

# Device Update for Endovascular Intervention

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# Contents (KUGH Weapons)

1. Peripheral Wires

2. Peripheral Balloons

3. Peripheral Stents

4. Retrograde approach tool box; Micro  
puncture set

# Wires

# Wires for PTA

**Abbott**

**Asahi**

**Boston**

**Cook**

**Covidien**

**014**

**Command**  
**Command ES**

**Regalia XS**  
**Astato XS**

**Journey**  
**V-14**  
**Victory 014**

**HydroST**  
**Approach CTO**

**Nitrex**

**018**

**Connect**  
**Connect Flex**  
**Connect 250T**

**Treasure 12**  
**Treasure Floppy**  
**Astato 30**

**V-18**  
**Victory 018**

# Wires Construction



## Distal Tip

- End of guidewire
- Working end of guidewire
- Different shapes and lengths
- Various flexibility levels

## Core

- Inner body
- Inner body of guidewire
- Different shapes and lengths
- Various flexibility levels

## Coating

- Surface of guidewire
- Lubricous surface of guidewire
- PTFE
- Silicone
- Hydrophilic

# Wire Distal Tip Covers

## Full Spring Coil Tip

-various flexibility



## Polymer Jacket, Spring Coil Tip

-smooth trackability and deliverability



## Full Polymer Tip

-Promotes lesion crossability



## Micro-cut Nitinol Sleeve

-Promotes precise steerability



# Wires Coatings

## – Hydrophilic

- Highly lubricious (slippery); bonds with water
- Promotes crossability and trackability
- Can reduce tactile feel



## – Hydrophobic

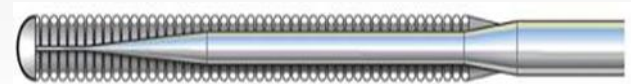
- Less lubricious than hydrophilic (silicone)
- Promotes tactile feel with slightly increased resistance



# Wire Core Material

## – Stainless Steel

- Original core material
- Good support, push force and torque
- Less flexible than other core materials



## – Nitinol Alloy

- Introduced in late 1990s
- Excellent flexibility and shape memory
- Exceptional torque, steerability and kink-resistance
- Durable for multiple vessel cases





# Hi-Torque Command

Wire	Command	Command ES
Shape		
Tip stiffness(g)	2.8	3.5
Tip diameter	014'	
Length(Cm)	190, 300	
Feature	stainless steel with nitinol tip	

# Hi-Torque Command

## Stainless Steel Body

- Good support for device delivery
- Highly pushable




## Nitinol Distal End

- Tip flexibility
- Durability



Seamless weld (bond)

# HT - Connect

Wire	Connect	Connect Flex	Connect 250T
			
<b>Tip Stiffness(g)</b>	4.0	12	30
<b>Tip Diameter(in)</b>	018'	018'	0125'
<b>Length (Cm)</b>	145, 195, 300	145, 195, 300	145, 195, 300

# HT - Connect

## HT Connect : Supportive for focal stenosis

Ideal for straight run-off with soft to moderate calcified occlusions in focal stenosis



## HT Connect Flex: Trackable for tortuous anatomies

Increased tip load & flexibility for tortuous anatomies, acute take-off, moderate calcified occlusions

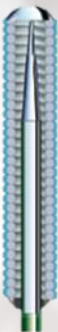
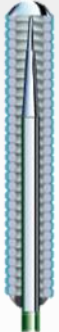
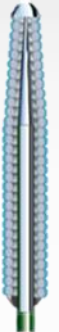




## HT Connect 250T: For chronically lesions

0.0125" tapered tip with 30 gram tip load ( increased penetration )



# Asahi

Wire	Treasure floppy	Treasure12	Astato 30	Astato XS 20	Regalia Xs
					
Tip Stiffness(g)	4	12	30	20	1
Tip Diameter(in)	018'	018'	018'	014'	014'
Length(Cm)	190, 300	190, 300	180, 300	180, 300	180, 300

# Asahi

## Treasure Floppy



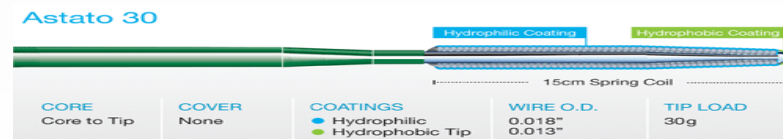
- Superior handling and distal placement for non-occluded lesions

## Treasure 12



- Controlled maneuverability with tactile response (CTO treatment of PAD)

## Astato 30



- Superior Penetration Ability Maneuverability with Tactile Response (penetrating the proximal CTO cap)

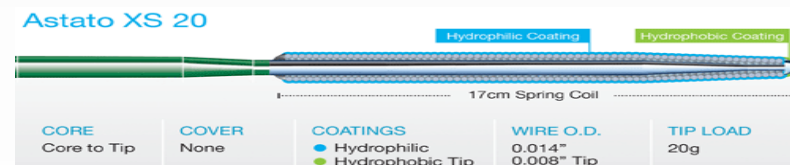
# Asahi

## Regalia XS 1.0






- Small vessel crossing advanced slip performance

## Astato XS 20



- Superior crossing ability for heavy stenosis in small vessels

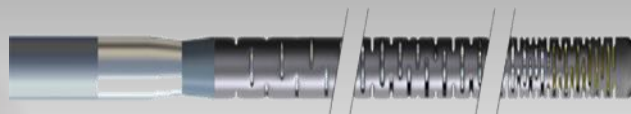
# Boston

Wire	Journey	V-14	V-18
			
<b>Tip Stiffness (g)</b>	1.3	3 (long Taper) 6 (short Taper)	7.6 (Short Taper) 6.7 (Long Taper)
<b>Tip Diameter (in)</b>	014'	014'	018'
<b>Length (Cm)</b>	145, 195, 300	145, 195, 300	145, 195, 300



# Boston

## Journey



- Nitinol Distal Core
- To provide excellent rail support to facilitate device delivery
- Highly resilient and kink resistant (Intraluminal Crossing)

## V-14



- Stainless Steel Core -To provide excellent rail support for improved device delivery
- Short and long taper options for optimal rail support
- Torque control to facilitate lesion access (Intraluminal or Subintimal Crossing)

## V-18



- stainless steel alloy core
- Superb torque control and rail support for maneuverability and catheter tracking (Intraluminal or Subintimal Crossing, peripheral access and contralateral approaches.)

