

Medtronic

Bio-Medicus™ NextGen

Cannula technologies

Advanced femoral cannulae backed by 30+ years
of Bio-Medicus™ cannulae family performance

Adult femoral
venous cannula
now with multi-
stage design



Cannula innovation that keeps up with you

We believe in the power of technology to improve lives. And, we believe improving lives means giving you the enabling technologies needed to provide the best care for your patients.

That's why we brought Bio-Medicus™ cannulae into the Medtronic family of cardiovascular technologies all those years ago. Even then, we recognized that cardiac surgery was changing – and that femoral cannulation would be playing an even larger role in minimally invasive and traditional cases.



1990

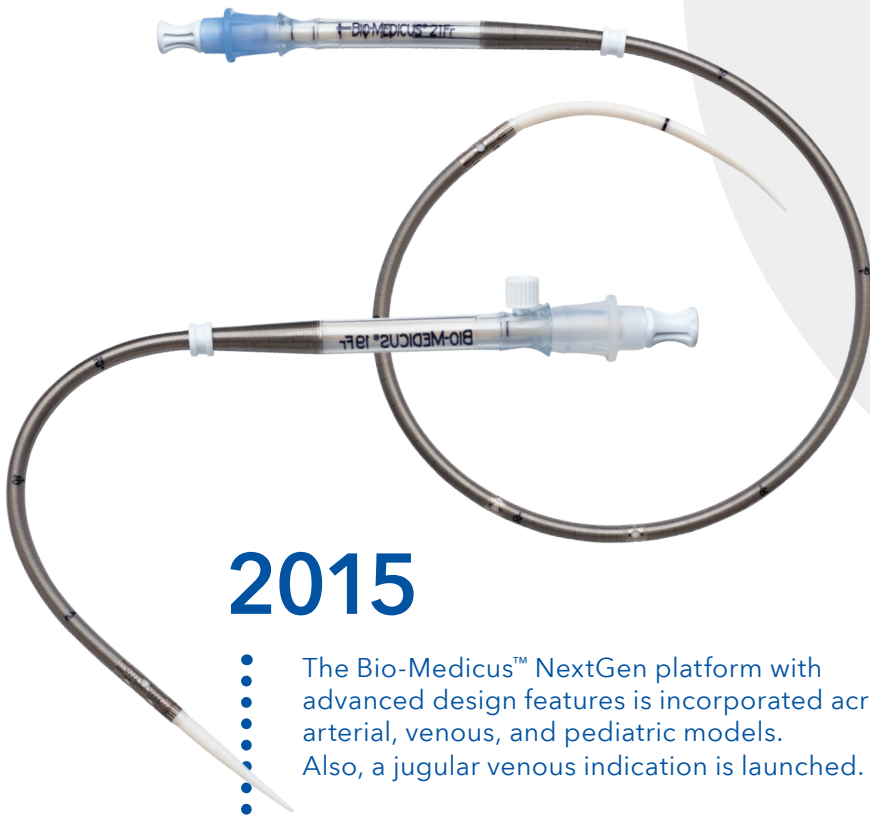
- Bio-Medicus™ cannulae becomes a part of the Medtronic family.
- Arterial and venous options are available for adults and pediatric patients.

We've never
stopped innovating

2006

- Medtronic introduces a Bio-Medicus™ multi-stage cannula. This was a first-to-market solution for femoral cannulation.





2015

The Bio-Medicus™ NextGen platform with advanced design features is incorporated across arterial, venous, and pediatric models. Also, a jugular venous indication is launched.

**More than
30 enhancements**

The timing seemed just right to build some of the same NextGen enhancements into our most popular multi-stage model.

