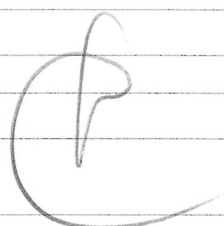


79641	3		
BSN			
Bestelldatum	15.06.2015 08:00:00	1 AT	
Termin	16.06.2015 18:00:00	Email	
BF 142 - Accounts Payable /			
Bestellnr. 4500273194			
4 Arb. Fr. Deing		ISSN: 1462-4753	A5888 gel.

3) Br J Community Nurs. 2003 Jun;8(6):279-83.

Jobst UlcerCARE compression hosiery for venous leg ulcers. Hampton S.

S. 281 WERKUNG
 2x Figure 1. cent
 S. 280

Jobst® UlcerCARE™ compression hosiery for venous leg ulcers

Sylvie Hampton

This article reviews the JOBST UlcerCARE system and its application and use for the treatment of venous leg ulcers.

Chronic venous insufficiency of the lower extremities is a complicated disorder, affecting the productivity and wellbeing of millions of people worldwide (Donaldson, 2000; de Araujo et al, 2003). It is also a major cause of morbidity among patients in hospital and community settings (Jones and Nelson, 2001).

Deep vein thrombosis and lipodermatosclerosis (Figure 1) are sequela of deep venous insufficiency and a risk factor for the occurrence of venous leg ulceration (Gniadecka et al, 1998). Venous disease is the most common cause of leg ulcers. Identification of the risks of venous ulceration is important, as is optimal therapy, which requires control of abnormal venous physiology combined with adjunctive treatments to correct secondary skin ulceration, infection and lymphoedema (Donaldson, 2000).

Management of venous leg ulcers is based on understanding the pathophysiologic abnormalities associated with venous disease. Treatment has in recent years been advanced through the identification of prognostic factors for healing and the development of novel therapeutic approaches for venous ulcers (de Araujo et al, 2003).

Treatment approaches include calf and foot pumps. Browne et al (1988) explored the action of the calf pump, which is thought to exert high pressure on the deep veins. The calf pump only functions effectively when the calf muscles contract (Ertl, 1991). The foot pump, placed against the sole of the foot, is activated by weight-bearing and flattening of the plantar arch (Gardner and Fox, 1989). It operates independently of any muscular action and works as well on people with paraplegia. Both of these physical pumps are assisted by compression therapy (Weidinger and Bachl, 1987).

Compression hosiery vs compression bandaging

Management of venous disease requires careful differential diagnosis and a systematic long-term multidisciplinary care effort directed toward realistic

goals within the context of the patient's lifestyle (Donaldson, 2000). Leg ulcers have a significant impact on individuals' lives. Many patients experience considerable pain and distress as a result of this condition (Jones and Nelson, 2001), although the degree to which this occurs varies between patients (Rich and McLachlan, 2003).

The vast majority of venous ulcers can be healed using compression bandages (Nelson et al, 2003). Graduated compression therapy is now recognized as the optimum approach for the treatment of venous ulcers (Johnson, 2002) and is rapidly becoming the treatment of choice (Stemmer et al, 1980; Blair et al, 1988; Charles, 1991). However, variations of bandage practice and poor technique (Stockport et al, 1997; Taylor et al, 1998) lead to only 50% of patients receiving adequate compression under their bandage.

Moreover, the bulkiness of the bandages can lead to non-concordance (non-compliance) with the compression treatment regime. The literature suggests that many factors influence patients' compliance, including patient-practitioner relationships, treatment regimes and psychosocial influences (Furlong, 2001). The nurse practitioner's role is highlighted as being pivotal in promoting concordance or non-concordance.

As graduated compression hosiery works in a similar way to compression bandages (with the shape and elasticity of the stocking providing

Sylvie Hampton is an independent tissue viability consultant, Eastbourne

ABSTRACT

Chronic venous insufficiency affects the productivity and wellbeing of millions of people worldwide and is the most common cause of leg ulcers. Treatment of leg ulcers currently accounts for 22% of district nurses' time and places a major financial burden on NHS resources. Compression bandaging has been recognized as the optimum approach for venous ulcers but is not always applied effectively. It is also costly and may lead to non-compliance. Compression hosiery is an alternative treatment approach. Review of relevant research shows JOBST UlcerCARE to be an effective treatment that is easy to apply, thereby maintaining patient independence. It also provides a major potential for cost savings to the NHS.

