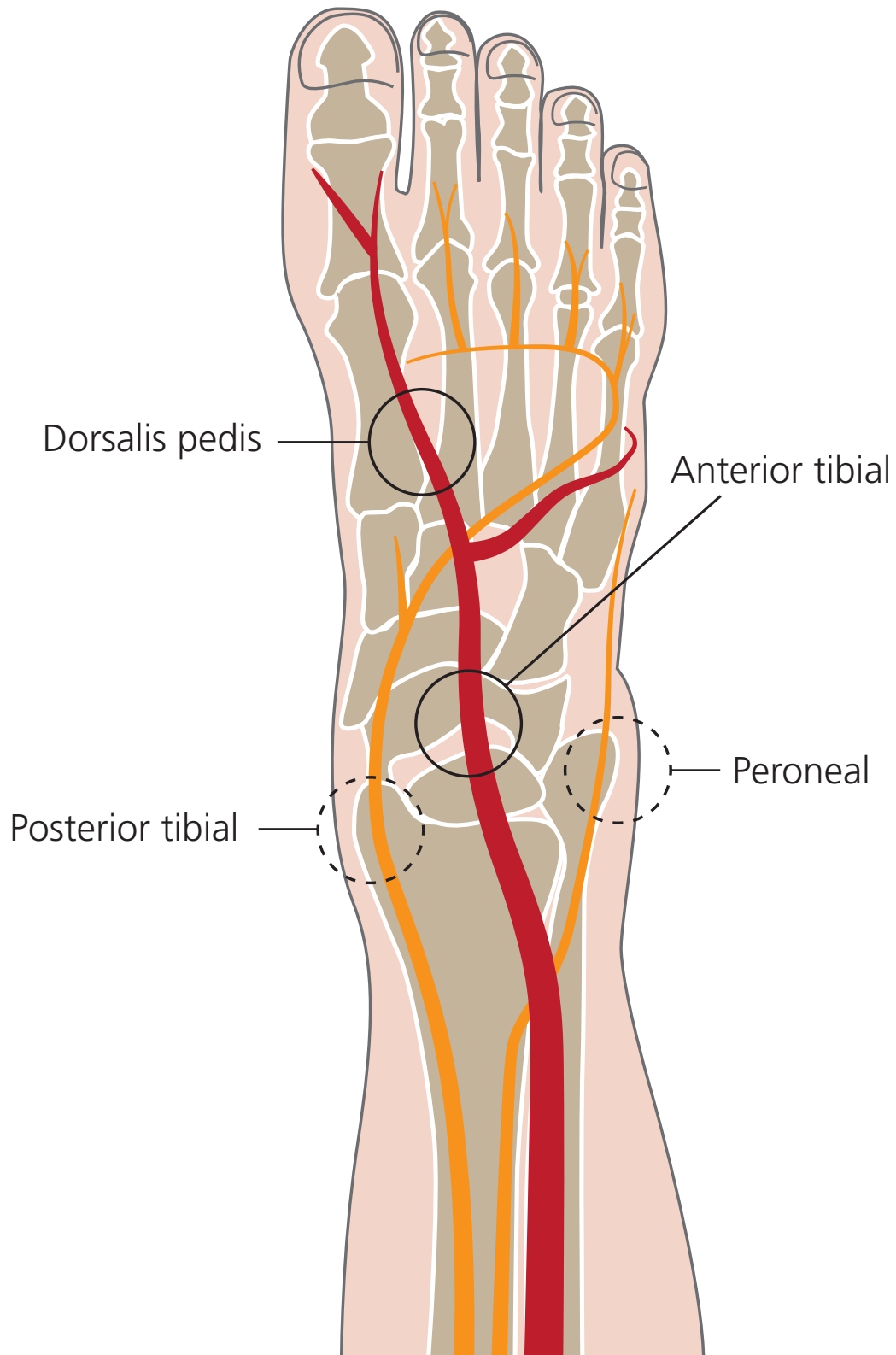


# Insert A

## Arteries in the foot



## Insert B

# Doppler Procedure

### 1. Prepare the patient

- Reassure and make comfortable
- Lie flat with one to two pillows (if this is impossible the patient should be as flat as possible)
- Rest for 10-15 minutes
- Ensure extremities are kept warm