2021

**Bio-Medicus™ NextGen
multi-stage adult venous
is introduced**

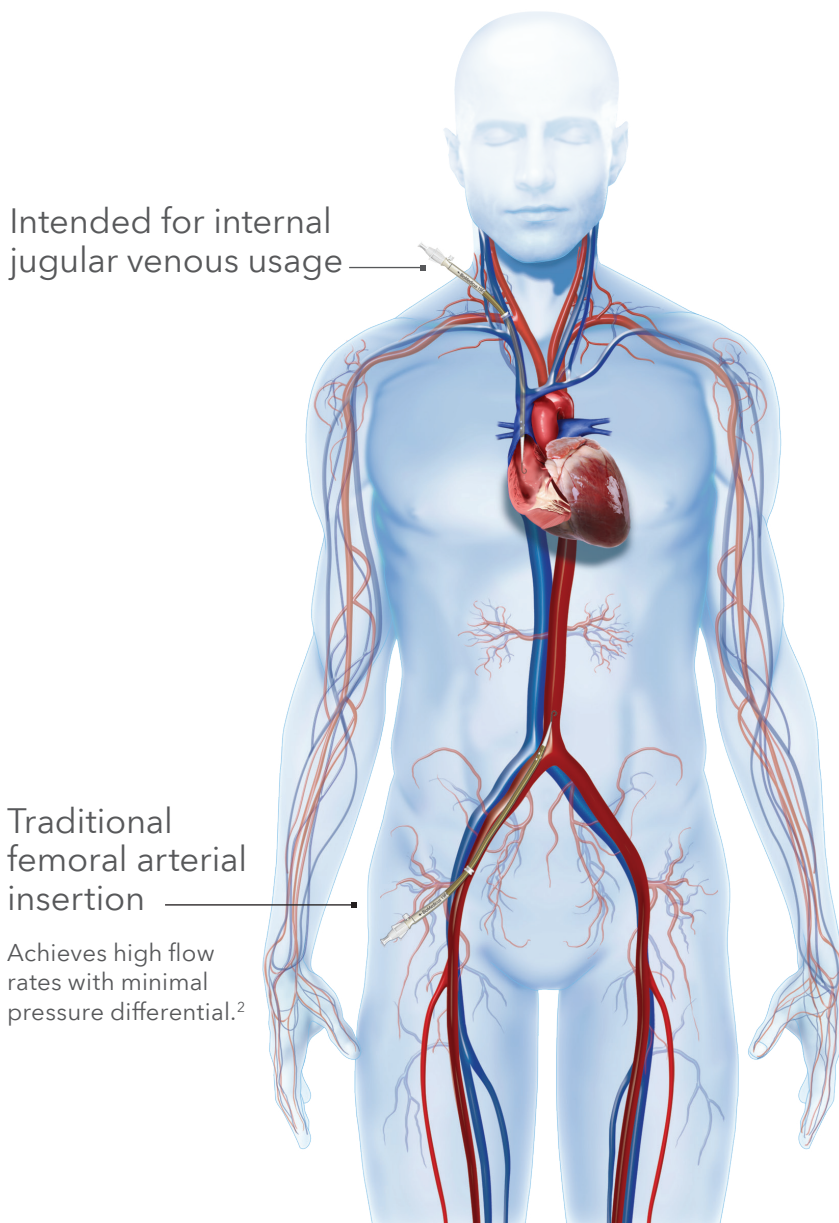


Versatile positioning for MICS and traditional cases

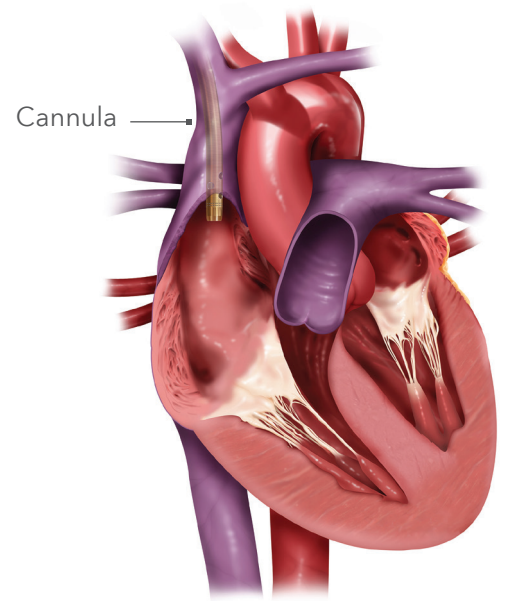
Bio-Medicus™ NextGen cannulae portfolio is an advanced platform that offers a versatile range of cardiopulmonary bypass options for MICS or traditional therapies. Choose the cannulation strategy that meets your preferences.

One cannula, two positions

Bio-Medicus™ NextGen cannulae arterial models offer a versatile and convenient platform beyond traditional femoral access,¹ and expand your alternative access options for cardiopulmonary bypass cases. A jugular positioning option offers another choice for your cardiac procedures.



Jugular venous



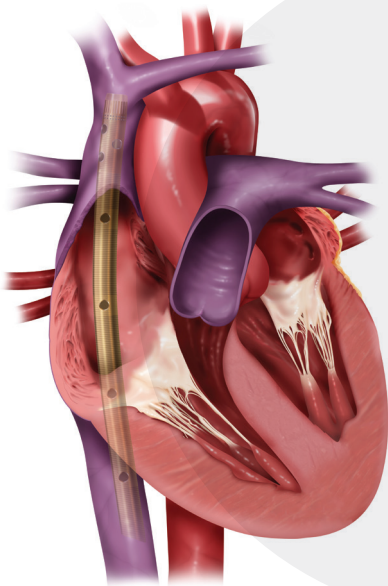
Internal jugular venous position

Promotes efficient venous drainage¹ with minimal pressure differential.²

¹ Medtronic data on file. Design Validation. These tests may not be indicative of clinical performance.
² Based on Medtronic flow rate/pressure loss data on file. Clinical results will vary due to the patient's condition and blood composition.
³ Medtronic data on file. Design Verification Testing Report. These tests may not be indicative of clinical performance.
⁴ Medtronic data on file. Design Validation and Verification Report. These tests may not be indicative of clinical performance.

The multi-stage side hole configurations are our latest addition – now available with the advanced features of our NextGen platform.

Multi-stage femoral venous

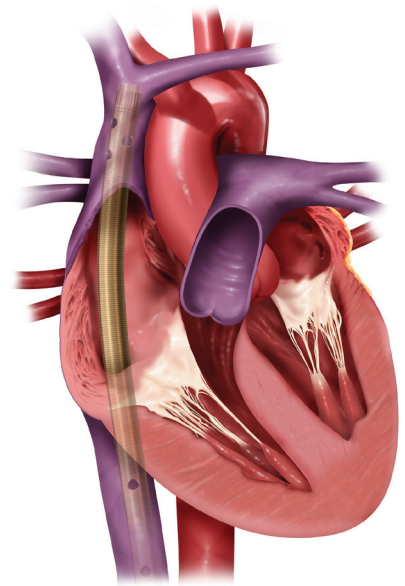


Advanced multi-stage design

Designed for easy placement across the atrium during MICS procedures.¹

Optimizes drainage of the entire circulation by accessing the IVC, atrium, and SVC.⁴

Bi-caval femoral venous



Traditional IVC/atrial junction position

Promotes efficient venous drainage.¹

Bi-caval capability with optimized basket placement³

Designed to enable right atrium occlusion and access – 27 Fr and 29 Fr models.