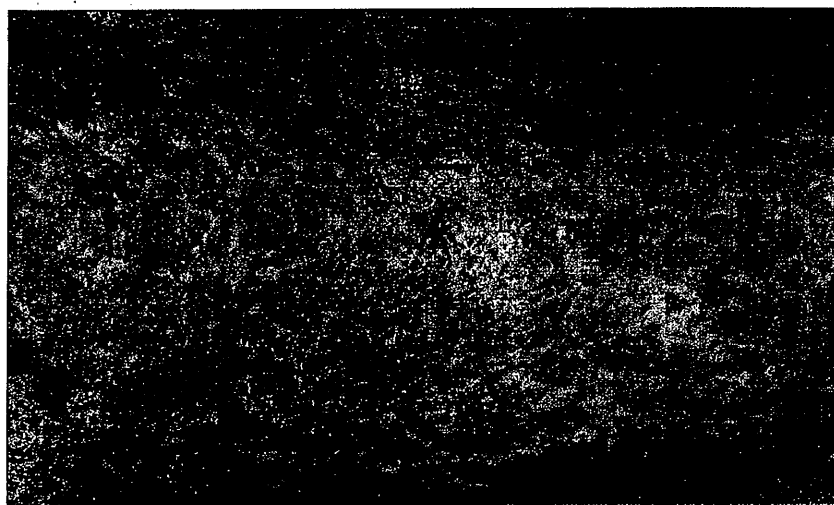


Figure 1.
Lipodermatosclerosis.

graduated compression), an alternative to bandaging could be the use of below-knee graduated compression hosiery to promote patient concordance (Johnson, 2002).

Compression stockings facilitate leg ulcer healing and prevent occurrence of ulcers (Gniadecka et al, 1998). Once the measurements have been taken and the hosiery is fitted, limited skill is required to apply the stocking and compression levels will be consistent. Patients can apply their stockings independently, promoting patient compliance and empowerment

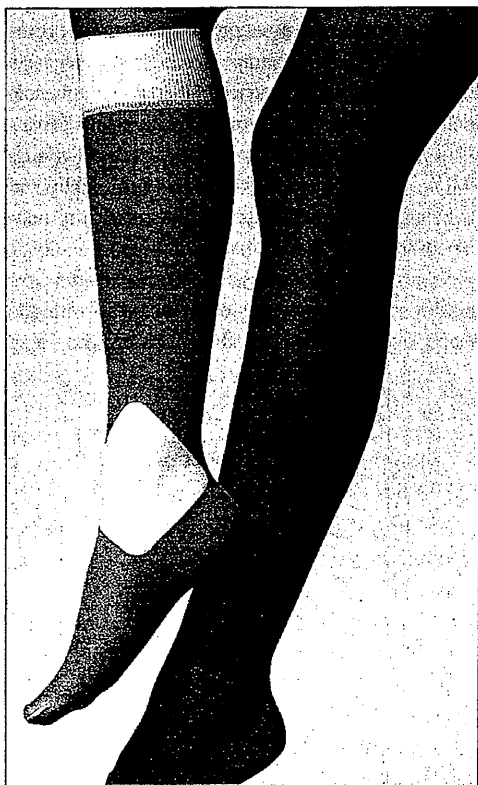


Figure 1. UlcerCARE liner stocking

by enabling patients to be an active participant in their own treatment regimes (Furlong, 2001).

Cost-effectiveness

Compression hosiery may be a particularly cost-effective option as at present up to 22% of community nurses' time is spent treating venous ulcers (Hutcheson, 1999) at a cost in 1996 of over £60 per visit (Thambiaya, 1996). This cost is certainly higher today. Venous insufficiency therefore has high annual costs to the NHS (Jones and Nelson, 2001).

However, the simple purchase price for any dressing is not a true indication of cost-effectiveness. The real cost is a combination of the price of the dressing plus the cost of nursing time, physician time, hospital stay, home-health costs, risks and costs of complications (e.g. infection); the frequency of dressing changes also needs to be taken into account (Kerstein, 2003).

UlcerCARE

JOBST UlcerCARE is a two-part compression hosiery system with a mechanism for achieving a high graduated compression of 40 mmHg at the ankle (the pressure recommended by Stemmer (1980) for promoting venous return). The combined pressures are as follows:

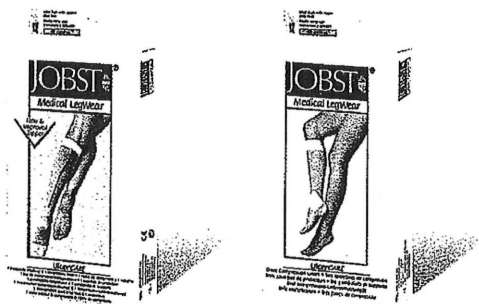
1. A white liner stocking (Figure 2) provides 10 mmHg at the ankle and permanently remains in situ; this layer offers a soft feeling against the skin
2. A beige over-stocking with a zip at the rear (Figure 3) provides 30 mmHg at the ankle; this layer is removed at night.

