

The logo for LING, featuring the word "LING" in white capital letters. The letters are positioned over a stylized graphic of three curved, overlapping brushstrokes in dark blue, red, and yellow. The background of the slide is light blue with large, faint, light blue brushstrokes.

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# New approach for the development and stratification of peripheral stents

Channing Convelbo, PhD  
QMedics AG

# Disclosure

Speaker name:

Channing Convelbo

I have the following potential conflicts of interest to report:

- Consulting
- Employment in industry
- Stockholder of a healthcare company
- Owner of a healthcare company
- Other(s)
  
- I do not have any potential conflict of interest

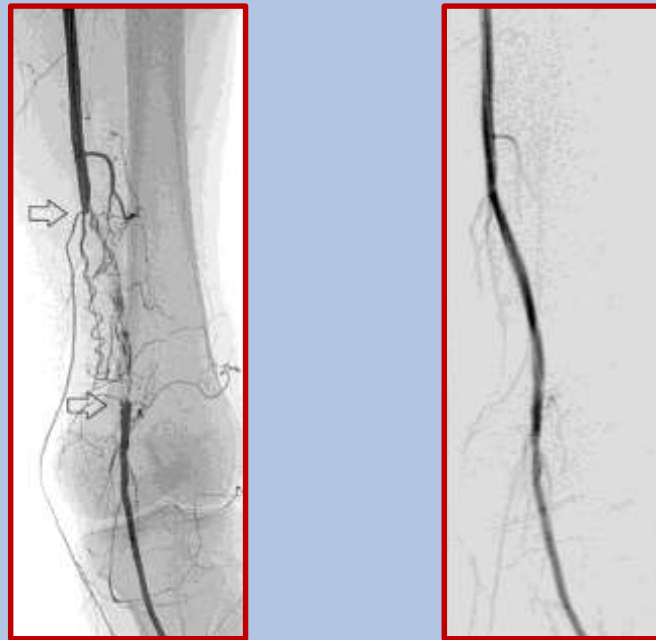
# Company

QMedics AG is a privately held Swiss company founded in 2008. Our main activity was the manufacturing of OEM stent delivery system alongside their balloon dilation catheter.

Since 2016, QMedics became an independent company focusing on the development of its own products portfolio. Our years of experience with production for other companies gave us a broader view to innovate and improve the concept of endovascular implants, particularly stent technology.

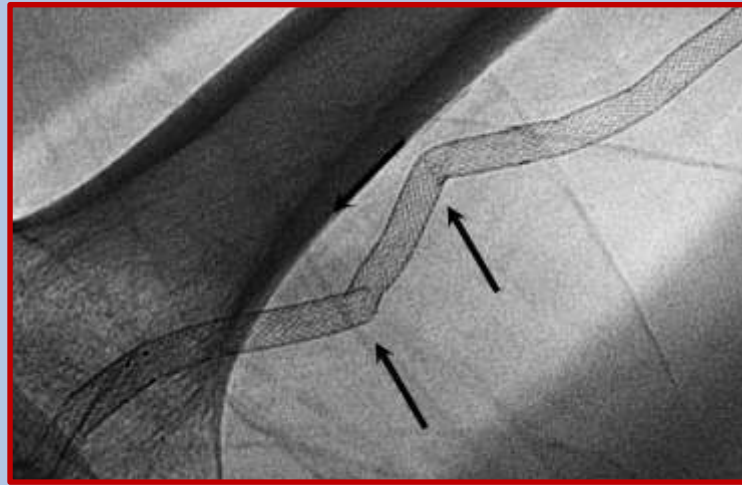
# Background

- Peripheral artery disease (PAD) is frequent (3-12%).
- Endovascular therapies (Angioplasty, Stenting and Atherectomy) are the Gold-Standard.