Bio-Medicus™ NextGen

Multi-stage femoral venous cannulae

Our multi-stage cannulae feature a new tip design with more side holes than other femoral venous cannula to help make insertion, tip transition, and final positioning even easier, all while maintaining efficient drainage.¹



New

Smooth transitions²

Tapered tip design.

Flexible and kink-resistant³

Stainless-steel wirewinding and reinforced side-hole baskets.

Efficient tracking²

Long-tapered introducer facilitates placement.

Easy insertion and removal²

Smooth side holes.

Promotes drainage³

Six large tip side holes.

Marker band

Indicates that all side holes are inserted at minimum depth within vessel.



- Depth markings allow for visualizing the introducer's length beyond the tip of the cannula body
- Tip taper location indicator
- 3/8 inch non-vented connector



- Echo-friendly cannula body design²
- Elongated taper allows introducer to dilate the vessel over a longer distance during insertion
- Overall tip length up to 60 cm

¹ Medtronic data on file. Design Validation, Verification Report, and published competitor brochure. These tests may not be indicative of clinical performance.

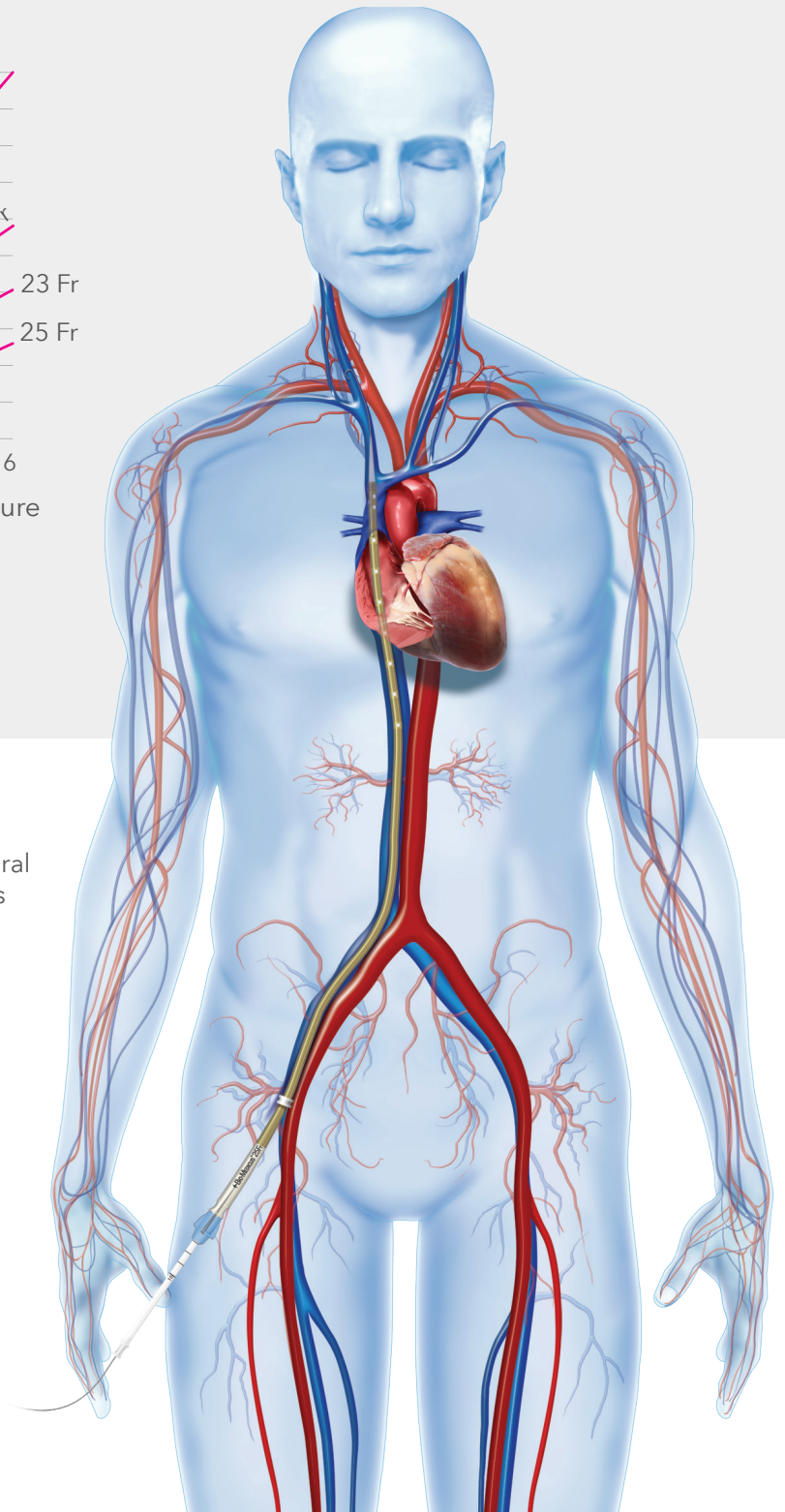
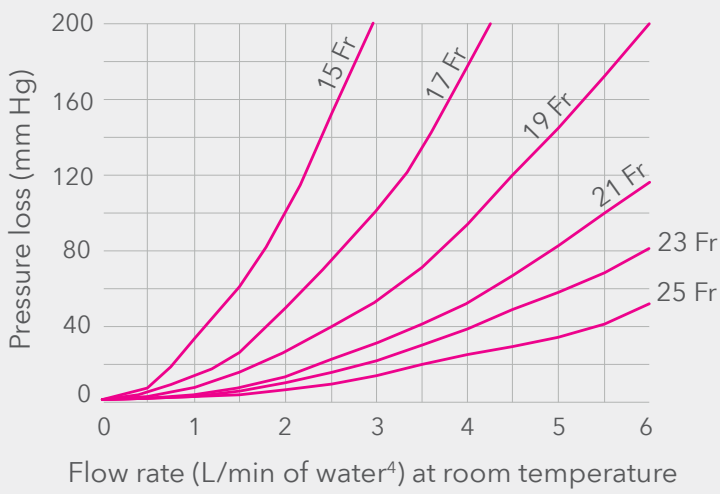
² Medtronic data on file. Design Validation and Verification Report. These tests may not be indicative of clinical performance.

