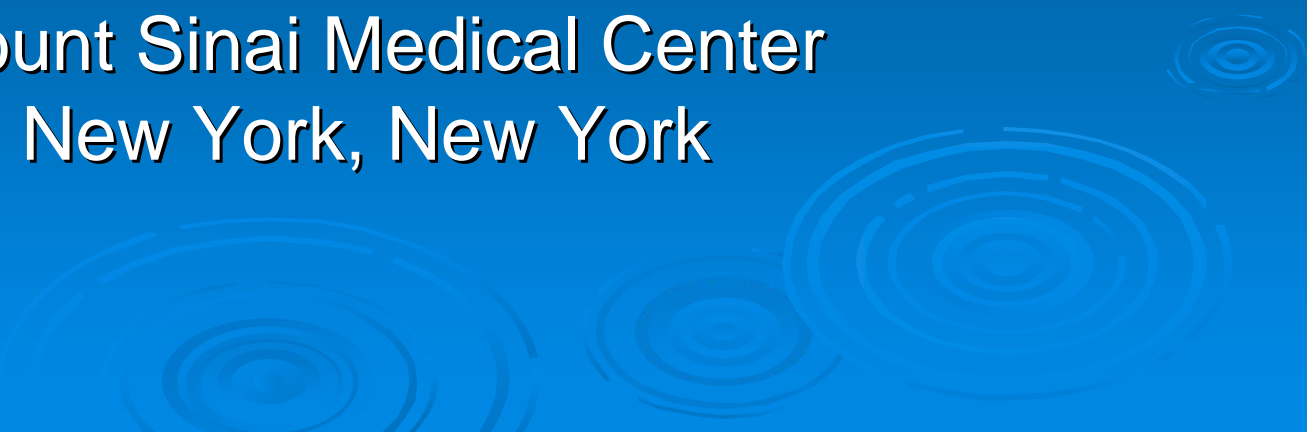


# 40 Year Old with AR Ross or Repair

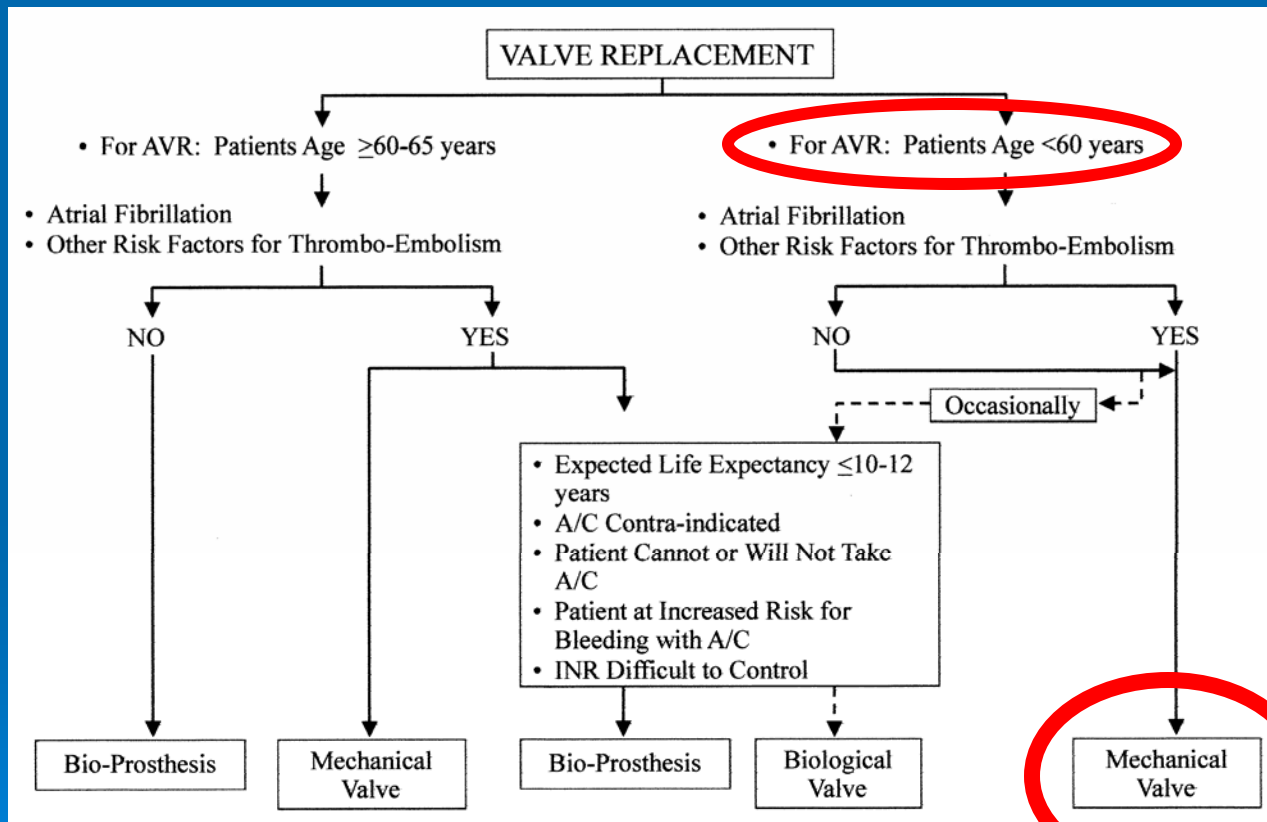
Paul Stelzer, MD  
Department of Cardiothoracic Surgery  
Mount Sinai Medical Center  
New York, New York