# Balloon

# Balloon for PTA

	014	018	035
<b>Abbott</b>	Armada14	Fox cross	Armada35
<b>Boston</b>	Coyote		<u>Mustang (NC)</u>
<b>Cook</b>	Advance 14 (M)	Advance 18	Advance 35
<b>Cordis</b>	Sleek (M)	Savvy	PowerFlex
<b>Medtronic</b>	Amphirion (M)		<b><i>InPact (DEB)</i></b>
<b>Covidien</b>	Nanocross		Evercross
<b>Bard</b>			Rival, <u>Conquest (NC)</u>

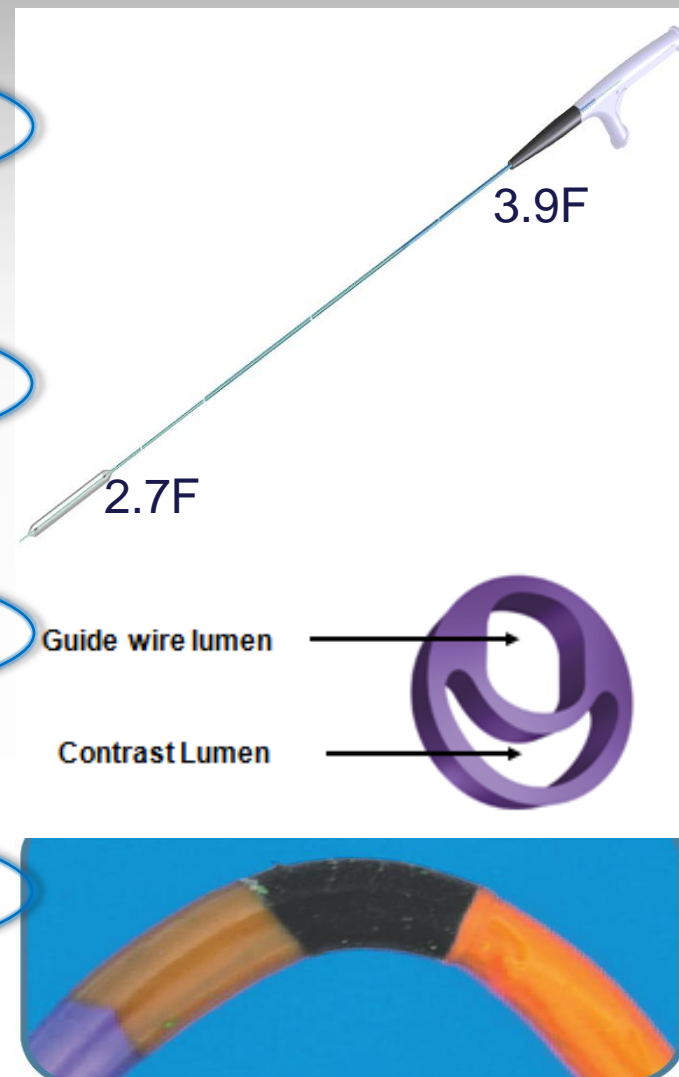
# Armada 14

**Tapered catheter profile**

**Reduces procedure time**

**Flexible tungsten markers**

**OTW, 014', 4F sheath**

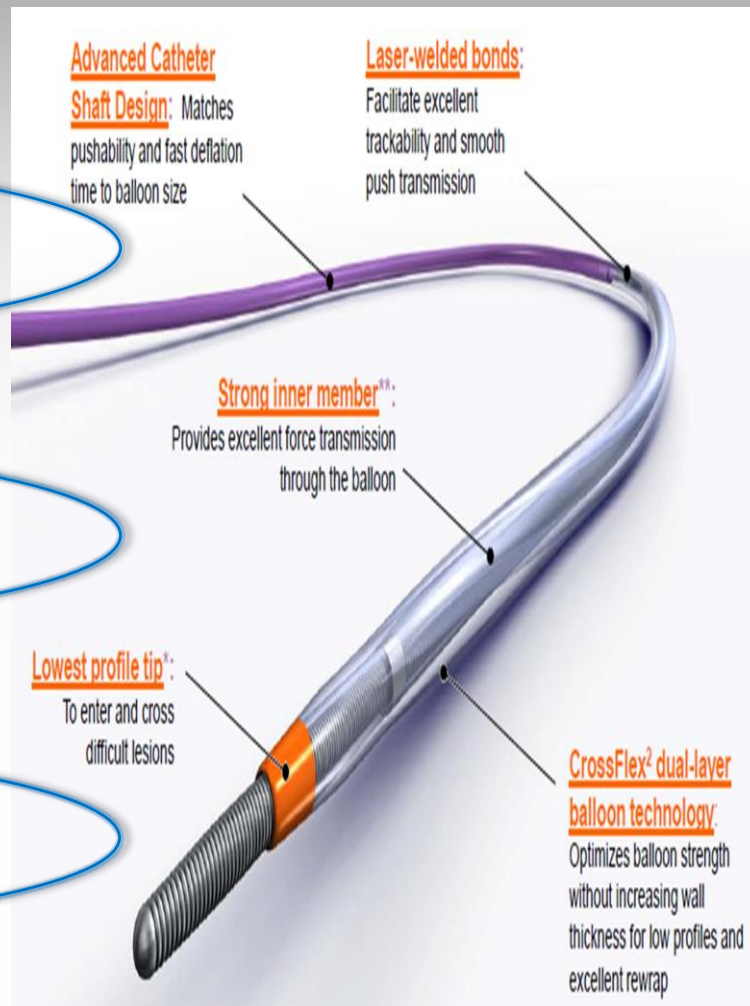


# Armada 35

**Tip lower profile**

**Dual-layer Pebax/nylon**

**OTW , 035', 6F Sheath**

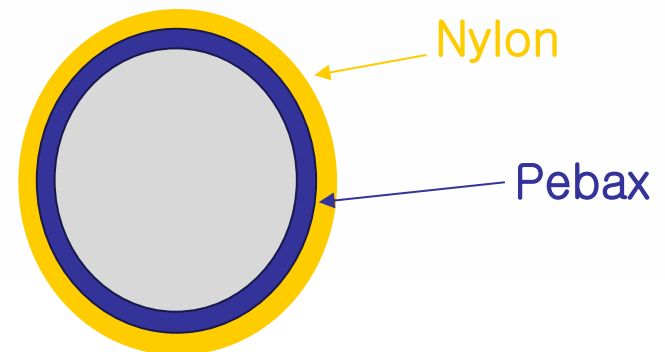
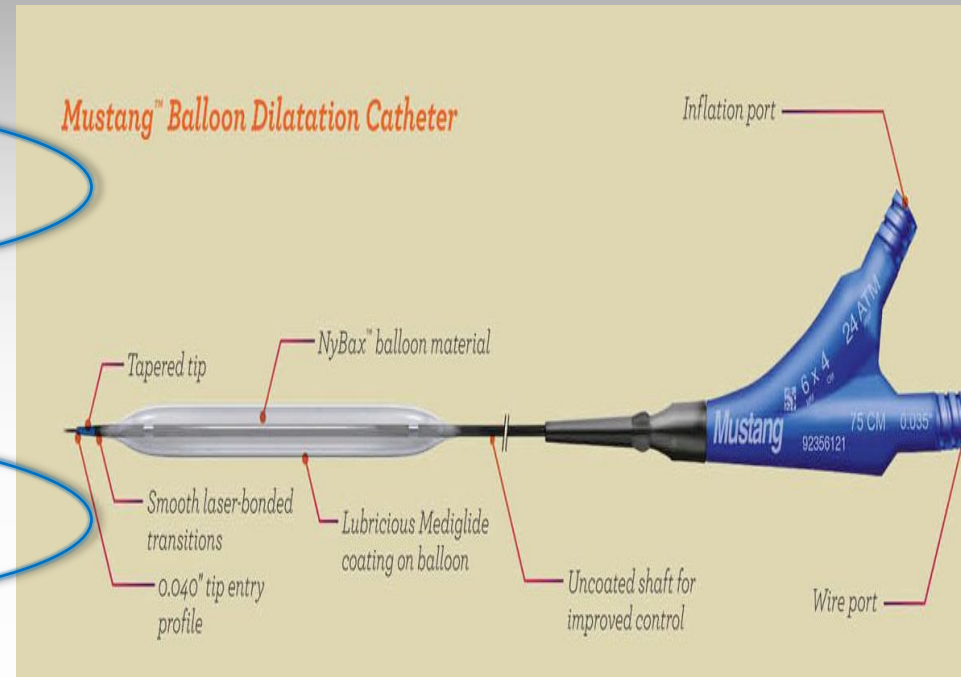


