

# What's heart fialure?

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What is  
Heart...

Introduction to Heart Failure

Mukherjee

What is Heart Failure?  
An Introduction

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Objectives

- Define pump function, contractility, preload, afterload
- Define heart failure
- Recognize terms associated with heart failure
- List symptoms and signs of heart failure
- Describe etiologies that lead to heart failure
- Recognize classifications of heart failure
- Recognize some treatment options for heart failure

1

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Outline

## Definition of Heart Failure (HF)

- Abnormality of cardiac structure or function leading to **failure of the heart to deliver oxygen at a rate commensurate with the requirements of the metabolizing tissues**, despite normal filling pressures (or only at the expense of increased filling pressures)

## Why Wouldn't the Heart Pump Enough Blood?

- Failure to pump ("eject") blood
  - Cells don't generate pressure (contractile deficit)
  - Loss of cells ("Dead meat don't beat")
  - Cell contraction not converted to ventricular contraction
  - There is too much backward load (afterload)
- Failure to fill
  - The ventricles cannot pump more than they fill
  - Pressure from outside of the ventricles
  - Ventricles relax too slowly (Does not "suck")
  - Ventricles too "stiff" and does not allow filling

5

## HF Defined by Ejection Fraction (EF)

### • TERMINOLOGY used to describe HF

- Related to ejection fraction (EF)\*:
  - HFrEF (reduced ejection fraction: EF<40%)
  - HFmrEF (mildly reduced ejection fraction: EF 40-49%)
  - HFpEF (preserved ejection fraction: EF ≥50%)\*
- Related to time-course: New onset, transient, chronic
- Related to progression: Acute, stable, worsening
- Related to location: Left heart, right heart, combined

\*CHF\*: congestive heart failure vs. chronic heart failure

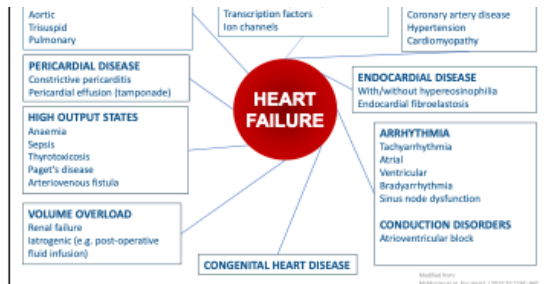
\*generally, set at an EF of 50%, but there is no consensus of using that 50% threshold. Other factors may also play a role

## Etiologies of HF

VALVULAR HEART DISEASE  
Mitral

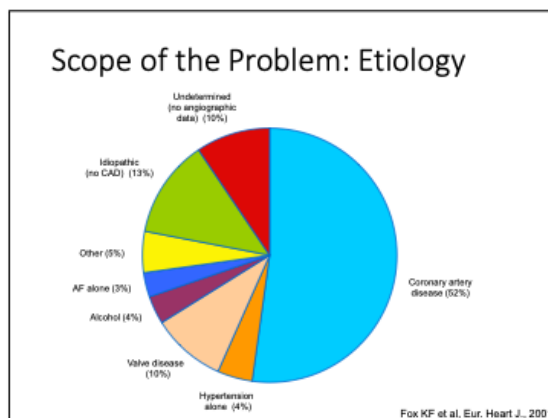
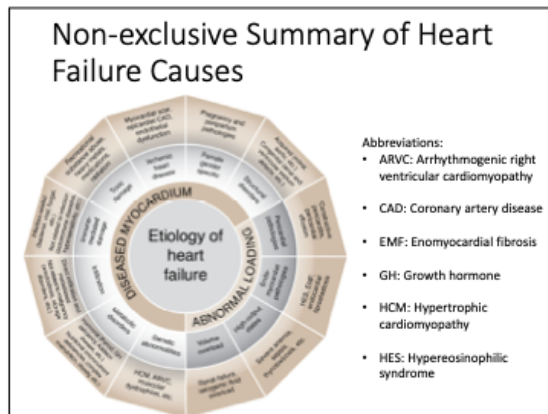
GENETIC/FAMILIAL  
Cytoskeletal components  
Sarcomeric components  
Nuclear envelope components

MYOCARDIAL DISEASE



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