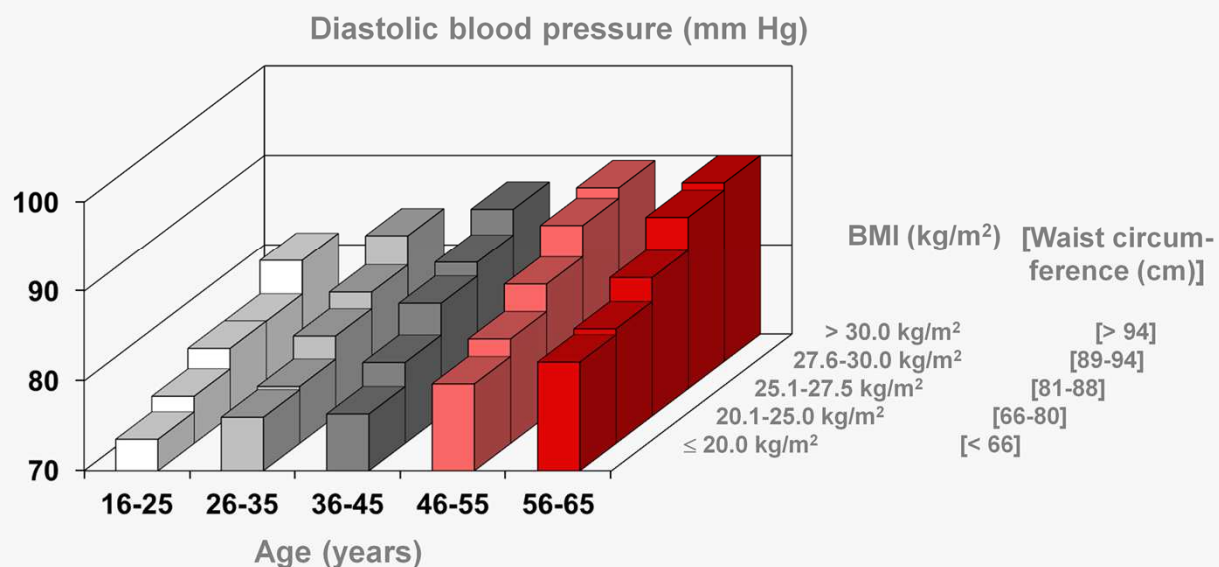
## Systolic Blood Pressure According to Age and Body Mass Index



Women (n=18,624)

PROCAM

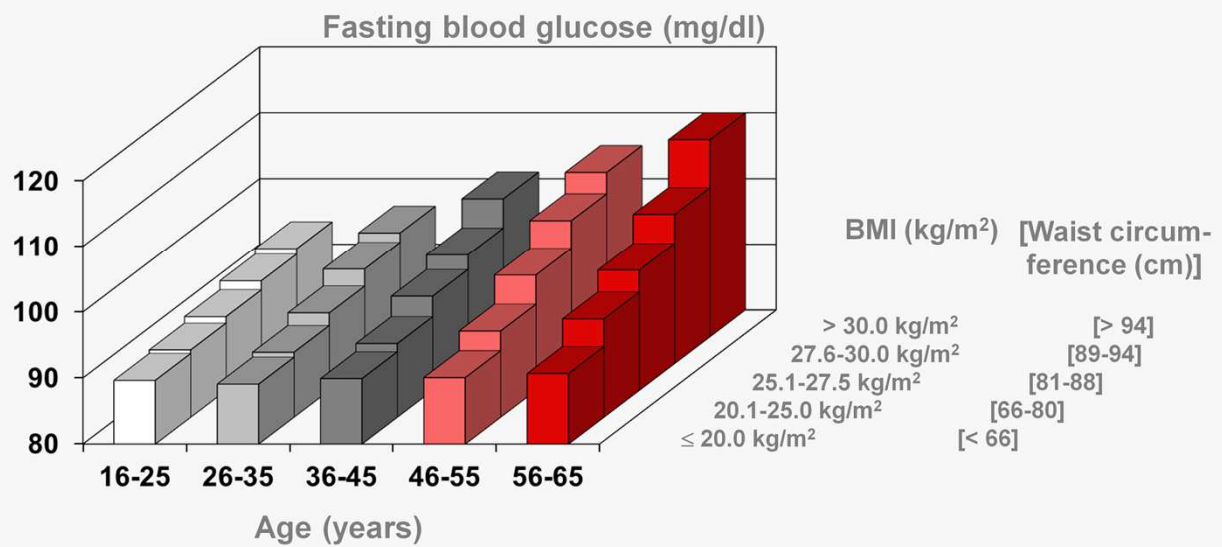
## Diastolic Blood Pressure According to Age and Body Mass Index



