

# The E-nside inner branches technology — an approach to make TAAA-EVAR more efficient?

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# Disclosure

Speaker name:

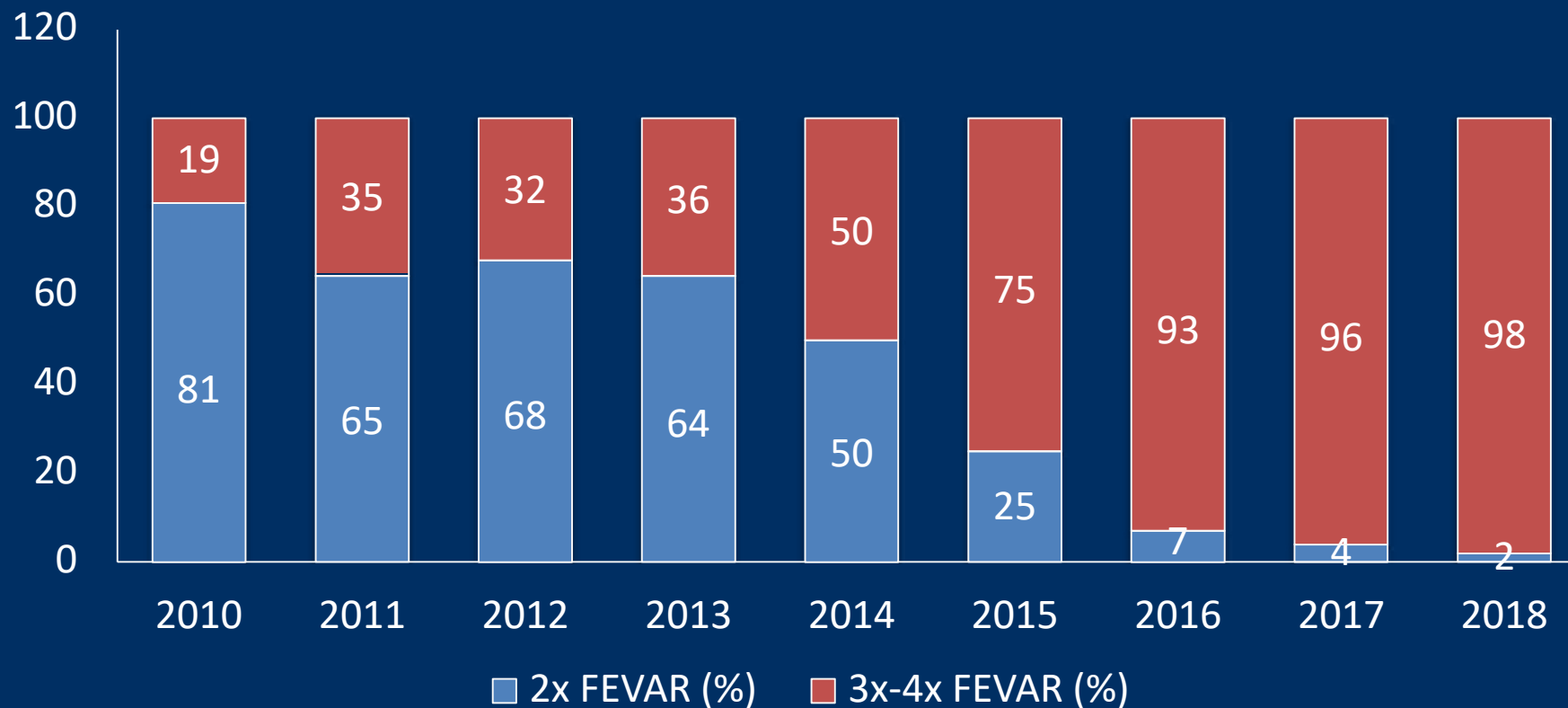
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I have the following potential conflicts of interest to report:

- Consulting (Cryolife/Jotec, Silkroad Medical, Abbott, Cook, Terumo Aortic, Medtronic)
- Employment in industry
- Stockholder of a healthcare company
- Owner of a healthcare company
- Other(s)
  
