How Do I Plan and Prepare for Redo TAVR?

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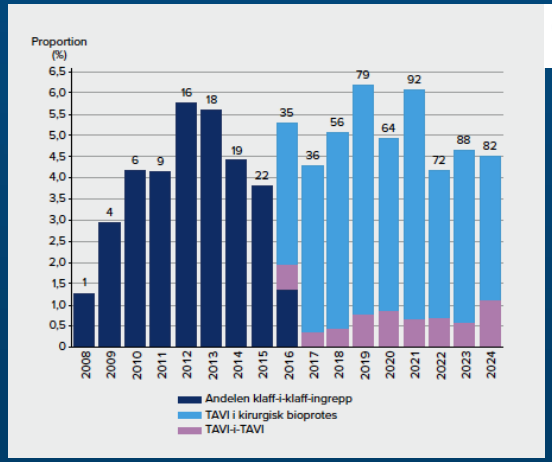
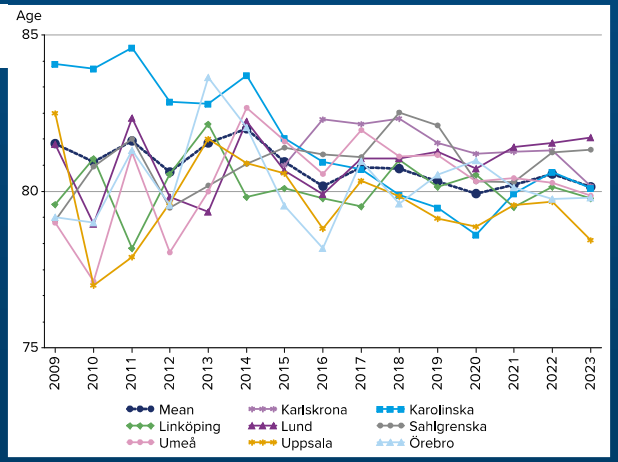
Nature of Financial Relationship	Ineligible Company
Grant/Research Support	Abbott, Medtronic
Consultant Fees/Honoraria	Abbott, Medtronic, Meril, Novo Nordisk
Individual Stock(s)/Stock Options	Texray

All Relevant Financial Relationships have been mitigated.
Faculty disclosure information can be found on the app

Patient panorama

- Redo-TAVI is still relatively rare in Europe





Patient panorama

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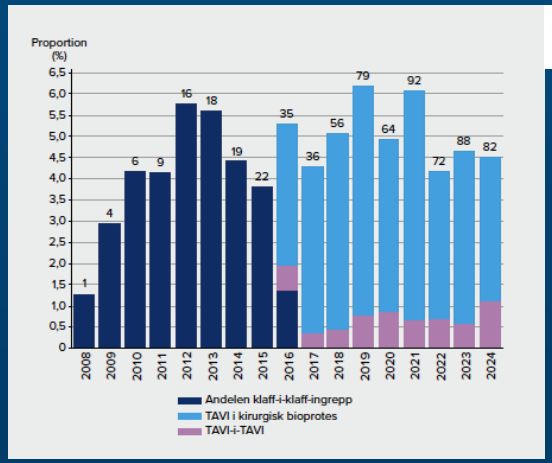
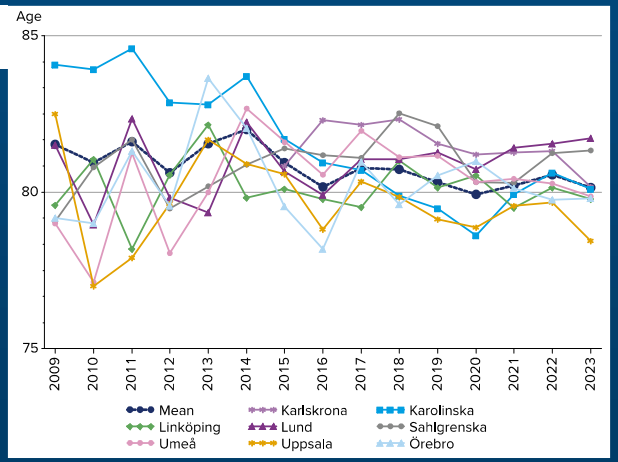




