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**AIM:** clean, dry, intact, comfortable, cost-effective dressing that provides catheter or TIVAD needle securement.

**KEY PRACTICES**

- **Assess and document dressing:** at least once per shift, and each outpatient, clinic or home visit
- **IV administration lines:** ensure IV lines are secured to patient to prevent pull on the dressing
- **Replace dressing every 7 days:** or earlier if it contains ooze, moisture or is not intact

**PATIENT FACTORS**

- **Educate patient** to look at dressing each day, to notify nurse of discomfort, burning, or itch of skin under dressing
- **Encourage hydration and balanced diet:** important elements for skin health
- **Hair under dressing:** clip if required to assist with dressing adherence to skin



**Types of CVADs**

- **CICC:** centrally inserted central catheter
- **tc-CICC:** tunnelled cuffed CICC (central venous catheter)
- **PICC:** peripherally inserted central catheter
- **TIVAD:** totally implantable venous access device (portacath)
- **Apheresis catheters**

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**KEY PRACTICE POINTS**

**SKIN ANTISEPSIS**

- ✓ **2% CHG in 70% IPA swab sticks**
  - e.g. Chloraprep® (sterile applicator), 3M™ Soluprep™ SwabStick, Reynard Foam Swab Stick®
- ✓ **Prolonged skin antiseptics**
  - CHG disc e.g. Biopatch® OR
  - CHG gel dressing 3M™ Tegaderm™ CHG Dressing
- ✓ **Tissue adhesive at catheter exit site**
  - (bacteriostatic, haemostatic) e.g. SecurePortIV®
- ✓ **Alternatives: silver or PMHB discs**
  - e.g. Acticoat™ Site, Kendall™ AMD Antimicrobial Foam Discs
- ! **CRITICAL PRACTICE POINT**  
Allow skin to completely air dry before applying any dressing materials

**DRESSING MATERIAL**

- ✓ **Application:** do not stretch or apply with tension, ensure borders adhere to the skin
- ✓ **Use sterile TSM:** consider next generation fabric bordered dressings
  - **Bordered TSM with integrated securement** e.g. SorbaView Shield® Dressing
  - **Bordered TSM** e.g. 3M™ Tegaderm™ I.V. Advanced Securement Dressing
- ! **CRITICAL PRACTICE POINT**  
Use low and slow, controlled removal technique while supporting skin to prevent skin damage related to acrylic adhesives\*
- \* **Acrylic adhesive:** strong dressing adhesive that increases risk of skin damage during removal

**SKIN PROTECTION**

- ✓ **Use alcohol-free skin barrier film** under dressing materials (not under CHG gel or disc) e.g. Cavilon™ No Sting Barrier Film
  - Preventatively for any patients with **risk factors for skin impairment** \*\*
  - For diaphoretic patients for dressing adhesion
- ! **CRITICAL PRACTICE POINT**  
Allow skin to completely air dry before applying any dressing materials

**SECUREMENT**

- ✓ **Use engineered securement devices (ESD)**
  - **Adhesive ESD** e.g. StatLock®, GripLoc®, bordered TSM with silicone adhesive ESD e.g. 3M™ PICC-CVC CHG Securement Dressing
  - **Subcutaneous ESD:** no adhesives for use with impaired skin e.g. SecurAcath™
- ✓ **Tissue adhesive** applied to catheter exit site (haemostatic, bacteriostatic, securement) and potentially under catheter e.g. SecurePortIV®
- ! **CRITICAL PRACTICE POINT**  
All external catheters are secured at all times ideally within 1-2cm of exit site

**\*\* RISK FACTORS FOR SKIN IMPAIRMENT**

- **Age** >50 years, neonates, premature infants
- **Number & type of comorbidities:** infection, diabetes, renal failure, malignancy, skin conditions e.g. eczema
- **Medication:** anticancer agents e.g. metabolites (e.g. fluorouracil, capecitabine), taxanes (e.g. paclitaxel); angiogenesis inhibitors (e.g. bevacizumab); epidermal growth factor inhibitors (e.g. cetuximab); long-term corticosteroids
- **Radiation therapy**
- **Immunosuppression**
- **Malnutrition & dehydration**



**ABBREVIATIONS**

CHG - chlorhexidine	ESD - engineered securement device (for catheter securement)
IPA - isopropyl alcohol	IV - intravenous NaCl - sodium chloride
NC - needleless connector	PHMB - polyhexamethylene biguanide
TSM - transparent semipermeable membrane	

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**COMPLETE HOLISTIC PATIENT ASSESSMENT INCLUDING:**

- Patient diagnosis
- Comorbidities
- Prescribed and other treatments
- Allergies and sensitivities
- Existing skin conditions
- Cognitive performance

! **Consult vascular access or wound care specialist nurse if required**

Skin changes can be categorised as **infection, dermatitis** or **mechanical injury** related

**LOCAL SKIN INFECTION**

**Signs / Symptoms**

- Red, blanched, mottled, warmth, discomfort, oedema, pustules, exudate, odour, induration

**Assessment**

- Is the patient neutropenic?
- Is the dressing clean, dry and intact?
- Is the skin broken? Evidence of skin impairment?
- What is the amount and type of exudate present?

