Compression Hosiery Guidance

Chronic oedema/Lymphoedema

Oedema can result from cardiac failure, renal failure, obesity, dependent limbs, vascular disease or arterial disease. Lymphoedema is specifically a result of an impaired lymphatic system and the swelling, more commonly in a limb, can develop anywhere in the body. All oedema may benefit from compression hosiery.

1. Knowledge level of professional assessing for hosiery
   Before undertaking an assessment, a Healthcare Professional should have knowledge of the:
   - Different types of hosiery and aids to help application
   - Underlying principles of the use of compression so they are able to explain to a patient
   - Different levels of compression - risks and benefits
   - Vascular assessment to be undertaken and their frequency

2. Assessment
   All individuals require appropriate assessment. This should include:
   - Medical history
   - Hosiery history
   - Diagnostic test results including vascular/Doppler assessment. Arterial insufficiency must be excluded prior to considering compression hosiery.
   - Skin condition and allergies

   Holistic Assessment and Re-Assessment
   Patients who have compression hosiery without ulcers should have an annual vascular assessment that includes Doppler according to the level of risk.

   Risk stratification for re-assessment* Annual
   - No cellulitis
   - Limited or well-controlled comorbidities
   - Healed ulcer (no recurrence in 12 months)
   - Stable oedema
   - Fully concordant, no reported problems with hosiery
   - ABPI >0.9 6-monthly
   - Lower-leg infection, even if it has been resolved
   - Diagnosed with new disease/comorbidity
   - History of recurrent lower limb problems
   - Multiple morbidities on an established regimen 3-monthly
   - History of non-concordance
   - Repeated poor fit
   - Increasing oedema
   - Skin breakdown/ulceration
   - Rapidly changing medical condition (e.g. palliative)

   *Expedite new assessment if there is increased oedema, lower-leg pain or new ulceration


   NB. Patients with a reducing Ankle Brachial Pressure Index should be closely monitored.
   In diabetes, ABPI may be elevated due to calcification.
   If ABPI is less than 0.8 but above 0.5 Compression should be used only under specialist advice

3. Product selection - by size of limb
   - Accurate measurement of the leg is essential before product selection. Limb should be as free from oedema as possible prior to using hosiery (compression bandaging may be required first).
   - Ideal time to obtain measurement is early morning or immediately after removing compression bandaging (when the limb is at its thinnest).
   - Made to measure hosiery should only be used if none of the over the counter brands fit, or the limb shape precludes over the counter hosiery.
4. Product selection - factors other than limb size

- Hosiery selection should consider materials and not be solely the size or shape of limb
- Product may be influenced by patient choice
- Practitioner should have the knowledge and understanding to be able to explain to patients the rationale for choosing between flat knit, circular knit and custom made in order to recommend the most appropriate hosiery.
  Circular-knitted products have no seam and are ideally suited for venous therapy.
  Flat-knitted products are recommended for use in the areas of lymph therapy, oedema and scar treatment, where they provide efficient compression therapy:
- Consider if hosiery is required for each leg, and prescribe the correct number of items required. If the unaffected leg is at risk of oedema, then hosiery should be supplied for both legs.

5. Fitting

Once the hosiery is available the practitioner should:

- Check the fitting of the delivered compression hosiery matches the product selected/prescribed/recommended by the assessing practitioner
- Check whether the patient is able to apply the hosiery themselves (with or without aids)
- Instruct the patient on the care of the hosiery.
- Review newly fitted hosiery one week after fitting
- Replace compression hosiery with any defect or damage
- Inform the patient both, when and for how long the compression hosiery should be worn.
  See pg 7 other useful information

6. Review

In most cases it is recommended that compression hosiery be re-measured and replaced every 3-6 months. (NICE 2012). Re-measure if there is any subsequent change in limb size. Consider using a key measurement chart (as shown in Appendices) for consistency.

Effectiveness should also be assessed at these reviews and compression or brand changed if necessary.

Skin assessment prior to prescribing compression hosiery

Check the condition of the skin:

Fragile skin may be damaged while trying to put on or take off compression hosiery. Consider whether the person is likely to be able to manage compression hosiery. Conditions such as arthritis, especially in older people, may make it difficult for the person to put on or take off hosiery.

