CAVT®

The **ONLY** Mechanical Thrombectomy System
Indicated for the Treatment of DVT[a]

BOLT-DVT TRIAL

A New Chapter in DVT Treatment

a. Specific indication as of November 2026.

BOLT-DVT Trial • A New Chapter in DVT Treatment[1]

Objective: To evaluate safety and effectiveness of CAVT in acute deep vein thrombosis (DVT)

N=229 Patients
39 Sites
22 US States

Primary Effectiveness Endpoint

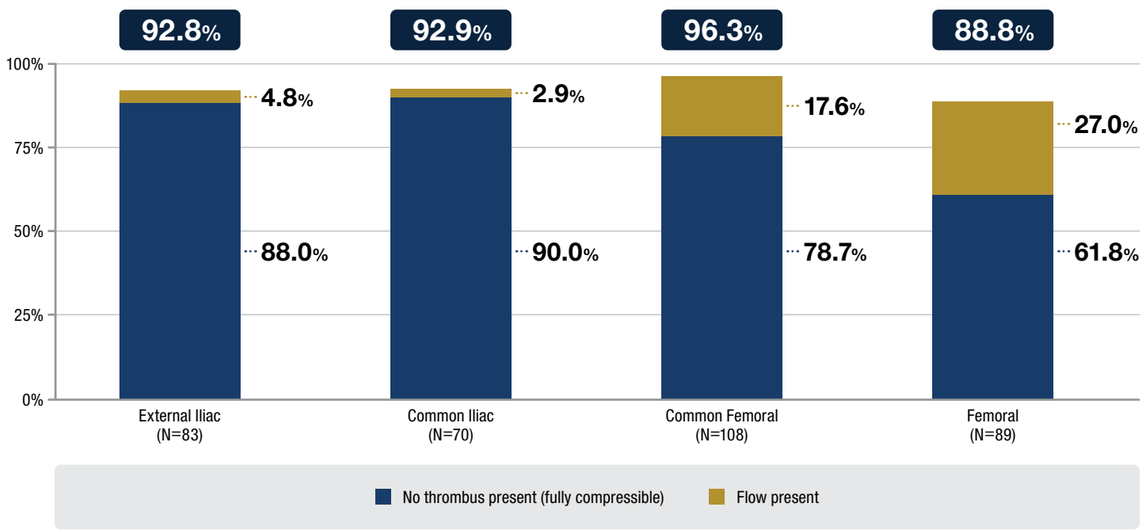
98.0% Complete or Near Complete Thrombus Reduction

Effectiveness Endpoint Definition
Complete or near complete (≥ 75%) thrombus reduction of target venous segment by Marder score; results adjudicated by independent core lab

Marder Score Reduction	% of Evaluable Patients, (n/N)
≥ 75%	98.0% (198/202) P<.001
≥ 90%	87.6% (177/202)
100%	74.8% (151/202)

BOLT-DVT demonstrated high rates of DUS-assessed patency at 30-days driven primarily by fully compressible veins

Vessel Patency[b] – All 30 Day DUS



b. Patency was determined as a fully compressible vein or flow present based on DUS imaging.

1. Muck P. Safety and effectiveness of mechanical thrombectomy for patients with iliofemoral deep vein thrombosis: Primary results from the prospective, multicenter BOLT-DVT trial. Presented at: VEINS (Venous Endovascular INterventional Strategies) 2026; October 4, 2026; Las Vegas, NV, USA.

The clinical results presented herein are for informational purposes only, and may not be predictive for all patients. Individual results may vary depending on patient-specific attributes and other factors.

Historical DVT Data Comparison[c]

Endpoints & Outcomes	BOLT-DVT	CLOUT
Marder, Median Baseline	15	8.75[2]
Marder, Median Postprocedural	0	0[2]
Marder, ≥ 90% Reduction	87.6%	70.6%[2]
MAE (composite), 30-Day	7.6%	19.7%[3]
Patency, 30-Day	88.8–96.3%	83.5%[4]
Full Compressibility, 30-Day	61.8–90.0%	47.9%[4]
Re-thrombosis, 30-Day	3.9%	4.8%[4]
Villalta, Median Baseline	11	9[4]
Villalta, Median 30-Day	1	3[4]
Villalta, 30-Day, Moderate-Severe	3%	12.2%[5]
rVCSS[d], Median Baseline	6	6[4]
rVCSS, Median 30-Day	1	3[4]
Leg Pain, Median Baseline	6[e]	5[2]
Leg Pain, Median Post-Procedure	0[e]	2[2,f]

Endpoints & Outcomes	BOLT-DVT	ATTRACT[6] (IFDVT Subset, PCDT arm)
Marder, Median Baseline	15	11
Marder, Median Postprocedural	0	2

c. BOLT-DVT Trial was not a randomized or head-to-head study. Please refer to specific publications to review source for detailed patient and data collection methods for CLOUT and ATTRACT.
d. Revised Venous Clinical Severity Score.
e. Data on file at Penumbra, Inc.
f. Discharge data.