Women (n=18,624)

PROCAM

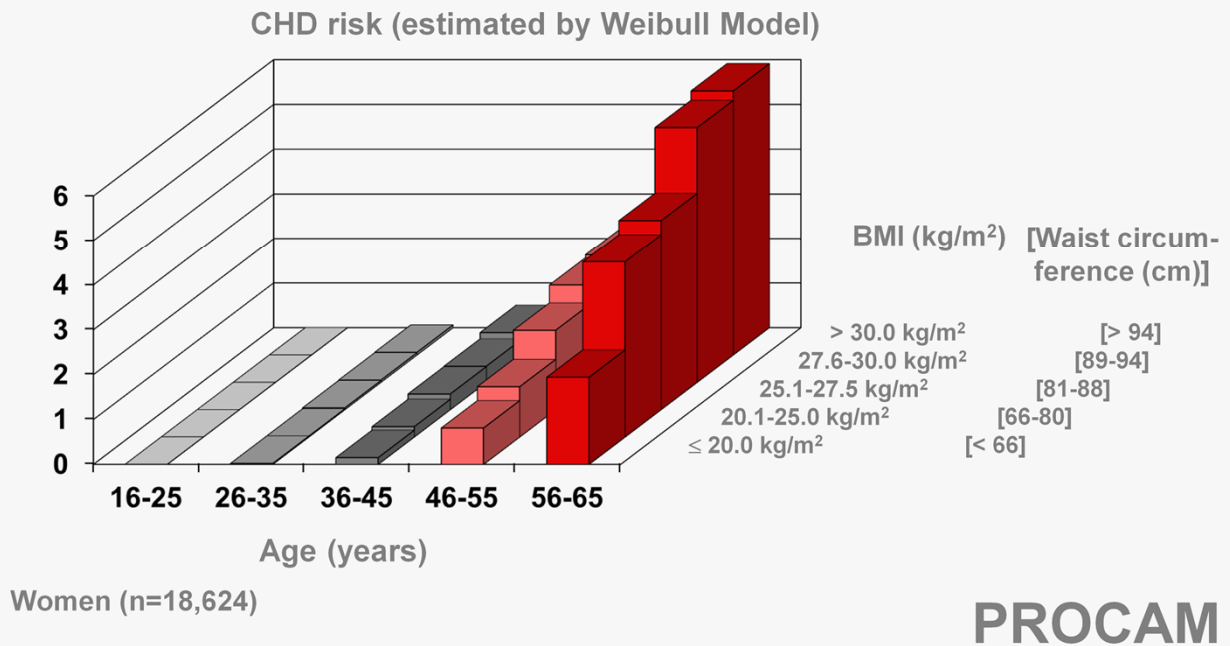
## Fasting Blood Glucose According to Age and Body Mass Index



Women (n=18,624)

