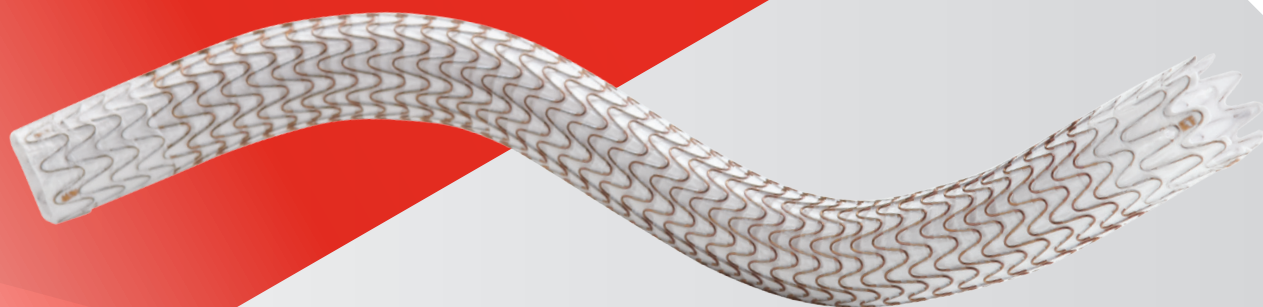




GORE® VIABAHN®

Endoprosthesis
with Heparin Bioactive Surface*

OPEN MORE POSSIBILITIES



*As used by Gore, Heparin Bioactive Surface refers to Gore's proprietary CBAS® Heparin Surface.

Together, improving life

1996

Original GORE® HEMOBAHN® Endoprosthesis introduced in Europe

2003

TIP to HUB deployment introduced on 6–8 mm devices

2005

6–8 mm devices in U.S. receive Food and Drug Administration (FDA) approval for superficial femoral artery (SFA) indication

2002

Original device introduced in U.S. as GORE® VIABAHN® Endoprosthesis

2007

GORE® VIABAHN® Endoprosthesis with Heparin Bioactive Surface introduced in U.S.

5–8 mm devices decreased in profile by one French size

2008

All device sizes receive FDA approval for Iliac artery indication

2009

Laser technology enables the new contoured edge at proximal end

9–13 mm devices introduced with .035" guidewire compatibility

* Across indications and configurations of covered stents.

† © 2022. Used with permission. Decision Resources Group (DRG).

‡ See full indications at eifu.goremedical.com

Continued innovation for durable outcomes and unmatched versatility.*

The VIABAHN® Device is a leader among stent grafts.† Decades of partnership with clinicians around the globe has resulted in reliable performance across multiple indications‡:

- Arteriovenous access
- In-stent restenosis
- Superficial femoral artery
- Iliac artery

2011

GORE® VIABAHN® Endoprosthesis with Heparin Bioactive Surface
5–8 mm devices decreased in profile by one French size

2016

7.5 cm length introduced in U.S. for 5–9 mm devices

2020

Up to 3 Fr size reduction in profile and addition of radiopaque markers on 9–13 mm devices