³ Medtronic data on file. Design Verification Testing Report. These tests may not be indicative of clinical performance.

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⁵ Medtronic data on file. Design Validation. These tests may not be indicative of clinical performance.

Bio-Medicus™ cannulae venous multi-stage⁴
Pressure drop vs. flow



Extended-length introducer with smooth transition zone promotes ease of percutaneous femoral vein cannulation⁵ and advancement through tortuous venous anatomy.

Important Safety Information

Care and caution should be taken to avoid damage to vessels and cardiac tissue during cannulation or other cardiac surgery procedures. For a listing of indications, contraindications, precautions, warnings, and potential adverse events, please refer to the Instructions for Use.

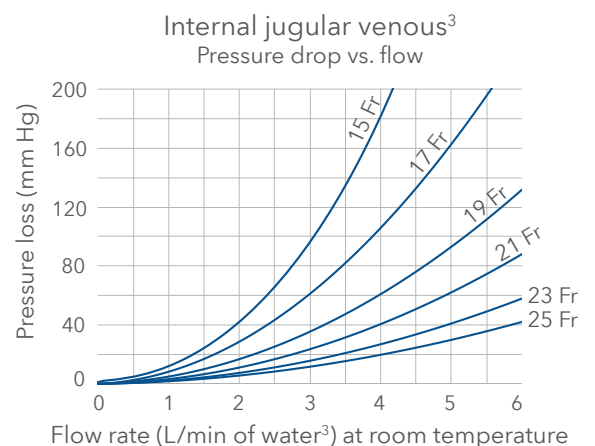
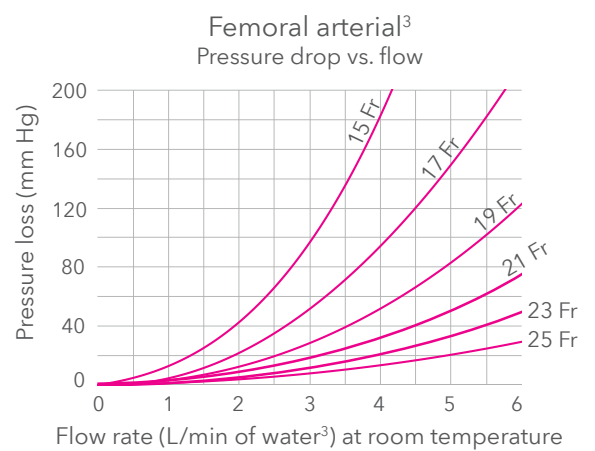
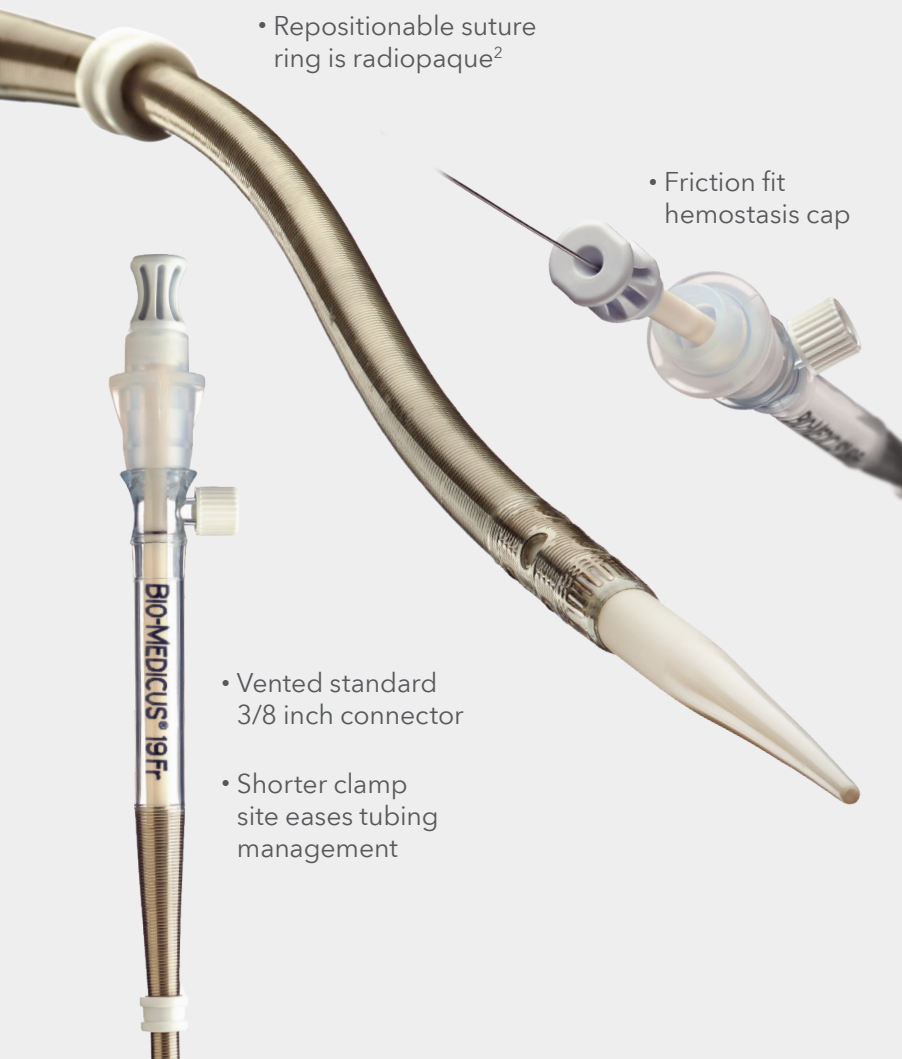
Bio-Medicus™ NextGen

