

## DERBYSHIRE JOINT AREA PRESCRIBING COMMITTEE (JAPC)

### GUIDELINES FOR THE USE OF COMPRESSION HOSIERY

- Do not routinely include 'made to measure' on the prescription. 'Made to measure' should only be selected if the patient has had their leg measurements checked in the past six months and none of the standard sizes are appropriate. If in doubt discuss with the community pharmacist.
- To avoid confusion hosiery can be prescribed as generic e.g. 'compression hosiery class 1 below knee.
- Compression hosiery is palliative not curative and treatment should continue for as long as there is evidence of venous disease – in most cases this is life-long (exc. pregnancy)
- Compression hosiery should not be applied if there is a history of symptomatic arterial disease (see assessment criteria).
- In the absence of any of the risk factors in the assessment criteria it is safe to start with mild compression hosiery such as class 1
- The ABPI test should be used as guide to assess the presence of significant peripheral arterial disease but should only be an adjunct to clinical assessment
- For patients requiring Class 2 compression hosiery e.g. to treat mild oedema, an Ankle Brachial Pressure Index (ABPI) is required. Consider the use of a milder (class 1) compression *whilst waiting* for the Doppler assessment to avoid deterioration of condition if appropriate and dependant on the results of a thorough assessment
- An ABPI is also recommended if starting with Class 3 support stockings
- All patients with chronic venous leg ulcers should have an ABPI performed prior to treatment
- Arterial insufficiency should be investigated further by the vascular team to ensure adequate circulation if clinically appropriate
- The recommended degree of compression depends on the condition being treated. If the person cannot tolerate the preferred compression for their condition, try the next level down (NICE CKS) Ideally, Doppler tests should be repeated every 6–12 months or earlier if clinically indicated (NICE CKS)
- Patients treated with compression hosiery should be reviewed every 6 months (with repeat Doppler ultrasound if appropriate) to reassess the condition and ensure the person is continuing to wear the stocking correctly and successfully.
- Compression hosiery for the sole prevention of DVT for travellers is not available on NHS prescription and patients should be advised to purchase class 1 below knee stockings or proprietary "flight socks".

## **INTRODUCTION**

Graduated compression hosiery is used to provide compression and support in conditions related to venous insufficiency or oedema (Coull 2005). It exerts the greatest degree of compression at the ankle, and the level of compression gradually decreases up the garment. Graduated compression hosiery is palliative rather than curative, and their use needs to continue for as long as there is evidence for venous disease. In most cases this is lifetime (Nelson 1997).

## **ASSESSMENT**

Compression hosiery should not be applied if there is a history of symptomatic arterial disease.

Before prescribing, the patient should be assessed for the following:-

- Painful cramping in calf muscles after activity, such as walking or climbing stairs (intermittent claudication)
- Leg numbness or weakness
- Sore ischaemic looking toes, feet or legs (Obvious lower limb ischaemia, especially gangrene/ ischaemic ulceration).
- Cold leg and/or foot, especially when compared with the other side
- Absent or difficult to feel foot pulse
- Poor capillary refill (should be less than 2 seconds)
- Drop in pulse oximetry on leg elevation

If any one or more of these is present, arterial insufficiency should be excluded by measuring the ankle-brachial pressure index (ABPI) using a Doppler machine performed by a suitably trained and competent healthcare professional. All patients with chronic venous leg ulcers should have an ABPI performed prior to treatment using a Doppler ultrasound (SIGN 2010).

Dependant on the arterial-brachial pressure index:

<b>ABPI</b>	<b>Comments</b>
Less than 0.5	Severe arterial disease is likely. Compression stockings should not be worn
between 0.5 and 0.8*	No more than light (class 1) compression should be applied. Arterial disease is likely and compression may further compromise arterial blood supply. (if in doubt seek specialist vascular assessment/ advice)
between 0.8-1.3	Compression stockings are safe to wear.
Greater than 1.3	Suspect calcified and incompressible arteries. Consider seeking a specialist vascular assessment. Compression should be avoided.

### **Note**

\*The ABPI tool for diagnosis is a reasonable guide as to the presence of significant peripheral arterial disease but should only be an adjunct to clinical assessment. An easily found palpable foot pulse (found with fingers, not a doppler probe) indicates compression can be used without the need of referral. However, the level of compression must be in line with national and local guidance and taking into consideration the overall clinical assessment.

