

# The GISSI-HF study

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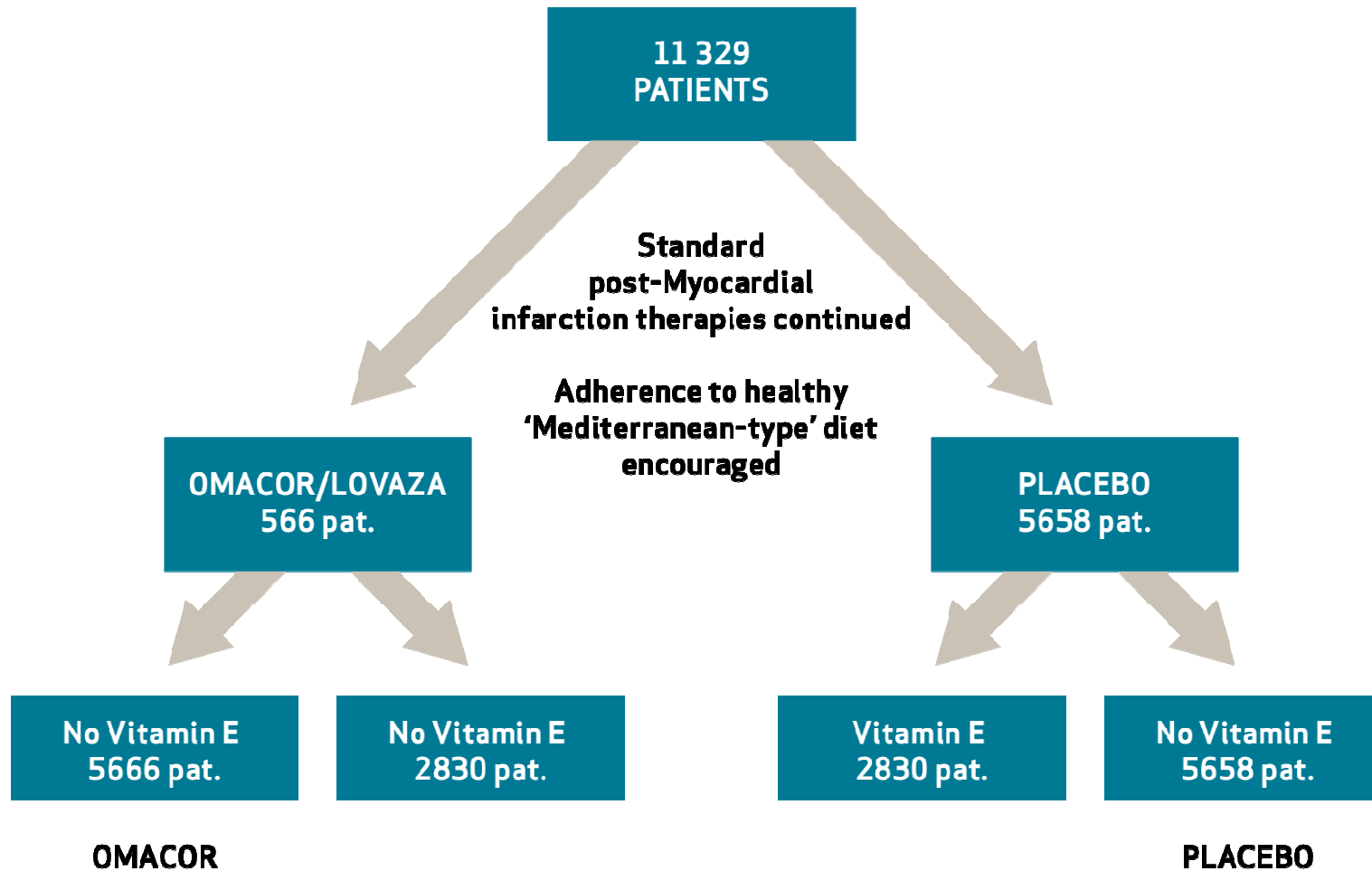
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# Outline