2013

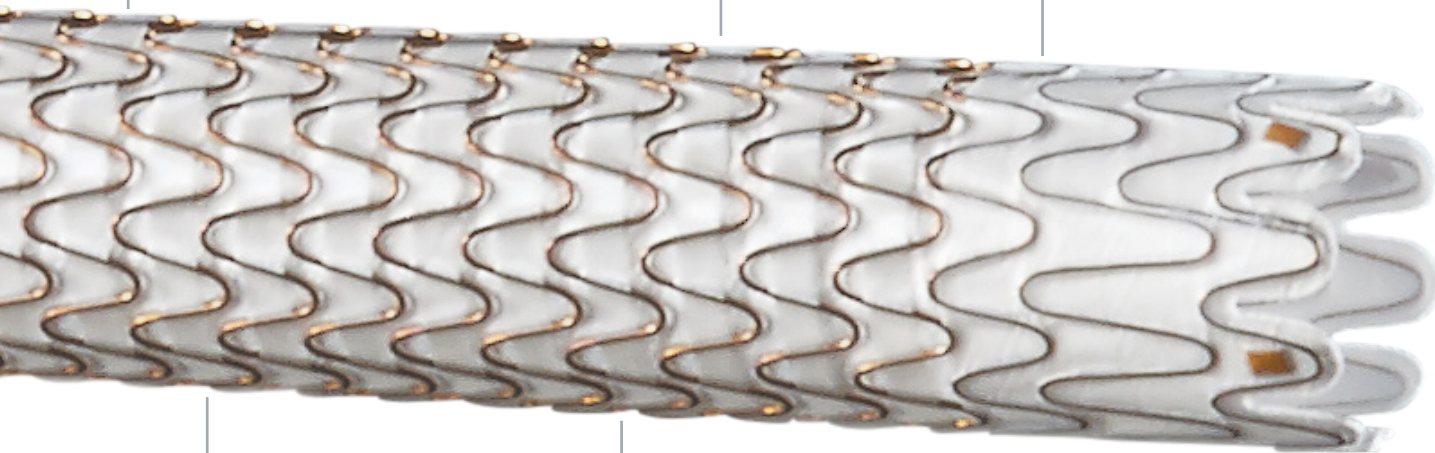
FDA approval for revision of arteriovenous access grafts

25 cm length: Longest stent graft introduced in U.S.

2014

5–7 mm devices receive FDA approval for treatment of in-stent restenosis in the SFA

Radiopaque markers on endoprosthesis introduced on 5–8 mm devices



Arteriovenous (AV) Access

Proven success in AV Access, even the most challenging cases, including:

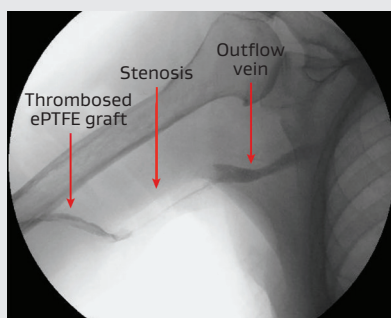
- Early percutaneous transluminal angioplasty (PTA) failures
- Lesions at points of flexion
- Thrombosed grafts

High primary patency even in the most challenging disease:

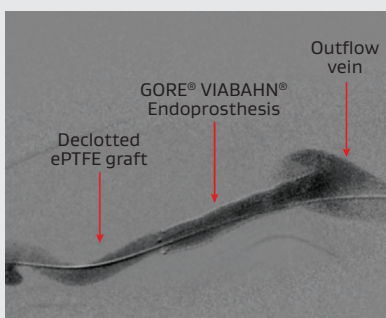
Increased trend in primary patency in thrombosed grafts of both the target lesion and the circuit by ~50% when compared to PTA at six months.¹

Provided consistent patency independent of the number of times a lesion has previously been treated.¹

Durable treatment of thrombosed AV grafts



Before: graft thrombosis secondary to outflow stenosis at the venous anastomosis of an AV graft.



After: At 60 months post-placement, the VIABAHN® Device has maintained secondary patency without any further episodes of thrombosis.

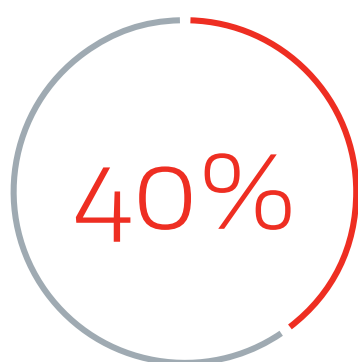
Images courtesy of Daniel V. Patel, M.D. Used with permission.

* Caution should be used when interpreting post-hoc analysis.

† The difference between the diameter of the vein and the device is ≥ 1 mm.

‡ The difference between the diameter of the vein and the device is < 1 mm.

