

# Care of Needling Sites Post Hemodialysis for Fistulas & Grafts (Hemostasis)



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## 1.0 Practice Standard

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### Skill Level (Nursing):

Registered Nurses (RNs), Licensed Practical Nurses (LPNs) and others who have received teaching from a hemodialysis (HD) RN or LPN to care for hemodialysis (HD) needle sites post dialysis may carry out this procedure.

### Need to Know:

1. The key to access longevity is nursing assessment. The three steps in vascular access assessment are LOOK, FEEL and LISTEN.
2. Vascular access thrombosis is a major problem for HD patients. The causes are multiple (many of which are preventable):
  - a. Poor caliber vessels (e.g., too large, too small or diseased).
  - b. Post-surgical stenosis at the area of the anastomosis (juxta-anastomotic stenosis).
  - c. Reduction in blood flow to the access from causes such as hypotension / hypovolemia (especially new accesses) or patients sleeping on their access or wearing clothing which tightly encircles the access arm.
  - d. Excessive, unchecked bleeding from an access puncture site which results in the formation of a hematoma. Hematomas can compress the access and lead to a thrombosis. Excessive bleeding can occur for many reasons including: too much heparin in the HD machine; patient is on anticoagulants (e.g., warfarin or clopidogrel) or has a coagulopathy, elevated BUN or hypertension; existing stenosis; or overuse of one needling site. Another cause is the inappropriate management of needling sites post HD. **Appropriate management of needling sites post HD is the focus of this guideline.**
3. There have been few, if any, published research studies on the appropriate care of needling sites post HD. Most recommendations are based on expert opinion.

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4. Expert opinion-based recommendations on the appropriate care of needling sites post HD include:
  - a. Hemostasis is best achieved by removing the needles one at a time.
    - Start by removing the venous needle. Wait until after the venous needle site has clotted (10 – 15 minutes) before removing the arterial needle.
    - Remove needles at the same angle as they were inserted.
    - Do not apply pressure to the needle site until the needle is completely out.
  - b. Hemostasis is best achieved by applying mild, digital (using 2 fingers), localized, direct pressure over the needle site for at least 10 minutes (15 minutes for new access).
    - There are two points of entry for each of the venous and arterial needles, one through the skin and one into the vascular access. Both holes need to be compressed for the bleeding to stop. Use two fingers to press the site, one where the needle was and one just above.
    - There is a fine balance between enough compression for the needle hole to clot and excessive compression which may lead to access thrombosis.
    - During the time that compression is applied, use your other hand to check frequently for a thrill above and below the needle hole. If a thrill cannot be felt, adjust the location and / or depth of compression.
  - c. The use of clotting *agents* (e.g., tip stop, gel foam, calcium alginate) to assist clotting are not recommended under any circumstances.
    - Clotting agents assist in clotting the hole through the skin (the hole that can be seen). They do not, however, assist in clotting the hole into the vascular access (hole that cannot be seen).
    - The danger in using these devices is that the hole through the skin may be clotted but the hole into the vascular access may still be bleeding.
    - If the access hole is still bleeding, there is likely a complication in the access that needs to be addressed. The use of clotting devices masks this underlying problem.
  - d. The use of clotting devices (e.g., tourniquets or straps) to assist clotting are also not recommended. However, if these *devices* are used, (i) use only on mature fistulas (not on new fistulas or on grafts); (ii) use only one device; and (iii) use tourniquets or straps. Do not use clamps.
    - Using one device at a time helps to avoid excessive pressure over the access.
    - When the device is on, check frequently for a thrill above and below the device. If a thrill is not present, read just the device. If still not present, remove the device, assess the access and consider holding the sites manually.

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- Never leave a device on for longer than 20 minutes. Always remove prior to a patient leaving the HD unit.
- Do not use clamps because they cannot be adjusted and can cause total occlusion of an access.
- Do not use any clotting devices on a graft. Graft material lacks the elasticity of native vessels and a clotting device may compress the access too much and the graft may not rebound back to its original diameter. This may lead to stenosis and possible access thrombosis.

## 2.0 Equipment

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- Non-sterile gloves
- Sharps container
- Gauze
- Tape
- Clotting device such as a tourniquet or strap (not recommended)

## 3.0 Assessment and Interventions

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1. Remove the venous needle at the same angle as it was inserted.
2. Once the needle is removed, hold the site using two fingers (one where the needle was and one just above) and apply local pressure for at least 10 minutes (15 minutes for new accesses).
  - If able, have patient hold the site.
  - If patient unable, have family member hold the site.
  - If patient and/or family unable, nurse / technician holds the site.
3. If no one is available to hold the site and the access is a mature fistula, a tourniquet or strap may be placed over the needle site. Check frequently for a thrill above and below the device. If a thrill is not present, readjust the device and reassess. If a thrill is still not present, remove the device, assess the access and consider holding the sites manually.
4. Once the venous needle sites have clotted, pull the arterial needle. Repeat steps 2 and 3.

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## 4.0 Patient Education and Resources

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1. Ask nurse to pull one needle at a time. The second needle should not be pulled until the first needle site has clotted.
2. Learn to hold your own needle sites using gentle pressure for 10 – 15 minutes. While wearing gloves, press at the needle spot and just above.
3. When the bleeding stops, tape the gauze in place, but avoid wrapping the tape all around your arm.
4. Do not leave the hemodialysis unit until your nurse has assessed your access.
5. Remove the gauze 4 – 6 hours after your dialysis treatment.
6. You can expect scabs to form where the needles were inserted. Avoid scratching or picking the scabs.
7. If your fistula starts to bleed and it is after you leave the dialysis unit, apply gentle pressure for 10 minutes using a clean towel or gauze. If the bleeding does not stop, keep applying pressure and go to the Emergency Department. Let your hemodialysis team know as well. It is a good idea to carry gauze with you.
8. While not recommended, if tourniquets or straps are used, they should not be shared between patients and must be removed before you leave the HD unit. Tourniquets / straps need to be replaced about every 3 to 6 months.

### To apply:

- Place the button (face down) on the needle puncture site, then wrap the band around the arm and secure with Velcro.
- Leave the tourniquet / strap on the puncture site for at least 10 minutes to stop the bleeding.
- After the bleeding has stopped, remove the tourniquet / strap and apply a clean gauze or band-aid to the puncture site.
- Do not leave the tourniquet / strap on for more than 20 minutes and ensure the tourniquet strap is removed before leaving the HD unit.
- Put the tourniquet / strap in a baggie and take home to wash.

### Washing care:

- After each dialysis treatment, wash your tourniquet / strap with a mild laundry detergent and a little bleach (about a tablespoon to each 4 cups of soapy water). Air dry (do not use a dryer).
- Ensure your tourniquet / strap is clean and completely dry before reusing.

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## 5.0 Documentation

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1. Document any findings from the post assessment that are unusual on the HD log and HD Kardex.
2. Document the length of time hemostasis of the needle sites takes to occur.

## 6.0 References

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## **7.0 Developed By**

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1. BCs Vascular Access Educators Group (VAEG).
2. Adapted from Fraser Health and Providence Health Care Renal Program guidelines/standards.

## **8.0 Reviewed By**

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1. British Columbia Renal Educators Group (BCREG).
2. BC Provincial Renal Agency – MAC (via e-mail to renal directors).