

## GUIDELINES FOR THE USE OF COMPRESSION HOSIERY

- ***Compression hosiery should not be offered to treat varicose veins unless interventional treatment is unsuitable. However compression hosiery should be considered for symptom relief of leg swelling associated with varicose veins during pregnancy. (NICE CG 168)***
- Compression hosiery for the sole prevention of DVT for travellers is not available on NHS prescription and patients should be advised to purchase flight socks for this purpose
- Do not include 'made to measure' on the prescription; the community pharmacy/dispensing practice will endorse the prescription if made to measure hosiery is required. In 95% of cases measurements are likely to fall within the manufacturer's standard size garments
- *It is recommended that 2 stockings (or 2 pairs if used on both legs) are prescribed, so that one can be worn while the other is being washed and dried.*
- *Garments should have a useful life of 3 to 6 months if appropriately cared for.(see washing and care instructions in appendix 1).*
- *It is recommended that compression hosiery is not placed on repeat prescription. Review of the patient every 6 months is recommended and a prescription*
- 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 or K lite spiral figure of 8 bandage
- 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
- 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

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## *East Kent Prescribing Group*

- 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 CK).

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## **INTRODUCTION**

Graduated compression hosiery is used to provide compression and support in conditions related to venous insufficiency or oedema (Coull 2005). Graduated compression garments exert the greatest degree of compression at the ankle, and the level of compression gradually decreases up the garment.

Graduated compression hosiery can be prescribed for the following indications (Prescription Pricing Division 2008). *However NICE recommend that compression hosiery is not offered for varicose veins unless interventional treatment is unsuitable.*

*In pregnancy, NICE recommend considering compression hosiery for symptom relief of leg swelling associated with varicose veins.*

**Class 1** stockings (compression at the ankle 14–17 mmHg) for:

- Varicose veins during pregnancy

Liners may be an option for patients unable to tolerate class1 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 1 stockings and some patients may prefer this option)

**Class 2** stockings (compression at the ankle 18–24 mmHg) for:

- Mild oedema
- Varicose veins during pregnancy
- Orthostatic hypotension (full length preferred). Some patients can reduce to class 1 , especially if other interventions at the same time.

**Class 3** stockings (compression at the ankle 25–35 mmHg) for:

- Post-thrombotic venous insufficiency
- Gross oedema
- Treatment of, and prevention of the recurrence of, leg ulcers
- Orthostatic hypotension if class 2 not effective

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. If in doubt, Doppler ultrasound should be performed by a suitably trained and competent healthcare professional. Before prescribing compression hosiery therefore the patient should be assessed for the following:-

- Painful cramping in calf muscles after activity, such as walking or climbing stairs (intermittent claudication) (see Edinburgh Claudication Questionnaire for more information on diagnosis – appendix 2)
- 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
- If there is at least one 'foot pulse' (not 'peripheral pulse') then compression can be used
- Poor capillary refill – should be less than 2 seconds
- Drop in pulse oximetry on leg elevation

An ABPI should be requested if any one of these is present.

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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:

- ABPI less than 0.5: compression stockings should not be worn, as severe arterial disease is likely.
- ABPI between 0.5 and 0.8: no more than light (class 1) compression should be applied, as arterial disease is likely and compression may further compromise arterial blood supply.
- ABPI greater than 0.8: compression stockings are safe to wear.
- ABPI greater than 1.3: compression should be avoided, as high ABPI values may be due to calcified and incompressible arteries.

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

## **Contra-indications to use are (NICE CG92)**

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

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.

Anti-embolism stocking (TED) stockings, which are often used in hospitals to minimise the risk of DVT in immobilised patients, are not prescribable on FP10.

Compression hosiery is available in below knee and thigh length varieties. Below Knee is suitable for most people (CKS). 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

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.

## **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.

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

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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. Most patients do not require thigh-length stockings.

- 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

Patients who may need made to measure hosiery includes patients with:

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

Flatbed knit is required for patients with lymphoedema

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

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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, 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 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 clinics).