Before (A) and after (B) peripheral stenting

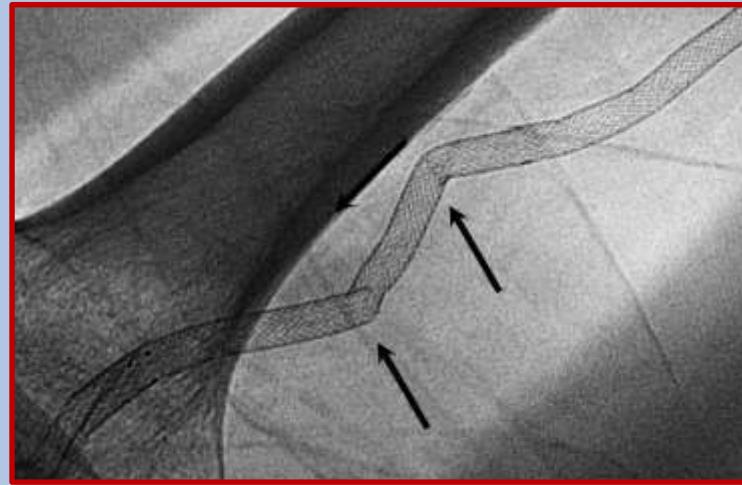
# Background



Peripheral stent fracture (A) & buckling (B)

Nathan *et al.*, 2017

# Background



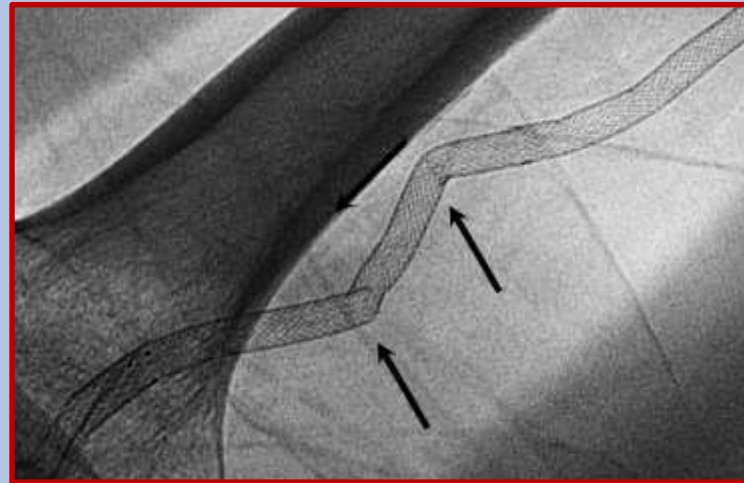
Peripheral stent fracture (A) & buckling (B)

Nathan *et al.*, 2017

- 24% of stent fracture at 25 months post-implantation
- 55% in-stent restenosis in the fractured group

Sarkadi *et al.*, 2015

# Background



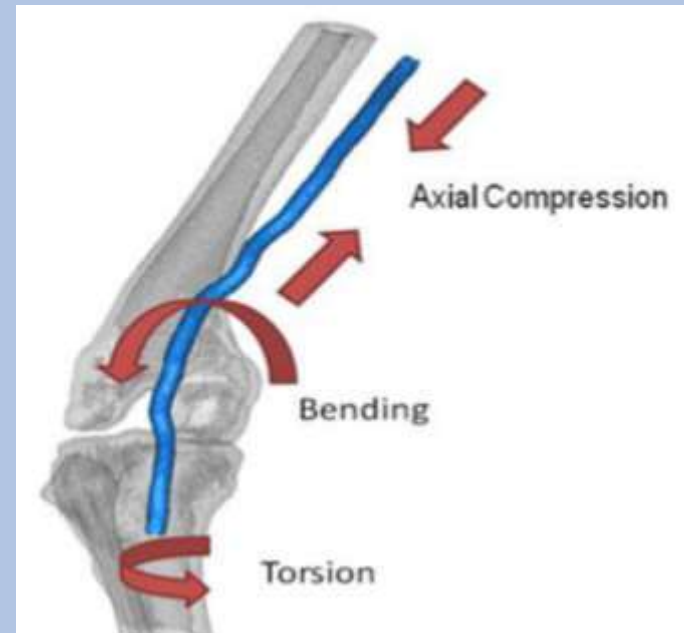
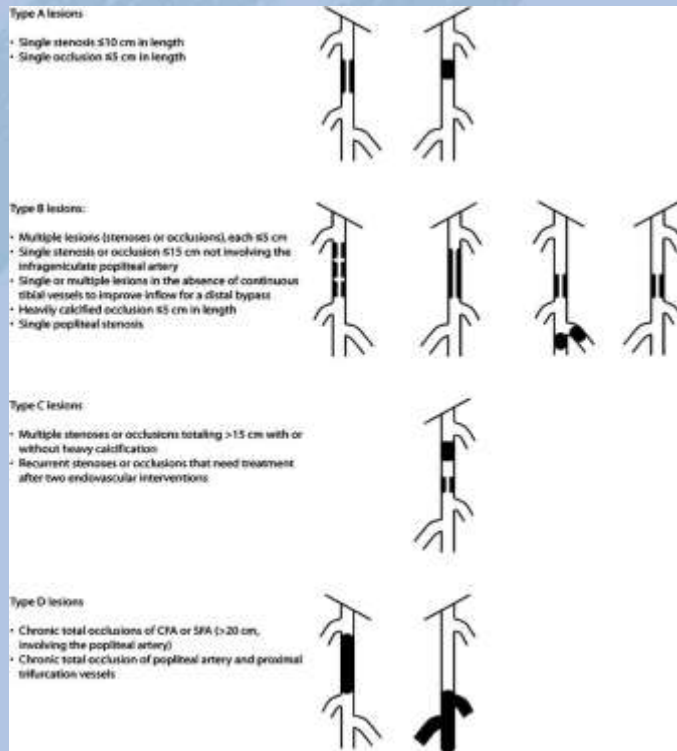
Peripheral stent fracture (A) & buckling (B)

