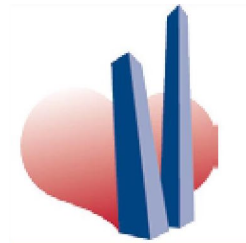


STENOSI VALVOLARE AORTICA

IL CARDIOCHIRURGO

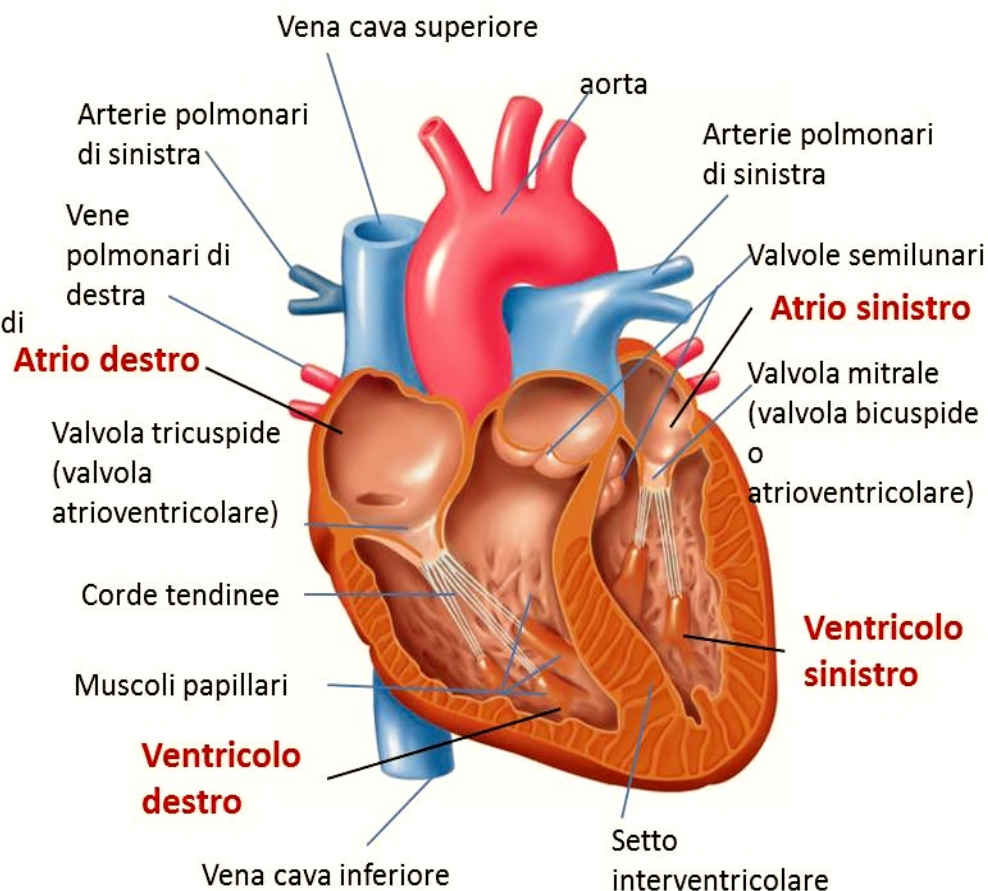
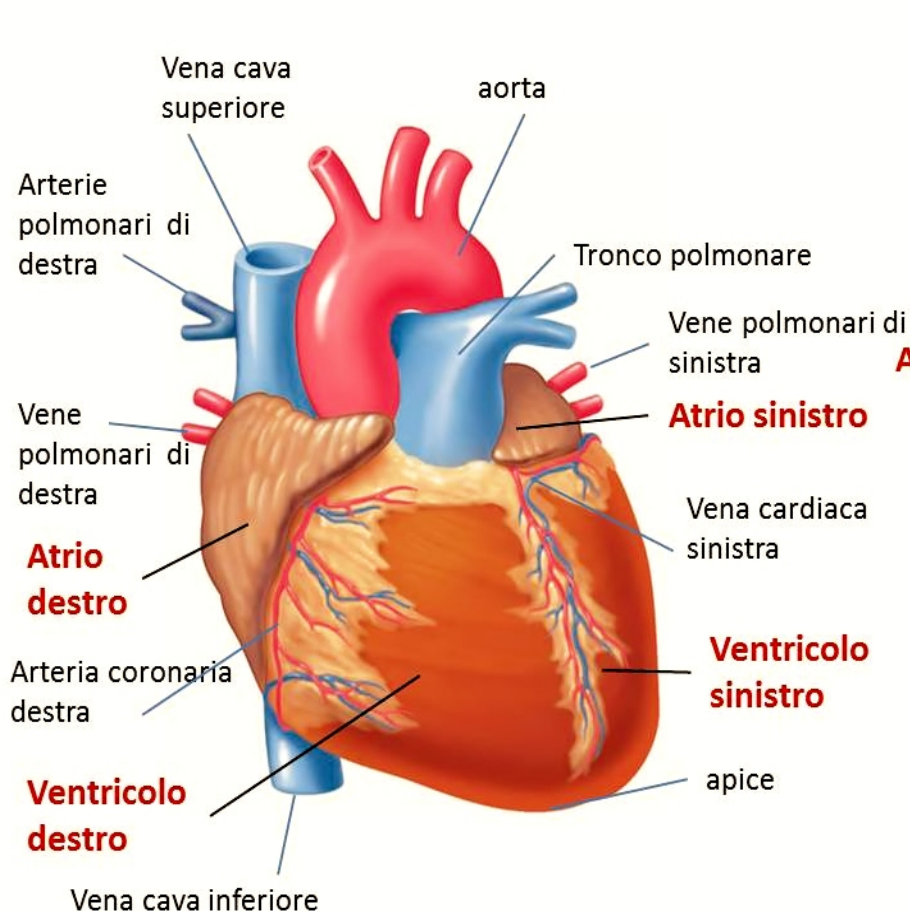