2. Dexter D, Kado H, Shaikh A, et al. Safety and effectiveness of mechanical thrombectomy from the fully enrolled multicenter, prospective CLOUT registry. *J Soc Cardiovasc Angiogr Interv.* 2023;2(2):100585. doi:10.1016/j.jscai.2023.100585.
3. ClinicalTrials.gov. ClotTriever Outcomes (CLOUT) Registry. NCT03575364. Results for the 30-day composite major adverse event (MAE) endpoint in the Primary Safety Cohort (15/76 participants; 19.7%). Updated August 26, 2025. Accessed October 20, 2026.
4. Shaikh A, Kado H, Dexter D, et al. Six-month outcomes of mechanical thrombectomy for treating deep vein thrombosis: analysis from the 500-patient CLOUT registry. *Cardiovasc Intervent Radiol.* 2023;46(11):1571–1580. doi:10.1007/s00270-023-03509-8.
5. Dexter DJ, Kado H, Schor J, et al; CLOUT Investigators. Interim outcomes of mechanical thrombectomy for deep vein thrombosis from the All-Comer CLOUT Registry. *J Vasc Surg Venous Lymphat Disord.* 2022;10(4):832–840.e2. doi:10.1016/j.jvsv.2022.02.013.
6. Comerota AJ, Kearon C, Gu CS, et al. Endovascular thrombus removal for acute iliofemoral deep vein thrombosis: analysis from a stratified multicenter randomized trial. *Circulation.* 2019;139(9):1162–1173. doi:10.1161/CIRCULATIONAHA.118.037425.

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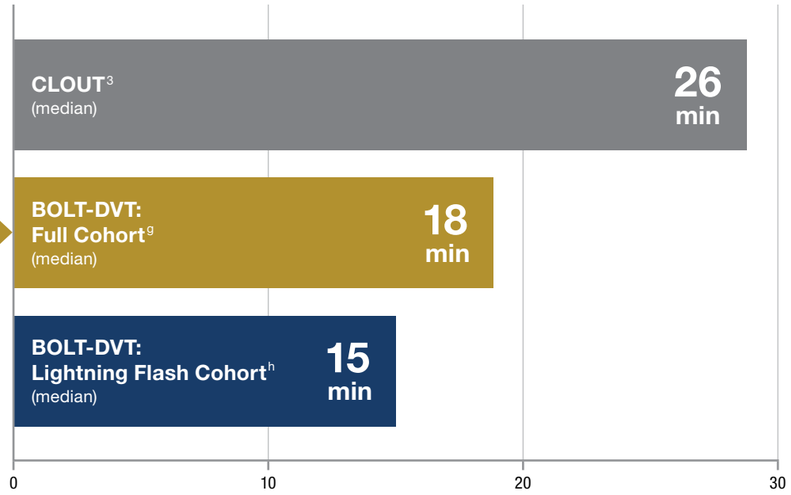
The BOLT-DVT Trial demonstrated that Computer Assisted Vacuum Thrombectomy (CAVT) is **safe and effective** for the treatment of DVT

18 min
Device Time



Primary Safety Endpoint

3.1% 48 Hour Major Adverse Event (MAE) Rate[i]
N=229 | P<.001

0% Device Related 48 Hour Serious Adverse Event (SAE) Rate

99.1%
N=229
Patients treated in a single session

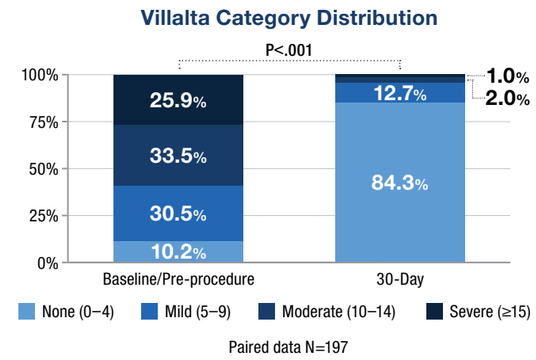
97.8%
N=229
Patients treated did NOT require an ICU stay[j]

g. All devices
h. Lightning Flash® 1.0 and 2.0 were utilized for (124/229) patients in BOLT-DVT.
i. MAE defined as device related death, major bleeding, new symptomatic pulmonary embolism or re-thrombosis of the target venous segment and serious device related events.
j. Data on file at Penumbra, Inc.
3. ClinicalTrials.gov. ClotTriever Outcomes (CLOUT) Registry. NCT03575364. Results for the 30-day composite major adverse event (MAE) endpoint in the Primary Safety Cohort (15/76 participants; 19.7%). Updated August 26, 2025. Accessed October 20, 2026

