

# Clinical Guidance on The Management of Wounds

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## Applicable to

All clinical staff delivering wound care including, registered nurses, health care assistants, nursing associates, assistant practitioners, and allied health care professionals involved in wound management.

## Executive Summary

To ensure that individuals presenting with a wound, receive a comprehensive assessment and appropriate management plan from a registered nurse who is competent in wound management. Additionally, to ensure that non-registered clinicians are confident in reviewing wounds, following treatment/ care plans, and recognising when further assessment from a registered nurse, or escalation is required.

## Implementation

These guidelines will assist clinical staff to ensure patient's receive effective care in wound management. They should be used alongside the Lower Limb Guidelines, the Pressure Injury Policy, the wound management formulary, and the Minute for Wounds (MfW) Standard Operating Procedure.

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## Consultation Process

### Key individuals involved in developing the document

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### Circulated to the following Committee for Ratification

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Quality Governance Group	30/07/24

### Version Control

Version	Updated By	Updated On	Summary of changes from previous version
1	Bethany Head	July 2024	New guidelines
1.1	Bethany Head	November 2024	Slight amendment to page 18 – Antimicrobial Dressings

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## Introduction

The National Health Service (NHS) managed an estimated 3.8 million patients with a wound in 2017/18 (Guest et al, 2020). This equates to a 71% increase in the annual prevalence of wounds between 2012/13 and 2017/18.

The total annual NHS cost of wound care has overtaken that of obesity and was found to be approaching the combined NHS cost of managing osteo and rheumatoid arthritis, which was reported to be £10.2 billion in 2017 (Woolf, 2018). Annual levels of resource use attributable to wound management included 54.4 million district/community nurse visits, 53.6 million healthcare assistant visits and 28.1 million practice nurse visits. The annual NHS cost of wound management was £8.3 billion, of which £2.7 billion and £5.6 billion were associated with managing healed and unhealed wounds, respectively. Eighty-one per cent of the total annual NHS cost was incurred in the community (Guest et al, 2020).

Wound management is predominantly a nurse-led discipline. Patients should receive consistent and integrated care from clinicians with qualified experience in wound care, including holistic assessments allowing coordinated management of any comorbidities which may impact on wound healing.

## Definition of a wound

A wound by true definition is a breakdown in the protective function of the skin; the loss of continuity of epithelium, with or without loss of underlying connective tissue (i.e. muscle, bone, nerves) following injury to the skin or underlying tissues/ organs caused by surgery, a blow, a cut, chemicals, heat/ cold, friction/ shear force, pressure or as a result of disease, such as leg ulcers or carcinomas (Wounds UK 2013).

### Acute Wounds

Acute wounds occur as a result of surgery or trauma. They move through the stages of healing within the predicted time-frame (Lazarus et al, 1994). An acute wound becomes a chronic wound when it does not follow the correct healing stages, resulting in a lengthened recovery. Examples include: Burns, traumatic wounds, surgical wounds.

### Chronic Wounds/ Hard to Heal Wounds

All chronic wounds begin as acute wounds. An acute wound becomes a chronic wound when it does not follow the correct healing process, generally due to the presence of underlying pathology and persistent state of inflammation, resulting in a lengthened recovery (Mustoe, et al, 2006). Examples include: Leg ulcers, pressure injuries, diabetic foot ulcers.

## Wound type, aetiology and onwards referral

Wound type and cause/ aetiology should be identified to ensure the correct treatment pathway is commenced. E.g., A venous leg ulcer caused by venous hypertension needs treatment of the underlying venous hypertension. Or pressure injury caused by pressure needs the appropriate equipment and repositioning. Reference should always be made to appropriate Sirona Care and Health policy/ guidance.

## Diabetic Foot Ulcers

For assessment and management of the diabetic foot including all patients with a wound on the foot who are diabetic, patients must be referred to Podiatry for their assessment and input. Referrals can be made via GP referral or e-referral using proforma obtained from the Remedy website: <https://remedy.bnssg.icb.nhs.uk/adults/diabetes/diabetes-foot-care/>

Ulceration above the ankle in a patient with diabetes should be managed as per the leg ulcer guidance.

## Leg Ulcers

Leg ulcers should be assessed using leg ulcer guidelines and utilising the Lower Limb and Compression Therapy Pathways.

## Pressure Injuries

Pressure injuries should be assessed and treated in accordance with the Policy and Procedure for the Prevention and Management of Pressure Injuries.

## Secondary Care Specialists

Patients who are under the care of secondary care, such as **Vascular, Plastics** or **Dermatology** should have their care lead by one specialist to avoid any confusion in treatment and management of their wound(s).

## Burns and Scalds

Burns and scalds are damage to the skin usually caused by heat; both are treated in the same way. Burns are caused by a dry heat- i.e., iron/ hob, whereas scalds are caused by something wet- i.e., hot water or steam.

How to manage burns/ scalds:

Keep the wound clean and dress with Silflex or Atrauman and cover with sterile gauze. A hydrocolloid can be used if the burn/ scald is superficial with low exudate. Treat the pain with Paracetamol or Ibuprofen.

Refer to the Burns Unit at Southmead Hospital (Gate 33a, level 2) via telephone 0117 4143100 or email [burns@nbt.nhs.uk](mailto:burns@nbt.nhs.uk) or urgent referrals via switchboard 0117 95050, if:

- Patient has a temperature higher than 38°C
- Burn/ scald is uncomfortable, painful or odorous
- If the wound has not healed in 2 weeks
- If there are signs of cellulitis - redness and swelling of the skin
- If the wound is full thickness
- All burns/ scalds to hands and feet, neck and head
- If the wound is a chemical or electrical burn

Further information can be found:

<https://remedy.bnssg.icb.nhs.uk/adults/surgery/burns-adult/>

## Surgical Wounds and Traumatic Injuries

The majority of clean, acute surgical wounds and some traumatic injuries are managed by primary closure. This means that the wound edges will have been

closed using sutures, staples, wound adhesives or paper adhesive strips (Moore and Foster, 2002). However, some wounds are left open to heal by secondary intention because it would be detrimental to close them. Secondary intention healing would be employed for abscesses, pilonidal sinuses or large wounds, such as abrasions, where closure is impossible (Moore and Foster, 2002). Other surgical wounds accidentally open or dehisce to reveal the wound cavity after they were originally closed (Dealey, 2005) and these are usually left to heal by secondary intention.

The patient's surgical team should be contacted urgently if there are any concerns regarding wound deterioration, dehiscence, suspected fistula/ sinus.

## **Fungating wounds**

Fungating wounds are also sometimes called fungating tumours, malignant wounds, or ulcerating cancers. They start when a tumour growing under the skin breaks through the skin's surface. Fungating tumours can be difficult to manage, the main priorities are managing pain, odour, skin condition, infection, exudate and bleeding, and the individual patients emotional and social needs. Further guidance can be found: <https://remedy.bnssq.icb.nhs.uk/media/6185/malignant-posies-pathway-1.pdf>

## **Skin tears**

Skin tears are defined as 'a traumatic wound caused by mechanical forces, including removal of adhesives. Severity may vary by depth (not extending through the subcutaneous layer)' ISTAP (2018).