PROF. ROBERTO DI BARTOLOMEO

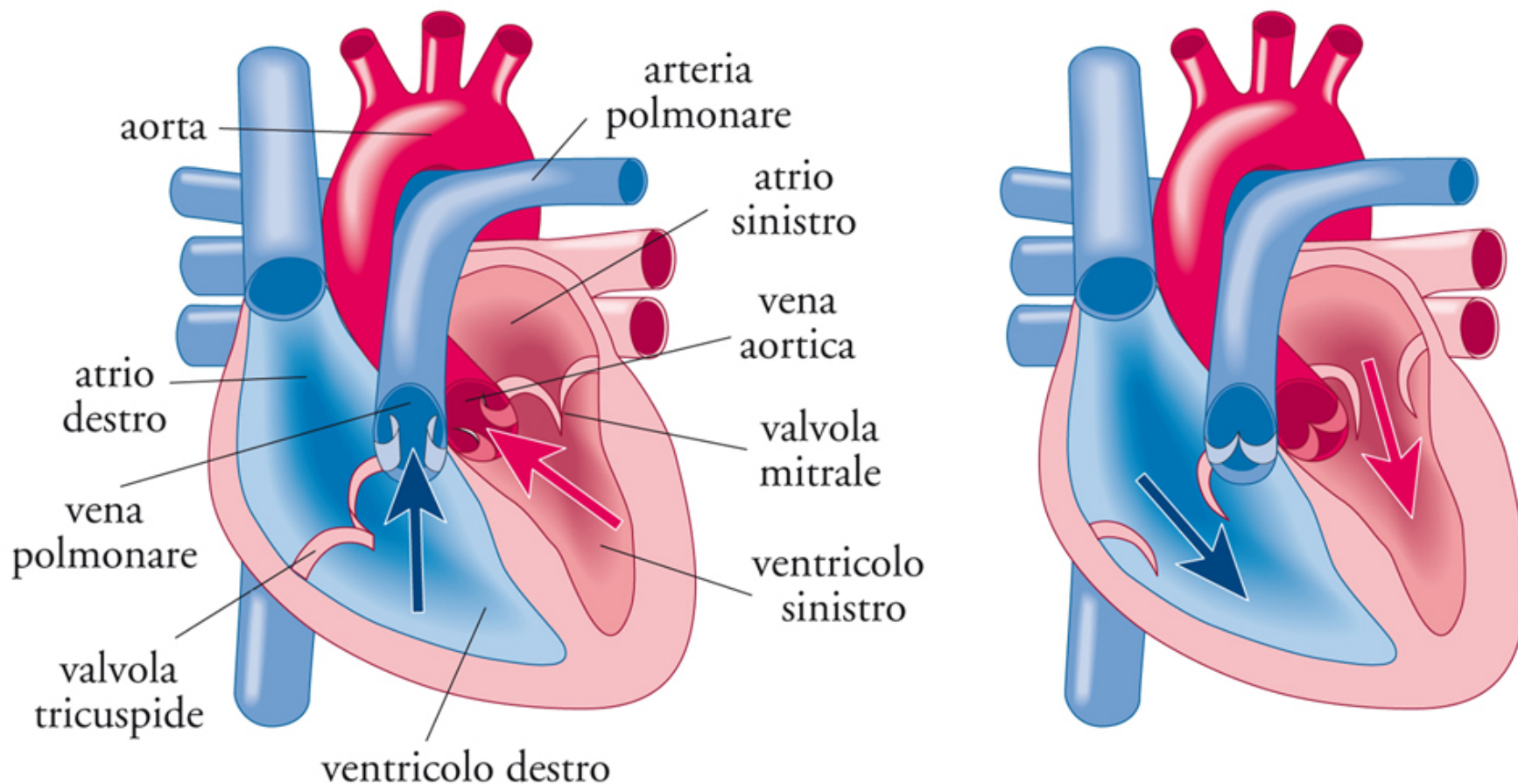
UNIVERSITY OF BOLOGNA



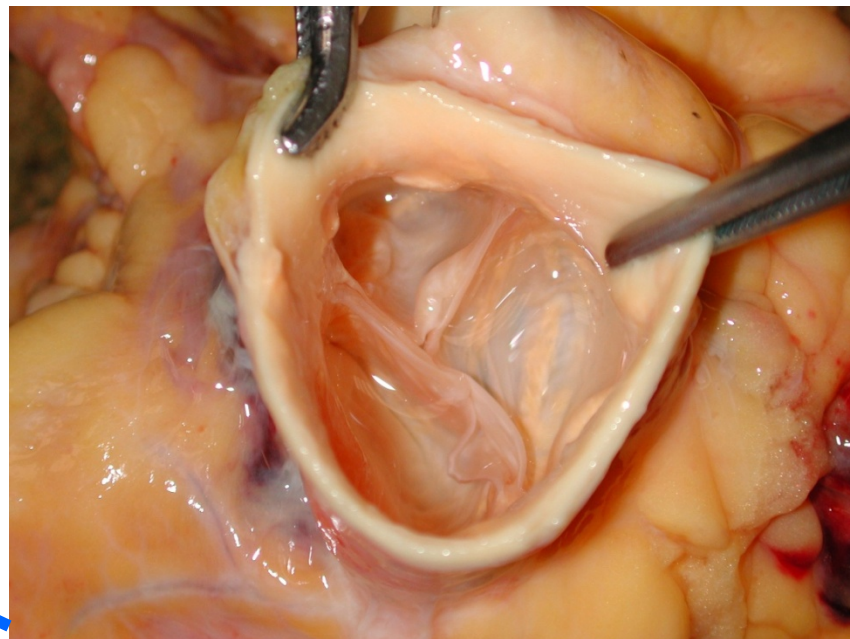
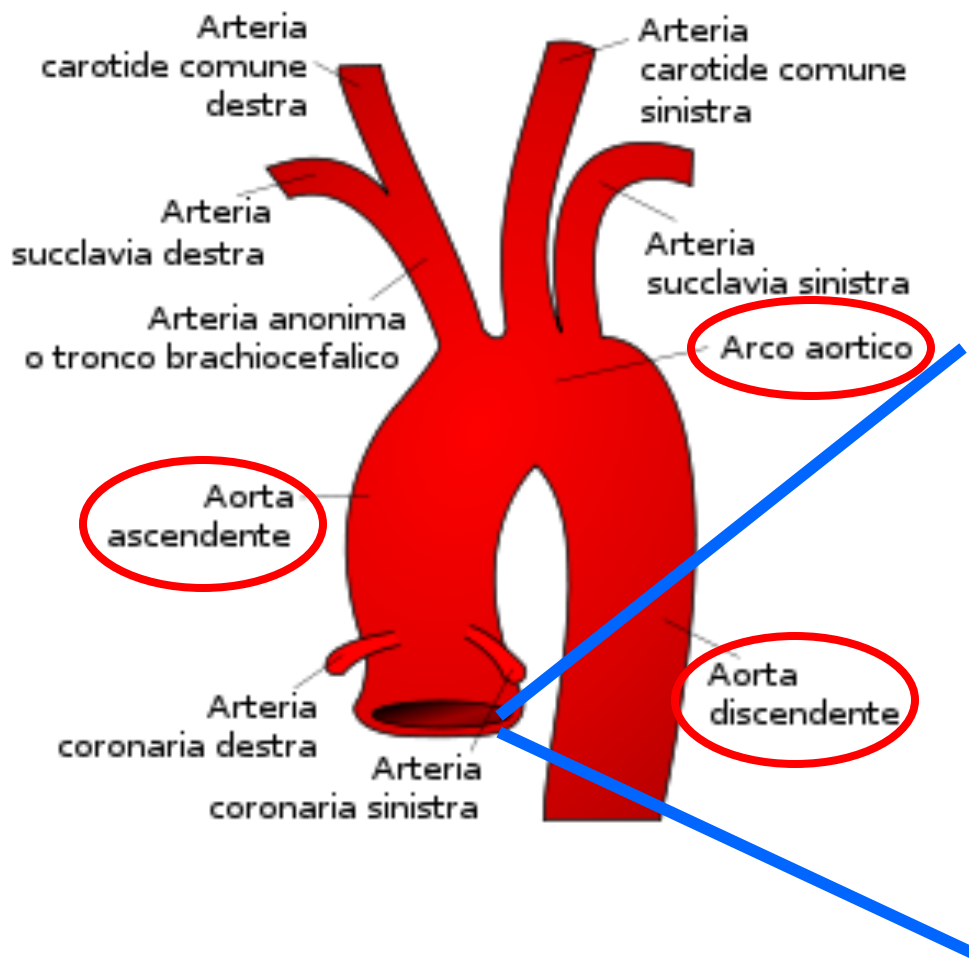
Anatomia del cuore



Anatomia del cuore

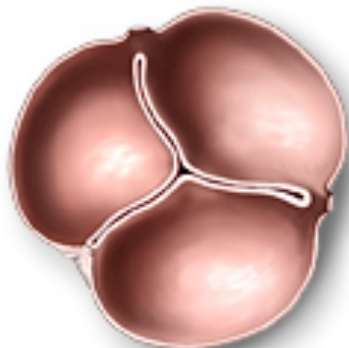


Anatomia dell'Aorta toracica

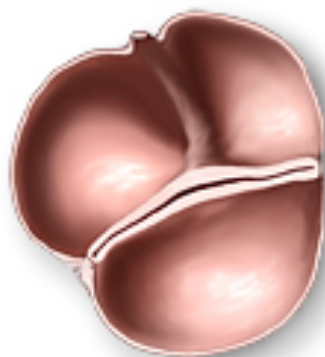


La valvola aortica

Tricuspide



Bicuspide



Tri-Leaflet (Normal)
Aortic Valve



Open



Closed

Bicuspid
Aortic Valve

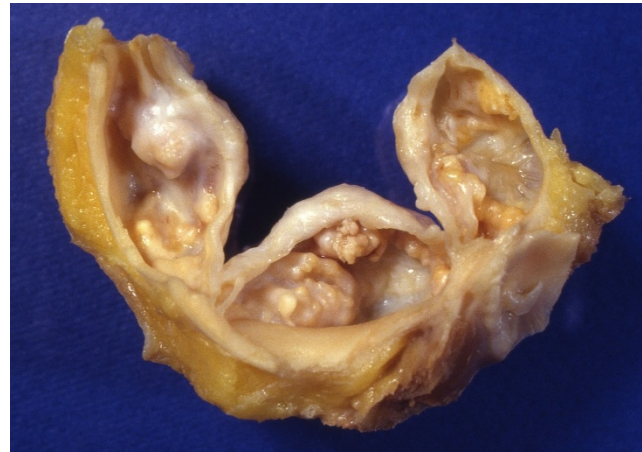
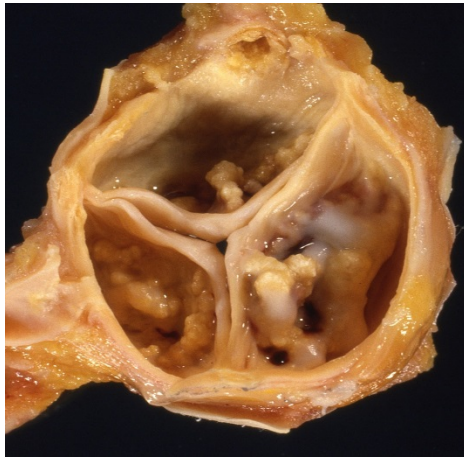