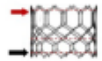
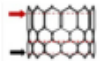
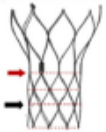
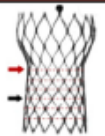
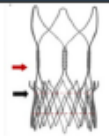
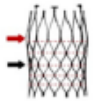
- The valve ”survives” the patient
  - Durability is most important when selecting index valve

Planing redo-TAVR

- Risks
  - Priorities
    1. Coronary occlusion – procedural risk!
    2. Coronary access – post-procedural risk
    3. Long-time durability – long term post-procedural risk

- Know the index valve
  - Commisures
  - Neo-skirt
  - Stent frame cells
  - Landmarks for positioning second valve

Index TAV Classification with Landmarks for Optimal Positioning & Sizing

	A Sapien XT / Sapien 3	B Myval	C Lotus	D Portico / Navitor	E CoreValve / Evolut	F ACURATE	G Allegra
Classification							
Frame Height	Short Frame			Tall Frame			
TAV Design	Intra-annular				Supra-annular		
Shape	Balloon-Expandable		Mechanical-expanding	Self-Expanding			
Same Shape for all sizes	Cylindrical		Cylindrical but complex	Geometric			
	Yes				No	Yes	
Landmarks for Optimal Positioning & Sizing							
Top of Deflected Leaflets	Top of commissure tab (S3); Top of Stent Frame (SXT)	Top of commissure tab	Top of the "tuning fork"	Bottom of the commissure tab	Node 6 Node 5 for Evolut 23	Bottom of the commissure tab	Node 5
Nadir of Leaflets	2-4mm above Inflow	2-4mm above Inflow	inflow	Node 1	Node 3	Bottom of the upper crown	Node 3
Important Fluoroscopic landmark	Top of commissure tab	Top of commissure tab	Inflow and bottom of the "fork"	Bottom of the commissure tab	Node 3&6 Node 3&5 for Evolut23	Top of Upper crown & Bottom of commissure tab	Node 3&5
Measurement levels for second TAV sizing	Inflow, mid (narrowest) and outflow	inflow, mid (narrowest) and outflow	Inflow, outflow, waist and bottom of the tuning fork	From node 0 to node 3	From node 1 to node 6	Bottom of the upper crown (waist) & node 1	Node 1 to Node 5
Compatible Second TAV							
Sapien 3	Compatible						
MyVal	Compatible						
Navitor	Compatible				Under Investigation		
Evolut	Compatible			Under Investigation	Compatible	Under Investigation	
ACURATE	Compatible		Incompatible			Compatible	Incompatible
Allegra	Compatible			Under Investigation	Compatible		