Nathan *et al.*, 2017

Two of the contributors are the design and vessel anatomy

# QMedics Stents

Back to the basics by implementing anatomical considerations into the design



Klein *et al.*, 2009

TASC classification of femoral popliteal lesions,

Kasapis & Gurm *et al.*, 2009

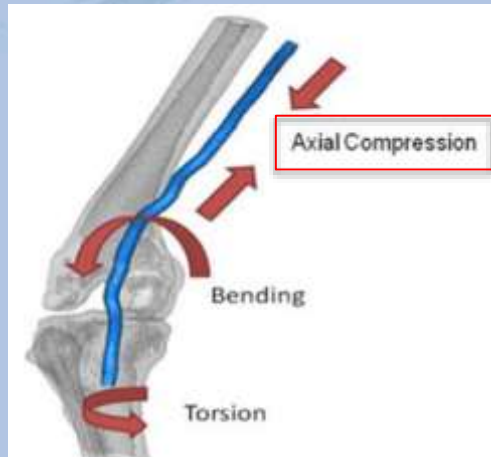
**Stents properties adapted to specific lesions and vessel behavior**



# QMedics Stents

## The PULL Stent Property

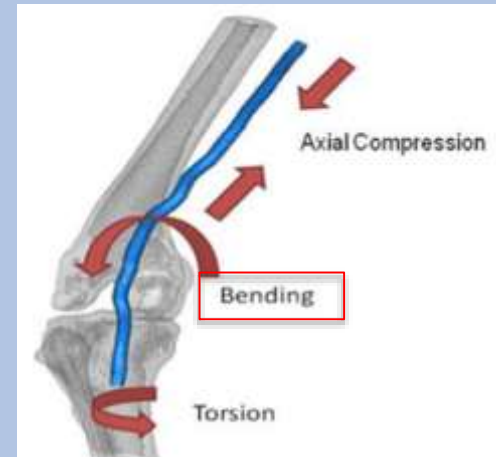
- Optimal radial compression resistance for **heavily calcified arteries** and difficult to cross lesions
- adaptation to **axial deformations**



