Anatomy & Physiology of the Heart

Lifespan Cardiovascular Institute
Rhode Island Hospital • The Miriam Hospital
Newport Hospital

Delivering health with care®

The Center for Cardiac Fitness
Cardiac Rehab Program
The Miriam Hospital
OBJECTIVES

• Identify chambers and valves of the heart

• Explain circulation through heart and coronary anatomy

• Identify grafts used for CABG
Anatomy

• Chambers
• Valves
• Major blood vessels to and from heart
Circulation

Body --> Heart -->

Lungs --> Heart -->

Through Body --> Back to Heart
Coronary Artery Anatomy

- Left Main
- LAD
- RCA
- Circumflex
Conduction System

- SA Node
- AV Node
- Bundle Branches
- Purkinje Fibers
Bypass Surgery (CABG)

- Blockages
- Grafts
Types of Grafts

- Saphenous Veins (legs)
- Internal Mammary Arteries (chest)
- Radial Arteries (arms)
Valve Surgery

- Mitral Valve
- Tricuspid Valve
- Pulmonary Valve
- Aortic Valve
Types of Valve Problems

- **Stenosis**: valve does not open completely
- **Regurgitation**: valve does not close tightly
Valve Surgery

REPAIR
- Balloon Valvuloplasty
  - Balloon/catheter used to open narrowed valve
- Annulplasty
  - More challenging surgery
  - Ring is used to repair valve

REPLACEMENT
- Mechanical
  - Lifetime of anticoagulant medication
- Biological Tissue
  - Pig, cow, or human
  - No anticoagulant medication