Femoral arterial/internal jugular venous cannulae

Bio-Medicus™ NextGen cannulae offer ease of insertion and are engineered for smooth transitions.² Fingerlet supports are formed into the tapered tip to create a smooth transition between the introducer and the thin cannula wall. All of these advanced Bio-Medicus NextGen cannulae design features add up to your opportunity for a smooth insertion.

Hemostasis management – the right fit

Our cap and introducer design for all NextGen cannulae offers improved function. The increased friction fit between cap and introducer helps prevent backing out when inserting or advancing in the vessel.¹ The introducer hub's smaller guidewire opening also equates to a reduction in blood loss.¹



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Bio-Medicus™ NextGen

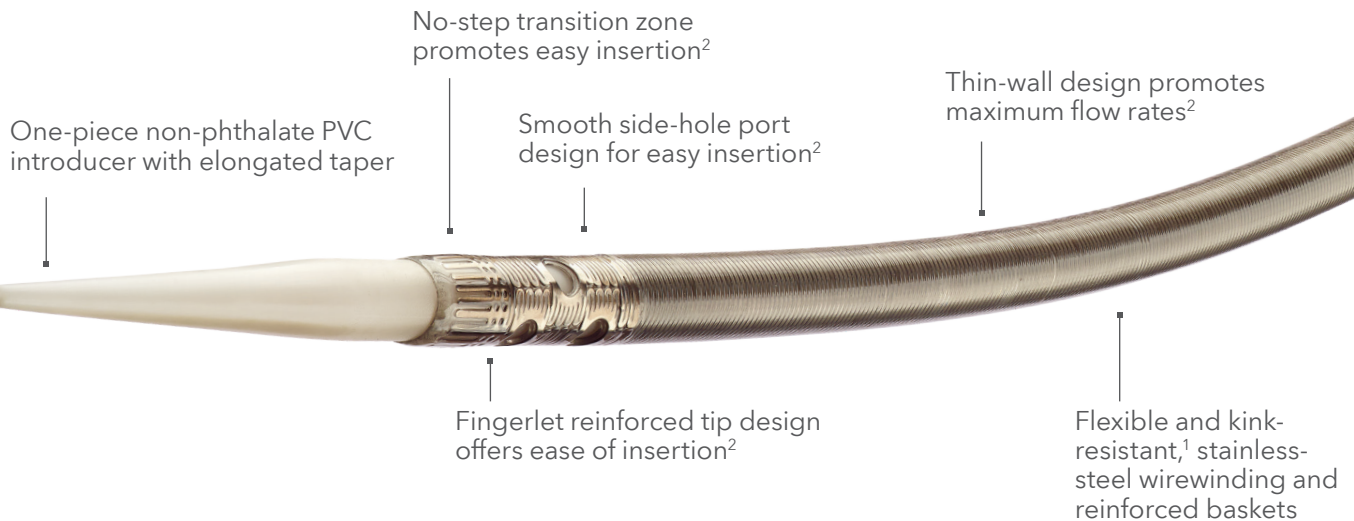
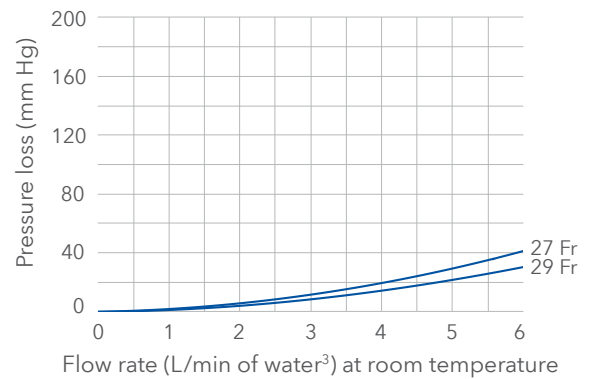
Femoral bi-caval venous cannulae

- Elongated taper on bi-caval venous cannula models offers dilation over a longer distance



- Introducer markings confirm alignment of cannulae and introducer tip

Bi-caval venous³
Pressure drop vs. flow



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Bio-Medicus™ NextGen

Pediatric cannulae

For your smaller patients, a tapered solid core and a percutaneous-style introducer is standard with each cannula. Contents come secured in the retention clip for easier transfer into the sterile field. Choose an arterial or venous model.