Durable clinical study outcomes in complex cases:
83% access secondary patency and zero device
fractures at two years when placed across the elbow.²



Proven to reduce reinterventions:
Lowered mean number of
interventions over two years
in thrombosed grafts³

Recommendations for optimal outcomes in AV Access:

- Outflow wall apposition to the outflow vein is not necessary for quality outcomes.
- Follow the *Instructions for Use* (IFU) recommendation for 5–20% oversizing using the graft inner diameter as the target vessel.
- Do not use PTA outside of the device.

A post-hoc analysis of the Gore REVISE Clinical Study demonstrated that undersizing the stent graft to the outflow vein trended toward increased patency^{*,2}

6-month outcomes	Device apposition relative to the outflow vein	
	Undersized [†]	Apposed [†]
Target lesion primary patency	60%	47%
Circuit primary patency	47%	40%

Note: The VIABAHN® Device should always be sized 5% to 20% greater than the AV graft diameter per the IFU.¹²

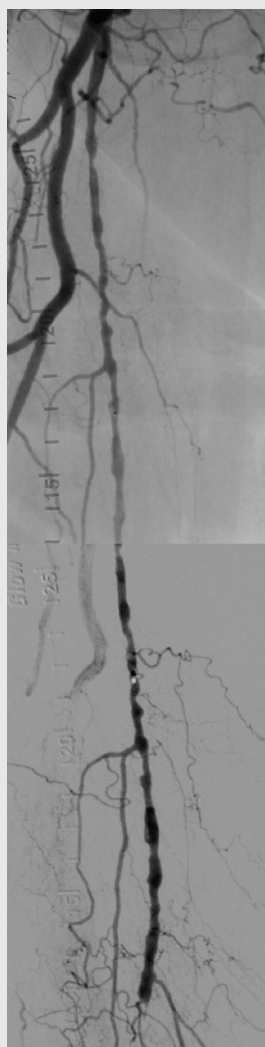
Superficial femoral artery (SFA)

Strong clinical performance in the most challenging cases including long SFA lesions and chronic total occlusions (CTOs).

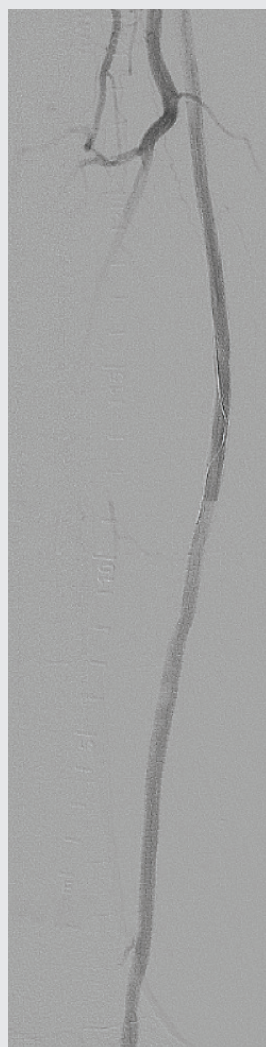
High primary patency even in the most challenging disease.

Proven patency for complex SFA lesions across seven multicenter, prospective, randomized or single-arm studies.⁴⁻¹⁰

Long lesion of the right SFA



Before: proximal SFA disease and mid-SFA occlusion.



After: post-placement of three 5 mm VIABAHN® Devices.

1089

lesions studied

71%

CTOs

23 cm

average lesion length*

80%

average primary patency†

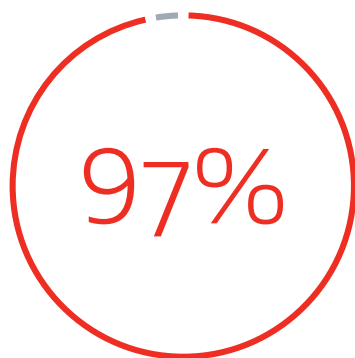
Images courtesy of James Persky, M.D. Used with permission.