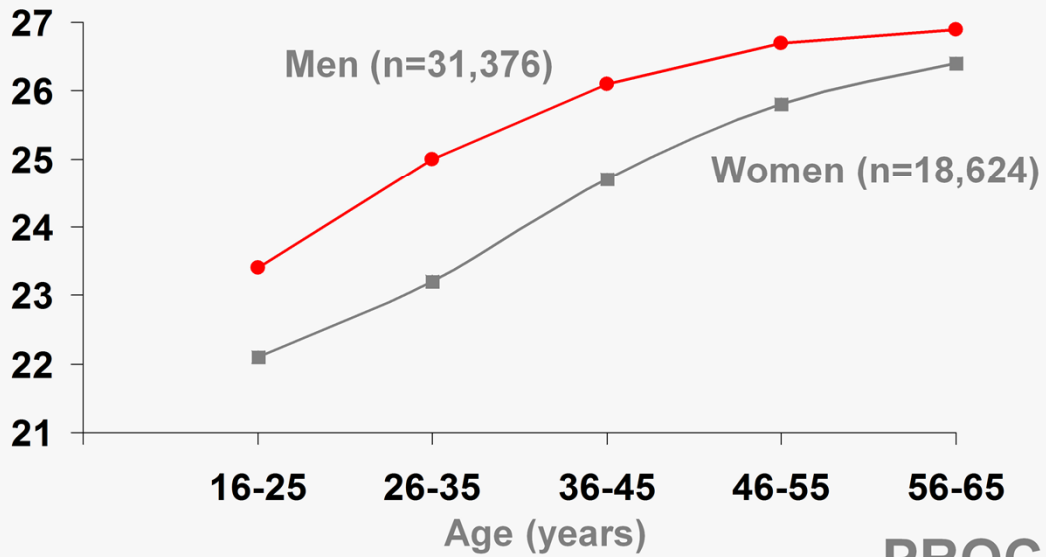
PROCAM

## CHD Risk (estimated by Cox Model) According to BMI/WC

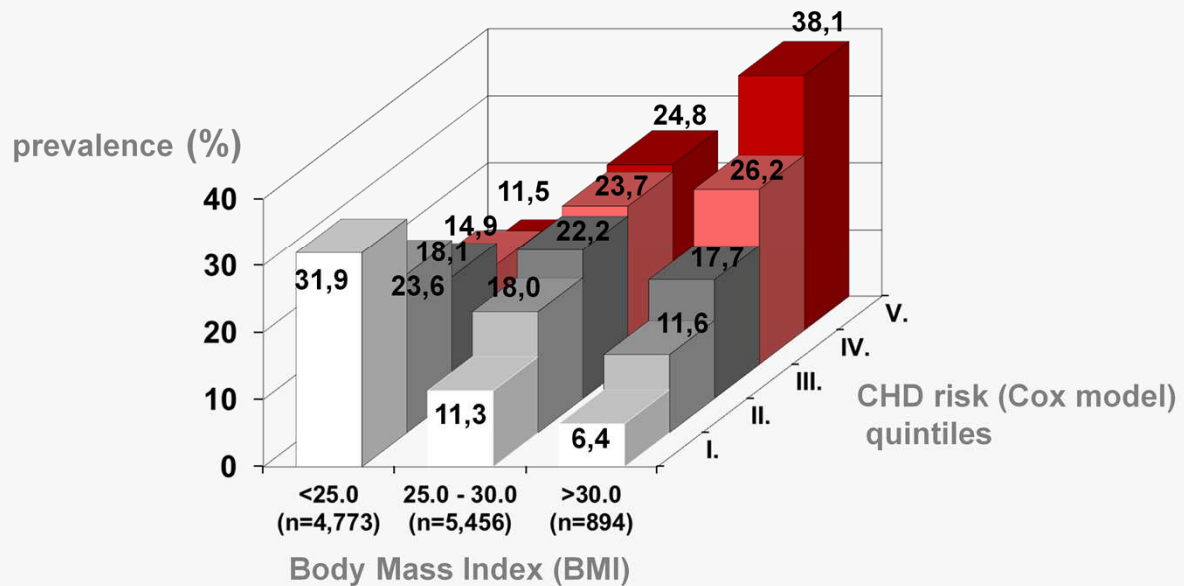


## Body Mass Index According to Age

Body Mass Index (kg/m<sup>2</sup>)