COMPOSTA DA:

- **Cuspidi valvolari (semilunari)**
- **Seni di Valsalva**
- **Commissure**
- **Trigoni fibrosi**
- **Osti delle arterie coronarie**
- **Noduli di Aranzio**
- **Anello protesico**



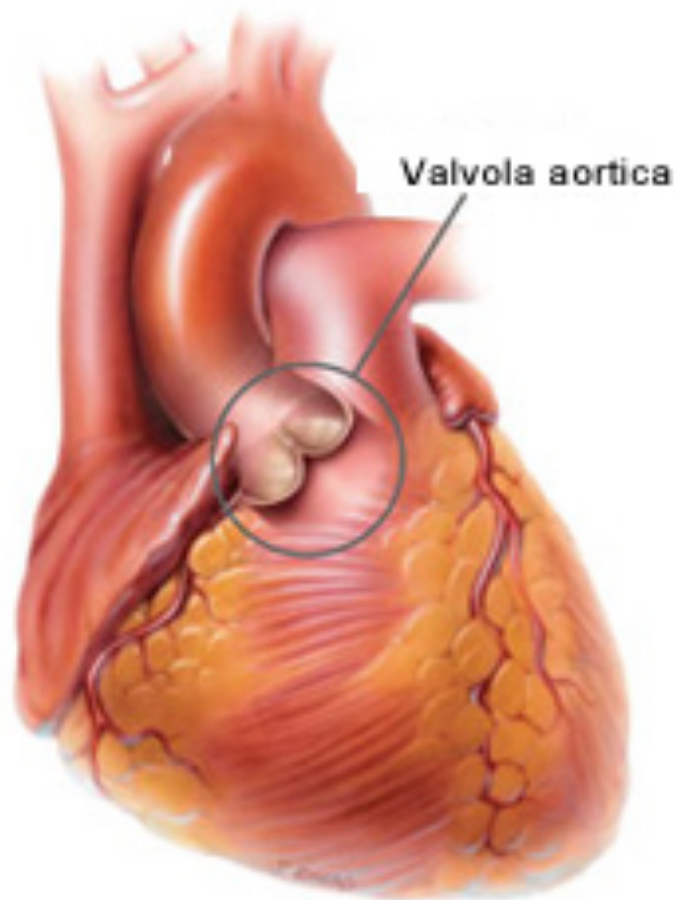
Stenosi valvolare aortica



**Valvulopatia tipica
dell' anziano....**



Stenosi valvolare aortica



VALVOLA AORTICA NORMALE

aperta



chiusa



VALVOLA AORTICA STENOTICA

aperta



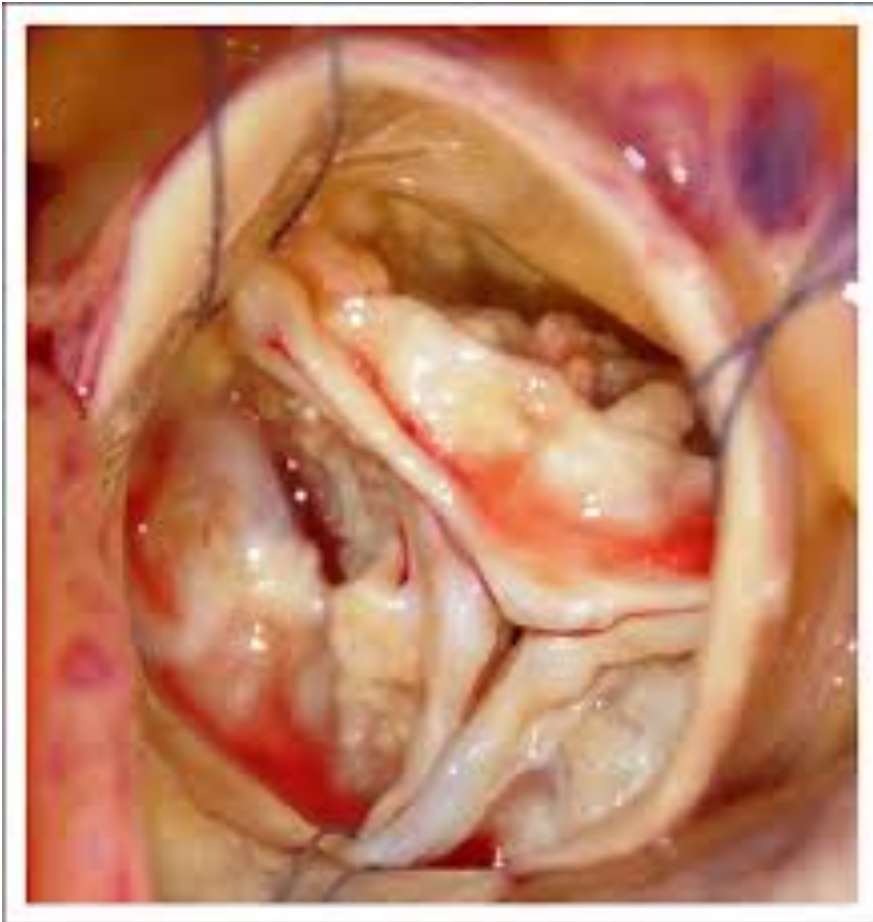
chiusa