### 2. Measure brachial pressures twice

- Secure cuff off above the elbow
- Liberally apply ultrasound gel over brachial pulse
- Position and angle the Doppler probe 45-60 degrees over brachial pulse until arterial signal is heard
- Pump up cuff until Doppler signal disappears, then slowly release the pressure until the signal returns. THIS IS BRACHIAL SYSTOLIC PRESSURE.
- Repeat on the other arm

### 3. Examine the foot for posterior tibial and dorsalis pedis pulses using finger or Doppler probe

### 4. Measure ankle pressures twice

- Secure the cuff with the lower edge just above the malleolus. If the ulcer is in this area it may be covered with a sterile towel.
- Liberally apply ultrasound gel over the posterior tibial or dorsalis pedis pulse
- Position and angle the Doppler probe 45-60 degrees over posterior tibial or dorsalis pedis pulse until arterial signal is heard
- Pump up cuff until Doppler signal disappears, then slowly release the pressure until the signal returns . THIS IS THE ANKLE SYSTOLIC PRESSURE
- Repeat on the other side obtain a reading from both arteries

### 5. Repeat a brachial pressure measurement to check that the pressures have not changed significantly

### 6. Calculate the ankle brachial pressure indices by dividing the highest ankle pressure by the highest brachial pressure.

$$\text{i.e. ABPI} = \frac{\text{ANKLE SYSTOLIC PRESSURE}}{\text{BRACHIAL SYSTOLIC PRESSURE}}$$

Example: ankle = 120 divided by brachial = 140 gives ABPI of 0.85

## Insert C

# Measuring a wound

An essential part of weekly wound assessment is measuring the wound. It is important to use a consistent technique every time the wound is measured. The measurement technique used in Southern Health NHS Trust is linear measurement, also known as the “clock” method. In this technique, the longest length, greatest width, and greatest depth of the wound, use the body as the face of an imaginary clock. Document the longest length using the face of the clock over the wound bed, and then measure the greatest width. On the feet, the heels are always at 12 o'clock and the toes are always 6 o'clock. Document all measurements in millimetres, as L x W x D. Remember—sometimes length is smaller than width.

### When measuring length:

- the head is always at 12 o'clock
- the feet are always at 6 o'clock
- your ruler should be placed over the wound on the longest length using the clock face.

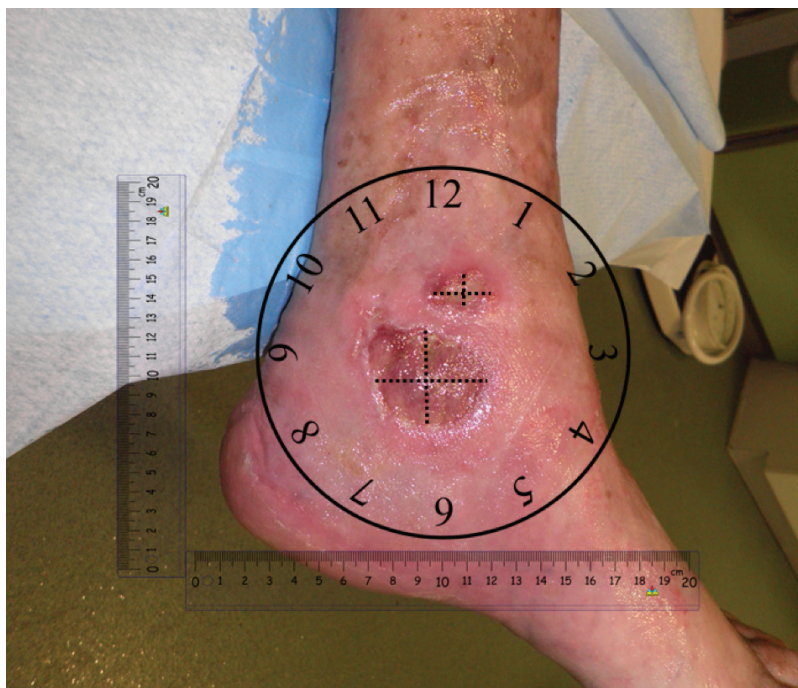
### When measuring width:

- measure perpendicular to the length, using the widest width
- place your ruler over the widest aspect of the wound and measure from 3 o'clock to 9 o'clock.

