UNIVERSITÄTS
FREIBURG · BAD KROZINGEN
HERZZENTRUM

Asahi Intecc 4 Core Technologies

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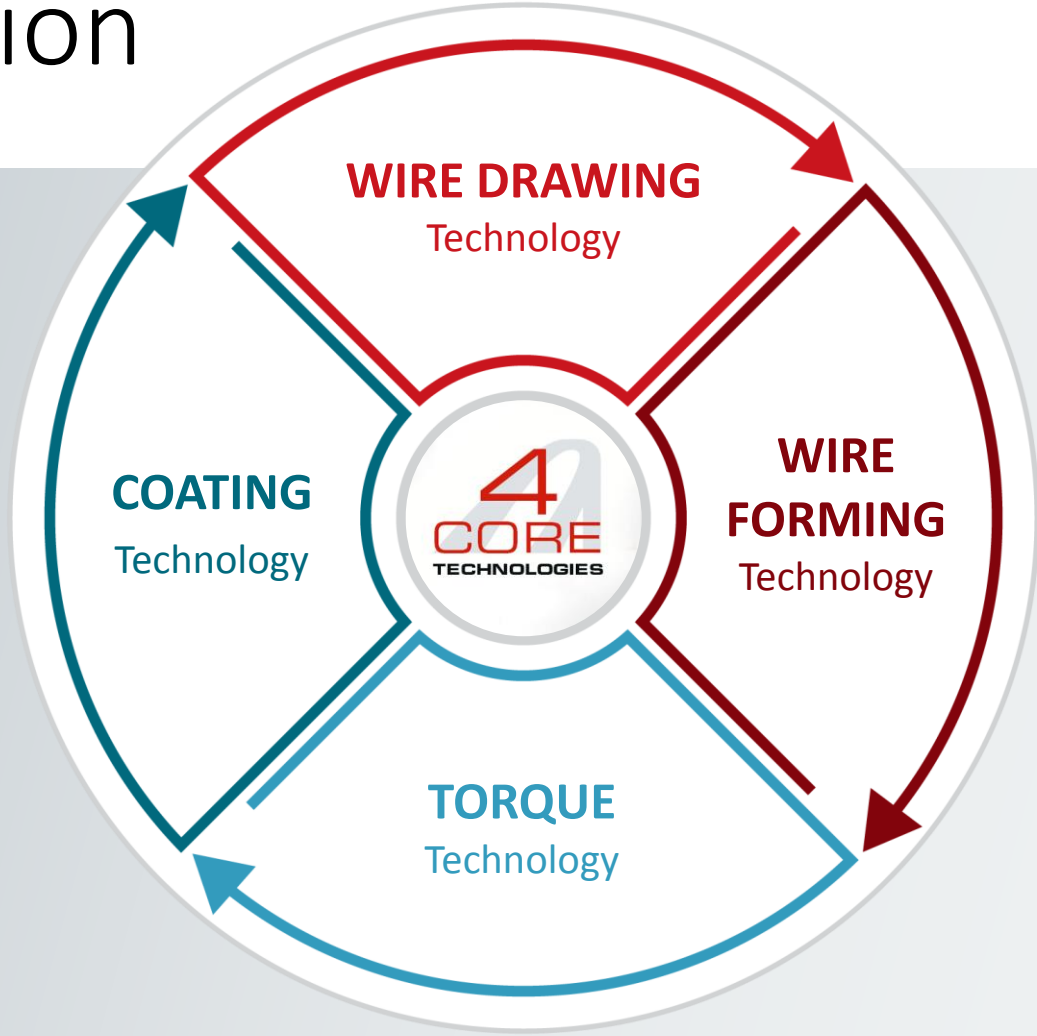
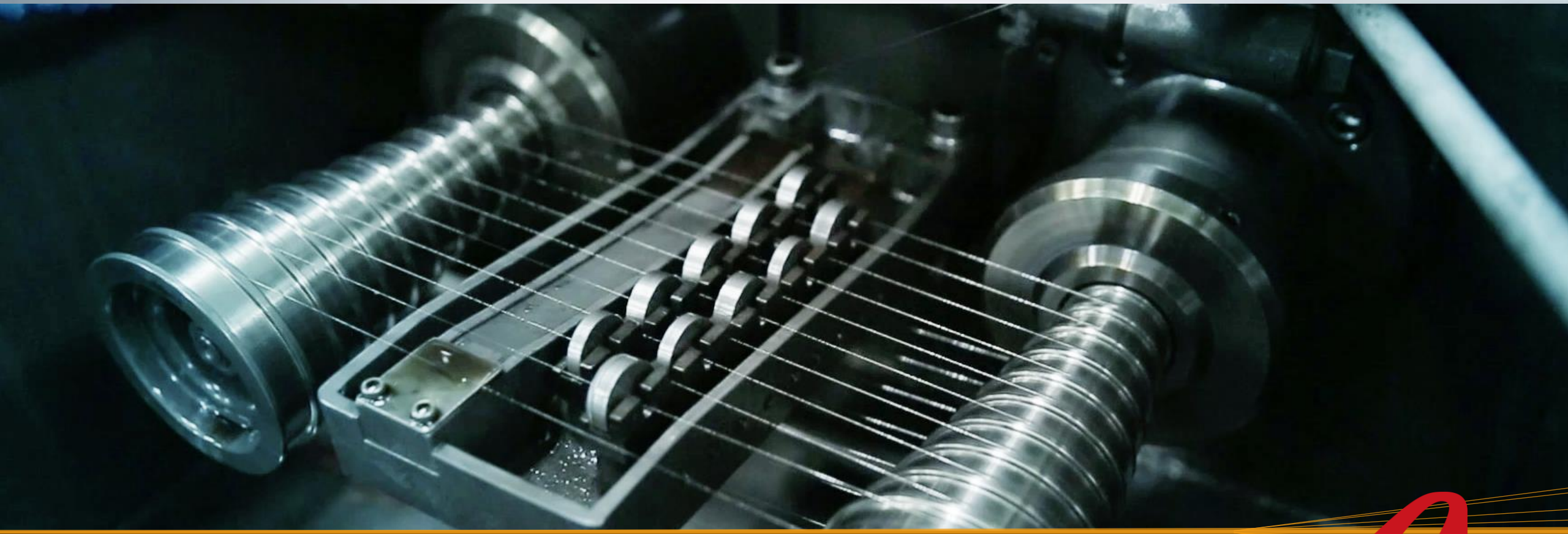
DEPARTMENT OF CARDIOLOGY AND ANGIOLOGY II
DIRECTOR OF CTO AND CHIP

Leading Innovation



Integrating Four Core Technologies to SHAPE THE FUTURE OF MEDICINE

CORE TECHNOLOGIES



FROM ROW MATERIAL TO FINISHED PRODUCT: IN-HOUSE PRODUCTION SYSTEM OF ASAHI INTECC

ASAHI INTECC THAILAND PLANT

NET WIRE ROPE

DIAMOND DIES

WIRE DRAWING

CORE, COIL

CENTERLESS GRINDING

WIRE BRAIDING

VERIFICATION

WIRE ASSEMBLY, SOLDERING

STERILIZATION

4 CORE TECHNOLOGIES

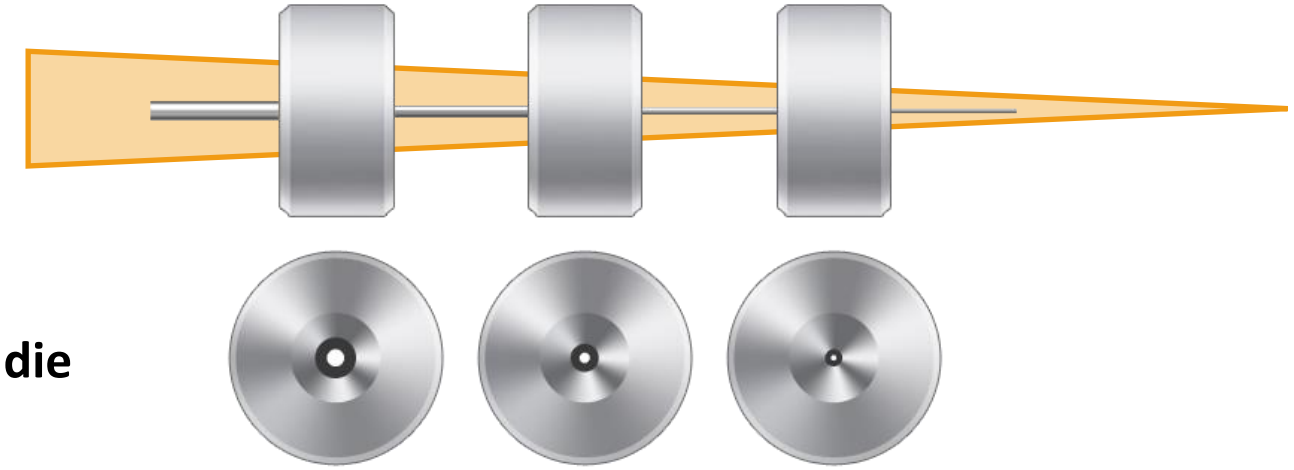
Wire Drawing Technology

Wire Drawing Technology

PROCESS

Stainless

Diamond die

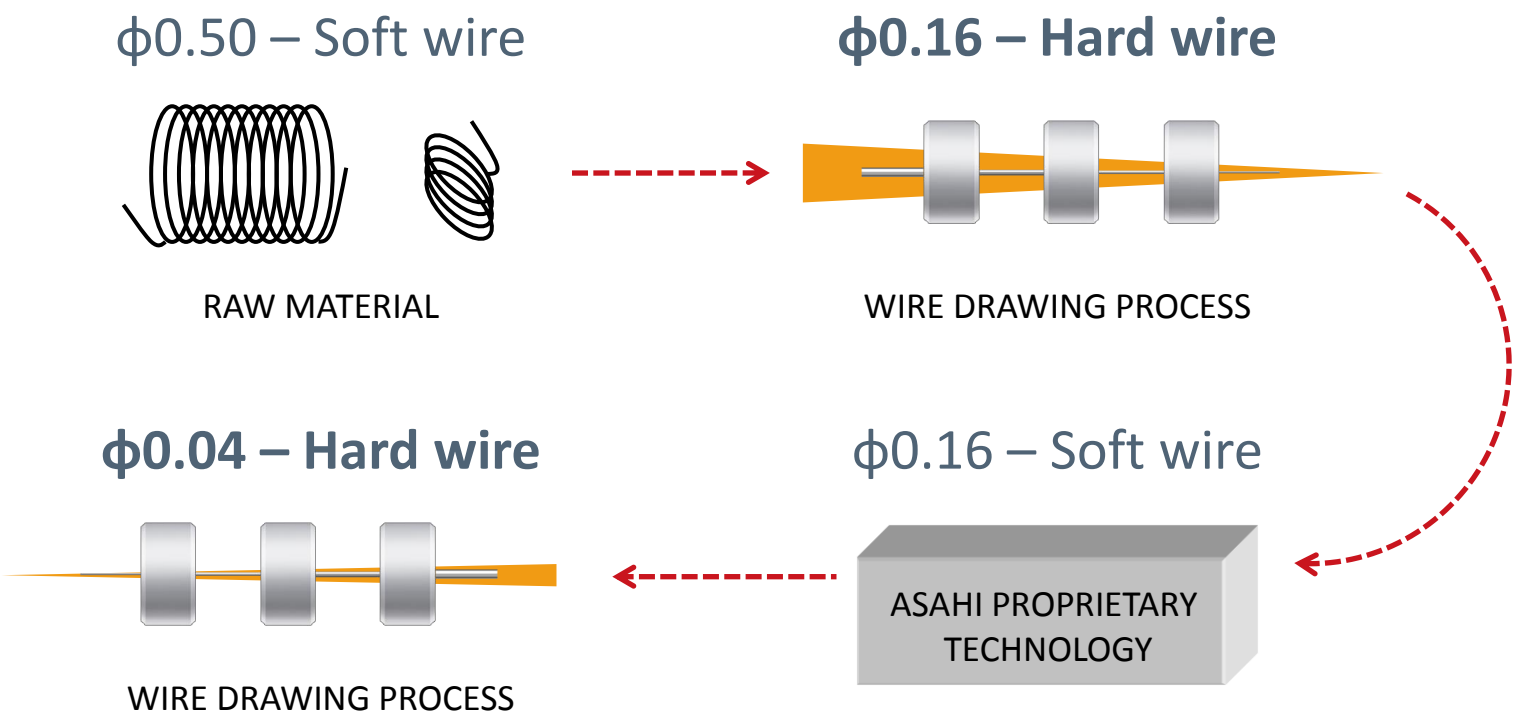


0.36mm（25%）

*an example of a production stage for wire drawing

Wire Drawing Technology

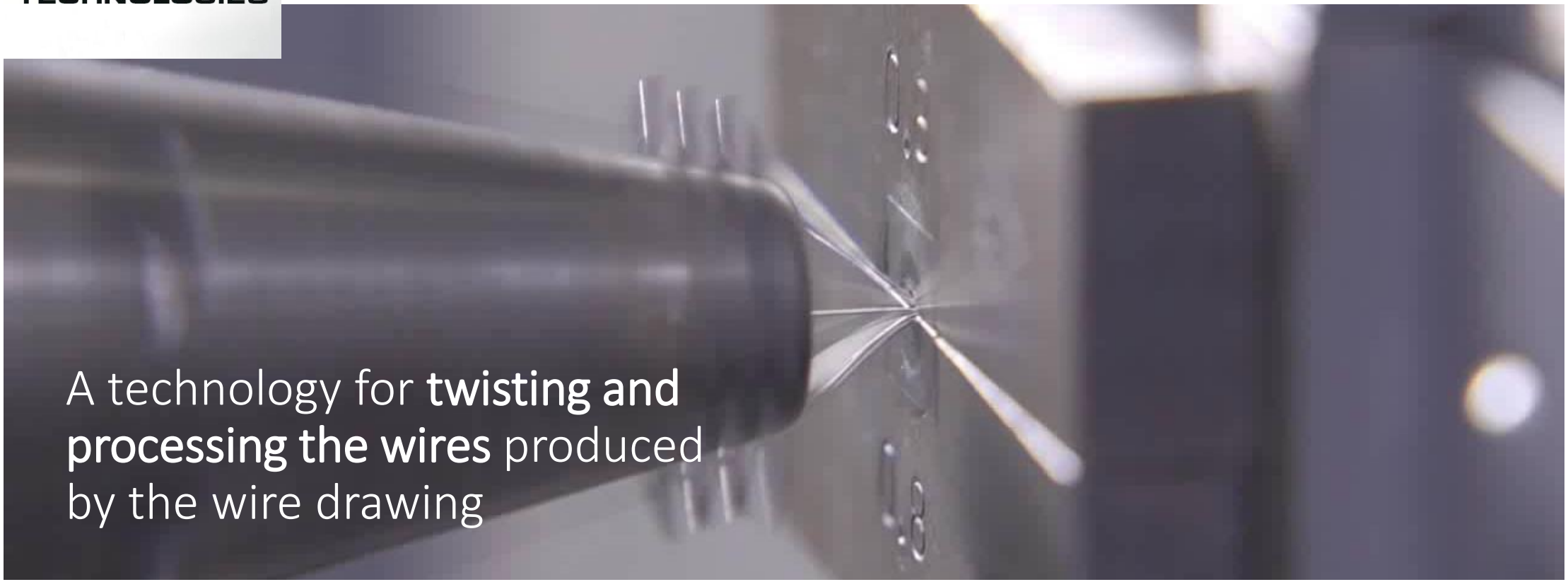
PROCESS



*an example of a production stage for wire drawing

4 CORE TECHNOLOGIES

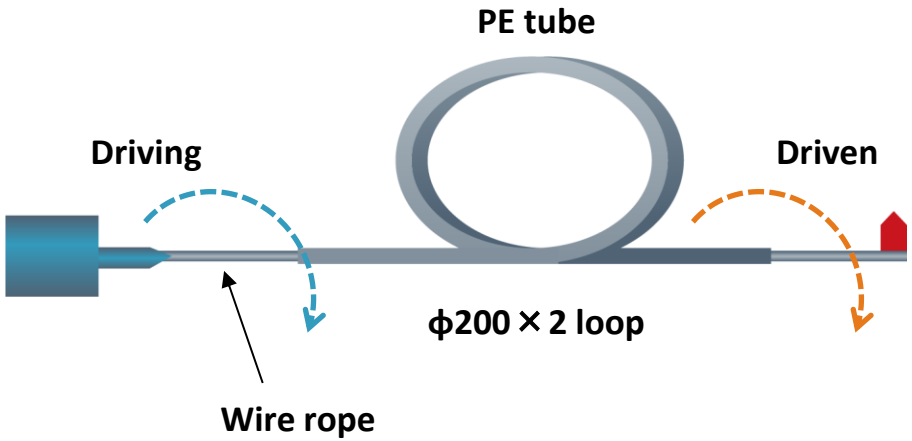
Wire Forming Technology



Wire Forming Technology

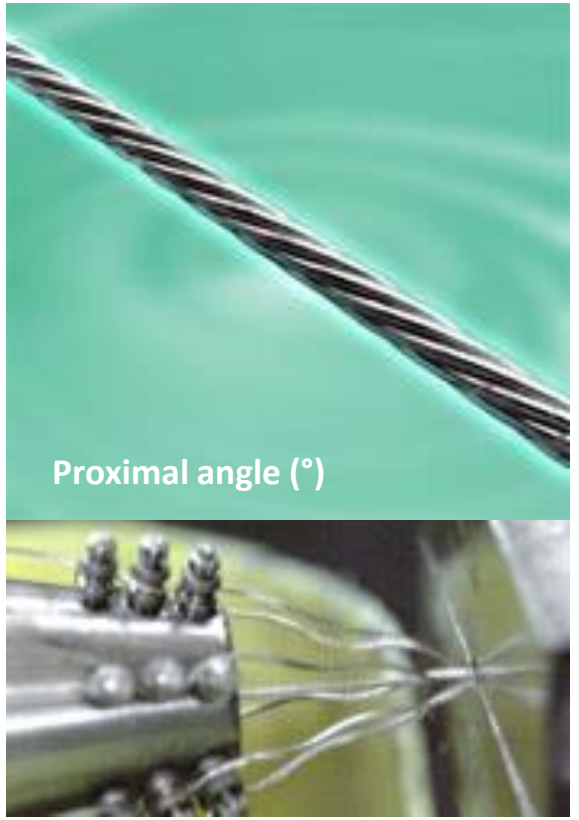
APPLICATIONS

- Endoscopes
- Treatment tools
- Snares
- Cutter
- Clip devices
- Pull wires

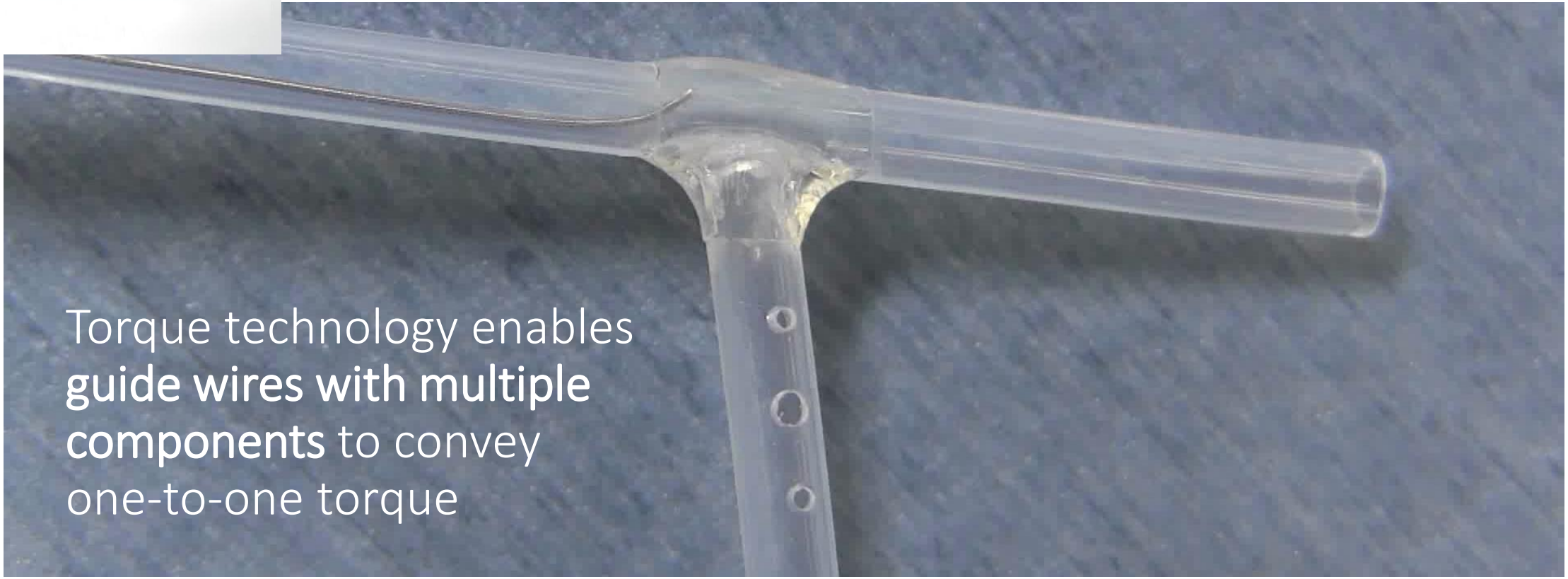


ONE-TO-ONE TORQUE RESPONSE

FLEXIBILITY / TORQUE FORCE



Torque Technology



Torque Technology

APPLICATIONS

- Endoscopic accessory
- Guide wire
- Catheter delivery systems
- ENT
- Atherectomy
- Thrombectomy
- AAA
- Spinal

MATERIALS

- SS304
- 316
- Ni-Ti

TYPES: Wires,
Wire ropes, Rope coils,
Torque coils

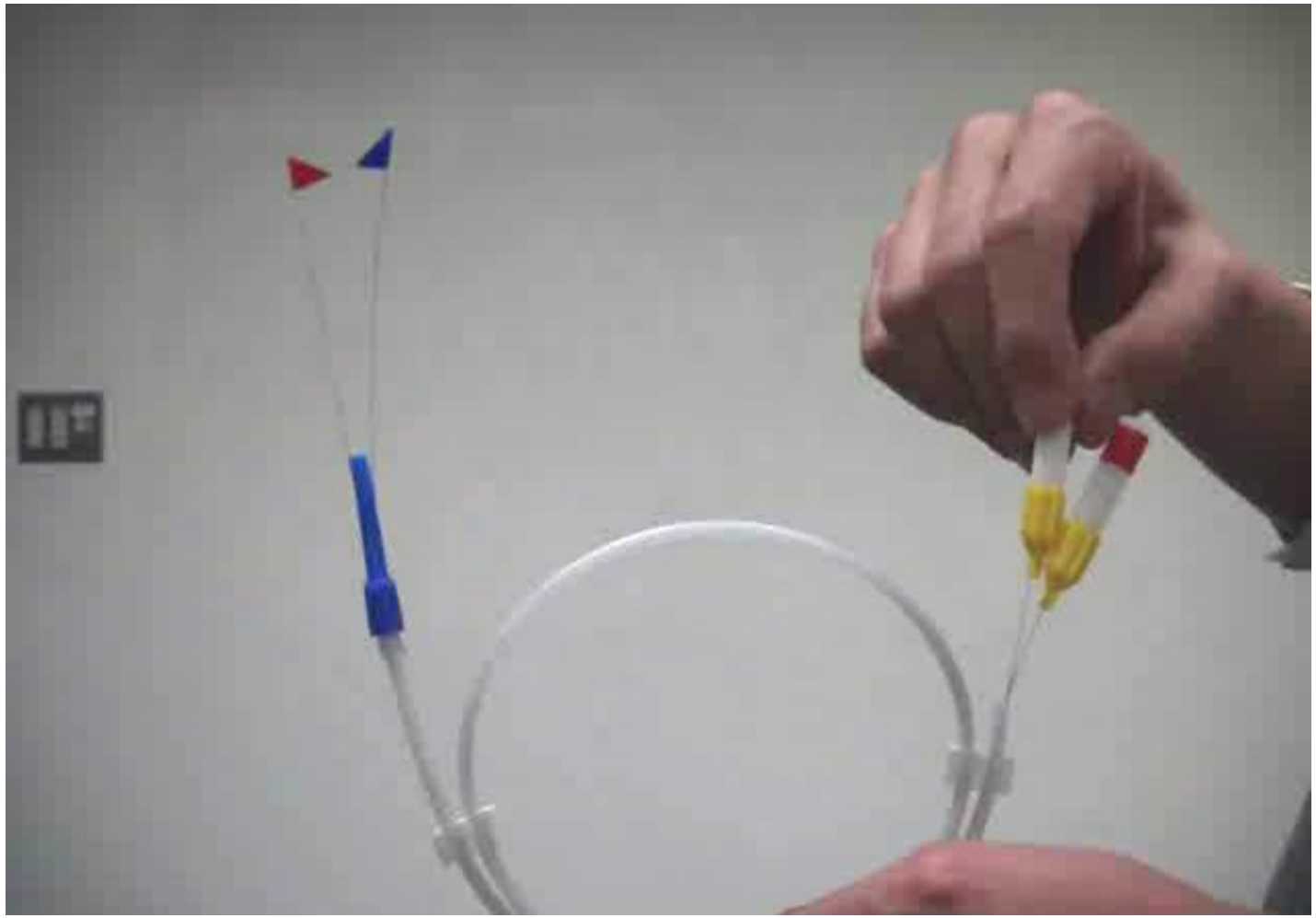
ASAHI Guide Wire
WITH Torque Technology

Guide Wire **WITHOUT**
Torque Technology

CUSTOM MACHINERY AND PROPRIETARY MANUFACTURING PRODUCES ONE-TO-ONE TORQUE.

