



## SECTION 9: WOUND CARE

### 9.3 Dressings

#### 9.3.2 Changing a Vacuum Assisted Closure (VAC<sup>®</sup>) Dressing

##### Aim

To promote wound healing by using intermittent or continuous negative pressure to actively drain excess fluid(s) from the wound<sup>1,2</sup> and enhance blood flow.<sup>2</sup>

##### Background Information<sup>1,2</sup>

Controlled levels of negative pressure, to the base of some types of wound have been shown to accelerate debridement and promote healing<sup>1,2</sup> by:

1. Removing excess fluid to prevent maceration,<sup>1</sup> decrease oedema and the bacterial count.<sup>2</sup>
2. Mechanically stretching the wound to enhance blood flow and speed up cellular reproduction.<sup>2</sup>

##### Indications<sup>1-3</sup>

- Chronic wounds; Acute/subacute wounds; Traumatic wounds; Dehisced wounds; Pressure ulcers (full thickness); Flaps; Grafts

##### Contraindications<sup>1-3</sup>

- Malignant wounds; untreated osteomyelitis; non enteric and unexplored fistula; necrotic tissue with eschar present; wounds with exposed blood vessels, anastomotic sites, organs or nerves.
- Patient's with allergy or sensitivity to acrylic adhesives, and/or silver in the case of VAC<sup>®</sup> Granufoam<sup>™</sup> Silver dressings.

##### Precautions<sup>1-3</sup>

- Patients at increased of bleeding eg. bleeding disorders, anticoagulant therapy, will require close monitoring. If active bleeding occurs in these patients during negative pressure wound therapy, cease VAC<sup>®</sup> therapy immediately and seek urgent medical assistance.
- Do not take a VAC<sup>®</sup> therapy unit into the MRI environment.<sup>3,4</sup> The dressing may remain in place unless the procedure is likely to take 2 hours or longer. Apply alternative dressing in this case.

### Key points

- Use aseptic non touch technique for all care and manipulation of the wound and dressing. Refer to [ANTT<sup>®</sup> Clinical Practice Framework](#).
- VAC<sup>®</sup> therapy dressings must be ordered by the treating clinician and documented in the patient's medical record.
- Maintaining a seal around the VAC<sup>®</sup> dressing is key to successful VAC<sup>®</sup> Therapy <sup>(KCI)</sup>
- Never leave a VAC<sup>®</sup> dressing in place for more than 2 hours when the VAC<sup>®</sup> machine is switched off. Either apply a new VAC<sup>®</sup> dressing or an alternative dressing at the direction of the treating clinician.<sup>3</sup>
- Change VAC<sup>®</sup> dressing every 48 to 72 hours, but no less than 3 times a week. Infected wounds may require more frequent changes.<sup>3</sup>
- Due to fluid losses, dehydration and/or electrolyte imbalance can occur.<sup>3</sup> Monitor the patient for such complications and report concerns to the treating clinician.
- Do not use the 1000mL canister for children.<sup>4</sup>
- VAC<sup>®</sup> dressing should be ceased if no progress in wound healing is noted in a 1-2 week period.<sup>3</sup>

### Pain Management

- Removal of the dressing +/- debridement may be painful and cause the patient distress.<sup>2,3</sup> Consider administering appropriate comfort measures, pain relief, +/- sedation 30 minutes prior to dressing removal.
- Other options include premedication, use of a non-adherent material prior to foam dressing placement or instillation of normal saline or a prescribed topical anaesthetic agent into the dressing (eg. 1% lignocaine).<sup>3</sup>

### Equipment

Dressing trolley	Sterile scissors
Dressing pack	VAC <sup>®</sup> Machine - Activsac <sup>®</sup> or Infovac <sup>®</sup>
Sodium chloride 0.9% for irrigation <sup>5, 6</sup>	GranuFoam <sup>™</sup> or GranuFoam <sup>™</sup> Silver or VAC <sup>®</sup> WhiteFoam dressing(s)
PPE: apron, sterile & non sterile gloves	TRAC <sup>™</sup> pad

### Additional equipment which may be required





Adaptic or Mepitel dressing	Spray adhesive
Extra sterile swabs	Protective skin film eg. No sting barrier wipe
Sterile cotton tip applicators	Canister (300mL or 500mL size)
Lignocaine 1%	Duoderm (thin dressing)

**Procedure**

- For specialist dressing tips consult [VAC® therapy Guidelines](#).
- Apply principles of ANTT® throughout the procedure.