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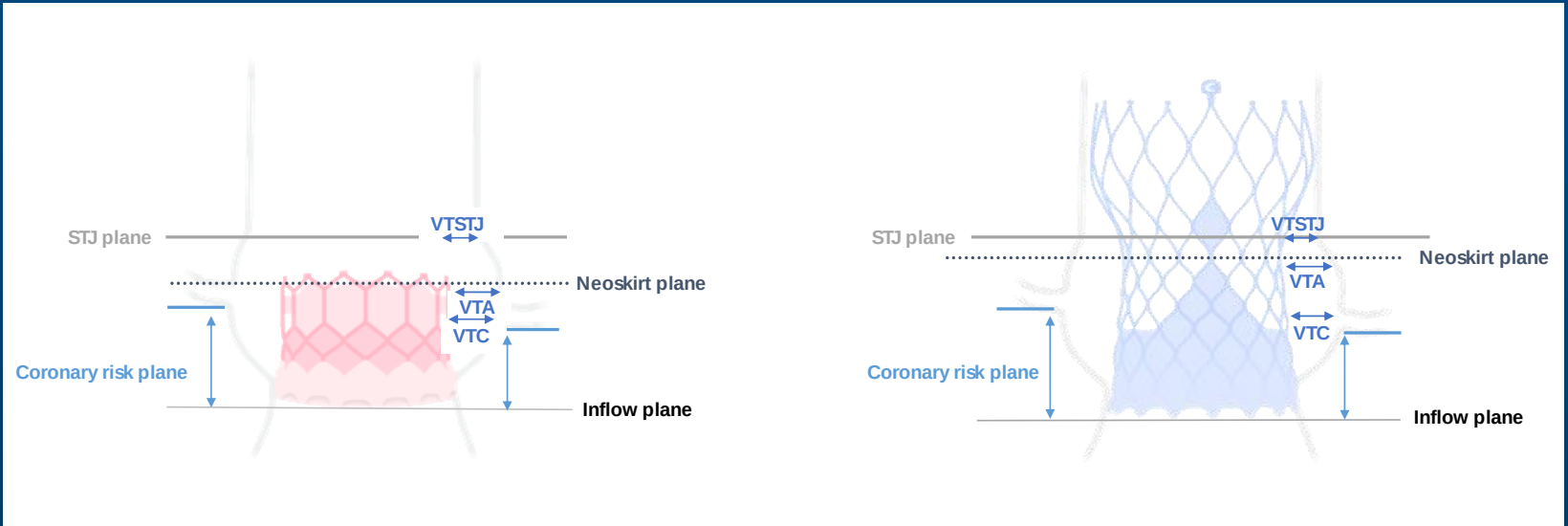
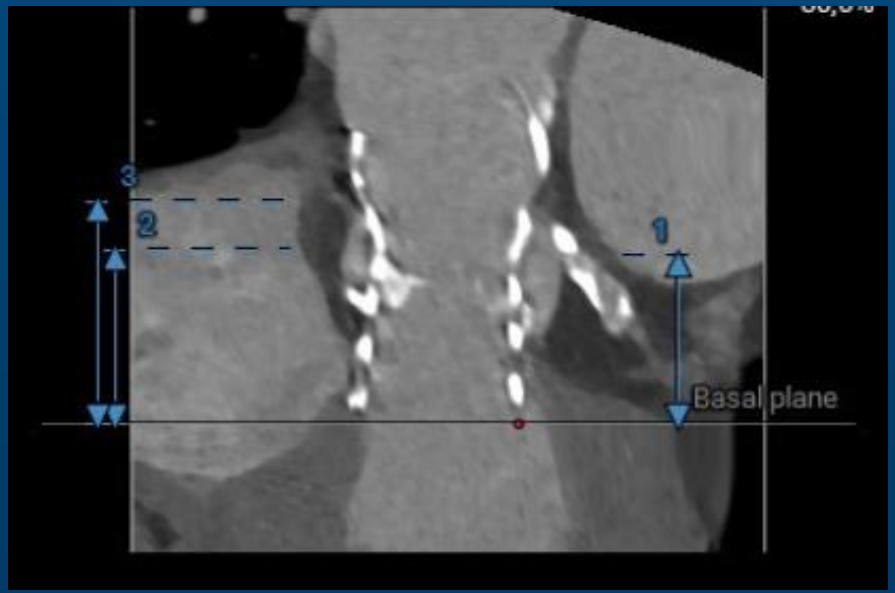
Important measurements



- Coronary risk plane = distance from bottom of stent frame to bottom of coronaries
- Neoskirt plane = height from bottom of stent frame to full predicted neo skirt height
- STJ plane = height from bottom of stent frame to ST-junction
- VTC = Valve to coronary distance
- VTSTJ = Valce to ST-junction distance (area?)