* Weighted average lesion length.

† One-year weighted average primary patency.

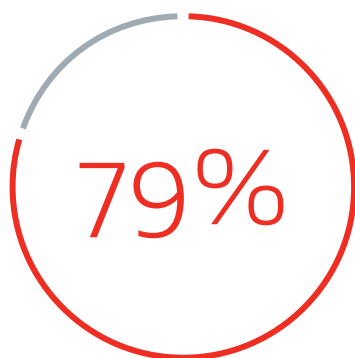
Durable clinical study outcomes in complex cases:

Comparable clinical results to surgical above-the-knee bypass (Both prosthetic¹¹ and native vein⁷).



three-year secondary patency
in complex disease

(27 cm average lesion length, 93% CTOs)¹²



five-year freedom from target
lesion revascularization (fTLR)⁴

Recommendations for optimal outcomes in the SFA:

Device sizing considerations

- Treat all of the disease (Stent “normal to normal”).¹²
- Overlap devices by at least 1 cm.¹²
- Avoid excessive oversizing (> 20%).¹²

Implantation considerations

- Ensure adequate inflow and outflow.¹²
- Post dilate.¹²
- Do not use PTA outside of the device.¹²
- Place device at the SFA origin if proximal SFA disease is present.¹²

Follow-up considerations

- Regular duplex ultrasonography follow-up.¹³
- Prescribe appropriate antiplatelet therapy.¹²
- Treat progressing disease.¹³

In-stent restenosis (ISR) of the SFA

Safe and effective treatment for in-stent restenotic lesions.¹⁴⁻¹⁶



Before: SFA ISR lesion with occluded bare metal stent.



After: post-reline with two 7 x 25 cm VIABAHN® Devices.

Proven patency in real-world lesions across two multicenter, prospective studies.
125 total lesions studied, averaging:¹⁴⁻¹⁶

11%

chronic limb-threatening ischemia (CLTI)*

27%

CTOs*

14 cm

lesion length*

75%

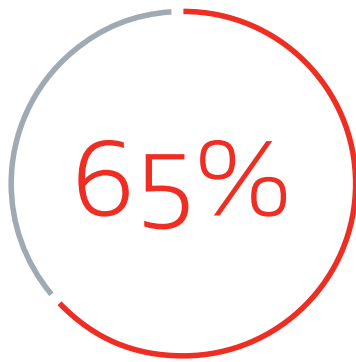
primary patency at one year*

Images courtesy of Peter Soukas, M.D. Used with permission.

* Weighted average.

† In a cohort including Rutherford category 4+ patients at baseline.

Durable clinical study outcomes through three years:¹⁴



three-year fTLR with no statistically significant difference relative to degree of calcification, number of runoff vessels, gender or diabetes status.¹⁴

> 80%

of patients maintained a ≥ 1 Rutherford category improvement.¹⁴



freedom from major amputations[†] and VIABAHN[®] Device stent fractures through three years.¹⁴

Recommendations for optimal outcomes in ISR:

- Extend the device at least 1 cm proximally and distally from the previously placed stent.¹²
- Cover any adjacent disease at least 1 cm beyond the proximal and distal margins of the lesion.¹²
- Measure the healthy vessel diameter in the proximal and distal landing zones and follow the IFU recommendation for 5–20% oversizing.¹²
- Ensure guidewire has traversed the lesion intraluminally before completing PTA.¹²

Iliac artery

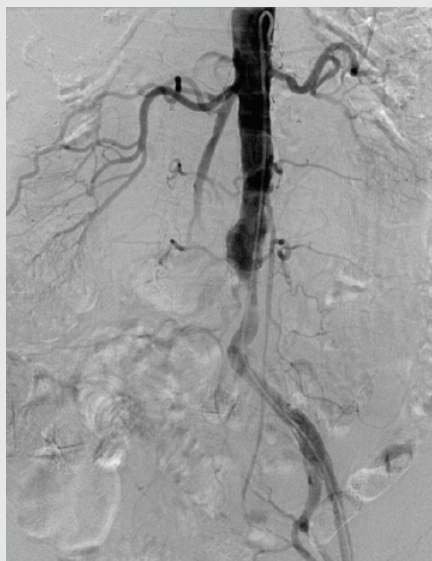
The VIABAHN® Device is the only self-expanding stent graft indicated to treat stenotic iliac lesions.