The zip, which can be supplied with a large ring for easy handling (Figure 4), enables all but the most infirm patient to use UlcerCARE unaided. The gradient pressure achieved by UlcerCARE makes this hosiery particularly useful in healing and preventing venous leg ulceration, particularly as it can be used to replace compression bandages.

The JOBST UlcerCARE stocking is aesthetically pleasing and acceptable to both men and women. The zip and liner stocking promote ease of application. This has implications for reducing labour and financial costs, as the patient is able to apply the stocking and remove it independently. The stocking can also be washed and worn repeatedly. It is easy and quick to apply compared to other kinds of bandaging. An evaluation undertaken on JOBST UlcerCARE indicated a time saving of 5–50 minutes compared to their previous bandaging regimen (BSN Medical Ltd, 2003). This provides the potential for major cost savings to the NHS. JOBST UlcerCARE is not currently available on prescription. A pack of three liners costs £17.88, and the stocking with a liner, £31.18.

JOBST® UlcercARE®

The innovative 2 in 1
compression system:
modern, simple
management of
venous leg ulcers



BSN medical

BSN medical Limited. Healthcare House,
Goulton Street, Hull HU3 4DJ
Tel: +44 (0) 1482 222200
Fax: +44 (0) 1482 222211

© Registered Trade Mark of BSN medical Ltd.
© BSN medical Limited April 2003
JG/ULCERCAD/00060/0503

Available in small, medium, large and extra large
ULCERCARE stocking with one compression liner - £ 31.18
Three compression liners - £ 17.88

To order or for further information please contact
Pauline Garraway on 01482 673831
or complete the slip below and post to BSN medical Ltd.
or fax back to 01482 673081

Name Position

Hospital/PCT

Address

Postcode

Tel
Fax
E mail

BSN medical

'Patients should be offered the strongest compression with which they can comply in order to reduce the risk of recurrence and to reduce the financial burden of leg ulcer management.'

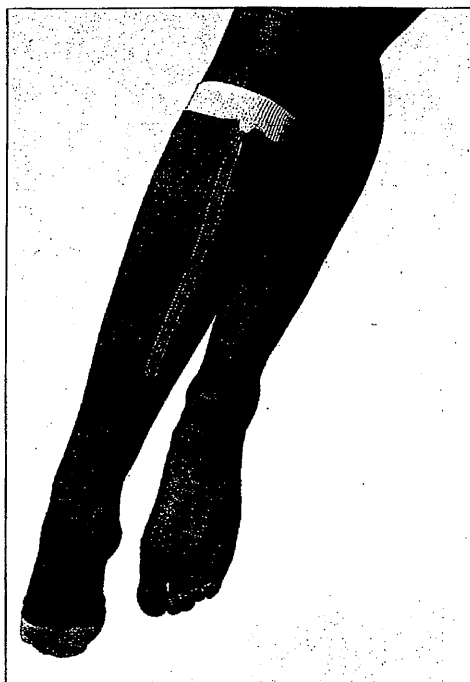


Figure 3. UlcerCARE over-stocking, showing zip.

Assessment for fitting UlcerCARE

As with any compression therapy, accurate patient assessment, using a handheld Doppler, and limb measurement is essential to ensure that hosiery is appropriate and fits the individual patient (Armstrong and Woollons, 1998); stockings will not be successful in treatment unless they fit properly (Dale and Gibson, 1990).

Patient assessment is needed before measurement and fitting to establish suitability of the treatment. An ankle brachial pressure index of less than 0.8 should exclude the patient from wearing compression hosiery (London and Donnelly, 2000). Any oedema should be corrected before measuring for stockings, or a second pair of stockings will be required once

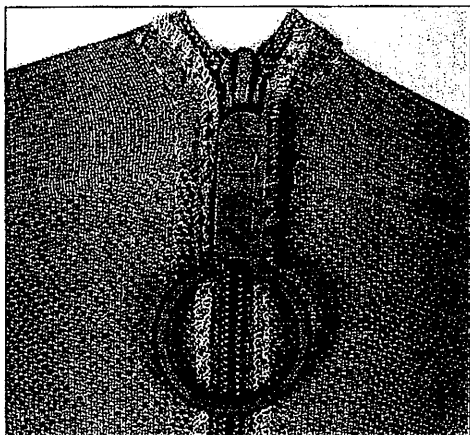


Figure 4. Detail of stocking zip with large ring

the oedema is resolved. The oedema can be corrected by bandaging over a short period and removing the bandage once the oedema is resolved.