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- **Background to GISSI-HF study**
- Design, objectives

# Trial design GISSI-prevenzione



THE LANCET

Dietary supplementation with n-3 polyunsaturated fatty acids and vitamin E after myocardial infarction: results of the GISSI-Prevenzione trial

GISSI-Prevenzione Investigators  
(Gruppo Italiano per lo Studio della Sopravvivenza nell'Infarto miocardico)

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# GISSI-Prevenzione trial: Endpoints

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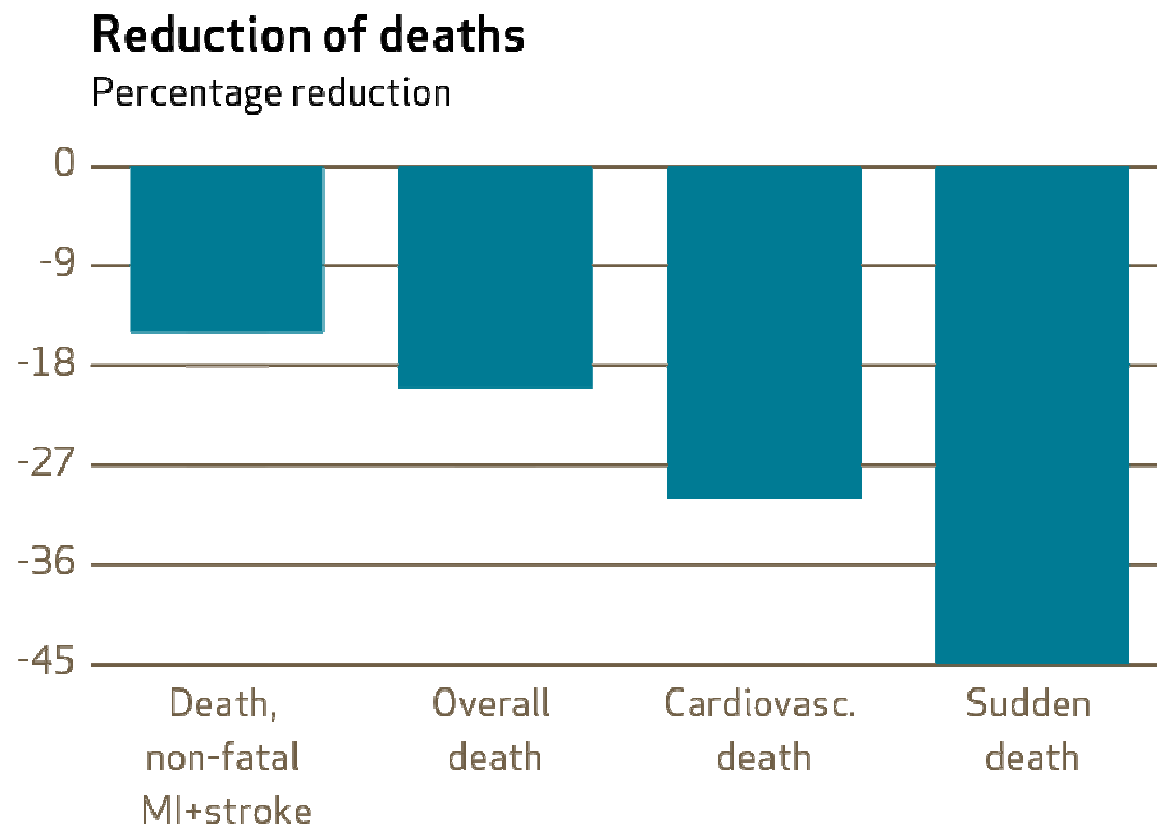
## Primary endpoints