Klein *et al.*, 2009

## The FLEX Stent Property

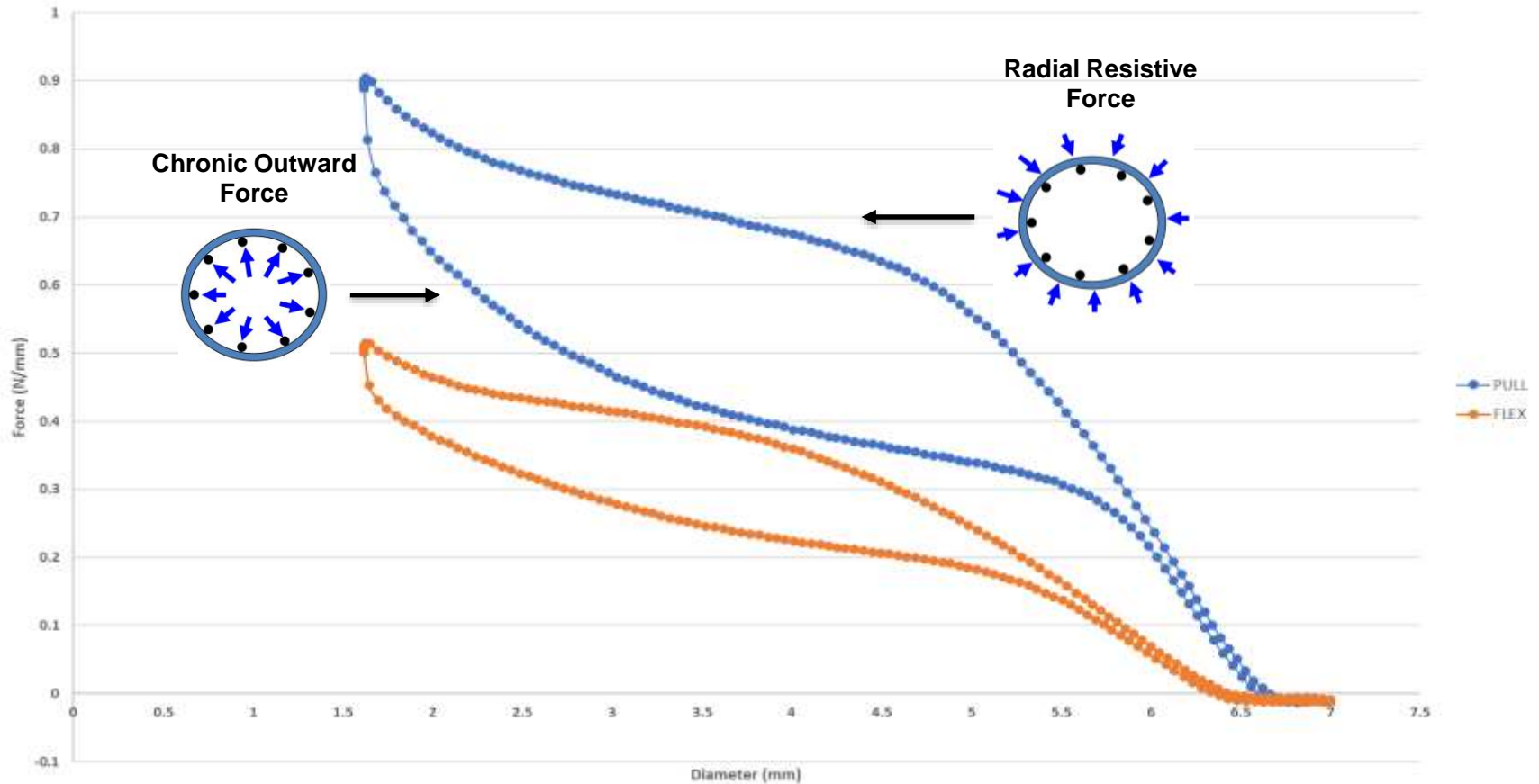
- Optimal radial compression resistance for **calcified lesions**
- adaptation to **bending deformations**