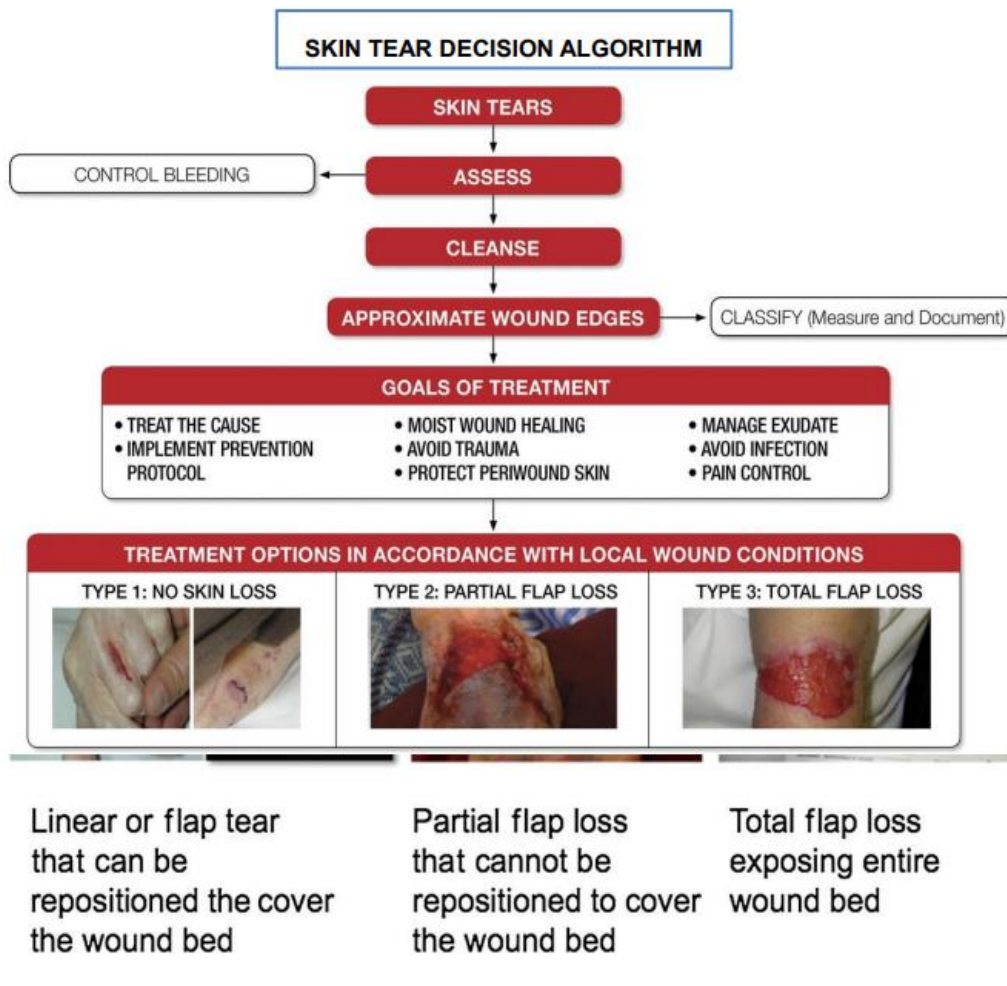
Skin tears are often under-recognised and misdiagnosed in clinical practice. For skin tears to receive optimal treatment, accurate identification and classification are essential; therefore, an accurate definition of skin tears is a crucial starting point.

There is often confusion in terminology, thus a need exists for standardisation of terms and definitions. In practice, skin tears are often referred to under the general terms of 'laceration' or 'cutaneous laceration'. However, a skin tear is a specific injury that is very different from a general laceration (which is defined by soft tissue tearing). Skin tears are traumatic wounds resulting from a variety of mechanical forces such as shearing or frictional forces, including blunt trauma, falls, poor handling, equipment injury or removal of adherent dressings. In already fragile or vulnerable skin, less force is required to cause a traumatic injury, meaning that incidence of skin tears is often increased.

Skin tears can occur on any part of the body but are often sustained on the extremities such as upper and lower limbs or the dorsal aspect of the hands. Skin tears on the lower limb should be treated following the Sirona leg ulcer guidelines and utilising the Lower Limb and Compression Therapy Pathway.

Further information on skin tears can be found:

<https://www.skintears.org/resources>



**Skin tear product selection guide:**

Product categories	Indications	Skin Tear type	Consideration
<b>Non adherent dressings:</b> Silicone mesh - Silflex or Petroleum mesh - Atrauman	Dry or low exudate	1,2,3	Maintains moisture balance for multiple levels of wound exudate, atraumatic removal, will need secondary dressing to cover.
<b>Foam dressings:</b> Allevyn or Allevyn Gentle (both available with/ without border)	Moderate exudate, longer wear time (2-7 days) depending on exudate levels.	2, 3	Caution with adhesive border foams, use non adhesive versions when possible to avoid periwound trauma. Or use silicone version (Allevyn Gentle).



Hydrogels or hydrogel sheet	Donates moisture to dry wounds	2,3	Maintains moisture balance for multiple levels of wound exudate, atraumatic removal. Will need a secondary dressing.
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## The stages of wound healing

The stages of wound healing follow four processes: haemostasis, inflammation, proliferation and maturation. Although the stages of wound healing are linear, wounds can progress backward or forward depending on internal and external patient conditions. The four stages of wound healing are:

### Hemostasis Phase

Hemostasis is the process of the wound being closed by clotting. The first step of hemostasis is when blood vessels constrict to restrict the blood flow. Next, platelets stick together in order to seal the break in the wall of the blood vessel. Finally, coagulation occurs and reinforces the platelet plug with threads of fibrin which are like a molecular binding agent. The hemostasis stage of wound healing happens very quickly.

### Inflammatory Phase

Inflammation is the second stage of wound healing and begins right after the injury when the injured blood vessels leak transudate (made of water, salt, and protein) causing localized swelling. Inflammation both controls bleeding and prevents infection. During the inflammatory phase, damaged cells, pathogens, and bacteria are removed from the wound area. These white blood cells, growth factors, nutrients and enzymes create the swelling, heat, pain and redness commonly seen during this stage of wound healing. Inflammation is a natural part of the wound healing process and only problematic if prolonged or excessive.

### Proliferative Phase

The proliferative phase of wound healing is when the wound is rebuilt with new tissue made up of collagen and extracellular matrix. In the proliferative phase, the wound contracts as new tissues are built. In addition, a new network of blood vessels must be constructed so that the granulation tissue can be healthy and receive sufficient oxygen and nutrients

### Maturation Phase/ Remodeling stage

Also called the remodeling stage of wound healing, the maturation phase is when collagen is remodeled from type III to type I and the wound fully closes. Generally, remodeling begins about 21 days after an injury and can continue for a year or more. Even with cross-linking, healed wound areas continue to be weaker than uninjured skin, generally only having 80% of the tensile strength of unwounded skin.

The stages of wound healing are a complex and fragile process. Failure to progress in the stages of wound healing can lead to chronic/ hard to heal wounds. Factors



that lead up to chronic wounds are venous disease, infection, diabetes and metabolic deficiencies of the elderly. Careful wound care can speed up the stages of wound healing by keeping wounds moist, clean and protected from reinjury and infection.

## Time frames for holistic wound assessment

A full holistic wound assessment should be performed by a registered nurse, registered nursing associate (or podiatrist if a foot wound) ideally on the first visit or within 2 weeks of admission to the Sirona Integrated Neighbourhood Team (INT) or podiatry caseload if capacity does not allow, or if the initial visit is not completed by a registered clinician. Interim wound care may be delivered by a non-registered clinician, whilst a patient is awaiting their full holistic assessment by a registered clinician, but any concerns must be escalated to an appropriate registered clinician.

For Sirona bedded units, a full holistic wound assessed should be performed ideally on admission, or if capacity doesn't allow, within 48 hours of admission.

Skin inspections to assess for pressure injuries (including reviewing wounds which are currently dressed) should be performed as per the pressure injury policy - on the first assessment if being assessed at home or in clinic, or within 6 hours of admission to a Sirona bedded unit.

Lower limb wound assessment (including a doppler) should be completed within 28 days of admission to any Sirona caseload. Please refer to the Clinical Guidance on the Treatment of Lower Limb Wounds for further details.

## Holistic wound assessment

A holistic patient assessment is vital to gather information about the patient's health and identify factors which may impede wound healing. A wound may be hard to heal due to factors local to the wound or those related to the whole patient, their beliefs and environment (Atkin et al 2019). The assessment should include the patient's medical history and assessment of their nutritional, psychological and social status.

