

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

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 anastamosis of an AV graft.



After: At 60 months post-placement, the GORE[®] VIABAHN[®] Endoprothesis 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 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^{*,4}

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

Note: The GORE^{\circ} VIABAHN^{\circ} Endoprosthesis should always be sized 5% to 20% greater than the AV graft diameter per the *Instructions for Use*.

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:

88% 12-month primary patency in SFA lesions averaging 22 cm in length⁵

Long SFA lesion of the right SFA





Before: Proximal SFA disease and mid-SFA occlusion.

After: Post-placement of three 5 mm GORE[®] VIABAHN[®] Devices.

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

- * Data on file 2020; W. L. Gore & Associates, Inc; Flagstaff, AZ.
- † Weighted average lesion length.
- + One-year weighted average primary patency.

Proven patency for complex SFA lesions across six multicenter, prospective, randomized or single arm studies^{5–10}

74671%Limbs studiedCTOS'22 cm80%Average
lesion length*Average
primary patency*

Durable clinical study outcomes in complex cases:

Comparable clinical results to above the knee surgical bypass (both prosthetic¹¹ and native vein⁸).



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 cm¹²
- Avoid excessive oversizing (> 20%)¹²

Implantation considerations

- Ensure adequate inflow and outflow¹²
- Post dilate¹²
- Do not use PTA outside of the device¹²
- Place device at the SFA origin if proximal SFA disease is present¹²

Follow-up considerations

- Regular duplex ultrasonography follow-up¹⁴
- Prescribe appropriate antiplatelet therapy¹²
- Treat progressing disease¹⁴

In-stent restenosis (ISR) of the SFA

Durable treatment for complex in-stent restenotic lesions.





Before: Diffuse SFA ISR in long-stented segment in the SFA.

After: Completion angiogram after placement of GORE[®] VIABAHN[®] Devices for ISR in the SFA.

High primary patency even in the most challenging disease:

75% one-year primary with an average lesion length of over 17 cm. $^{\rm 15}$

Fewer than one third the number of patients required an intervention at one year compared to PTA.¹²

Durable clinical study outcomes in complex cases:

Four times greater primary patency compared to PTA at two years.¹⁶

More than three times greater fTLR compared to PTA at two years. $\ensuremath{^{12}}$

Proven to reduce reinterventions:

Fewer patients had reintervention procedures compared to PTA at two years.¹²



primary patency at one year¹⁵

17.3 CM mean lesion length¹⁵



fTLR at one year¹⁵

Recommendations for optimal outcomes in ISR

- Extend the device at least 1 cm proximally and distally from the previously placed stent¹²
- Cover any adjacent disease at least 1 cm beyond the proximal and distal margins of the lesion¹²
- Follow the IFU recommendation for 5–20% oversizing using the healthy vessel diameter immediately proximal and distal to the lesion¹²
- Ensure guidewire has traversed the lesion intraluminally before completing PTA¹²

lliac artery

The GORE® VIABAHN® Endoprosthesis is the only self-expanding stent graft indicated to treat 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 GORE[®] VIABAHN[®] Endoprosthesis and 7 mm x 59 mm balloon expandable covered stent.

Images courtesy of Barry Weinstock, M.D. Used with permission.

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 cm¹²
- Avoid excessive oversizing (> 20%)¹²

Implantation considerations

- Ensure adequate inflow and outflow¹²
- Post dilate¹²
- Do not use PTA outside of the device¹²

Follow-up considerations

- Prescribe appropriate antiplatelet therapy¹²
- Treat progressing disease¹⁴

Features and benefits

The unique design of the GORE[®] VIABAHN[®] Endoprosthesis 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.



Conformable yet durable design:

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

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



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 GORE[®] VIABAHN[®] Endoprosthesis with Heparin Bioactive Surface 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 GORE[®] VIABAHN[®] Endoprosthesis has a reported fracture rate of < .015% across all uses.

(Data on file 2020; W. L. Gore & Associates, Inc.; Flagstaff, AZ.)

Sizing table

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	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	5	
6	4.8-5.5	7	7	7	7	7	6	
7	5.6-6.5	8	8	8	8	8	7	
8	6.6–7.5	8	8	8	8	8	8	
9	7.6-8.5	_	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	

 $^{\ast}\,$ Labeled device diameters and lengths are nominal.

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

 $\dagger\,$ The 13 mm diameter device is not compatible with the 10 Fr COOK $^{\circ}$ FLEXOR $^{\circ}$ CHECK-FLO $^{\circ}$ Sheath.

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. Vesely T, Rodriguez A. Summary of the Gore REVISE Clinical Study. Endovascular Today 2014;13(6)Supplement:22-26.
- 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.
- 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.
- 5. Ohki T, Kichikawa K, Yokoi H, et al. Outcomes of the Japanese multicenter Viabahn trial of endovascular stent grafting for superficial femoral artery lesions. Journal of Vascular Surgery 2017;66(1):130-142.e1.
- 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.
- 7. 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.
- 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.
- 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.
- 10. Yamaoka T. VIABAHN the latest real world clinical data from Japan to the worlds PMS 1Y/IDE 5Y VIABAHN. Presented at JETTALKS on Air; April 18-19, 25-26, 2020; Osaka, Japan.
- 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.
- 12. GORE® VIABAHN® Endoprosthesis with Heparin Bioactive Surface Instructions for Use (IFU). W. L. Gore & Associates, Inc website. Accessed July 28, 2020. https://eifu.goremedical.com/7.
- Iida O. Update on value and indications of the Viabahn self-expanding stent-graft for fempop occlusive disease: evolution of the device: technical tips and 5-year results from Japan. Presented at the 46th Annual Symposium on Vascular and Endovascular Issues, Techniques, Horizons (VEITHsymposium); November 19 -23, 2019; New York, NY.
- 14. 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.
- 15. Bosiers M, Deloose 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.
- Bosiers M, Deloose K. 2-year results of the RELINE Trial comparing Viabahn Stent-Grafts to POBA for ISR show durable benefits to endograft treatment. Presented at the 41st Annual Symposium on Vascular and Endovascular Issues, Techniques, Horizons (VEITHsymposium); November 18–22, 2014; New York, NY. Abstract 168.
- 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.
- Chang RW, Goodney PP, Baek JH, Nolan BW, Rzucidlo 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.
- 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. W. L. Gore & Associates website. Accessed October 28, 2020. https://www.goremedical.com/cbas/references.



Refer to Instructions for Use at eifu.goremedical.com for complete description of all indications, warnings, precations and contraindications for the markets where this product is available. $R_{\rm X \, Only}$

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. © 2020 W. L. Gore & Associates, Inc. 2022650-EN DECEMBER 2020

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

GORE

 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