# Mustang

**Powerful dilation  
(NC balloon)**

**NyBax™ Balloon Material**

**OTW, 035', 5F-7F sheath**



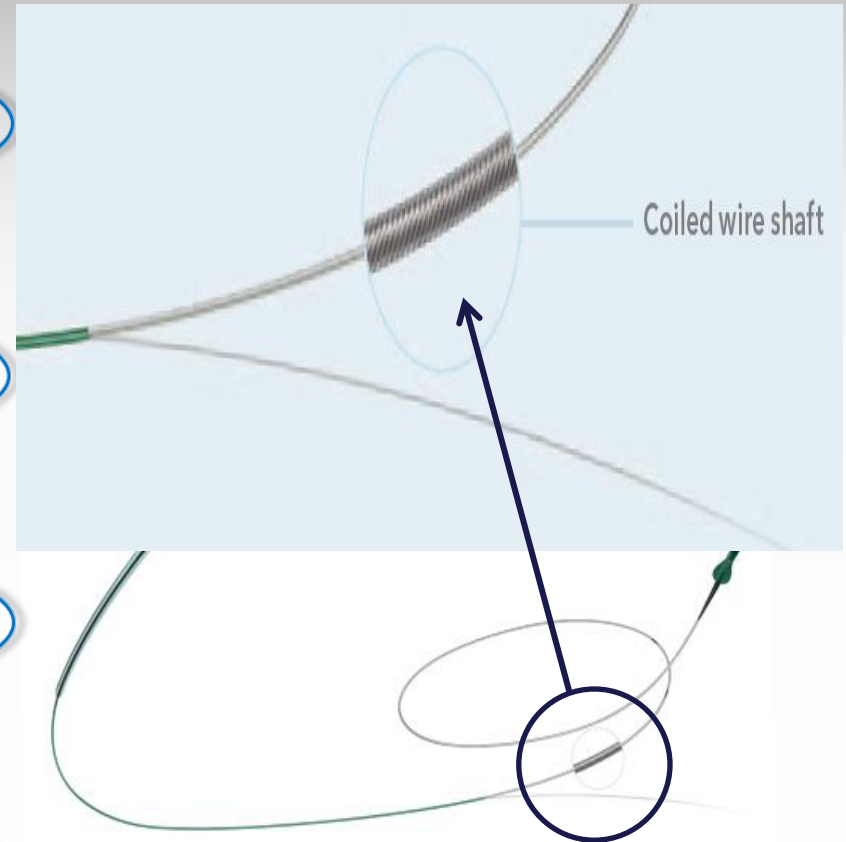
# Advance LP14

**Exclusive Coiled Wire Shaft**

**Ultra-Low Crossing Profile**

**LONG BALLOONS**  
Balloon Sizes up to 200 mm

**Mono, 014', 4F sheath**

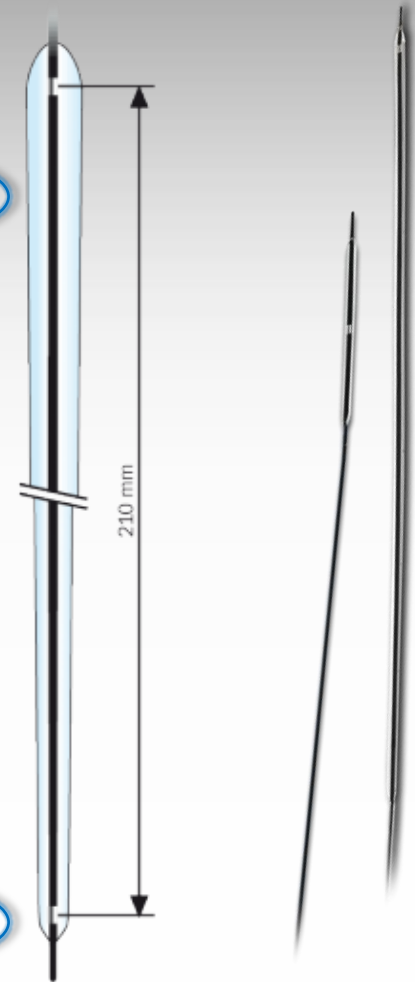


# Amphirion

## Long Cone / Long tapered

- Reduced risk of dissections
- No balloon overlap
- Procedure time significantly shorter
- Reduced X-ray dose for patients, operators and assistants

**OTW, 014', 4F sheath**



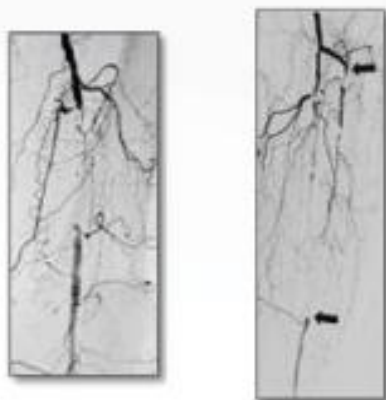


# InPact (Paclitaxel-eluting Balloon)

## Peripheral Drug Eluting Balloon

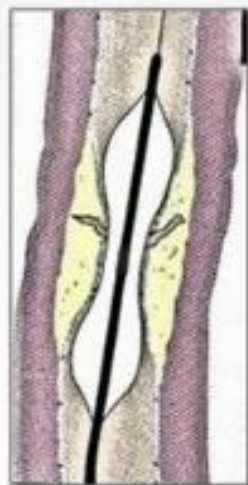
### De Novo Lesions

Small vessels(BTK) high movement or flexion Sites(SFA/POP)



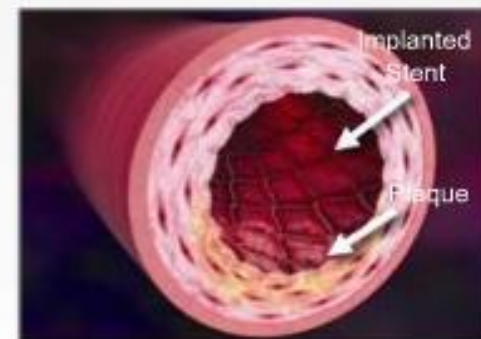
Stent should not be placed or It may not be ideal