### Medical history

The patient assessment should include gathering information about their medical and drug history, which should include: -

- a. The patient's past and current medical conditions and general health, identifying risk factors which may delay healing.
- b. Drug history and current prescribed medications, including over the counter medicines and alternative therapies.
- c. Smoking and alcohol history
- d. Allergies: including any skin sensitivities & previous reactions to wound dressings, topical applications and natural rubber latex
- e. Nutrition and hydration level. Complete Malnutrition Universal Screening Tool (MUST)
- f. Level of mobility
- g. Vital signs

- h. Previous/planned investigations and procedure e.g. venous/arterial duplex, x-rays, surgery.

### **Nutritional assessment and support**

The prevention and treatment of malnutrition requires assessment, and the Malnutrition Universal Screening Tool (MUST) should be utilised taking guidance from the MUST guidelines (BAPEN 2020).

- i. All individuals should have a nutritional screen, at initial assessment and reviewed as appropriate, this should proceed to full assessment if deficit is suspected (NICE 2024)
- ii. Individuals considered as “malnourished” or “at risk” of malnutrition should be managed according to local and national guidance (NICE 2024)
- iii. Nutritionally compromised patients who have wounds may have an increased dietary need and a referral to a Dietician should be considered for further assessment, advice and supplementation (NICE 2024)

Further information on dietetics advice and guidance can be found:

<https://remedy.bnssg.icb.nhs.uk/adults/dietetics-nutrition/local-services/>

### **Psychological and Social Assessment**

The following aspects should be considering during the individual’s assessment (DH 2010a),

- i. Stress level, depression, ability to sleep and where the patient sleeps e.g. bed or chair
- ii. Capacity to understand the cause of the wound and ability to participate in care including capability to self-care.
- iii. Factors that may affect concordance with treatment e.g. dementia, cognitive impairment, learning difficulties, behavior, lifestyle choices
- iv. Drug/Alcohol dependency.
- v. Occupation, family structure, carers and their ability to assist with care.
- vi. Detail attitudes and avoidance of social activities due to general condition and wound position.
- vii. Impact of wounds on quality of life

### **Documentation and Minuteful for Wound – A digital solution (Healthy IO app)**

Wound assessment and treatment should be documented on Emis. Healthy IO enables clinicians to capture standardised wound images using a smart phone quickly and accurately. The app analyses the wound image, taking measurements, recording tissue type and allowing the clinician to record further details of the wound assessment performed and treatment provided. The app does not take away from

the clinician's clinical judgement e.g. Escalating concerns regarding infection/ ischaemia, or if the tissue type suggested within the app is not what the clinician assessed it to be, this can be amended by the clinician in both the app/portal. Once an assessment has been completed in the app on a smartphone, it should be reviewed on the portal (and amended if required) prior to uploading to Emis. Clinicians should refer to the Minuteful for Wounds (MfW) Standard Operating Procedure for further guidance on use of the app. These guidelines refer to it's use where appropriate.

If the Minuteful for wound app cannot be used for any reason, the 'Wound assessment' template within Emis should be used.

## Wound Assessment

The aim of wound assessment is to identify the cause of the wound and any underlying factors which may delay or interfere with healing; enabling early intervention to provide optimum wound healing. All aspects of the patient's health should be considered during the assessment, and the practitioner should not focus on the wound alone. The assessment informs care planning; ensuring the patient receives the most appropriate treatment in line with best practice. A comprehensive patient assessment can lead to improving wound healing rates and patient outcomes, reducing the impact of the wound on the patient, and lower the burden of wounds on the health provider. Wound assessment also aids appropriate wound dressing selection.

The wound assessment should establish the duration of the wound, cause (aetiology) e.g. surgical/ pressure/ burn etc, and location using the correct anatomical language. This should be clearly documented.

The TIMERS framework (Atkin et al 2019) is used to structure the approach to assessing and managing the wound:

**T** = Tissue viability/ assessment

**I** = Infection and/or inflammation, incorporating the infection continuum (IWII 2022)

**M** = Moisture balance

**E** = Edge of wound





**R** = Repair/regeneration






**S** = Social factors and surrounding skin

## Tissue Assessment

The wound assessment must include a description of the type and amount of tissue present to the wound bed (Ousey & Cook 2012) using the terms of epithelising, granulating, sloughy, necrotic, or non-healing. Different tissue types can exist in the wound at the same time and should be recorded as an estimated percentage of the whole wound e.g. granulation tissue 80% and sloughy tissue 20%. This allows comparison over time. Percentages are used only as a guide and do not need to be precise.

Wound colour is related to tissue type and can enhance description of the wound status.

	<p>Necrotic tissue may appear black, hard, dry and leathery or grey in colour and usually indicates devitalized tissue. If a wound is located on the foot, assess the patient's circulation to the affected area before deciding on method of debridement. Foot wounds should be kept dry until circulation is established</p>
	<p>Sloughy tissue is also devitalized and includes a build-up of dead white cells and may appear yellow or waxy white in colour. It may appear wet or dry and is usually attached to the wound base. Sloughy tissue hinders wound healing and harbours bacteria.</p>
	<p>Granulating tissue appears red (strawberry jam in colour and appearance) with small mounds caused by growth of capillary loops and should be protected. Granulation tissue is a sign of wound healing.</p>
 <p>Spreading erythema indicating wound infection</p> <p>Cellulitis</p>	<p>Spreading infection (e.g. Cellulitis) extends beyond the wound margins and peri wound edge (generally over 2cm). The main diagnosis influence is spreading erythema. Erythema is often red, but not always, depending on an individual's skin tone. Erythema can be hard to diagnose in dark skin tones, therefore it's vital to assess the patient holistically. If erythema is spreading and/ or associated with any clinical signs and symptoms of infection then systemic antibiotics are indicated with local wound management to control odour, pain, exudate. Cellulitis is rarely bilateral.</p>

 <p>Localised infection (dark granulating wound bed) or biofilm</p>  <p>Localised infection (sloughy wound bed with tinge of green, and purulent exudate)</p>	<p>Localised infection can present as darker granulation tissue (more like cherry jam than strawberry jam), and/ or display other signs of localised infection such as purulent/ green exudate, or odour.</p> <p>Wounds with local infection do <b>not</b> need to be swabbed, they can be treated with good wound hygiene, antimicrobial dressings and close monitoring.</p> <p>Chronic wounds are often colonized with bacteria therefore diagnosis of infection should <b>NOT</b> be made solely on the basis of a microbiology swab result. Care should be taken with individuals that have conditions such as diabetes or are immuno suppressed as they may not exhibit any signs of infection.</p>
	<p>Epithelising tissue appears white, pink, blue/mauve in colour. This tissue should be kept warm (body temperature) and moist to facilitate epithelial growth and mitotic cell division (Winter 1962, Hinman and Maibach 1963).</p>
 <p>Hypergranulation</p>  <p>Tendon</p>	<p>Other tissue types</p> <ul style="list-style-type: none"> <li>• <b>Hypergranulation</b> tissue</li> <li>• <b>Bone</b> – shiny, smooth, milky white appearance</li> <li>• <b>Muscle</b> – pink to dark red, firm, highly vascular, striated</li> <li>• <b>Tendon</b> – gleaming yellow or white, shiny when healthy, strong fiborous tissue, attaches muscle to bone, moves when flexing limb.</li> <li>• <b>Other</b> – anything present but not previously described e.g sutures</li> </ul> <p>Any exposed underlying structures e.g. Bone/ tendon/ muscle, should be kept moist, to avoid them from drying out.</p>

## Hypergranulation

Hypergranulation, also known as overgranulation or proud tissue is most commonly seen in chronic wounds which are healing by secondary intention.



For a wound to heal as expected the bed of the wound needs to granulate upwards and fill the void bringing together the wound edges so that epithelial cells can grow and spread over the top of the granulation tissue.

