

# The impact of great saphenous vein size on clinical severity and outcomes of patients undergoing vein ablation for varicose veins

Scott D. Bendix, MD, Edward L. Peterson, PhD, Loay S. Kabbani, MD, Mitchell R. Weaver, MD, Judith C. Lin, MD

Division of Vascular Surgery, Henry Ford Hospital, Detroit, MI



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# DISCLOSURE

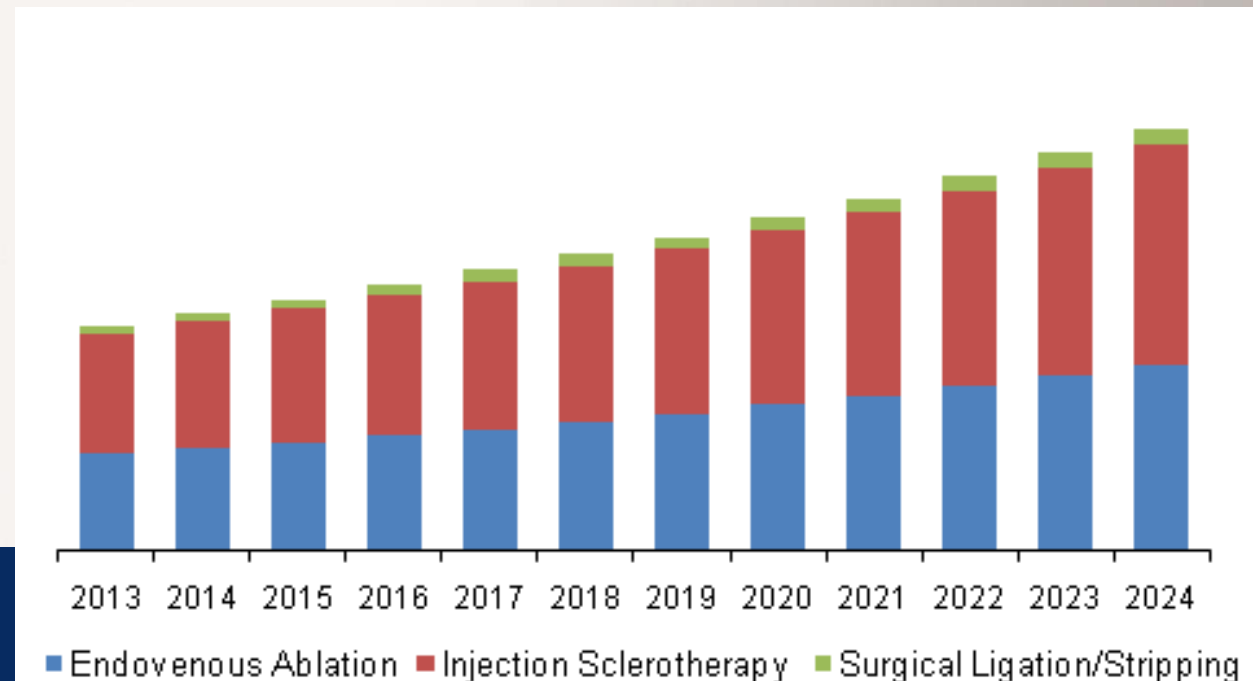
**Scott Bendix, MD**

**No Relevant Financial  
Relationship Reported**



# Background

- Varicose veins affect an increasing percentage of our aging population
- More than 30 million Americans have some form of chronic venous disease