### When measuring depth:

- Gently place a wound probe into the deepest part of the wound bed and document the depth.

Morgan, N. (2012) Measuring wounds Wound Care Advisor found on the internet at:  
<https://woundcareadvisor.com/blog/measuring-wounds/> accessed 8 May 2017



## Insert D

### Tips for photographing wounds

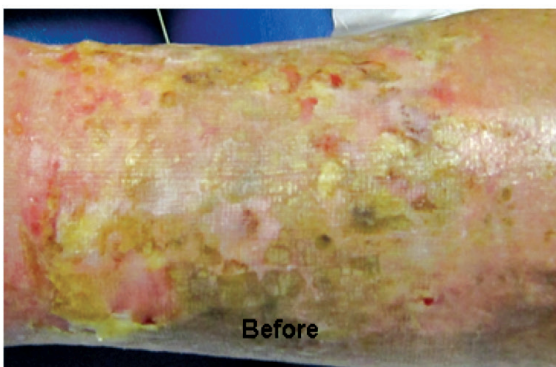
1. Use a digital camera/phone owned by your place of work
2. Set the time and date on the camera
3. Get the light right – ensuring flash is on
4. Include patient data in the first photograph (name/identification number, date of birth, location and brief clinical history) to help identify images (ensuring that appropriate patient consent has been obtained and documented)
5. Make the wound the focus – remove clutter from background and use a plain backdrop where possible
6. Standardise the views taken of the wound each time you assess and record
7. Get the angle right to record proportions accurately – the camera body should be parallel to the subject
8. Establish the wound location on the patient's limb
9. Use close-up images to establish detail, placing a ruler near the wound to give an accurate indication of size also take a perspective shoot to establish location
10. Do not include patients face
11. Securely save and store the images

## Insert E

## Step by step guide to leg care



- Line the bowls with plastic bags and half fill with warm water
- Add a cap full of emollient to the water, to soften any old residual build up of emollient and any dead skin. Ensure emollient is thoroughly dispersed in the water
- The patient should be sat in a chair which will enable their feet to reach the bowls easily
- Place absorbent sheets on the floor under the bowls to soak up any spills
- Place the patients feet into separate bowls for a soak
- Wash the legs with a disposable cloth, removing any build up of old emollient and dead skin
- After the legs have had a soak, dry with either sterile towel or if in the patients home with a clean towel
- Remove any loose skin and old emollient build up by gentle debridement with a monofilament fibre pad or disposable plastic forceps
- Apply emollient in a downward motion



## Insert F

# Differentiating between cellulitis and venous disease

Cellulitis	Venous disease/Eczema
May have pyrexia, general malaise	No pyrexia
Location: anywhere	Location: often lower third of legs, common on superior/medial malleolus
Painful	May be painful, but pain often not acute
Inflamed erythema to specific location	Discolouration around gaiter region
Bright red in colour (shades/intensity may differ between dark/pale skin)	Red/brown, hyperpigmentation that can appear inflamed when acute
Clearly defined edges	No sharp defined edges
Tender to touch	Minimal tenderness
Warmth to skin	Minimal/no warmth of skin
Skin can resemble orange peel	Skin may have 'wooden' appearance, with fibrosis scaly plaques. Itching common
No crusting	Crusting can be present, especially with venous eczema
Oedema to the surrounding skin, often resulting in elimination of fine wrinkles or causing fibrosis	General lower limb oedema
May have portal of entry (e.g. ulceration, tinea pedis, trauma)	May have visible varicose veins
White cell count, erythrocyte sedimentation rate and C-reactive protein (CRP) may be raised	No change in white cell count. If ulceration CRP may be raised
Unilateral	Can be unilateral – commonly bilateral
Rapid onset	Symptoms develop over weeks and months

### Leg Ulcer Prevention: Tinea Pedis

Tinea pedis is a common fungal infection of the foot most commonly known as Athletes foot

Bacteria and fungi live naturally on the skin. If these multiply your skin can become infected. A group of fungi called Dermatophytes are responsible for athletes' foot, they live in and feed off dead skin cells. Feet provide a warm, dark and humid environment which is ideal for fungi to live and multiply.