Bio-Medicus™ NextGen cannulae Pediatric arterial and venous

(1 unit per carton)

Arterial or venous cannula, hemostasis cap, adjustable radiopaque suture ring

Tapered solid-core and percutaneous-style introducer

Cannula/tubing retention clip



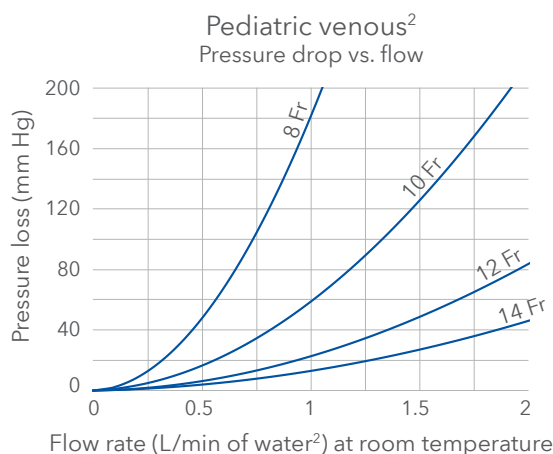
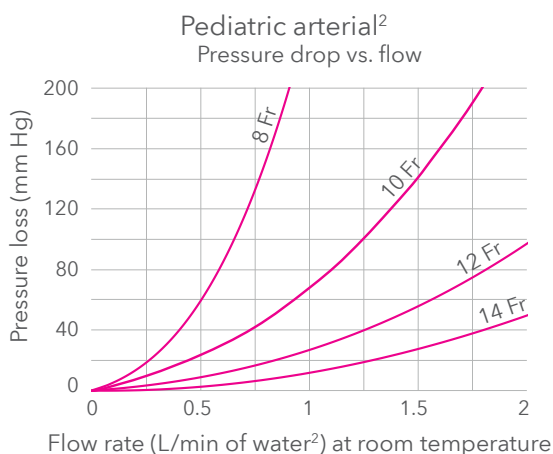
Pediatric arterial

- Tapered percutaneous-style 0.025 mm guidewire



Pediatric venous

- Reinforced side holes support smooth insertion¹



¹ Medtronic data on file. Design Validation and Verification Report. These tests may not be indicative of clinical performance.
² Based on Medtronic flow rate/pressure loss data on file. Clinical results will vary due to the patient's condition and blood composition.

Bio-Medicus™ NextGen

Ordering information

Bio-Medicus™ NextGen cannulae packaged for convenience

Our NextGen cannulae are offered in a variety of configurations that meet the growing demands of physicians and their teams.

We offer individual cannula or cannula kits. A separate insertion kit is also available for all adult and pediatric models.



Important Safety Information

Care and caution should be taken to avoid damage to vessels and cardiac tissue during cannulation or other cardiac surgery procedures. For a listing of indications, contraindications, precautions, warnings, and potential adverse events, please refer to the Instructions for Use.

Bio-Medicus™ NextGen Cannula kits

Choose your cannula kit – these kits are available with a standard set of insertion components. A noncorrugated carton design makes this kit a ready choice.

Bio-Medicus™ NextGen Femoral venous cannula kit

(1 unit per carton)

Multi-stage or bi-caval venous cannula with introducer, hemostasis cap, adjustable radiopaque suture ring

0.038 in (0.965 mm) diameter guidewire;
180 cm (70.87 in) length

1/2 in (1.27 cm) to 3/8 in (0.95 cm) tubing adapter
(included only with venous models 23 Fr, 25 Fr, 27 Fr,
29 Fr)

Stepped vessel dilator, 8 Fr/10 Fr, 12 Fr/14 Fr, 16 Fr/18 Fr,
plus (1) additional larger dilator (included only with
21 Fr, 23 Fr, 25 Fr, 27 Fr, 29 Fr models)