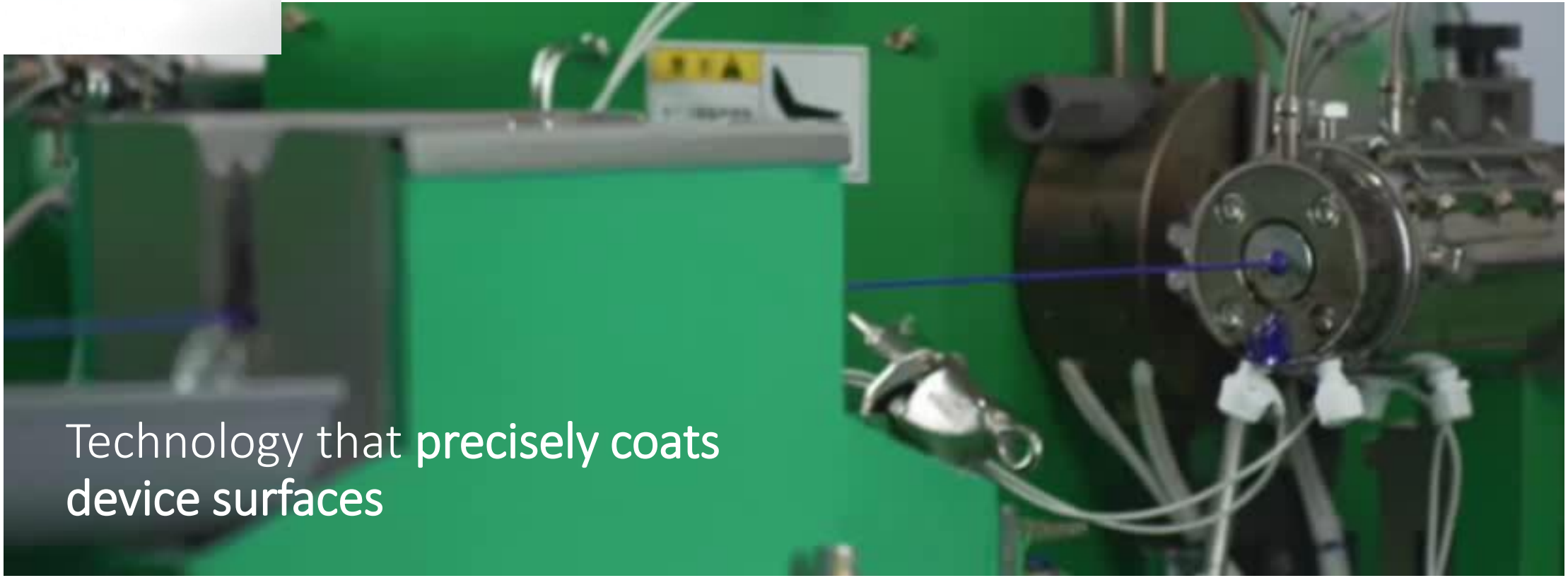
Torque Technology

ASAHI Guide Wire
WITH Torque Technology



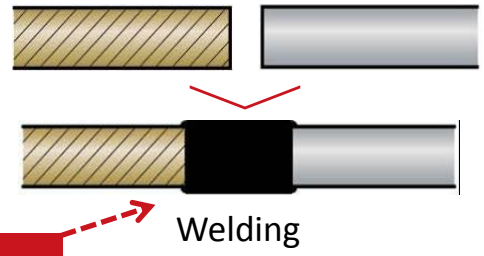
Guide Wire **WITHOUT**
Torque Technology

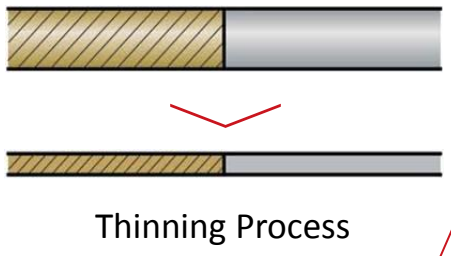
Coating Technology



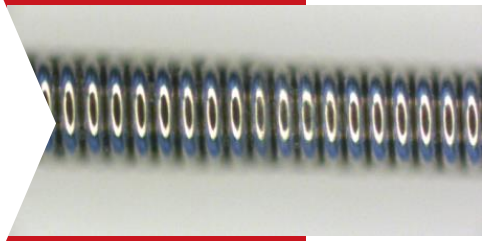
Jointless Spring Coil Technology

ASAHI Jointless Spring Coil Assembly





(Platinum + Stainless) Coil



A Unique Development of Jointless Technology
(Patent:2981976)

Standard Coil Assembly

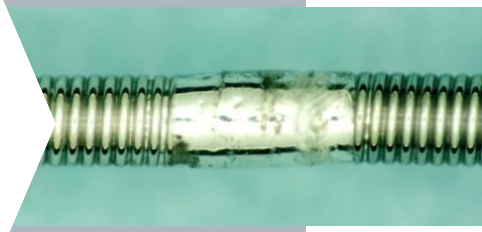
Platinum coil

Stainless coil

Entwist

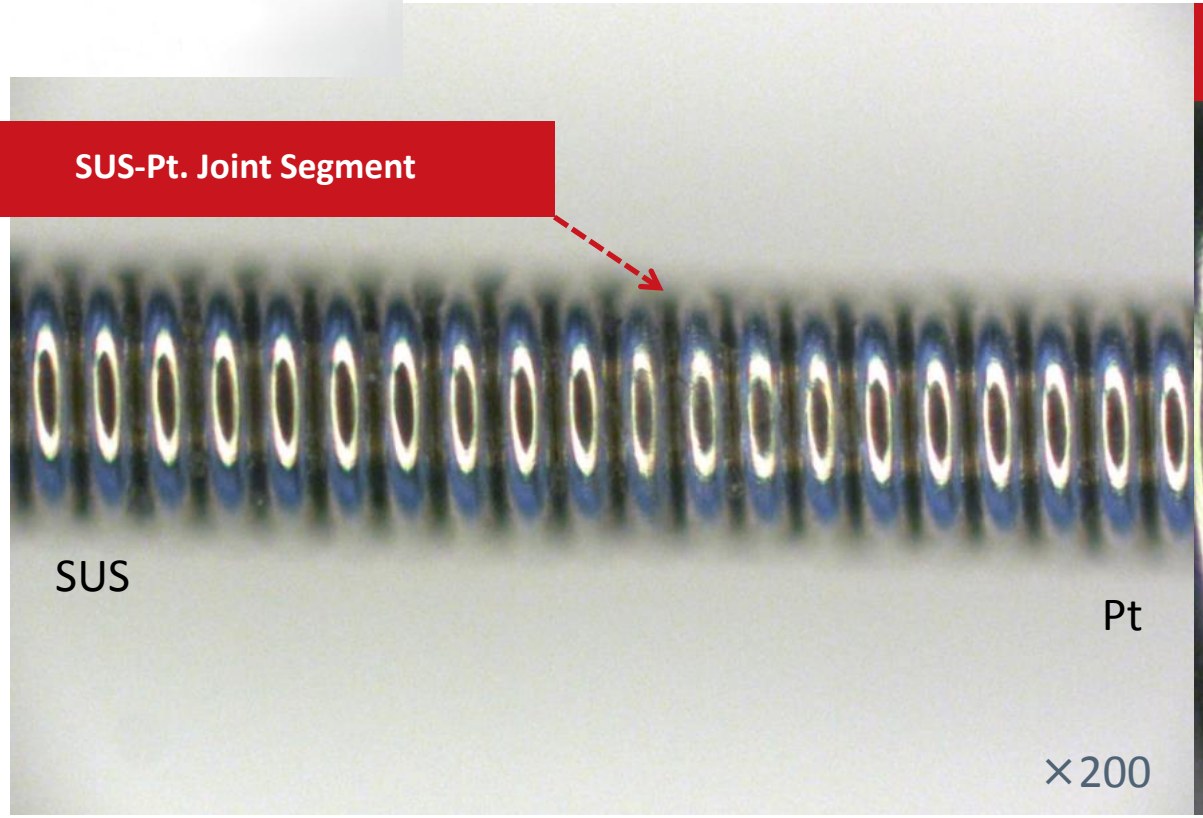
Soldering

Platinum Coil + Stainless Coil

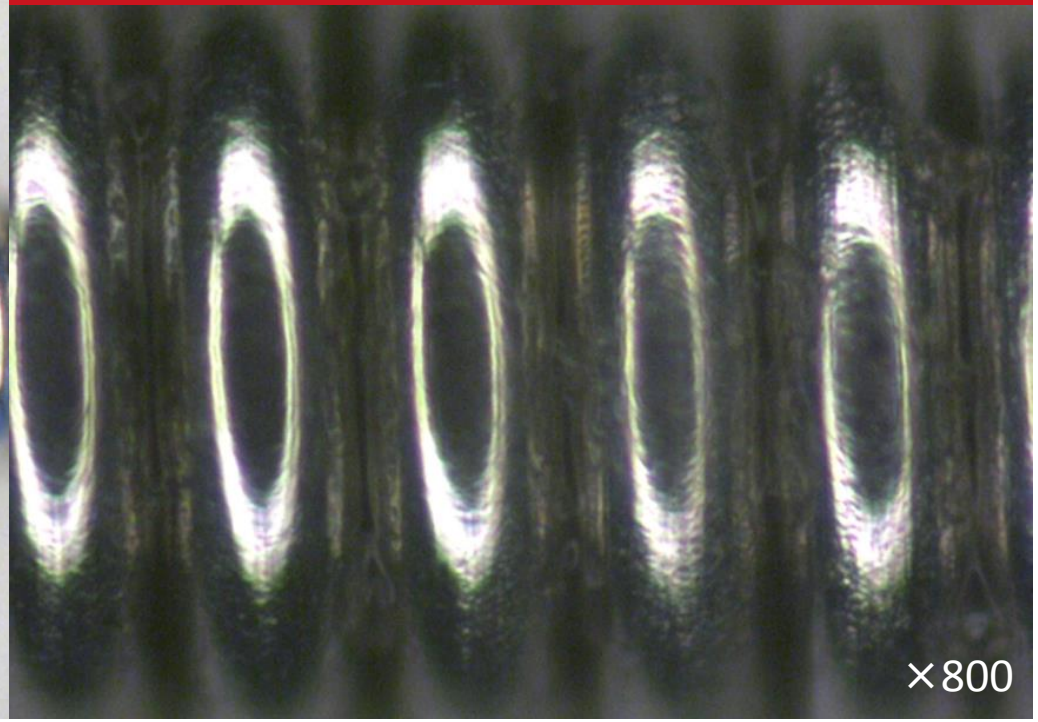


Jointless Spring Coil Technology

SUS-Pt. Joint Segment



Features of ASAHI PCI Guide Wire (Jointless Coil)



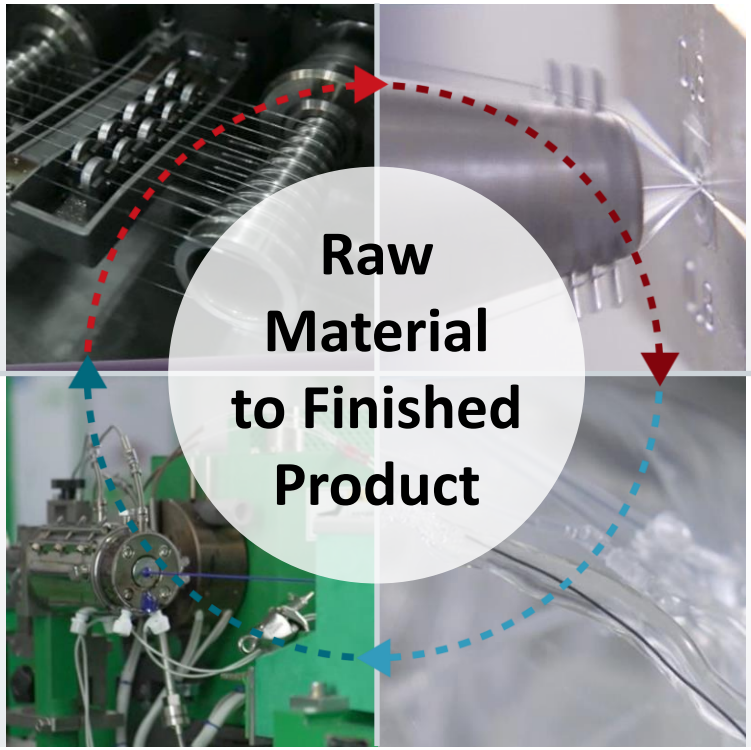
Integrated Production System

Wire Drawing
TECHNOLOGY

Control strength & wire diameter

Wire Forming
TECHNOLOGY

Micron size wire



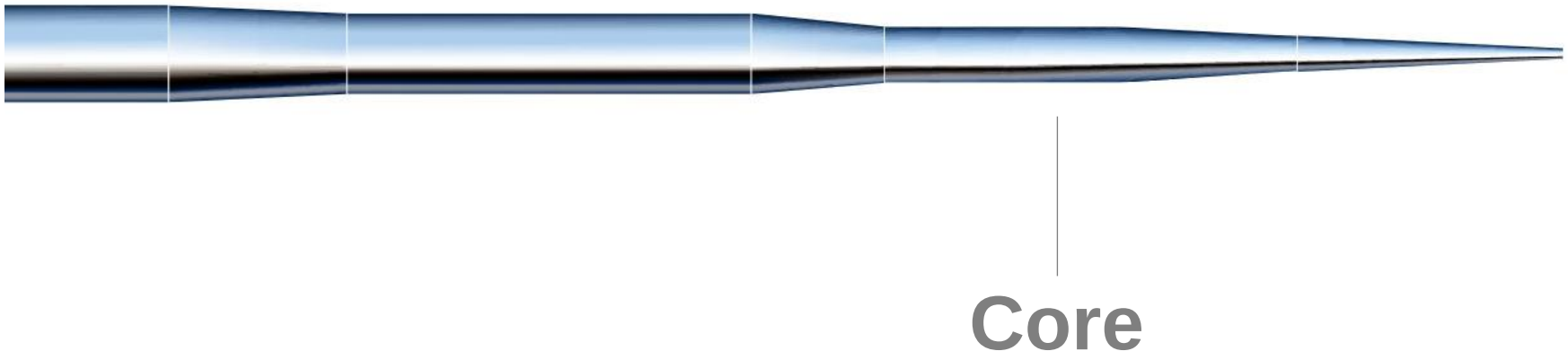
Resin Coating
TECHNOLOGY

Extra-fine coating

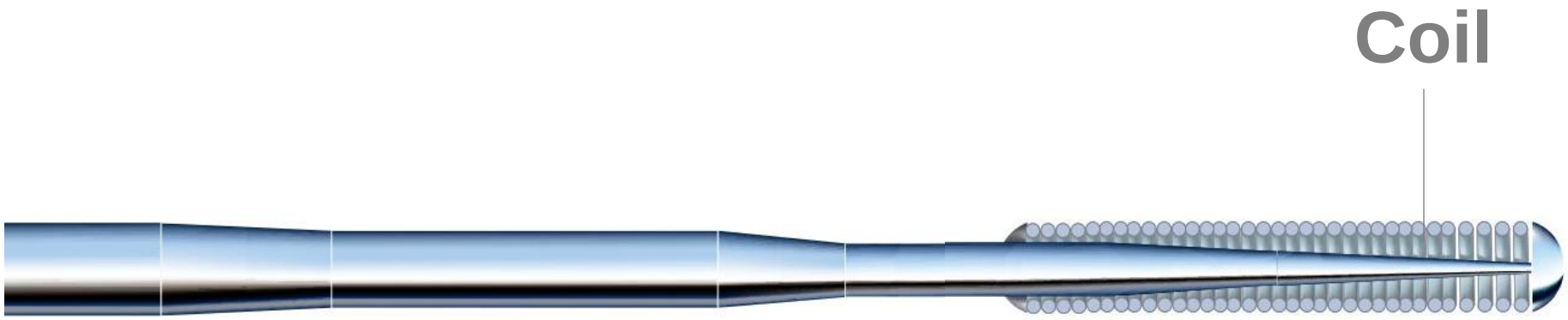
Torque
TECHNOLOGY

Torque Response

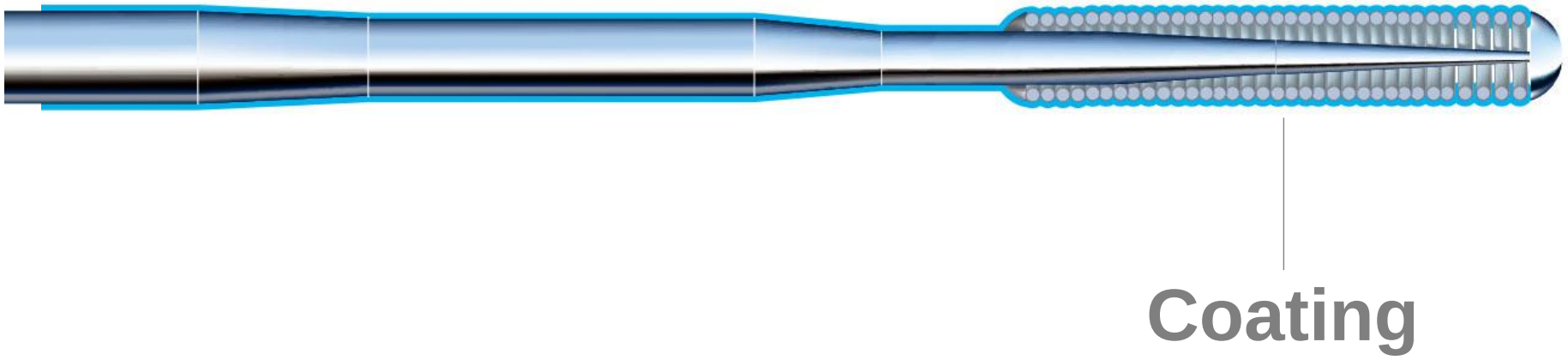
Basic Wire Construction



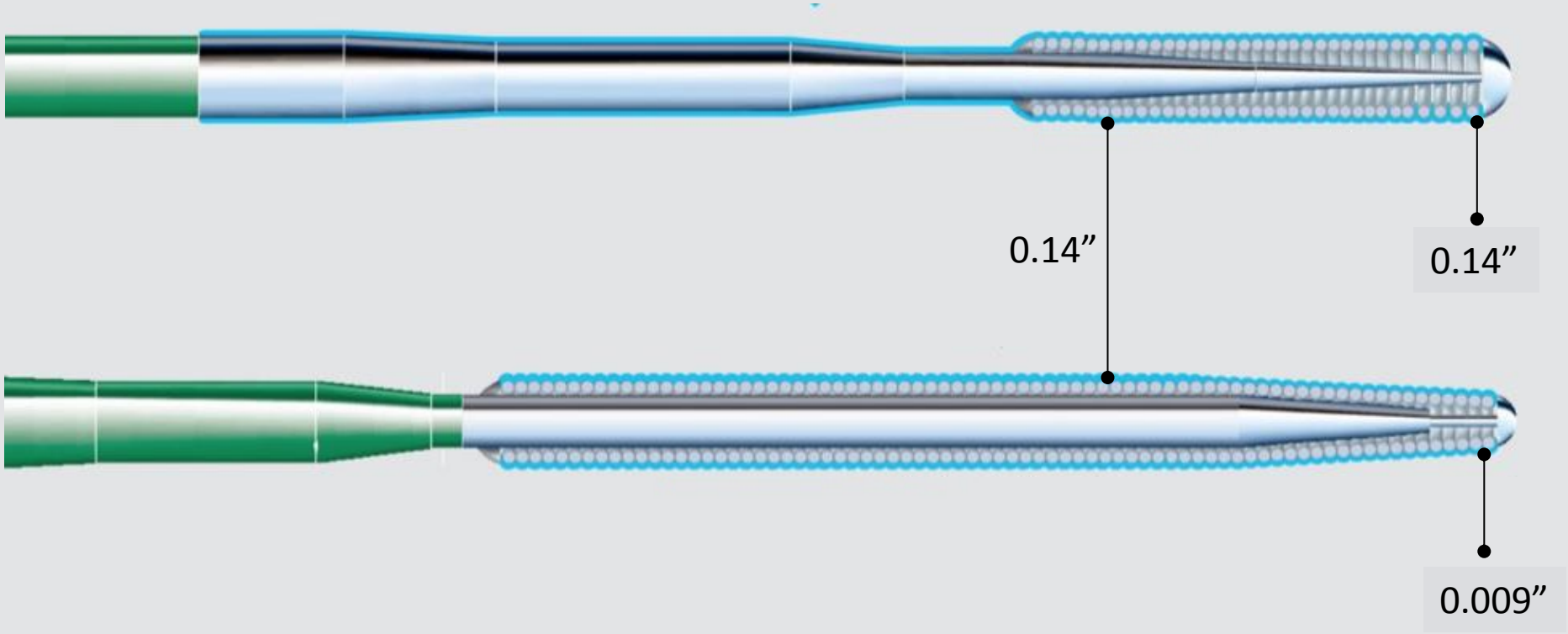
Basic Wire Construction



Basic Wire Construction



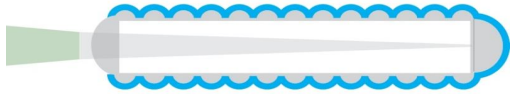
Two types of 0.014” wires: tapered & none tapered



Tip Load

Coil

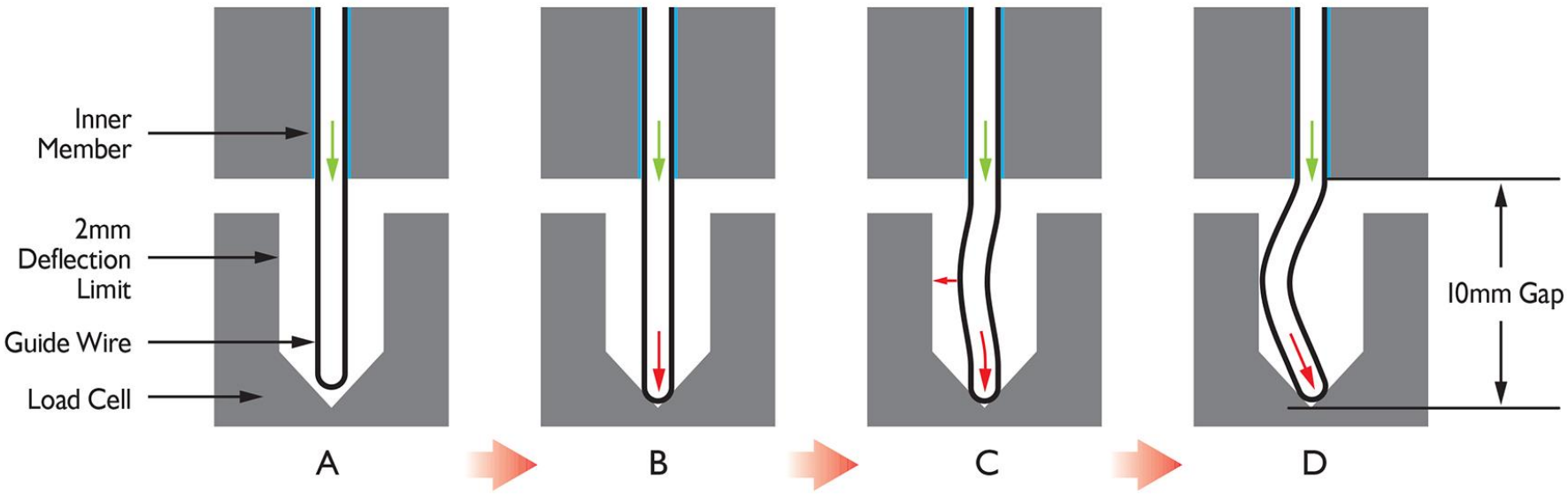
Feel
&
Performance



Coatings

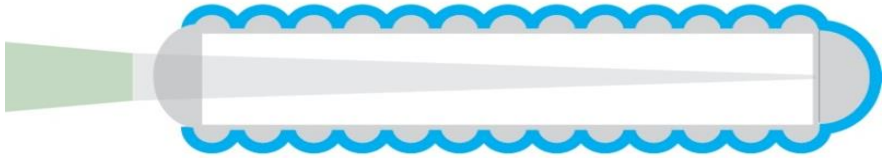
Core

Tip Load: how to measure a tip load

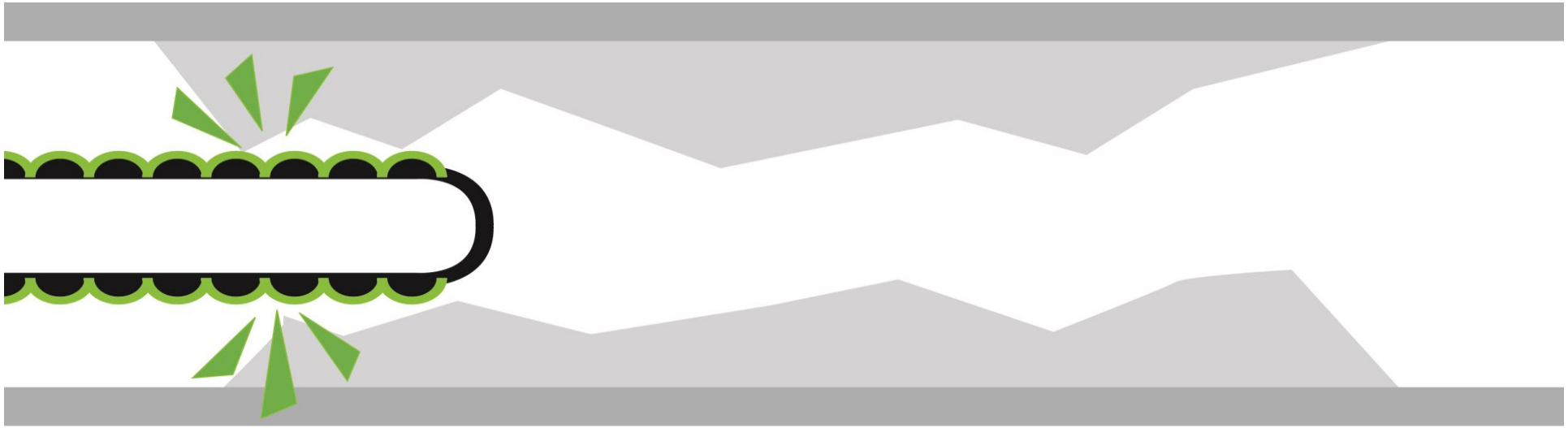


Green Arrow indicates guide wire motion.
Red Arrows indicate approximate force vector.
Gap is fixed at 10mm during test.

Coatings

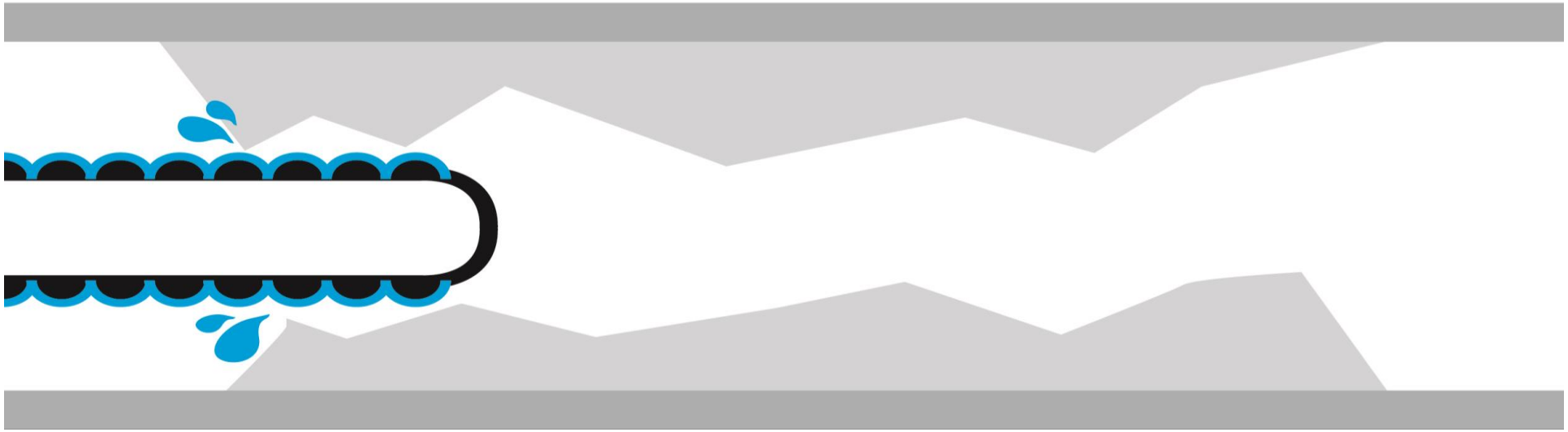


Hydrophobic = wax-like when wet



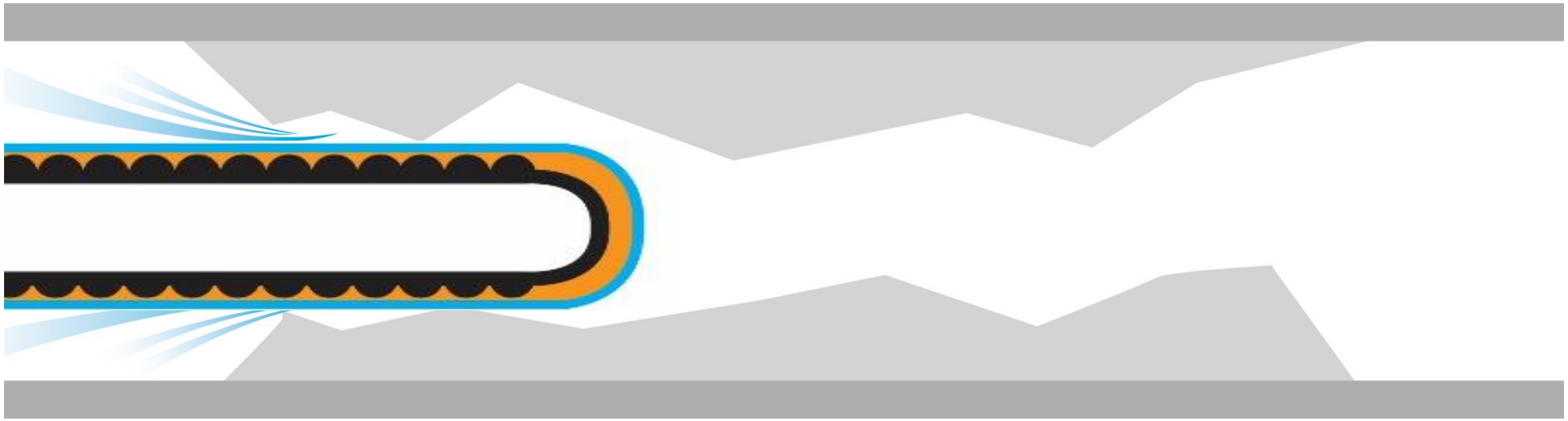
Provides tactile feedback

Hydrophilic = gel-like when wet



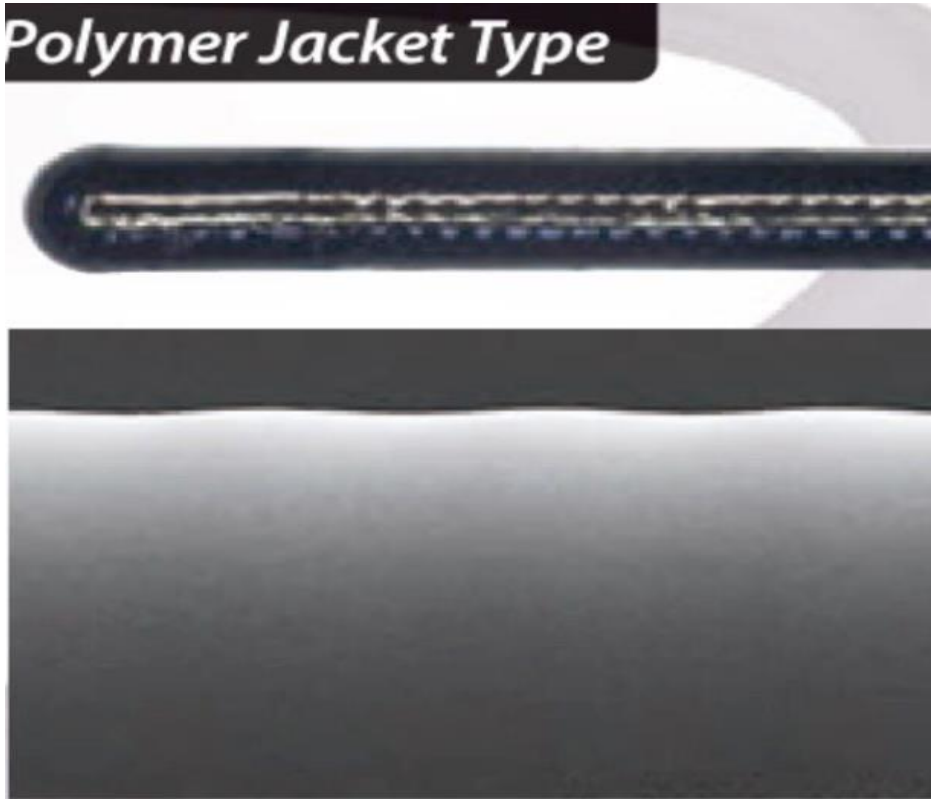
Slide through vessels + lesions

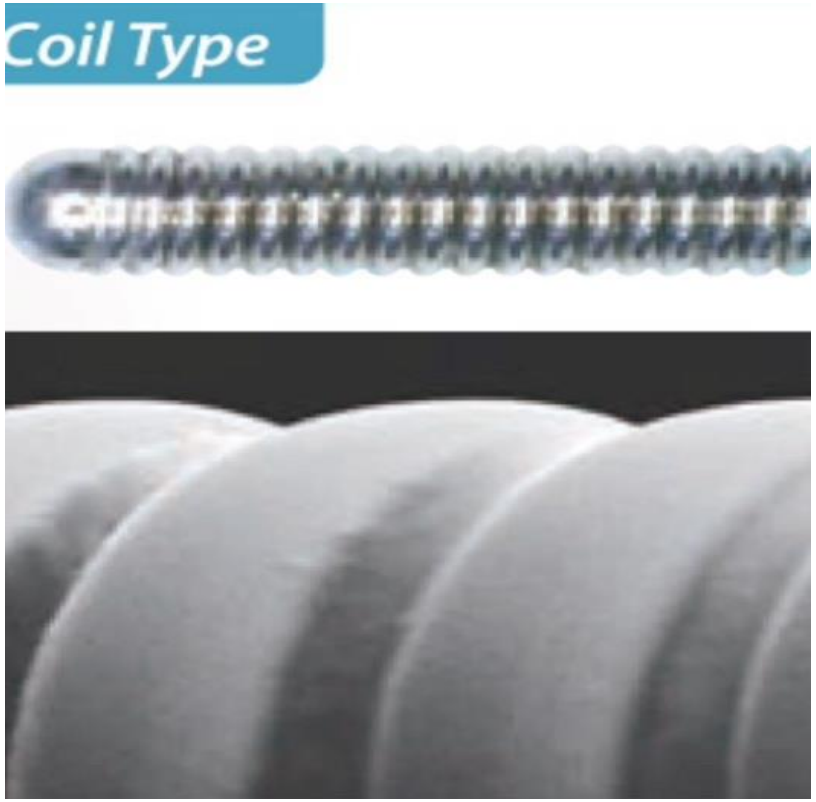
Polymer Jacket = gel-like & smooth
(Lubricious)



Tracks / slides through tortuous vessels and heavily calcified lesions / micro-channels – reduces friction.