### Symptoms often include:

Itchiness, red, scaly, flaky skin, dryness or thick white discharge between the toes

Complications include:

Fungal nail infections

Bacterial infection

Cellulitis

### Treatment:

Topical antifungal treatment

Terbinafine

Clotrimazole

Econazole

Wash feet and toes regularly and thoroughly. Ensure feet are dried well.

## Insert G

## Cortico-Topical Steroids

Characteristic	Action
Venous/varicose/stasis/Gravitational eczema	
Mild manifestation	Treat with skin cleansing process and bland emollient therapy in conjunction with adequate compression (if appropriate). Alleviates/reduces dryness and itching.
Mild to moderate	Continue with cleansing process and consider commencement of moderate potency topical therapy steroid for a measured course under medical direction and reduce frequency of application slowly in order to avoid rebound of symptoms. Use ointment base rather than creams as more penetrating and less sensitizing. Continue with compression if tolerated.
Severe and/or infected varicose eczema	<p>Commence cleansing process and moderate to potent steroid therapy under medical direction as above.</p> <p>Consider preparations with an antibiotic component included, e.g. Fucibet/Trimovate.</p> <p>Restricting the course to no longer than 2 weeks, changing to a mild to moderate potency in a reducing dose for a measured course. Crusting eczema is an indicator of infection present.</p> <p>Consider applying paste bandage containing ichthammol to soothe.</p> <p>Consider Potassium Permanganate soak, 1/8,000 parts for measured short term use to 'dry' leg.</p> <p>Discontinue and referral to Dermatology department if fails to resolve in 2-4 weeks maximum (Cameron, 1997)</p>
Contact dermatitis	<p>Localised 'reaction' to a suspected allergen, e.g. exudate, dressing, jewellery, bandage, hosiery product.</p> <p>Remove suspected allergen and treat with appropriate topical steroid if necessary. Refer for patch testing to Dermatology. (Cameron, 2004)</p>

# Insert H

# Leg Ulcer Management

## Leg Ulcer Management Pathway

ABPI = Ankle Brachial Pressure Index  
TVN = Tissue Viability Nurse

### Start

Patient presents with a wound to the lower leg.

Record activity on electronic records as appropriate.

### Week 0-2

Refer all mobile patients to Leg Ulcer Clinic or Practice Nurse. House bound patients to Integrated Care Teams.

At initial contact if no arterial and PVD risk factors identified (see box below) apply primary dressing and 14-17mmHg hosiery. If arterial and PVD risk factors present and/or leg ulcer not healing with 14-17mmHg hosiery perform full leg ulcer assessment within 2 weeks.

Record leg ulcer assessment electronically.  
Instigate wound assessment form electronically

### Consider referring all recurrent ulcers for vascular assessment

#### Arterial and Peripheral Vascular Disease (PVD) risk factors

- Smokes
- Intermittent claudication
- Pain on rest/elevating limbs
- Myocardial infraction, Angina, Ischemic Heart Disease, Transient Ischaemic Attack, Cerebrovascular accident
- Rheumatoid arthritis and/or active vasculitis
- Diabetes
- Reduced or absent sensation to feet (neuropathy)
- Signs of limb/foot ischaemia and/or known peripheral arterial disease

### Diagnosis

**ABPI 0.8 - 1.3**  
Biphasic / triphasic pulses

**ABPI 0.8 - 1.3**  
Monophasic pulses

**ABPI 0.6 and below**

**ABPI 0.6 - 0.8**  
**ABPI greater than 1.3**  
Incompressible arteries  
Biphasic/ monophasic sounds  
With or without Arterial and Peripheral risk factors