The background of the slide is a solid blue color. In the lower right quadrant, there are several decorative elements consisting of concentric circles, resembling ripples in water. These circles are rendered in a lighter shade of blue and are arranged in a pattern that suggests movement or depth.

# Timing of Surgery

- Guidelines Very Useful
- Symptoms – Exertional Dyspnea
- Left Ventricular Dysfunction
  - Resting EF < 50%
  - Drop in EF with Exercise
- Left Ventricular Dilatation
  - LVEDD > 7.0 cm
  - LVEDS > 5.0 cm (?4.5)
- Aortic Dimension > 5.5 cm (?5.0)

# Aortic Valve Replacement: Choice of Prosthetic Heart Valve



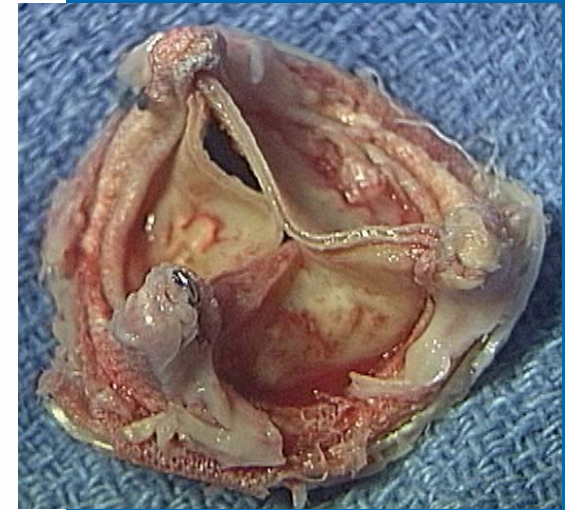
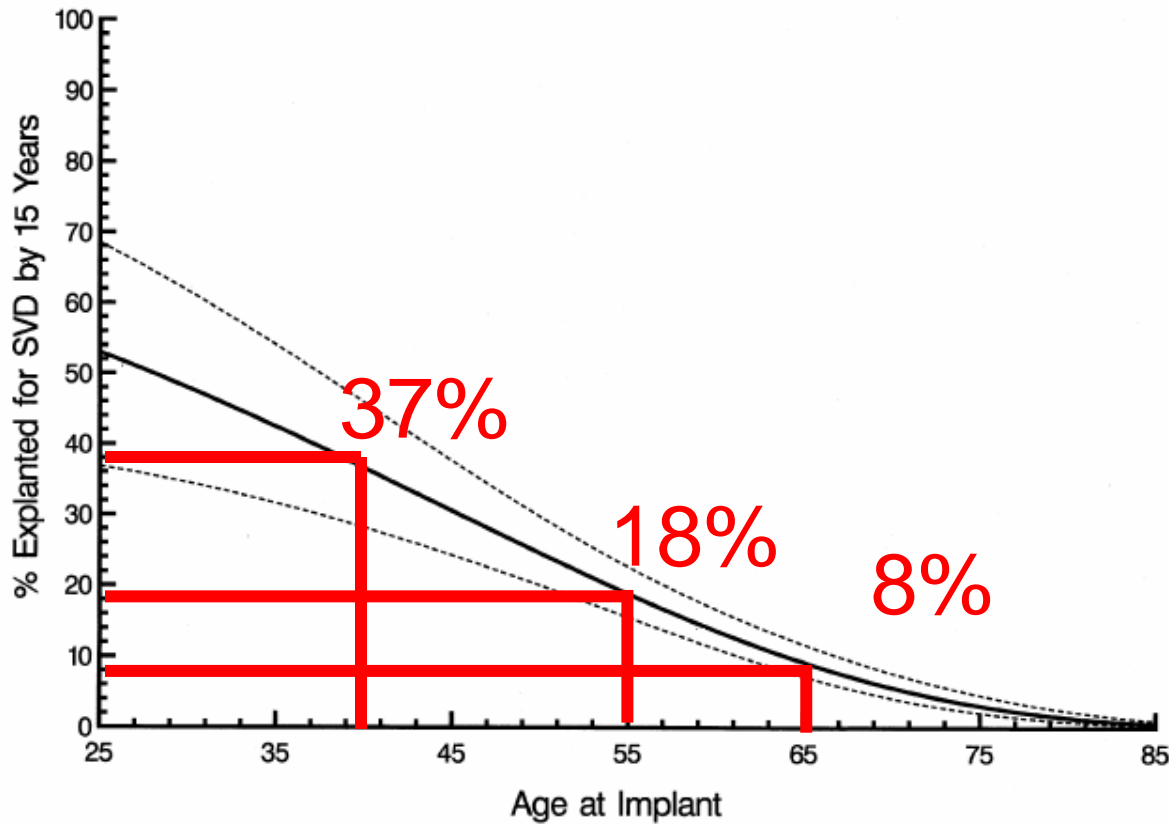
# Follow the Guidelines?



- Just Put in a Mechanical Valve!?
- Thankfully, NO!