1. All-cause mortality, non-fatal MI and non-fatal stroke
2. Cardiovascular mortality, non-fatal MI and non-fatal stroke

## Secondary endpoints

- Cardiovascular mortality, comprising:
  - *cardiac death*
  - *coronary death;*
  - *sudden death*
- Other deaths
- Non-fatal cardiovascular events

# Omacor/Lovaza saves lives in post-MI patients



# From GISSI-P to GISSI-HF

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- **An analysis of the GISSI-Prevenzione trial demonstrated:**
  - *In nearly 2 000 patients in the study, who had had a myocardial infarction and who had developed heart failure, the effects of Omacor/Lovaza on all-cause and sudden mortality were similar to those observed in the rest of the trial*
- **This observation deserved further investigation**

# Background to the GISSI-HF study

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- **Heart failure is a complex clinical condition**
  - *It is the final common pathway for several types of cardiac damage*
- **During the past 3 decades there have been major advances in the prevention and treatment of cardiovascular diseases**
  - *Despite these advances, the incidence and prevalence of heart failure are still increasing*
- **Approximately 1-3% of the populations in major western countries have heart failure**

# Heart failure classification

## New York Heart Association

### NYHA-class

### Functional level

<b>I</b>	<b>No heart failure symptoms with normal physical activity</b>
<b>II</b>	<b>Heart failure symptoms with moderate physical activity</b>
<b>III</b>	<b>Heart failure symptoms with light physical activity</b>
<b>IV</b>	<b>Heart failure symptoms while resting and increased symptoms with all physical activity</b>

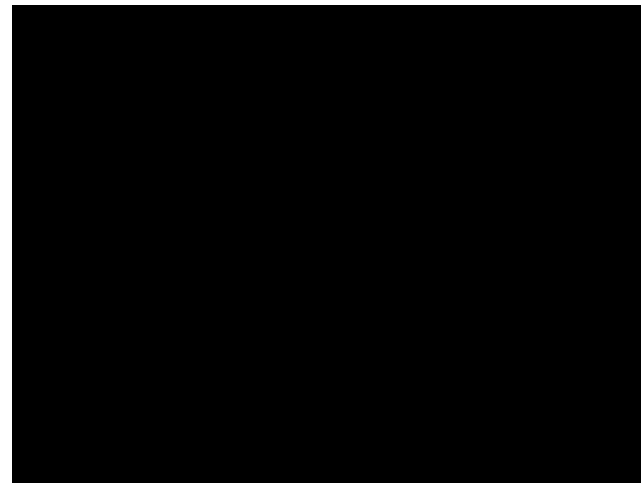
# The meaning of ejection fraction in heart failure

- **Ejection fraction**

- *the amount of blood that leaves the left ventricle every time the heart beats*

