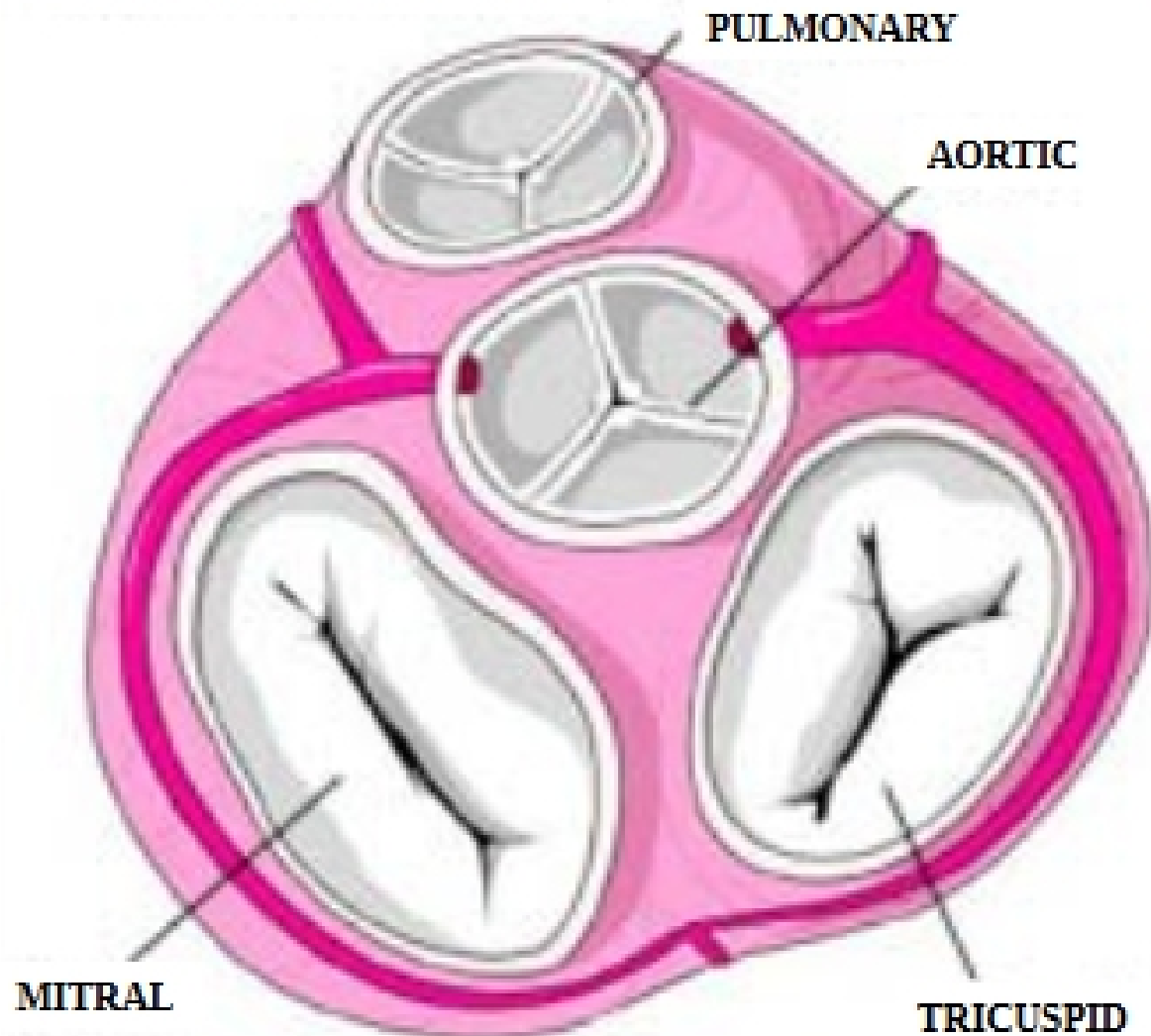


Artificial Heart valves

- Used for tens of thousands of patients
- Both mechanical and biological valves implanted
- Mitral valve replacement most prevalent
- Aortic valve replacement second most prevalent

Heart valve orientation

NORMAL HEART VALVES:



- Mitral valve between left ventricle and left atrium
- Aortic valve between left ventricle and aorta

Artificial heart valve issues

Artificial Heart Valves

- Low hemolysis (RBC destruction)
- low clotting
- long life (20 - 30 years)
- patient must receive anticoagulants indefinitely
- pyrolytic carbon and Si rubber resist clot formation, become covered with protein over time
- other materials: titanium, stellite 21 alloy, dacron polyester cloth for of valve body to heart tissue
- porcine valves can also be used, must be treated with glutaraldehyde to resist antigenicity (bioprosthetic valve)

- Biocompatible
- Durable
- Allow free flow of blood during open position
- No leakage in closed position