Klein *et al.*, 2009

# QMedics Stents

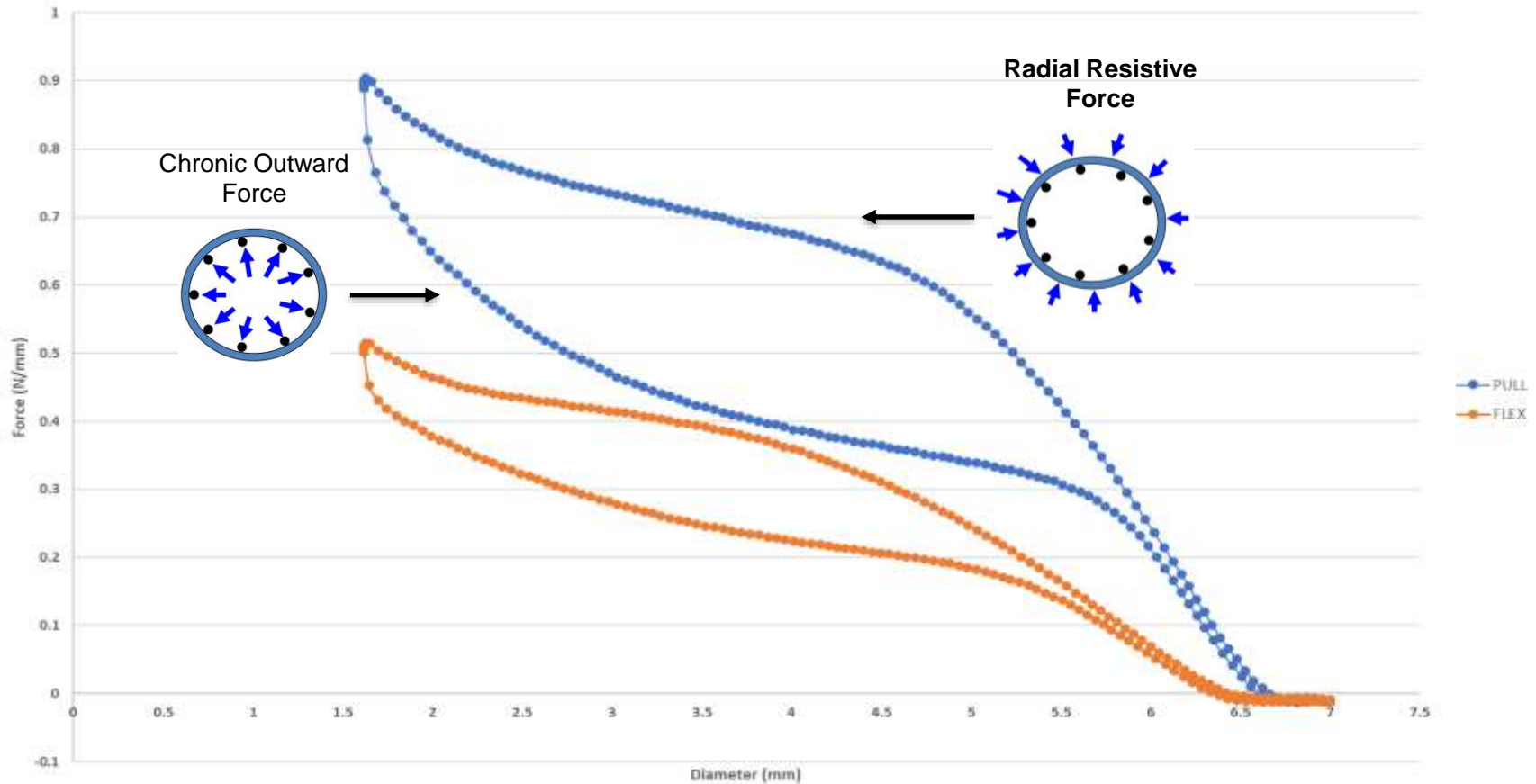
PULL and FLEX Radial Force Curves



PULL and FLEX stents  $\text{\O}6\text{mm}$  length 80mm (n=8 stents/group)