Patients treated with CAVT experienced **significant improvement** in quality of life (QoL) and post-thrombotic syndrome (PTS) severity symptoms

Villalta Score at 30 Days

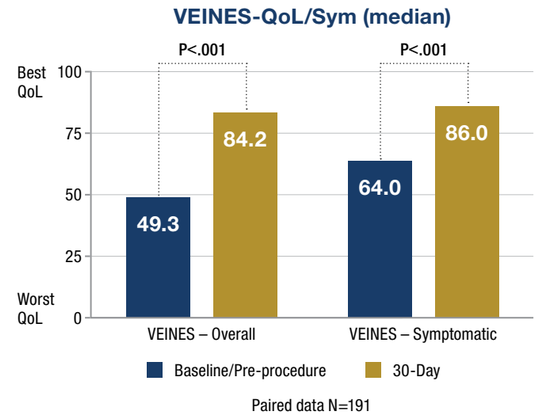
No PTS symptoms were observed in **84.3%** of patients at **30 days**



VEINES-QoL Includes:

- **Venous Symptoms**
  Pain, Restlessness, Swelling, Cramps, Itching, etc
- **Limitations in Daily Activities**
- **Psychological Impact**
- **Changes/Timing of Leg Symptoms**

Patients reported significantly improved overall QoL and improved symptoms



CAVT showed greater improvement in QoL at 30 days compared to both arms in the ATTRACT IFDVT subgroup[7]

Historical Precedent – Change in VEINES-QoL[k]			
	BOLT-DVT	**ATTRACT IFDVT Subgroup** (PCDT Arm)	**ATTRACT IFDVT Subgroup** (No PCDT Arm)
VEINES-QoL	**+26.4 pts**[l] (median)	**+15.5 pts** (mean)	**+5.3 pts** (mean)

k. BOLT-DVT Trial was not a randomized or head-to-head study. Please refer to specific publications to review source for detailed patient and data collection methods for ATTRACT.
l. Data on file at Penumbra, Inc.
7. Kahn SR, Julian JA, Kearon C, et al. Quality of life after pharmacomechanical catheter-directed thrombolysis for proximal deep vein thrombosis. *J Vasc Surg Venous Lymphat Disord.* 2020;8(1):8–23.e18. doi:10.1016/j.jvsv.2019.03.023.



LIGHTNING FLASH[h]

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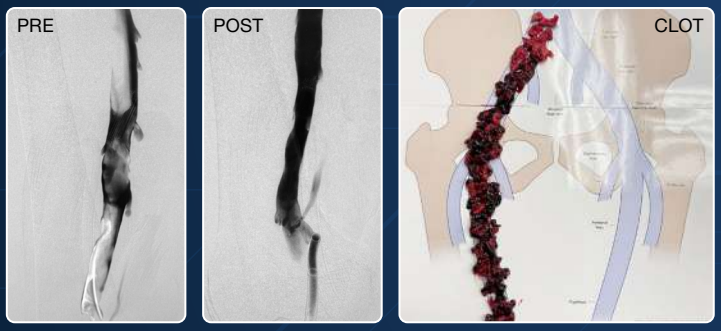
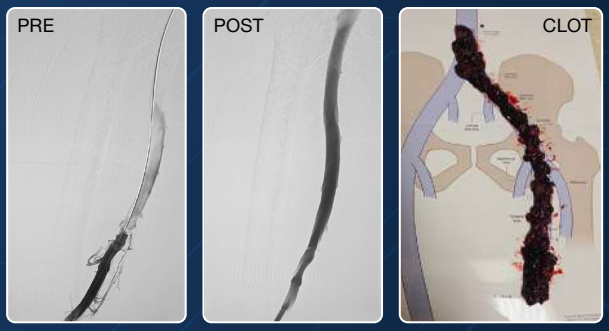
Scan to see BOLT-DVT data presentation

DVT treatment with Lightning Flash 3.0



Dr. Brad Grimsley
Baylor The Heart Hospital, TX



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Learn More About BOLT-DVT

For the complete Penumbra® IFU Risk Summary Statements and more, scan QR code or visit: peninc.info/bolt-dvt

a. Specific indication as of November 2026.
h. Lightning Flash 1.0 and 2.0 were utilized for (124/229) patients in BOLT-DVT.

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