### Restenosis After POBA



Anti-proliferative therapy desired

### In-Stent Restenosis

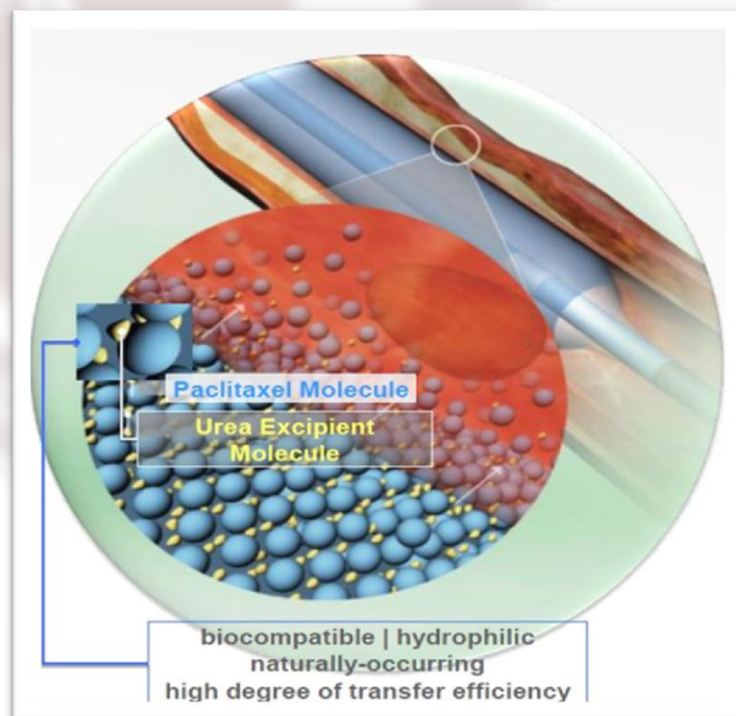


Stent-in-stent not desired

# InPact

## Urea separates paclitaxel molecules

- Increased drug solubility and optimal diffusion into vessel wall
- Urea facilitates Paclitaxel absorption into the vessel wall

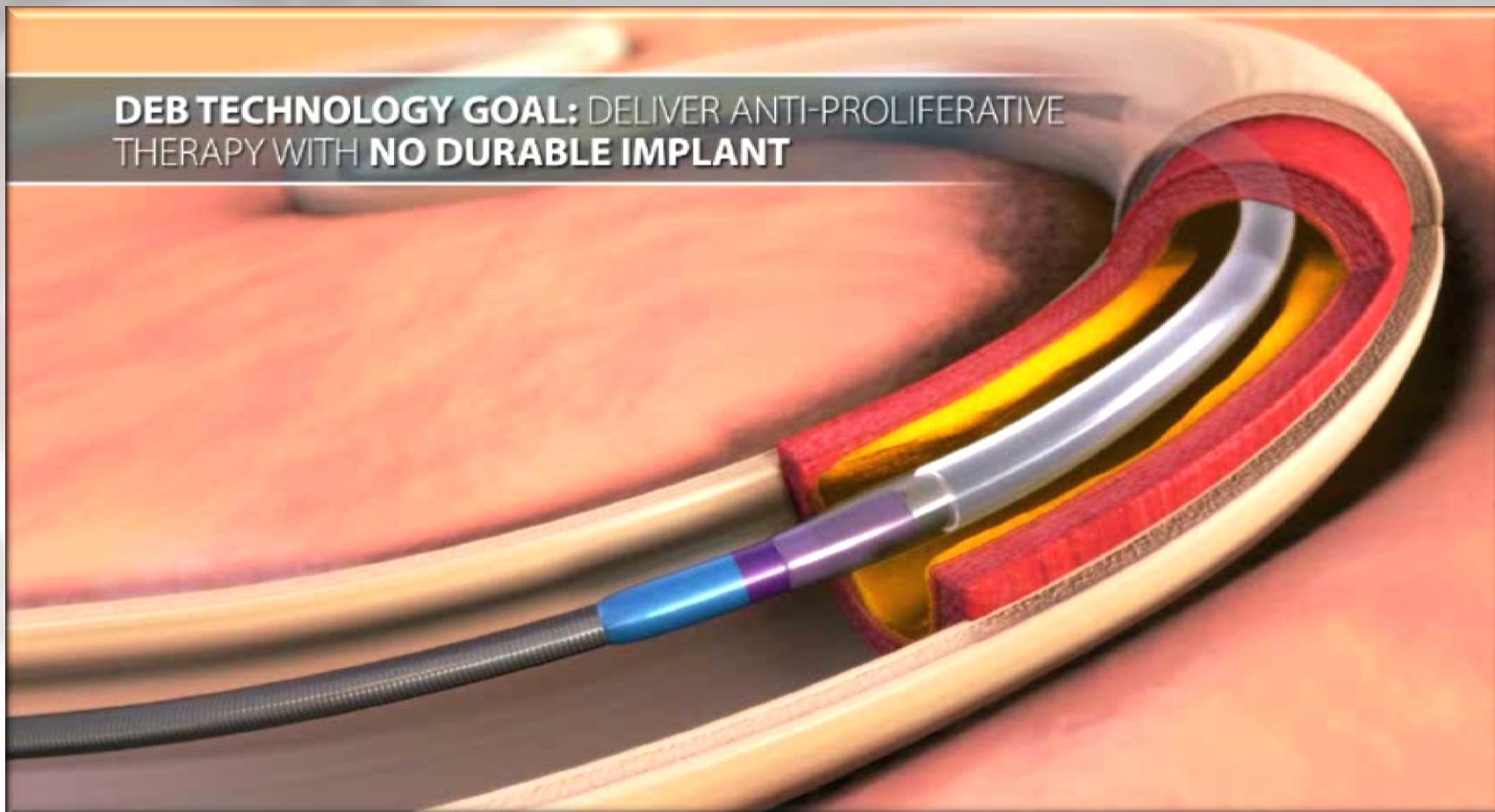


## Medtronic DEBs

- Admiral : OTW, 035', 5-6F sheath
- Pacific : OTW, 018', 5-6F sheath
- Amphirion :OTW, 014', 4F sheath

# InPact

**DEB TECHNOLOGY GOAL:** DELIVER ANTI-PROLIFERATIVE THERAPY WITH **NO DURABLE IMPLANT**

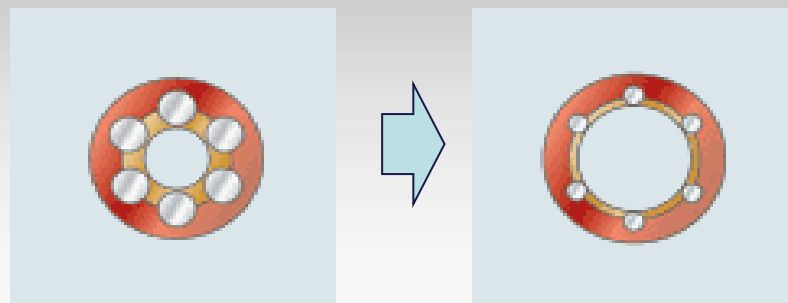


# Stent

014		035
<b>Abbott</b>	Xpert (SES)	Absolute Pro Omnilink (BES)
<b>Bard</b>		Life
<b>Cordis</b>	Precise (SES)-Carotid Palmaz Blue/Genesis (BES)-Renal	<u>Smart</u>
<b>Gore</b>		Viabahn (Stentgraft)
<b>Cook</b>		Zilver, Zilver PTX (DES)
<b>Medtronic</b>	Maris deep (SES);014 & 018 Chromis Deep (BES)	Complete SE Scuba (BES)
<b>Boston</b>		Wall Stent, Epic
<b>Covidien</b>		Protege