High primary patency even in the most challenging disease: demonstrated 91% one-year primary patency.¹⁷

Durable clinical study outcomes in complex cases:

Stent grafts have demonstrated superiority over bare metal stents (BMS) for treating complex iliac lesions.^{18,19}

Self-expanding stent grafts, at three years, have demonstrated improved patency over BMS when treating TASC D iliac lesions.¹⁹



Before: flush ostial CTO of the right common iliac artery with reconstitution of the proximal common femoral artery.



After: post-placement of 7 mm x 150 mm VIABAHN® Device and 7 mm x 59 mm balloon expandable covered stent.

Recommendations for optimal outcomes in the iliac artery:

Device sizing considerations

- Treat all of the disease (Stent “normal to normal”).¹²
- Overlap devices by at least 1 cm.¹²
- Avoid excessive oversizing (> 20%).¹²

Implantation considerations

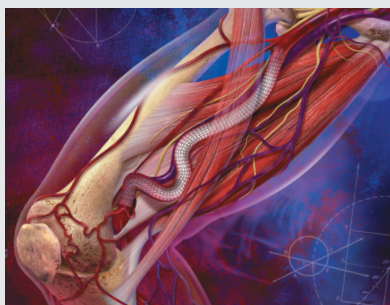
- Ensure adequate inflow and outflow.¹²
- Post dilate.¹²
- Do not use PTA outside of the device.¹²

Follow-up considerations

- Prescribe appropriate antiplatelet therapy.¹²
- Treat progressing disease.¹³

Features and benefits

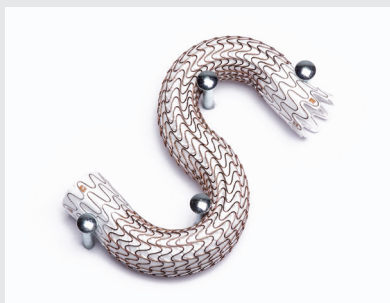
The unique design of the VIABAHN® Device enables treatment of even the most challenging peripheral cases.



Performs as an endoluminal bypass:

Covers and excludes diseased and irregular tissue.

Provides a barrier from tissue ingrowth, minimizing ISR.

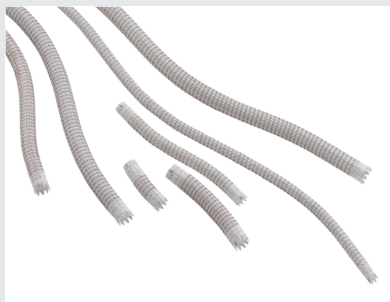


Bench-top evaluations are intended to demonstrate relative physical characteristics and may not correlate to clinical results.

Conformable yet durable design:

Like with all Gore single nitinol wire stents, the design and frame construction reduce strain to provide mechanical durability.¹

Proven flexibility maintains flow at points of flexion and increases anatomical options.¹



Ease of use:

Robust configurations cover a broad range of patient needs.

Radiopaque markers enhance endoprosthesis visibility.

Low profile delivery system makes it potentially easier to reach and treat challenging lesions.

Lasting thromboresistance:

CBAS® Heparin Surface, also featured in the GORE® PROPATEN® Vascular Graft, is the proven lasting heparin bonding technology designed to resist thrombus formation.²⁰

GORE® VIABAHN® Endoprosthesis with Heparin Bioactive Surface

The bioactive luminal surface of a 5 mm diameter VIABAHN® Device appears free of thrombus after two hours in an in vitro blood loop model.