#11 scalpel blade

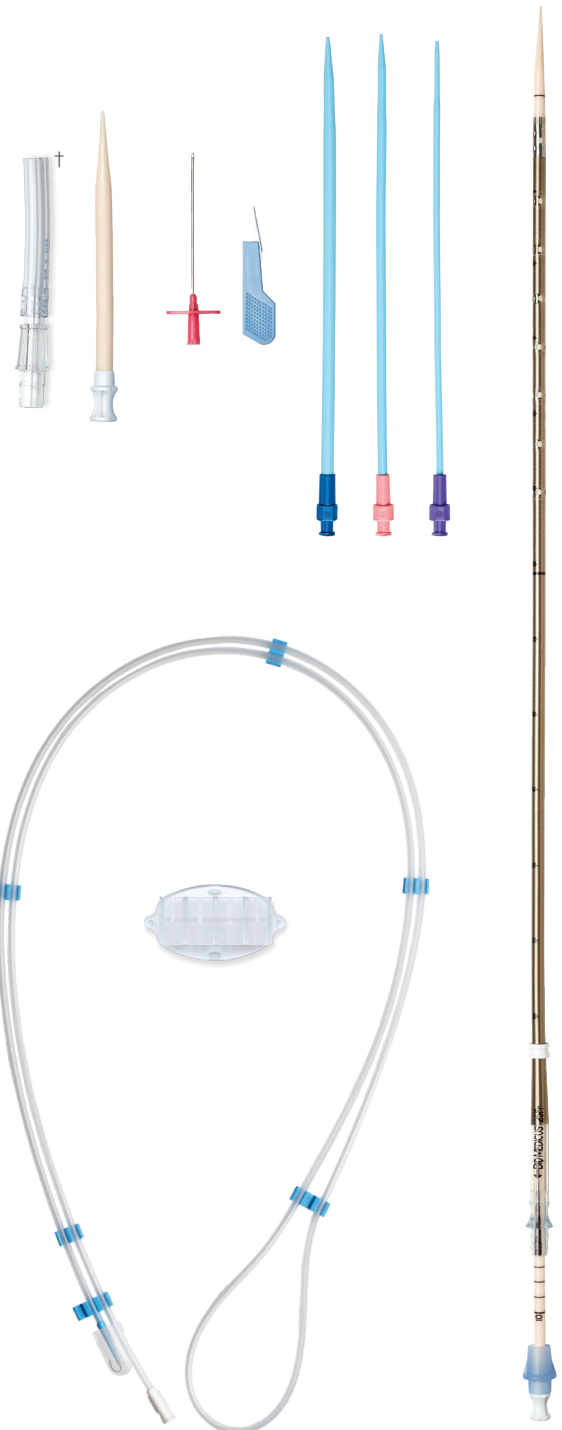
Seldinger needle – 18 ga (1.02 mm)

Cannula/tubing retention clip

†DEHP free IV tubing.

Important Safety Information

Care and caution should be taken to avoid damage to vessels and cardiac tissue during cannulation or other cardiac surgery procedures. For a listing of indications, contraindications, precautions, warnings, and potential adverse events, please refer to the Instructions for Use.



Bio-Medicus™ NextGen Femoral arterial/internal jugular venous cannula kit

(1 unit per carton)

Femoral arterial/internal jugular venous cannula
with introducer, hemostasis cap, adjustable radiopaque
suture ring

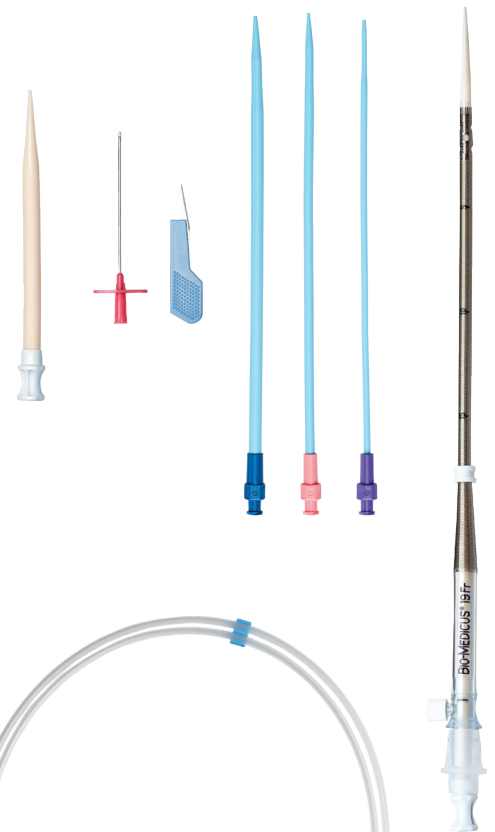
0.038 in (0.965 mm) diameter guidewire;
100 cm (39.37 in) length

Stepped vessel dilator, 8 Fr/10 Fr, 12 Fr/14 Fr, 16 Fr/18 Fr,
plus (1) additional larger dilator (included only with 21 Fr,
23 Fr, 25 Fr models)

#11 scalpel blade

Seldinger needle – 18 ga (1.02 mm)

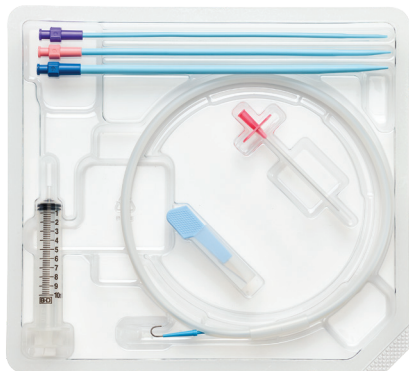
Cannula/tubing retention clip



Bio-Medicus™ NextGen

Insertion kits

Our insertion kits offer components for peripheral cannulation via Seldinger technique. Cannulae are sold separately.



Venous 96551

(5 units per carton)

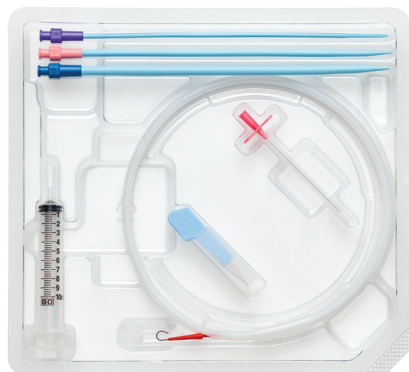
0.038 in (0.965 mm) x 180 cm (70.87 in) guidewire

Stepped vessel dilator, 8 Fr/10 Fr, 12 Fr/14 Fr, and 16 Fr/18 Fr

#11 scalpel blade

Seldinger needle – 18 ga (1.02 mm)

10 cc syringe (1) each



Arterial 96552

(5 units per carton)