calcificazioni

Stenosi valvolare aortica

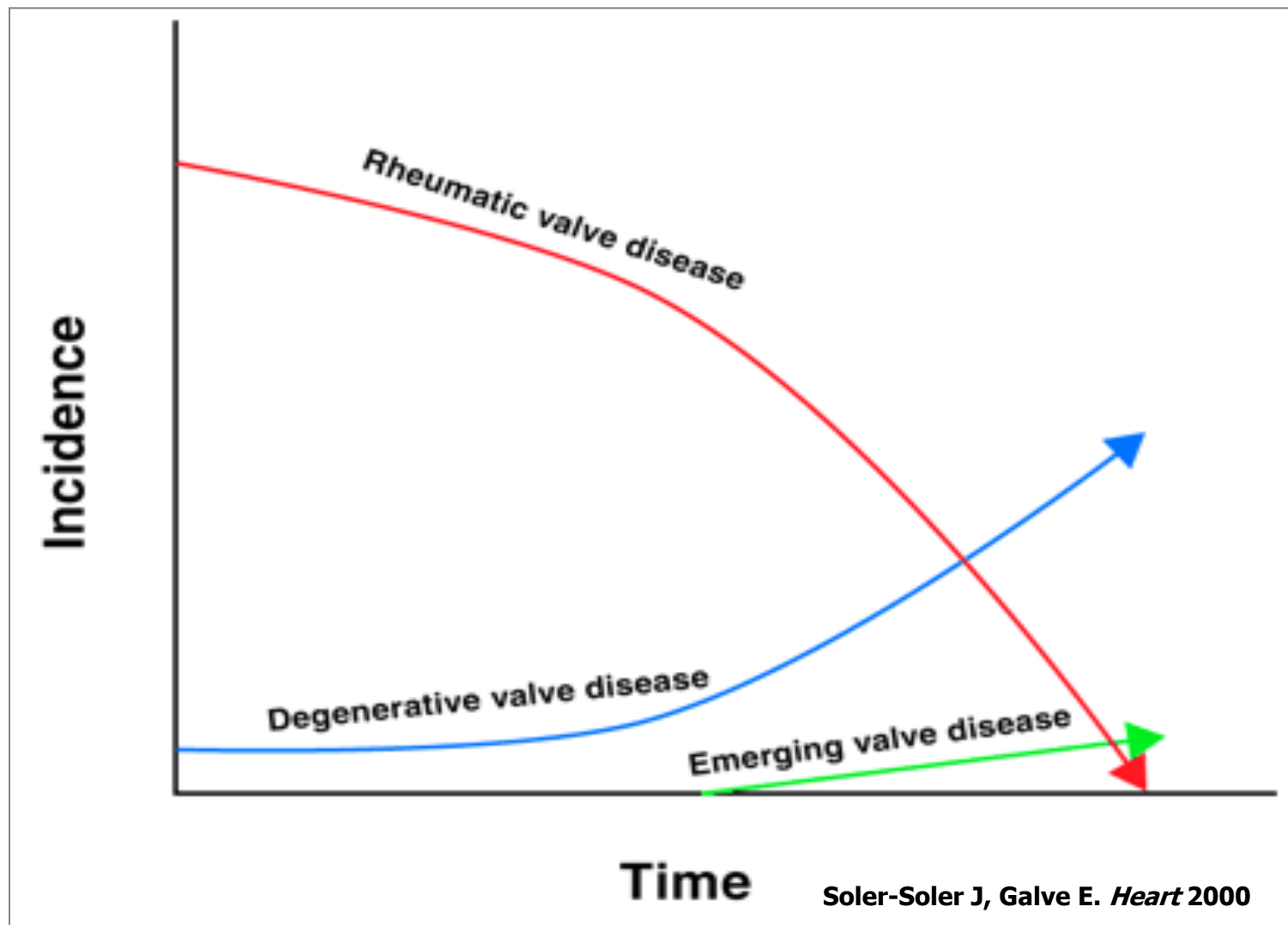
Valvola aortica tricuspidale



Valvola aortica bicuspidale



Eziologia



ESC/EACTS Linee guida 2017

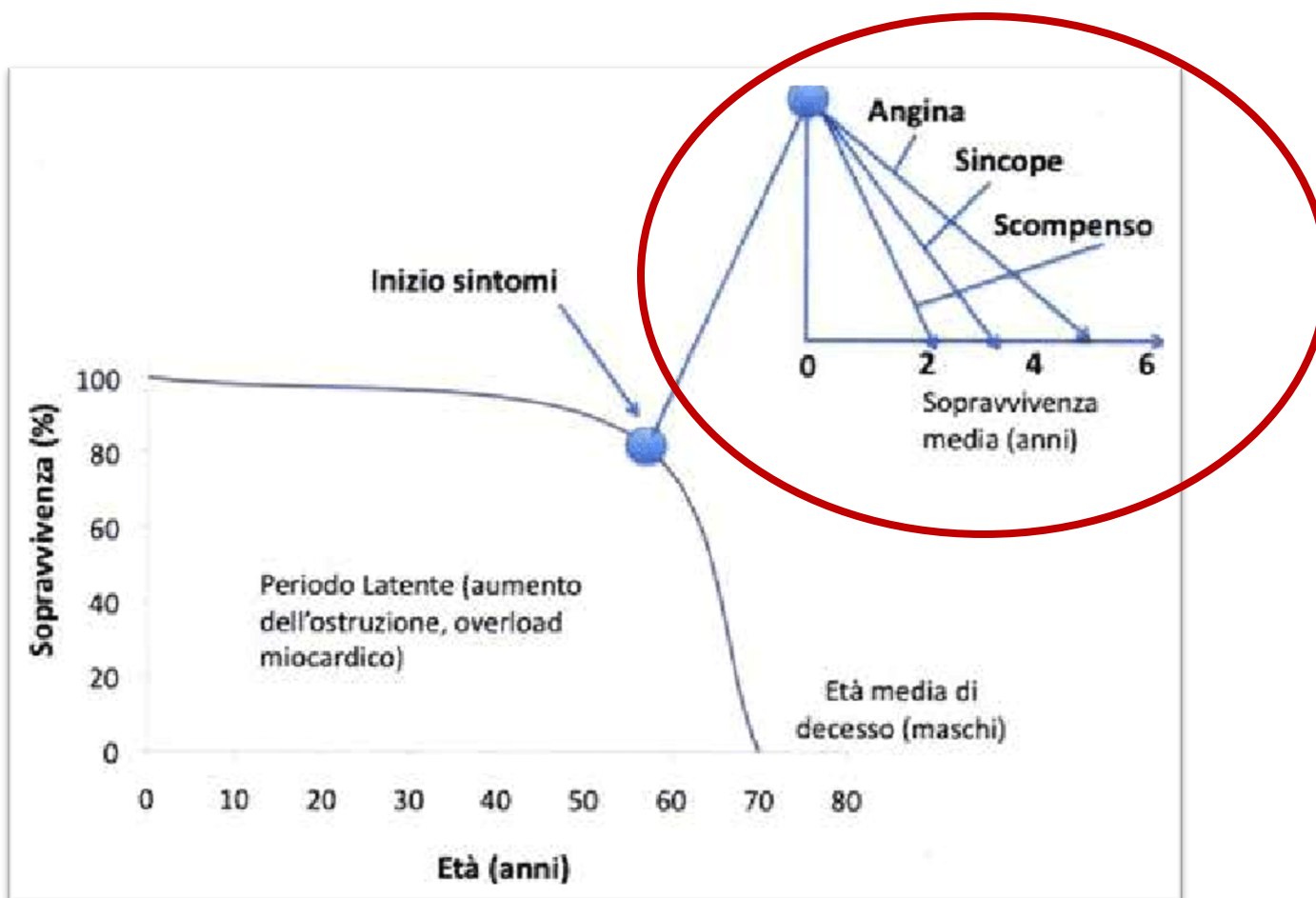
Indicazioni a sostituzione valvolare aortica



EACTS
European Association For Cardio-Thoracic Surgery

Valve area (cm ²)	<1.0
Indexed valve area (cm ² /m ² BSA)	<0.6
Mean gradient (mmHg)	>40
Maximum jet velocity (m/s)	>4.0
Velocity ratio	<0.25