Epithelial cells are only able to grow horizontally, therefore if the granulation cells have grown higher than the epithelial cells epithelisation cannot occur. The result is prolonged wound bed exposure and an increased risk of wound infection.

It is generally believed that the hypergranulation is precipitated by a kind of altered inflammatory response. It is an excess of granulation tissue usually recognised clinically by its friable, red often shiny and soft appearance that protrudes above the surrounding skin.

Hypergranulation tissue can be a sign of a biofilm, localized wound infection, excess moisture, a foreign body in the wound (e.g. Hair or suture) or physical irritation or friction.

### **Malignancies**

Malignancies can sometimes resemble hypergranulation tissue and any suspected cases should be examined carefully looking for the signs which could indicate a malignancy. If malignancy is suspected an urgent referral to Plastics or dermatology is required. Common skin malignancies are Basal Cell carcinoma (BCC), Squamous cell carcinoma (SCC) and Malignant Melanoma (MM).

Indications of Malignancies

1. The tissue has been present for many months or years
2. The tissue is hard to touch
3. May have a 'cauliflower' appearance
4. Tissue has grown beyond the wound margins
5. It does not respond to suggested treatments for hypergranulation (see below)



### **Causes, considerations and 1<sup>st</sup> line treatment of hypergranulation**

A thorough and holistic assessment can help to identify risks which may contribute to the development of hypergranulation tissue. Good wound bed management such as regulation of bacterial burden, mechanical debridement, exudate control, avoidance of dressing adherence/ friction etc will help to reduce the likelihood of hypergranulation tissue developing.

Cause of hypergranulation	Extra considerations	Treatment	Practical tips	Further practical tips
<b>Infection or increased bacterial load</b>	When a wound is infected, it enters an inflammatory phase, increasing exudate.	Treat as per biofilm pathway or infected leg ulcer pathway if on the lower limb	Commence antimicrobial dressing and step up to superabsorbent to manage exudate	Discontinue antimicrobial after 2 weeks if resolved. Use alternative antimicrobial if not resolved for further 2 weeks.
<b>Foreign bodies/irritants in the wound bed</b>	What has allowed this foreign body into the wound? Hair? Remove, shave if needed. Dressing? Remove. Eliminate it happening again.	Observe for any undissolved sutures, or one that may have been left in.	Shave hair away from wound edges and surrounding skin. Seek further advice on removal of any deep tension sutures (from surgeon).	Encourage patients not to poke/ prod or contaminate the wound bed.
<b>Friction usually related to tubing, eg, Suprapubic catheters or PEG sites</b>	Ensure that you have identified the cause – movement of tubing/ clothing/ footwear/ dressings, especially on surgical sites.	Remove cause of friction where possible.	If there is excess exudate due to the friction, manage this appropriately using keyhole dressings/ absorbent dressings. Do not occlude or layer dressings.	Consider using haelan tape daily or Mometasone Furoate 0.1% cream or ointment smeared onto Atrauman with a keyhole dressing at each dressing change.
<b>Poorly managed exudate</b>	If on the leg, consider whether compression is indicated. Check appropriate superabsorbent is being used.	Check cause of excess exudate and treat. E.g. Infection Friction Need to compress if lower limb.	Review absorbent pad and step down or up as needed.	Consider frequency of dressing changes – may need to increase
<b>Occlusion</b>	Commonly caused by interactive dressings, hydrocolloids or occlusive dressings	Film dressings can allow for some moisture vapour transmission, but not if built up with many layers of different dressings.	Switch to a non-occlusive dressing, stop using hydrocolloids and don't layer dressings.	A suitable primary dressing and secondary dressing should be used e.g., Atrauman and a pad. Do not layer dressings.

## 2<sup>nd</sup> line treatment of hypergranulation – Topical Steroids

Topical Steroids should not be used first line management for hypergranulation and should only be considered when all other treatment options have been explored (see above table). Topical steroids can be effective at dampening down the inflammatory response. A week's application of a potent steroid, Mometasone furoate 0.1% ointment or cream (may need to smear onto atrauman rather than directly onto wound bed), is an appropriate 2<sup>nd</sup> line treatment plan if no initial response to 1<sup>st</sup> line treatment. It is advisable that you contact the WCS to discuss further, if there has been no improvement with 1<sup>st</sup> or 2<sup>nd</sup> line treatments, as onwards referral to Dermatology or plastics may be indicated.

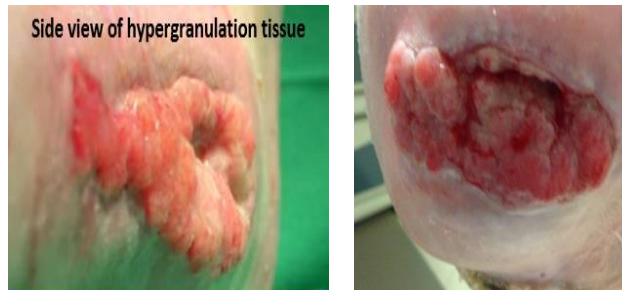
Healan tape is available and licensed for use in cases such as Granulomas and hypergranulation, but again please discuss with WCS.



Drain sites with hypergranulation:



Side view of hypergranulation:



## Infection and inflammation

Signs of both inflammation and infection should be observed when assessing the wound. Wound inflammation is the second stage of wound healing and is characterized by heat, redness, swelling and pain (Collier 2003). Chronic wounds can become stuck in the inflammatory stage of healing and are unable to move onto the next stage of wound healing.

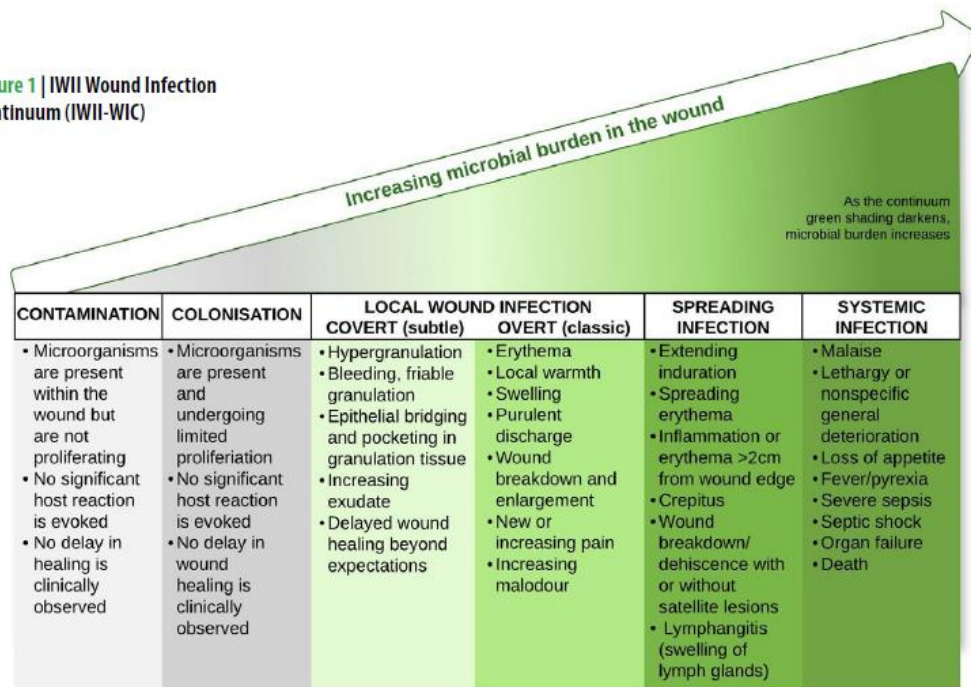
Wound infection will affect wound healing and can cause unpleasant symptoms for the patient such as pain, odour and increased exudate. There are many factors which may lead to a wound infection such as:-

- The individual's characteristics, such as risk factors including diabetes, chronic diseases etc
- Characteristics of the wound – e.g. foreign body present, duration of the wound, large sized wounds
- Environment – unhygienic environment, inadequate management of moisture, exudate and oedema.