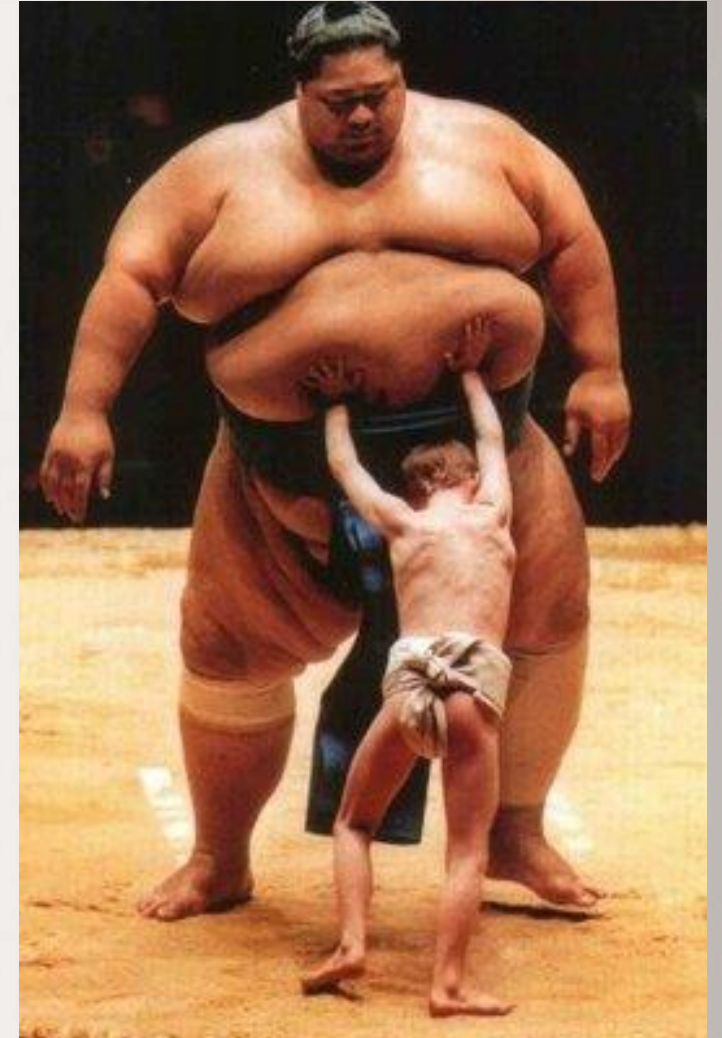
# Background

- Controversy exists for the medical necessity, indications, patient outcomes, and payment of these procedures.
- Growing trend toward using GSV size as criteria to approve patients for insurance coverage.



# Background

- Significant effects of venous disease on the functional aspects of QOL, not just the emotional components.
- Correlation between GSV size and venous disease remains controversial.
- Does size really matter?





# Objective

- Vascular Quality Initiative - Varicose Vein Registry (VQI-VVR)
- Significance of saphenous vein size
  - Clinical disease severity
  - Post-procedural outcomes