# Pericardial Valve Durability (AVR)

## *Impact of Age at Implant*



B

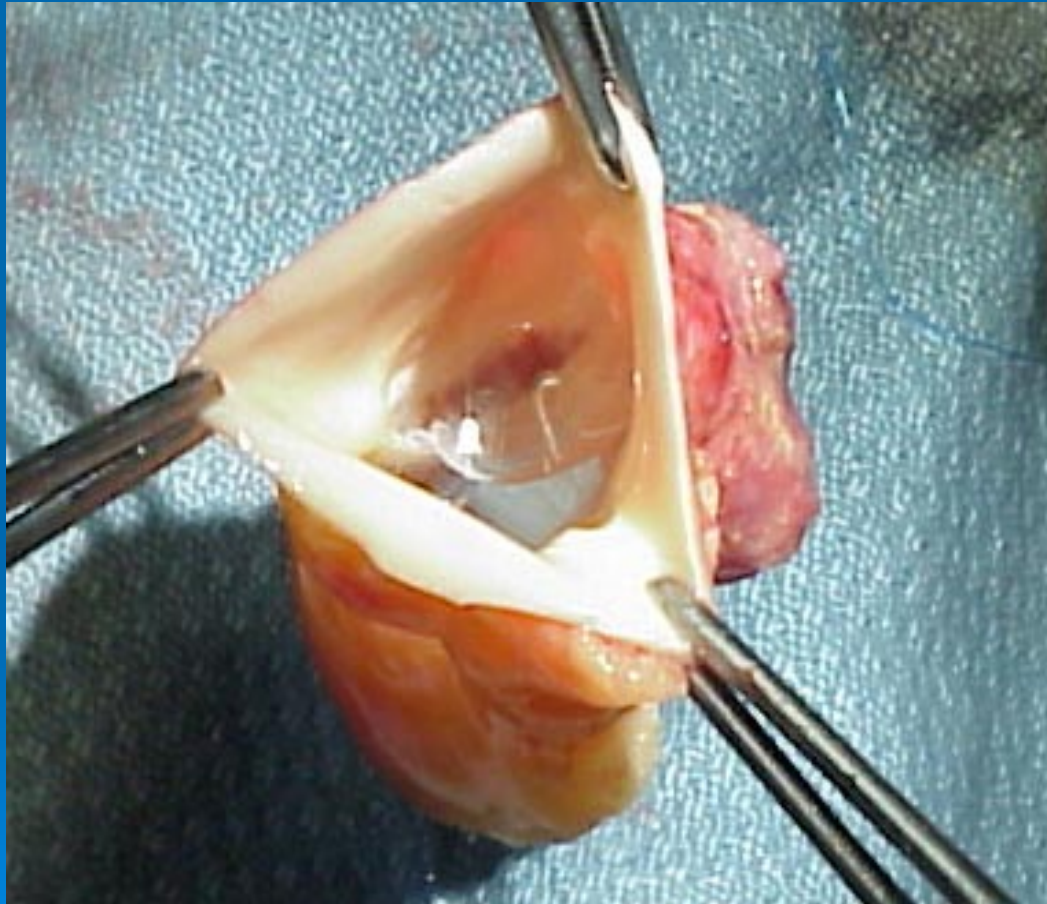
Risk of Explant at 15 years

Banbury, et al. Ann Thorac Surg 2001;72:753

# Ross Procedure - Concept

- Transfer Fully Living Autologous Pulmonary Valve to the Aortic Position
- Reconstruct RV Outflow Tract with Potentially Problematic Homograft
- (Consequences of Dysfunction far less)

# Pulmonary Autograft



# Valve-Sparing Concept

- Preserve Native Aortic Valve Leaflets
  - Correct Prolapse
  - Restore Normal Coaptation
- Reconstruct Aortic Root Around Valve
  - Support Annulus and Sino-tubular Junction
- Replace as Much Aorta as Needed

# Completed David Operation



# Advantages of Both Ross & Repair

- No Anticoagulation
- Quiet
- Normal Hemodynamics
- Normal Coronary Flow Reserve
- Living Aortic Valve
- Normal Active Lifestyle
  