## *CHD Risk (estimated by MLF) According to Body Mass Index (BMI)*



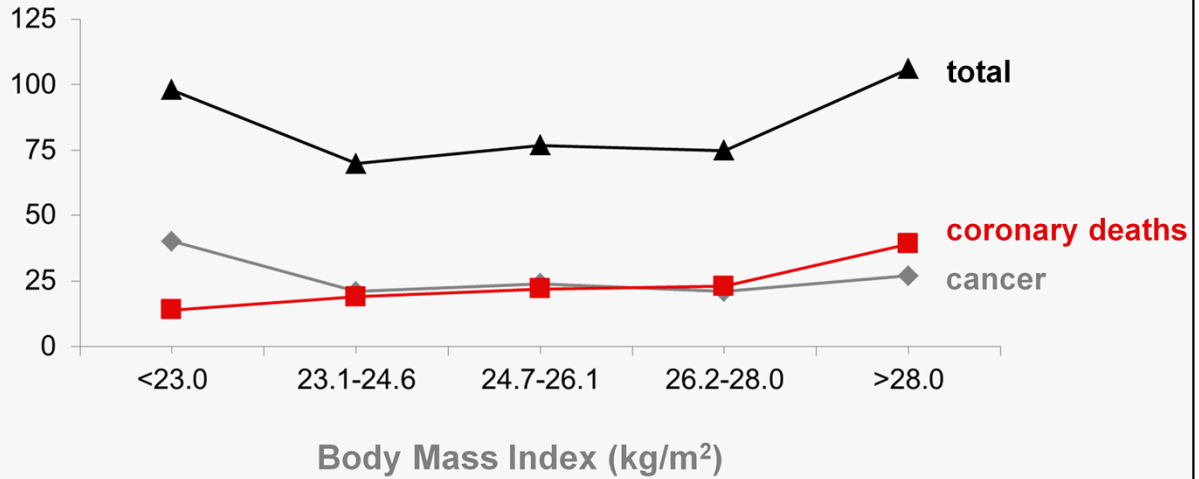
530 incidences in 11,123 men aged 35 to 65 years

**PROCAM**

This slide shows the relationship between Body Mass Index and CHD risk among middle-aged men in PROCAM. The main message of this data is that lean men tended to be at low CHD risk, while overweight men tended to be at high risk. However this distinction is not very clearcut. For example, 6.4% of the overweight men were in the lowest quintile of risk, while 11.5% of the lean men were in the highest risk quintile.

### Age Standardized Death Rates in Male Participants (n=11123) According to Body Mass Index

Deaths per 1,000



Age range 35-65 years;

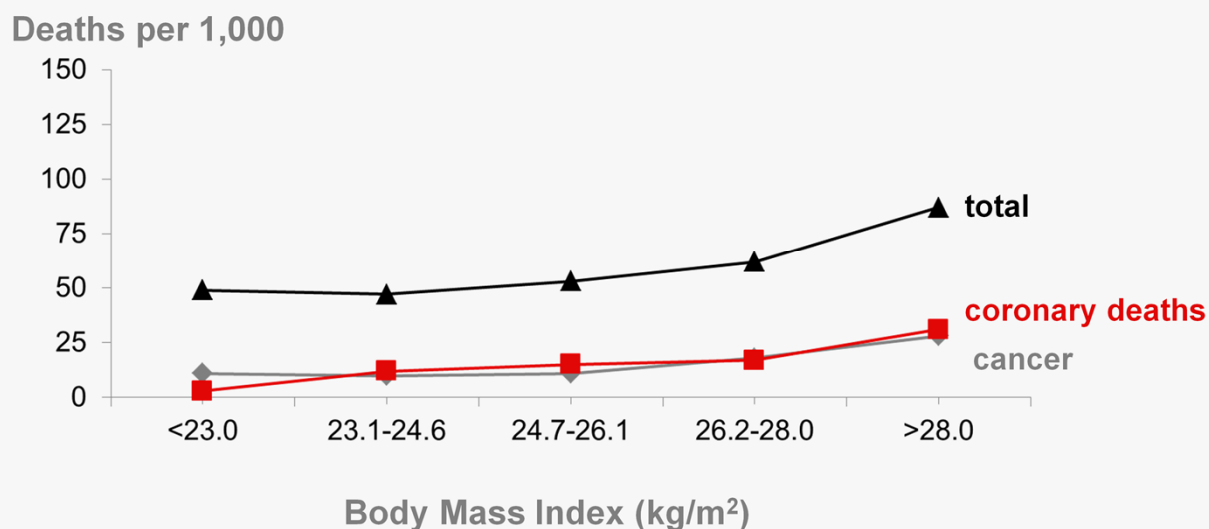
Number of deaths: total: 945; coronary deaths: 246; cancer: 302