# QMedics Stents

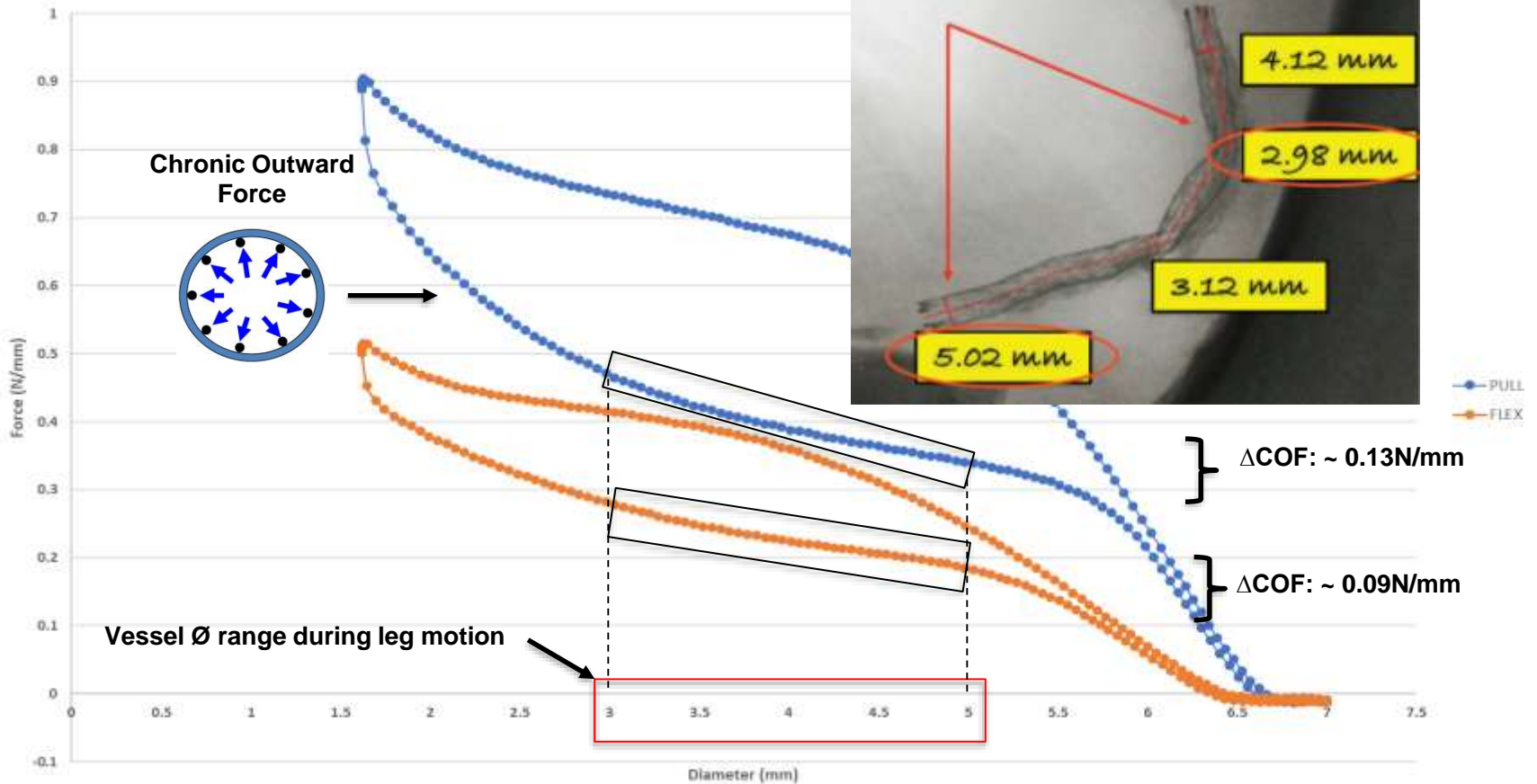
PULL and FLEX Radial Force Curves



PULL and FLEX stents  $\text{\O}6\text{mm}$  length 80mm (n=8 stents/group)

