



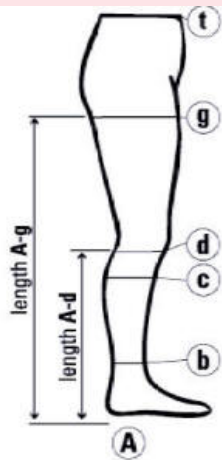
**WELSH WOUND
INNOVATION
ARLOESED
CLWYFAU CYMRU**

Evaluation of the feasibility of 3D scanning to provide individualized compression therapies among healthy volunteer subjects.

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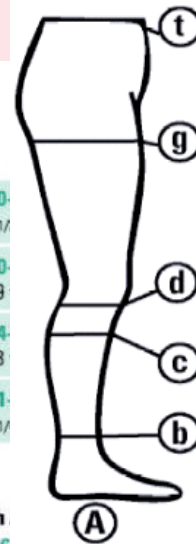
Compression hosiery



hip circumference
A-T Form A < 41" / 104 cm
A-T Form B > 41" / 104 cm

	I	II
g	41-60 cm 16 1/4"-23 1/2"	50- 19 1/2"
g with silicone	45-55 cm 17 3/4"-21 1/2"	50- 19"
c	29-38 cm 11 1/2"-15"	34- 13"
b	18-21 cm 7"-8 1/4"	21- 8 1/2"

A-D Regular - len 15 3/4"-18 1/4" / 40-46"



Size Chart For Juzo® Basic Compression Stockings and Pantyhose

	I	II	III	IV
g	44-66 cm 17 1/4"-26"	48-71 cm 18 3/4"-28"	52-76 cm 20 1/2"-29 3/4"	56-81cm 22"-32"
g with silicone	44-62 cm 17 1/4"-24 1/2"	48-67 cm 18 3/4"-26 1/4"	52-72 cm 20 1/2"-28 1/4"	56-77 cm 22"-30 1/4"
c	28-38 cm 11"-15"	31-42 cm 12"-16 1/2"	34-46 cm 13 1/4"-18"	37-50 cm 14 1/2"-19 3/4"
b	18-21.5 cm 7"-8 1/2"	21.5-25 cm 8 1/2"-9 3/4"	25-28 cm 9 3/4"-11"	28-31.5 cm 11"-12 1/2"

A-D Regular - len 40-46 cm / 15 3/4-18
A-D Short - len 34-40 cm / 13 1/4 - 15 3/4

A-G Regular and A-T Regular - len 72-83 cm / 28 1/4 - 32 1/2
A-G Short and A-T Short - len 66 - 72 cm / 26 - 28 1/4



- A:** Widest part of the thigh (5cm below the groin)
- B:** Widest part of the calf
- C:** Just above the malleolus (ankle bone)
- D:** From back of the heel to the longest toe

MEASURING GUIDE					
A SIZE INDICATOR CAN BE FOUND BY A COLOURED THREAD IN THE STOCKING					
SIZE	S	M	L	XL	XXL
A	40.5-53.0cm	43.0-55.0cm	48.0-60.5cm	53.0-66.0cm	N/A
B	30.5-37.5cm	33.0-40.0cm	35.5-43.0cm	38.0-46.0cm	40.0-49.0cm
C	19.5-25.5cm	21.5-27.5cm	22.5-29.5cm	23.0-32.0cm	23.5-34.0cm
D	20.5-24.0cm	23.0-26.0cm	25.5-29.5cm	26.5-32.5cm	26.5-32.5cm

Compression hosiery



Healthy volunteer study

25 volunteers

5 male, 20 female

Age 49.2 (12.2), 29 – 71 years.

BMI 27.1 (6.3), 19.8 – 51.1

Ankle circumference 22.3 (2.1), 18.5 – 28.5 cms

Calf circumference 38.0 (24.4), 29.5 – 50.1 cms

Lower leg length 40.6 (3.1), 34.5 – 46.0 cms

Subjects 1-5 had both legs scanned, 6-25 had single leg scanned = 30 legs

Healthy volunteer study

1st visit

Leg scanned from foot to knee (10s)

Scan sent to manufacturer who knitted compression hosiery from scanned data

2nd visit

Wore compression hosiery with pressures measured at B1 and C positions (Kikuhime), three repeat measurements

Compared with Class II Sigvaris stocking selected based on limb measurements (n=23, 2 had made-to-measure stockings)

All pressure measurements within 1 hour.

Approved by School of Medicine Research Ethics Committee, Cardiff University.

Results

Stocking	Sub-stocking pressure		
	Mean (mmHg)	Standard deviation (mmHg)	Range (mmHg)
3D scanned			
Ankle	26.5	6.7	14.7 – 49.0
Calf	20.1	3.7	14.0 – 28.0
Sigvaris or Made to Measure			
Ankle	43.2	9.3	24.0 – 67.7
Calf	25.6	4.7	18.0 – 40.0

Results

Higher pressures at ankle and calf where ready to wear or made-to-measure stocking applied.

Greater variability of sub-stockings pressures.

Class II, 23 to 32mmHg at ankle,

Seen 4/30 legs with ready to wear or made to measure stockings

20/30 times 3D scanned stocking

Conclusion

The 3D scanned stockings applied lower pressures than did the ready to wear stockings.

The 3D scanned stockings applied more consistent sub stocking pressures as shown by the narrower standard deviations around the mean pressure measurements.

The 3D scanned stockings were more likely to apply compression anticipated by a class II stocking.