**It is also important to check the condition of the skin.** Fragile skin may be damaged while trying to put on or take off compression stockings. Ideally, venous ulcers should be healed before using compression stockings. Be aware that if worn incorrectly, compression stocking may cause local pressure on toes or over malleoli, leading to skin necrosis, especially in diabetics.

***The above is guidance only and should not replace clinical judgement.***

### **NICE NG89 Do not offer anti-embolism stockings to people who have:**

- Suspected or proven peripheral arterial disease
- peripheral arterial bypass grafting
- peripheral neuropathy or other causes of sensory impairment
- any local conditions in which anti-embolism stockings may cause damage – for example, fragile 'tissue paper' skin, dermatitis, gangrene or recent skin graft
- known allergy to material of manufacture
- severe leg oedema
- major limb deformity or unusual leg size or shape preventing correct fit.

**Guidelines for the use of compression hosiery**

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**Page 2 of 6**

## TYPES AND INDICATIONS

British Standard Drug Tariff Classification elastic hosiery (BS 6612) was introduced in 1985 and is available on FP10. Three classes are available, with differing levels of compression at the ankle and differing indications for use.

British Class (BS6612:1985)	Compression at the ankle
Class 1* (light compression)	14-17 mmHg
Class 2 (medium compression)	18-24 mmHg
Class 3 (high compression)	25-35 mmHg

\* *Liners (10mmHg) may be an option for patients unable to tolerate class 1 stockings to start with working on the assumption that some compression is better than none. Liners can be layered to provide higher levels of compression (for example a double layer liner stockings amount to class 2 stockings (20mmHg) and some patients may prefer this option)*

The recommended degree of compression (class of stocking) depends on the condition being treated, but should be the highest the person can tolerate.

Indication for use	British Class
Varicose veins (including during pregnancy)	<b>1 or 2</b> depending on the severity of the varicose veins and tolerability 3 for gross varicose veins
Venous eczema, lipodermatosclerosis, atrophie blanche, healed venous leg ulcers (for treatment and prevention)	<b>2</b> Try class 3 stockings if response to class 2 stockings is inadequate Try class 1 stockings if class 2 are not tolerated.
After deep vein thrombosis (DVT) for the prevention of post-thrombotic syndrome	Do not offer elastic graduated compression stockings to prevent post-thrombotic syndrome (PTS) or venous thromboembolism (VTE) recurrence after a proximal DVT.  Compression stockings (class 2-3) may be used for the management of leg symptoms after DVT. The recommended duration is 2 years, however, people with established post-phlebotic symptoms may benefit from ongoing use of compression stocking.
Superficial thrombophlebitis	<b>2</b> Most people find class 2 stockings too painful, class 1 stockings or travel socks are practical alternatives.

European Standard hosiery and garments are also available for the treatment of lymphoedema – these are available in three classes of compression but the level of compression for each class of garment is higher than the equivalent British Standard class.

The following are **NOT available on FP10**:

- Compression hosiery for the sole prevention of DVT for travellers. Patients should be advised to purchase class 1 below knee stockings or proprietary “flight socks”.
- Anti-embolism stocking (TED) stockings, which are used in hospitals to minimise the risk of DVT in immobilised patients. If required these should be supplied through the Community Nursing Team.

## **PRESCRIBING NOTES**

Many brands of hosiery are available; however all are priced at standard drug tariff rates. To avoid confusion, hosiery can be prescribed as generic; “compression hosiery class 1 below knee”. Size need not be selected and as such pharmacists can ensure the patient is measured receives the correct size.

### **Length**

Compression hosiery is available in below knee and thigh length varieties. Below Knee is suitable for most people (CKS). When prescribed for varicosities, the garment should reach the highest level of the varices and extend 5cm above it. Thigh-length stockings should be considered if there are severe varicose veins above the knee or swelling which extends above the knee.