ECG gated cardiac CT



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ECG gated cardiac CT

ID	Type	Label	Value
1	Diameter	Valve To LCA Distance	7,9 mm
2	Diameter	Valve To RCA Distance	8,7 mm

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Failed Evolut 26 mm in 73-year old woman with coronary disease

ID	Type	Label	Value
1	Vessel Length	Left Coronary Height	26,3 mm
2	Vessel Length	Right Coronary Height	27,6 mm
3	Vessel Length	Sinus of Valsalva Height	35,1 mm

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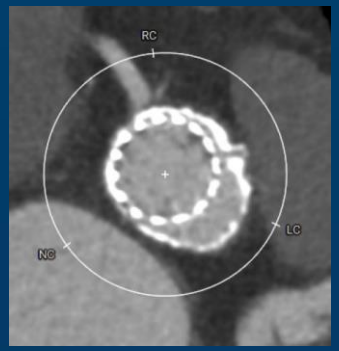
Failed Evolut 29 mm in 76-year old woman

ID	Type	Label	Value
1	Vessel Length	Right Coronary Height	15,7 mm



Failed Evolut 26 mm in 65 year old male with previous Mitroflow 23 and left main stent

ID	Type	Label	Value
1	Vessel Length	Left Coronary Height	17,4 mm

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Navitor 25 mm

Failed Evolut 26 mm in 73-year old woman with coronary disease

ID	Type	Label	Value
1	Vessel Length	Left Coronary Height	26,3 mm
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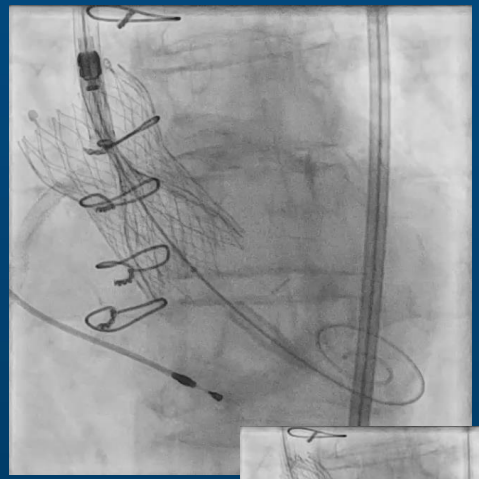