Measurement should always be carried out by a nurse or technician experienced in measuring and applying stockings. The optimum time for measuring is the beginning of the day, as a measurement at the end of the day will be entirely different. In case the UlcerCARE standard sizes do not fit, JOBST hosiery can be made to measure, with a 4-day turnaround time.

Applying JOBST UlcerCARE hosiery

The hosiery is fitted as shown in Figure 5:

1. Pull the liner stocking inside out as far as the heel so that the heel can be placed easily to the foot
2. Gently pull the stocking onto the leg, taking care not to disturb the dressing
3. Smooth out any wrinkles. The liner stocking is worn permanently and only removed for changing or bathing
4. Unzip the over-stocking and pull over the foot, ensuring that the heel fits into the heel pocket. This stocking is removed every night
5. If possible, hold the fabric edges of the stocking together and pull up the zip
6. Smooth out any wrinkles.

It is recommended that patients are supplied with two stockings and two liners so that one can be worn while the other is being laundered. Laundering is simple as UlcerCARE can be hand- or machine-washed in warm water. Tumble-drying is not recommended.

Treatment efficacy

Patients need consistent treatment that incorporates benchmarking (Rich and McLachlan, 2003), particularly as skin ulcers of the lower extremities have a chronic, relapsing course and remain a significant management challenge to health-care professionals (Paquette and Falanga, 2002). Recurrence rates may be lower in high-compression hosiery than in medium-compression hosiery. Patients should therefore be offered the strongest compression with which they can comply (Nelson et al, 2000) in order to reduce the risk of recurrence and to reduce the financial burden of leg ulcer management. (It is important to ensure that leg ulcer treatment and management do not end when the ulcer has healed as prevention of recurrence and lifelong compression is an important part of total holistic care.)

Haefner et al's (2000) study to measure the pressure exerted on the skin by the UlcerCARE compression stocking demonstrated that it is equivalent to a class III medical compression stocking. It also found that UlcerCARE hosiery diminishes venous

reflux and reduces leg oedema; it concluded that UlcerCARE is an effective compression therapy for venous ulcers.

A study by Baccaglini et al (1999) demonstrated that 56 out of 63 patients treated with UlcerCARE healed in 16 weeks, with a mean healing time of 5–6 weeks. This study concluded that UlcerCARE is effective for treating venous ulcers and well tolerated by patients.

These findings confirmed previous work undertaken on UlcerCARE by Young and Terwoord (unpublished observations, 1989), who found JOBST UlcerCARE to be superior in healing and comfort to the Unna boot, a treatment popular in the USA.

Sampson (1993) also identified high healing rates and concluded that UlcerCARE provides controlled, well-defined pressure to all patients and, as patients are able to bathe daily, that UlcerCARE is a socially acceptable treatment with high cost savings.

Conclusion

The straightforward design of UlcerCARE stockings should enable nurses to successfully treat patients with venous ulceration and support those wishing to maintain independence. The stocking is an efficacious, cost-effective and easy-to-use compression system for the prevention and treatment of venous ulcers. ■

- Armstrong S, Woollons S (1998) Compression hosiery. *Prof Nurse* 14(1): 49–56
- de Araujo T, Valencia I, Federman DG, Kirsner RS (2003) Managing the patient with venous ulcers. *Ann Intern Med* 138(4): 326–34
- Baccaglini U, Pavei P, Giraldi E, Spreafico G, Castoro C, Penzo S (1999) Evaluation of the JOBST UlcerCARE system (JUCS) in the treatment of venous ulcer of the lower limb. Paper presented at the European Congress of the International Union of Phlebology (UIP) 41st Annual Meeting of German Society of Phlebology, September.
- Blair D, Wright D, Backhouse C, Riddle E, McCollum C (1988) Sustained compression and healing of chronic venous ulcers. *BMJ* 297(6657): 1159–61
- Browse NL et al (1988) *Diseases of the Veins: Pathology, Diagnosis and Treatment*. Edward Arnold, London
- BSN Medical Ltd (2003) *Test report: evaluation of fit properties and acceptance of new JOBST UlcerCARE version*. Details kept on file at Regulatory Affairs. Smith & Nephew, Hull
- Charles H (1991) Compression healing of ulcers. *Journal of District Nursing* 10(3): 4–8
- Dale JJ, Gibson B (1990) Back-up for the venous pump. *Prof Nurse* 5(9): 481–4
- Donaldson MC (2000) Chronic venous insufficiency: current treatment options. *Cardiovasc Med* 2(3): 265–72
- Ertl P (1991) Incidence and aetiology of leg ulcers. *Prof Nurse* 7(3): 190–6
- Furlong W (2001) Venous disease treatment and compliance: the nursing role. *Br J Nurs* 10(11 Suppl): S18–20, S22, S25–26
- Gardner A, Fox H. (1989) *The Return of Blood to the Heart*. John Libbey, London
- Gniadecka M, Karlsmark T, Bertram A (1998) Removal of dermal edema with class I and II compression stockings in patients with lipodermatosclerosis. *J Am Acad Dermatol* 39(6): 966–70