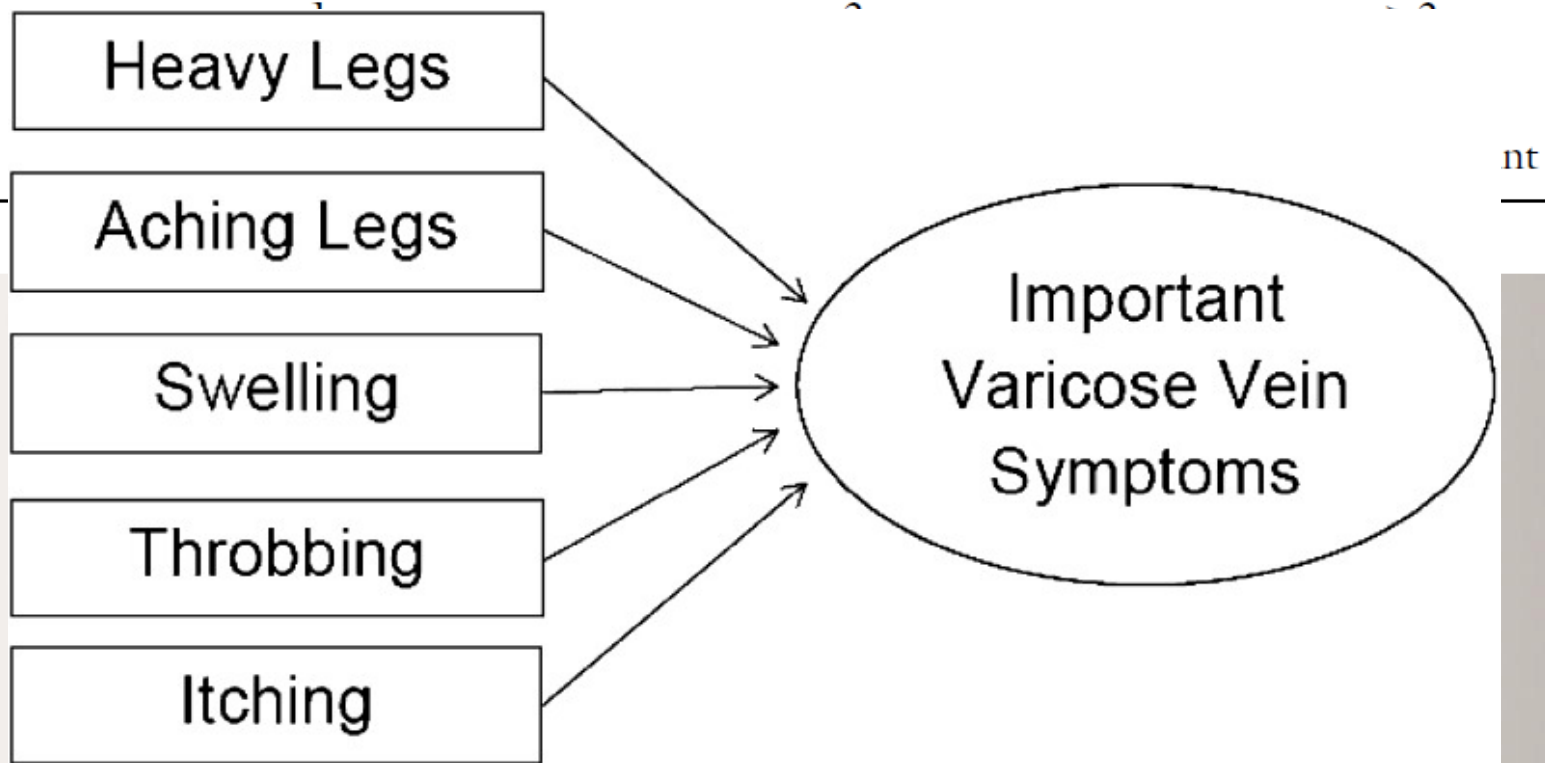
# Methods

- VQI-VVR queried from January 2015 to October 2017
  - All with symptomatic varicose vein disease
  - Varicose vein procedures (RFA, EVLT, Ligation)
- Two groups classified by maximal GSV size
  - $< 5\text{mm}$  or  $\geq 5\text{mm}$
- Demographics, peri-procedural data, post-op outcomes
  - VCSS, HASTI

**Table I.** Venous Clinical Severity Scoring system used by NVSP

<i>Attribute</i>	<i>Absent (0)</i>	<i>Mild (1)</i>	<i>Moderate (2)</i>	<i>Severe (3)</i>
Pain	None	Occasional	Daily	Daily with meds
Varicose veins	None	Few	Multiple	Extensive
Venous edema	None	Evening only	Afternoon	Morning
Skin pigmentation	None	Limited, old	Diffuse, more recent	Wider, recent
Inflammation	None	Mild cellulitis	Moderate cellulitis	Severe
Induration	None	Focal <5 cm	<1/3 gaiter	>1/3 gaiter
No. of active ulcers	None			
Active ulcer size	None			
Ulcer duration	None			
Compression	None			

NVSP, National Venous Screening Program.





# Results

- 5757 total veins included
  - Group 1: 770 with GSV < 5 mm
  - Group 2: 4987 with GSV ≥ 5 mm
- Group 1 more likely
  - female, 81.7% vs 68.4% (P=0.001)
  - older, 56.8 years vs 55.6 years (P=0.012)

# Results

Pre procedure	GSV < 5 mm N=770	GSV ≥ 5mm N=4987	P value
Mean number vein interventions	2.0 ± 1.0	1.8 ± 1.0	0.001
Maximal diameter (mm)	3.9 ± 0.9	8.3 ± 3.1	0.001
Anticoagulation (%)	5.0	8.8	0.001