- **In heart failure this amount is reduced**

- *from about 60-70% to under 40%*



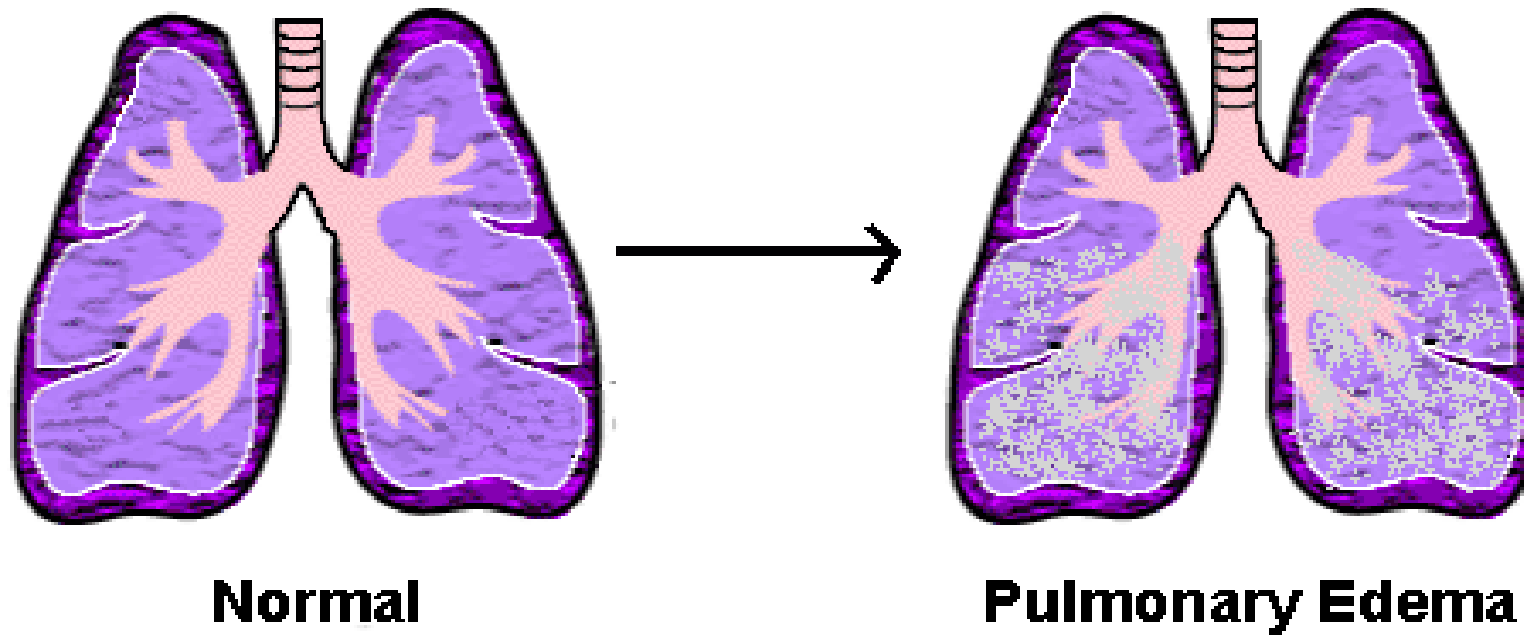
**Ejection fraction  $\leq$  40% = Heart failure**

# Heart failure: A condition

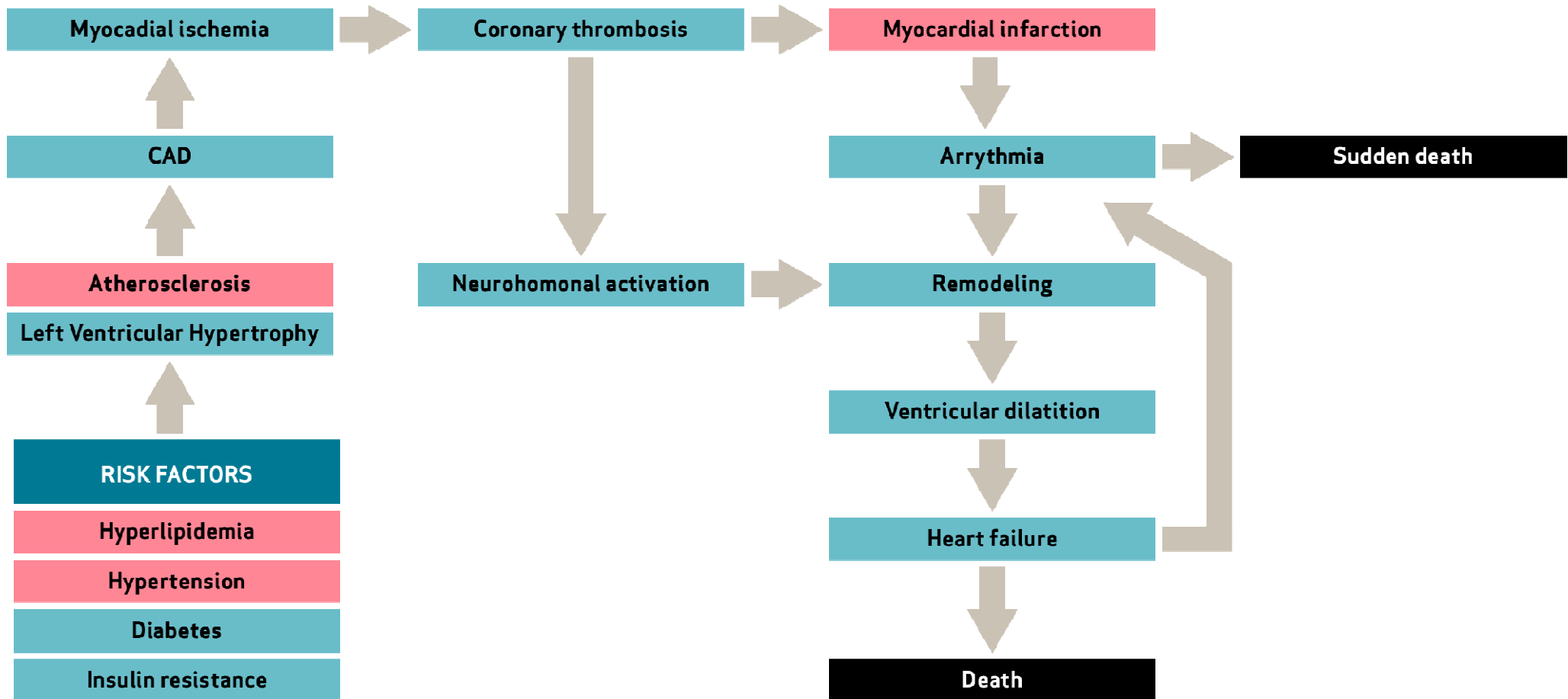
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- Shortness of breath
- Rales or crackles in the lungs
- Fatigue
- Reduced performance
- Dizziness