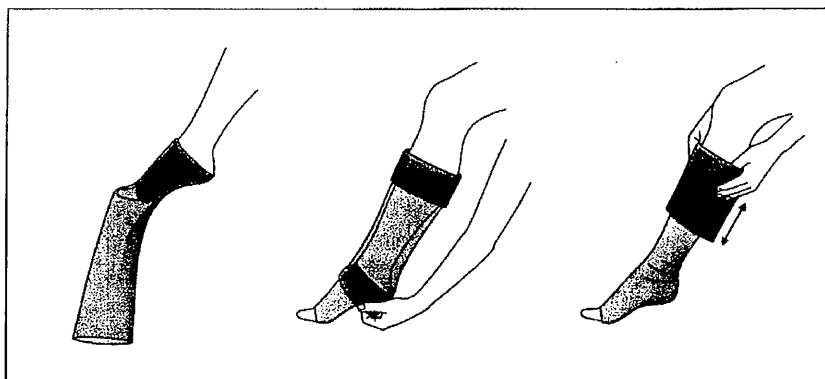


Figure 5. Application of the UlcerCARE stocking.

- Haefner HM, Vollert B, Schlez A, Junger M (2000) Compression stocking in treatment of *ulcus cruris*: an efficient alternative to bandages. *Hautarzt* 51(12): 925–30
- Hutcheson F (1999) Foot impulse technology in arteriovenous disease. *J Wound Care* 8(9): 462–5
- Johnson S (2002) Compression hosiery in the prevention and treatment of venous leg ulcers. *J Tissue Viability* 12(2): 67, 70, 72–4
- Jones J, Nelson EA (2001) Use of compression hosiery in venous leg ulceration. *Nurs Stand* 16(6): 57–60, 62
- Kerstein MD (2003) Economics of quality ulcer care. *Dermatol Nurs* 15(1): 59–61
- London NJM, Donnelly R (2000) ABC of arterial disease. Ulcerated lower limb. *BMJ* 320(7249): 1589–91
- Nelson EA, Bell-Syer SEM, Cullum NA (2003) Compression for preventing recurrence of venous ulcers (Cochrane Review). *The Cochrane Library, Issue 2*. Update Software, Oxford
- Paquette D, Falanga V (2002) Leg ulcers. *Clin Geriatr Med* 18(1): 77–88
- Rich A, McLachlan L (2003) How living with a leg ulcer affects people's daily life: a nurse-led study. *J Wound Care* 12(2): 51–4
- Samson RH (1993) Compression stockings and non-continuous use of polyurethane foam dressings for the treatment of venous ulceration. A pilot study. *J Dermatol Surg Oncol* 19(1): 68–72
- Stemmer R, Marescaux J, Furdur C (1980) Compression treatment of the lower extremities particularly with compression stockings. *Hautarzt* 31(7): 355–65
- Stockport JC, Groarke L, Ellison DA, McCollum C (1997) Single-layer and multilayer bandaging in the treatment of venous leg ulcers. *J Wound Care* 6(10): 485–8
- Taylor AD, Taylor RJ, Said SSS (1998) Using bandage pressure monitor as an aid in improving bandaging skills. *J Wound Care* 7(3): 131–3
- Thambiaya K (1996) Evaluation of a leg ulcer clinic. *Nurs Stand* 10(31): 58–62
- Weidinger F, Bachl N (1987) Therapie der Venopathien durch Gefäßtraining. *Deutsche Zeitschrift Sportmedizin* 38(Sonderh): 60–9

KEY POINTS

- Chronic venous insufficiency of the lower extremities is a major cause of morbidity.
- Compression bandaging is a prevalent treatment technique for venous ulceration, but poor technique can affect efficacy and patient compliance may be poor.
- Compression hosiery is an alternative to compression bandaging, leading to cost savings and higher treatment compliance.
- JOBST UlcerCARE is a two-part system that provides the recommended pressures to address chronic venous insufficiency.
- The system is easily applied, promoting patient independence, treatment efficacy and cost-effectiveness.