- QUALITY OF LIFE

# Conditions Favoring Ross

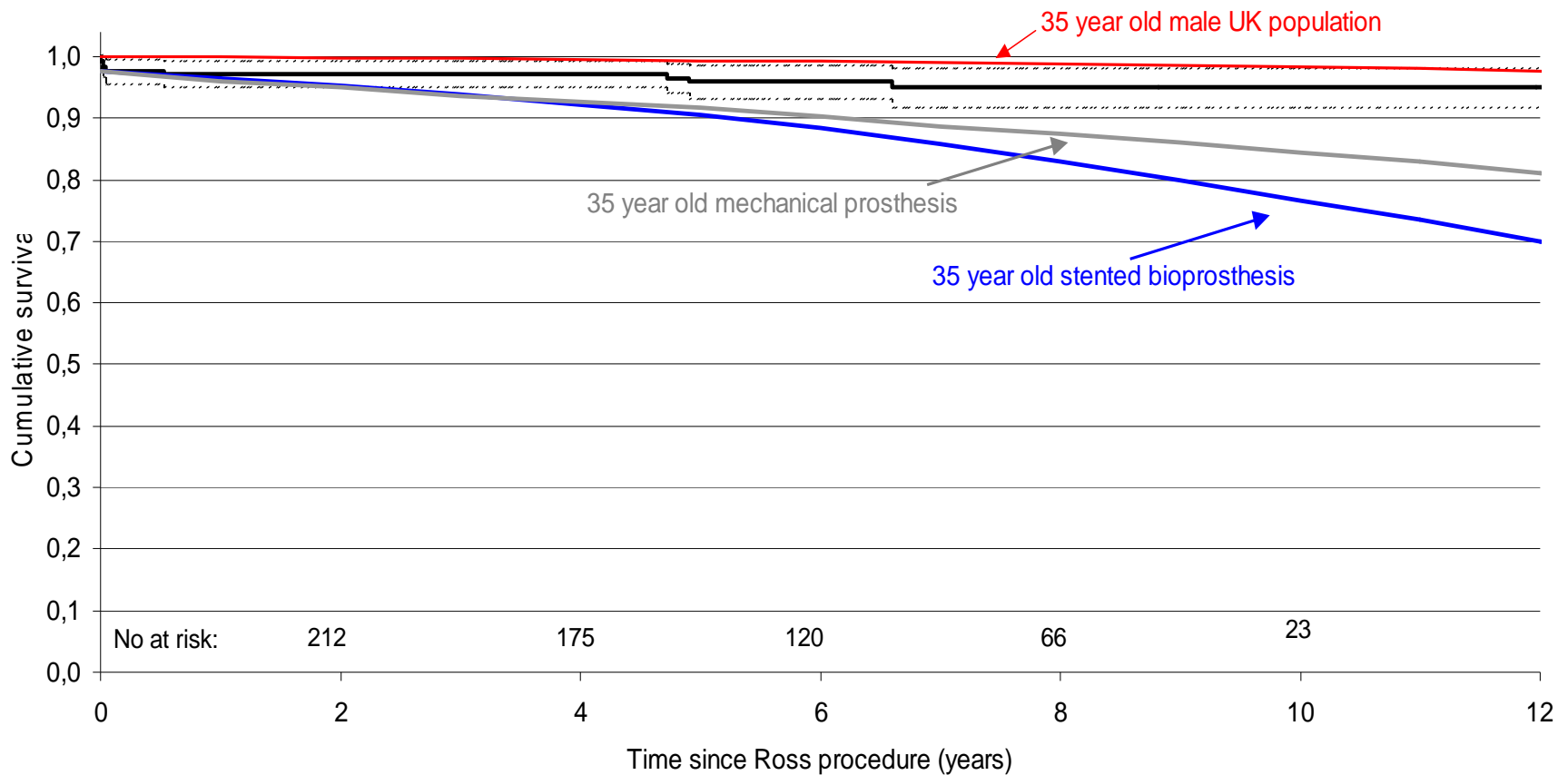
- Primary Valve Problem
- Combined Stenosis/Regurgitation
- Previous Valvotomy
  - Balloon
  - Open
- Calcification of Leaflets
- Complex Leaflet Repair Required

# Conditions Favoring Repair

- Primary Root Problem
- Ascending Aortic Aneurysm
- Good Leaflets
- Milder Degree of AR
- Abnormal Pulmonary Valve
  - Rare Bicuspid PV

# Survival Advantage of Ross Operation in Adults – Yacoub et al

Survival after Ross procedure in adult patients (18 years and older; N=267)



# Durability is the Goal

- Both are Lengthy Operations
  - Clamp Times over 2 hours
- Both are Complex Root Procedures
  - Coronary Ostial Issues
  - Hemostatic Issues
  - Myocardial Protection Issues
  - Homograft Issue with Ross
- Either can Follow the Other
  - NOT at the Same Sitting

# Plea for Reference Surgery

- Risks and Results Surgeon-Dependent
- Experienced Root Surgeon Required
- Precise Pre-Operative Imaging Needed
- Almost Always Elective Operations
- Patients Seek out these Options

# Long Term Follow Up

- Blood Pressure Control
  - ACEI, ARB, Beta Blockers ???
- Annual Echocardiogram
  - Assess LV and Valve Function
- CT or MRI
  - Better for Aorta, PA post Ross
  - Every 5 years if  $< 4.5$  cm