- I do not have any potential conflict of interest



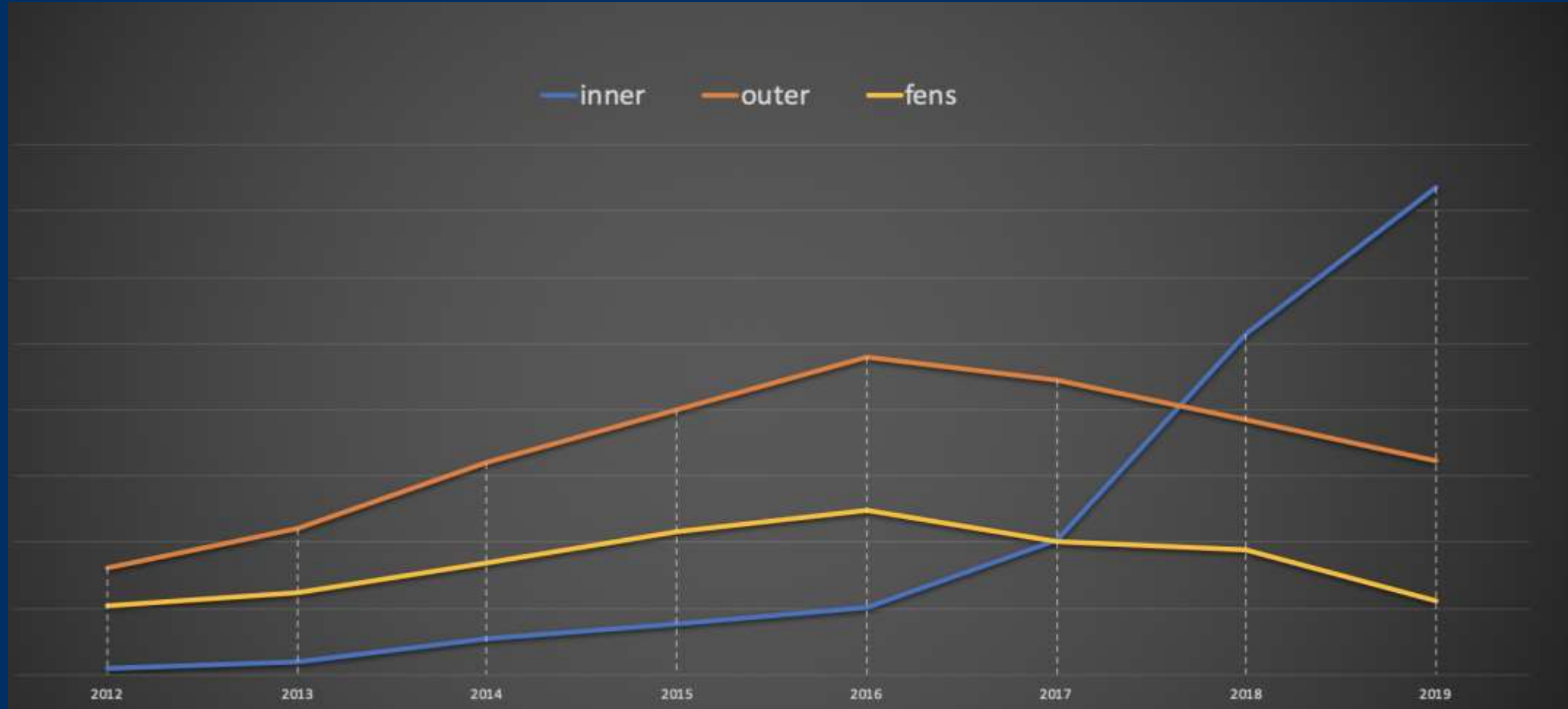
# Evolution of Stent-graft Design



↑ Use of Complex FEVAR over the years...