# Effect of heart failure on the lungs



# Chain of events leading to heart failure



# Non-medicinal treatment

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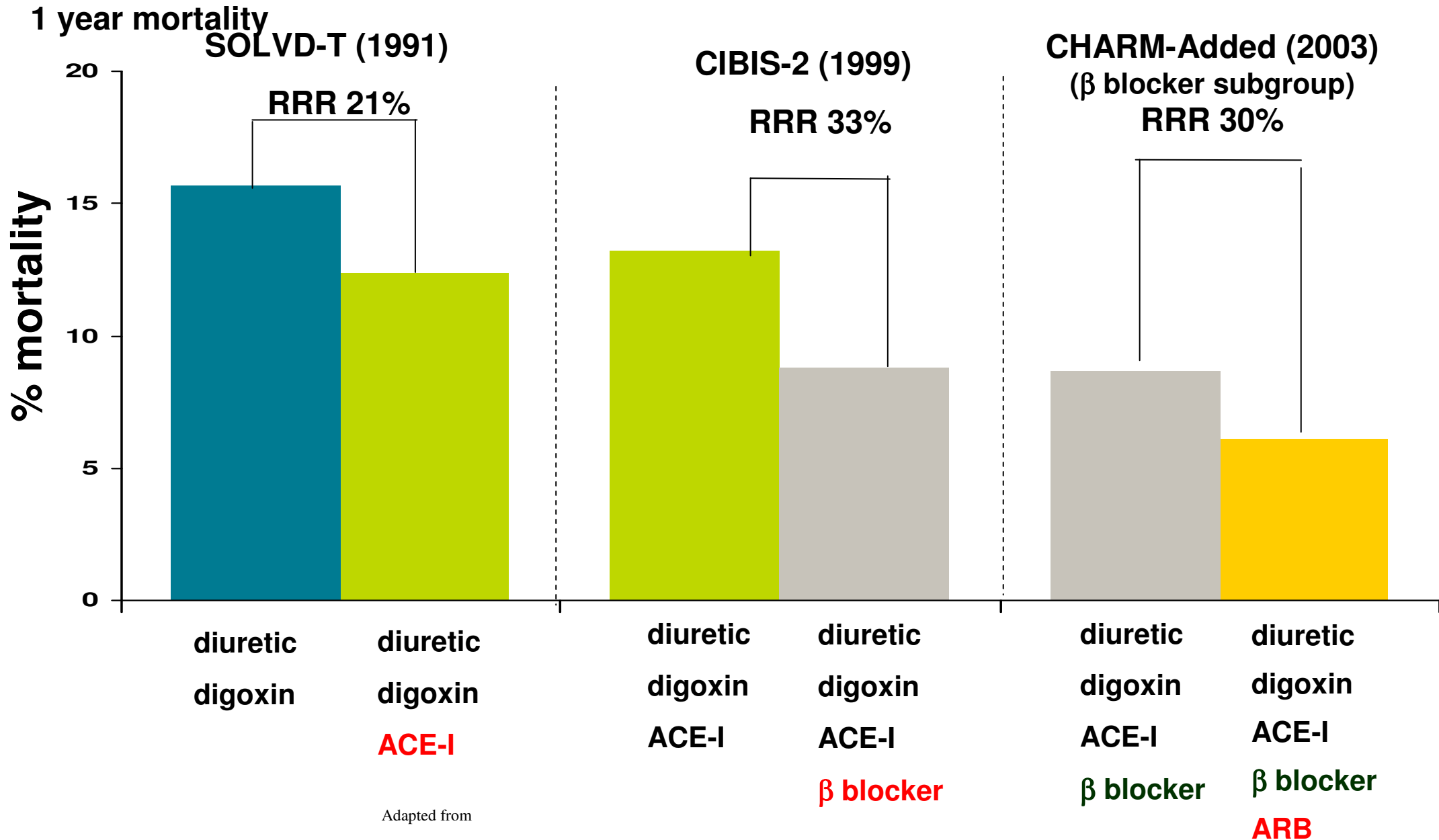
- Salt restriction
- Fluid restriction
- Reduced intake of alcohol
- Stop smoking
- Increased physical activity

# Medicinal treatment of heart failure

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- All treatment must be individualized
- But, mainly use substances that influence the body's compensation mechanisms:
  - *Beta-blockers (Change heart rate and rhythm)*
  - *ACE-inhibitors (Reduce blood pressure, reverse left ventricular hypertrophy)*
  - *Diuretics (Rid the body of water)*
- **Angiotensin Receptor Blockers (ARBs)**
- **Aldosterone antagonists**
- **Digitalis**
- **Aspirin**
- **Slow working nitrates**
- **Statins?**