Steps	Additional Information
<p><b>Dressing Removal:</b></p> <ul style="list-style-type: none"> <li>• Raise the tubing connectors above the level of the VAC machine,</li> <li>• Close clamp on the dressing tubing and disconnect from the canister tubing.<sup>7</sup></li> <li>• Close the canister clamp and turn off VAC machine.</li> <li>• Wait 15-30 seconds to allow foam to decompress.<sup>3,8</sup></li> <li>• Stretch drape horizontally to release the adhesive from the skin.</li> <li>• Slowly pull the old dressing up from skin to remove.<sup>7</sup></li> <li>• Dispose of old dressing and wash hands.</li> <li>• Apply new gloves and prepare dressing equipment.</li> </ul>	<p>Allow the VAC® machine to pull the exudate in the canister tube into the canister.<sup>3</sup></p> <p>If dressing adheres to wound consider instilling sterile water or saline into the dressing and wait 15-30 minutes before attempting removal.</p>
<p><b>2. Prepare wound:</b></p> <ul style="list-style-type: none"> <li>• Inspect the status of the wound and observe for signs of deterioration, pain and infection.</li> <li>• Report any concerns to the treating clinician’s team promptly.</li> <li>• Cleanse/irrigate the wound with 0.9% sodium chloride solution starting with the cleaner parts first.</li> <li>• Measure and map wound size and depth.</li> </ul>	<p>Refer to the <a href="#">wound assessment tool</a></p> <p>Deterioration may indicate dehydration and/or electrolyte imbalance.</p> <p>Ensure debris and remnants of previous foam dressing are removed.</p> <p>Document measurements on <a href="#">wound assessment tool</a></p>

Steps	Additional Information
<ul style="list-style-type: none"> <li>• Cleanse and <b>dry</b> peri-wound skin.</li> <li>• Apply skin protection product to protect peri wound skin and promote adherence of the drape.<sup>3</sup></li> </ul>	<p>No-sting barrier wipe, additional VAC® Drape, hydrocolloid or other transparent film may be used.</p>
<p><b>3. Prepare foam dressing:</b></p> <ul style="list-style-type: none"> <li>• Select appropriate foam size and assembly unit.</li> <li>• Cut foam with sterile scissors to wound dimensions to allow foam to be placed gently into the wound without overlapping onto intact skin.</li> <li>• Trim the foam edges and gently rub edges to remove loose fragments.</li> </ul>	<div data-bbox="919 719 1257 887" data-label="Image"> </div> <p>Do not cut the foam over the wound area as fragments may fall into wound.</p>
<p><b>4. Protect vulnerable tissue:</b></p> <ul style="list-style-type: none"> <li>• Prior to applying dressing, cover any body cavities and highly vascular wounds.</li> <li>• Cover any sutures or staples with a single layer of a non adherent dressing.<sup>7</sup></li> </ul>	<p>Use natural tissue (skin graft), meshed non-adherent material or synthetic material (Adaptic/Mepitel).<sup>3</sup></p>
<p><b>5. Applying the foam and drape:</b></p> <ul style="list-style-type: none"> <li>• Gently insert the foam dressing into the wound cavity – do not use force. →</li> <li>• Size the adhesive drape so it covers the foam and a 3-5cm border of intact peri-wound skin.</li> <li>• Apply adhesive drape by removing the top support layer and smooth the drape (adhesive side down) onto the skin to ensure occlusive seal.<sup>7</sup></li> </ul>	<div data-bbox="911 1404 1211 1570" data-label="Image"> </div> <p>Retain excess adhesive drape to seal difficult areas/air leaks if needed.</p> <p>For large or difficult areas use small pieces and overlap drape by 2.5cm.<sup>3</sup></p>

Steps	Additional Information
<ul style="list-style-type: none"> <li>Do not stretch drape when applying, as this may cause undue pressure or shear forces on the surrounding skin</li> <li>Remove green-striped stabilisation layer and then the blue handles along perforations.<sup>7</sup></li> </ul>	 <p>Minimise creases in the drape to minimise air leaks.</p> <p>Ensure drape is not applied circumferentially.<sup>3</sup></p>
<p><b>6. Apply TRAC™ pad:</b></p> <ul style="list-style-type: none"> <li>Choose location on the drape to apply TRAC™ pad.<sup>7</sup></li> <li>Pinch the drape at the chosen location and cut a hole, 2cm in diameter.</li> <li>Remove the backing liner on TRAC™ pad.</li> <li>Apply pad directly over the hole cut in drape.</li> </ul>	<p>A central location is preferred (consider patient clothing)</p>    <p>The hole must be complete to allow unrestricted flow of fluid from wound.</p>
<ul style="list-style-type: none"> <li>If the wound is smaller than the central disc of the TRAC pad:             <ul style="list-style-type: none"> <li>cut a piece of foam 1-2cm larger than the central disc diameter</li> <li>place this piece of foam over the hole in the drape then apply the TRAC pad.</li> </ul> </li> </ul>	<p>The central disc must only lay on top of foam to prevent damage to periwound skin<sup>3</sup></p>
<ul style="list-style-type: none"> <li>Gently pat around the pad to ensure complete adhesion.</li> <li>Remove the TRAC™ support layer and blue handles at perforations.<sup>3</sup></li> </ul>	