If the person is having difficulty putting the hosiery on, an application aid may be helpful (information attached). These products should not be added to repeat prescription.

Severely swollen legs may first require a period of compression bandaging to reduce oedema.

How do I decide on the strength of compression?

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:

There are two measurements used:

(1) RAL
(2) British Standard

RAL standard hosiery is the gold standard treatment for oedema

<table>
<thead>
<tr>
<th>RAL Class 1</th>
<th>18-21mmHg</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAL Class 2</td>
<td>23-32mmHg</td>
</tr>
<tr>
<td>RAL Class 3</td>
<td>34-46mmHg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>British Standard Class 1</th>
<th>14-17 mmHg</th>
</tr>
</thead>
<tbody>
<tr>
<td>British Standard Class 2</td>
<td>18-24 mmHg</td>
</tr>
<tr>
<td>British Standard Class 3</td>
<td>25-35 mmHg</td>
</tr>
</tbody>
</table>
Compression Hosiery - Pressure Comparison Chart

<table>
<thead>
<tr>
<th>mmHg</th>
<th>10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAL Standard</td>
<td>class 1</td>
</tr>
<tr>
<td>British Standard</td>
<td>class 1</td>
</tr>
<tr>
<td>French Standard</td>
<td>class 1</td>
</tr>
</tbody>
</table>

How do I choose between below knee and thigh length?

Below-knee compression hosiery are the preferred choice in most people. Consider thigh-length hosiery in people with severe varicose veins above the knee or who have swelling that extends above the knee. Some patients with arthritis or oedema in the knee are also unable to manage below knee hosiery.

Below-knee compression is preferred because:

It is better tolerated than thigh-length compression, resulting in improved compliance. Below-knee hosiery improve the action of the calf-muscle pump, thereby improving venous return from the leg even if venous disease affects the proximal part of the leg. Most randomized controlled trials have used below-knee hosiery for a detailed discussion of the evidence for compression hosiery, see the CKS (Clinical knowledge summaries compression topic on the particular condition being treated).

If using thigh length hosiery always order a grip top unless the patient has sensitivities/ allergies.

How do I choose between open and closed toe?

The choice mainly depends on the person’s preference. Open toe hosiery may be preferred for people who:

1. Have arthritic or clawed toes, or fungal toe or nail infection for comfort
2. Prefer to wear a sock over the compression hosiery
3. Have a long foot size compared with their calf size

Measuring

Accurate measurement of the limb is essential before product selection. Limb should be as free from oedema as possible prior to measuring for hosiery (compression bandaging or wrap systems may be required first).

Compression wraps can be applied by any qualified nurse who has had the training in that wrap system and understands the underlying principles of compression. Correct patient selection is required, ensuring the patient has the understanding and dexterity to apply the product. All wrap systems need to be checked on each dressing change for correct fit as a reduction in oedema can happen quickly. Products need to be reordered or refitted as appropriate.
Please follow individual manufacturers measuring instructions

Ideally measurements should be taken first thing in the morning, before any leg swelling occurs.

In community pharmacy, If the patient cannot get to the pharmacy to be measured, the pharmacy will either ask the person or carer to do the measurements (if capable) on a pre-printed measurement form, which they fill in with their measurements at home and return back to the pharmacy.

The measurements that need to be taken vary depending on the manufacturer, but in general the following measurements need to be obtained. (With the person seated, and feet flat on the floor): for below knee hosiery measure A-d and for thigh length measure A-g

Leg Measurement Guide Chart

- Lengths
  - All length measurements should be taken straight with the patient lying down or sitting (up to f) and standing for thigh-high and panty garments.
  - Inside leg
  - A - g
  - A - d

- Circumferences
  - g is the position you would like the garment to finish when measuring for thigh length garments
  - f mid-thigh
  - d Approximately 3cm or 2 finger widths below the popliteal crease
  - c The largest girth of the calf
  - b is approx 2cm above the malleolus
  - A The floor

Compression hosiery come in several ready-made sizes. (Described as ‘standard stock’ on Emis).

If the patient takes the prescription to the pharmacy, most pharmacies will carry out the measurements and ensure the correct size is ordered.