# Design -Xpert

**Xpert strut profile in a small vessel**



**tortuous anatomy,  
good wall apposition**



**OTW, 018, 4-5F sheath**

# Maris Deep

## Full length braided sheath design

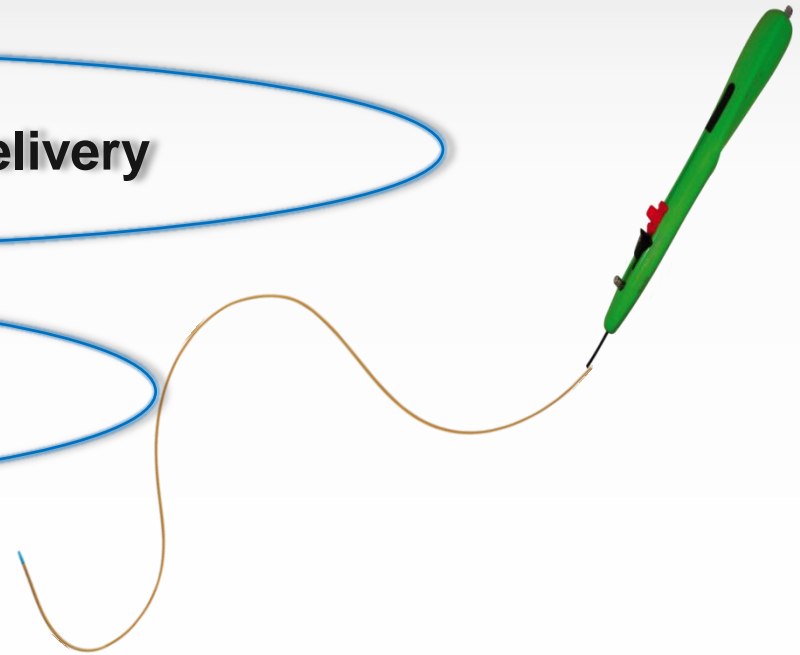
Reinforcement combines pushability and flexibility to enable easy negotiation in tortuous anatomies without kinking

## precise and comfortable delivery

## OTW, 014/018', 4F sheath

Real 4 F introducer sheath compatibility  
(3.7 F outer shaft Ø)