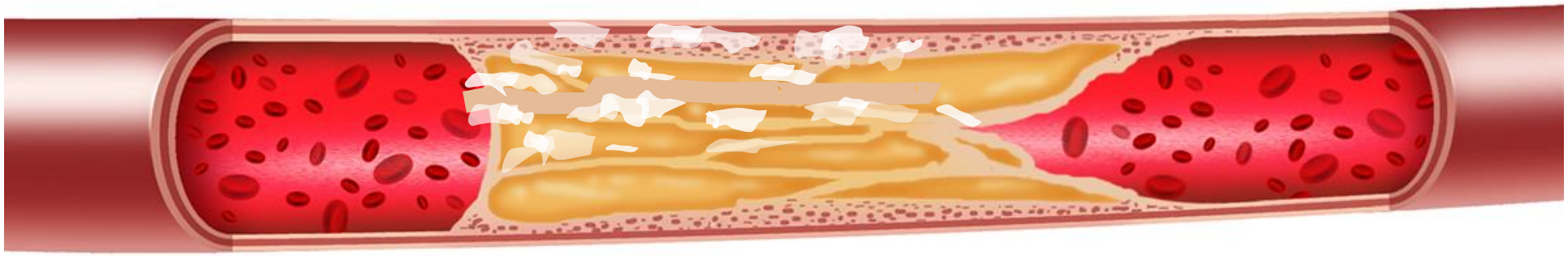
Polymer Jacket Micrograph





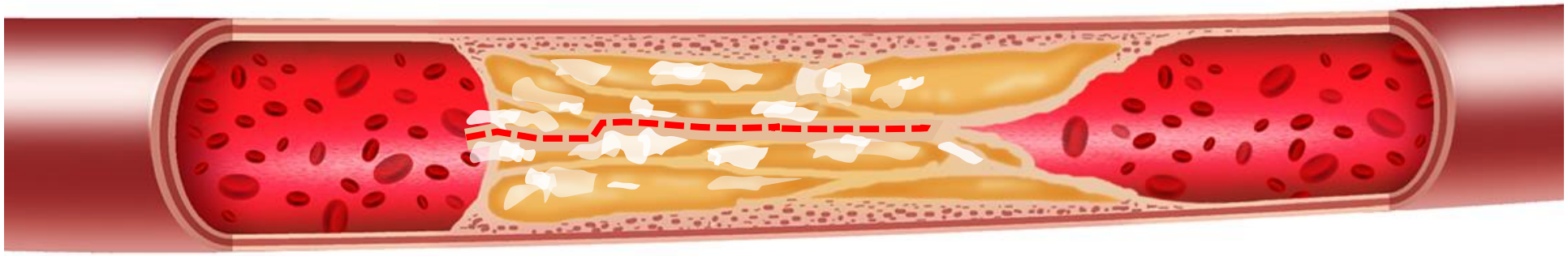
Septal Surfing with Sion black

Polymer Jacket Wires



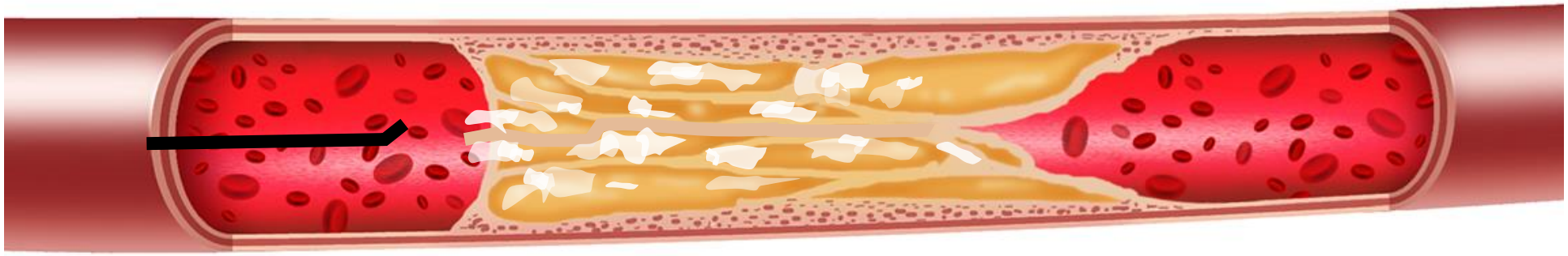
Reduce Friction = Lubricious!

Polymer Jacket Wires



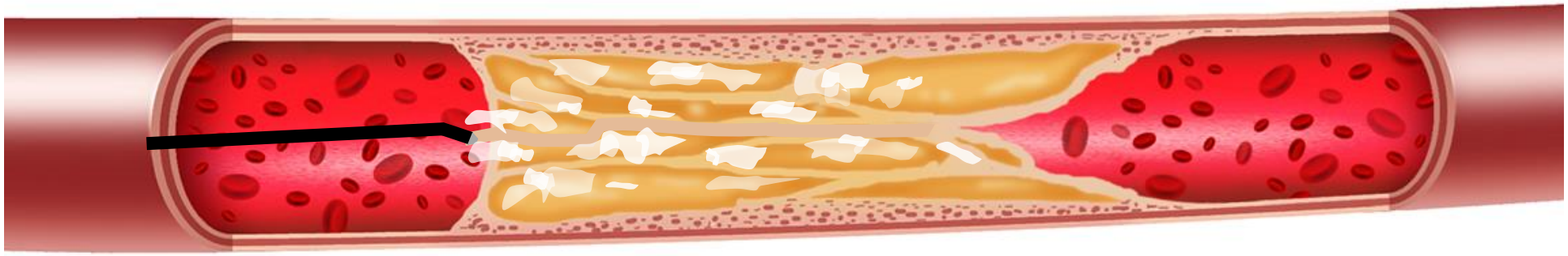
Reduce Friction = Lubricious!

Polymer Jacket Wires



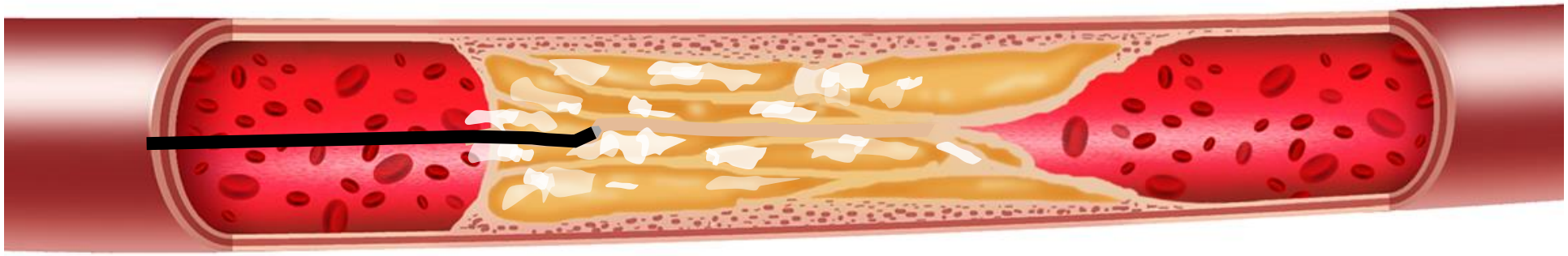
Reduce Friction = Lubricious!

Polymer Jacket Wires



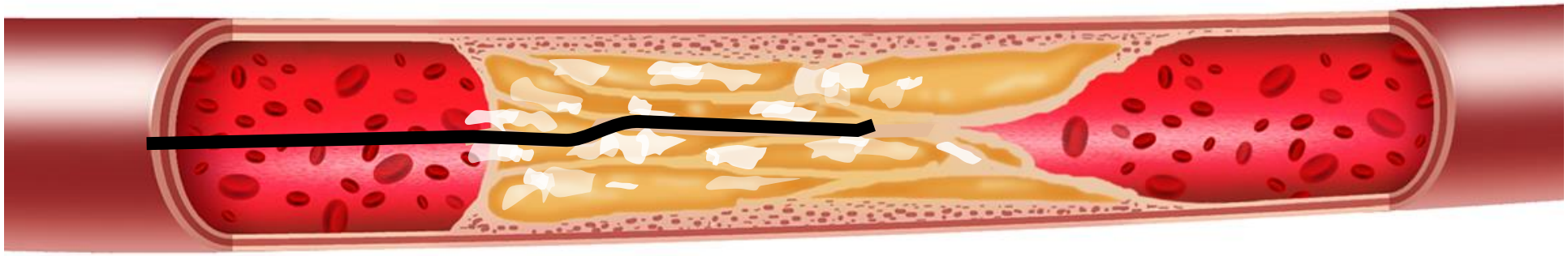
Reduce Friction = Lubricious!

Polymer Jacket Wires



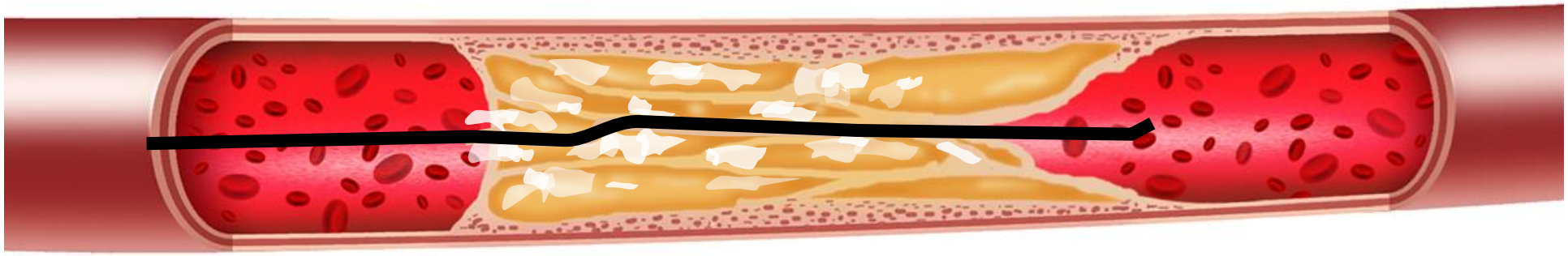
Reduce Friction = Lubricious!

Polymer Jacket Wires



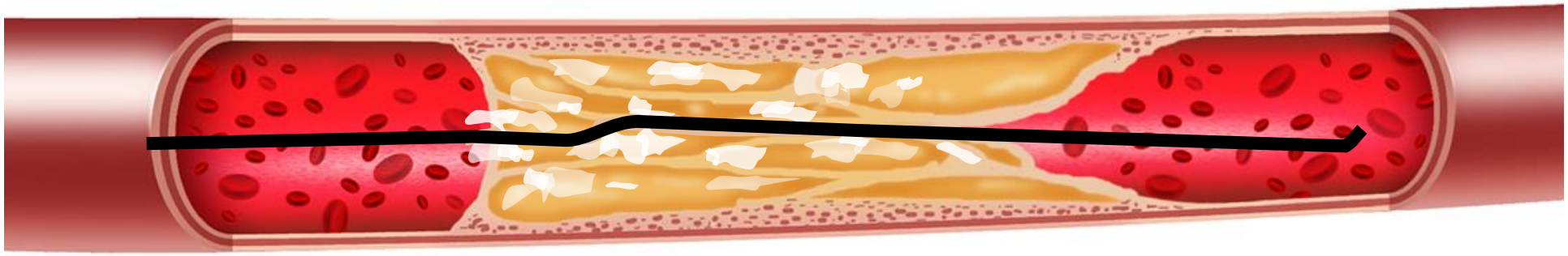
Reduce Friction = Lubricious!

Polymer Jacket Wires

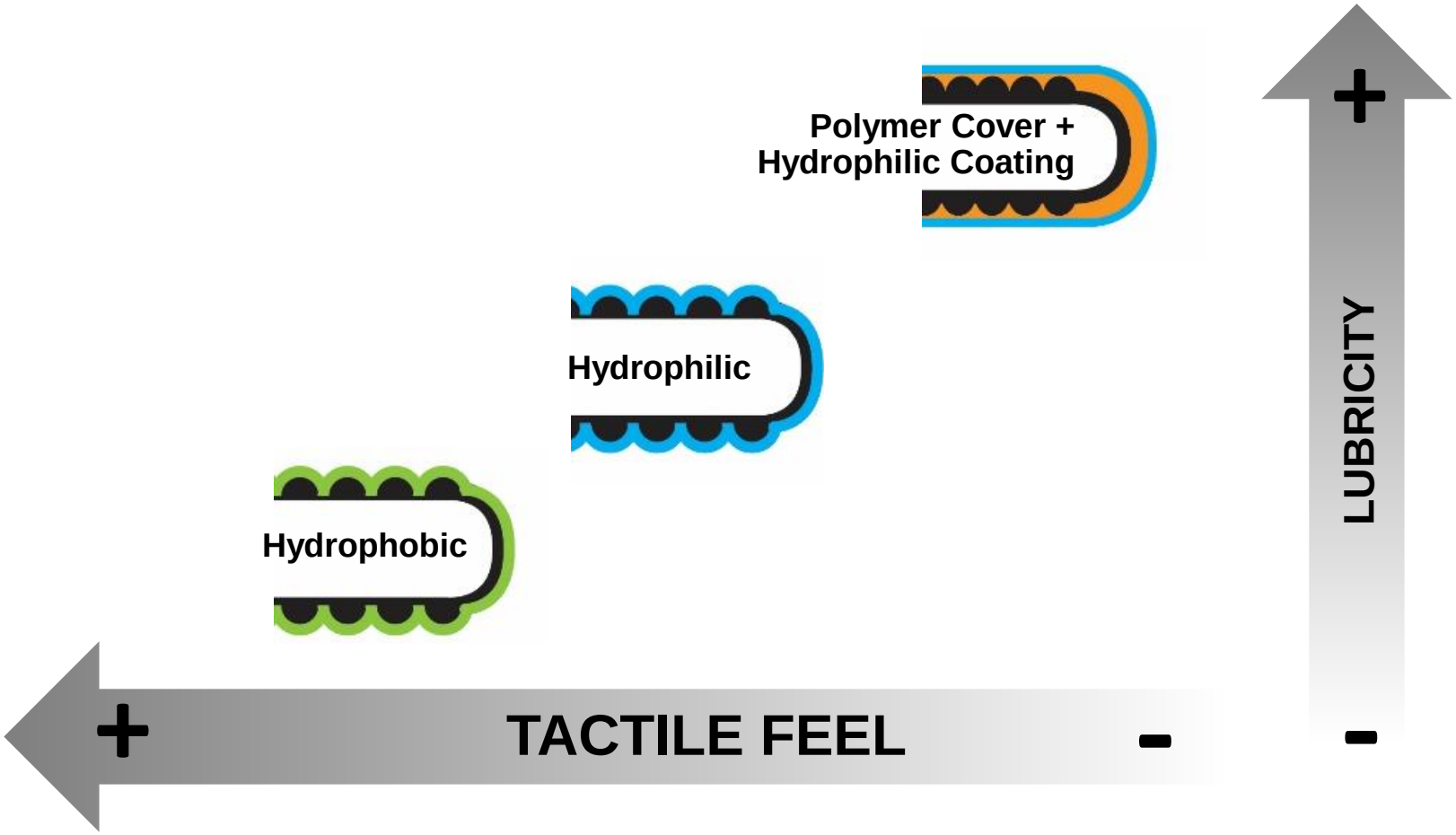


Reduce Friction = Lubricious!

Polymer Jacket Wires

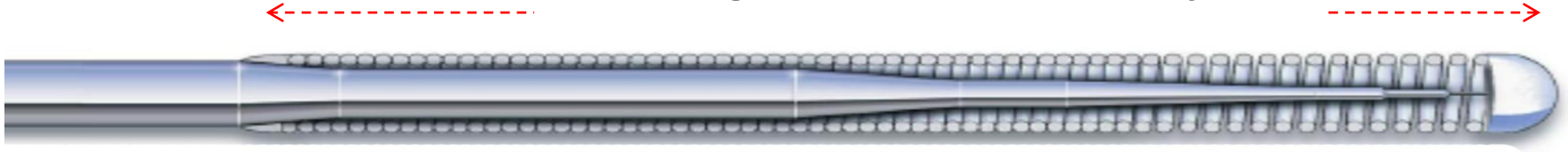


Reduce Friction = Lubricious!

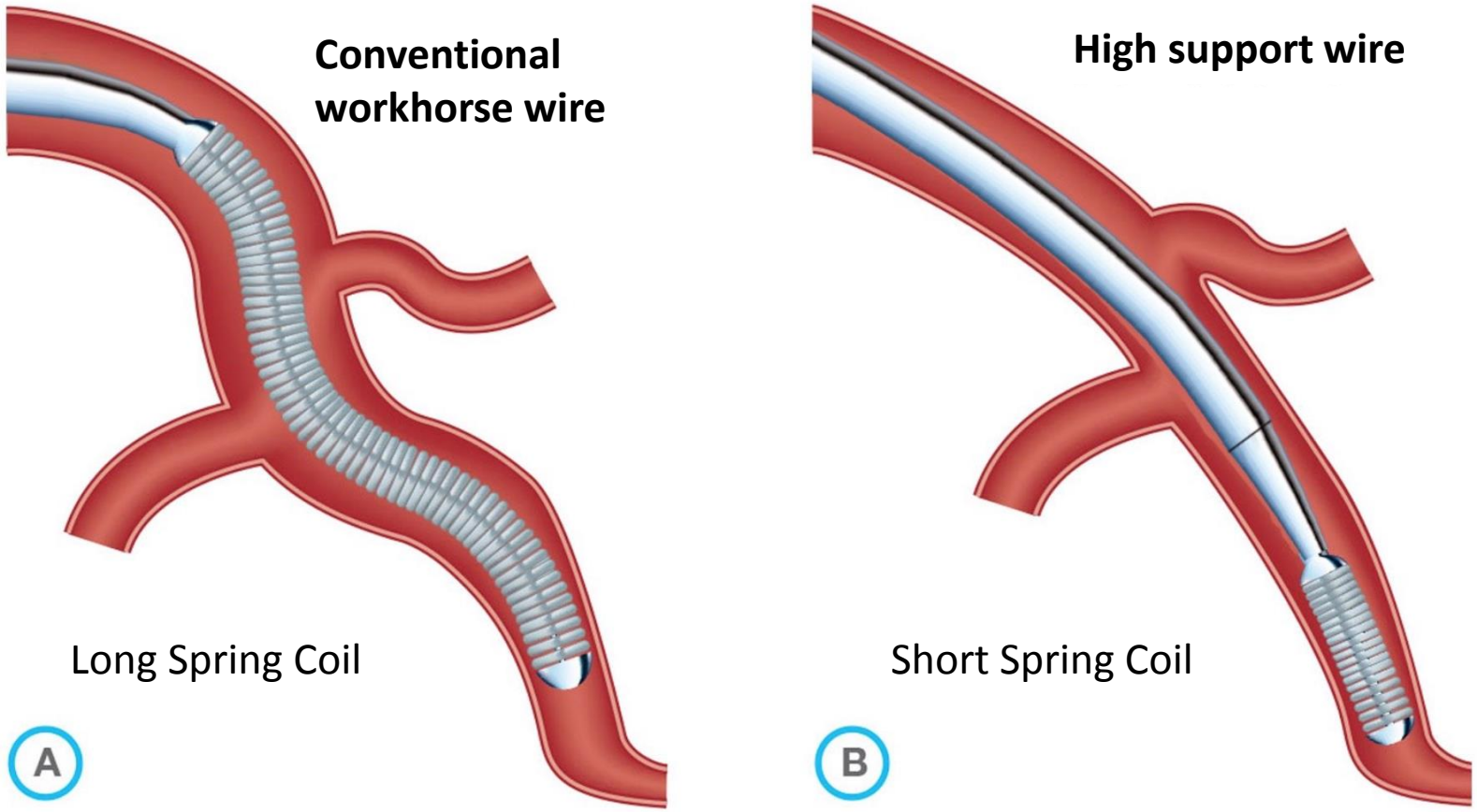

Polymer Cover +
Hydrophilic Coating
Hydrophilic
Hydrophobic
LUBRICITY
+
-
TACTILE FEEL
+
-

Coils

Long Outer Coils = **Flexibility**

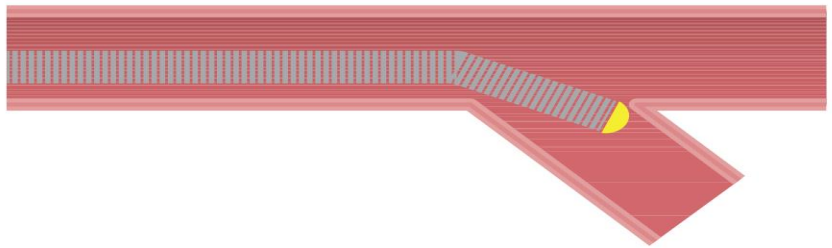


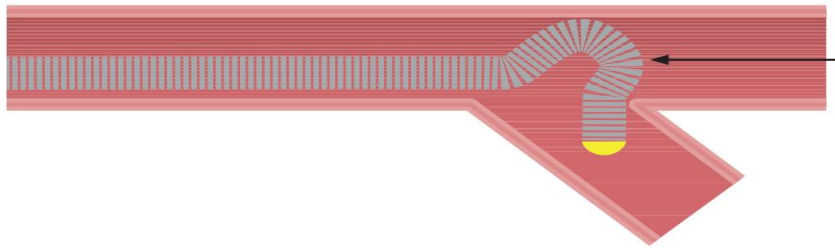
Short Tip Coils = **Support**


Conventional
workhorse wire
Long Spring Coil
A
High support wire
Short Spring Coil
B

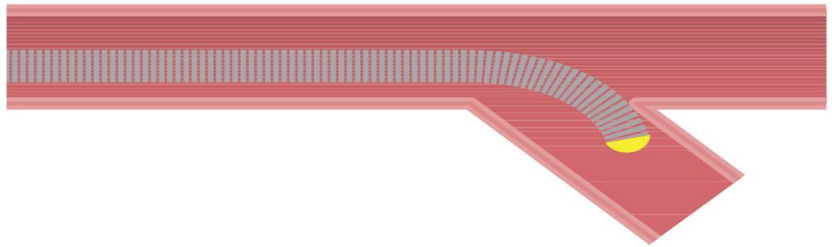
Core

Shorter Taper



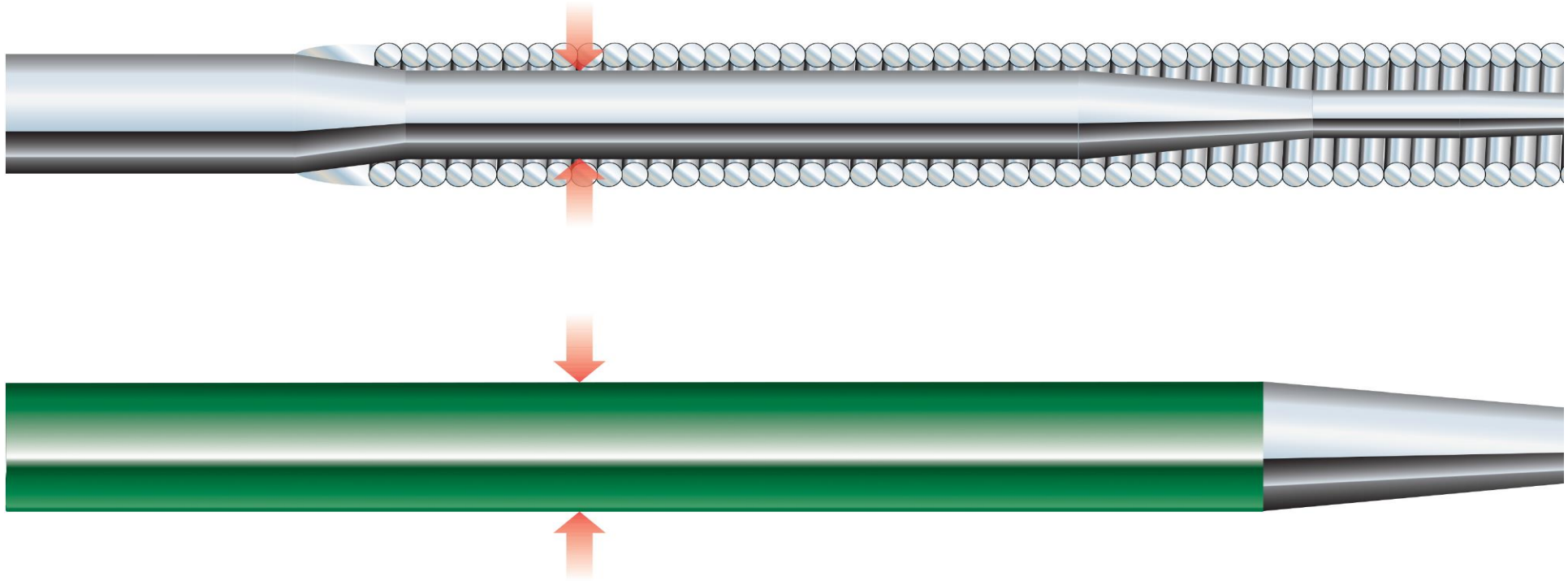


Long Taper



Successful Tracking

Smaller Diameter = **More Flexibility**

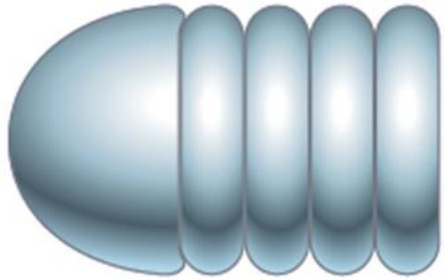


Larger Diameter = **More Support & Torque**

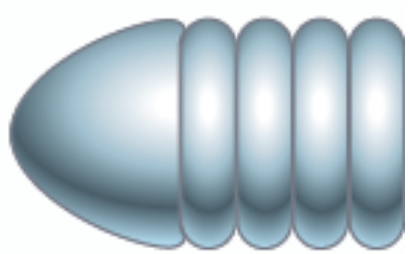
Efficacy of Tip end design

Ball tip has been sharpened to give the necessary penetration ability to enter hard occlusions, while tip flexibility is maintained.

