

# Impact of class I compression stockings on cross-sectional area of calf deep veins and great saphenous vein in healthy subjects and varicose veins patients

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# Background



The screenshot shows a journal article page. On the left is a sidebar with the journal title 'Ultraschall in der Medizin' and a search bar. The main content area features an advertisement for 'Thieme Medizinjobs' and the article title 'GASTROCNEMIUS VEIN – DIAMETERS DECREASE UNDER COMPRESSION STOCKINGS'. Below the title are the authors' names and their affiliations.

Ultraschall in der Medizin  
Thieme

Year  
2005

Issue  
06: 445-554  
05: 365-444

Advertisement:  
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Vom Anästhesiologen über MTRAs bis hin zu Gesundheits- und Pflegekräften erreichen wir ärztliche und pflegerische Fachkräfte. Wir bieten Ihnen individuelle Cross-Media-Pakete für eine streuverlustfreie Kandidatenansprache von aktiv-suchenden und nicht-aktiv-suchenden-Bewerbern.  
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Ultraschall in Med 2005; 26 - P145  
DOI: 10.1055/s-2005-917645

**GASTROCNEMIUS VEIN – DIAMETERS DECREASE UNDER COMPRESSION STOCKINGS**

CR Jeanneret-Gris <sup>1</sup>, I Von Planta <sup>2</sup>, H Partsch <sup>3</sup>

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... small differences are seen, the antero-posterior and medio-lateral diameter of the medial gastrocnemius muscle veins decrease under compression – stocking class II in healthy volunteers...

(upright, tested by DUS)

Jeanneret-Gris CR, Von Planta I, Partsch H. Gastrocnemius vein – diameters decrease under compression stockings. Ultraschall in Med 2005; 26 - P145

# Background



... In the standing position compression stockings with a pressure of 22 mmHg were able to reduce the calibre of deep calf veins, but not of superficial varices...

(upright, tested by MRI)

Partsch H, Mosti G, Uhl J-F. Unexpected Venous Diameter Reduction by Compression Stocking of Deep, but not of Superficial Veins. *Veins and Lymphatics*, 2012:1(1)

# Background

< Previous article Next article >

Vasa (2014), 43, pp. 268-277 <https://doi.org/10.1024/0301-1526/a000362> © 2014 Hogrefe AG.

**Impact of compression stockings on calf-vein diameters and on quality of life parameters in subjects with painful legs**

[Christina Jeanneret](#) , [Konstantinos Karatolios](#) , [Irene von Planta](#) 

Published online July 9, 2014

<https://doi.org/10.1024/0301-1526/a000362>

[Abstract](#) [Cited by](#) [PDF](#)

**Abstract**

Background: Calf vein diameters during compression with two different stocking brands are assessed as well

**Vasa**  
European Journal of  
Vascular Medicine



After 2 weeks of compression mean diameters of gastrocnemius veins and short saphenous veins decreased significantly in the standing position. No significant change was seen in the posterior tibial veins.

(upright, tested by DUS)

Jeanneret C, Karatolios K, von Planta I. Impact of compression stockings on calf-vein diameters and on quality of life parameters in subjects with painful legs. Vasa. 2014 Jul;43(4):268-77

# Aim

- 01 To find out the changes of cross-sectional area of deep and superficial veins in *healthy subjects* after applying compression class I stockings (15-20 mmHg)
- 02 To find out the changes of cross-sectional area of deep and superficial veins *in varicose veins patients* after applying compression class I stockings (15-20 mmHg)

# Design

DUS performed before and after applying of stockings in both supine and upright positions

Measurement of cross-sectional area of one of posterior tibial veins and a great saphenous vein at the same level

# Study group

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Healthy  
22 (25 legs)

Varicose veins  
15 (15 legs)

Female  
12 (48%)

Female  
14 (93%)

