

***Element 09.00AP***

**Yoshikawa**

# Definition of Heart Failure

Heart failure occurs when an abnormality of cardiac function causes the heart to fail to pump blood at a rate required by the metabolizing tissues or when the heart can do so only with an elevated filling pressure

*- National Heart, Lung, and Blood Institute*

# Categories of Heart Failure (HF)

- **Systolic HF: Defect in expulsion of blood**

*Inadequate forward cardiac output*

- **Diastolic HF: Defect in ventricular filling**

*Pulmonary and/or systemic congestion with normal systolic function*

*Aging has greater impact on diastolic function than systolic function*

# Heart Failure is Common

- 4.8 million pts in US
- 400,000 pts diagnosed/year
- 261,000 pts die of HF
  - 42,000 directly from HF*
  - 219,000 related to HF*

# Death from Heart Failure



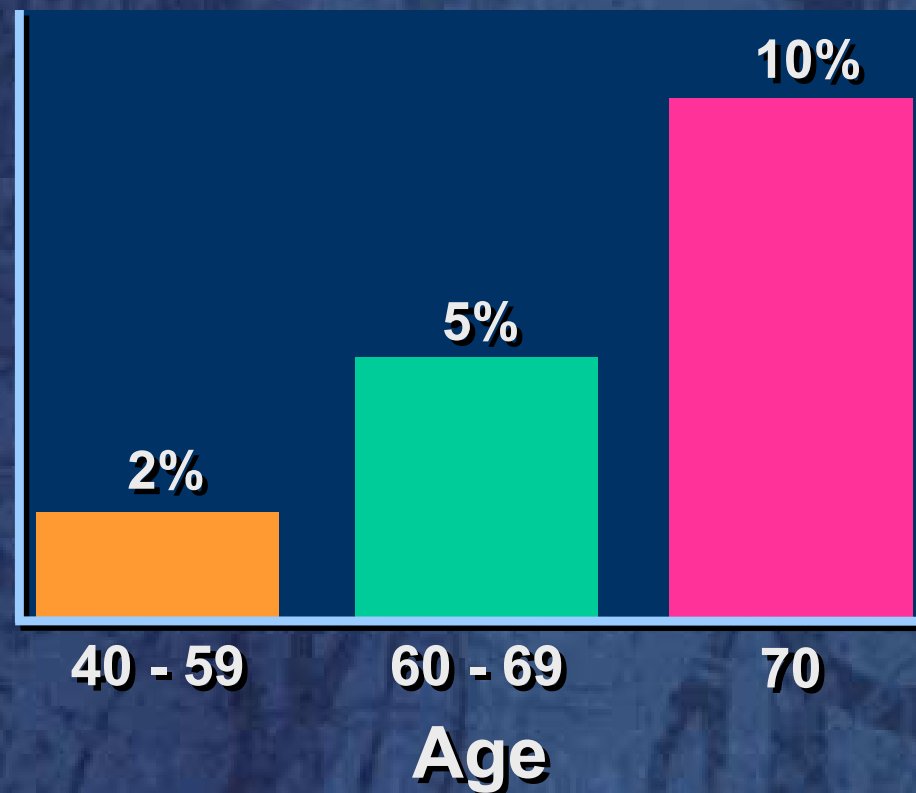
*Vital statistics of the USA. National Center for Health Statistics*

# Primarily a Disease of the Elderly

- Most common diagnosis in hospital pts  $\geq$  65 yrs
- Of these, 20% of pts have a primary or secondary diagnosis of HF
- 80% of pts hospitalized with HF  $\geq$  65 yrs