# When a company has all 3 options...



# Inner Branch Technology, or iBEVAR

## Outer Bevar Advantages

- Flexibility
- Current preferred approach for type II and III TAAAs
- Better sealing and fixation for the bridging stents
- Less critical positioning of the branches

**i  
B  
E  
V  
A  
R**

## Fevar Advantages

- Requires less space (narrow aortas)
- Currently used for type I, IV and V TAAAs
- The technology allows for minimal aortic coverage



# E-nside – inner branch technology



## MAIN BODY

Proximal diameters:

**38, 33mm**

Middle portion diameter:

**24mm**

Distal diameters:

**30, 26mm**

## BRANCHES

CT, SMA diameter:

**8mm**

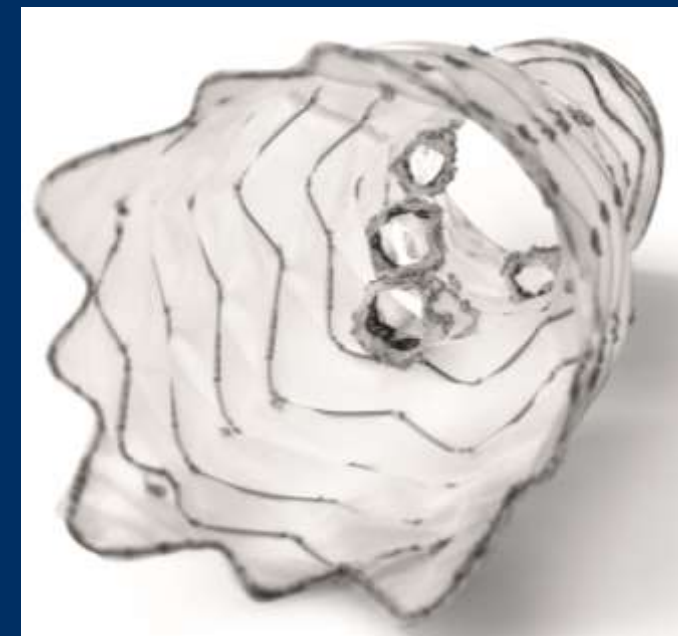
R/LRA diameter:

**6mm**

Length:

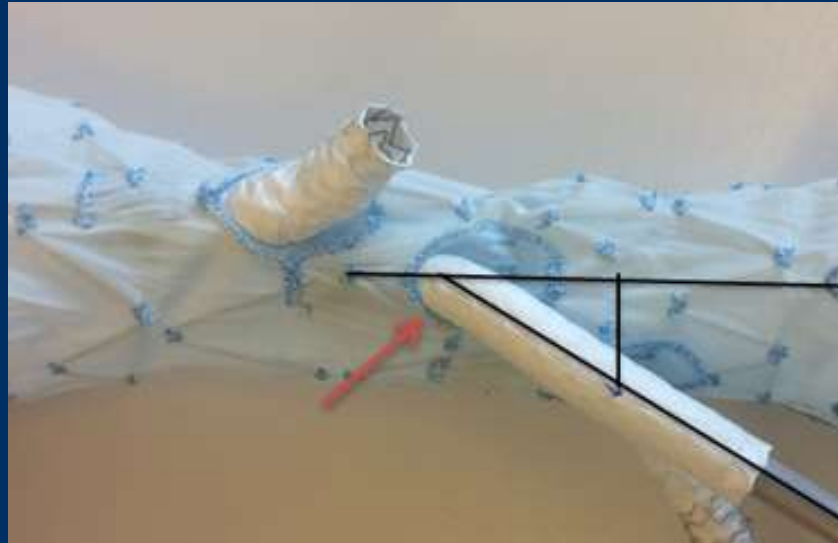
**20mm**

**Four pre-cannulation polyimide tubes**

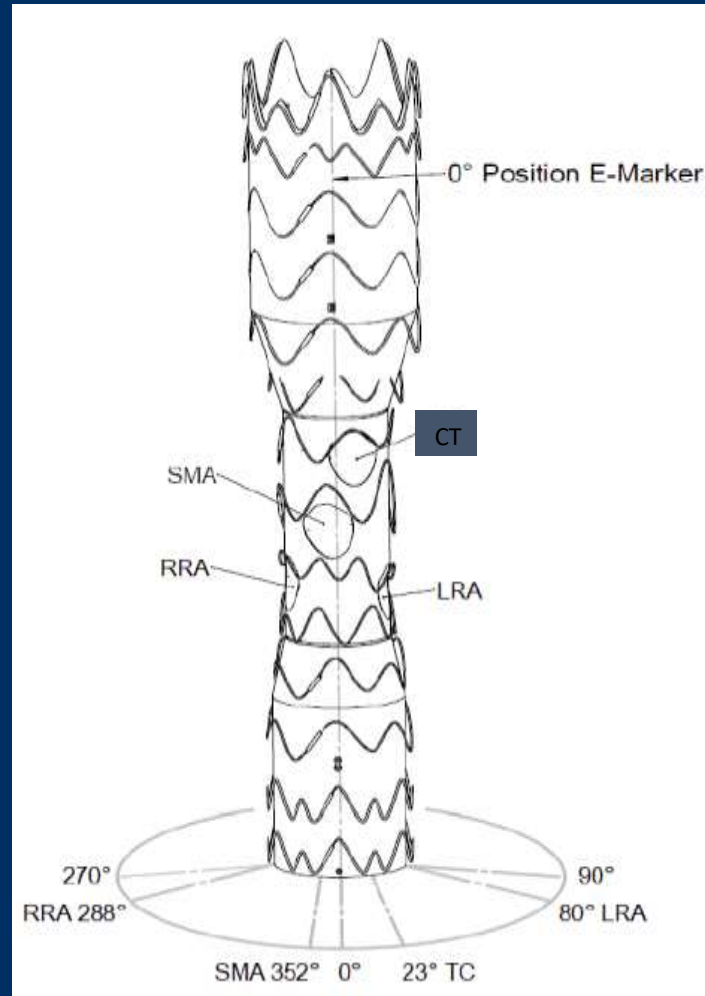
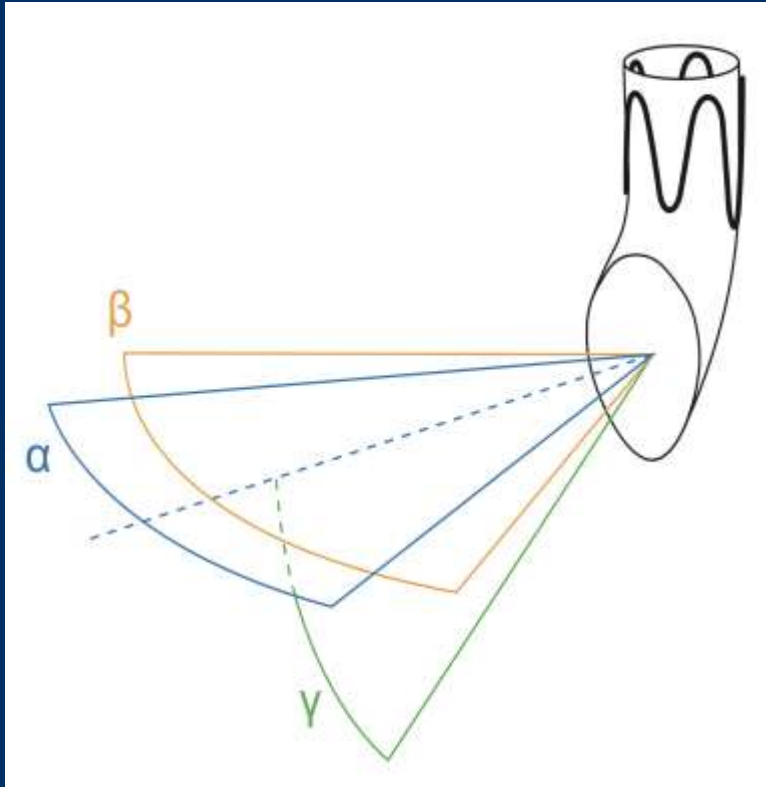