Age  
31±8,8

Age  
41±9,9

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# Method

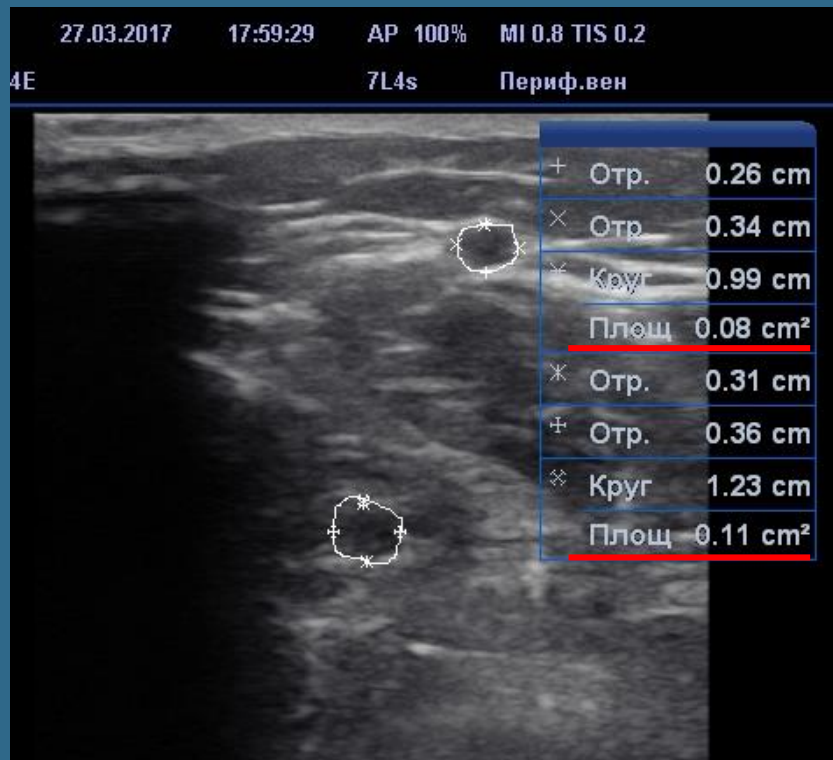




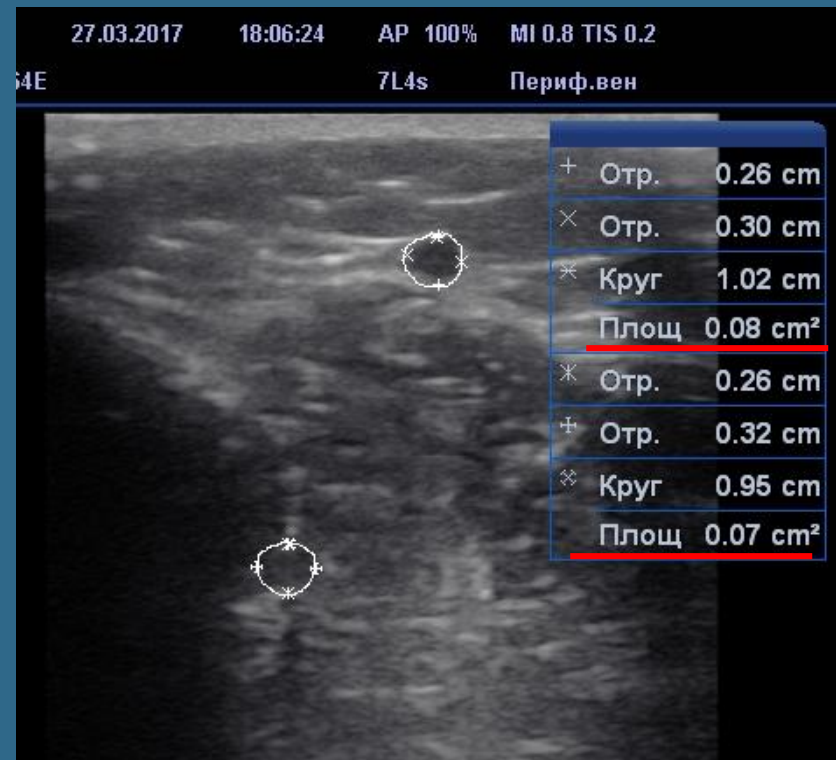