Conventional guide wire
plain ball tip



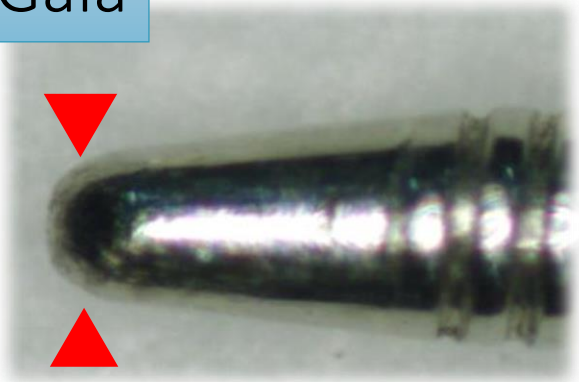
ASAHI micro-cone tip



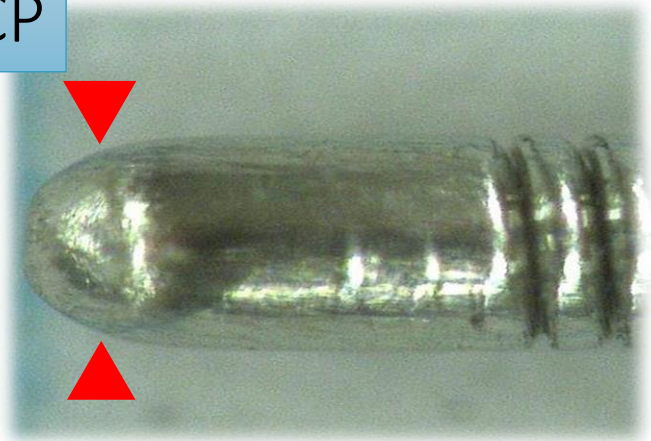
Tip cross section area

Tip end ball tip shape / Non-tapered design

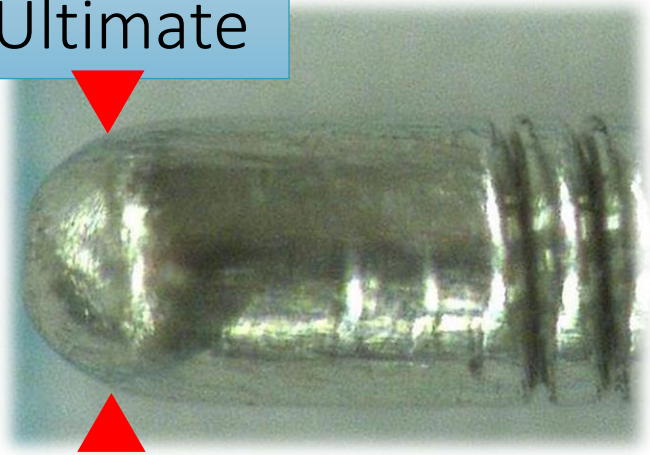
Gaia



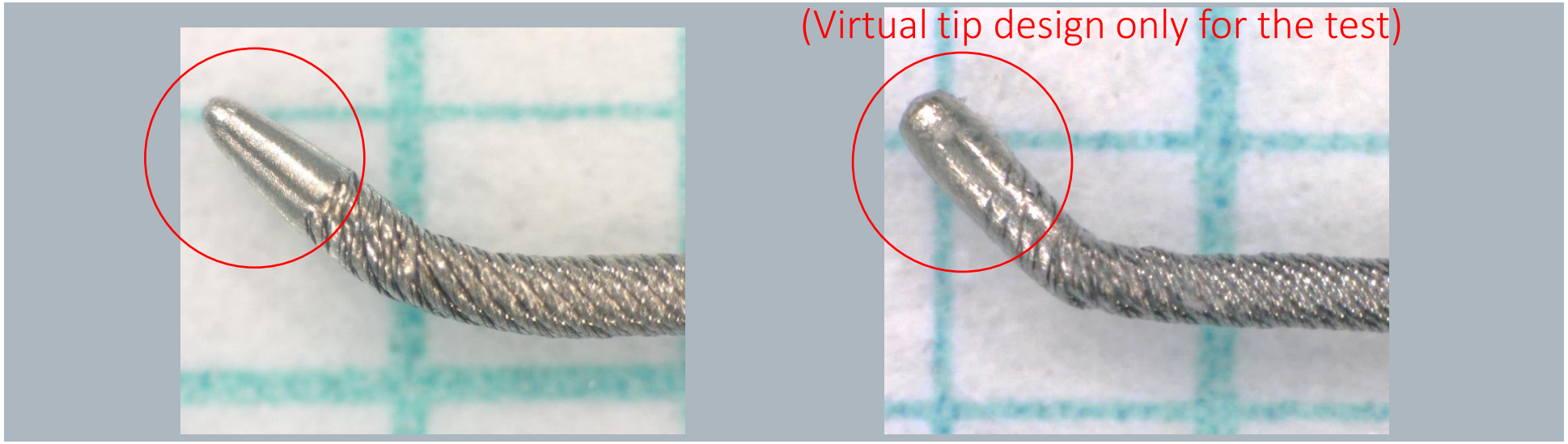
CP



Ultimate



“Micro cone tip” and “plain ball tip” Penetration comparison



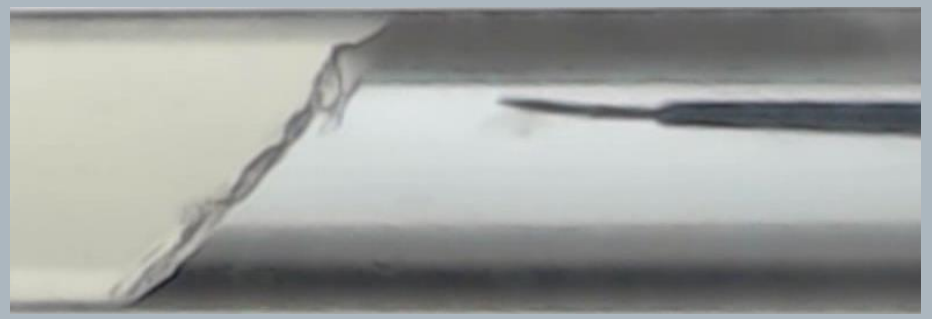
(Virtual tip design only for the test)

Micro cone tip

Plain ball tip

“Micro cone tip” and “plain ball tip” Penetration comparison

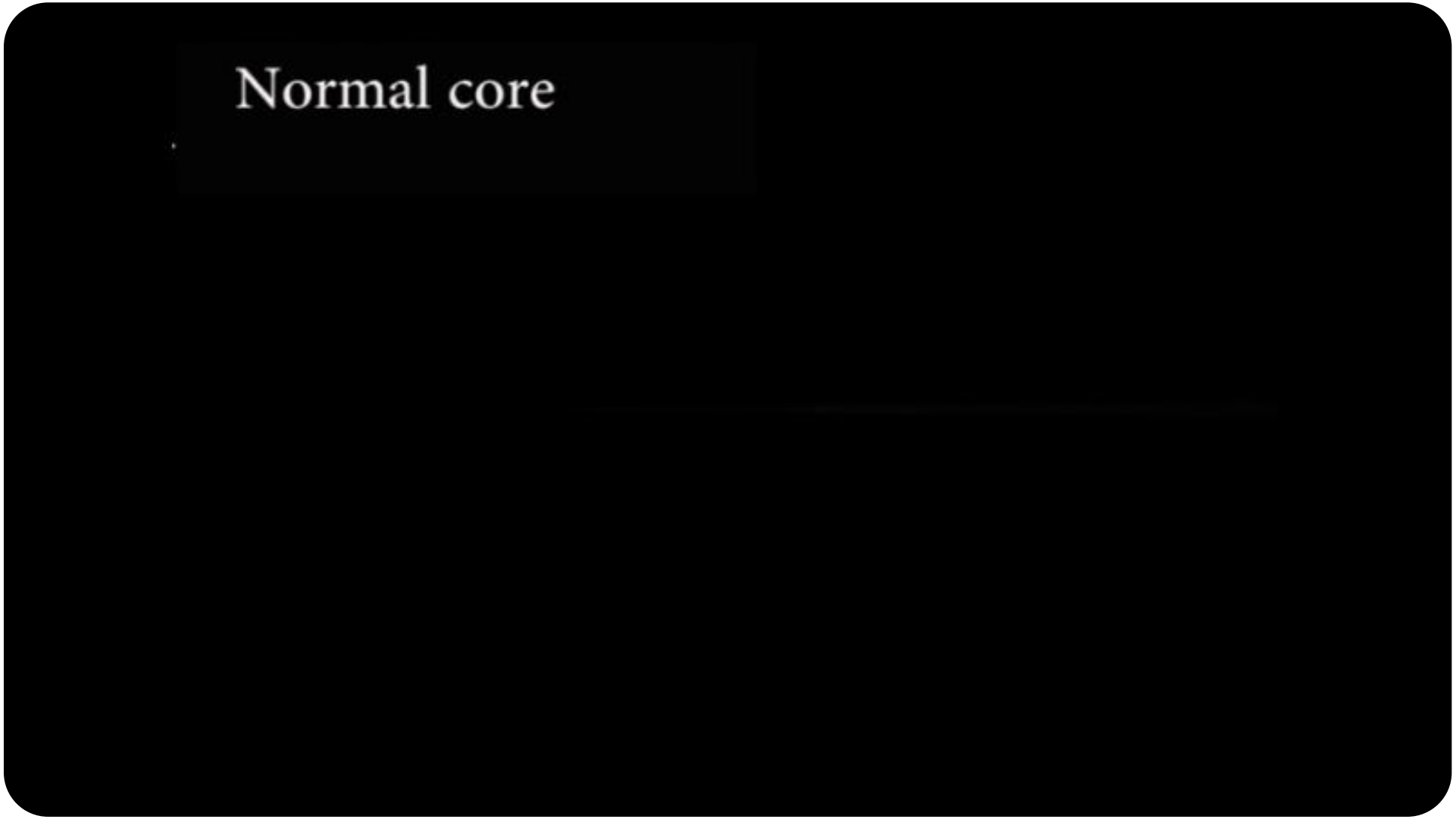
(Virtual tip design only for the test)



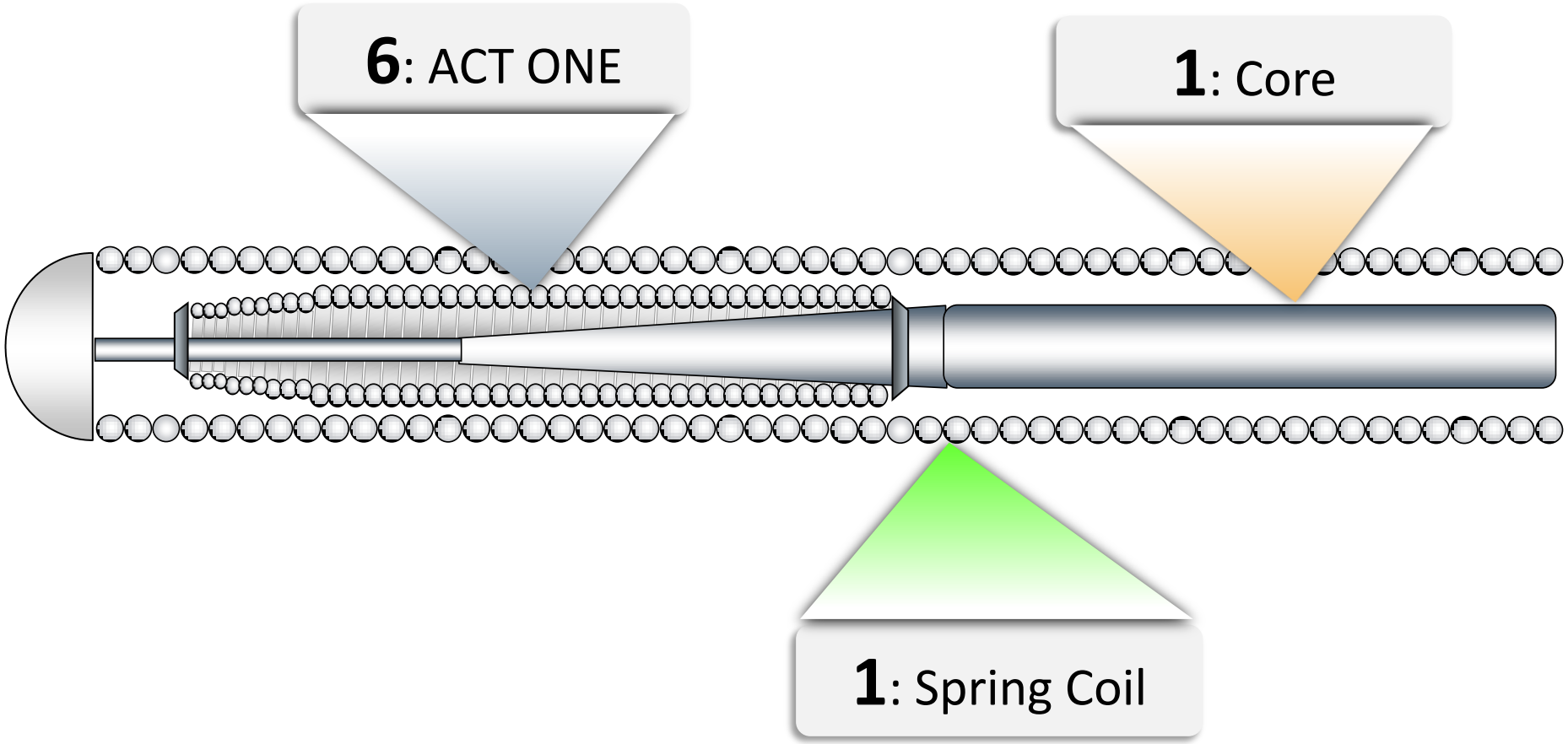
Micro cone tip

Plain ball tip

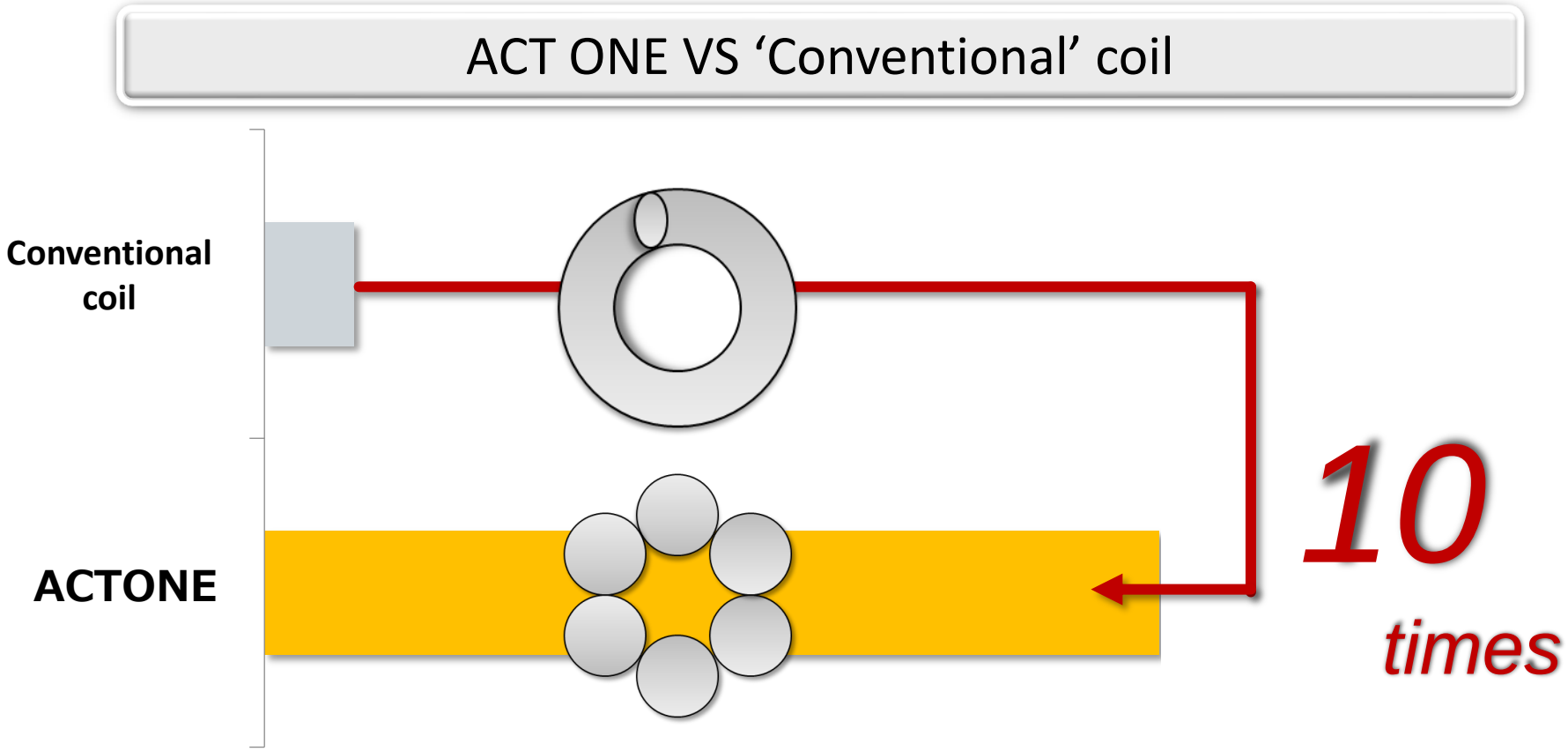
20th Century



Rope Coil: ACT ONE



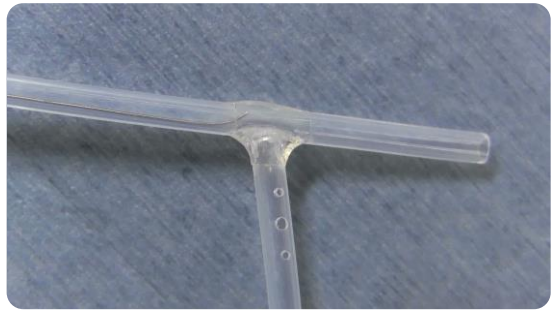
Increased Torque Force



The above data was obtained by company standardized test, which may differ from industry standardized tests.
The above data does not prove that all devices have exactly the same performance with the samples used for these tests.

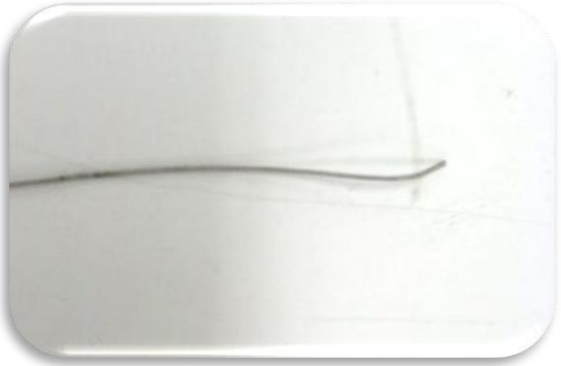
21st Century ASAHI GW Technology

ASAHI INTECC Guidewire key features



High Torque Performance

Enhanced tip durability



Durable tip shape

SION SERIES WITH SION TECC

Leading to the NEXT

ASAHI SION blue
PTCA GUIDE WIRE

ASAHI SION black
PTCA GUIDE WIRE

ASAHI SION

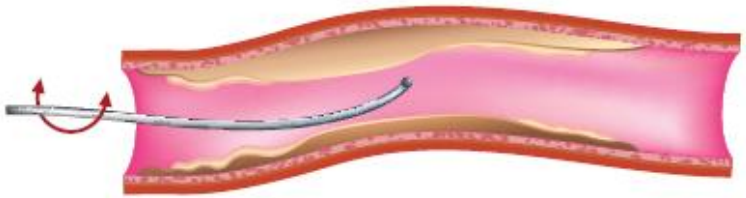
ASAHI SION blue

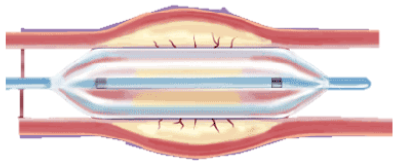
1st CHOICE

ASAHI SION blue

SION TECC

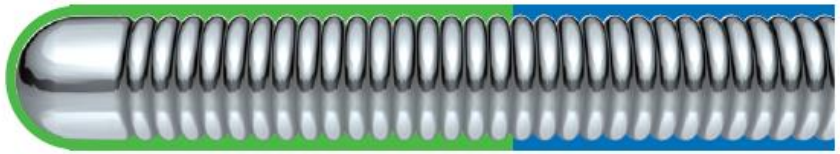
1st choice guide wire for Frontline cases
Balance of flexibility & support





ASAHI SION blue

SION blue 15mm hydrophobic tip



Atraumatic to vessel wall

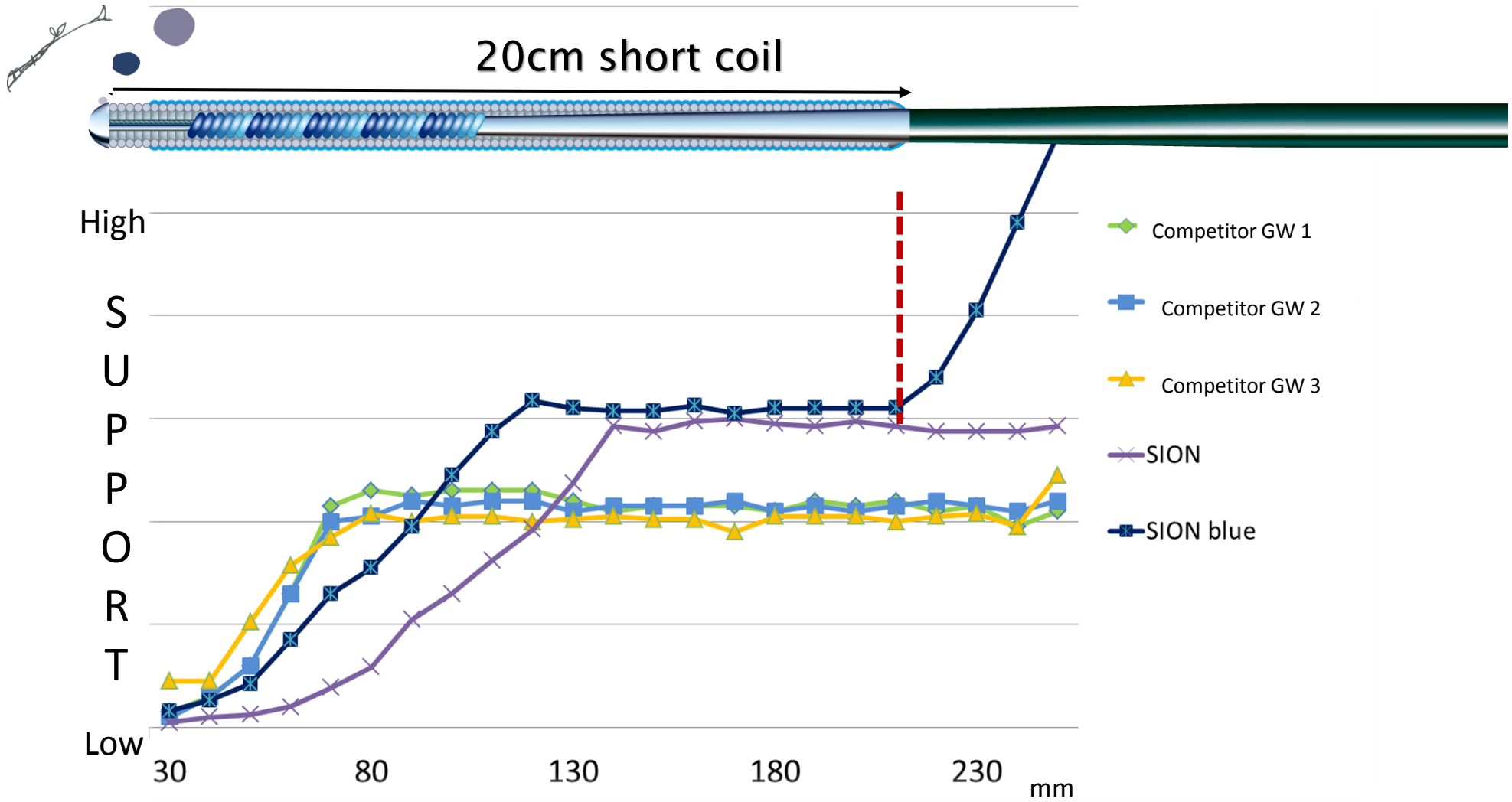
Safe procedure

+

15mm hydrophobic tip

Minimizes accidental slip into branches

ASAHI SION blue



Improved support performance increases device deliverability

The above data was obtained by company standardized test, which may differ from industry standardized tests.

ASAHI SION blue

Unique shaft color

SION blue shaft : blue

Distinguishable

Other ASAHI wire shaft : green

ASAHI SION

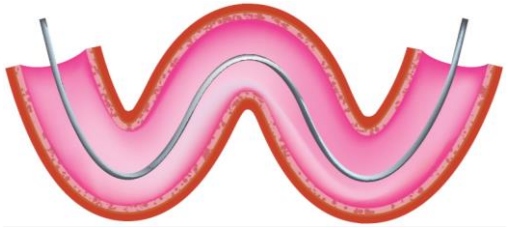
ASAHI SION

SION TECC

1st choice for complex cases
&
Collateral channel tracking

Tortuosity

Acute Bends



Calcification

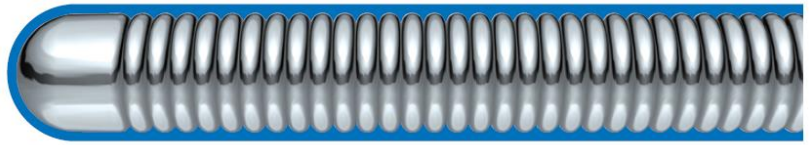
Sub-Total Occlusions

ASAHI SION

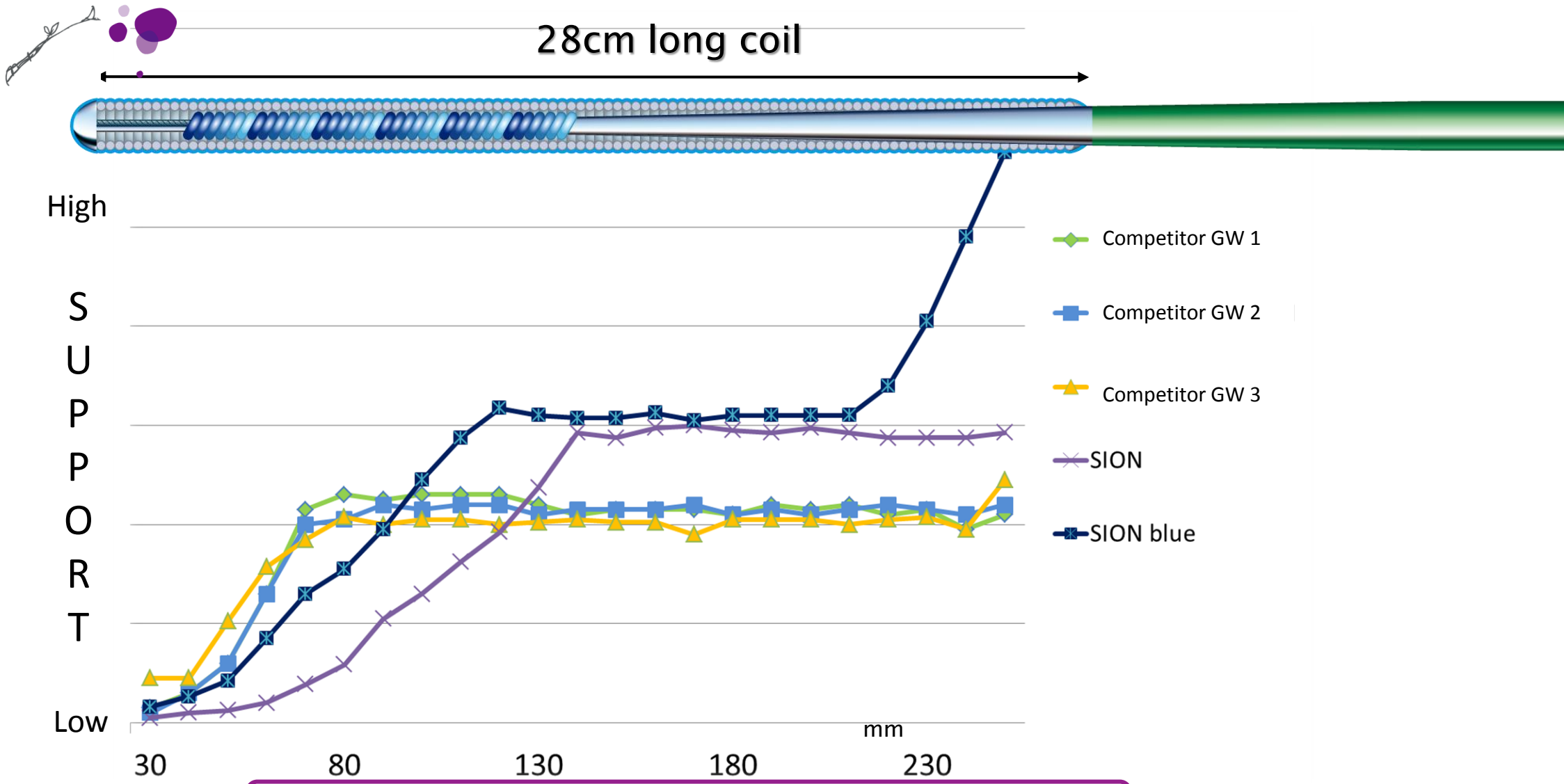
Enters tight lesions
&
acute branches

SION full hydrophilic coating

Navigates tortuous anatomy



ASAHI SION



Flexibility increases vessel trackability

The above data was obtained by company standardized test, which may differ from industry standardized tests.