## Ergonomic Handle



# Absolute Pro

Accurate stent deployment

OTW, 035, 6F sheath

**Triaxial Technology**  
with I-BEAM Laser-cut hypotube



**New Absolute Handle**

One-handed deployment –  
better comfort and control





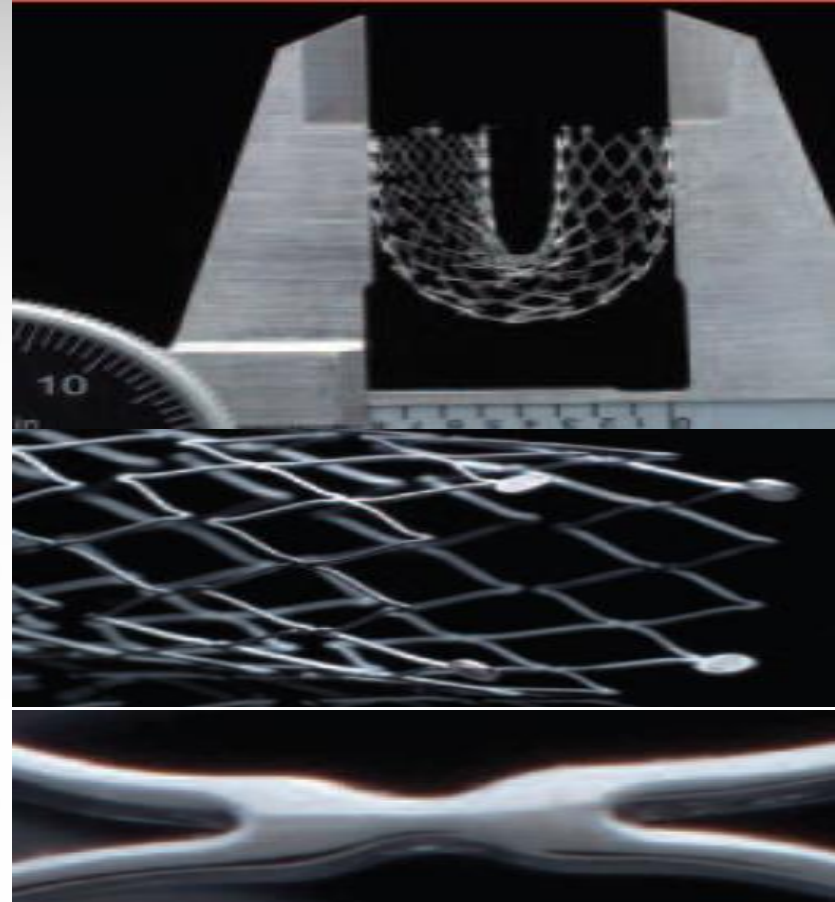
# Complete SE

**Minimize crown :  
flexibility**

**Enhanced Visibility :  
4 tantalum markers**

**resistant to metal fatigue  
and fracture.**

**OTW, 035', 6F sheath**

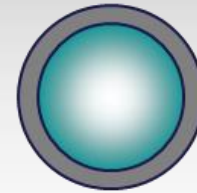


# Scuba

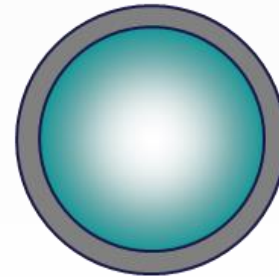
**Thin Co-Cr struts**

**Balloon expansion :  
Minimal-shortening**

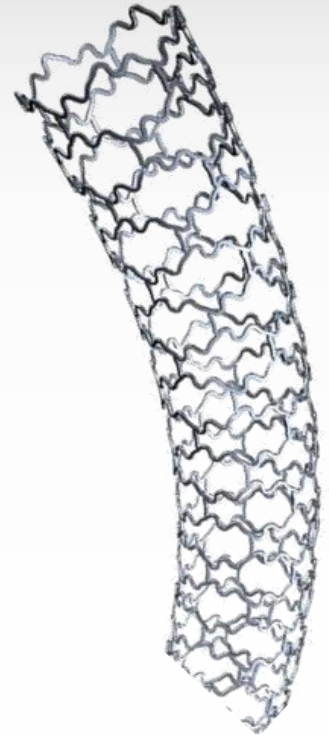
**OTW, 035', 6-7F sheath**



Strut thickness 120  $\mu\text{m}$   
for 5.0 / 6.0 / 7.0 mm



Strut thickness 152  $\mu\text{m}$   
for 8.0 / 9.0 / 10.0 mm



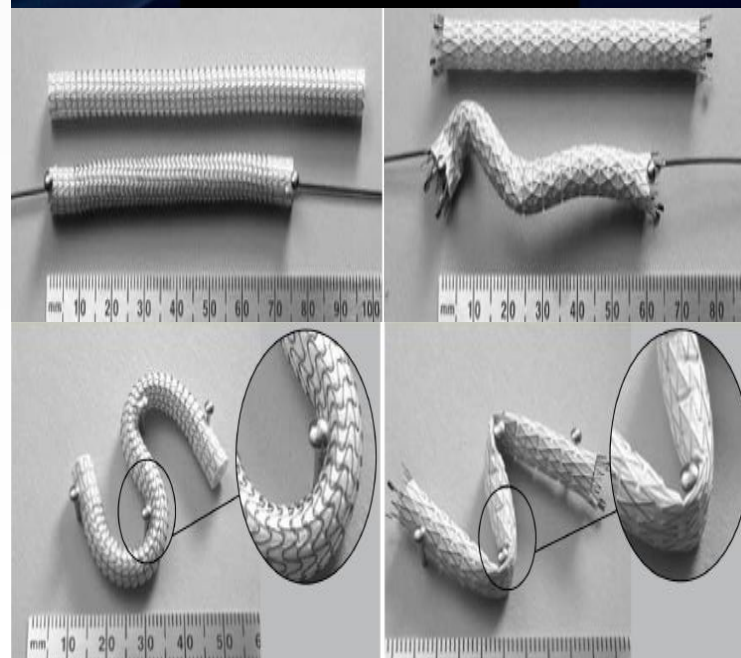
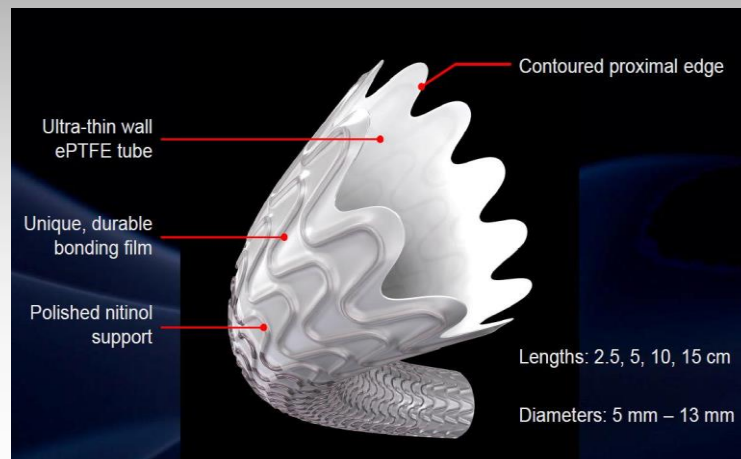
# Viabahn