Diagnosis of wound infection should combine both the clinician's professional judgement and the clinical presentation of the wound and patient. Clinicians caring for patients with wounds should be able to recognise the signs and symptoms of wound infection.

The International Wound Infection Institute (2022) Principles of Best Practice provides a detailed overview of all infection assessment factors: <https://woundinfection-institute.com/>

**Figure 1 | IWII Wound Infection Continuum (IWII-WIC)**



## Wound Swabbing

Routine swabbing of wounds, in the absence of spreading or systemic signs of infection, is not required. Wound swabbing is not used to diagnose infection, but to guide antibiotic selection against the organisms causing the clinical signs of infection. Localised (covert and overt) infection can be treated with an antimicrobial dressing first.

### When to wound swab:

- Suspected spreading or systemic wound infection (see IWII (2022) Wound Infection Continuum), to select the correct systemic antimicrobial agent to manage the microorganisms present in the wound.
- If exposed bone is present in the wound bed, causing a risk of osteomyelitis.
- If a wound fails to respond to biofilm management using three different antimicrobial dressings
- Patients have high risk factors for delayed healing e.g., Immunocompromised.
- Patients with repeated wound infections

Chronic wounds are often colonised with bacteria therefore diagnosis of infection should NOT be made solely on the basis of a microbiology swab result. Care should be taken with individuals that have conditions such as diabetes or are immunosuppressed as they may not exhibit any signs of infection.

### How to take a wound swab

- Irrigate (& debride if appropriate) wound bed
- Take a wound swab using the Levine technique (Using an aseptic technique, firmly press the swab down into the wound and rotate the swab over a 1cm<sup>2</sup> area to express fluid from the tissue, take from

- the cleanest part of the wound
- Fill in form including full clinical details (duration of wound, comorbidities, current antibiotics therapy, relevant medication use (e.g., steroids), correct patient details
- If spreading or systemic infection is suspected, do not wait for the swab results, commence broad spectrum antibiotic treatment as soon as possible

### **Antimicrobial dressings**

Antimicrobial dressings are used to treat localised wound infections and biofilms. They can also be used in conjunction with antibiotic therapy for spreading or systemic wound infections, but antimicrobial dressings alone will not treat spreading or systemic infection. There are several different types of antimicrobial dressings available on the Sirona Wound Dressing Formulary.

It is recommended that antimicrobial dressings are used for a minimum of 2 weeks and then the wound should be re-evaluated. The antimicrobial dressing should be discontinued if the signs and symptoms of wound infection have resolved after 2 weeks. However, if these signs and symptoms are still present and the wound is progressing the antimicrobial dressing should be continued for a further 2 weeks. If there is no progress in the wound, then an alternative type antimicrobial dressing should be considered and reviewed after 2 weeks e.g. if using a silver based dressing initially, change to a different type of antimicrobial such as a dialkylcarbamoyl coated (DACC) dressing such as Cutimed Sorbact, or an Iodine based dressing such as Iodoflex. If no progress in the wound is achieved after using 3 different types of antimicrobial dressing, then swab the wound and refer the patient to the Wound Care Service for assessment. Additionally, ensure the appropriate pathway is being following.

Spreading or systemic infection may develop whilst treating a patient for localised infection. If this happens, commence broad spectrum antibiotic treatment as soon as possible and swab the wound. Antimicrobial dressings can be used alongside antibiotics, but if there are signs of spreading or systemic infection, antimicrobial dressings alone will not be adequate.

### **Biofilm**

A biofilm is invisible to the naked eye and consists of bacteria strongly attached to the surfaces/tissues, encapsulated in a self-produced protein matrix and tolerant to antimicrobial agents both topical and systemic (Bjarnsholt et al 2017). Biofilms develop in hard to heal wounds and they are thought to be present in 70-100% of chronic wounds (Malone et al 2017). It is suggested that biofilms keep the wound in the inflammatory stage preventing normal wound healing (Bjarnsholt et al 2017). Please refer to the Sirona biofilm pathway for further information.

## **Wound Hygiene and Debridement methods**

### **Should you cleanse a wound if it looks clean?**

If a wound is healing well and appears clean, cleansing isn't always indicated. However, if a wound is static or deteriorating, despite the wound bed appearing

clean, this could indicate present of biofilm. Biofilms are not visible to the naked eye.

Biofilm and devitalised tissue would be removed from a wound bed to enable healing. Preparation of the wound bed, including regular cleansing and debridement supports the disruption of biofilms (WUWHS 2016, Murphy *et al* 2020).

### **What is physical (mechanical) debridement of a wound bed?**

A biofilm in a wound bed is like dental plaque on your teeth. It can cause problems if left unattended which can lead to wound bed deterioration and delayed wound healing. We brush our teeth regularly to debride dental plaque so we need to be doing the same for wound beds. Undertaking regular debridement using a 'biofilm based wound care' strategy will support reduction of wound biofilms and increasing healing (Medi UK 2020). Debridement is also used to remove devitalised tissue – adherent, dead or contaminated tissue, from the wound e.g. Slough or necrosis.

### **Type of physical (mechanical) debridement pads/cloths:**

- Dry non-woven gauze swab – Use the swab to firmly brush over the wound bed to remove debris and disrupt biofilms.
- UCS cloth – The cloth has unique loop technology to capture and disrupt the biofilm within the wound bed, rather than redistributing the bacteria to another part of wound bed cleansed. UCS contains a surfactant – use a vigorous circular action for 3-5 minutes on the wound bed. Do not add anything to this cloth.
- Debrisoft Pad/Lolly - Uses monofilament fibre technology™. Each pad/lolly has millions of fibres that are cleverly designed to lift, bind and remove bacteria and biofilms (L&R Medical Ltd 2020). Debrisoft should have 20 – 40mls of saline or surfactant (Octenalin) added – use a vigorous circular action for 3 -5 minutes on the wound bed.

DO NOT EMMERSE these products in a bowl of water.



**Please refer to the Sirona Biofilm Pathway**

### **Other types of debridement**

**Autolytic** – Use of dressings that donate moisture into the wound bed e.g. Hydrogels and Hydrocolloids.

**Mechanical (physical)**- Monofilament debridement pads – Debrisoft/ UCS cloths

**Surgical** – Requires admission to hospital, therefore avoid where possible

**Conservative Sharp Debridement (CSD)** – Only podiatrists or clinicians who have undertaken a course e.g. TVN

## Biotherapy – Larvae

### Larvae Therapy, also known as 'Maggot Therapy'

Larvae therapy involves the use of larvae of the green bottle fly, which are placed into a wound to remove necrotic, sloughy and/or infected tissue which will improve the condition of a wound and allow the process of healing to begin.

### How does Larvae Therapy work?

The larvae feed on dead tissue by releasing a mixture of natural enzymes and components into the wound. The enzymes break down non-viable tissue into a liquid that the larvae digest, also removing bacteria. Exudate levels will increase during this process. This process is so effective that larvae can often clean a wound within a few days.

### When should larvae therapy be used?

- It is not a first line treatment for all wound types.
- An ideal treatment for rapid debridement of sloughy/necrotic category 3 and 4 pressure injuries prior to the application of topical negative pressure therapy.
- Other wound types i.e. surgical wounds, traumatic wounds that are struggling to debride with standard formulary dressings may also be appropriate.

**Biobag** (similar to a teabag) – there are 5 sizes of Biobag allowing for use in small to moderately large wounds. The larvae remain in the position the Biobag is placed. Multiple bags can be placed in a single wound. A Biobag is not always the most effective therapy for wounds with irregular shapes or undermining/tunnelling areas.