ASAHI SION black

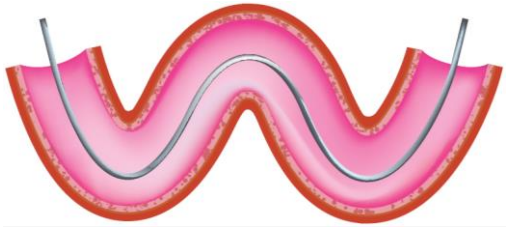
ASAHI SION black

SION TECC

For complex cases
&
Collateral and epicardial channel tracking

Tortuosity

Acute Bends

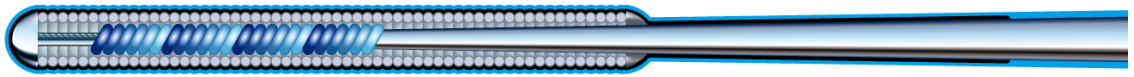


Calcification

Sub-Total Occlusions

ASAHI SION black

SION black Polymer jacket
+
Hydrophilic coating



High lubricity

ASAHI SION black Tip Load 0.8 gf

+

Polymer jacket
+
Hydrophilic coating

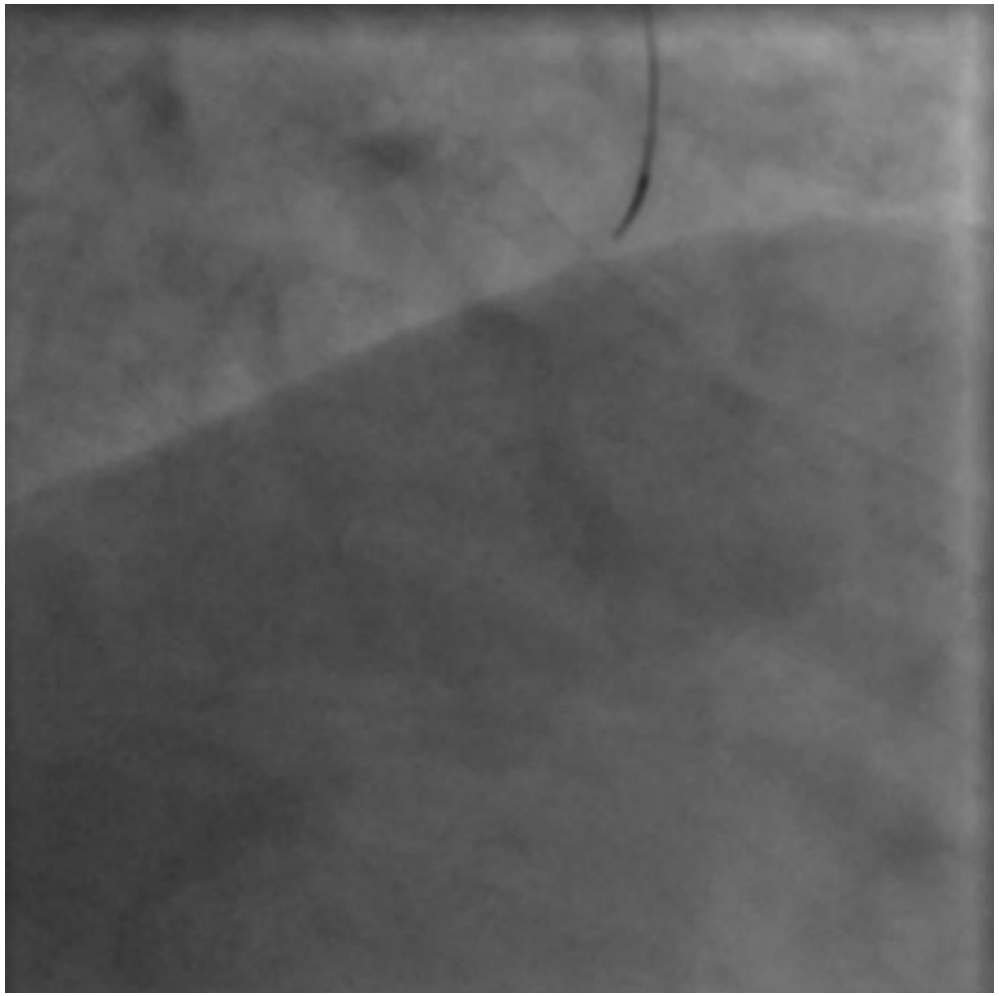
Highly stenosed lesions

Extreme tortuosity

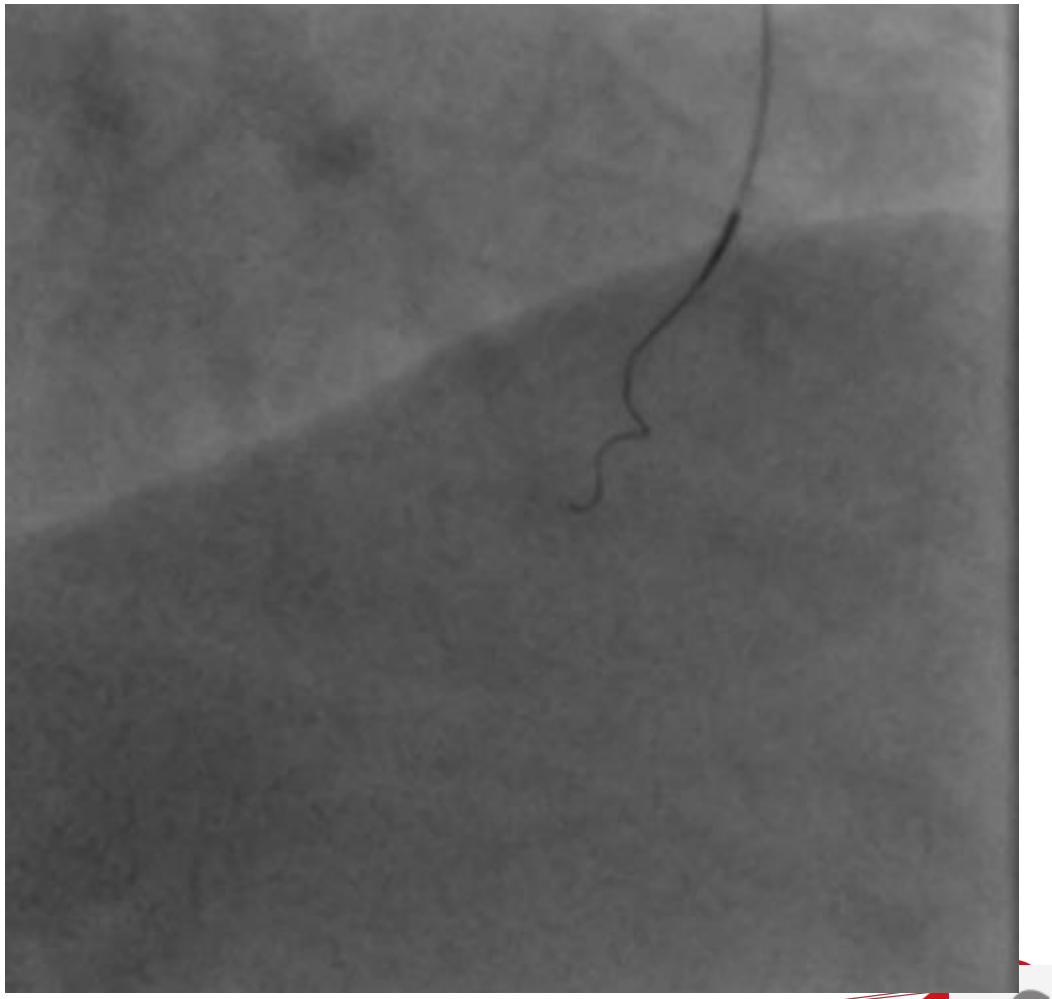
Diffused lesions

RCA CTO J-CTO 3

Septal, tortuous CC 2



Sion black, Corsair

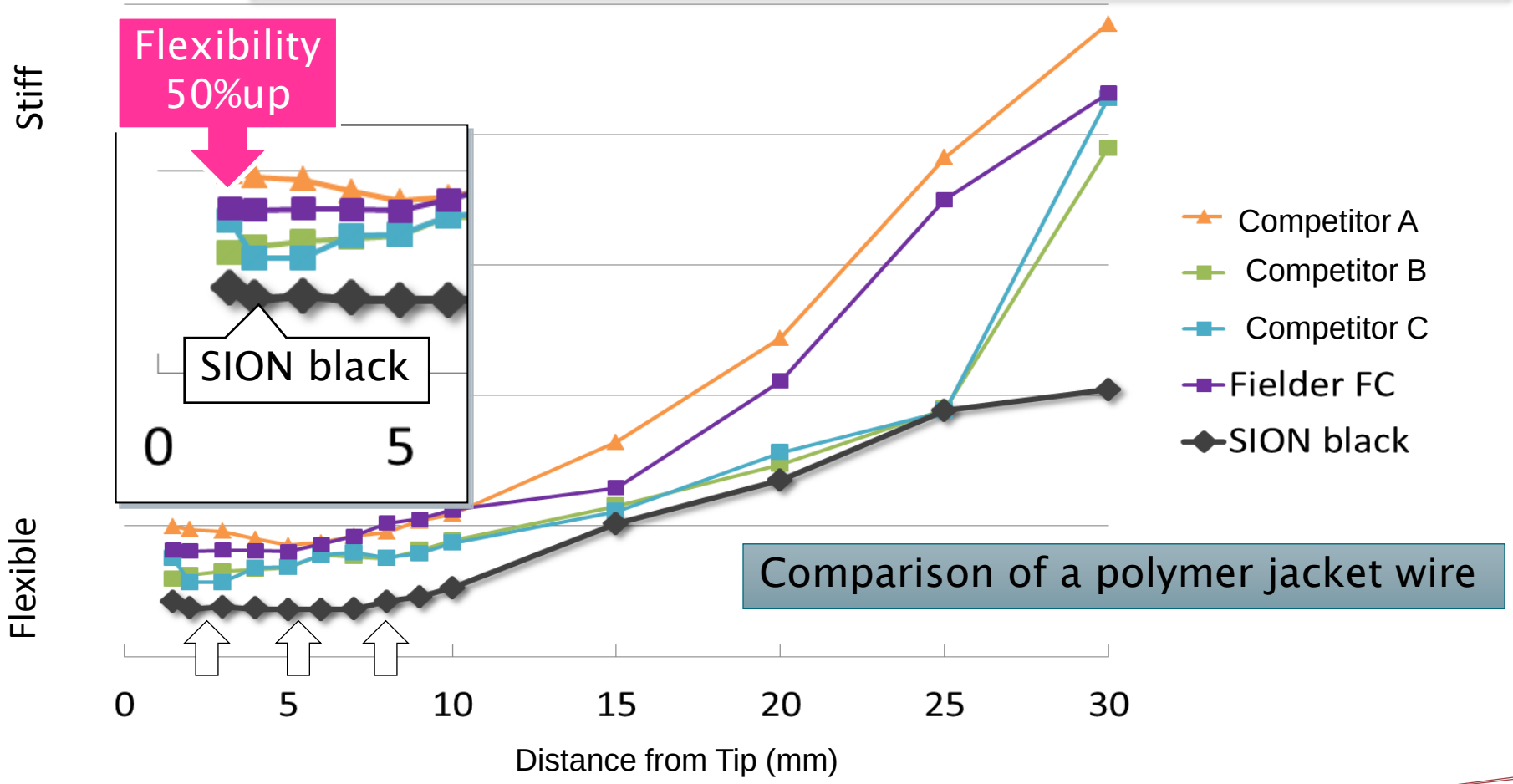


ASAHI SION black

Tip flexibility （Lateral flexibility）

Compared with conventional polymer jacket wires, ASAHI SION black is very flexible laterally.

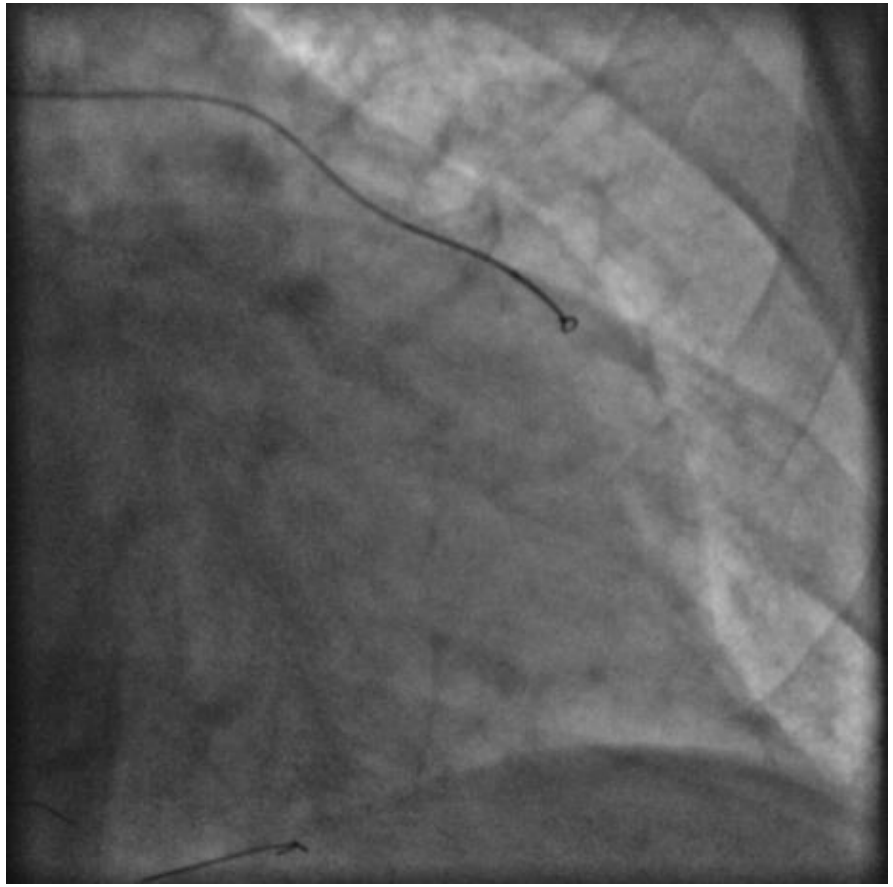
This increases vessel tracking capability in very tortuous lesions.

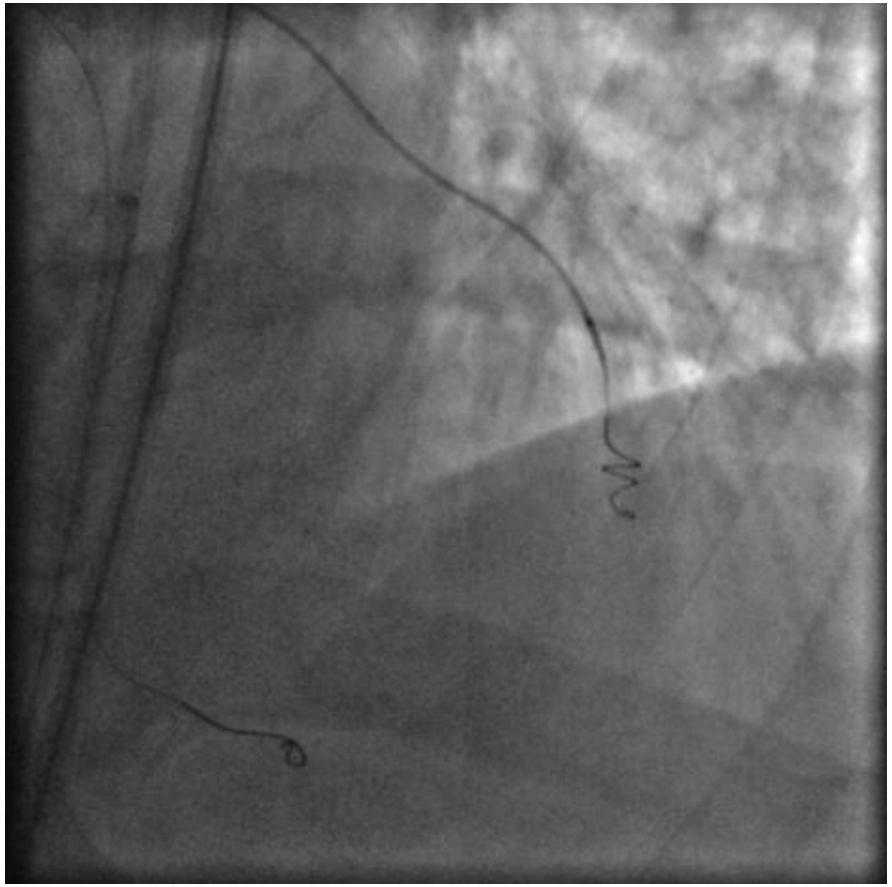


Comparison of a polymer jacket wire

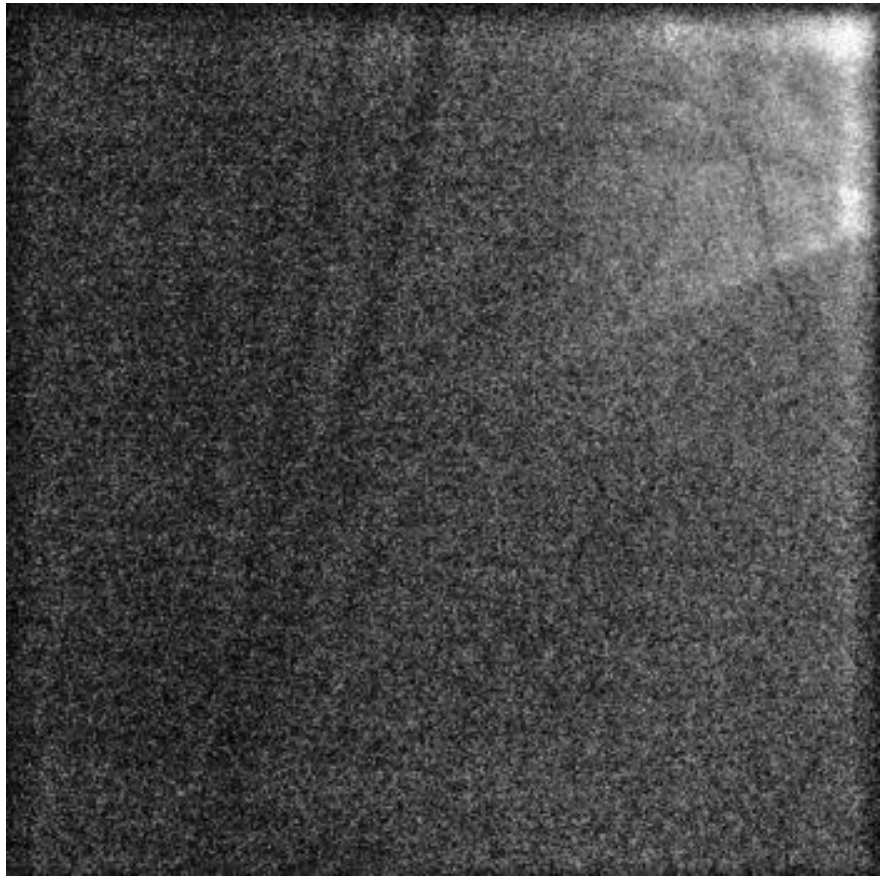
*The above data was obtained by company standardized test, which may differ from industry standardized tests.

Sion black supported by Corsair





Sion black supported by Corsair

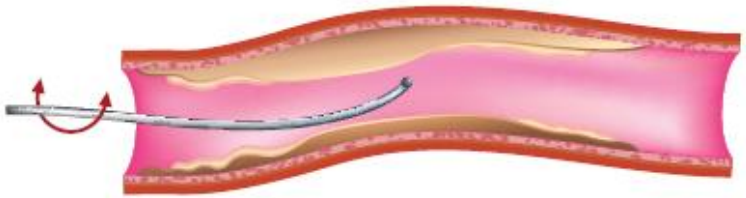


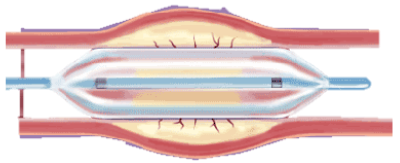
Sion black in epicardial collateral

ASAHI
SION blue ES

ASAHI
SION blue ES
SION TECC

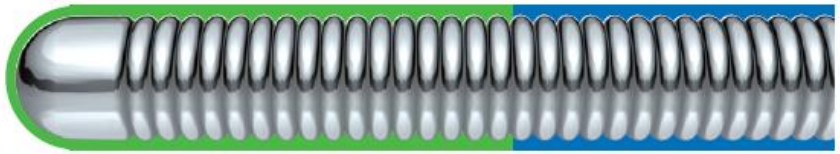
For extra support
Balance of flexibility & support





ASAHI SION blue ES

SION blue ES 25mm hydrophobic tip



Atraumatic to vessel wall

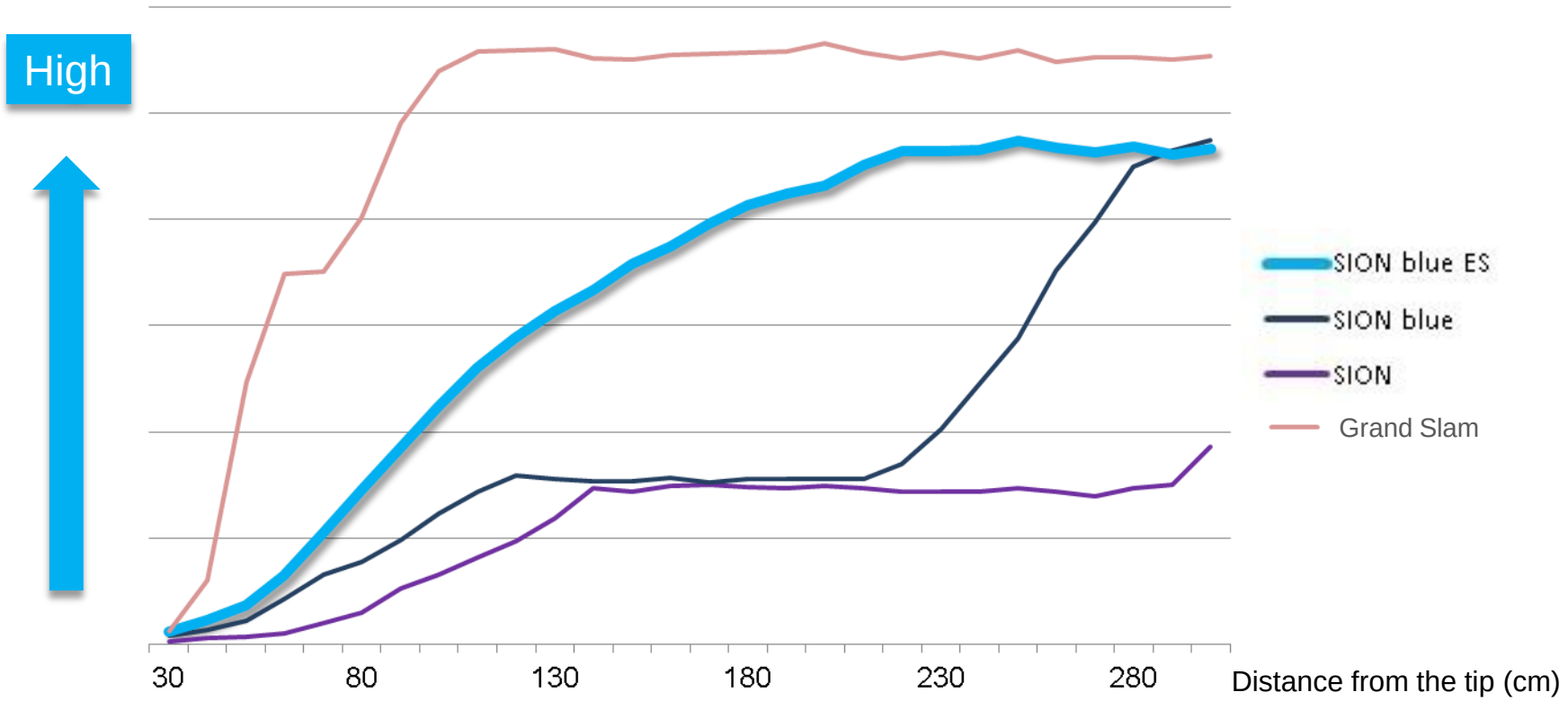
Safe procedure

25mm hydrophobic tip

Minimizes accidental slip into branches

Support comparison

The distal 5cm has the flexibility of the SION series, but has increased support.
Good push control in tortuous vessel due to minimal firmness disparity



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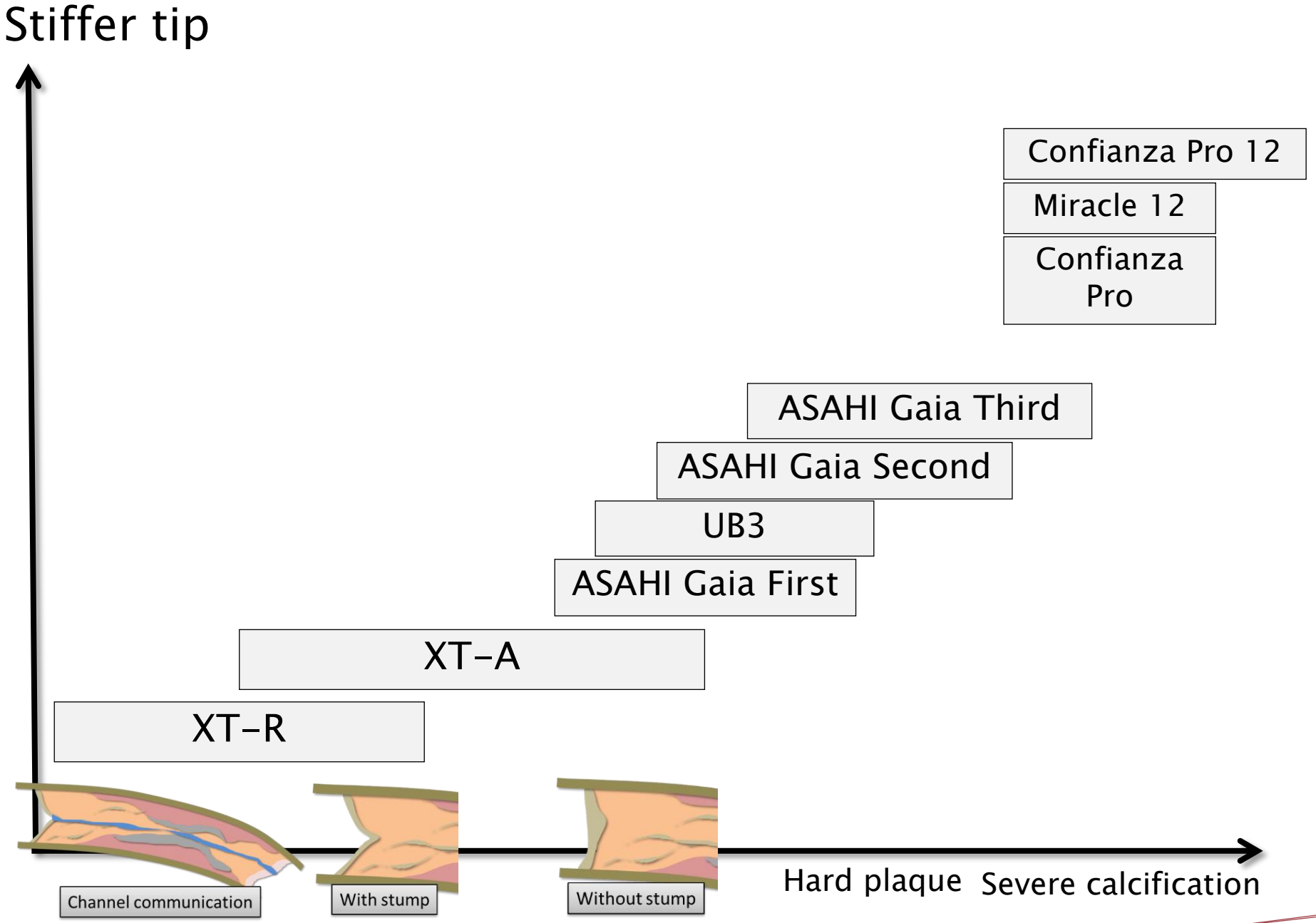
All the data do not guarantee that all devices have exactly the same performance with the samples used for tests.