Steps	Additional Information
<p><b>7. Apply VAC Therapy:</b></p> <ul style="list-style-type: none"> <li>• Insert the new VAC<sup>®</sup> canister into the VAC<sup>®</sup> machine until it locks into place.<sup>7</sup></li> <li>• Connect the TRAC<sup>™</sup> pad tubing to the canister tubing and open clamps.<sup>7</sup></li> <li>• Switch on the VAC machine and ensure settings are correctly programmed as prescribed by the treating clinician.</li> <li>• Observe for any air leaks and patch the dressing if required.</li> </ul>	<div data-bbox="900 423 1219 582" data-label="Image"> </div> <p>Position clamps away from the patient.</p> <p>The VAC machine should be quiet during operation - a 'hissing' sound will identify a leak.</p>
<p>8. Place VAC pump in a visible position for ease of monitoring.</p>	<p>ActiVAC pumps can be placed in the carry bag supplied and hung on patients IV pole or placed onto the bedside locker.</p>
<p><b>9. Documentation and Monitoring</b></p> <p>Record date and time of dressing change on the <a href="#">wound assessment and management plan</a>. and/or patients' medical record.</p> <ul style="list-style-type: none"> <li>• Record status of wound with each dressing change</li> <li>• Inspect the dressing hourly to ensure: <ul style="list-style-type: none"> <li>– foam has decompressed</li> <li>– negative pressure is being delivered as prescribed<sup>3</sup></li> <li>– document checks on the fluid balance chart.</li> </ul> </li> </ul>	<p>If foam loses compression, check for leaks.</p>

### Changing the VAC® Canister<sup>3</sup>

Steps	Additional Information
<ul style="list-style-type: none"> <li>• Wash hands and apply gloves.</li> <li>• Close clamps on both the canister and dressing tube.</li> <li>• Disconnect the canister tubing from the dressing tubing.</li> <li>• Remove canister from the machine and dispose of in clinical waste.</li> <li>• Connect new canister tubing to dressing tubing, open both clamps.</li> </ul>	<p>The canister should be changed when full (machine will alarm)<sup>3</sup> or at each dressing change.</p>

### Temporary Disconnection from the VAC® machine<sup>3</sup>

#### Key point:

- Never leave a VAC® dressing in situ without active VAC® therapy for more the 2 hours.<sup>3</sup>

Steps	Additional Information
<ul style="list-style-type: none"> <li>• Close clamps on both the canister and dressing tube.</li> <li>• Turn the VAC® machine off.</li> <li>• Disconnect the dressing tubing from the canister tubing.</li> <li>• Cap the ends of tubing and secure.</li> <li>• <b>Note;</b> When reconnecting and turning VAC® machine back on confirm previous therapy settings resume.</li> </ul>	<p>Use canister tubing cap if available.</p>

#### Troubleshooting:

- Refer to unit specific user manual +/- quick reference guide for information on alarms/trouble shooting.
- For KCI VAC® Therapy units, a tubing cap is supplied (can be found in unit case) to assist with diagnosis of therapy problems. Contact the 24 hour customer support line for advice if clinical problems arise: 1300 524 822

Related policy, procedures and guidelines.
<a href="#">ANTT<sup>®</sup> Wound Care Protocol</a>
<a href="#">Conscious Sedation</a> (Clinical Practice Guideline)
<a href="#">PNPM 2.11</a> Administration of Sedative Drugs and Anaesthetic Agents

Useful resources.
KCI: Kinetic Concepts Incorporated: (24 hours customer support). <b>1300 524 822</b>
<a href="#">KCI VAC<sup>®</sup> Therapy Clinical Guidelines</a> . A reference source for clinicians for trouble shooting & general dressing tips.

### References:


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8. Kinetic Concepts Incorporated. VAC<sup>®</sup> Therapy Clinical Guidelines; A reference source for clinicians. London: MEP Ltd; 2007.

### Bibliography

- Higgins S. Centre for Clinical Effectiveness. The effectiveness of Vacuum assisted closure in wound healing.



## Dressings – Changing a Vacuum Assisted Closure (VAC) Dressing

File Name and Path:	Changing a Vacuum Assisted Closure (VAC) Dressing <a href="https://healthpoint.hdwa.health.wa.gov.au/policies/Policies/CAHS/PNPM%2009.03.02%20Changing%20a%20Vacuum%20Assisted%20Closure%20(VAC)%20Dressing.pdf">https://healthpoint.hdwa.health.wa.gov.au/policies/Policies/CAHS/PNPM%2009.03.02%20Changing%20a%20Vacuum%20Assisted%20Closure%20(VAC)%20Dressing.pdf</a>		
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