

**Template for**

**Leech Therapy Policy & Procedure**

**PURPOSE:**

To provide guidelines for the use of leech therapy to decrease venous congestion after replant surgery or reconstructive surgery, thereby decompressing the region and improving arterial blood flow to the operative area.

**POLICY :**

1. Physician order is required. The order should include the number of leeches, the area to be treated, and the frequency of treatments. Typically, treatments will be with 1-5 leeches at a time, once daily until no longer needed. Occasionally, 2 or 3 treatments may be done in a single day. It is advised that the physician evaluate the patient after the first few treatments before recommending each additional treatment.
2. Leech(s) is/are obtained from Wound Care Services.
3. Nursing staff is responsible for applying leech and disposing leech after use.
4. \*\*\* Patient undergoing leech therapy is to have hemoglobin and hematocrit levels drawn at least once daily.

**\*\*Note:** Continuous oozing may result in blood loss that may require blood transfusions as each bite may ooze 50-60 ml. Leeches produce a thrombin inhibitor which they secrete into the blood stream to prevent clotting, which encourages oozing from the attachment site. A leech will suck 5-30 ml of blood from a congested area.

5. **IMPORTANT: NEVER RE-USE A LEECH. DISCARD AS DESCRIBED BELOW.**

**PROCEDURE:**

1. Perform neurovascular checks and document hourly on the area of the patient's body that is in need of leech therapy.

**\*\*Note:** Venous congestion is generally demonstrated by purplish or bluish color, warm temperature, and rapid capillary refill (less than 2 seconds). Arterial inflow problems will usually leave the transplanted part pale, mottled, cool, with lack of turgor.

1. Leech therapy is effective to relieve venous congestion. It is not helpful in cases of insufficient arterial flow.

Elevation of extremity can alleviate venous outflow problems, while depression or lowering of the treated area may improve arterial inflow problems.

<p>2. Explain procedure and purpose to patient and obtain patient's verbal consent.</p> <p><b>**Note:</b> It is the physician's responsibility to <u>discuss</u> the procedure with the patient prior to initiation of therapy, and document that consent in the medical record.</p>	<p>2. Patient acceptance of this therapy is important.</p>
<p>3. Obtain leech(s) from Wound Care Services based on MD order. Wound Care Services or properly trained personnel will transport per guidelines.</p>	
<p>4. Cleanse patient's skin with <u>sterile water</u>.</p> <p><b>**Note:</b> If the patient is unable to tolerate looking at the leech, drape a sheet between affected extremity and patient's face.</p>	<p>4. The leech will not attach if alcohol or povidone-iodine are present on skin.</p>
<p>5. Dampen a gauze and cut a 1 cm hole in the center. Place the hole over area of skin where leech is to attach. Gently tape in place.</p>	<p>5. Will restrict area available for leech to attach to the area ordered by the physician.</p>
<p>6. Pick up leech with gauze square in gloved fingers or non-toothed forceps. Apply leech to congested area. Do not squeeze or apply pressure to the body of the leech.</p> <p><u>Alternatively</u>, remove plunger from 5cc syringe and place leech in barrel. Invert barrel and place open end on the wound site where you want the leech to attach. Once it attaches, remove the syringe barrel.</p> <p><b>**Note:</b> The head of the leech performs the searching and biting. The tail of the leech has suction for holding the leech in place to stabilize it.</p>	<p>6. Squeezing, whether with fingers or forceps. could injure the leech.</p>
<p>7. If the leech does not attach, notify the surgeon. The following interventions may be tried:</p> <ol style="list-style-type: none"> <li>a. Prick area with a sterile needle and place leech next to blood drop (<b><u>requires a physician order</u></b>).</li> <li>b. Try another leech if first leech still does not attach.</li> <li>c. Call physician if second leech will not attach.</li> </ol>	<p>7. c. Persistent resistance of leech to attach could indicate poor arterial flow to affected area.</p>