CTO PRODUCTS

Fielder XT series

Gaia series

Confianza Pro series


Stiffer tip
Confianza Pro 12
Miracle 12
Confianza Pro
ASAHI Gaia Third
ASAHI Gaia Second
UB3
ASAHI Gaia First
XT-A
XT-R
Channel communication
With stump
Without stump
Hard plaque
Severe calcification

FIELDER XT SERIES

Fielder XT

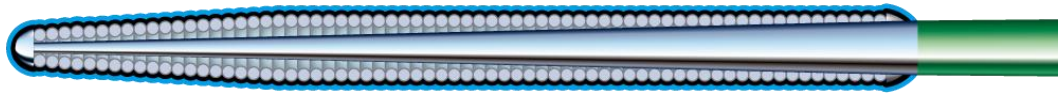
Fielder XT-R

Fielder XT-A

Fielder XT

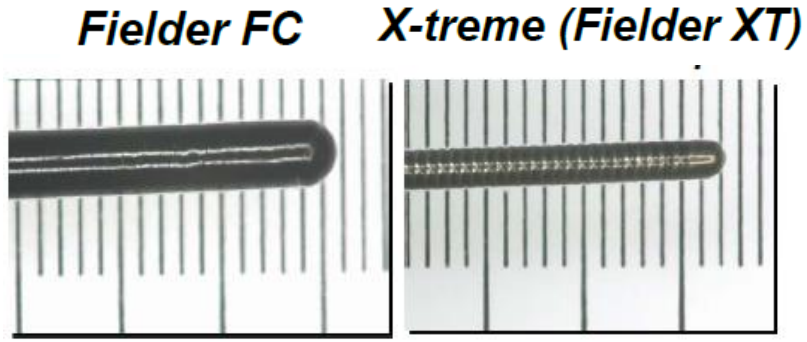
Fielder XT Polymer jacket
+
Hydrophilic coating

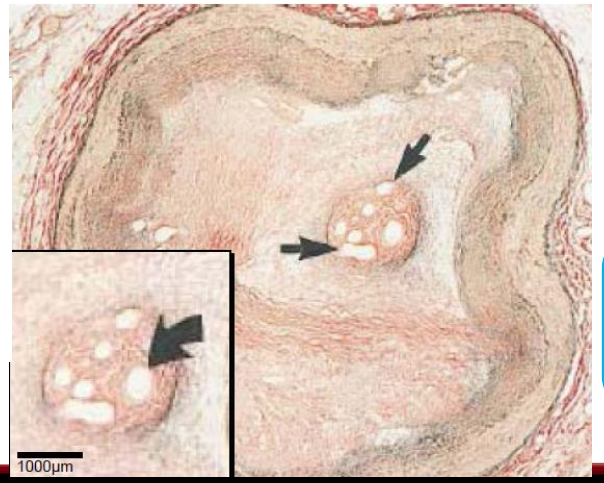
High lubricity



For Extreme tortuosity

Tapered tip

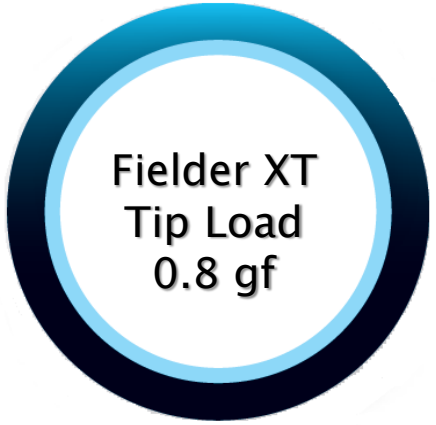




Exploring the entry point

For micro channels

Fielder XT



Tapered type
Polymer jacket

Possibility to surf inside micro channel

Minimizes possibility of damaging micro channels

Fielder XT

Fielder XT

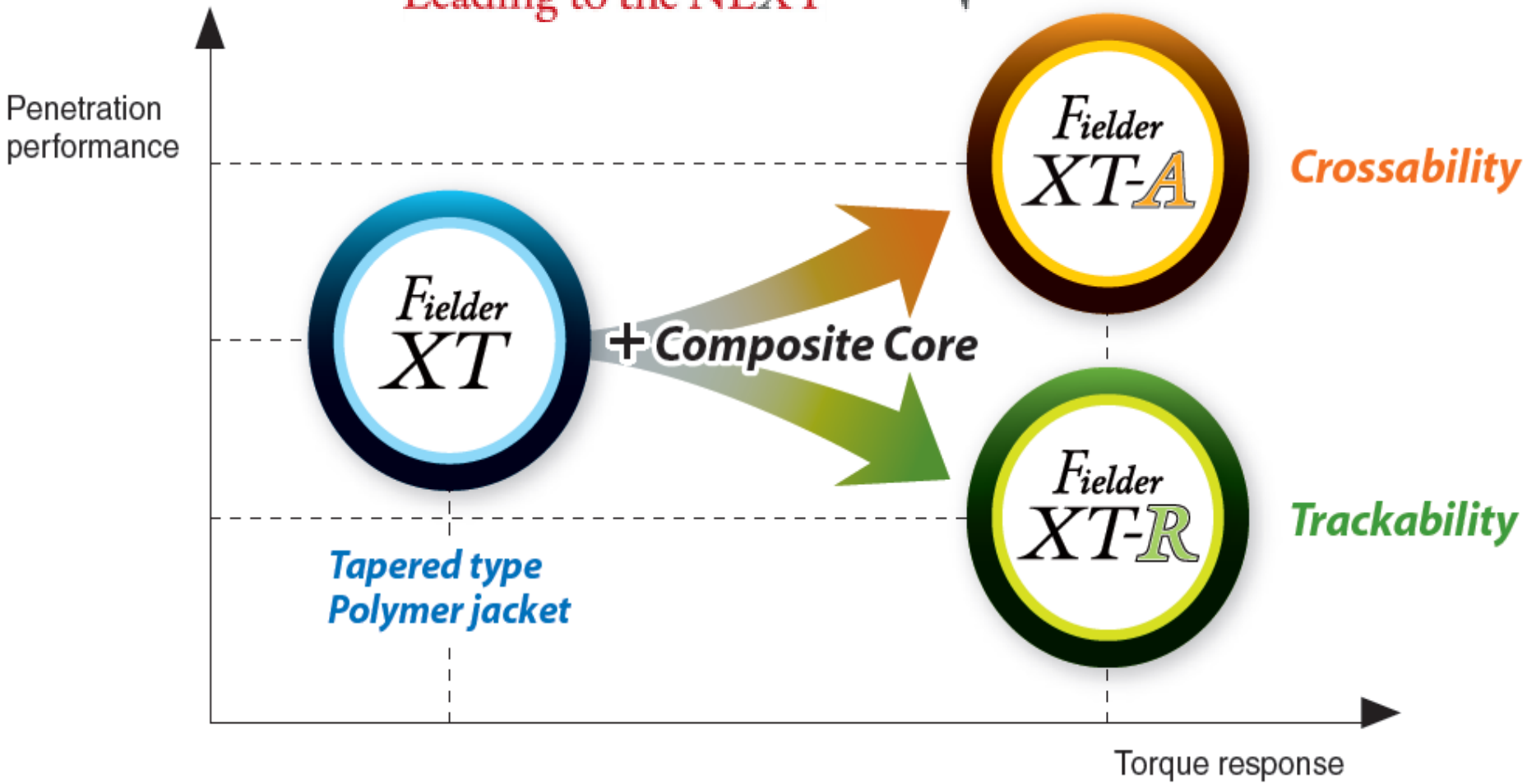
Soft wire without SION TECC
→ low torque force

Durability and shape retention relatively poor

Necessity of reshaping during procedure

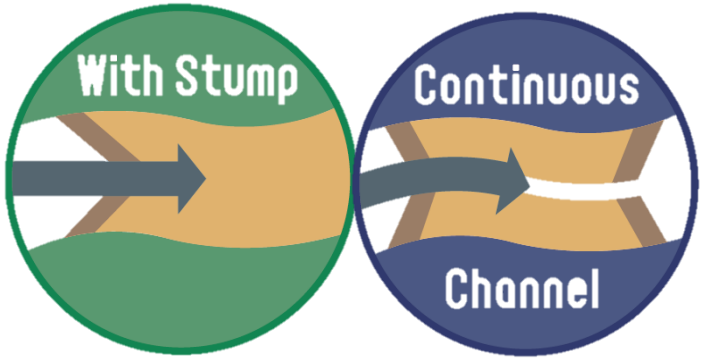
SION TECC

Leading to the NEXT



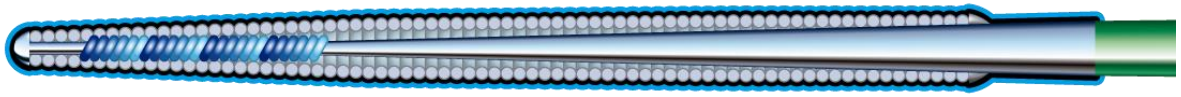
Fielder XT-R
SION TECC

For subtotal occlusions
&
1st choice CTO GW for channel tracking
and retrograde navigation

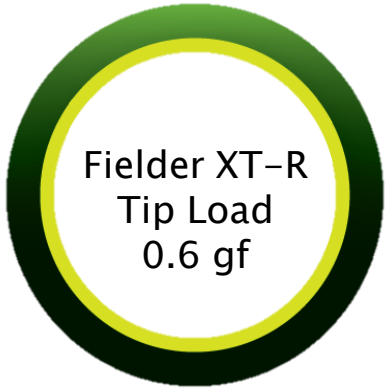


Fielder XT-R Polymer jacket
+
Hydrophilic coating

High lubricity



For extreme tortuosity
and
Tight lesions



Tapered type
Polymer jacket

Micro channel tracking

Less likely to damage
micro channels

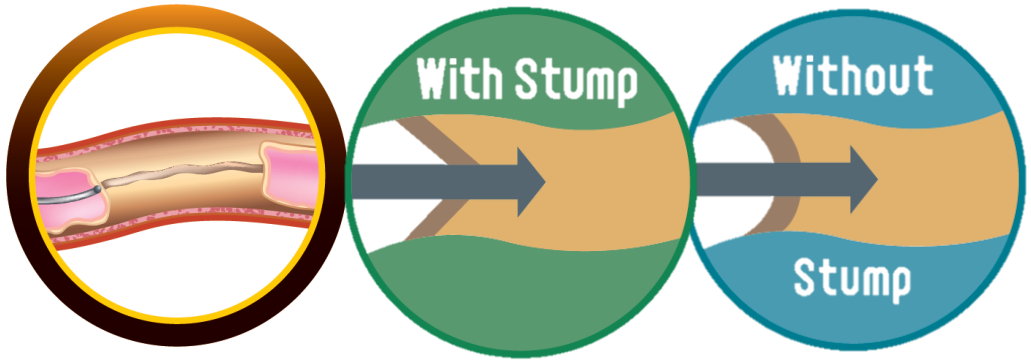
Collateral channel tracking

Fielder XT - R

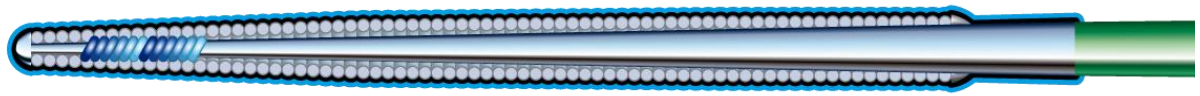
Fielder XT-A

SION TECC

1st choice CTO Guide Wire
For active soft tissue sliding



Fielder XT-A Polymer jacket
+
Hydrophilic coating



High lubricity

Extreme tortuosity

Fielder XT-A
Tip Load
1.0 gf

+

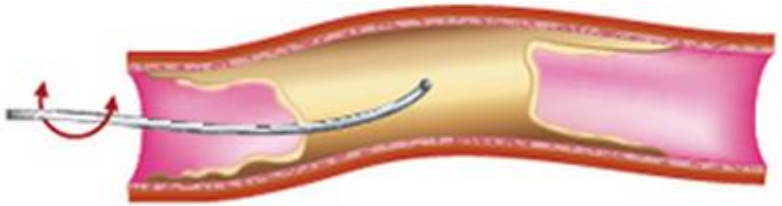
Tapered type
Polymer jacket

Possibility to cross soft tissue

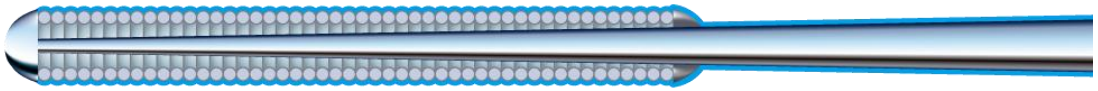
ULTIMATEbros 3

UTIMATEbros 3

2nd choice CTO Guide Wire
&
For moderately calcified lesions with tough tissue



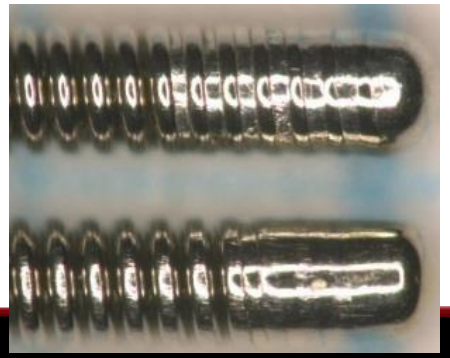
Hydrophilic coating
+
Uncoated tip



Tactile feedback
&
Lesion entry

Moderate
3 gf Tip Load

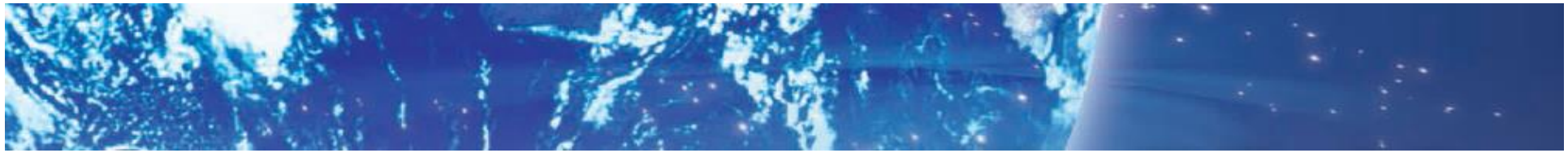
Small tip shaping



More control

Drilling technique
inside tough tissue

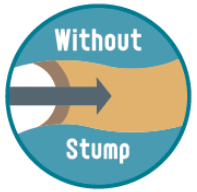
ASAHI Gaia Series



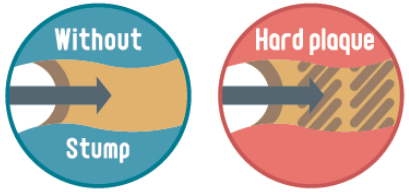
ASAHI
Gaia
PTCA GUIDE WIRE

ASAHI
Gaia

ASAHI
Gaia First

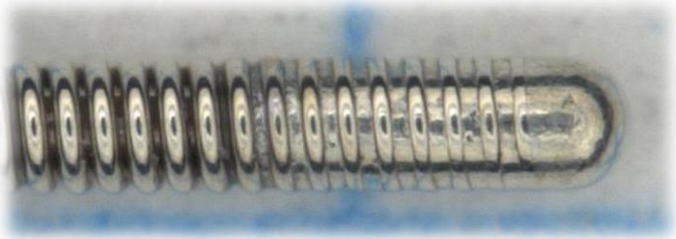


ASAHI
Gaia Second
ASAHI
Gaia Third



ASAHI Gaia

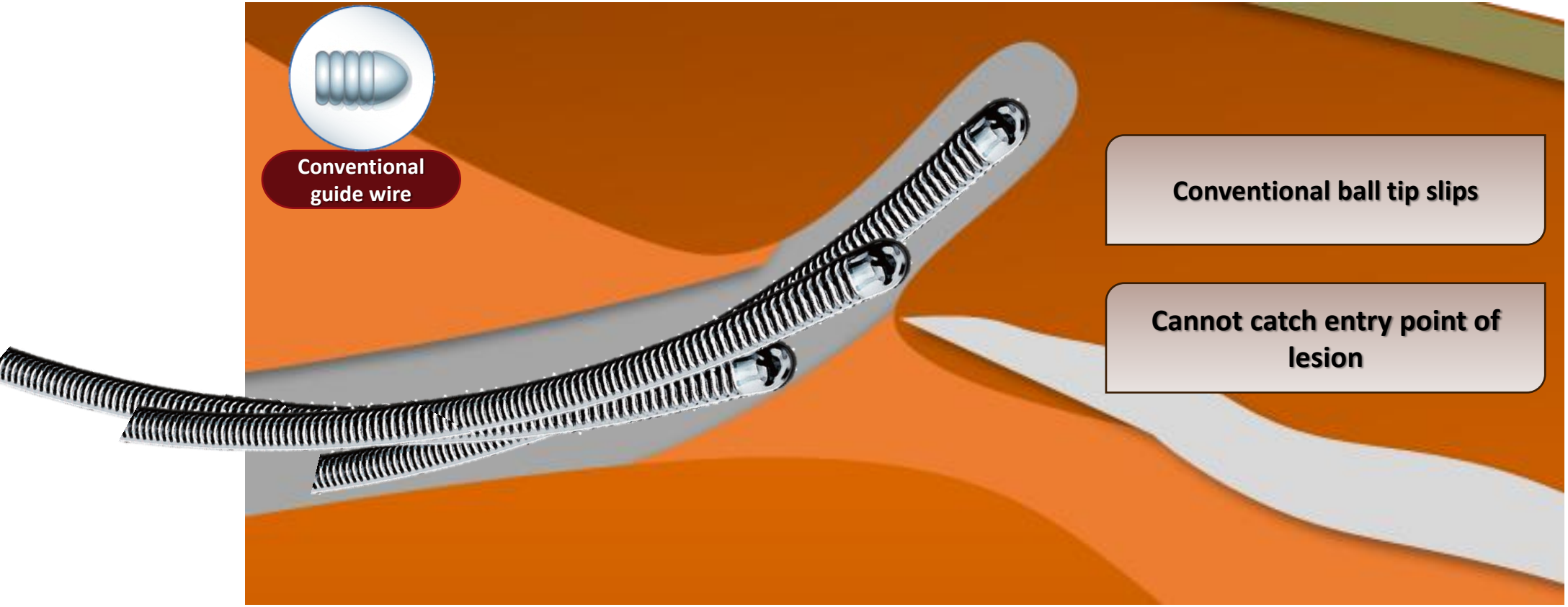
Conventional guide wire



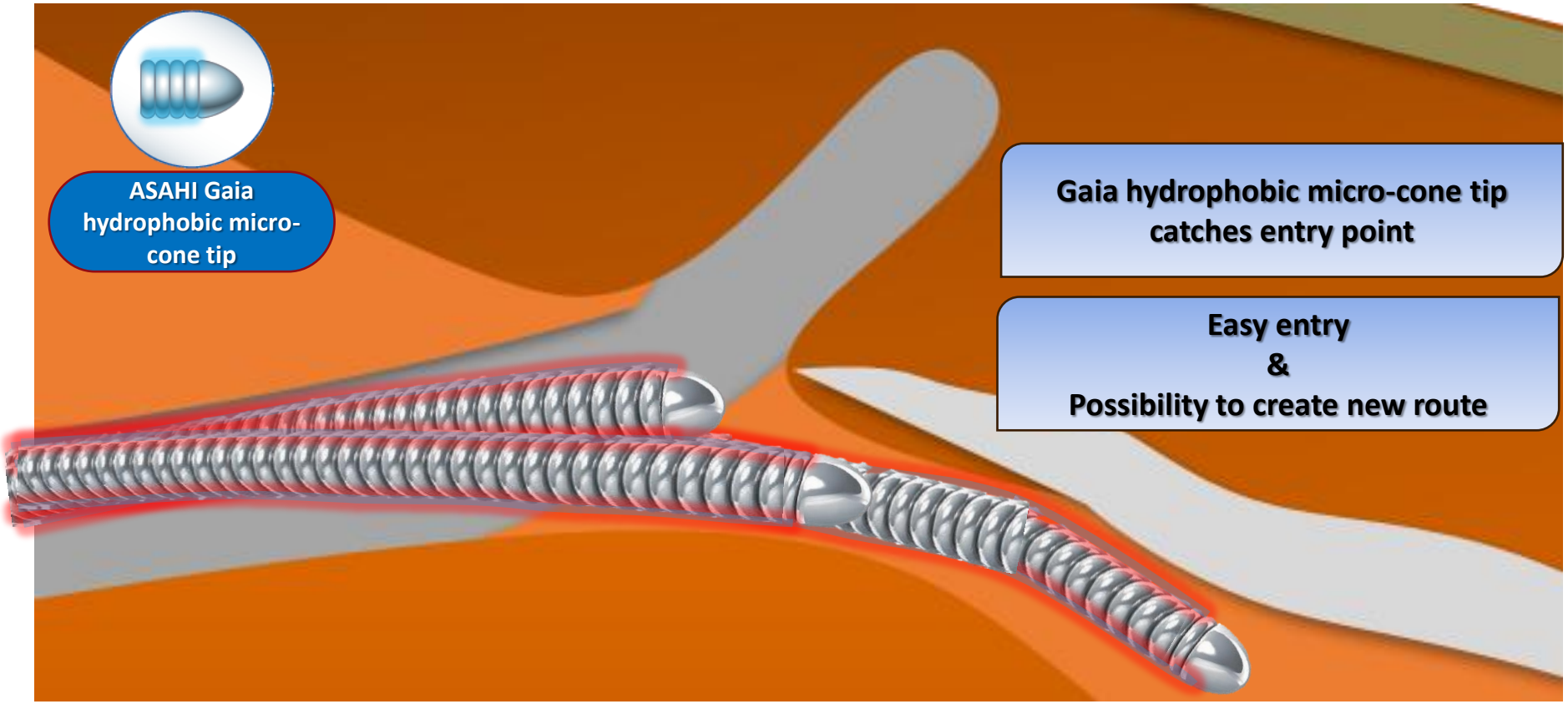
ASAHI Gaia micro-cone tip

Easier access to occluded lesion

Possibility to create new routes


Conventional guide wire
Conventional ball tip slips
Cannot catch entry point of lesion

ASAHI Gaia


ASAHI Gaia hydrophobic micro-cone tip
Gaia hydrophobic micro-cone tip catches entry point
Easy entry
&
Possibility to create new route

ASAHI Gaia

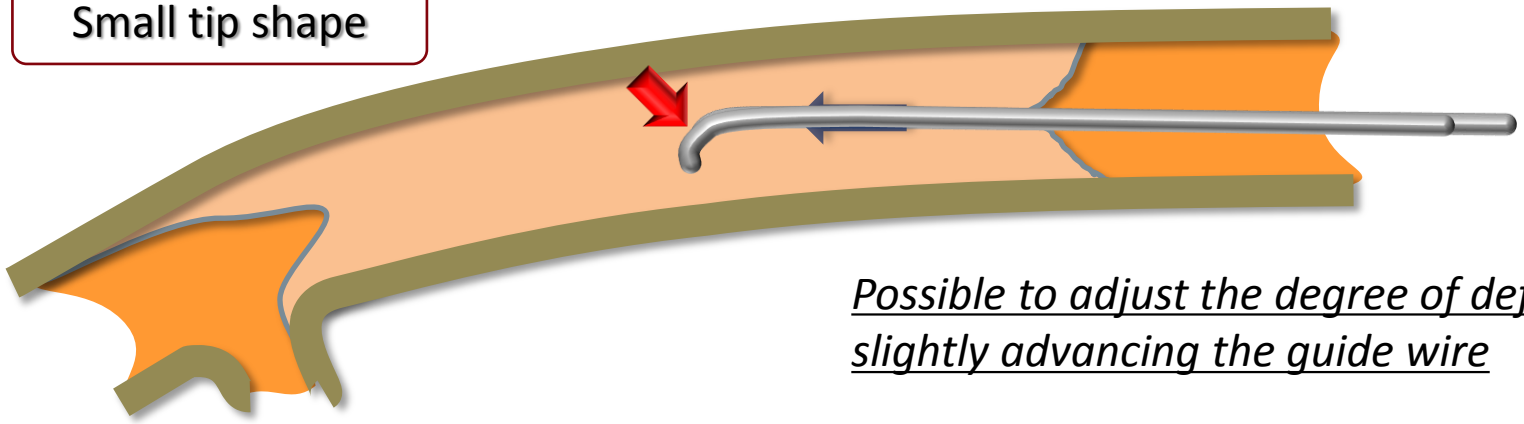
1mm pre-shaped tip

The most distal 1mm (approx.) is shaped during production, saving the operator the difficulty and time of manual shaping

Possible to increase the angle to create a more acute curve manually.
Possible to re-shape the tip depending on procedural conditions.