### Contra-indications

Larvae **should not** be used on:

- Wounds that have a tendency to bleed easily or are close to large blood vessels
- Wounds with **dry** necrotic eschar, rehydration is required first.
- Malignant wounds

Larvae **should be used with caution** on: (*seek wound care service support*)

- Wounds such as sinuses or fistulas
- Wounds over adjacent exposed organs or leading to a body cavity.
- Patient's on anticoagulants with clotting markers below acceptable clinical range.

### How to access larvae therapy

- Discuss with your wound care specialist nurse who will be able to assess the wound for suitability and support in selecting the correct size biobag **and/or**



- Discuss with your non-medical prescriber (NMP) or the patient's general practitioner (GP) to obtain a prescription for Larvae therapy. You will need to provide them with accurate details of what is required for the prescription as they may not be familiar with prescribing larvae therapy.
- The best place to find the most up to date information is at <https://biomonde.com/en/>

Larvae therapy remains in situ for 4 days, requiring daily visits for maintenance of outer dressings. Occasionally more than 1 course will be required; you should make this assessment on day 3 so that a further course can be arranged without a gap in treatment.

## Moisture Imbalance

Wound exudate is a normal part of wound healing and contributes to wound autolysis (removal of devitalised tissue). Gaining the right balance of moisture in a wound is essential to wound healing; too much or too little wound exudate will disrupt wound healing and potentially damage the wound's surrounding skin (Atkin et al 2019). Dry wounds prevent the migration of cells across the wound and may inhibit debridement. Excessive wound exudate delays healing, can damage the surrounding skin and impact the patient's quality of life through leakage onto clothing or bedding, and potentially causing social isolation.

When undertaking a wound assessment the following characteristics of exudate should be included:-

- Amount/volume
- Colour of the exudate
- Viscosity – thin or thick
- Odour

The amount and volume of exudate can be assessed by reviewing the current dressing and the required frequency of dressing changes. The assessment should include whether the dressing has managed to retain the exudate or not. Observe for signs of moisture damage to the wound edge. An increase in wound exudate may signify wound infection or inflammation, or be due to unmanaged oedema, particularly in the lower limb. Leakage of wound exudate to outer dressings increases the risk of wound infection as it opens up pathways for microbes to enter the wound. Quantifying the volume of wound exudate can be challenging and subjective, and the terms none, low, moderate or high should be used to document the exudate volume.

- Low exudate means a small amount contained within the dressing – less than 33%
- Moderate – contained within the dressing – less than 67%.

- High – exceeds beyond the dressing - more than 67%. Dressing often saturated and soaked through/ striking through.

The usual colour of wound exudate is clear (serous), or a straw colour (clear yellow). Any changes to the wound exudate colour can indicate a potential problem with the wound. Green, blue or dark yellow exudate usually indicates a bacterial infection. Haemoserous (blood stained serous fluid) can indicate local trauma to the wound bed. Cloudy, creamy or milky colour can be due to fibrin strands in the exudate from the inflammatory process or the presence of white blood cells and bacteria indicating infection (Nicholls 2016).

The colour, viscosity or change in the wound exudate should be noted. The presence of any surrounding oedema/lymphoedema should also be documented.

Exudate as defined by its colour:

Characteristic	Possible Cause
Clear, amber	Serious exudate, often considered 'normal' but may be associated with infection by fibrinolysin-producing bacteria such as staphylococcus aureus may also be due to fluid from a urinary or lymphatic fistula/leak.
Cloudy, milky or creamy	May indicate the presence of fibrin strands (fibrinous exudate – the response to inflammation) or infection (purulent exudate containing white cells and bacteria).
Pink or red	Due to the presence of red blood cells and indicating capillary damage (sanguineous or hemorrhagic exudate).
Green	May be indicative of bacterial infection, e.g. pseudomonas aeruginosa.
Yellow or brown	May be due to the presence of the wound slough or material from an enteric or urinary fistula.
Grey or blue	May be related to the use of silver dressings.

Exudate as defined by its consistency:

Characteristic	Possible Cause
High viscosity (thick, often sticky)	High protein content due to: Infection, inflammatory response Necrotic material Enteric fistula Residue from some types of dressings or topical preparations.
Low viscosity (thin, 'runny')	Low protein content due to: venous or congestive cardiac disease, malnutrition.

(WUWHS 2007)

Wound odour can be caused by several factors – infection, interaction between a dressing product and the wound (e.g. hydrocolloids) or as a result of a sinus, enteric or urinary fistula (Nicholls 2016). It may also be caused by devitalized tissue and is



commonly found in fungating wounds. The effect of the wound odour on the patient's quality of life should also be considered and wound management choices made to alleviate the impact of the odour.

### Edge of the wound and surrounding skin

Healthy wounds epithelialise from the wound edge. Indications at the wound edge that a wound is not progressing well are a lack of epithelial presence at the wound edges, failure for the wound edge to reduce in size and the presence of rolled wound edges. When assessing a wound the wound edges must be observed. The practitioner is looking to see if there is epithelialisation at the wound edge, whether rolled wound edges, callus or devitalised tissue are present, and if undermining is detected.

The peri-wound and surrounding skin should also be assessed noting any dry, scaly skin, eczema, irritation, sensitivity, and maceration. Dry, scaly skin needs to be treated with appropriate skin care. Irritation may be caused by sensitivities to wound dressings, or the adhesives present in the dressing. Maceration will be caused by prolonged moisture on the skin causing skin damage, such as high volumes of wound exudate or lymphorrhoea.

	<p><b>Excoriation</b></p> <p>When the surrounding skin becomes irritated because of wound exudate not being managed effectively. Excoriation can also be caused by picking or scratching of the skin.</p> <p>Skin should be protected by using a barrier film or emollient. The frequency of dressing changes and dressing choice should also be considered.</p>
	<p><b>Maceration</b></p> <p>When skin is in contact with moisture such as wound exudate, urine or sweat, for too long, it becomes wet/ soggy, resulting in maceration.</p> <p>Skin should be protected by using a barrier film or emollient. The frequency of dressing changes and dressing choice should also be considered.</p>



Hyperkeratosis



Dry skin

### Dry skin and hyperkeratosis

Skin can become rough, scaly, and flaky, because of a lack of water in the skin. This can be due to aging, medical conditions, medications, environmental factors and much more.

Skin should be hydrated by using an emollient. The frequency of skin care should also be considered.

Lotions/ gels - Mild dry skin conditions.

Creams – Mild to moderate dry skin conditions

Ointments – Severely dry skin conditions.

Further information on emollients can be found:

<https://remedy.bnssg.icb.nhs.uk/media/yxem05va/emollients-table-v94-update-feb-24.pdf>



### Rolled wound edge

Rolled wound edges present when a wound edge stops advancing across the surface of the wound and instead, cells migrate down the sides of the wound edge, preventing wound closure. These are typically seen in chronic wounds. Treatment includes refashioning the wound edges by using mechanical debridement.



### Undermining or depth

Edges that appear to be undermining or wounds that appear to have visible depth should be gently probed to monitor the progress.

## Repair and Regenerate

The aim of this section is to achieve wound closure and assessment considers what factors will affect this. If a wound is slow or failing to heal advanced therapies may be required. Firstly consider if all the other factors within the TIMERS framework have been assessed, including the underlying pathology of the wound, infection, biofilm and patient related factors.

A wound which is failing to progress after 4 weeks of treatment should be identified as hard-to-heal and be referred for specialist intervention (Atkin et al 2019) if not responding to the appropriate treatment pathway, via the Wound Care Service. Prompt referral is essential to enabling appropriate interventions and reducing healing time. Referral may also be required to other specialist services e.g. plastic surgery, dermatology or vascular services.

Advanced wound therapies will include negative pressure wound therapy and larvae therapy.

## Social Factors

This section recognises the importance of patient engagement in achieving wound healing and focuses on the patient's social situation and patient-related factors. To engage a patient in their care, they need to understand the treatment they are receiving and the underlying cause of their wound. Assessing the patient's ability to understand is vital and includes the patient's literacy abilities and also the ability of the clinician to use the right communication skills, adapted for each individual, to explain the rationale. Patient, relative and carer education is key to success.