Recanalization (%)	0.9	1.2	0.001
Missed work days	1.6 ± 2.9	2.3 ± 3.8	0.001

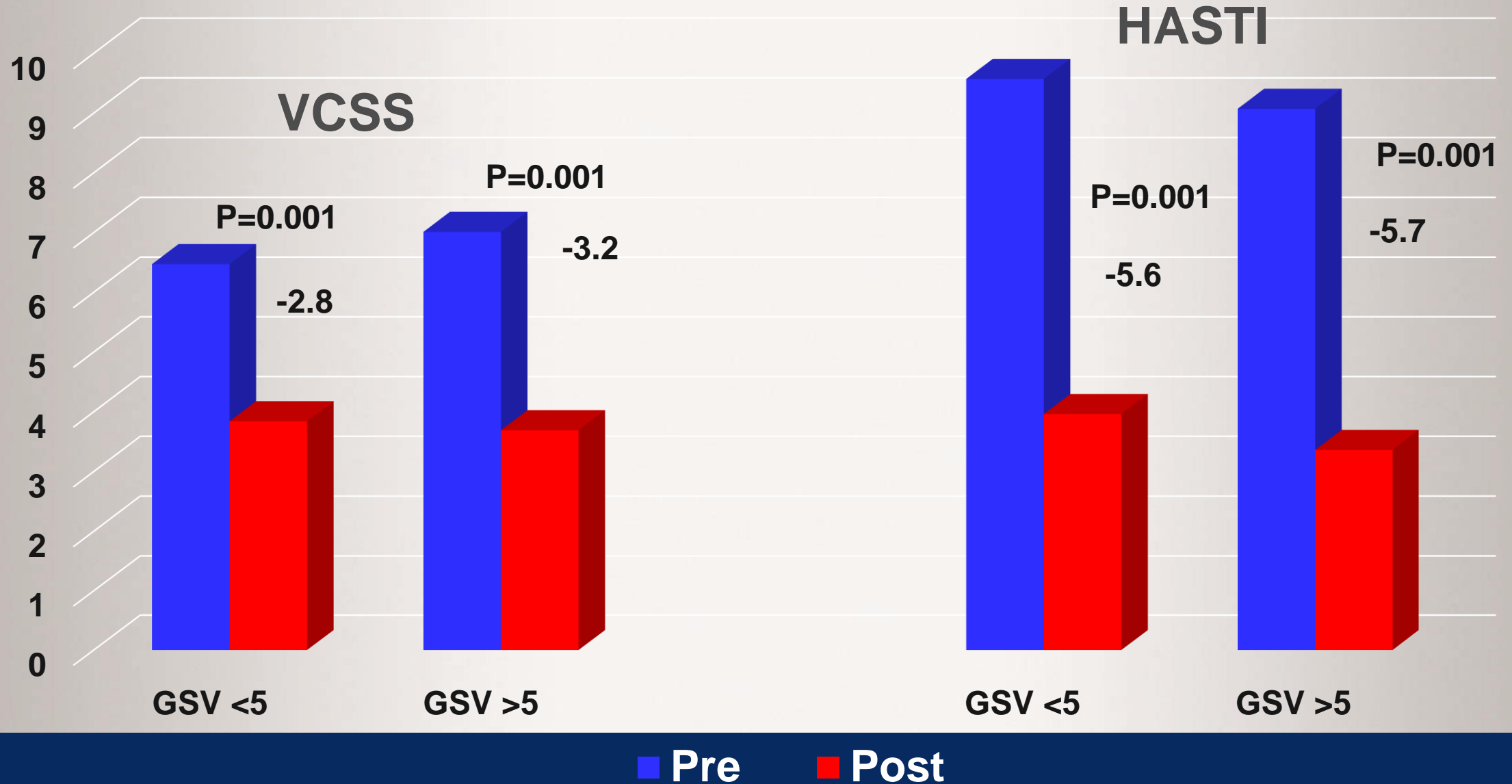
# Results

CEAP Right	GSV < 5mm N=770	GSV ≥ 5mm N=4987	P value
C0	16.5	15.9	0.001
C1	3.1	3.2	
C2	36.5	25.2	
C3	26.3	30.5	
C4a	11.1	16.7	
C4b	1.9	3.4	
C5	1.9	1.9	
C6	2.8	3.2	
CEAP Left			
C0	15.3	15.2	0.001
C1	2.5	3.1	
C2	33.0	25.1	
C3	28.2	31.0	
C4a	12.8	16.4	
C4b	1.8	3.5	
C5	2.2	2.3	
C6	3.7	3.6	

# Results

	GSV < 5 mm N=770	GSV ≥ 5mm N=4987	P value
RFA	59.2	64.1	0.001
EVLT	32.9	32.5	
Ligation	7.9	3.5	
Phlebectomy	59.3	17.5	0.001
Office	61.8	59.8	0.001
Ambulatory	7.0	12.4	
Hospital outpatient	30.7	27.8	
Hospital inpatient	0.5	0.0	
Complications	0	0.6%	0.027

# Post-op Outcomes



# Limitations

- VQI-VVR missing data
- Under reporting of complications



# Conclusions

- Smaller saphenous veins were more likely to be female and older, and have more procedures performed
- CEAP scores were higher in GSV  $\geq$  5mm
- Patients with symptomatic GSV reflux demonstrate improvement in clinical outcomes after treatment regardless of size

# Summary

- **Patients with symptomatic saphenous veins should not be denied intervention based on size**



# Thank you!

# Questions???