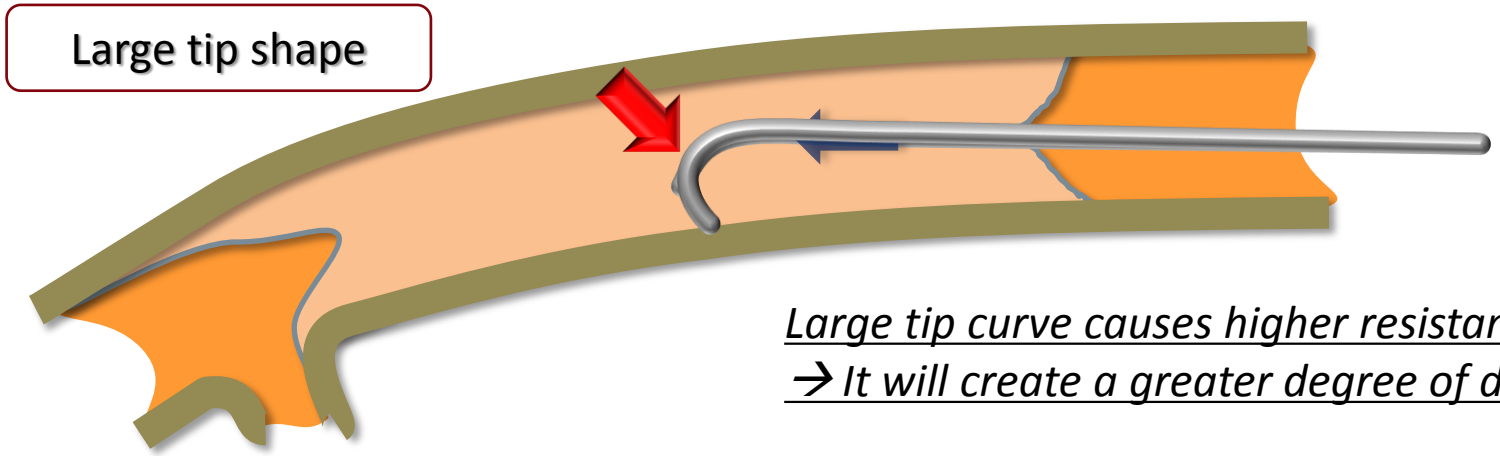
TIP SHAPE

Small tip shape



Possible to adjust the degree of deflection by slightly advancing the guide wire

Large tip shape



Large tip curve causes higher resistance within lesion
→ It will create a greater degree of deflection

Shape retention

Smaller movements inside lesion

More control

Gaia 3rd wire deflextion

ASAHI Gaia

Conventional guide wire

Whip motion → No full control of wire

SION TECC
Leading to the NEXT

ASAHI Gaia

Enhanced torque response → No whip motion

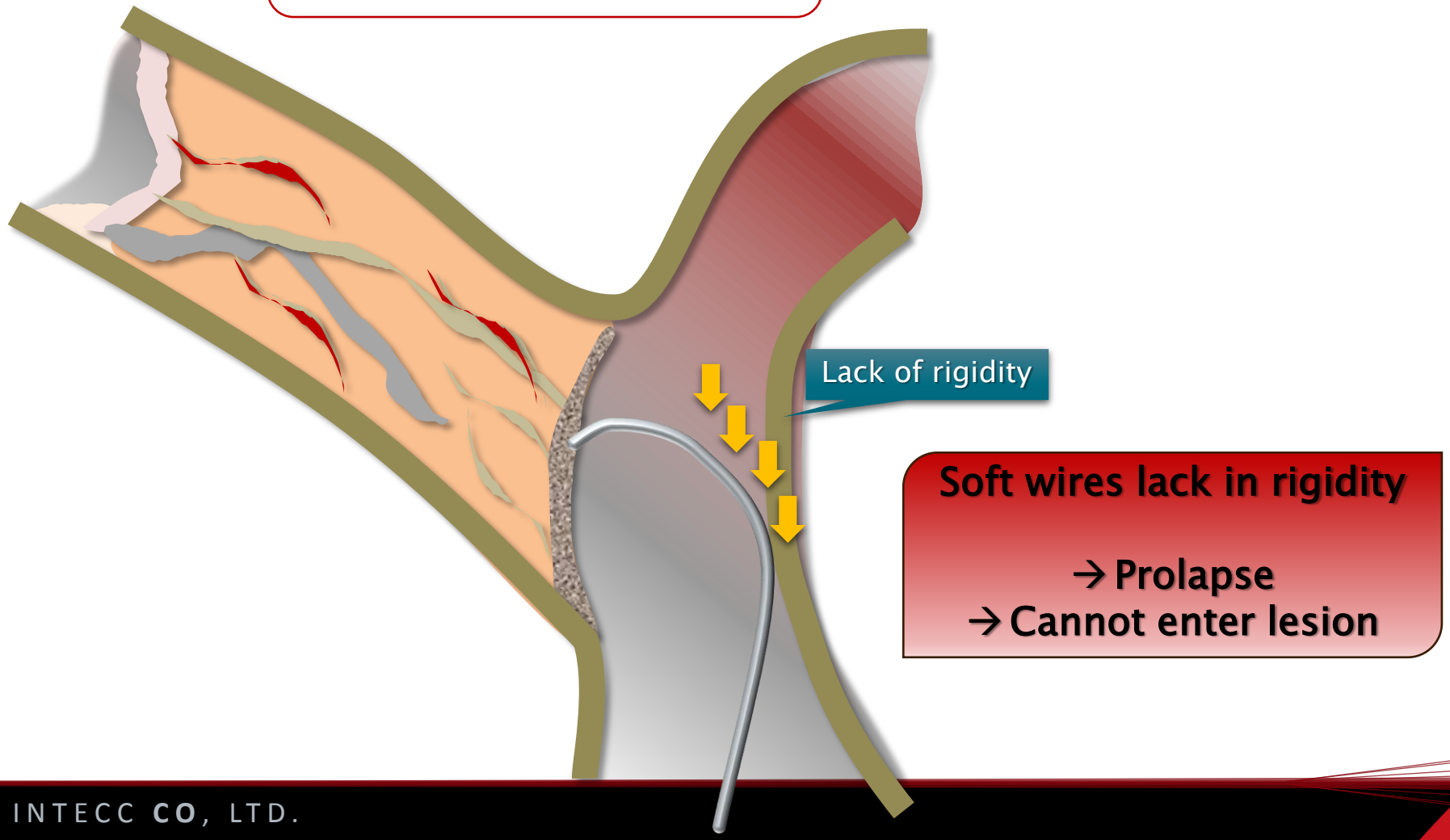
Control

Torque Response Comparison

CTO from Friday 26th April

ASAHI
Gaia

Soft wire at
Ostial Occlusion at Bifurcation

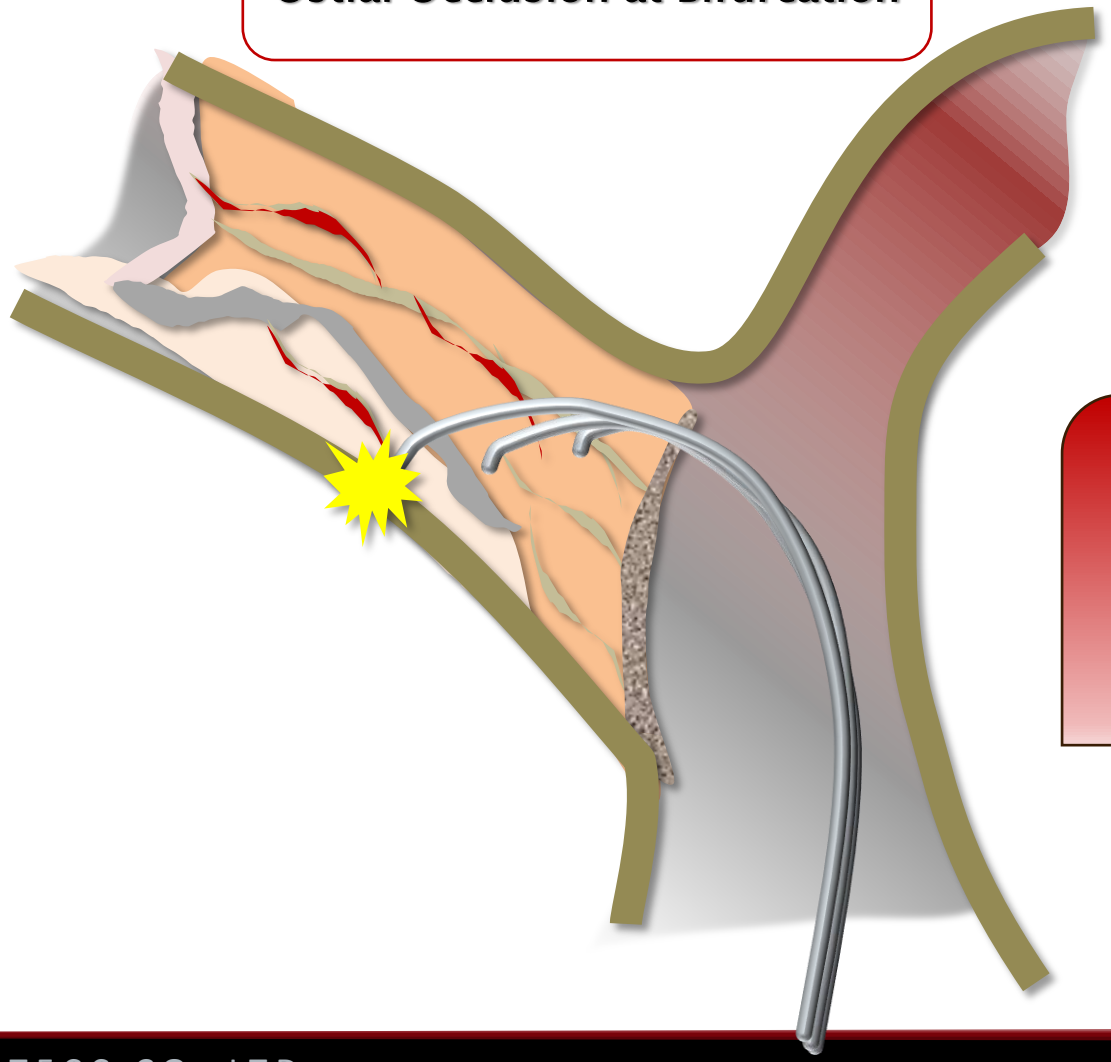


Soft wires lack in rigidity

→ Prolapse
→ Cannot enter lesion

ASAHI Gaia

Stiff wire at
Ostial Occlusion at Bifurcation

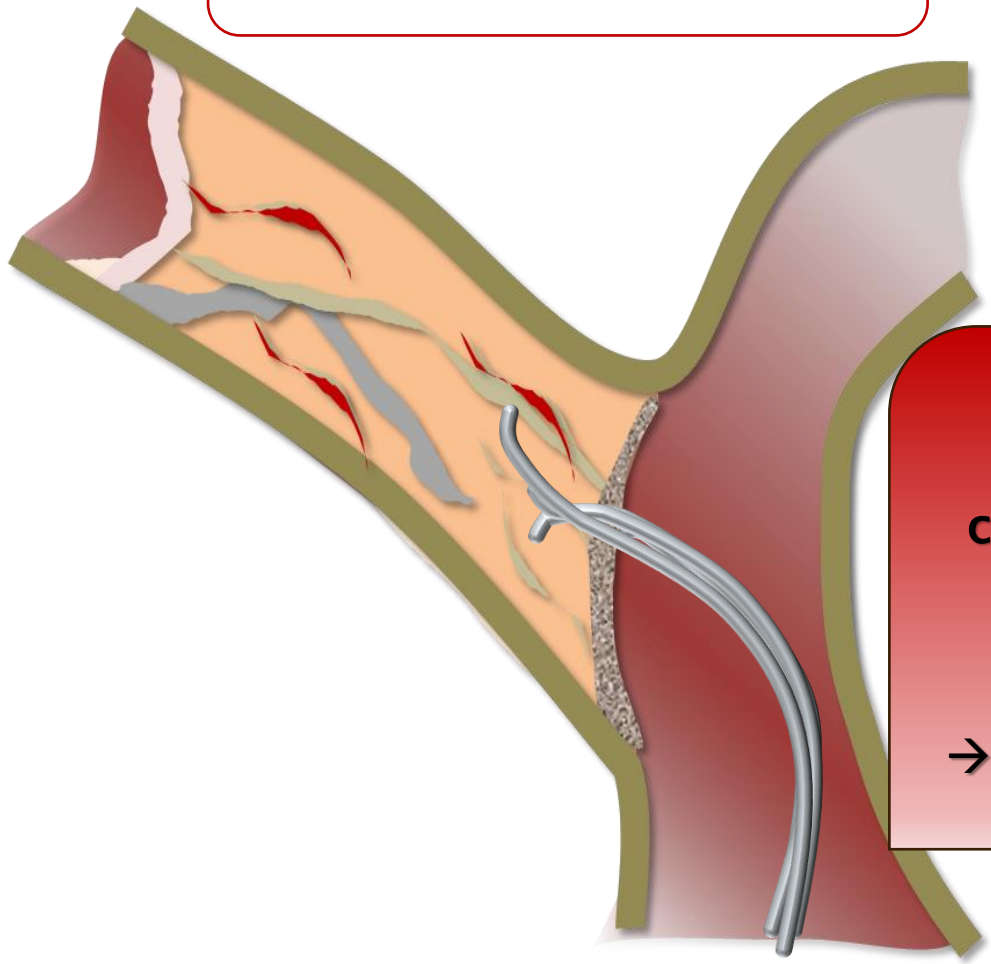


Stiff wires will enter straight

→ Possibility of vessel damage

ASAHI Gaia

ASAHI Gaia Third for Ostial Occlusion at Bifurcation



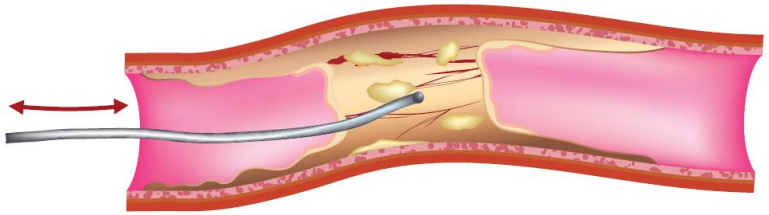
Gaia Third has enough rigidity, pushability and control to enter bifurcation lesion

→ Lesion entry
→ Use of deflection & control

CONFIANZA PRO

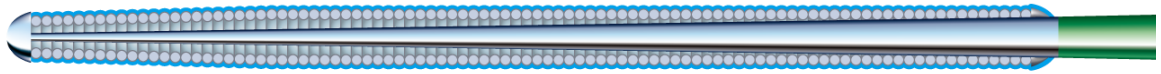
CONFIANZA PRO

CTO Guide Wire for calcified lesions & Tough fibrous caps



CONFIANZA PRO

Hydrophilic coating
+
Uncoated tip



Tactile feedback
&
Lesion entry

CONFIANZA PRO
CONFIANZA PRO 12

9 gf and 12 gf Tip Loads

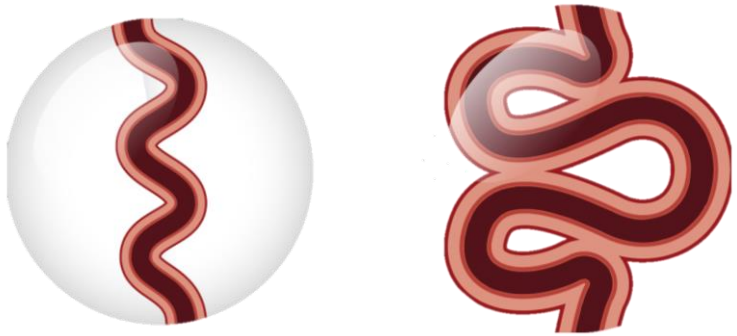
Thick core + Tapered tip 0.009 inch

Concentrated penetration power

ASAHI SUOH 03

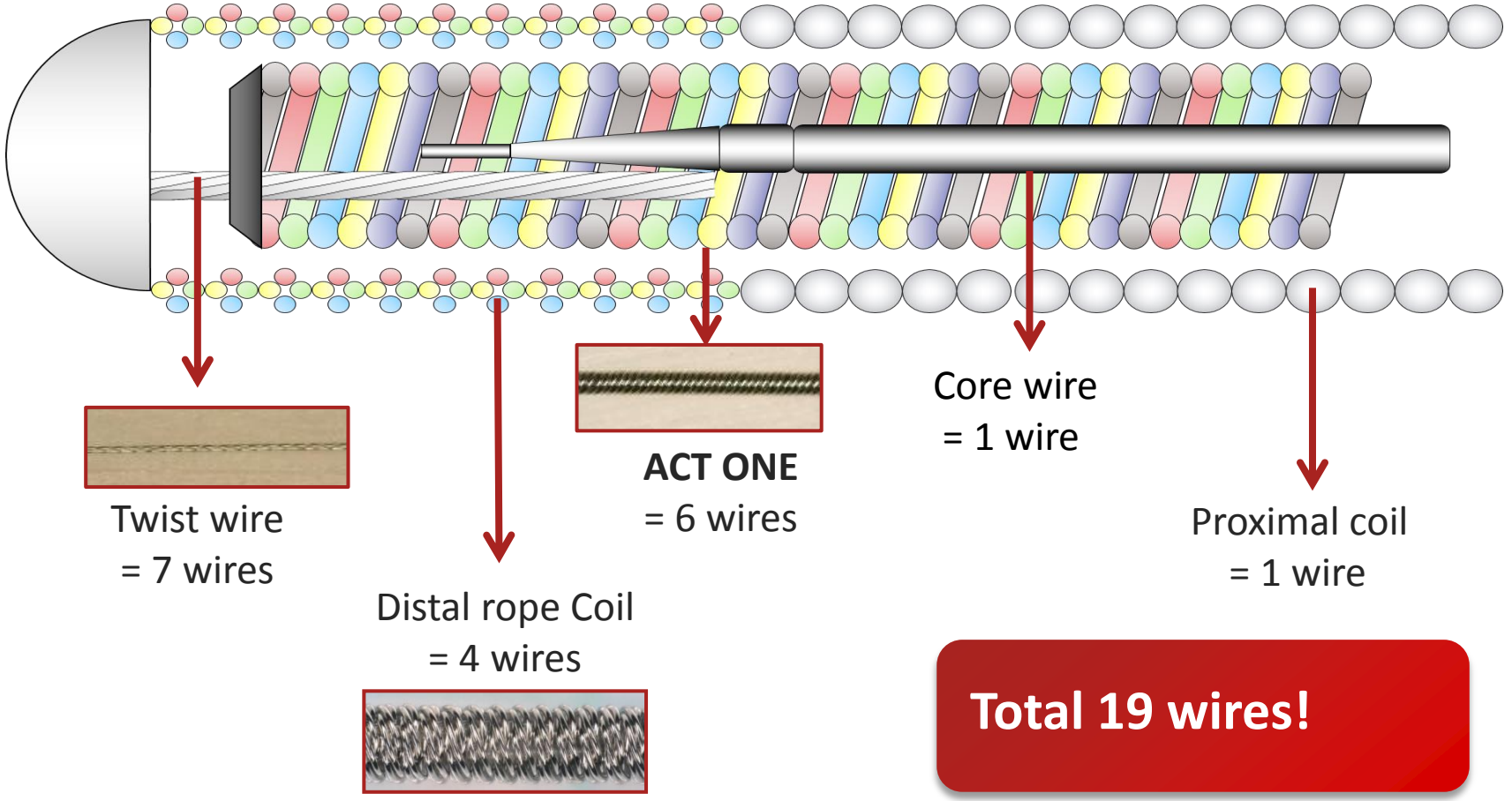
ASAHI SUOH 03
SION TECC

Retrograde collateral channel
Speciality guide wire



SUOH 03 Construction: overview

Multiple wire components are placed inside the **ASAHI SUOH 03**

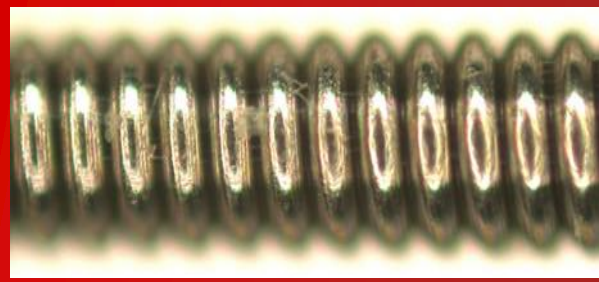


SUOH 03 Construction: Single wire rope coil

Unique distal ‘single wire rope coil’ segment is made out of 4 wires

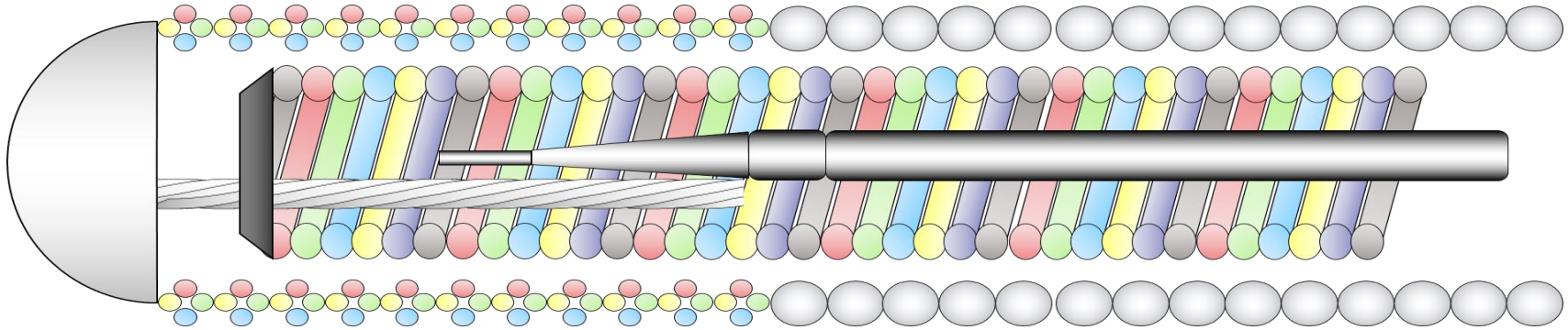
Distal 3 cm ‘Single Wire Rope Coil’
(4 wires)

Proximal 16 cm
‘Conventional Coil’
(1 wire)



SUOH 03 Construction: Single Wire Rope Coil

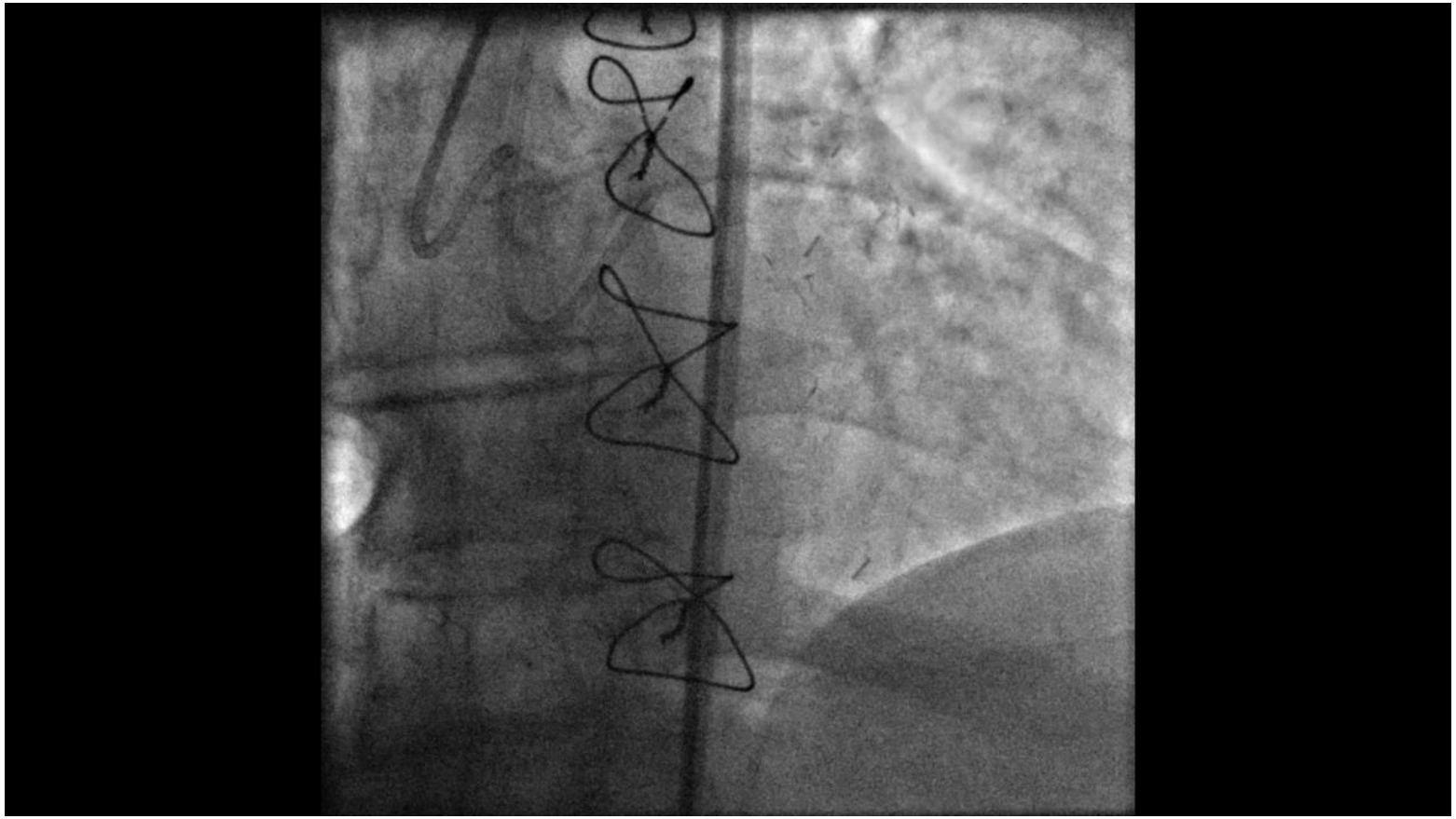
Unique distal ‘single wire rope coil’ segment is made out of 4 wires



Single Wire Rope Coil:
constructed with
4 smaller-diameter wires

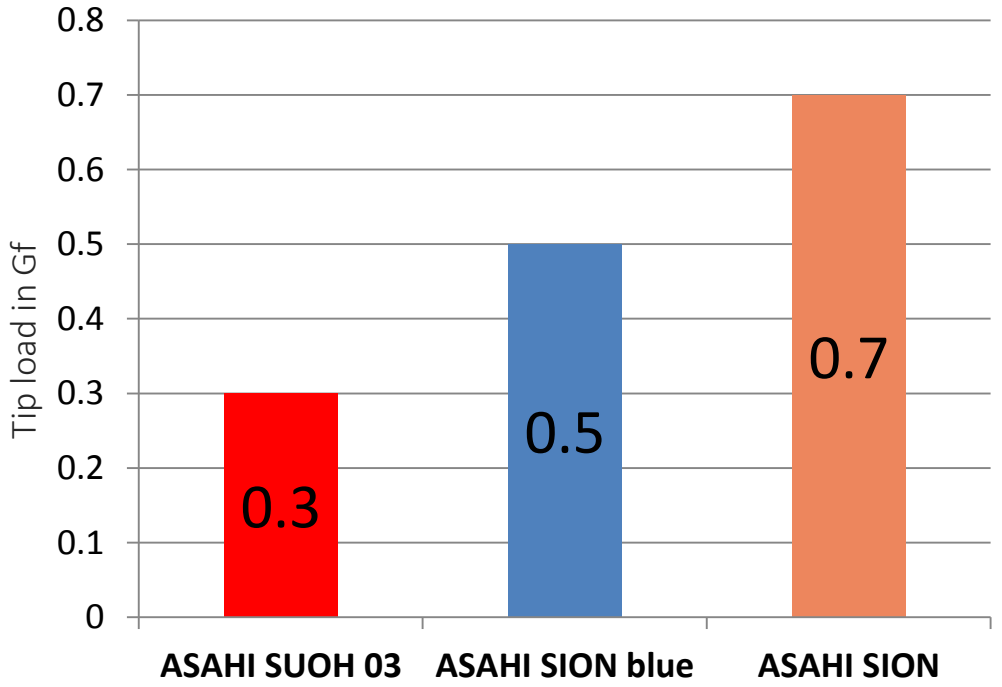
Results in higher flexibility

Suoh 3



SUOH 03 Features:

- **Flexibility**
- Lubricity
- Control
- Device delivery



Extremely low tip load

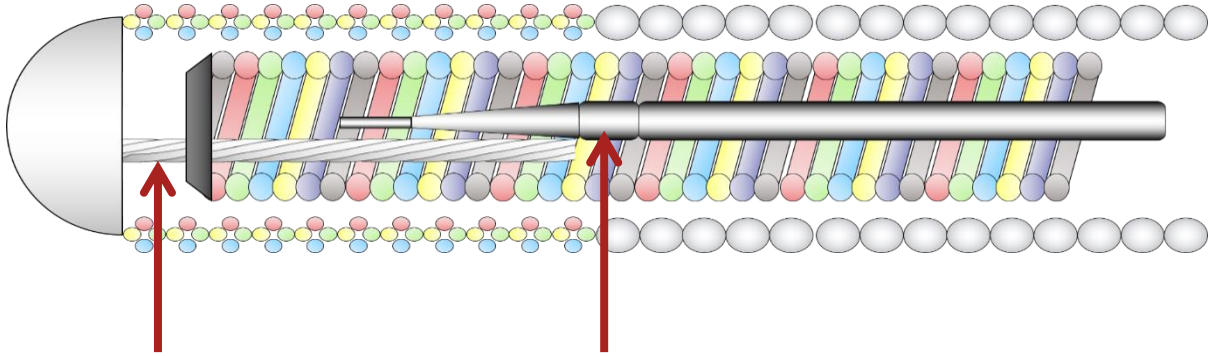
SUOH 03 Features:

Flexibility

Lubricity

Control

Device delivery



Only twist wire is connected to the tip, not the core wire

This greatly increases tip flexibility of the SUOH 03

Flexibility = ⬆

SUOH 03 Features:

Flexibility

Lubricity

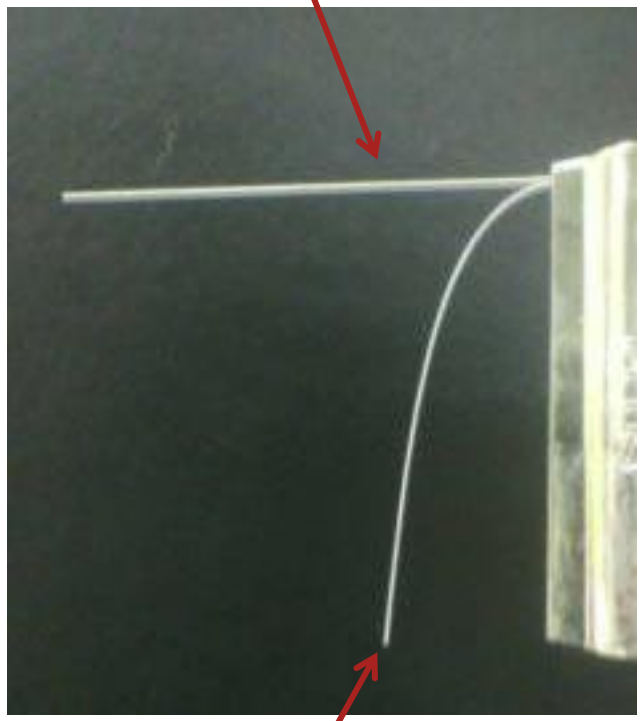
Control

Device delivery

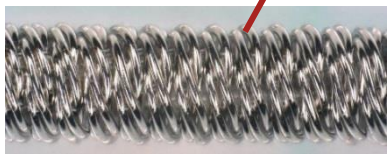
Comparison of flexibility (when pulling out core wire).

The Rope Coil shows extreme flexibility compared to the conventional 1-wire spring coil.