**Very low incidence of reported fractures**

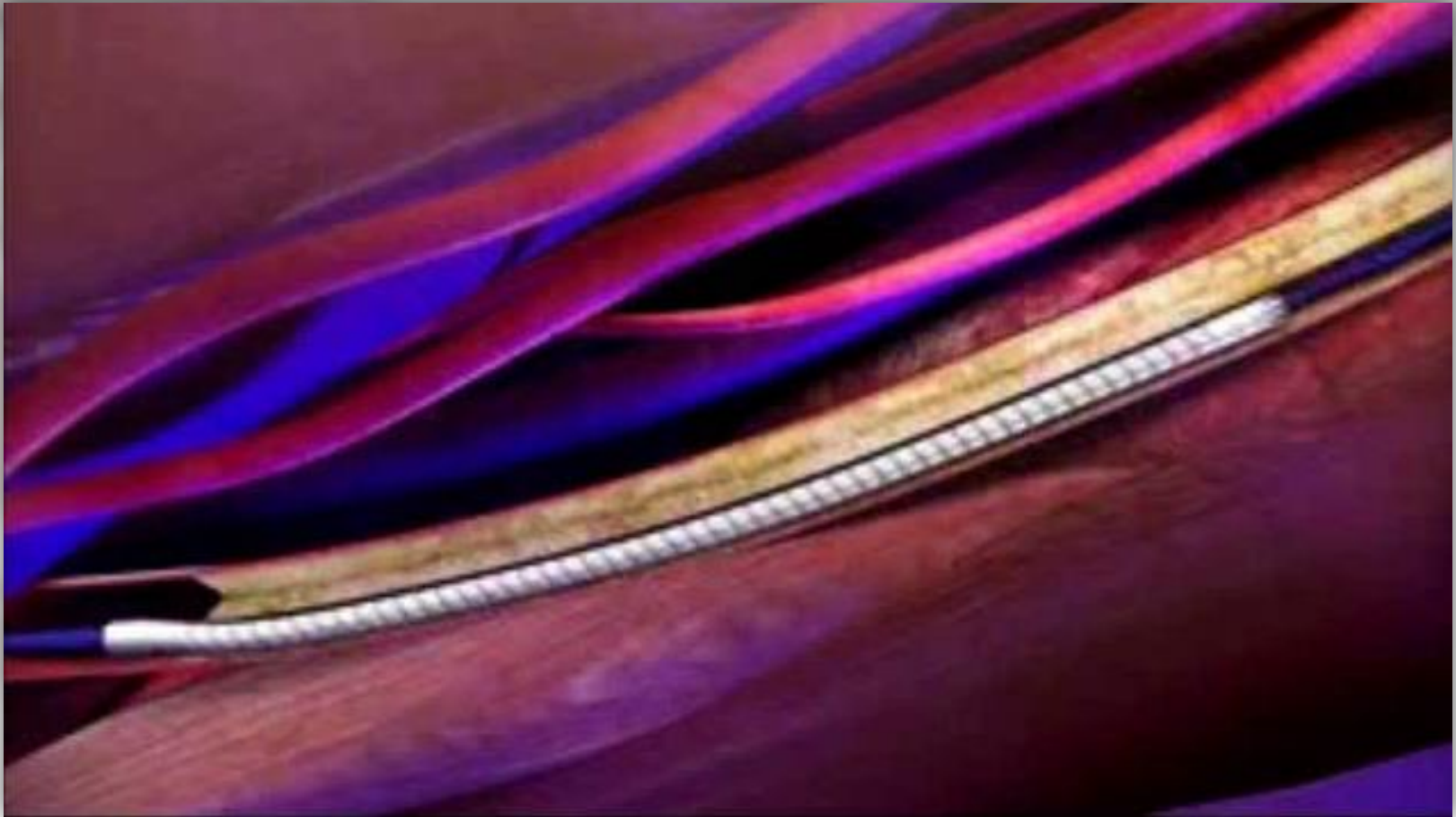
**Capable of longitudinal compression**

**Superb flexibility**

**OTW, 035', 7-12F sheath**



# Viabahn



# Life Stent

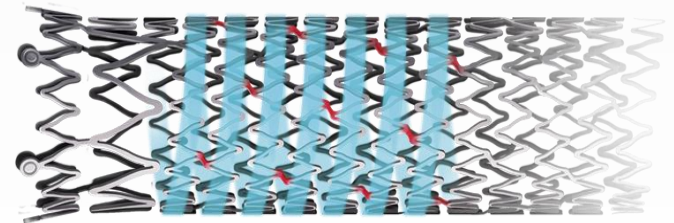
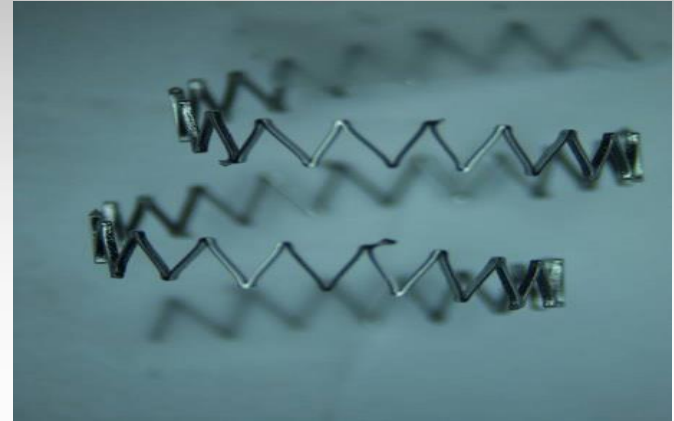
High compressive resistance

Helical Architecture delivers

Dynamic Conformability

Engineered for Bending,  
Compression, Torsion

OTW, 035', 6F sheath



HELICAL STRUT  
 HELICAL BRIDGE

# Life Stent

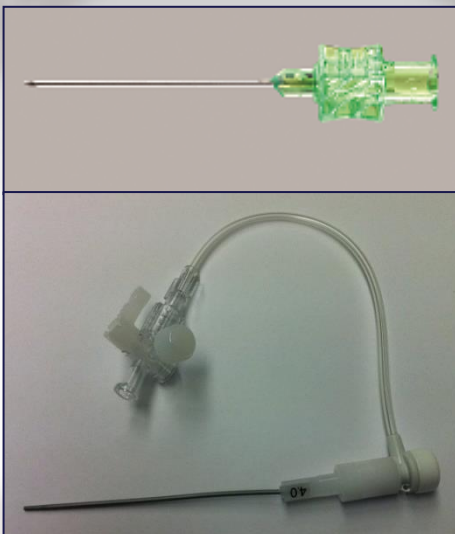


**Life stent**



# Micro puncture

# Micro-puncture SET (Cook)



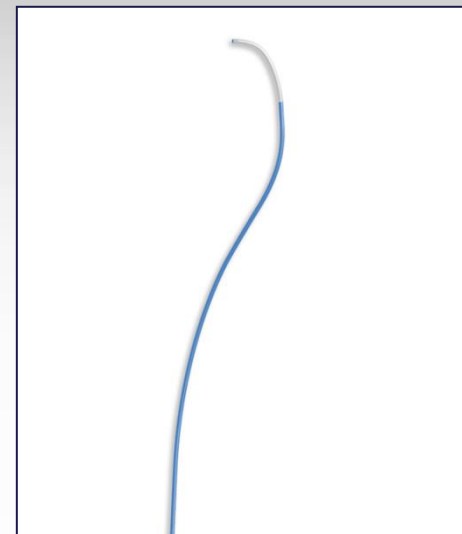
Micro - catheter  
(21G puncture needle)  
(3F sheath)



Micro-catheter  
(CXI, CXC)



CTO wire  
(V-18)



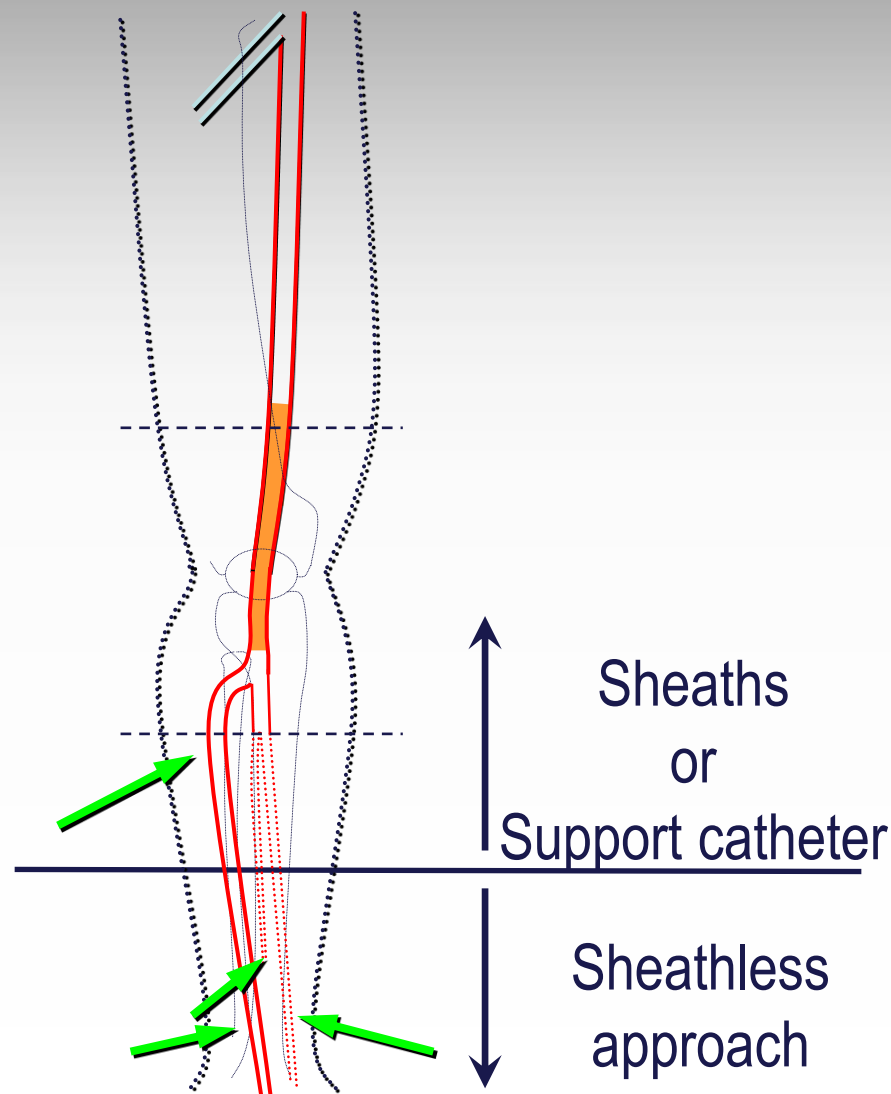
JR (5F)