Pharmacists can claim a payment for carrying out leg measurements when dispensing compression hosiery. If hosiery are to be worn on both legs, the manufacturers recommend that each leg should be measured to exclude a significant discrepancy in size (in which case, two differently sized hosiery will need to be ordered).
Prescribing of Compression Hosiery

EMIS description for hosiery was previously ‘graduated compression’, but is now just ‘compression.’
(If you have a preferred brand, such as Medi, enter it into the EMIS search.)

On the EMIS system in patient medication screen, from add drug tab, type into the search bar - compression (or brand).

And if it is below knee or thigh.
If the knit type is specified, select this as well as it is important that the patient receives the right type of knit for their condition.

Circular-knitted products have no seam and are ideally suited for venous therapy.
Flat-knitted products are recommended for use in the areas of lymph therapy, oedema and scar treatment, where they provide efficient compression therapy:

Check the description states ‘stock’, and not ‘made to measure’ (unless required).

**COMPRESSION HOSIERY SHOULD NOT BE ON A REPEAT PRESCRIPTION**

Non-prescription items

Compression hosiery for the sole prevention of DVT for flight travel purposes is NOT available on NHS prescription and patients should be advised to purchase class 1 below knee hosiery or proprietary “flight socks”.

Anti-embolism hosiery (TED) hosiery, which are often used in hospitals to minimise the risk of DVT in immobilised patients, are not to be prescribed on an NHS (FP10) prescription.

Made to Measure

How do I prescribe made-to-measure hosiery, if required?

Occasionally, ready-made hosiery are not suitable and a custom-made stocking will be required, especially if the person has a misshapen limb or if a correctly sized ‘standard stock’ hosiery cannot be obtained from limb measurements.

These are classed as made to measure and are made specially to fit the patient’s limb. They usually take 2-3 weeks to manufacture and will cost significantly more.

Select ‘Compression’ ‘made to measure’ in the EMIS description. Add any other description required e.g. colour.

The pharmacist will complete a manufacturer’s order form, which specifies the required measurements. If the pharmacist cannot take the measurements, the person may be given the form to be completed by a member of the primary healthcare team.

Community nursing teams may be able to order directly from the manufacturer.
As with ready-made hosiery, if the leg is swollen, measurements are best taken first thing in the morning or after a period of compression bandaging.

Made-to-measure hosiery requires many more measurements to be taken than ready-made hosiery
The measurement requirements will vary depending on the manufacturer of the hosiery.
Other useful information

Basis for recommendation
Extended wearing of compression hosiery is often poorly tolerated, can lead to poor condition of the skin (dryness in particular), and prevents regular application of emollients and other topical treatments (e.g. topical steroids for the treatment of venous eczema). However, extended wear time may be needed for people who need assistance putting their hosiery back on (e.g. by a carer or healthcare professional who can visit only occasionally).

How often should hosiery be replaced?
Compression hosiery should be replaced every 3–6 months. (Compression is guaranteed for 3 months for British Standard, and 6 months for RAL standard).
Provide two hosiery (or two pairs if used on both legs), so that one can be worn while the other is being washed and dried.
The hosiery should be replaced earlier if any defects or damage become apparent or, if on stretching, the hosiery does not return to its original shape.
Ideally, each time a hosiery is replaced, the leg should be re-measured.
The life of the hosiery can be prolonged by correct washing. Hosiery should be washed according to manufacturer’s instructions at about 40°C and dried away from direct heat.

Should hosiery be removed at bedtime?
Compression hosiery should be taken off at bedtime and put back on first thing in the morning (before any leg swelling develops or worsens).

How frequently should a person be reviewed?
Following initial prescription, the clinician needs to be assured that the patient has all the information on the care of the legs and hosiery and the patient needs to be able to apply and remove the hosiery before the patient is discharged.
Patient needs to then have an appointment 3 months later for review.
At this review, a holistic assessment should be carried out and the patient re-measured.
If everything is satisfactory then the following review should be at 6 months, then 12 months.
Patient should be risk assessed for timing of further review and expedite new assessment if increased oedema, lower leg pain or new ulceration.