Control endoprosthesis

The non-bioactive luminal surface of a control endoprosthesis (5 mm diameter) appears covered with thrombus after 90 minutes in the same blood loop model (data on file; W. L. Gore & Associates, Inc; Flagstaff, AZ).



The VIABAHN® Device has a reported fracture rate of .0032% across all uses.

(Data on file 2022; W. L. Gore & Associates, Inc.; Flagstaff, AZ.)

Sizing tables

GORE® VIABAHN® Endoprosthesis with Heparin Bioactive Surface

.035" guidewire compatibility

Device sizing		Introducer sheath (Fr)						
Endoprosthesis labeled diameter* (mm)	Recommended vessel diameter† (mm)	2.5 cm device length*	5 cm device length*	7.5 cm device length*	10 cm device length*	15 cm device length*	25 cm device length*	Recommended balloon diameter for device touch-up (mm)
5	4.0–4.7	7	7	7	7	7	7	5
6	4.8–5.5	7	7	7	7	7	7	6
7	5.6–6.5	8	8	8	8	8	8	7
8	6.6–7.5	8	8	8	8	8	8	8
9	7.6–8.5	–	8	8	8	8	–	9
10	8.6–9.5	–	8	–	8	8	–	10
11	9.6–10.5	–	10	–	10	–	–	12
13	10.6–12.0	–	10 [‡]	–	10 [‡]	–	–	14

.014" or .018" guidewire compatibility

Device sizing		Introducer sheath (Fr)						
Endoprosthesis labeled diameter* (mm)	Recommended vessel diameter† (mm)	2.5 cm device length*	5 cm device length*	7.5 cm device length*	10 cm device length*	15 cm device length*	25 cm device length*	Recommended balloon diameter for device touch-up (mm)
5	4.0–4.7	6	6	6	6	6	6	5
6	4.8–5.5	6	6	6	6	6	6	6
7	5.6–6.5	7	7	7	7	7	7	7
8	6.6–7.5	7	7	7	7	7	7 [§]	8

* Labeled device diameters and lengths are nominal.

† Recommended endoprosthesis compression within the vessel is approximately 5–20%.

‡ The 13 mm diameter device is not compatible with the 10 Fr COOK® FLEXOR® CHECK-FLO® Introducer.

§ The 8 mm x 25 cm device is not compatible with the 7 Fr COOK® FLEXOR® CHECK-FLO® Introducer.

COOK, CHECK-FLO and FLEXOR are trademarks of Cook Medical, Inc.