The patient's own health beliefs and their social support will affect care planning and need to be considered in the assessment and management of the wound. Setting goals with the patient using shared decision making empowers them to support wound healing. The patient's goals may differ to that of the clinician and working with them to align the goals will enable adherence and success in achieving them.

Supportive self-care should be promoted at every opportunity with patients and assessment of their physical and mental abilities plus motivation and willingness to be involved in their own care.

## Wound Pain

Wound pain is commonly experienced by patients and consideration should be given to pain in relation to wound management, and a pain assessment undertaken. An individual's experience of pain is unique, complex and influenced by many factors. A systematic and rational approach to the assessment and management of pain is essential. This is a specific role of the clinician and should be documented as with other aspects of assessment (NMC 2009).

There are many causes of wound pain and include:-

- the underlying aetiology e.g. ischaemia with an arterial leg ulcer
- tissue damage as a result of trauma,
- the inflammatory response,
- infection,
- interventions such as cleansing, debridement, topical applications such as wound dressings, dressing removal and compression therapy
- other local pathology such as oedema, allergic reactions, arthritis

Pain can negatively affect patient's quality of life including their interpersonal relationships, work and social activities, and emotional wellbeing (Mudge & Orsted 2010).

### **Neuropathic pain**

Neuropathic pain is often associated with altered or unpleasant sensations whereby any sensory stimulus such as light touch or pressure or changes in temperature can provoke intense pain.

Clinicians must recognise that this requires specific pharmacological management and referral for assessment by a clinician who is able to diagnose (and treat) neuropathic pain e.g. a GP or pain specialist.

### **Background pain**

The pain felt at rest when no wound manipulation is taking place.

It may be continuous (e.g. like a toothache) or intermittent (e.g. like cramp or night-time pain).

Related to the underlying cause of the wound, local wound factors (e.g. ischaemia, infection and maceration) and other related pathologies (e.g. diabetic neuropathy, peripheral vascular disease, rheumatoid arthritis and dermatological conditions).

### **Pain management**

Address local factors causing wound pain:

Clinicians need to consider how best to treat and manage factors that may alter the intensity or character of wound pain. Factors such as age, gender, educational level, environment and previous pain history can all influence patients' experience of pain and ability to communicate their pain.

The most important factor in reducing background pain is to treat, where possible, the underlying aetiology of the wound or associated pathologies.

Consider analgesic options:

The World Health Organization has developed a three-step ladder for managing cancer related pain. This is also suitable for managing background wound pain. Please discuss analgesia with the patients GP.

## **Negative Pressure Wound Therapy**

### **What is VAC therapy?**

Vacuum assisted closure (VAC), also known as negative pressure wound therapy (NPWT) is used on hard to heal and highly exuding wounds. Wounds which are unable to be managed with conventional dressings such as those that have a high level of exudate and require daily dressings, or static wounds. VAC therapy delivers between -125mmHg and -150mmHg negative pressure to wounds.

### Wounds suitable for VAC therapy:

VAC can be used on various wound aetiologies, including;

- Pressure injuries
- Surgical wounds, often dehisced surgical wounds
- Diabetic foot ulcers
- Traumatic wounds
- Pilonidal sinuses



### How does it work?

Negative pressure is created by suction, like a vacuum. The mechanisms of action for VAC Therapy include drawing wound edges together, removing infectious materials and wound fluids, promoting perfusion, maintaining a closed, moist wound healing environment and promoting granulation tissue formation.

ACTI VAC pumps are portable and charged via the mains, patients need to be able to carry them with them at all times and be able to plug them into a power source to charge. Exudate is collected in a canister attached to the pump.

Contraindications for VAC therapy include;

- Malignancy of wound
- Presence of necrotic/ devitalised tissue in wound bed
- Untreated osteomyelitis
- Unexplored and high output fistulas
- Ischaemia/ absence of blood supply

### PICO

PICO7 is a single use, disposable negative pressure, battery powered system, lasting up to 7 days. It delivers -80mmHg therapeutic negative pressure. Dressings are usually changed once or twice weekly. The pump fits into the palm of a hand/ pocket. Used for wounds with low to moderate exudate with up to 3-4cm depth. For wounds with depth, a wound filler e.g. PICO gauze should be considered. PICO can be used on various wound aetiologies, like VAC therapy. Wound exudate is managed in the dressing; there is no canister inside the pump, therefore not suitable for highly exuding wounds.



### SNAP

SNAP is a single use, disposable negative pressure wound therapy system, that is mechanically powered. It delivers -125mmHg therapeutic negative pressure. It has a portable sized pump/ cannister designed to manage low to moderately exuding wounds, with a depth of up to 3-4cm. A filler must be used - SNAP dressings come with foam to pack the wound bed. Dressings should be changed twice weekly.





## Measuring a wound

### **Wound measurement using the Minuteful for Wound (MfW) app**

See: For utilising the Minuteful for Wound (MfW) Digital wound management App SOP for in depth guidance.

- Calibration stickers should always be used during wound photography where there is a clear and well-defined wound edge. This will support achieving the more accurate circumferential measurement (see yellow line in image). All measurements can be amended in the MfW online portal if not captured accurately during the initial assessment via the app.
- Scenarios for when the 'can't use sticker' option is appropriate:
  - wide spread skin conditions e.g., varicose eczema, moisture associated skin damage, circumferential leg ulceration, wet leaking legs secondary to chronic oedema/lymphoedema, skin sensitivities.
- When using the 'can't use sticker' option, manual measurements for L x W x D will need to be assessed using a measuring tape and wound probe and manually entered into the MfW app.
- Measurements for undermining and tunnelling regions need to be assessed manually using a wound probe and entered into the MfW wound assessment via the app or the portal.



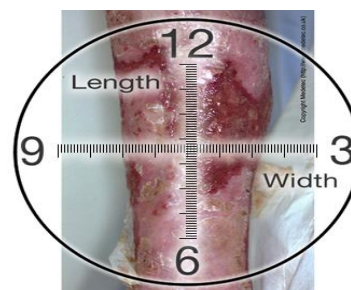
### **Wound measurements if unable to use the Minuteful for Wound app**

Length, width and depth (L x W x D) of a wound should be recorded to monitor progress of a wound. Measurements should be taken using a head-to-toe orientation. Using a clock face is an easy way of recording measurements, where 12 o'clock is the direction of a patient's head and 6 o'clock is in the direction of their feet.

From 12 – 6 o'clock records the length of the wound and from 9 – 3 o'clock records the width.