<p>8. Once leech has attached, contain leech to the desired area by surrounding the leech with 4x4's.</p>	<p>8. The leech must be contained to prevent it from roaming to good tissue or into the dressing.</p>
<p>9. Stay with the patient during the attachment period.</p> <p><b>**Note 1:</b> The leech will detach when "full", usually between 30-45 minutes. <u>Never "pull off" a leech as teeth could be left in the wound.</u></p> <p><b>**Note 2:</b> A non-licensed caregiver (e.g.-CCA) may be assigned to stay with patient and monitor for detachment.</p>	<p>9. Monitoring for detachment is necessary to prevent leech migration.</p>
<p>10. When leech is detached, remove leech with gauze square and place in container of 70% alcohol for 5 minutes. Tighten lid. Place in red biohazard bag, tie bag off tightly, then place in 2<sup>nd</sup> red Biohazard bag, tie tightly and place bag in Biohazard container in dirty utility area.</p> <p><b><u>Never squeeze leech.</u></b></p> <p><b>**Note 1:</b> NEVER REMOVE A LEECH BEFORE IT HAS FINISHED FEEDING</p> <p><b>**Note 2:</b> If the leech needs to be removed during an emergency, wipe with alcohol soaked gauze.</p>	<p>10. Squeezing leech before detachment could cause regurgitation of contents into wound. This will contaminate and infect the wound.</p> <p>Nursing staff is responsible for disposal of leeches.</p> <p>If a leech is pulled off the wound while still feeding, its teeth can be left in the wound.</p>
<p>11. When the leech is removed, cover attachment site with sterile 4x4 fluffs, loosely to encourage bleeding.</p>	<p>The major therapeutic effect occurs during the post bite period. The bite must be encouraged to bleed.</p>
<p>12. Documentation of leech therapy is to include:</p> <ol style="list-style-type: none"> <li>a. Length of attachment.</li> <li>b. Color, capillary refill, and temperature (cold, cool, warm, hot) of area before and after therapy.</li> <li>c. Amount of oozing from site.</li> </ol>	
<p>13. Monitor oozing from site every hour and PRN. Change 4x4's as needed. Remove any topical blood clot to promote oozing.</p> <p>Obtain order for daily H&amp;H.</p>	<p>13. Each bite may ooze 10-12 hours, perhaps more.</p> <p>Patient should be on daily H&amp;H as continuous oozing may result in significant blood loss.</p>

<p>14. Monitor bite sites for signs of local infection. <b>Document site appearance q shift and PRN.</b></p>	<p>Aeromonas Hydrophila is a leech digestive bacterium. Prophylactic antibiotics may be recommended or empirical IV antibiotics. Obtain order for C&amp;S if signs of infection PRN</p>
<p>15. If additional leech therapy is ordered, attach leech to an <u>adjacent</u> area of congestion. <b>**Note:</b> Never attempt to re-use a leech.</p>	<p>15. Leeches can burrow under the skin if bite size becomes large.</p>
<p>16. Continue neurovascular data collection hourly or as ordered by the physician.</p>	

**EQUIPMENT**

1. Jar of leech(s) in distilled, non-chlorinated water containing HIRODU salt.
2. Container (UA Cup) with a small amount of 70% alcohol for placing leech(s) into after treatment is completed.
3. Single use bottle of sterile water.
4. 4 x 4 gauze.
5. Tape.
6. Scissors and non-toothed forceps.
7. Sterile needle or Lancet (used if leech does not attach – requires a doctor’s order before using)
8. 5 cc plastic syringe.
8. Sterile gloves, and other Personal Protective Equipment PRN

When leech has detached the following is needed:

1. Specimen container with screw top lid (use container leech was received in).
2. At least 75 ml of 70% alcohol to place in specimen container (obtain from storeroom).
2. Two (2) red Biohazard bags for disposal of leeches.
3. Package of sterile gauze dressings (J05318) to cover bite wound.

**DOCUMENTATION**

1. Neurovascular CSM module: Document CSM of proximal and distal treated area hourly.
2. Assessment module and Nurses’ Notes: Appearance of wound (site appearance, drainage, any signs/symptoms of infection q shift and as needed).
3. Physician communication module or Nurses’ Notes: Any communication with physician.
4. Physician documentation of consent and orders

**REFERENCED POLICIES**

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**ATTACHMENTS:**

**APPROVALS:**

\_\_\_\_\_ Date: \_\_\_\_\_  
 Department Director

\_\_\_\_\_ Date: \_\_\_\_\_  
 Vice President

Original Date:  
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 Originating Department:  
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**SEARCH WORDS: LEECH, LEECH THERAPY**