How can I encourage compliance with wearing hosiery?
Reassess the condition for which the hosiery is being prescribed.
Ensure that the person is continuing to wear the hosiery successfully and is replacing them regularly.
Ensure that the person understands the reasons for wearing compression hosiery.
Ensure that the person has been shown how to put on and take off the hosiery. The best time to put hosiery on is first thing in the morning, before any leg swelling develops.
Check that the person is happy with the colour of the hosiery. Men often prefer black or other colours, rather than flesh coloured.

Recommend application of an emollient at night when the hosiery is removed, to reduce skin dryness and irritation.
Ensure that the hosiery is still a correct fit.
If the person is having difficulty tolerating the level of compression, try a lighter compression hosiery.
If the person is having difficulty using a thigh-length hosiery, consider switching to a below-knee hosiery (particularly as thigh-length hosiery are not usually necessary).
If the person is having difficulty applying compression hosiery, consider a wrap system as an alternative.
Arm Hosiery

Arm oedema, or lymphoedema, usually (but not always) occurs following treatment for cancer, and will therefore likely be unilateral.

Arm sleeves follow the same rules as leg hosiery with regard to compression classes (Class 1 & 2 only). RAL standard is preferable. Sleeves can incorporate a hand piece (often referred to as a mitt) and these should always be used if the patient has noticed hand swelling. Sleeves are available with or without grip tops, always order a grip top unless the patient has sensitivities/ allergies. As with leg hosiery, 2 sleeves should be provided and these should be reviewed & replaced every 6 months.

Some companies produce low compression sleeves for palliative patients.

Circumferences

- **g** Top of the arm where you want the sleeve to finish
- **f** Mid upper arm
- **e** Elbow (ensure the elbow is slightly bent)
- **d** Widest mid forearm
- **c** Wrist. Ideally take this measurement above the ulnar styliod process. This is at the point where the sleeve will start
- **b** Base of the thumb webbing (ensure the thumb is relaxed) and the hand is flat
- **a** Palm at base of fingers

The arm should be well supported with the palm facing up if possible. Take the measurements on the inside of the arm as far as possible.

© Haddenham Healthcare
# RECORD OF MEASUREMENTS TAKEN FOR SUPPLYING LEG GARMENTS

First measure to include lengths of measuring point from floor/ base of foot

## RIGHT LEG

<table>
<thead>
<tr>
<th>Point of circumference</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foot</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ankle eg 10cm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mid calf (widest part)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below knee</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mid thigh (widest part)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top of thigh</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signature</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## LEFT LEG

<table>
<thead>
<tr>
<th>Point of circumference</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foot</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ankle eg 10cm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mid calf (widest part)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below knee</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mid thigh (widest part)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top of thigh</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signature</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## RECORD OF MEASUREMENTS TAKEN FOR SUPPLYING ARM HOSIERY

First measure to include lengths of measuring point from base of middle finger nail

### RIGHT ARM

<table>
<thead>
<tr>
<th>Point of circumference</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wrist eg 18cm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mid forearm Widest point</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elbow</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mid upper arm Widest point</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signature</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### LEFT ARM

<table>
<thead>
<tr>
<th>Point of circumference</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wrist eg 18cm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mid forearm Widest point</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elbow</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mid upper arm Widest point</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signature</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Hosiery recommended by Lymphoedema Team:-

Macmillan Lymphoedema Specialist Practitioner: - 01606 555682
St Luke’s Hospice
Queensway
Winsford
Cheshire
CW7 1BH

In order of preference for Lymphoedema patients

*Off the shelf round knit Arm sleeves*
Medi Harmony or
Sgvaris Advance

*Off the shelf Flat knit Arm sleeves*
Medi Esprit

*Made to measure Armsleeves*
Juzo Expert

*Off the shelf leg hosiery*
Round knit
Medi Elegance
Mediven Plus

Sigvaris James (men’s socks, can be used for women)

*Flat knit*
Haddenham Pertex/Pertex light

*Made to measure leg hosiery*
Juzo Expert

*Palliative patients*
Duomed soft

Applicators all available on FP10

Easyslide for open toe garments/sleeves
ACTi glide for closed toe garments
Sigvaris Rolly for open and closed toe hosiery & sleeves

Please contact individual companies for advice & training on measuring & ordering

Non-lymphoedema patients
There are other brands available through the pharmacy