

# OTU Echocardiography - Chapter 13

## Prosthetic valves

### three types of prosthetic valves

① tissue or bioprosthesis

② homograft valves → preserved tissue — autopsy  
— cryopreserved

③ mechanical valves

bioprosthesis — porcine, bovine, or equine

variable support structure  
anchoring treatments

eg. Carpentier - Edwards porcine valves  
Hancock porcine valves  
Jonescu bovine pericardial valve

old method → CPB

newer method → transapical surgical approach  
or transcatheter approach

homograft → cryopreserved human aortic valves or  
pulmonic valves harvested @ autopsy

Mechanical

→ bileaflet: 2 semicircular discs

→ tilting-disk valve: single, circular disc

## FAILURE

Primary structural failure - usually of slow progressive tissue degeneration

→ fibrocalcific leaflet changes

\* usually failure of tissue valve is ~ 10 yrs

↳ failure of mechanical valve is usually of wear & tear

or, could be thrombus formation or pannus ingrowth

↳ paravalvular leak raises possibility of endocarditis

## Thromboembolic Complications

mechanical is particularly prone to thrombus

## Endocarditis

could have ① vegetation or ② i mechanical valve more likely to have paravalvular leak