**Key Points**

- ✓ Discuss assessment with treating medical team
- ✓ As per orders - skin culture of exit site, systemic antibiotics, potential CVAD removal
- ✓ Continue regular observation, patient assessment and documentation



**CONTACT DERMATITIS**

- irritant, allergic, moisture-associated

**Signs / Symptoms**

- Redness, burning, pain, itch, shiny, scales, vesicles, exudate (blood, serous), maceration (moisture-associated)

**Assessment**

- Is it associated with infiltration or extravasation?
- Is the area the same size & shape of dressing material or adhesive ESD?
- What are suspected cause/s - solutions, dressing materials, adhesives?
- What is the amount and type of exudate present?
- Is the skin broken?

**Key Points**

- Discuss assessment with the vascular access or wound care specialist nurse if required



**MECHANICAL INJURY**

**Signs / Symptoms**

- Initial skin injury from insertion (bleeding exit site), skin stripping, tears, tension blisters, pressure injury, bruising

**Assessment**

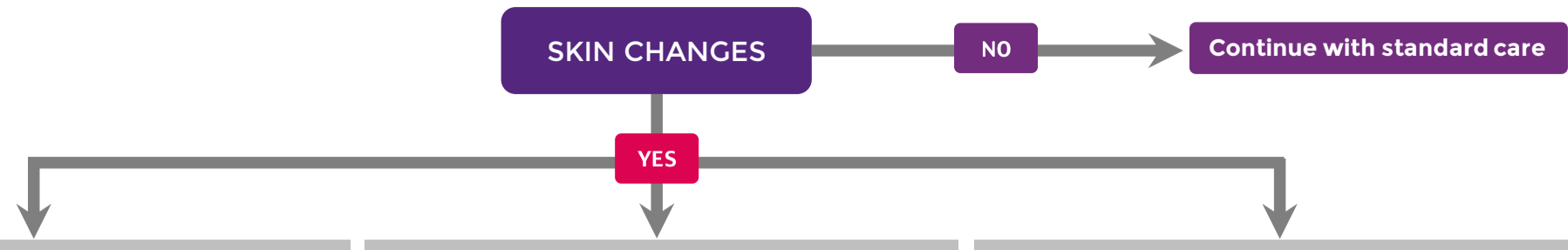
- What caused the injury?
- Skin tear: can the skin edges be gently moved together?
- Was the pressure injury caused by a bandage, tubing, needleless connector?

**Key Points**

- Avoid the mechanism of injury
- Protect skin from catheter hubs or NC with cushioning dressing materials, avoid tight tubing material over dressing



! **PROMPT INTERVENTION:** Do not wait until the next dressing change is due



## SKIN ANTISEPSIS ALTERNATIVES

- ✓ Remove exudate with sterile NaCl
- ✓ Continue with 2% CHG in 70% IPA swab sticks
- ✓ Ensure correct application of CHG disc (blue side up, 360° coverage around catheter at the exit site), gel pad covering exit site

**CRITICAL PRACTICE POINT**  
Allow skin to completely air dry before applying any dressing materials

- Identify and replace suspected irritant/s - may be a combination including:
- ✓ CHG: skin patch test\*\*\* with reduced CHG concentration (0.5%) or
  - ✓ Alcohol: change to aqueous CHG
  - ✓ CHG sensitivity: skin patch test\*\*\* with povidone-iodine 10%
  - ✓ Broken skin: use aqueous CHG (avoid pain caused by alcohol on broken skin)
  - ✓ Use sterile NaCl: for severe skin impairment - allow for greater drying time
- \*\*\* Skin patch test  
Apply material or solution to skin (e.g. forearm)  
Monitor for short period (30-60 mins)  
Monitor over next 2-3 days  
Observe for signs, ask patient re symptoms of irritation

- ✓ Continue to use 2% CHG in 70% IPA swab sticks if skin is intact
- ✓ Consider temporary reduction to CHG 0.5% in 70% IPA or aqueous until skin is healed
- ✓ If severe use sterile NaCl for maintenance procedures - allow for greater drying time

**CRITICAL PRACTICE POINT**  
Allow greater drying time for NaCl & povidone-iodine solutions

## DRESSING MATERIAL ALTERNATIVES

- ✓ CHG gel bordered TSM: allows observation of exit site
- ✓ Antimicrobial disc: add to dressing management if not currently used e.g. CHG (Biopatch® or gel dressing 3M™ Tegaderm™ CHG Dressing), silver (Acticoat™ Site) or PHMB discs (Kendall™ AMD Antimicrobial Foam Discs)
- ✓ For exudate: use absorbent dressing material and attempt to keep separate from exit site e.g. Mepilex® Border, Mepilex Lite®, Biatain® Non-adhesive dressings