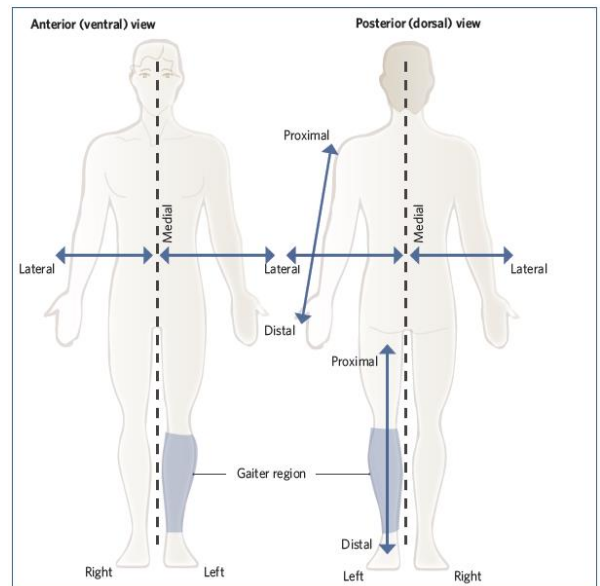
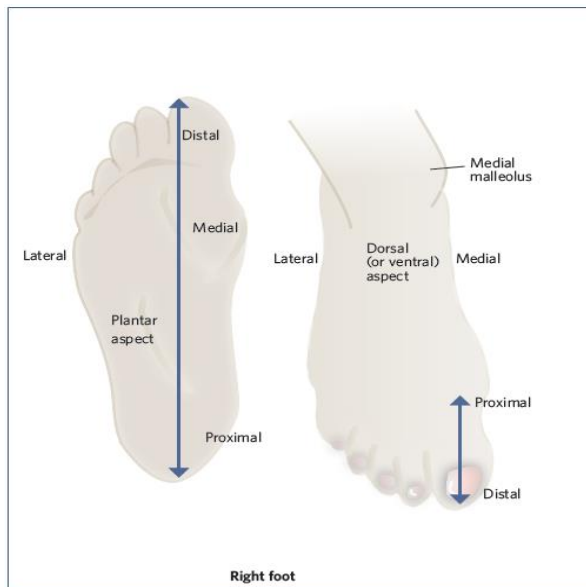
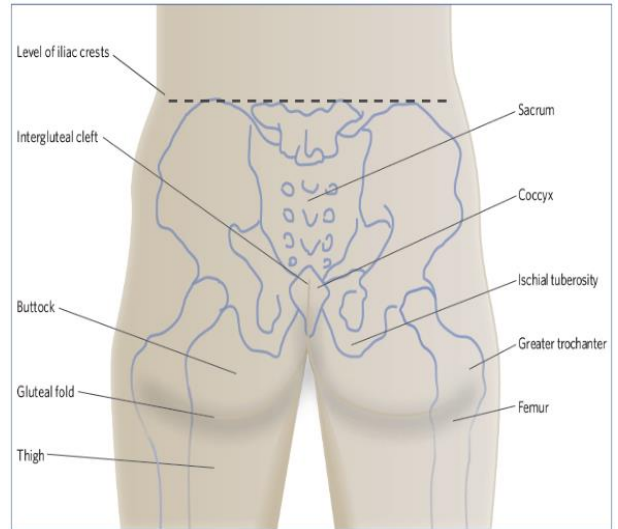
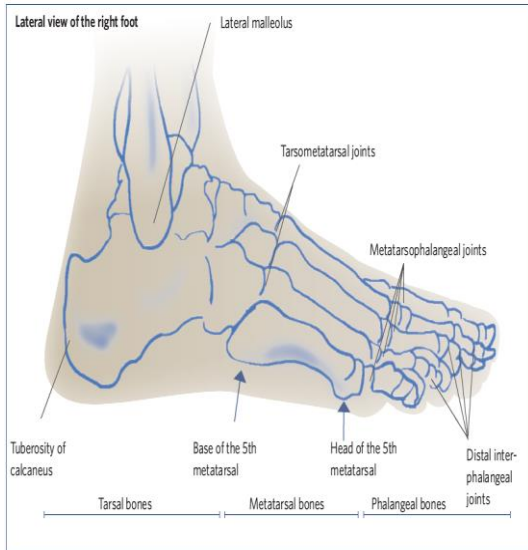
For wounds with depth, a probe will need to be used.

Ideally, measuring should be weekly for VAC, fortnightly for acute wounds and monthly for chronic wounds.



# Anatomical Terminology

(Best Practice Statement Improving holistic assessment of chronic wounds 2018 Wounds UK)





## Photography in wound care

Clinical Photography relates to any photographs or videos taken by clinicians in practice that are used to support and evidence patient care.

Wound photography has the potential to validate and enhance the wound assessment process by providing useful information regarding the current status and healing progress of a wound (Jacob 2019). To ensure photographs can be confidently utilised in clinical decision making and care planning it is imperative that they are high quality images which are clearly labelled and capture as much information as possible (Sperring & Baker 2014).

**Wound photography using the Minuteful for Wound (MfW) app** See: *For utilising the Minuteful for Wound (MfW) Digital wound management App SOP for in depth guidance.*

- Clinicians should turn on the flash in the top left-hand corner of the screen no matter what the lighting in the environment. This will help to achieve a clear, well-lit image.
- Wound photography is a mandatory requirement at every clinical assessment using the MfW. Clinicians cannot proceed to the wound assessment questions without completion.
- Capturing wounds of a personal and sensitive nature using MfW e.g., malignancy, that are not expected to heal are not required to be photographed at every visit. Once every 2 weeks is sufficient, unless there are clinical concerns which will require input from another clinician. During the visits when wound photography is not taking place, take a photo of a blank space e.g., dressing pack blue sheet to be able to move onto the assessment questions.
- Ensure privacy and dignity is maintained whenever undertaking wound photography. If a wound is located close to or over intimate anatomy, ensure all areas not required to be captured in the photography are covered up.
- Where photography is completed using the MfW app, clinicians must visit the MfW portal and send assessments to EMIS using the 'Send to EHR' button.

### Tips to achieving gold standard photography in practice:

- Ensure the appropriate consent is gained prior to any wound photography and documented clearly in the patient's record (this should be done every time).
- Be prepared; take the time to plan to maximise the accuracy of the photographs. You may require more than one person to position the patient comfortably to facilitate this.
- **Make it count!** Consider lighting, positioning and where possible try to ensure the patient is in a consistent position to enhance reliability of images.
- **Always** use a Sirona provided device to take photographs, **never** use personal phones or devices.

- Clearly label each photograph (*not applicable when using MfW app*). The label must include: - patient Initials and last 4 digits of the NHS number, date photograph taken, photographers initials, location of wound (this information can be written on the paper measuring tool).
- Include a close up and distanced photograph (approx. 1m) to give a sense of perspective to the body which will limit confusion of the wound location and enhance accuracy of documentation.
- When not using MfW app, photographs should be taken regularly (weekly for VAC, fortnightly for acute wounds and monthly for chronic wounds) throughout a care episode to provide a clear timeline to enhance and support documented wound assessments.
- Ensure that photographs are promptly uploaded to the patient's electronic records and then deleted from the mobile device/camera. Edit the document title with wound location. (Estacado & Black 2019, Jacob 2019 Sperring & Baker 2014).

### **Responsibilities in Clinical Photography**

Wound photographs will form part of a patient's medical record and are legal documents. It is important therefore that any person/s involved in producing such images understands their accountability and responsibility for the use and management of this data (Hampton & Kilroy-Findley 2016). This includes; consent, privacy and dignity, General Data Protection Regulation (GDPR) and record keeping.

\*Refer to the Sirona Care and Health Policies and Procedure documents for further information

### **Training and competencies**

All Sirona clinicians should attend the appropriate training every 3 years.

**Wound management training** - Registered nurses, nursing associates, assistant practitioners, advanced clinical practitioners, and experienced Health Care Assistants.

**Basic wound management training** for health care assistants, community support workers, therapists, and therapy assistants. This session is designed for clinicians who support nurses with wound care but are not expected to complete full wound assessments.

Wound care competencies can be downloaded from the Sirona Workplace page under 'Competency Assessment Forms'.

### **Other wound care related training available:**

**2-day leg ulcer management course** – Registered nurses, nursing associates, assistant practitioners, advanced clinical practitioners. Experienced health care assistants can attend this course at their managers discretion, but the course does include clinical skills that a HCA will not be able to do e.g. Compression bandaging.

**Introduction to lower limb management** is aimed at non-registered professionals e.g. health care assistants, community support workers and therapy assistants, and for other health care professionals not regularly performing wound care e.g. Therapists. This session is designed for clinicians who support nurses with wound care but are not expected to complete full lower limbs assessments.

**Hosiery workshop** – Anyone can attend this session once they've completed one of the above sessions (2 day leg ulcer management course OR introduction to lower limb management) according to their job role. Aimed at registered nurses, nursing associates, assistant practitioners, advanced clinical practitioners, and experienced health care assistants.

**Doppler assessment** – Band 4's and up who have completed the 2-day leg ulcer management course.

**Pressure injury plus** – All clinicians can attend this course.

**VAC training** – Band 4's and up.

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