# Method



# Measurements of cross-sectional area



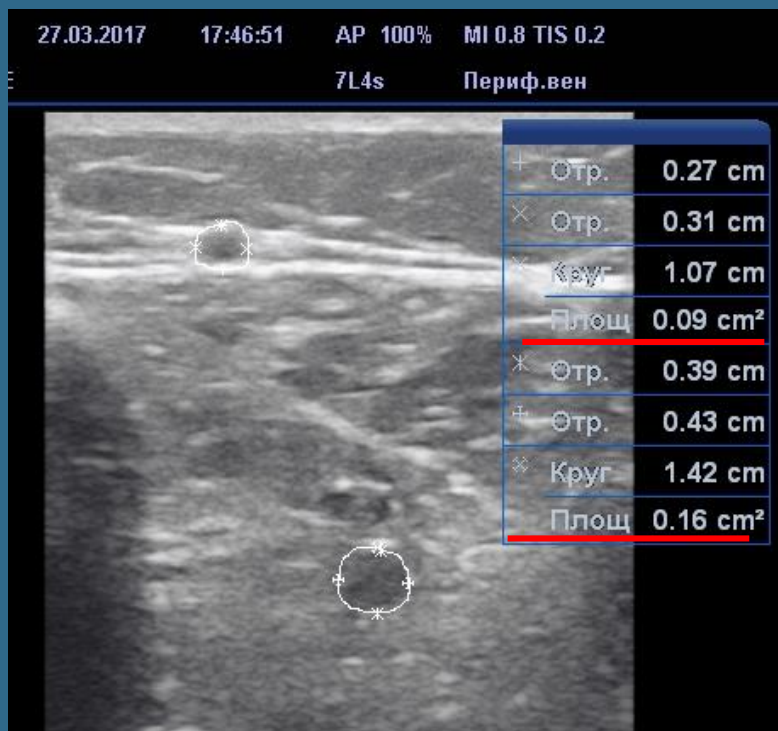
No compression



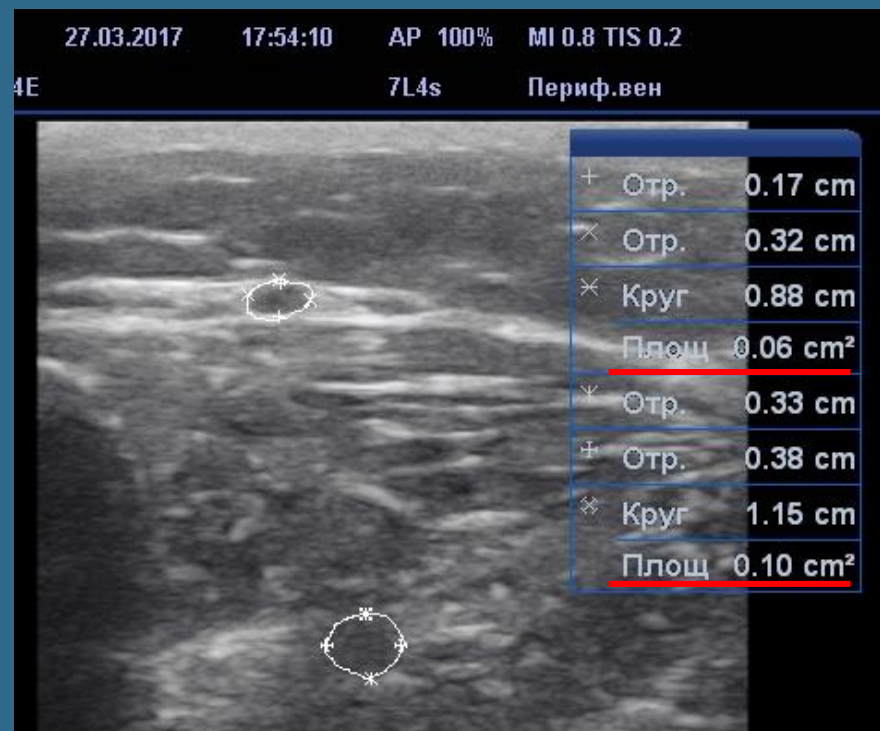
Compression

Supine