**PROCAM**

This slide shows relationship between total mortality, cancer mortality and CHD mortality rates and Body Mass Index among middle-aged men in PROCAM. The overall mortality showed a J-shaped relationship to Body Mass Index; excess mortality in lean men being explained largely by cancer and in overweight men by coronary heart disease.



## Age Standardized Death Rates in Male Participants (nonsmoker, n=7225) According to Body Mass Index



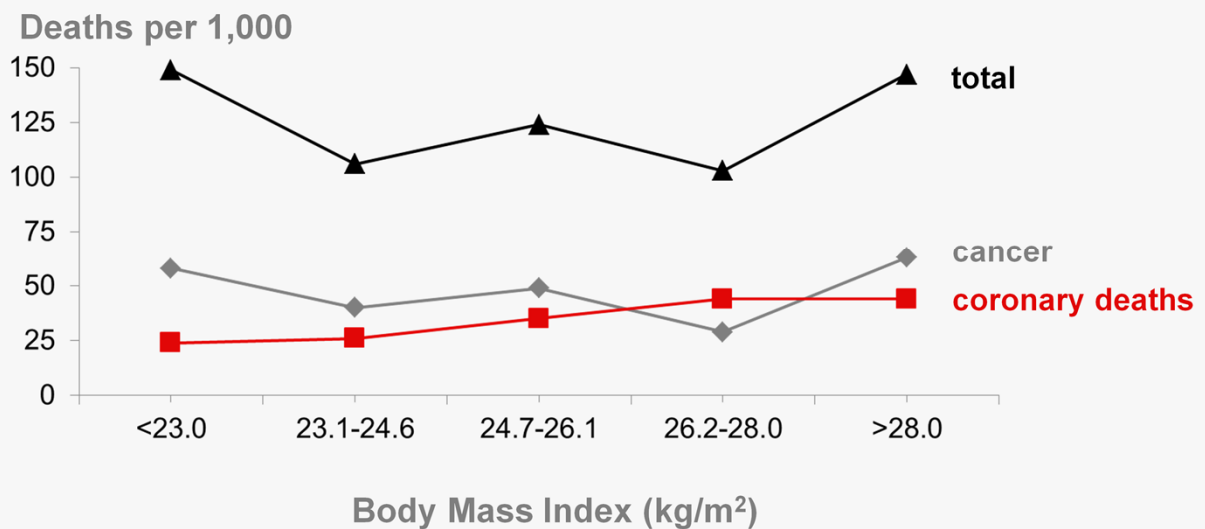
Age range 35-65 years;

Number of deaths: total: 451; coronary deaths: 115 cancer: 116

**PROCAM**

This slide shows the same relationship as slide 24, but includes only non-smoking men. The difference to the overall data shown in slide 24 is striking: among the non-smoking men, there is no increase in cancer or overall mortality among lean men.

### Age Standardized Death Rates in Male Participants (smoker, n=3898) According to Body Mass Index



Age range 35-65 years;  
Number of deaths: total: 494; coronary deaths: 131; cancer: 186

**PROCAM**

This slide shows the same as slide 24, but includes only men who smoked. Here also, the difference to the overall data shown in slide 24 is striking: the smokers showed a striking increase in cancer mortality at low body weight. These cancers were mainly smoking related, such as carcinoma of the bronchus or the larynx.