References

1. Vesely T, DaVanzo W, Behrend T, Dwyer A, Aruny J. Balloon angioplasty versus Viabahn stent graft for treatment of failing or thrombosed prosthetic hemodialysis grafts. *Journal of Vascular Surgery* 2016;64(5):1400-1410.e1. <http://www.sciencedirect.com/science/article/pii/S0741521416301756>
2. W. L. Gore & Associates, Inc. *GORE® VIABAHN® Endoprosthesis versus Percutaneous Transluminal Angioplasty (PTA) to Revise Arteriovenous Grafts at the Venous Anastomosis in Hemodialysis Patients. (GORE REVISE Study, AVR 06-01)*. Flagstaff, AZ: W. L. Gore & Associates, Inc; 2012. [IDE Final Clinical Study Report]. G070069.
3. Mohr BA, Sheen AL, Roy-Chaudhury P, Schultz SR, Aruny JE; REVISE Investigators. Clinical and economic benefits of stent grafts in dysfunctional and thrombosed hemodialysis access graft circuits in the REVISE Randomized Trial. *Journal of Vascular & Interventional Radiology* 2018;30(2):203-211.e4. <https://www.sciencedirect.com/science/article/pii/S105104431831772X>
4. Ohki T, Kichikawa K, Yokoi H, et al. Long-term results of the Japanese multicenter Viabahn trial of heparin bonded endovascular stent grafts for long and complex lesions in the superficial femoral artery. *Journal of Vascular Surgery* 2021;74(6):1958-1967.e2. <https://www.sciencedirect.com/science/article/pii/S0741521421010119>
5. Lammer J, Zeller T, Hausegger KA, et al. Sustained benefit at 2 years for covered stents versus bare-metal stents in long SFA lesions: the VIASTAR Trial. *Cardiovascular & Interventional Radiology* 2015;38(1):25-32.
6. Zeller T, Peeters P, Bosiers M, et al. Heparin-bonded stent-graft for the treatment of TASC II C and D femoropopliteal lesions: the Viabahn-25 cm Trial. *Journal of Endovascular Therapy* 2014;21(6):765-774.
7. Reijnen MMPJ, van Walraven LA, Fritschy WM, et al. 1-year results of a multicenter randomized controlled trial comparing heparin-bonded endoluminal to femoropopliteal bypass. *JACC: Cardiovascular Interventions* 2017;10(22):2320-2331. <http://www.sciencedirect.com/science/article/pii/S1936879817319775>
8. Saxon RR, Chervu A, Jones PA, et al. Heparin bonded, expanded polytetrafluoroethylene lined stent graft in the treatment of femoropopliteal artery disease: 1 year results of the VIPER (Viabahn Endoprosthesis with Heparin Bioactive Surface in the Treatment of Superficial Femoral Artery Obstructive Disease) Trial. *Journal of Vascular & Interventional Radiology* 2013;24(2):165-173.
9. Iida O, Ohki T, Soga Y, et al. Twelve-month outcomes from the Japanese post-market surveillance study of the Viabahn Endoprosthesis as treatment for symptomatic peripheral arterial disease in the superficial femoral arteries. *Journal of Endovascular Therapy* 2022;29(6):855-865. <https://journals.sagepub.com/doi/full/10.1177/15266028211067739>
10. Iida O, Takahara M, Soga Y, et al; VANQUISH Investigators. One-year outcomes of heparin-bonded stent-graft therapy for real-world femoropopliteal lesions and the association of patency with the prothrombotic state based on the prospective, observational, multicenter Viabahn Stent-Graft Placement for Femoropopliteal Diseases Requiring Endovascular Therapy (VANQUISH) Study. *Journal of Endovascular Therapy* 2021;28(1):123-131.
11. McQuade K, Gable D, Pearl G, Theune B, Black S. Four-year randomized prospective comparison of percutaneous ePTFE/nitinol self-expanding stent graft versus prosthetic femoral-popliteal bypass in the treatment of superficial femoral artery occlusive disease. *Journal of Vascular Surgery* 2010;52(3):584-591. <https://www.sciencedirect.com/science/article/pii/S0741521410009043>
12. GORE® VIABAHN® Endoprosthesis with Heparin Bioactive Surface Instructions for Use (IFU). W. L. Gore & Associates, Inc website. March 24, 2023. <https://eifu.goremedical.com/>
13. Troutman DA, Madden NJ, Dougherty MJ, Calligaro KD. Duplex ultrasound diagnosis of failing stent grafts placed for occlusive disease. *Journal of Vascular Surgery* 2014;60(6):1580-1584.
14. Soukas P, Becker M, Stark K, Tepe G; RELINE MAX Investigators. Three-year results of the GORE® VIABAHN® endoprosthesis in the superficial femoral artery for in-stent restenosis. *Journal of the Society for Cardiovascular Angiography & Interventions*. In press. [https://www.jscail.org/article/S2772-9303\(23\)00025-X/fulltext](https://www.jscail.org/article/S2772-9303(23)00025-X/fulltext)
15. Bosiers M, Deloof K, Callaert J, et al. Superiority of stent-grafts for in-stent restenosis in the superficial femoral artery: twelve-month results from a multicenter randomized trial. *Journal of Endovascular Therapy* 2015;22(1):1-10.
16. Bosiers M, Deloof K, Callaert J, et al. Stent-grafts are the best way to treat complex in-stent restenosis lesions in the superficial femoral artery: 24-month results from a multicenter randomized trial. *Journal of Cardiovascular Surgery* 2020;61(5):617-625. <https://www.minervamedica.it/en/journals/cardiovascular-surgery/article.php?cod=R37Y2020N05A0617>
17. Lammer J, Dake MD, Bleyn J, et al. Peripheral arterial obstruction: prospective study of treatment with a transluminally placed self-expanding stent graft. *Radiology* 2000;217(1):95-104.
18. Chang RW, Goodney PP, Baek JH, Nolan BW, Rzcudlo EM, Powell RJ. Long-term results of combined common femoral endarterectomy and iliac stenting/stent grafting for occlusive disease. *Journal of Vascular Surgery* 2008;48(2):362-367.
19. Piazza M, Squizzato F, Dall'Antonia A, et al. Outcomes of self expanding PTFE covered stent versus bare metal stent for chronic iliac artery occlusion in matched cohorts using propensity score modelling. *European Journal of Vascular & Endovascular Surgery* 2017;54(2):177-185.
20. CBAS® Heparin Surface. References. W. L. Gore & Associates, Inc. Accessed March 24, 2023. <https://www.goremedical.com/cbas/references>