Storia naturale e sintomi

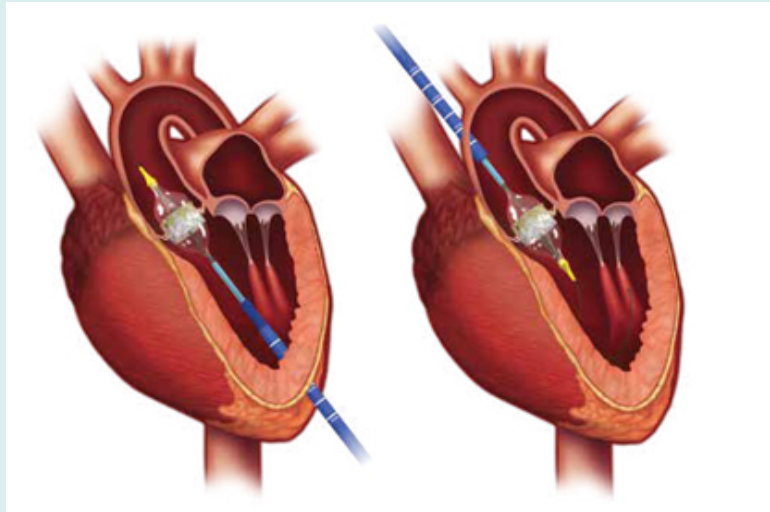


Sostituzione valvolare aortica

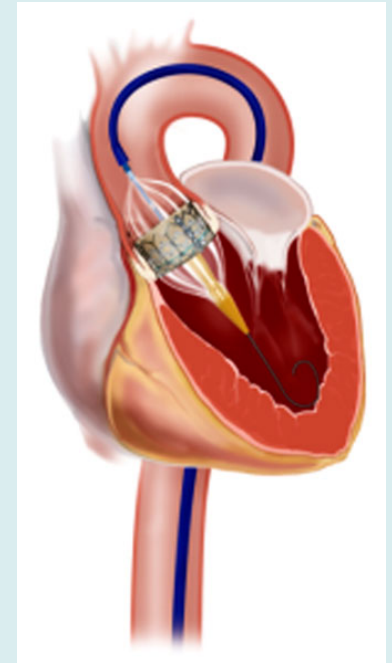
Chirurgia convenzionale



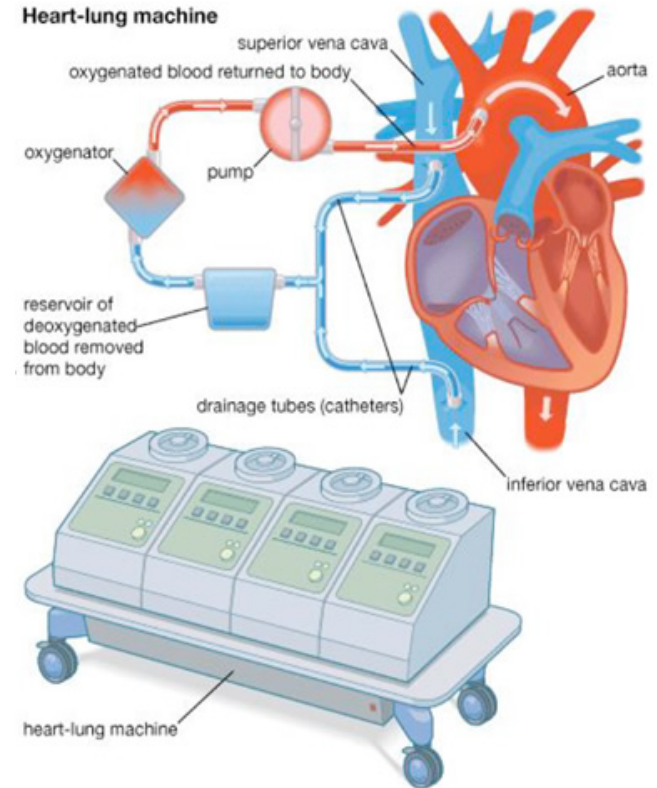
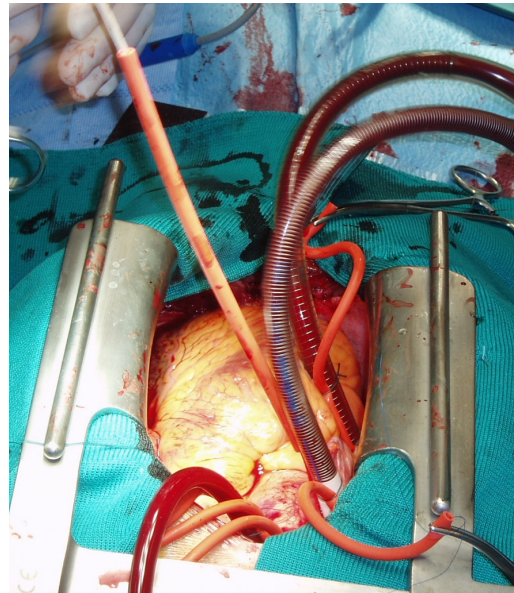
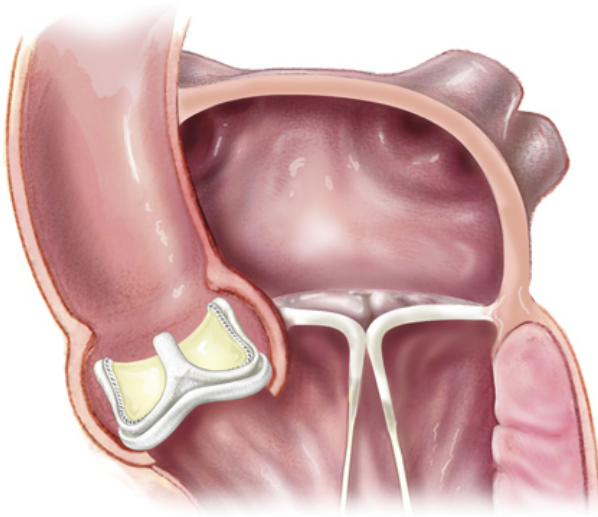
TAVI con accesso chirurgico