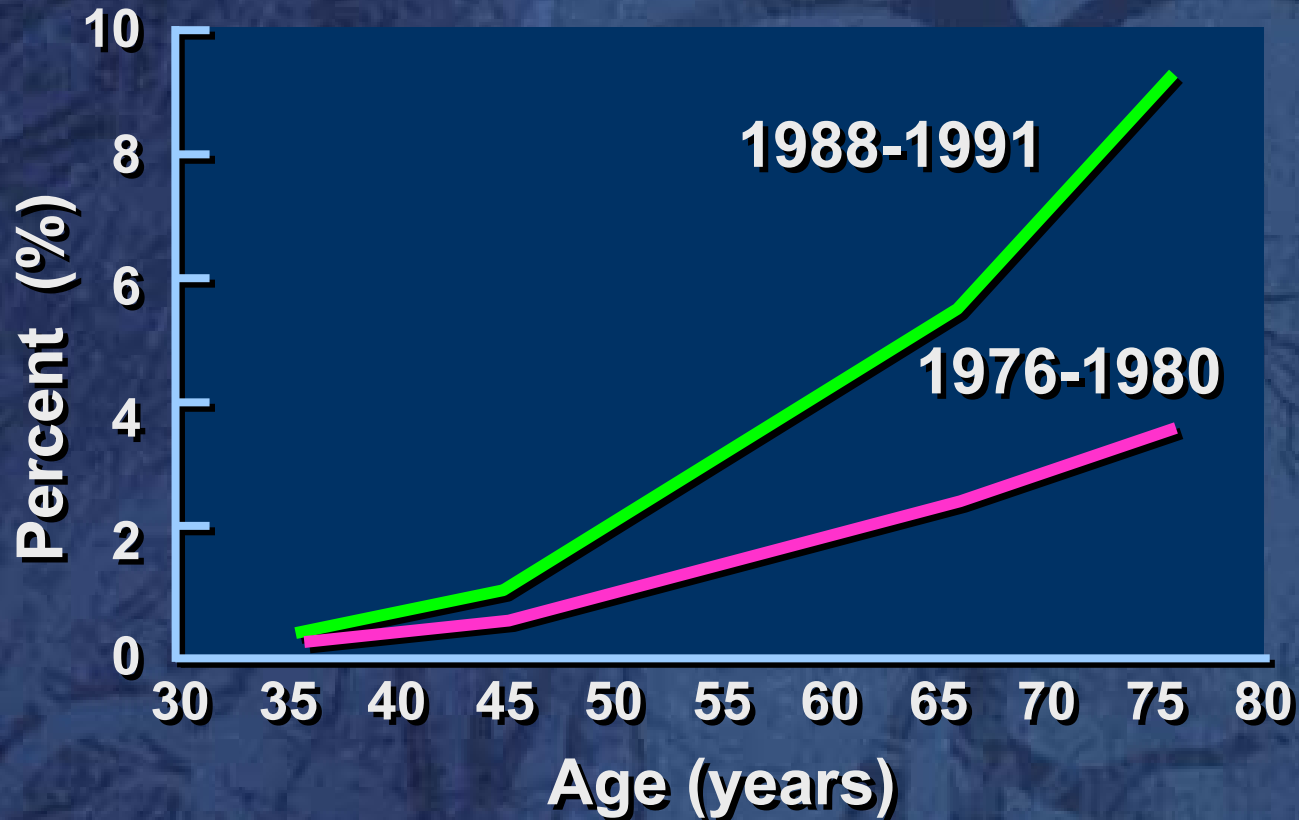
# Prevalence of Heart Failure

## 1988-91



*Nat'l Health/Nutrition Examination Survey. Nat'l Center for Health Statistics*

# Prevalence of Heart Failure



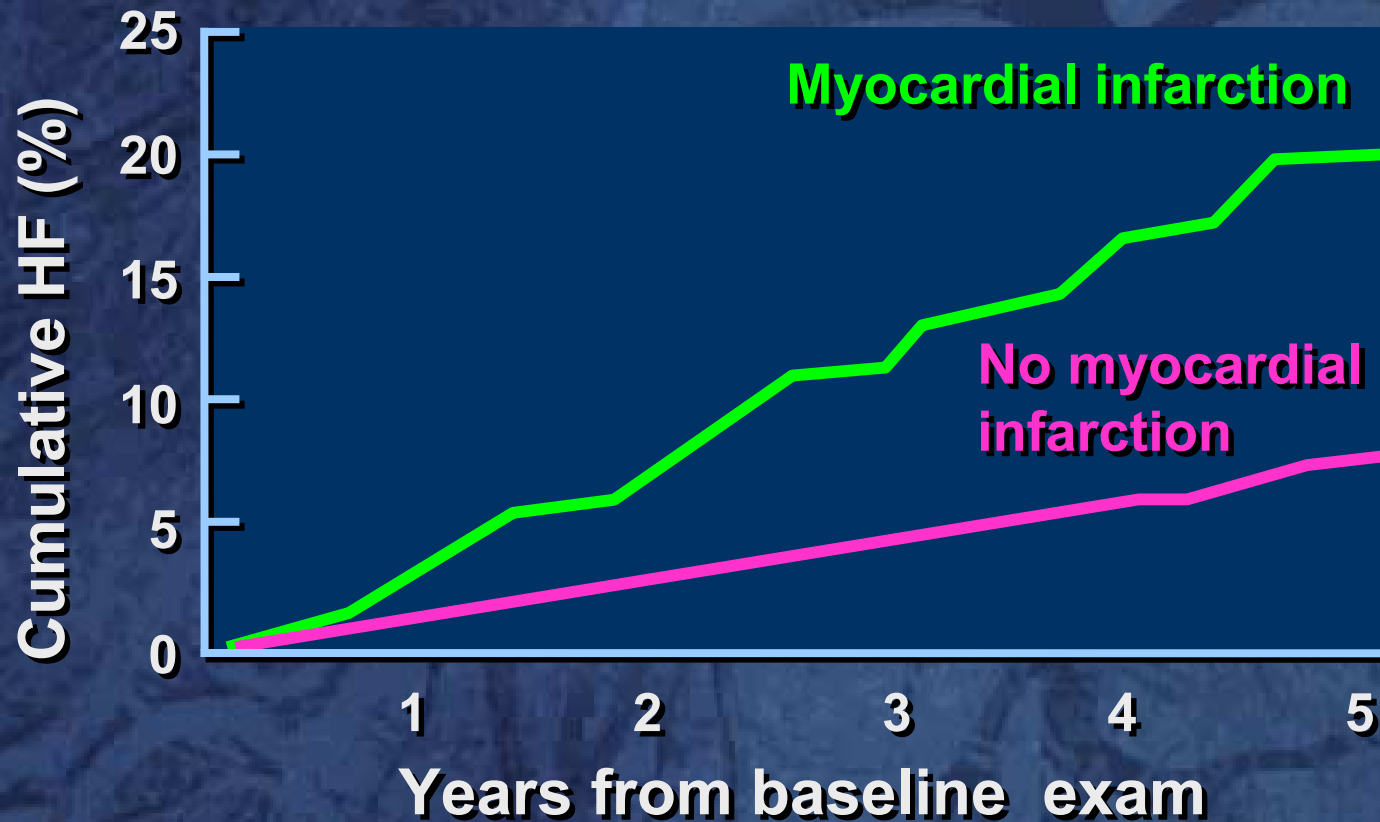
*Nat'l Health/Nutrition Examination Survey. Nat'l Center for Health Statistics*

# Causes of LV Dysfunction

## *Clinical trials*

	History of HT (%)	Ischemic (%)	Non-Ischemic (%)
<b>CONSENSUS</b>	<b>19</b>	<b>74</b>	<b>26</b>
<b>VHeFT I</b>	<b>40</b>	<b>44</b>	<b>56</b>
<b>VHeFT II</b>	<b>50</b>	<b>54</b>	<b>46</b>
<b>SOLVD-RX</b>	<b>42</b>	<b>72</b>	<b>28</b>
<b>SOLVD-P</b>	<b>37</b>	<b>83</b>	<b>17</b>

# Heart Failure and Infarction



*Cardiovascular Heart Study. NHLBI*

# Clinical Trial Mortality Rate

	Mortality Rate	Average Follow-up	NYHA Class
<b>ACE Inhibitor</b>			
CONSENSUS	26%	188 d	IV
SOLVD-Rx	35%	41 mo	II - III
SAVE	20%	42 mo	I
<b><math>\beta</math>-blocker</b>			
CBIS-II	11.8%	1.3 yrs	III - IV
US Carvedilol	3.2%	6.5 mo	II - IV
MERIT-HF	7.2%	1 yr	II - IV

# Drugs Recommended for Routine Use

*Pts with symptomatic LV dysfunction*

Value established in large clinical trials

- Diuretics
- ACE inhibitor
- $\beta$ -adrenergic blocker
- Digitalis

*ACC/AHA Practice Guidelines 2001*

# **Assessment**

## ***Pts with heart failure***

### **Identify structural abnormality**

- **First step is complete history taking and physical exam**
- **Single most useful diagnostic test is 2-D echo/Doppler**