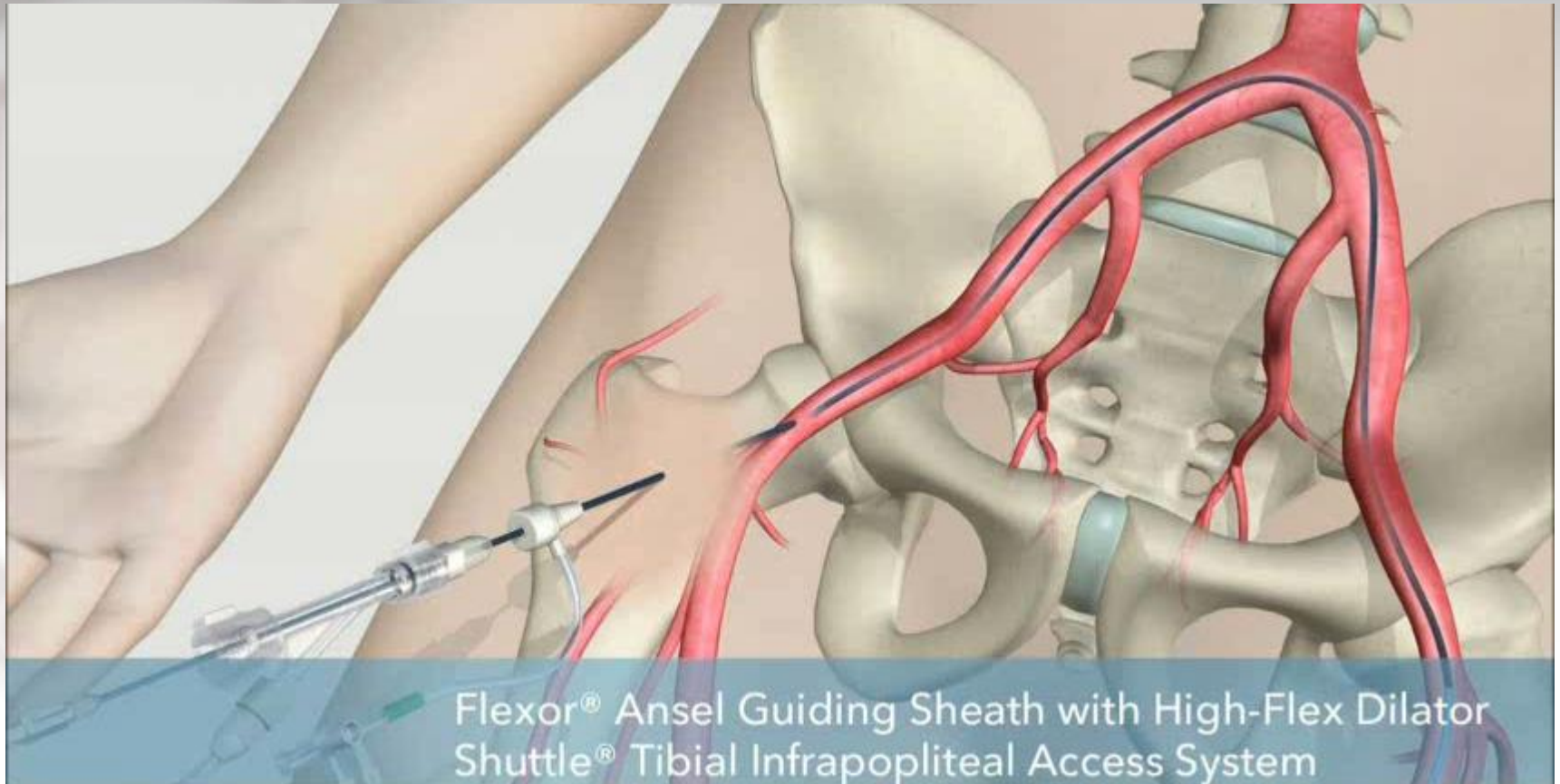
# Retrograde Approach

1. Puncture needle
  - 1) Pedal approach; 4cm length
  - 2) Prox tibial approach; 7cm
  - 3) Distal SFA approach; 9cm
  
2. Supporting catheter
  - 1) Cook; CXI (018), CXC (014)
  - 2) Boston; Rubicon (018, 014), Renegade
  - 3) Covidien; Trailblazer (018, 014)
  
3. Retrograde Wires  
; 018 (V-18, Connect, Treasure..), 014 (V-14, Command...)
  
4. Externalization; 4-5F JR4

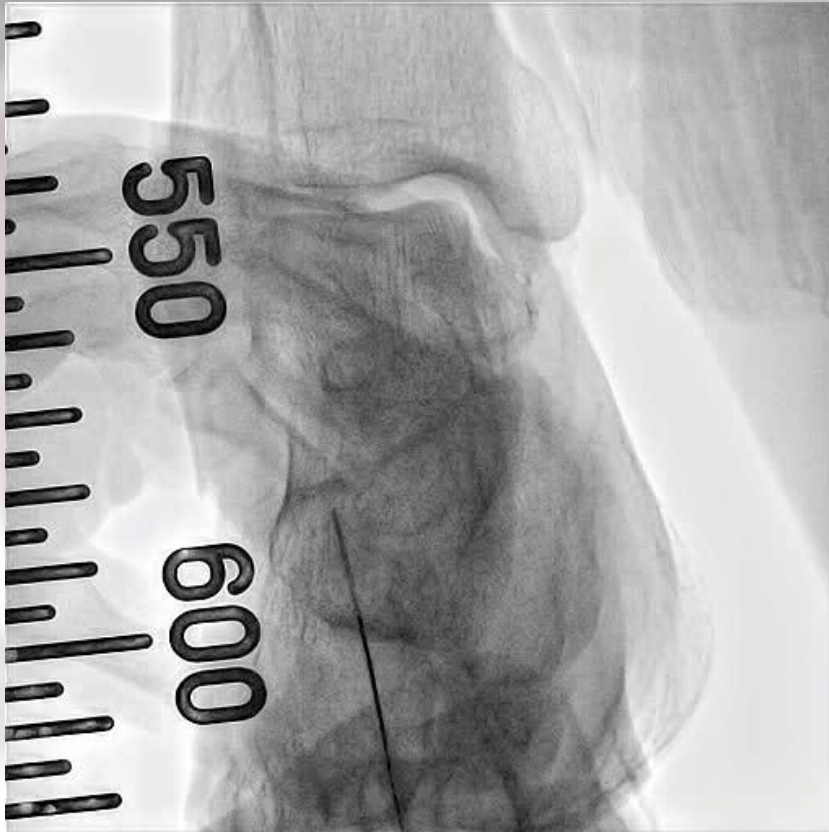
# Retrograde approach



# Retrograde approach



# Retrograde approach



retrograde puncture



backup support – CXI+ v18(cook)

# Retrograde approach



Advance V-18 wire advance into JR(5fr)



JR advance to reentry site (true lumen)

# Retrograde approach

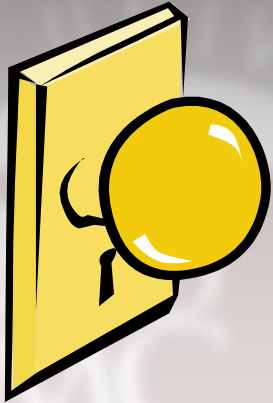


018' balloon(fox sv) ballooning



exchange floppy wire

# Take home message



Our cath lab is always faced into  
A variety of complex lesions and  
patients.

In this situation, we should ready for  
multiple weapons (tools & devices) for the  
best patient's outcomes.



The **appropriate device** use combined  
with **experienced technologies** are the  
**Golden key** of successful procedures!

Thank You for Your Attention!