### Treatment

**Education**  
Commence full compression  
If limb not distorted, no reducible oedema present and exudate controlled within primary dressing, use compression hosiery. Otherwise use compression bandages and assess for hosiery at each dressing change

**Education**  
Consider reduced compression  
If limb not distorted, no reducible oedema present and exudate controlled within primary dressing use compression hosiery. Otherwise use compression bandages and assess for hosiery at each dressing change

**Education**  
Arrange referral for Vascular assessment  
Dress wound as Wound Care Formulary  
**NO COMPRESSION**

**Education**  
Refer to TVN or nurse with appropriate competencies to consider for reduced compression hosiery or bandages

### Outcome 4-8 weeks

**Ulcer heals**  
Education  
Prevention of recurrence  
Hosiery as Well Leg Pathway

**Record healed status on wound assessment form**

**At 4 - 6 weeks if less than 30-40% healing**  
Refer to link nurse or TVN

**If wound continues to be non-healing at 8 weeks**  
Refer to TVN

**Other reasons for TV /link nurse referral**  
Unable to tolerate compression  
Allergy  
Repeated infection  
No response to treatment at 8 weeks.

### Outcome 12 weeks

**Ulcer heals**  
Education  
Prevention of recurrence  
Hosiery as Well Leg Pathway

**Record healed status on wound assessment form**

**Ulcer continues to be non healing**  
Consider for vascular referral

**Record wound status at each visit and complete assessment weekly or if significant change to wound.**



## Insert 1

# Hosiery application and the use of application aids

### Application of Hosiery when fitted by the Patient or Carer



1 and 2



3



4



5



6



7

### Follow these simple steps

**STEPS 1 and 2** – slip your hand down the inside of the stocking. Gently grasp the heel area and pull the stocking inside out. This will leave the toe region tucked in.

**STEP 3** – fold back the edge about an inch /3cm

**STEP 4** – you can easily slip the toes into the front of the stocking comfortably.

**STEP 5** – Gently pull the rest of the stocking over the foot, heel and ankle.

**STEP 6** – continue to pull the stocking up the leg in stages. Blow knee stockings have to be pulled up to the bend at the back of the knee. A thigh length stocking has to be pulled up to the middle section of the thigh.

**STEP 7** – Make sure that the toes are NOT restricted.

**TO REMOVE** – hosiery should be peeled off gently. DO NOT roll the stocking to remove.

## Insert J

# Deep breathing and ankle exercises

We know from research that exercise can improve the movement of the lymph fluid through the lymphatic system. This can help to reduce swelling, because exercise makes the muscles contract and push lymph through the lymph vessels.

Try to do some exercise every day. Think about how you can build into your daily routine. You're much more likely to carry on doing exercise if it becomes a normal part of your day.

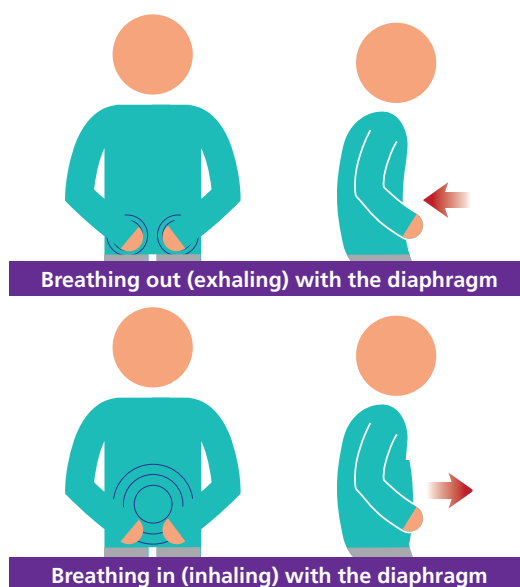
## Deep Breathing Exercises

Deep breathing is helpful for all types of leg ulceration and swelling to the lower limbs. It works by changing the pressure in your abdomen and chest, which encourages lymph to flow back into the blood.