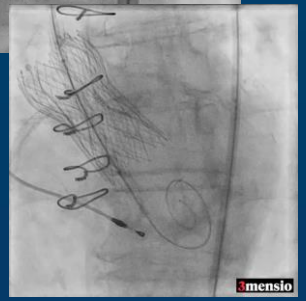

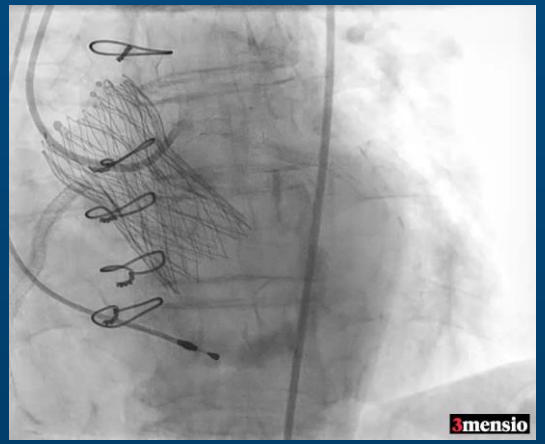

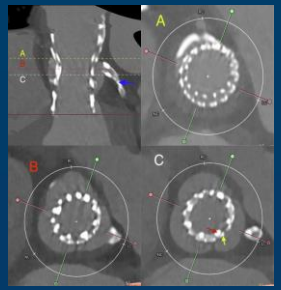

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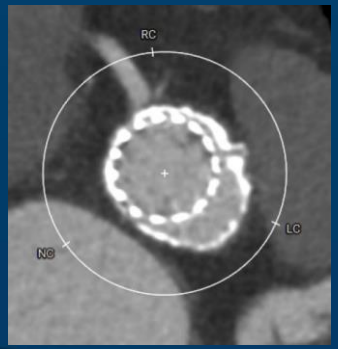
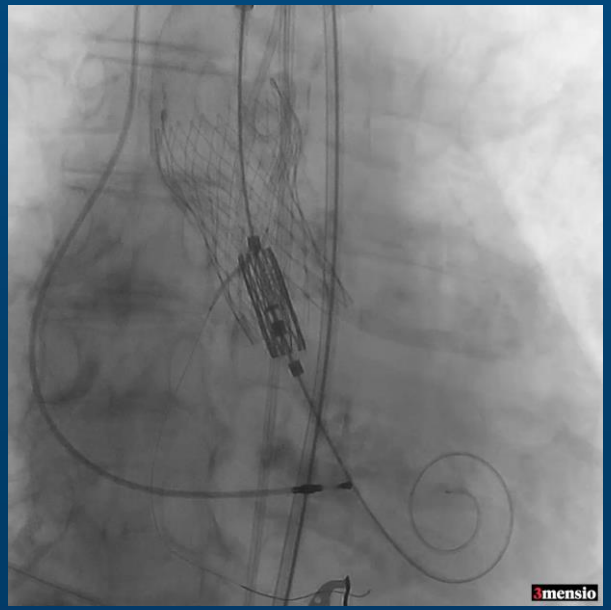
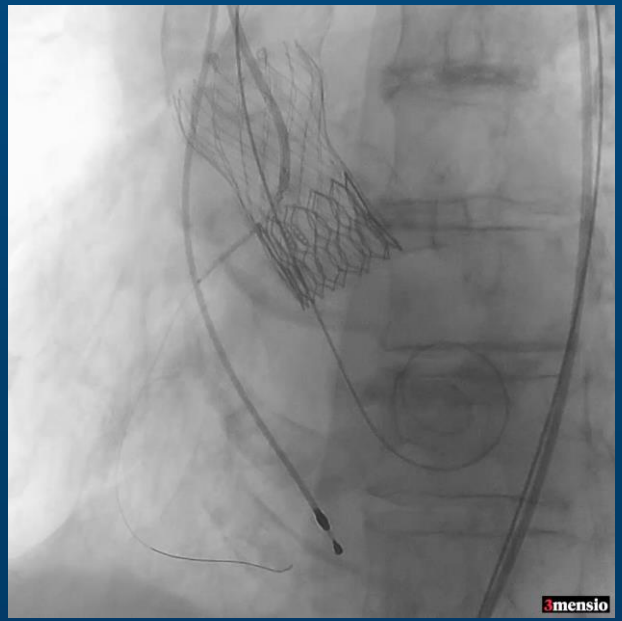
Failed Evolut 29 mm in 76-year old woman

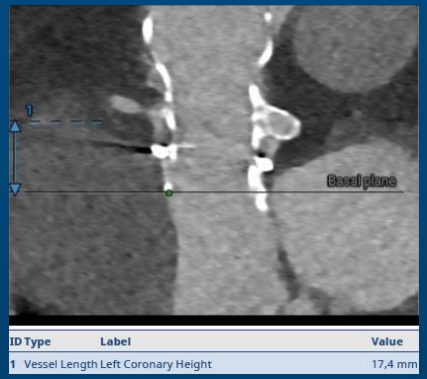
MyVal 24,5 mm with coronary protection







Surgery



- Risk of coronary occlusion
- High risk for additional future interventions – PCI and TAVR
- Postoperative
  - 10 days in respirator
  - 15 days in ICU
  - Etc etc

Take-home Message

- Durability of index valve important to avoid redo-TAVR
- Preprocedural planning is of great importance
- How to prioritize
  1. Avoid coronary occlusion
  2. Future access to coronaries
  3. Long-term durabilty