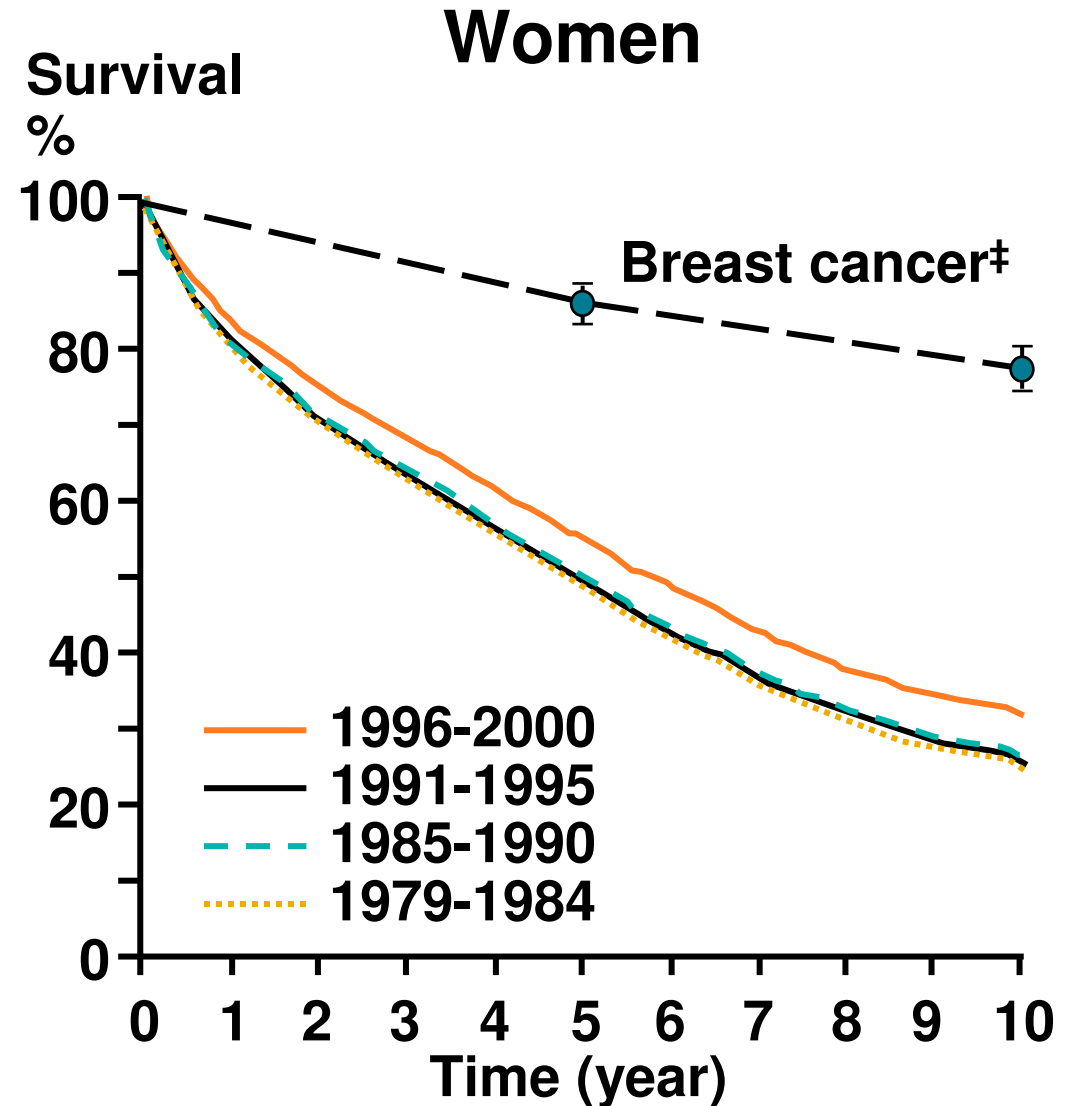
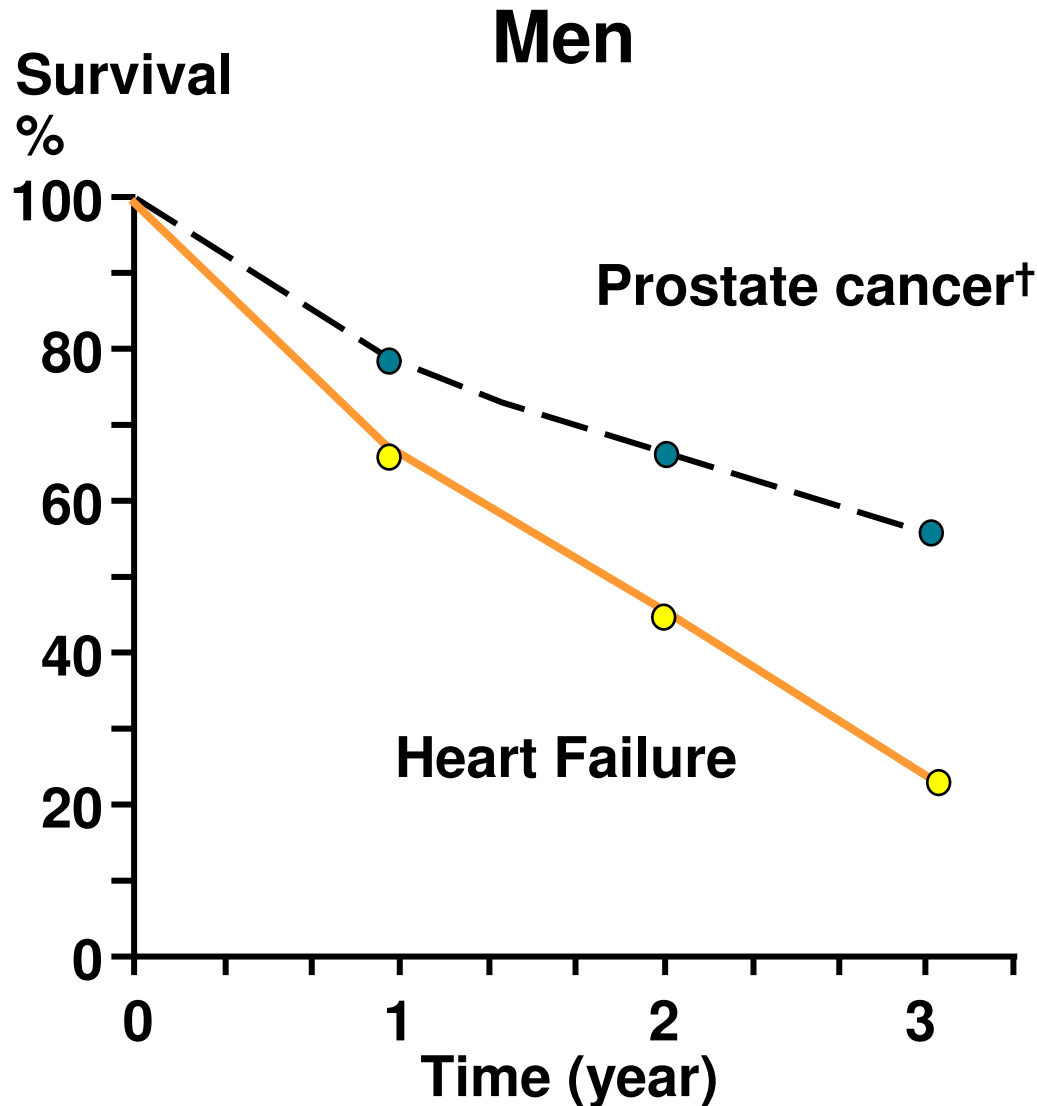
# Improving survival in chronic heart failure