# QMedics Stents

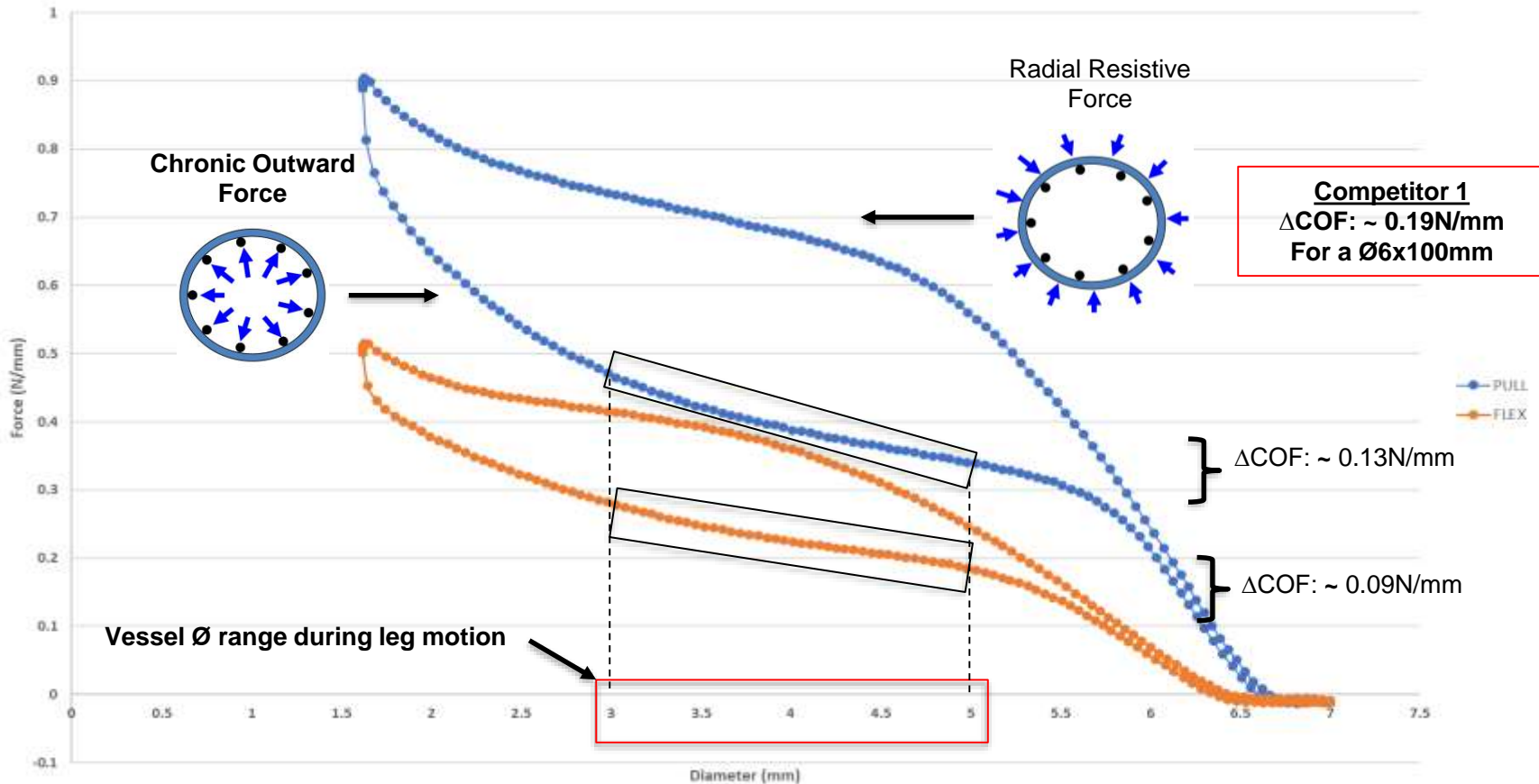
PULL and FLEX Radial Force Curves



PULL and FLEX stents Ø6mm length 80mm (n=8 stents/group)

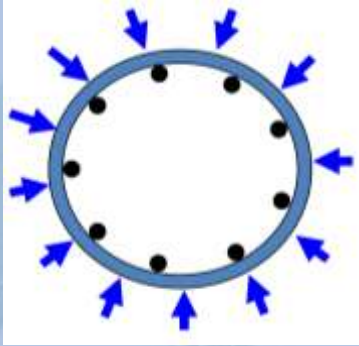
# QMedics Stents

PULL and FLEX Radial Force Curves



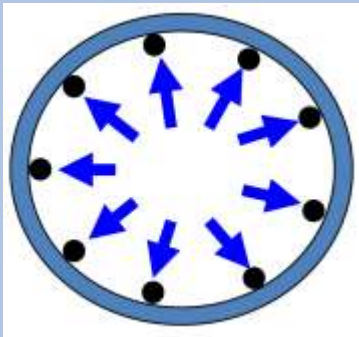
PULL and FLEX stents  $\text{Ø}6\text{mm}$  length 80mm (n=8 stents/group)

# Conclusion



The PULL property is adapted for **heavily calcified lesions**

**+++ Radial Resistive Force**



The PULL and FLEX properties have a **low COF variation** for a wide  $\emptyset$  change

**These stents could provide an optimal scaffolding for specific lesions and vessels.**



Thank you for your attention

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