Conventional spring coil



Single Wire Rope coil



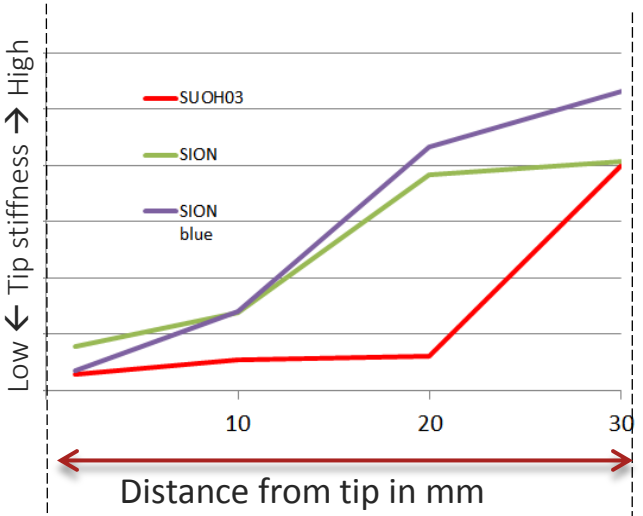
SUOH 03 Features:

Flexibility

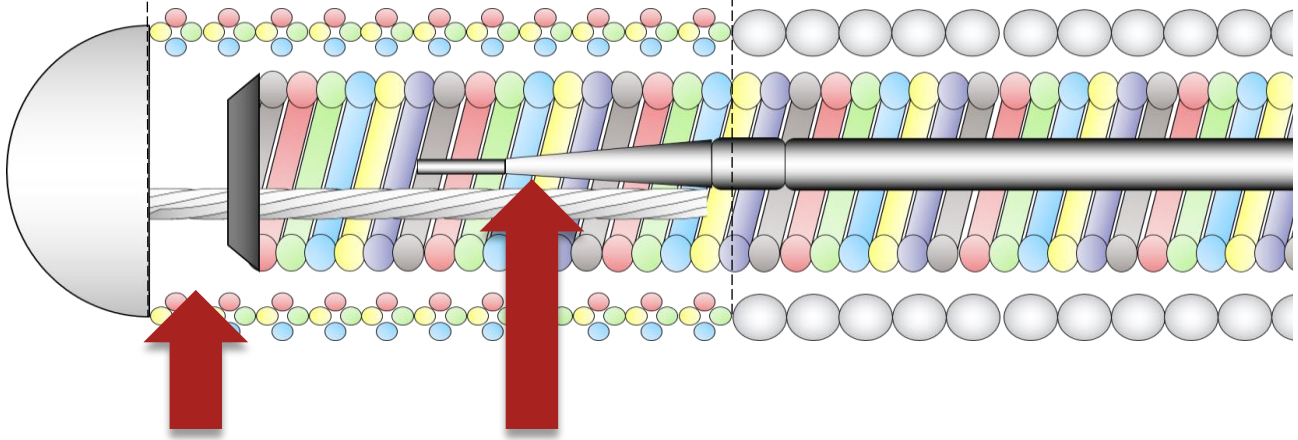
Lubricity

Control

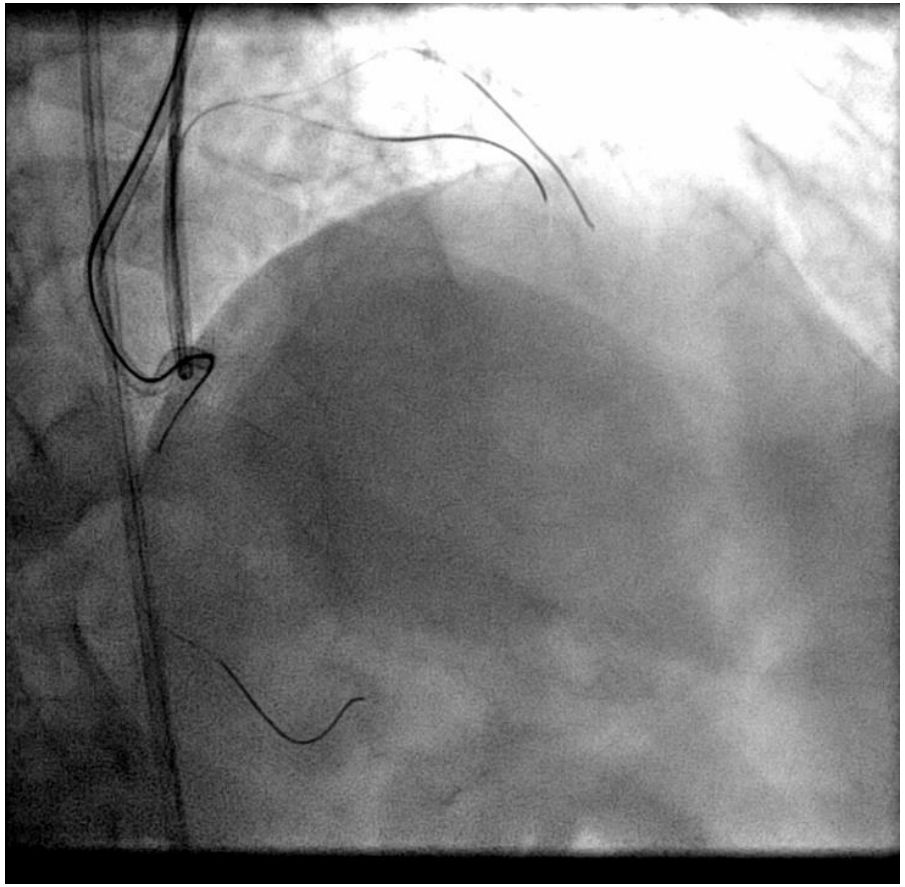
Device delivery

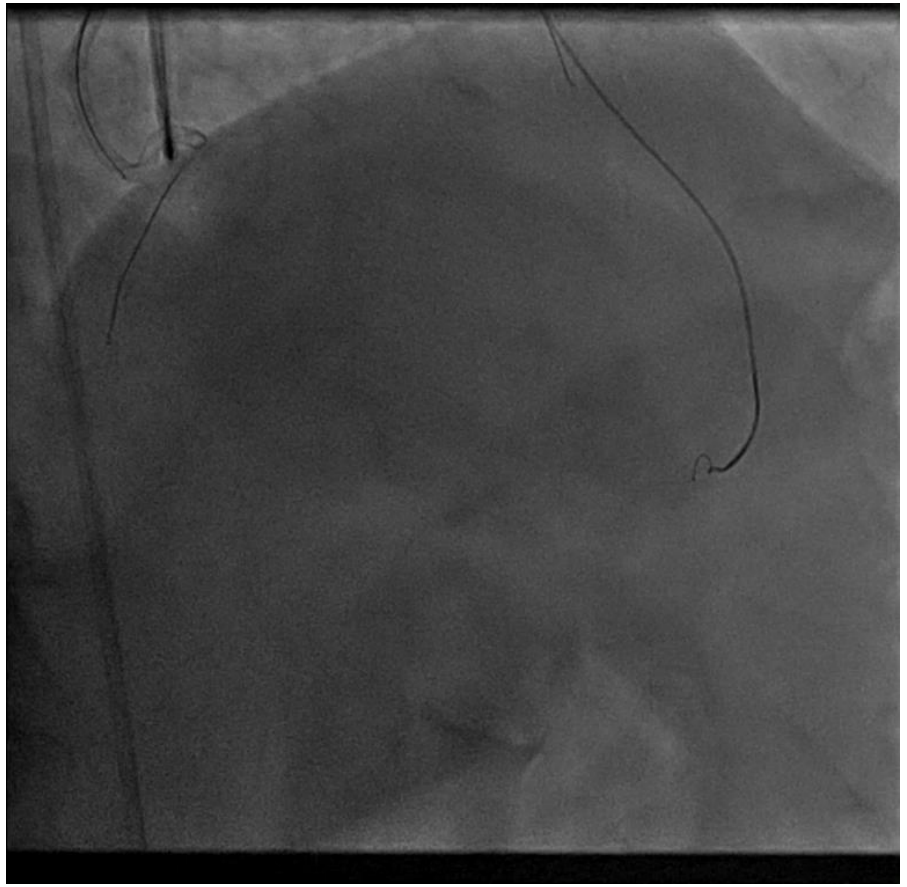


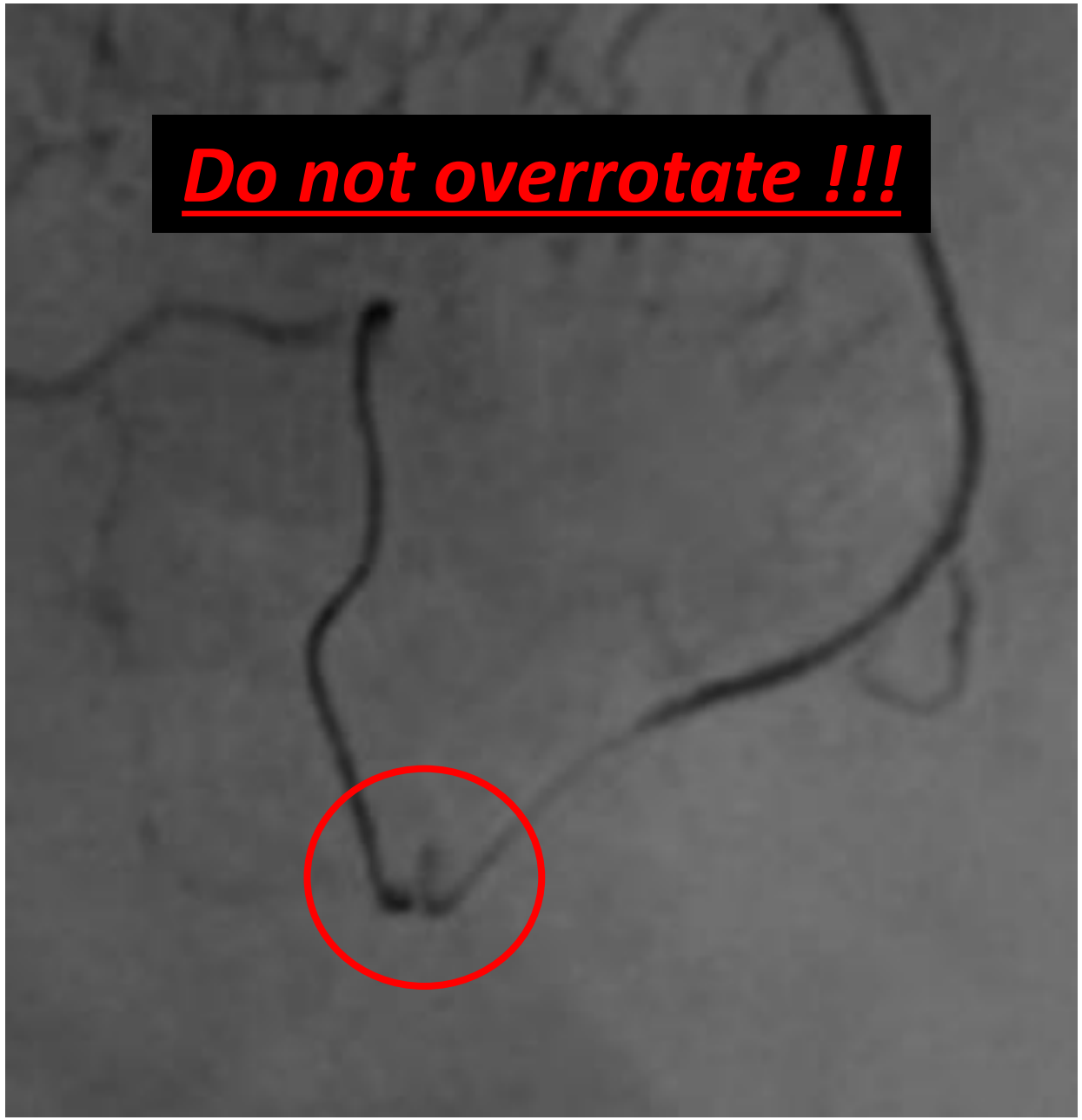
Extreme flexibility is achieved because the core wire is not connected to the tip, in combination with the new ‘rope coil’ design



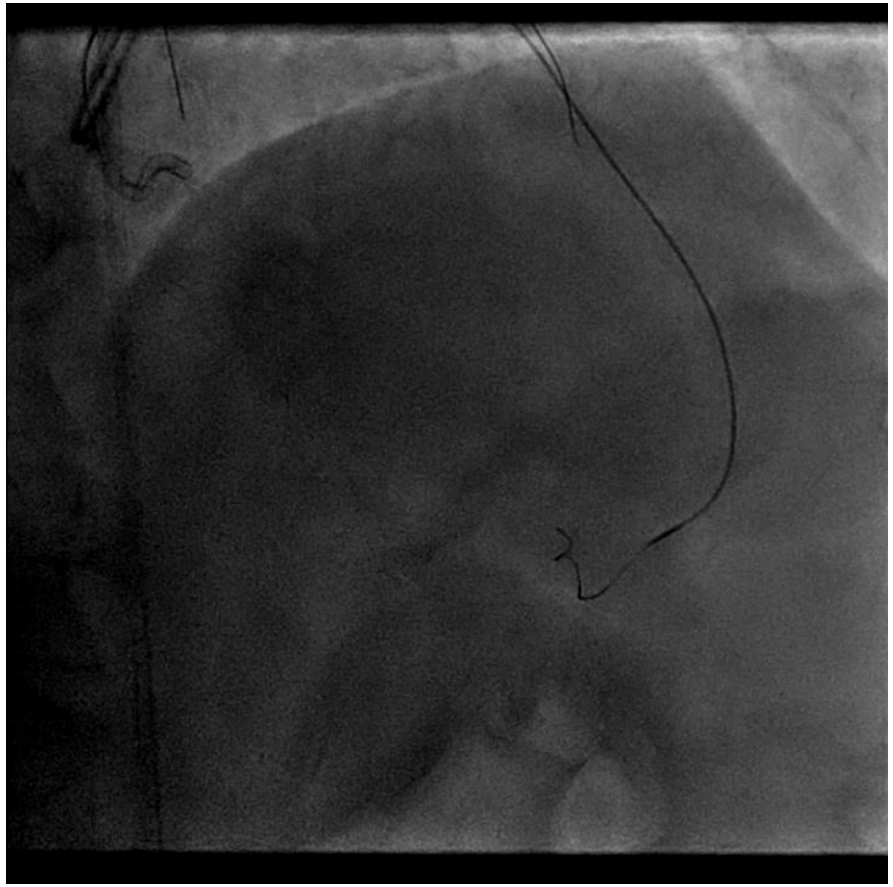
Suoh 3



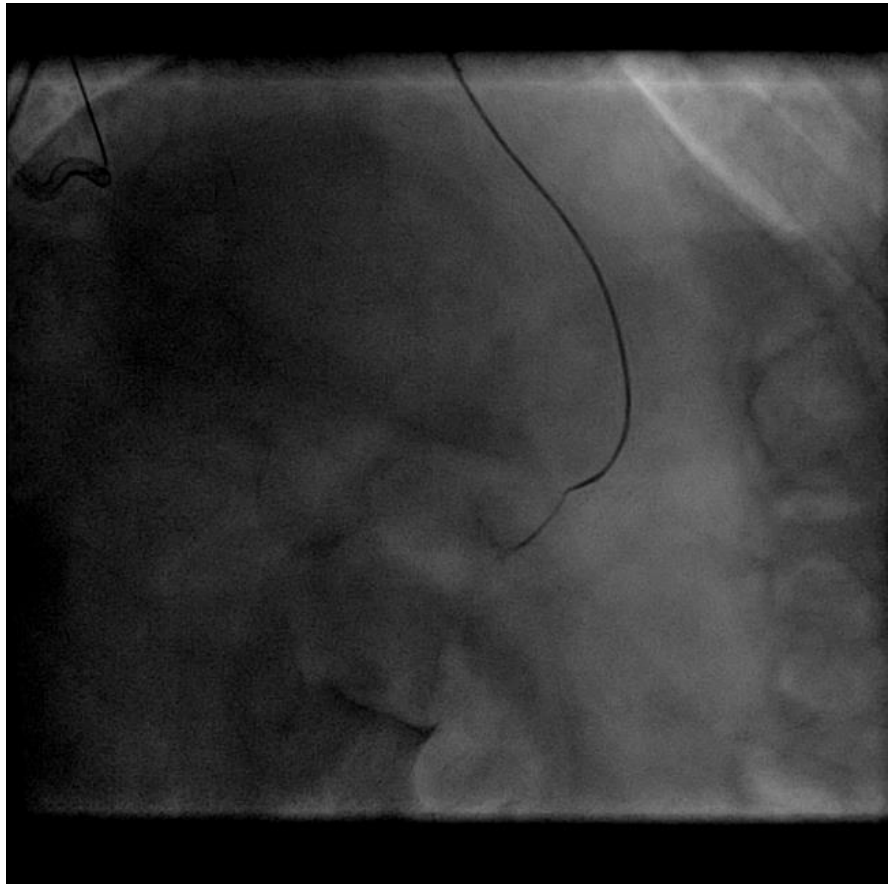


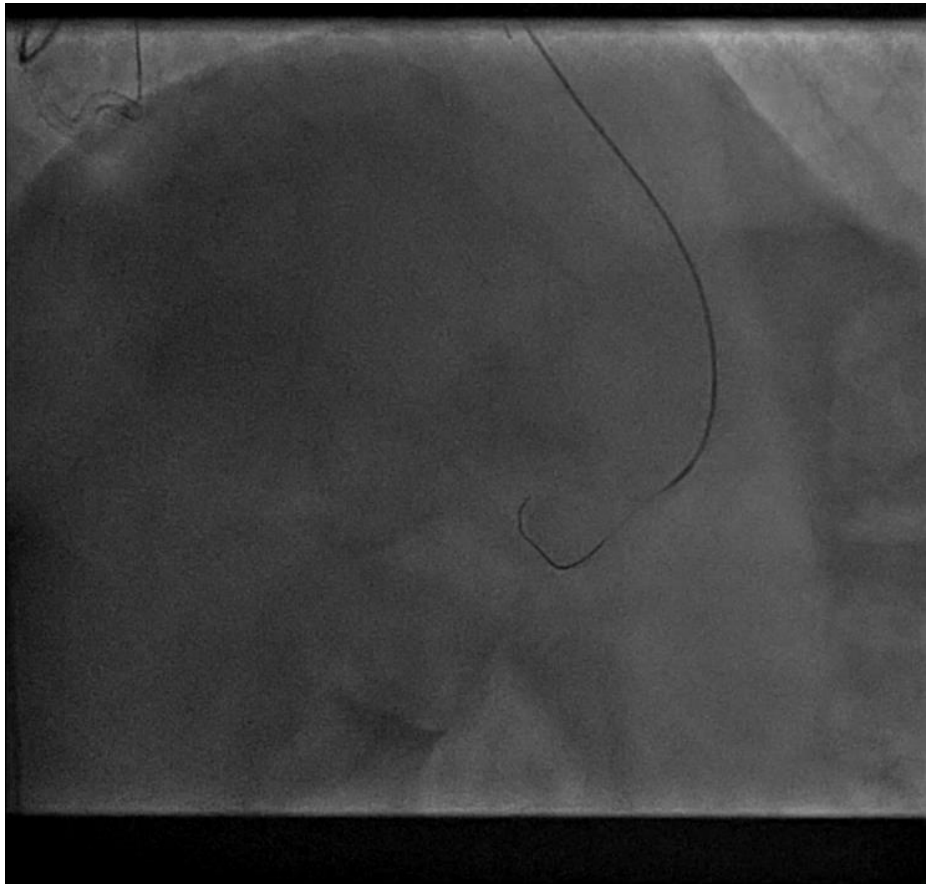

Do not overrotate !!!

Suoh 3



Suoh 3





SUOH 03 Features:

Flexibility

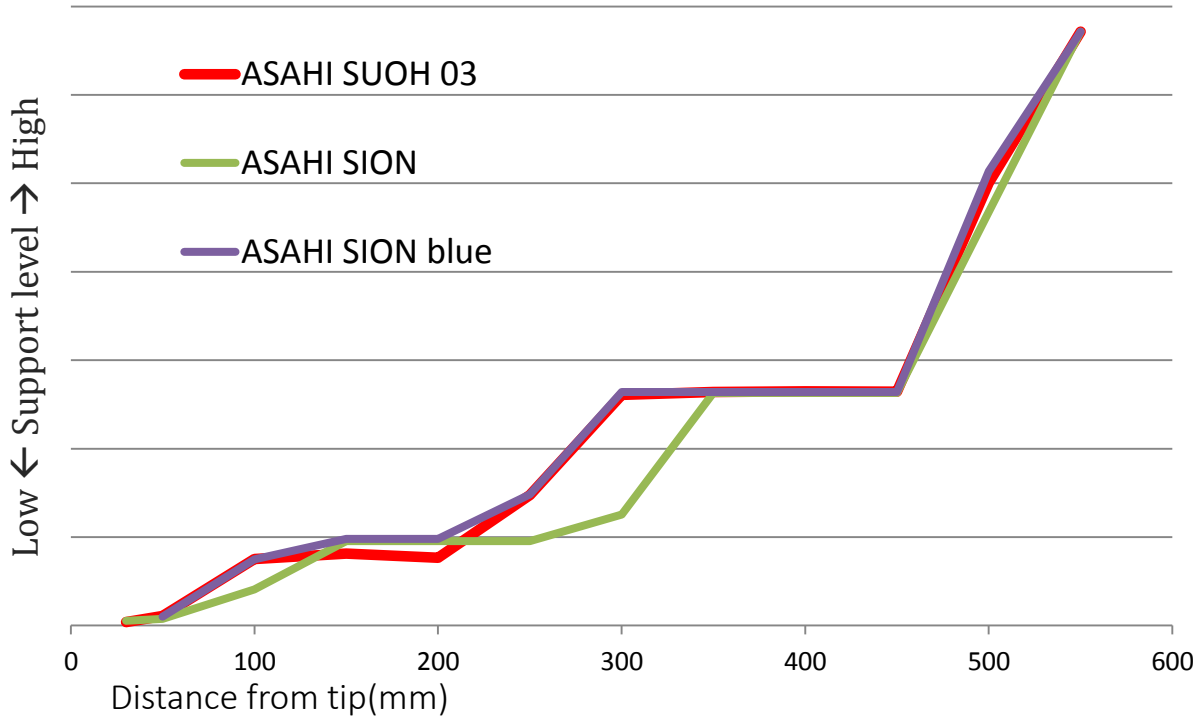
Lubricity

Control

Device delivery

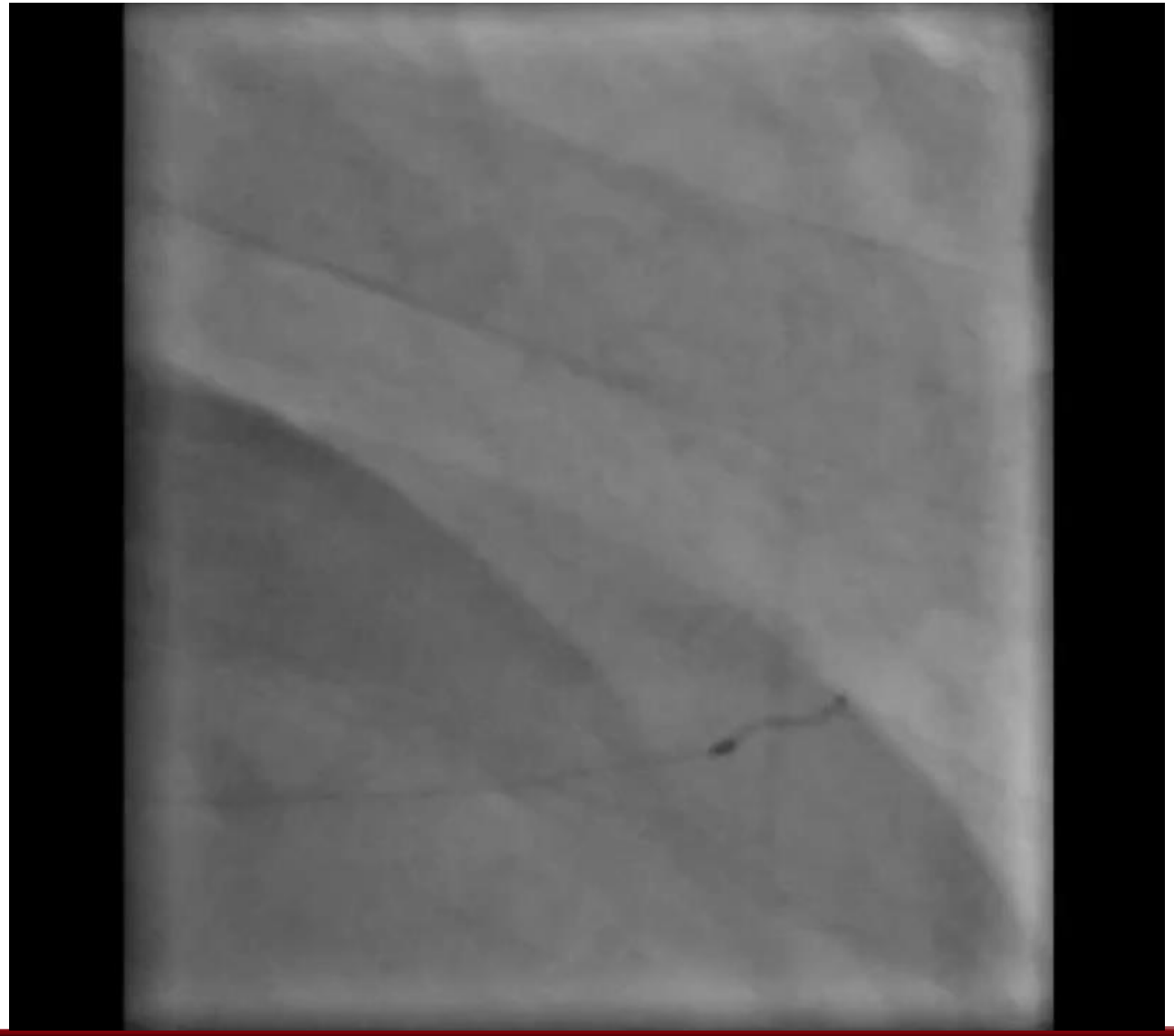
Shaft support

The shaft support of **ASAHI SUOH 03** is almost equal to **ASAHI SION blue** from about 5cm from the tip.



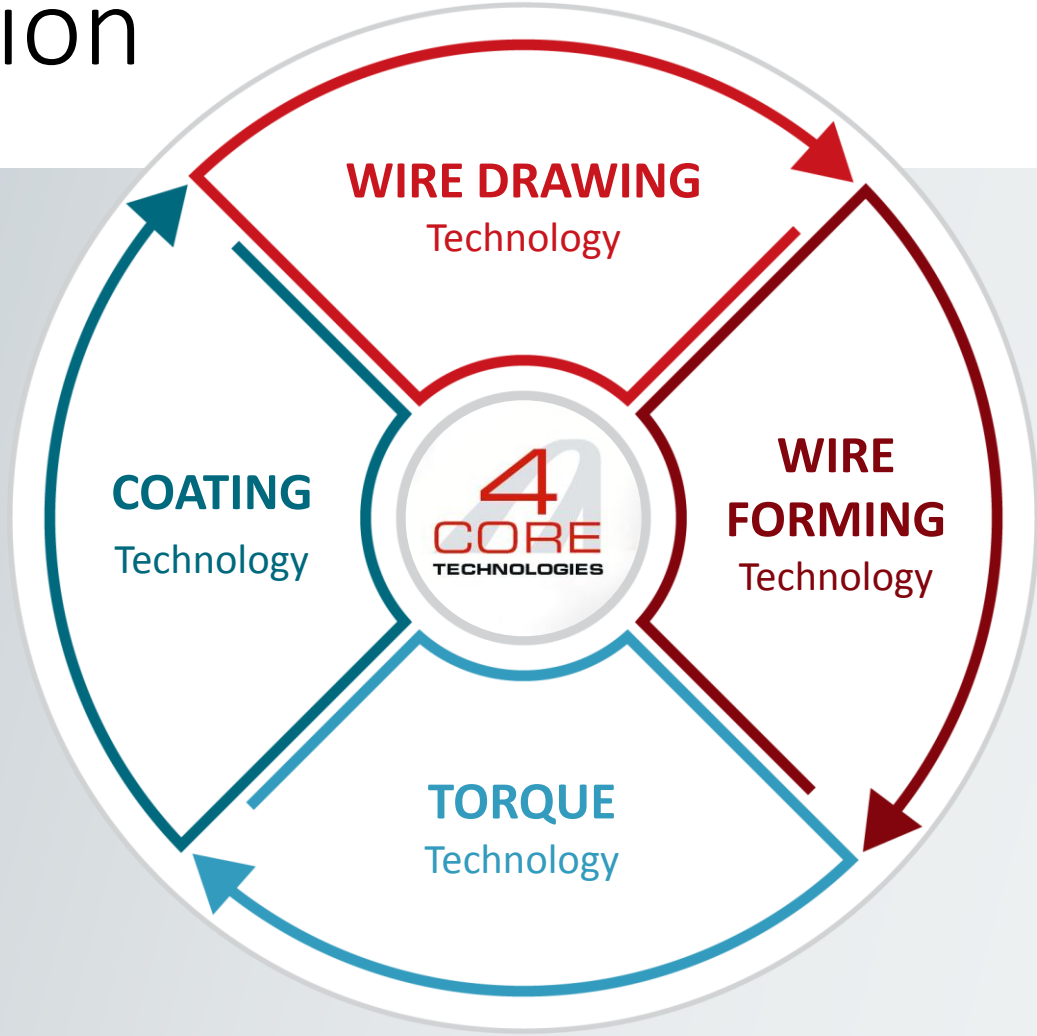
Test performed by ASAHI Intecc Co., Ltd.
This above data was obtained by company standardized test, which may differ from industry standardized tests.
The above data does not guarantee that all devices have exactly the same performance with the samples used for these tests.

Suoh 3 – Case 2



Leading Innovation

Integrating Four Core Technologies to SHAPE THE FUTURE OF MEDICINE



SAVE the dates!