# Prognosis of patients with heart failure

NYHA-class	ONE YEAR MORTALITY (with treatment)
I	ca. 5%
II	ca. 10–15%
III	ca. 20–30%
IV	ca. 35–50%

# Survival after heart failure and common types of cancer diagnosis in men and women



# Background to the GISSI-HF study (cont.)

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- **Heart failure represents a major public health problem with a significant impact on the healthcare system, being one of the most common hospital admitting diagnoses**
  - *Direct costs of heart failure:*
    - European National Health Services: nearly 1.5-2% of all expenditures.
    - US: \$25-40 billion annual health care expenditure.

# Agenda

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- Background to GISSI-HF study
- **Design, objectives**

# GISSI - Heart failure



Prospective, Multicenter, Double blind, Randomized, Placebo controlled



**Two co-primary endpoints:**

- All-cause death
- All-cause death or cardiovascular hospitalization

- **Treatment period:** Above 3 years
- **Expected presentation forum:** ESC 2008, Munich

# Summary

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- **Heart failure is a major public health issue that will grow during the next few decades**
- **Mortality is high despite patients being on what is considered standard treatment**
- **The use of Omacor/Lovaza in the GISSI-HF trial may represent a milestone in the treatment of heart failure**

**THANK YOU FOR YOUR ATTENTION!**