### **Style**

Standard size garments are circular knit. Garments may be fully footed or have open heels or toes. Open toe stockings may be necessary if the person:

- Has arthritic or clawed toes, or fungal infection
- Prefers to wear a sock over the compression stocking
- Has a long foot size compared with their calf size

### **Ongoing prescribing**

- If properly cared for, individual garments should last for at least three months. Two garments (per limb) should therefore last 6 months
- It is recommended that review should take place every 6 months (with repeat Doppler ultrasound if appropriate), therefore it is recommended items do not go on repeat prescription
- Detailed instructions on application are given with garments and community pharmacists are trained in fitting garments. However, in cases where patients have genuine difficulty in application, application aids are available on prescription

## **MEASURING AND SELECTING THE CORRECT SIZE OF HOSIERY**

The usefulness of the garment is dependent on the accuracy of limb measurements and the correct selection of garment based on those measurements. If measurements are not stated on the prescription this can be done by community pharmacists who are trained in the measuring and fitting of garments. If this is not possible, the pharmacist will either ask the patient or carer to do the measurements (if capable) or refer patient back to the prescriber.

**Made-to-measure garments are much more expensive than standard size and are seldom needed.** In 95% of cases measurements are likely to fall within the manufacturer’s standard size garments. Where measurements are significantly different to standard size documents, made-to-measure garments should be prescribed..

Patients who may need made to measure hosiery or EU/RAL standard hosiery include patients with:

- Large feet
- Grossly oedematous legs
- Awkward shaped legs
- Wide malleoli measurement

Made-to-measure garments are available in all three British compression classes.

Flatbed knit (made to measure) is required for patients with lymphoedema.

## **HOSIERY ACCESSORIES**

Most garments are manufactured with a more highly elasticated portion at the upper end to keep the hosiery in position. Men prescribed thigh-length garments may be prescribed a suspender belt. Women are ineligible for a prescription of the same.

Where application is an issue (see appendix 1), application aids are available on NHS prescription.

## **References**

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## **Appendix 1– fitting instructions and care of graduated compression hosiery**

### **Fitting and removing hosiery**

The ease of application (and removal) of the hosiery will influence the patient's ability for independence and will influence whether the patient wears them (Dale & Gibson 1992). Hosiery should be fitted without creases or wrinkles.

- The garment should be fitted next to the skin. If required, the leg may be lightly coated with powder
- The patient should remove all sharp objects (e.g. rings and bracelets) and trim long nails on fingers and toes
- The garment should be turned inside-out as far as the heel pouch
- The heel should be laid flat so that the foot may slip in easily and the toes and heel be correctly positioned
- The rest of the garment should be eased over the foot and ankle, ensuring it does not become bunched. The garment may then be gently pulled up the leg, but care should be taken not to damage the garment with fingers or nails.
- Where application remains an issue, application aids are available on prescription which are effective in applying hosiery

Removing hosiery is usually easier than putting it on. The garment should be peeled down as far as the ankle, in effect turning it inside-out. It can then be removed from the leg by pulling the toe portion gently.

Compression stockings should be removed at bedtime, although if impossible, continuous wear time can be extended to a maximum of 7 days

### **Care of hosiery**

- Where manufacturer's instructions are followed, garments should have a useful life of three to six months. Prolonged use may lead to a gradual reduction in the compression exerted and support provided.
- Washing instructions should be followed carefully. Preferably, hosiery should be hand-washed at 40°C, but some garments may be suitable for gentle machine washing with mild detergent. Check individual manufacturer's instructions. Garments should not be wrung out, twisted or tumble dried. They should be dried flat (not hung from a washing line) away from direct heat and when dry should not be ironed.
- Hosiery with ladders or holes should be discarded.
- Provide at least two stockings (or two pairs if used on both legs), so that one can be worn while the other is being washed and dried.

### **How can compliance with compression hosiery be encouraged (CKS)**

- Ensure that the person understands the reasons for wearing compression stockings.
- Ensure that the person has been shown how to put on and take off the stocking. The best time to put stockings on is first thing in the morning, before any leg swelling develops.
- Check that the person is happy with the colour of the stocking. Men often prefer black or other colours, rather than flesh coloured.
- Recommend application of an emollient while the stocking is off, to reduce skin dryness and irritation.
- Ensure that the stocking is a correct fit — if standard sizes are not suitable, the person may need a made-to-measure stocking.
- If the person is having difficulty tolerating the level of compression, try a lighter compression stocking.
- If the person is having difficulty using a thigh-length stocking, consider switching to a below-knee stocking (particularly as thigh-length stockings are not usually necessary).

If the person is having difficulty putting the stocking on, an application aid may be helpful (information about these can be obtained from the manufacturer of the stocking or from specialist services, such as leg ulcer and lymphoedema clinic).