# Measurements of cross-sectional area



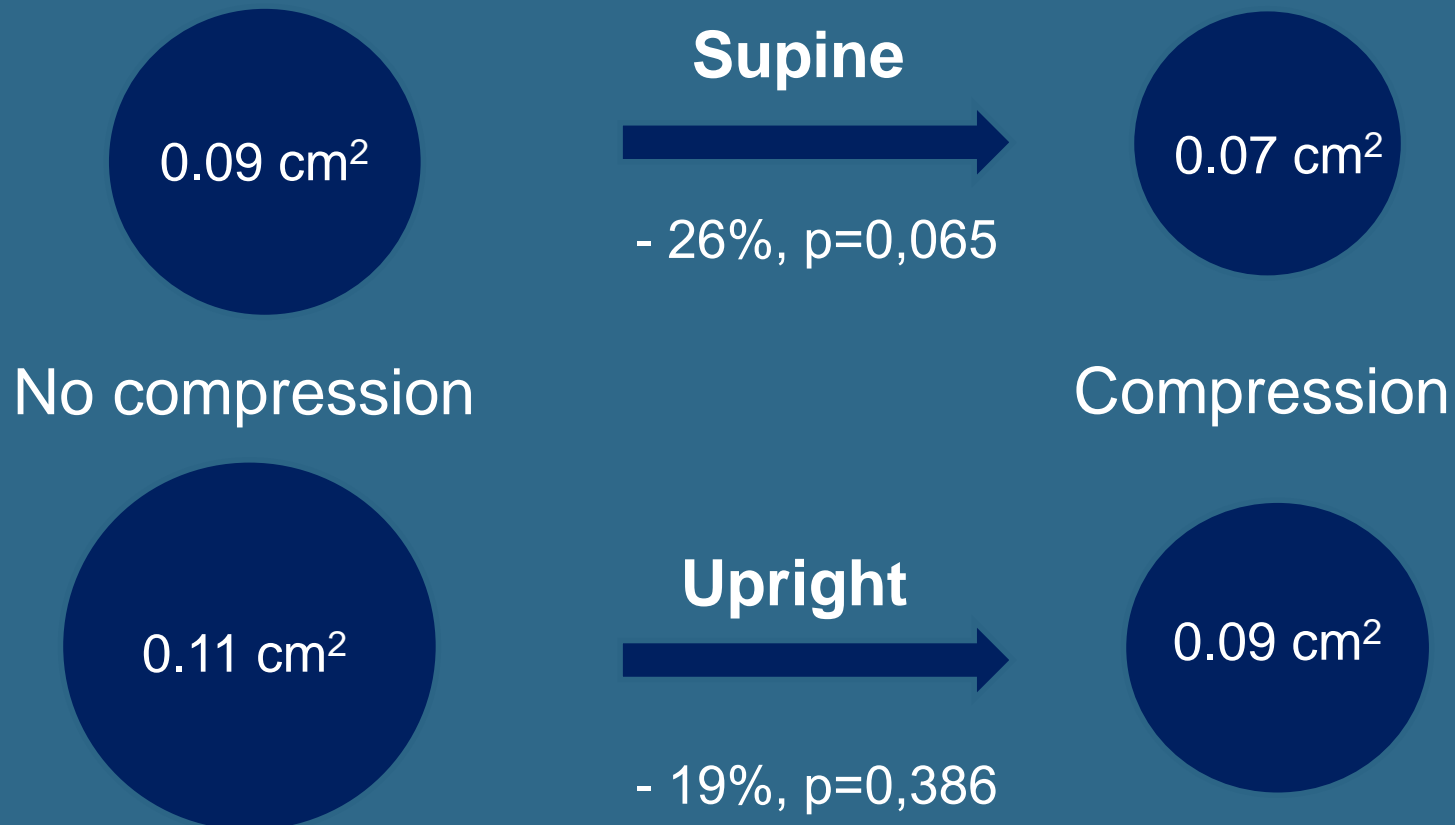
No compression



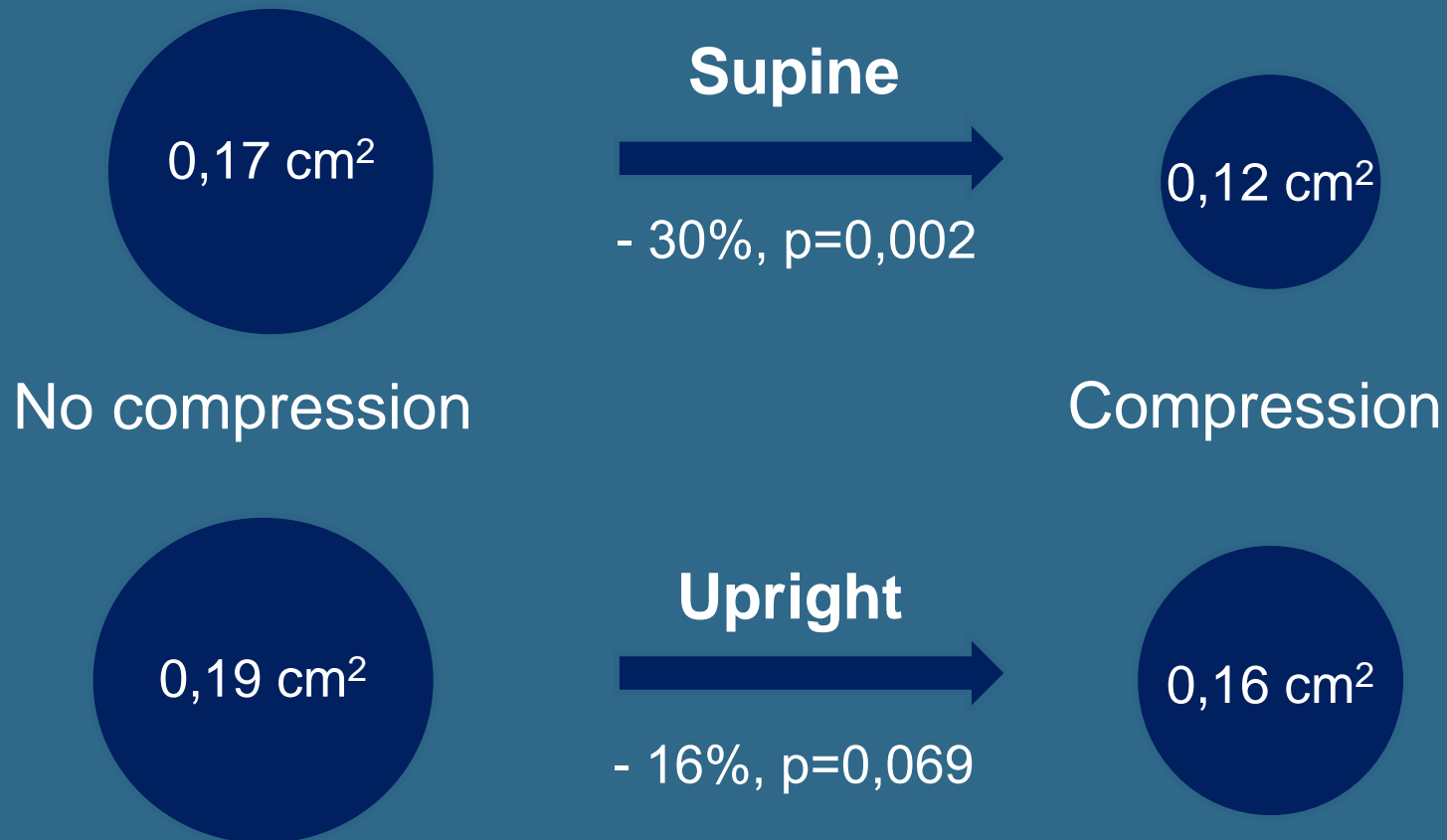
Compression

**Upright**

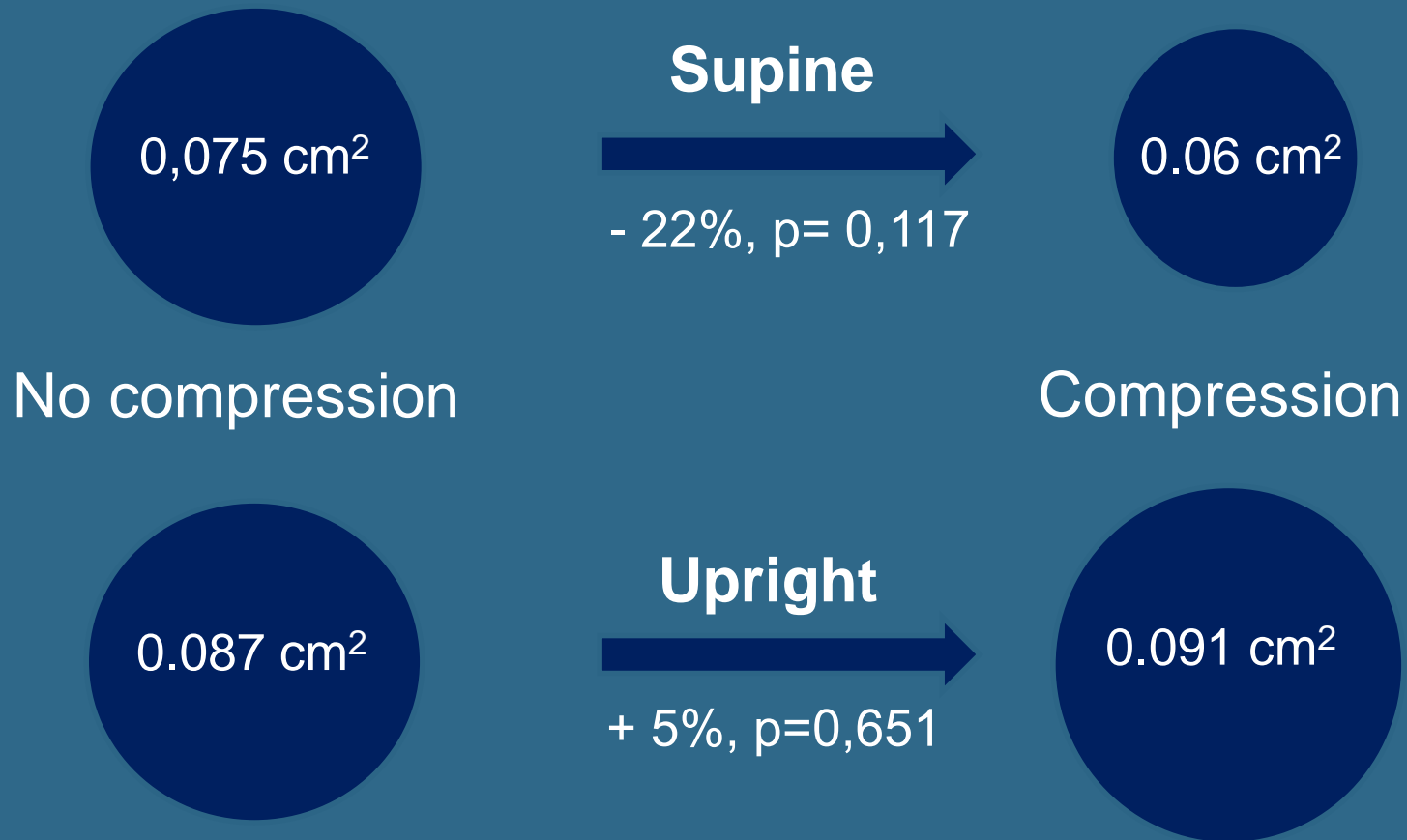