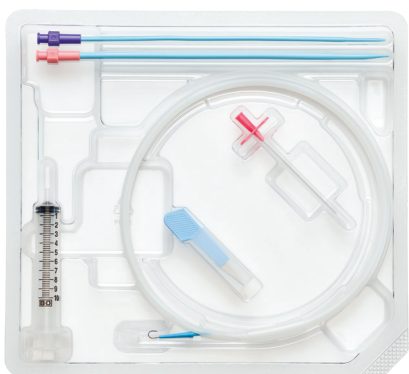
0.038 in (0.965 mm) x 100 cm (39.37 in) guidewire

Stepped vessel dilator, 8 Fr/10 Fr, 12 Fr/14 Fr, and 16 Fr/18 Fr

#11 scalpel blade

Seldinger needle – 18 ga (1.02 mm)

10 cc syringe (1) each



Pediatric 96553

(5 units per carton)

0.025 in (0.535 mm) x 60 cm (23.62 in) guidewire

Stepped vessel dilator, 8 Fr/10 Fr and 12 Fr/14 Fr

#11 scalpel blade

Seldinger needle – 18 ga (1.02 mm)

10 cc syringe (1) each

Important Safety Information

Care and caution should be taken to avoid damage to vessels and cardiac tissue during cannulation or other cardiac surgery procedures. For a listing of indications, contraindications, precautions, warnings, and potential adverse events, please refer to the Instructions for Use.

Ordering information

Femoral arterial/internal jugular venous cannulae (1 unit per carton)

Cannula code	Cannula kit code	French size	Overall length	Tip length	Connector
96570-115	96530-115	15 Fr (5.0 mm)	31.8 cm	18.0 cm	3/8 in (0.95 cm), vented
96570-117	96530-117	17 Fr (5.7 mm)	31.8 cm	18.0 cm	3/8 in (0.95 cm), vented
96570-119	96530-119	19 Fr (6.3 mm)	31.8 cm	18.0 cm	3/8 in (0.95 cm), vented
96570-121	96530-121	21 Fr (7.0 mm)	31.8 cm	18.0 cm	3/8 in (0.95 cm), vented
96570-123	96530-123	23 Fr (7.7 mm)	31.8 cm	18.0 cm	3/8 in (0.95 cm), vented
96570-125	96530-125	25 Fr (8.3 mm)	31.8 cm	18.0 cm	3/8 in (0.95 cm), vented

Pediatric arterial and venous cannulae (1 unit per carton)

Arterial code	Venous code	French size	Overall length	Tip length	Connector
96820-108	96830-108	8 Fr (2.7 mm)	22.9 cm	10.0 cm	1/4 in (0.64 cm), non-vented
96820-110	96830-110	10 Fr (3.3 mm)	22.9 cm	10.5 cm	1/4 in (0.64 cm), non-vented
96820-112	96830-112	12 Fr (4.0 mm)	22.9 cm	11.0 cm	1/4 in (0.64 cm), non-vented
96820-114	96830-114	14 Fr (4.7 mm)	22.9 cm	11.5 cm	1/4 in (0.64 cm), non-vented

Femoral bi-caval venous cannulae (1 unit per carton)

Cannula code	Cannula kit code	French size	Overall length	Tip length	Connector
96670-127 [†]	96600-127 [†]	27 Fr (9.0 mm)	76.2 cm	60.0 cm	3/8 in (0.95 cm), non-vented
96670-129 [†]	96600-129 [†]	29 Fr (9.7 mm)	76.2 cm	60.0 cm	3/8 in (0.95 cm), non-vented

[†]1/2 in (1.27 cm) to 3/8 in (0.95 cm) tubing adapter included.

Bio-Medicus™ multi-stage femoral venous cannulae (1 unit per carton)

Cannula code	Cannula kit code	French size	Overall length	Tip length	Connector
96670-115	96600-115	15 Fr (5.0 mm)	64.8 cm	50.0 cm	3/8 in (0.95 cm), non-vented
96670-117	96600-117	17 Fr (5.7 mm)	64.8 cm	50.0 cm	3/8 in (0.95 cm), non-vented
96670-119	96600-119	19 Fr (6.3 mm)	69.9 cm	55.0 cm	3/8 in (0.95 cm), non-vented
96670-121	96600-121	21 Fr (7.0 mm)	69.9 cm	55.0 cm	3/8 in (0.95 cm), non-vented
96670-123 [§]	96600-123 [§]	23 Fr (7.7 mm)	76.2 cm	60.0 cm	3/8 in (0.95 cm), non-vented
96670-125 [§]	96600-125 [§]	25 Fr (8.3 mm)	76.2 cm	60.0 cm	3/8 in (0.95 cm), non-vented

[§]1/2 in (1.27 cm) to 3/8 in (0.95 cm) tubing adapter included with venous models 23 Fr and 25 Fr models.

Multi-stage sizes for varying patient anatomies

To accommodate patient sizes, we offer a multi-stage cannula in six sizes. To provide easier positioning and improved drainage, the number of side-hole locations is based on cannula Fr size and cannula length.



Important safety information:

Care and caution should be taken to avoid damage to vessels and cardiac tissue during cannulation or other cardiac surgery procedures. For a listing of indications, contraindications, precautions, warnings, and potential adverse events, please refer to the Instructions for Use.

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Medtronic

Europe
Medtronic International Trading Sàrl.
Route du Molliau 31
Case postale
CH-1131 Tolochenaz
Tel: +41 (0)21 802 70 00
Fax: +41 (0)21 802 79 00

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