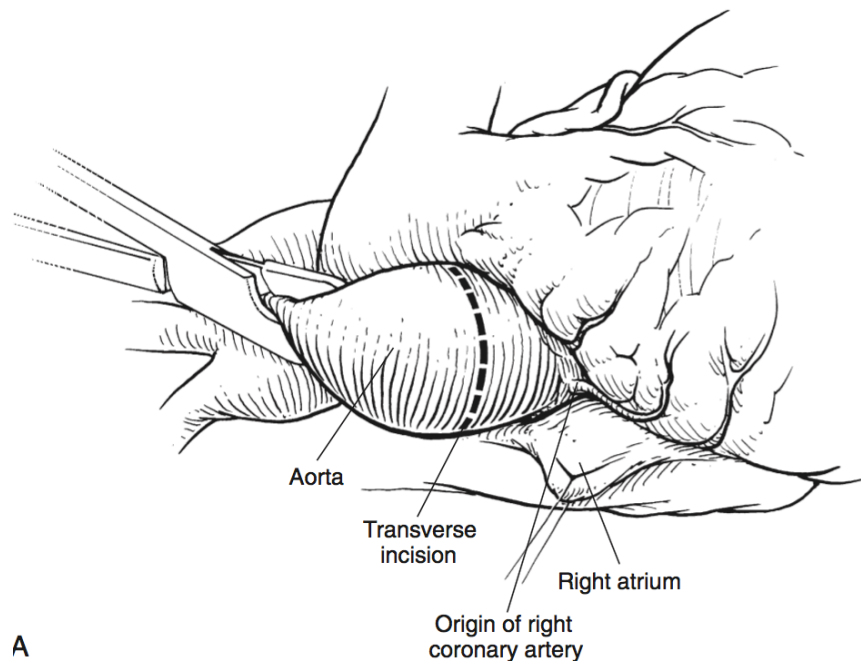
TAVI con accesso percutaneo



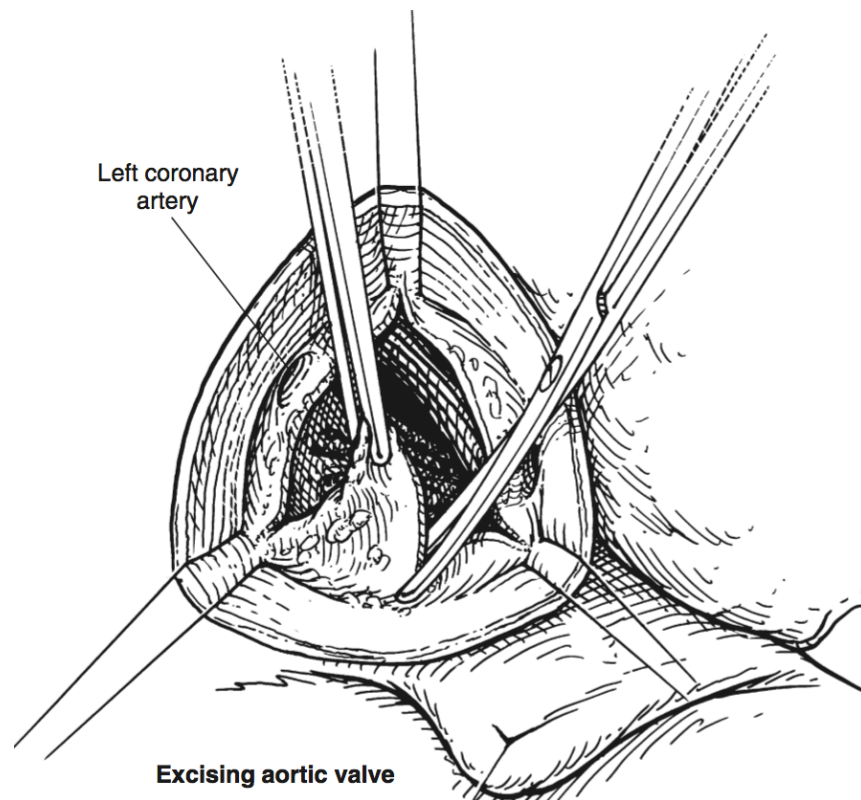
Trattamento chirurgico convenzionale



Sostituzione Valvolare Aortica

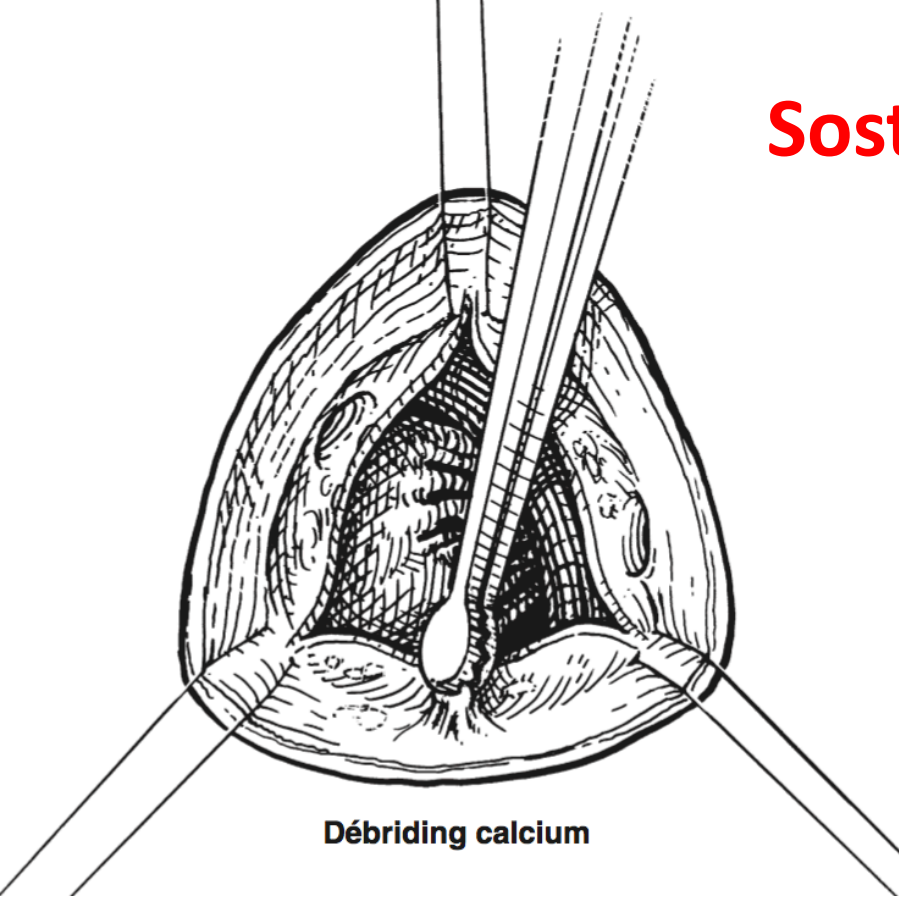


APERTURA AORTA ASCENDENTE



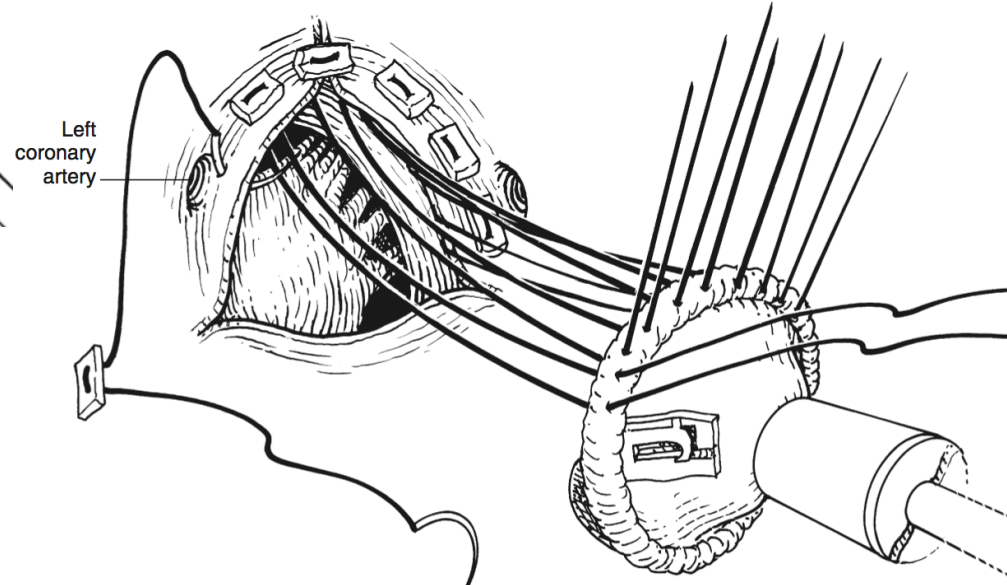
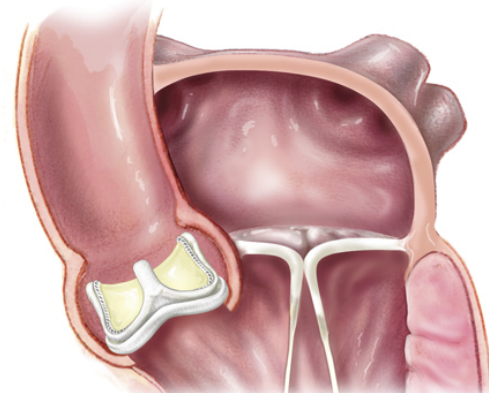
ASPORTAZIONE DELLA VALVOLA

Sostituzione Valvolare Aortica



Débriding calcium

RIMOZIONE DEL CALCIO



IMPIANTO DELLA PROTESI

Trattamento chirurgico convenzionale

1. SURGICAL APPROACH

Conventional (full sternotomy)

Minimal Invasive

ministernotomy

minithoracotomy

2. CARDIOPULMONARY BYPASS(CPB)

Conventional CPB

3. PROSTHESIS

Mechanical

Biological

- *Stented*
- *Stentless*
- *Homograft*
- *Sutureless*

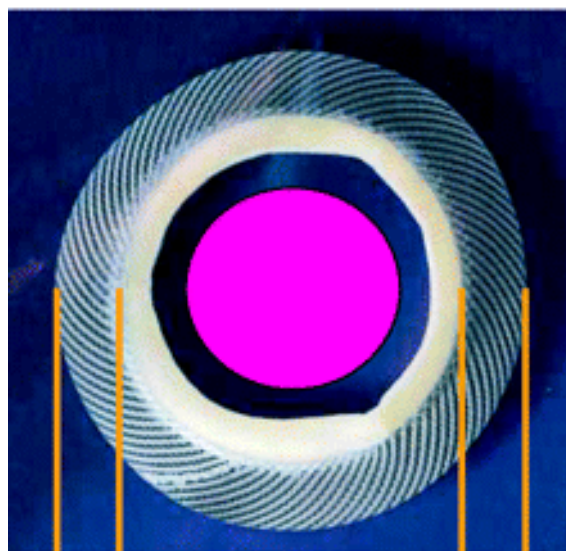


Protesi valvolari



Biologiche

Meccaniche



Internal
diameter

External
diameter

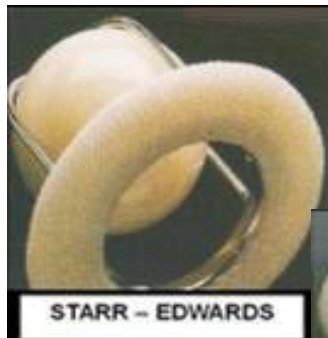


Internal
diameter

External
diameter

Evoluzione delle protesi meccaniche

1960



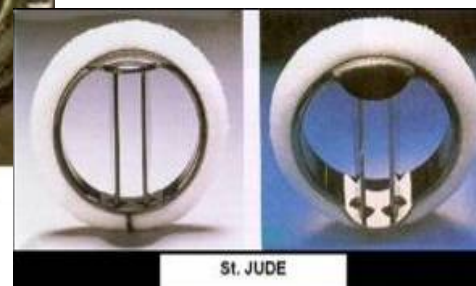
1970



1980



1990



2000

2010

2020

Carbomedics



Evoluzione delle protesi Meccaniche



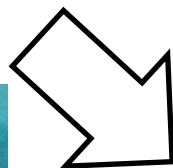
1965



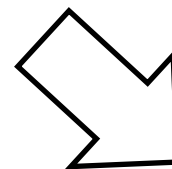
Oggi

Evoluzione delle protesi Biologiche

Stented



Stentless



Sutureless





Which Prosthesis?

Mechanical



Biological



American College of Cardiology (ACC) / American Heart Association (AHA)

European Society of Cardiology (ESC) /
European Association for Cardio-Thoracic Surgery (EACTS)

Recommendations

Choice of valve intervention and prosthetic valve type should be a shared decision process

A bioprosthesis is recommended in patients of any age for whom anticoagulant therapy is contraindicated, cannot be managed appropriately, or is not desired

A mechanical prosthesis is reasonable for AVR or MVR in patients <60 y of age who do not have a contraindication to anticoagulation