# Inner branches – design

All FOUR inner tunnels present with:  
Enlarged, oval-shaped outlets  
to allow for greater variability of the  
bridging stents



# Branches – “flexibility and reach”



## Tolerance of E-nside Inner Branches:

- ▶ CT, SMA:  $\alpha = 50^\circ$
- ▶ RRA, LRA:  $\beta = 70^\circ$
- ▶ All:  $0 < \gamma < 45^\circ$



# Feasibility analysis

	N (%)
AC feasibility	209 (78)
Upper access	266 (99)
Iliac access	211 (79)
AO feasibility	160 (60)
Proximal aortic diameter ( $24 \text{ mm} \leq \text{Ø} \leq 39 \text{ mm}$ )	224 (84)
Ø Proximal neck $\geq 24 \text{ mm}$ (ID)	241 (90)
Ø Proximal neck $\leq 39 \text{ mm}$ (ID)	251 (94)
Coeliac trunk to aortic bifurcation distance $\geq 98 \text{ mm}$	251 (94)
Ø Distal neck $\geq 21 \text{ mm}$ (ID)	224 (84)
Inner aortic visceral lumen $\geq 24 \text{ mm}$	230 (86)
VV feasibility	213 (79)
Visceral vessels $\leq 4^a$	250 (93)
Visceral vessels $> 4$	18 (7)
Supernumerary essential vessels	21 (8)
Adequate diameter of visceral vessels	237 (88)
Adequate height and orientation of visceral vessels	259 (97)
<b>Overall feasibility</b>	<b>114 (43)</b>
Extent type I TAAA	6 (2)
Extent type II TAAA	38 (14)
Extent type III TAAA	25 (9)
Extent type IV TAAA	45 (17)

<sup>a</sup>Including patients with expandable supernumerary vessels or occluded visceral vessels.

AC: access; AO: aortic; ID: inner diameter; TAAA, Thoraco-abdominal aortic aneurysm; VV: visceral vessels.

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ORIGINAL ARTICLE

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### Anatomical feasibility of a new off-the-shelf inner branch stent graft (E-nside) for endovascular treatment of thoraco-abdominal aneurysms

Victor Bilman <sup>a</sup>, Tommaso Cambiaghi <sup>b</sup>, Alessandro Grandi <sup>c</sup>, Nicolò Carta <sup>c</sup>, Germano Melissano <sup>c</sup>, Roberto Chiesa <sup>c</sup> and Luca Bertoglio <sup>c,d</sup>

	N (%)
Number of non-feasible factors	
1 factor	91 (59)
2 factors	36 (23)
>3 factors	27 (18)
Detail of factors excluding patients with only 1 factor, N = 91	
Iliac access	18 (20)
Proximal aortic diameter ( $\leq 24 \text{ mm}$ or $\geq 39 \text{ mm}$ )	18 (20)
Ø Distal neck $\geq 21 \text{ mm}$ (ID)	15 (16)
Aortic visceral lumen $\leq 24 \text{ mm}$	13 (14)
Adequate diameter of visceral vessels	9 (10)
Adequate number of visceral vessels	7 (8)
Coeliac trunk to aortic bifurcation distance $\geq 98 \text{ mm}$	6 (7)
Adequate height and orientation of visceral vessels	3 (3)
Upper extremity access	2 (2)

Description of factors influencing the feasibility in patients with only 1 reason for being excluded.

ID: inner diameter.



# Conclusion

1. In addition to “standard” TAAA E-nside can be used
  - In complex/narrow aortas
  - In post-dissection TAAA (TAADs)
2. Combines the advantages of FEVAR and BEVAR in one device
3. Off the shelf – usable in emergency cases
4. Off the shelf pre-cannulated system → time matters
5. No risk for squashed branches

Highly efficient treatment for a variety of complex aortic pathologies



# Thank You

Free Registration



**MARZ**  
MANAGEMENT AORTIC RUPTURE ZÜRICH

**SAVE THE DATE**

03./04.02. & 10./11.02.2021 (17:00 – 18:10 CET)

**VENUE: ONLINE "ZOOM"** 