### Deep breathing can also help you to relax

You can do these breathing exercises while sitting up in a chair or in bed, or while lying down.

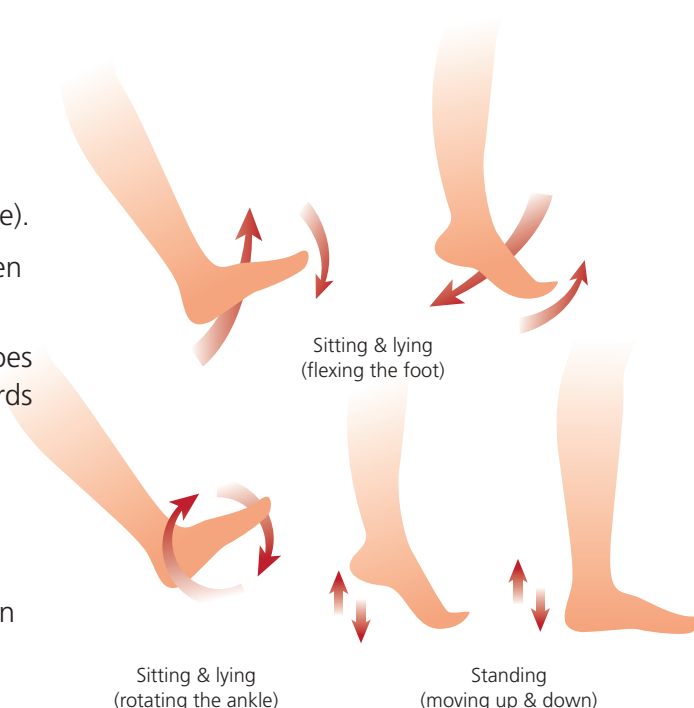
- Relax your shoulders and upper chest
- Take a slow, deep comfortable breath in and hold it for a couple of seconds
- Slowly breathe out. Do this 10 times



## Foot and leg exercises

Sit comfortably in a chair. You can do the exercises while watching television. Try to do them twice a day. Start with some deep breathing (there are tips further up this page).

- With bare feet, curl your toes up and then stretch them out - repeat 10 times.
- With your heel on the floor point your toes away from you then pull your toes towards your chin - repeat 10 times.
- Lift your foot off the floor then circle your ankle clockwise 10 times, then anticlockwise 10 times.
- Lift your foot off the floor then straighten and bend your leg - repeat 10 times.



# Insert K

## Lower Limb Arterial Risk Assessment

Complete this risk assessment at each Doppler review to determine frequency of ABPI.

Date		Assessor	
Patient Name:		NHS No:	DOB:
<b>The lower limb arterial risk should be carried out as part of a holistic assessment</b>			
<b>Patients with non-healing or deteriorating ulceration must have a Doppler reassessment as soon as possible</b>			
<b>HIGH RISK</b>	<b>MEDIUM RISK</b>		<b>LOW RISK</b>
Deemed high risk if any ONE risk factor identified	With accompanying ticks of 2 or more		ALL the criteria listed below MUST be present
Review 3 – 6 monthly depending on clinical judgement	Review 6 monthly		Review annually
ABPI less than 0.80 or greater than 1.3			
Diabetes	History of Angioplasty/ bypass in lower limb/s	Good Cognitive Ability	
Known Peripheral Arterial Disease (PAD) e.g. Raynaud's disease	Inflammatory Conditions, e.g. Rheumatoid Arthritis, Lupus, etc.	0-1 ticks in the medium factor column	
Intermittent Claudication and/or rest pain	Learning needs/cognitive impairment/drug/alcohol dependency/mental illness		
Unilateral amputee due to PAD/Diabetes	Chronic kidney disease stage 4 and above		
Reducing ABPI's from last reviews	Cerebral Vascular Accident (CVA)		
Active leg ulceration	Reduced mobility		
	Smoker		
	Cardiac disease		
	Trans-Ischaemic Attack		
	Hypertension		
	Total number of ticks		