A bioprosthesis is reasonable in patients >70 y of age

EITHER A BIOPROSTHESIC OR MECHANICAL VALVE IS REASONABLE IN PATIENTS BETWEEN 60Y AND 70Y

contraindicated or undesirable

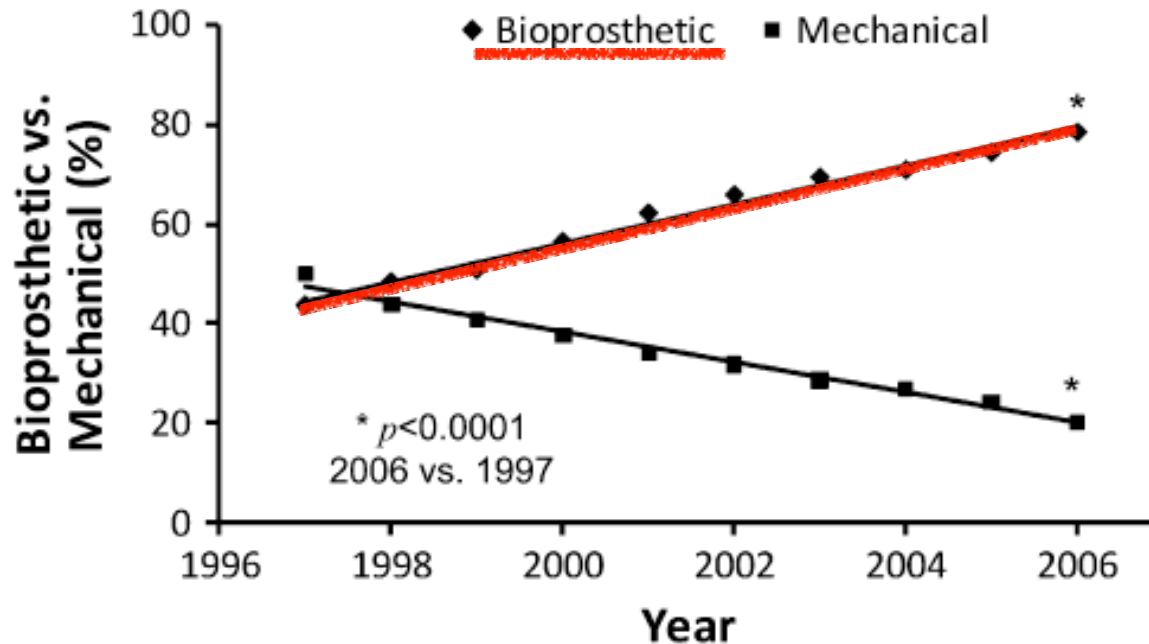
The relevance of Aortic Valve Replacement

Acquired Cardiovascular Disease

Brown et al

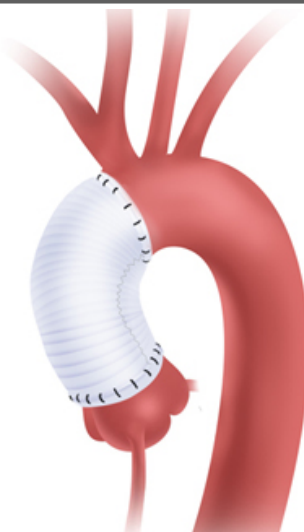
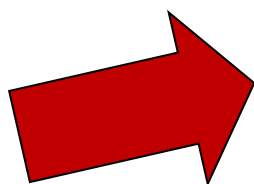
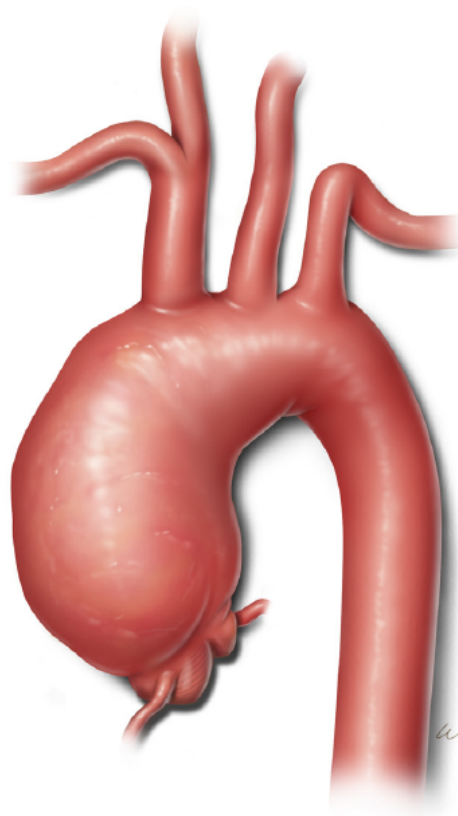
Isolated aortic valve replacement in North America comprising 108,687 patients in 10 years: Changes in risks, valve types, and outcomes in the Society of Thoracic Surgeons National Database

,^a Bartley P. Griffith, MD,^a and

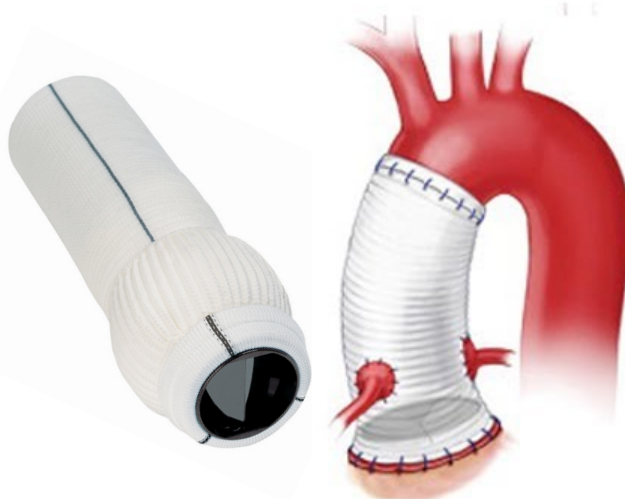
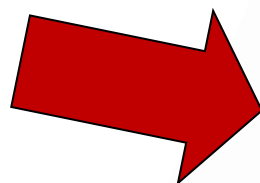


JTCVS 2009;137:82-90

...e se l'aorta ascendente è dilatata?



**Sostituzione dell' aorta
ascendente
sovracoronarica + SVAo**



**Procedura di
Bentall**

New perspectives: Mechanical

Protesi valvolare On-X



Clinical Update Number Forty-Six

**Recently Approved in Europe —
Lower Anticoagulation Maintenance
of Aortic Heart Valve Recipients!¹**



Introducing the On-X® Plus 1.5™ Aortic Heart Valve: Significantly reduced bleeding for On-X aortic heart valve patients does not increase the stroke rate.²

European aortic valve patients can now take less warfarin for lowered bleeding rates

The On-X valve is the first and only mechanical valve to be tested in a randomized, FDA approved clinical trial for lowered levels of INR.² On-X Life Technologies, Inc. (Austin, Texas) has received European regulatory approval—CE mark (Conformité Européenne mark)—for an aortic valve INR level of 1.5 to 2.0 compared to a standard recommendation of 2.0-3.0.³ Aortic valve patients in countries that recognize the CE mark can now control their anticoagulation level within this lowered labeling indication for On-X Plus 1.5 Aortic Valves.

A mechanical valve that offers less bleeding events

A presentation of the "High Risk" patient group data from the Prospective, Randomized, On-X Anticoagulation Clinical Trial

Table 2. Risk Factors: Patients in the PROACT High Risk Aortic Test Group⁷

Chronical atrial fibrillation
Left ventricular ejection fraction <30%
Enlarged left atrium >50mm diameter
Spontaneous echo contrasts in the left atrium
Vascular pathology
Neurological events
Hypercoagulability
Left or right ventricular aneurysm
Lack of platelet response to aspirin or clopidogrel

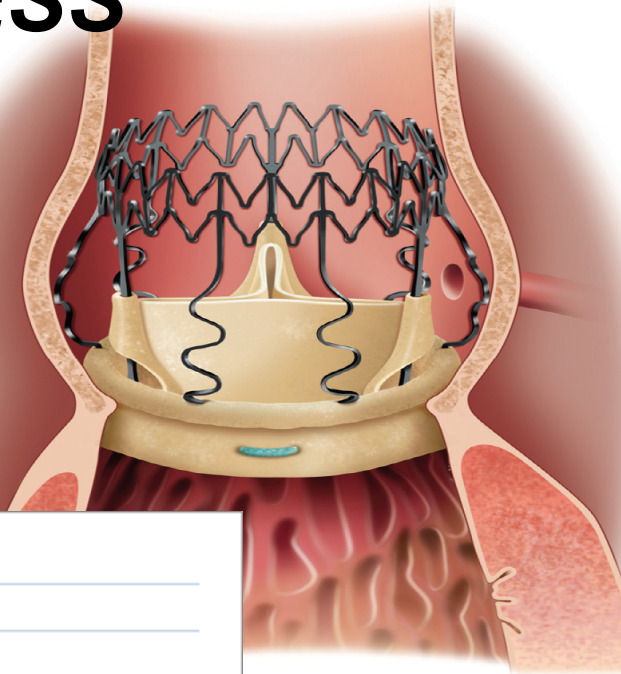
2015

US FDA ha approvato l'utilizzo della protesi On-X con un INR compreso tra 1.5–2.0