INTENDED USE/INDICATIONS: The GORE® VIABAHN® Endoprosthesis with Heparin Bioactive Surface is indicated for improving blood flow in patients with symptomatic peripheral arterial disease in superficial femoral artery de novo and restenotic lesions up to 270 mm in length with reference vessel diameters ranging from 4.0 – 7.5 mm. The GORE® VIABAHN® Endoprosthesis with Heparin Bioactive Surface is indicated for improving blood flow in patients with symptomatic peripheral arterial disease in superficial femoral artery in-stent restenotic lesions up to 270 mm in length with reference vessel diameters ranging from 4.0 – 6.5 mm. The GORE® VIABAHN® Endoprosthesis with Heparin Bioactive Surface is indicated for improving blood flow in patients with symptomatic peripheral arterial disease in iliac artery lesions up to 80 mm in length with reference vessel diameters ranging from 4.0 – 12 mm. The GORE® VIABAHN® Endoprosthesis with Heparin Bioactive Surface is also indicated for the treatment of stenosis or thrombotic occlusion at the venous anastomosis of synthetic arteriovenous (AV) access grafts. **CONTRAINDICATIONS:** The GORE® VIABAHN® Endoprosthesis with Heparin Bioactive Surface is contraindicated for non-compliant lesions where full expansion of an angioplasty balloon catheter was not achieved during pre-dilatation, or where lesions cannot be dilated sufficiently to allow passage of the delivery system. Do not use the GORE® VIABAHN® Endoprosthesis with Heparin Bioactive Surface in patients with known hypersensitivity to heparin, including those patients who have had a previous incident of Heparin-Induced Thrombocytopenia (HIT) type II. Refer to *Instructions for Use* at eifu.goremedical.com for a complete description of all applicable indications, warnings, precautions and contraindications for the markets where this product is available. Only

Products listed may not be available in all markets.

COOK, CHECK-FLO and FLEXOR are trademarks of Cook Medical, Inc.

CBAS is a trademark of Carmeda AB, a wholly owned subsidiary of W. L. Gore & Associates, Inc.

GORE, *Together, improving life*, HEMOBAHN, PROPATEN, VIABAHN and designs are trademarks of W. L. Gore & Associates.

© 2023 W. L. Gore & Associates, Inc. 22788393-EN JUNE 2023

W. L. Gore & Associates, Inc.
goremedical.com

Asia Pacific +65 6733 2882 Australia / New Zealand 1800 680 424 Europe 00800 6334 4673
United States Flagstaff, AZ 86004 800 437 8181 928 779 2771