- ✓ Identify and replace suspected irritant/s: may be more than one agent
- ✓ Use NaCl or alcohol-free adhesive removal products (e.g. wipes, sprays, pads) to remove dressing. Cleanse skin with sterile NaCl to remove product from skin before applying skin antiseptis
- ✓ For exudate: use absorbent dressing material and attempt to keep separate from exit site e.g. Mepilex® Border, Mepilex Lite®, Biatain® Non-adhesive dressings
- ✓ Consider changing TSM brand e.g. IV3000™, Opsite Flexigrid™, SorbaView Shield® Dressing, 3M™ Tegaderm™ I.V. Advanced Securement Dressing
- ✓ Ensure impaired skin is protected and completely covered
- ✓ Slightly move dressing materials to avoid applying adhesive to same skin area every dressing

- ✓ Continue to use 2% CHG in 70% IPA swab sticks if skin is intact
- ✓ Consider temporary reduction to CHG 0.5% in 70% IPA or aqueous until skin is healed
- ✓ If severe use sterile NaCl for maintenance procedures - allow for greater drying time

**CRITICAL PRACTICE POINT**  
Minimise skin damage with dressing removal technique. Use low and slow technique (for bordered dressings), or lateral stretch technique for flat dressings while supporting the skin (IV3000™)

## SKIN PROTECTION ALTERNATIVES

- ✓ Avoid use of hydrocolloid materials\*\*\*\*
- ✓ Unbroken skin: use alcohol-free skin barrier film e.g. Cavilon™ No Sting Barrier Film
- ✓ Broken skin: use alcohol-free skin barrier film designed for broken skin e.g. 3M™ Cavilon™ Advanced Skin Protectant
- ✓ Use silicone adhesive materials\*\*\*\*\* for protection: over impaired skin to protect from TSM, adhesive ESD

**Main types of adhesives used for dressing materials:**

- \* Acrylic adhesive: strong adhesive for dressing adherence; greater risk of skin damage during removal so slow and low, controlled removal technique is required possibly with additional adhesive remover wipes
- \*\*\*\* Hydrocolloid: avoid due to moisture content under dressing
- \*\*\*\*\* Silicone adhesive: gentle adhesive; can be applied over impaired skin; some materials have absorbent properties to wick away excess moisture; gentle on impaired skin for removal

- ✓ If skin is intact: continue to use skin barrier film
- ✓ If skin is broken: apply
  - silicone adhesive material as protective layer between skin and TSM adhesive e.g. Mepilex® Border, Mepilex Lite®, Biatain® Non-adhesive dressing
  - skin barrier film designed for broken skin e.g. 3M™ Cavilon™ Advanced Skin Protectant
- ✓ Severe cases: place silicone adhesive dressing material over broken skin and situate all dressing materials on top (see example below)
- ✓ Skin with high moisture content or ooze: consider using silicone adhesive material with absorbent properties e.g. Mepilex Border™ or Biatain® Silicone dressing

- ✓ If skin intact: continue to use skin barrier film and ensure skin is completely air dry before dressing application
- ✓ If skin is broken: apply silicone material (protection layer between skin and TSM adhesive)
- ✓ Severe cases: use silicone adhesive dressing material on the skin and place all dressing materials on top
- ✓ Skin with high moisture content or ooze: consider using silicone adhesive material with absorbent properties
- ✓ Broken skin: cover with silicone dressing material

**CRITICAL PRACTICE POINT**  
Allow skin to completely air dry before applying any dressing materials

## SECUREMENT ALTERNATIVES

- ✓ Adhesive ESD: ensure it is not over or adjacent to catheter exit site for monitoring
- ✓ Use a subcutaneous ESD: advantage is there is no adhesive involved, can place silicone adhesive material underneath if needed

- ✓ Move adhesive ESD to different area of skin to avoid skin impairment
- ✓ Place silicone adhesive material between skin and adhesive or subcutaneous ESD
- ✓ Use subcutaneous ESD

- ✓ Alternative: bordered dressing that includes ESD with silicone adhesive
- ✓ Move adhesive ESD to avoid injured skin
- ✓ Use a subcutaneous ESD, can place silicone adhesive dressing underneath if required

CONTINUE TO ASSESSEVERY DRESSING. DOCUMENTALL ASSESSMENTS, PROCEDURES & INTERVENTIONS

### EXAMPLE



Figure 1: Erosive contact dermatitis



Figure 2: Impaired skin protected with silicone adhesive dressing with adhesive ESD on top, and completely covered with TSM



Figure 3: One week later





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