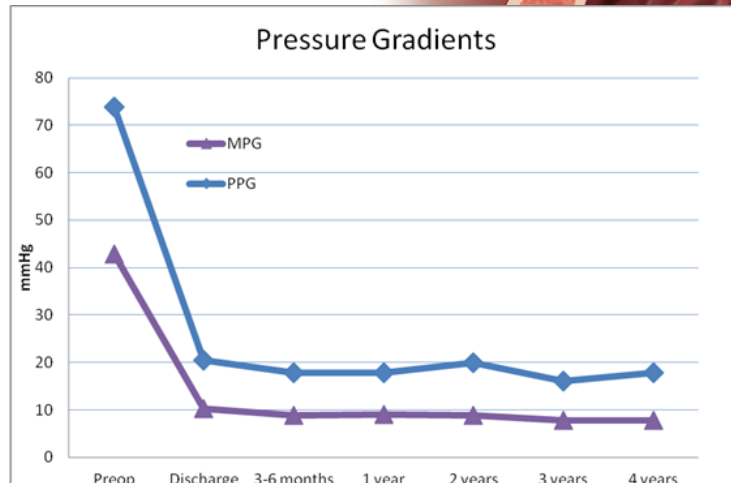
New perspectives: Biological

SUTURELESS

Perceval
(Livanova)

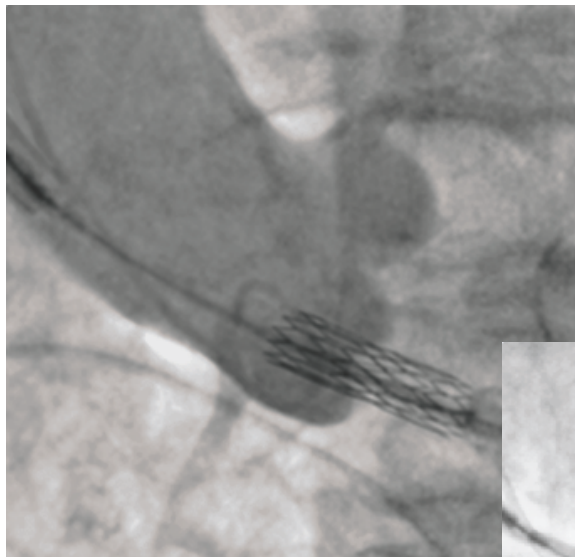


Intuity Elite
(Edwards)

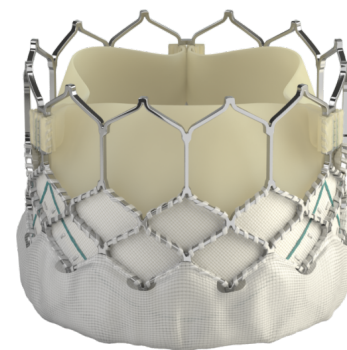


RAPID DEPLOYMENT

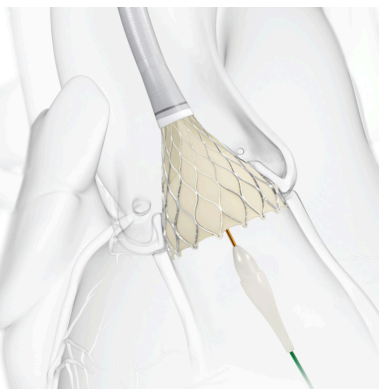
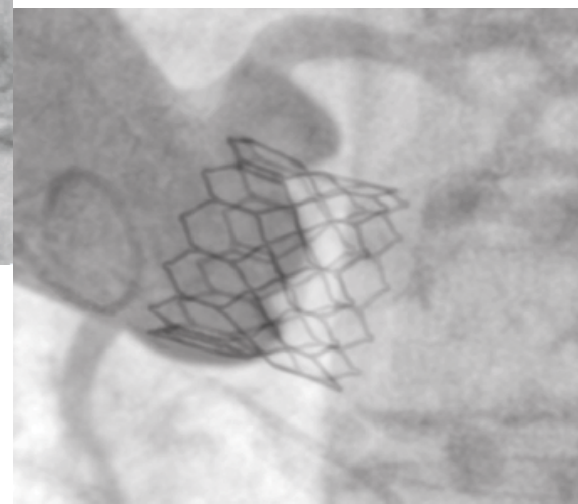
TAVI-Transcatheter Aortic Valve Implantation



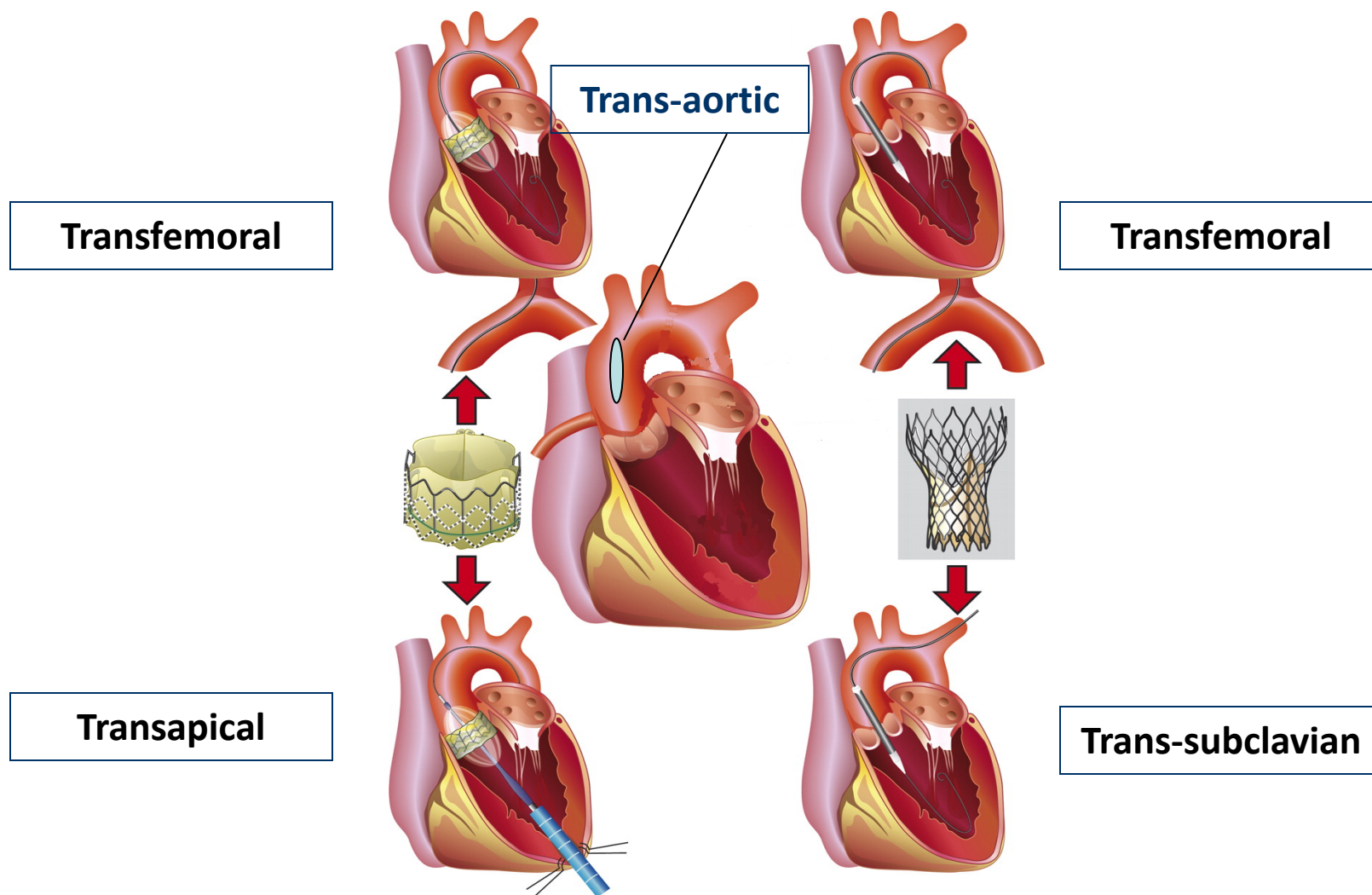
Edwards - Sapien™



Medtronic CoreValve



TAVI-Transcatheter Aortic Valve Implantation



HEART VALVE CENTRE

Requirements



Back-up services including other cardiologists, cardiac surgeons, intensive care and other medical specialties.

Multidisciplinary teams with competencies in valve replacement, aortic root surgery, mitral, tricuspid and aortic valve repair, as well as transcatheter aortic and mitral valve techniques including reoperations and reinterventions. The Heart Teams must meet on a regular basis and work with standard operating procedures.

Imaging, including 3D and stress echocardiographic techniques, peri-operative TOE, cardiac CT, MRI, and positron emission tomography-CT.

Regular consultation with community, other hospitals, and extracardiac departments, and between non-invasive cardiologists and surgeons and interventional cardiologists.