# Results: healthy subjects, GSV



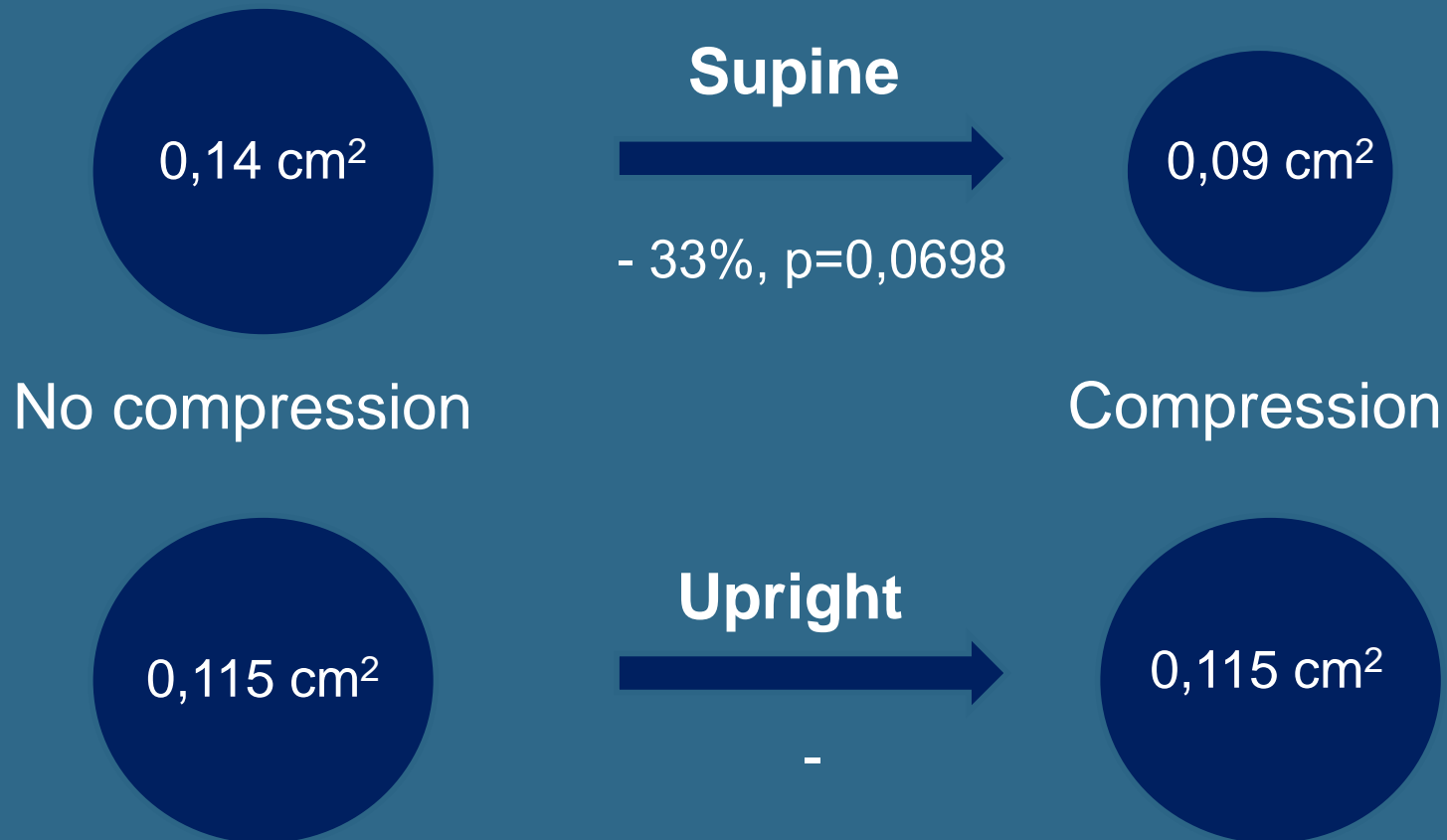
# Results: healthy subjects, PTV



# Results: varicose veins, GSV



# Results: varicose veins, PTV



# Results: action of 15-20 mmHg compression

	Healthy		Varicose veins	
	Superficial	Deep	Superficial	Deep
Supine	 NS		 NS	 NS
Upright	 NS	 NS		



# Conclusion

## Compression class I stockings:

- do not narrow superficial and deep veins in patients with varicose veins in upright position
- have significant impact on only deep veins in only supine position in healthy subjects