

Cannulation for the *Novice* Cannulator Self-Learning Package

Please review the PowerPoint presentation “**Cannulation for the Novice Cannulator**” and then answer the questions below. Once you have completed the questions, please check your responses using the answer key. Submit completed answer sheets to your VA Nurse or Renal Educator for their review with you.

In addition to completing the PowerPoint presentation and the quiz, it is suggested you complete the following to fulfill the criteria for a **Novice Cannulator**:

- Demonstrate cannulation of an established AVF or AVG on a VA practice arm.
- Under the observation of an advanced cannulator, successfully cannulate 3 established AVFs (with at least one having a buttonhole track) and 3 AVGs designated as “easy.”

Novice Cannulators may cannulate established AVFs and AVGs which are easy to cannulate (no complications). If AVF has a buttonhole, track is well established.

Refer to Cannulation Learning Plan: www.bcrenalagency.ca ► Health Professionals ► Clinical Resources ► Vascular Access ► Cannulation Teaching Tools

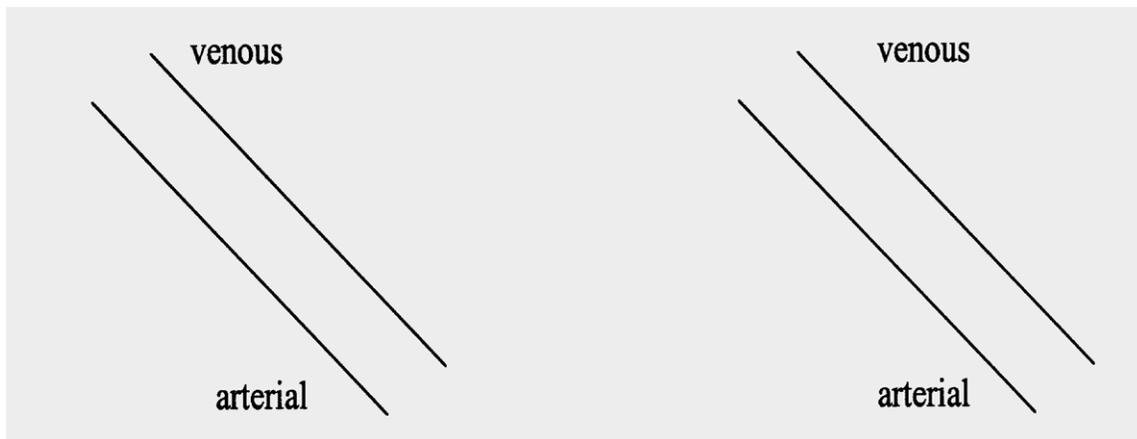
Direct link: www.bcrenalagency.ca/resource-gallery/Documents/Cannulation%20Learning%20Plan.pdf

Questions

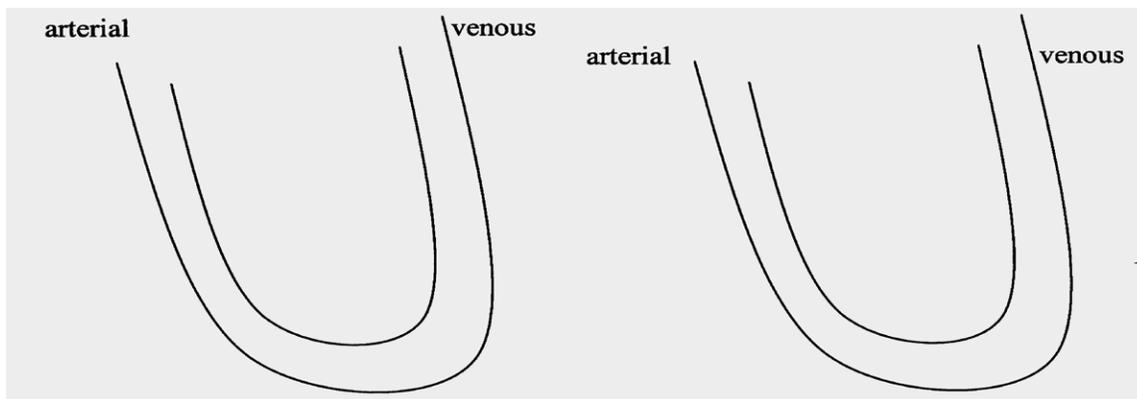
1. As professional nurses what standards guide our decision making regarding management of hemodialysis vascular accesses?
2. List the three categories of cannulators.
3. What does a new hemodialysis nurse need to accomplish before being classified as a Novice Cannulator?
4. What does the novice cannulator need to accomplish to move to the Skilled Cannulator level?
5. Can a novice cannulator cannulate a new HD access?
6. What are the key principles to successful cannulation?
7. List things you should be checking when you are assessing the access for needle placement.
8. How do you determine which needle should be arterial (access) and which should be venous (return)?
9. Explain the difference between a native fistula and an artificial graft.
10. What is steal syndrome and what is a possible outcome?
11. Needles should be placed into a **fistula** at ____ degree angle to the skin.
12. Needles should be placed into a **graft** at ____ degree angle to the skin.
13. What is an aneurysm? Can an aneurysm be cannulated?
14. When should the MD or VA Coordinator be consulted regarding a specific access?
15. List & describe two recommended cannulation

techniques and when each should be used.

16. What are the pros and cons of each cannulation technique?
17. Is the use of local anesthetics recommended?
18. If local anesthetic is needed what is the recommended type?
19. How far apart should the needle tips be?
20. Draw 2 variations of correct needle placement for a fistula.



21. Draw 2 variations of correct needle placement for a graft.



22. If a fistula needle infiltrates what steps should be taken?

23. What is the recommended disinfectant for use on vascular accesses?
24. Compared to AV grafts, an AV fistula is associated with which of the following?
 - a) Better long-term survival
 - b) Less intervention to maintain patency
 - c) Lower infection rates
 - d) Less healthcare expenditure
 - e) All of the above
25. Describe two important points in removing a fistula needle at the end of the dialysis treatment and why.
26. How many times should you try cannulating before asking for assistance?
27. Patients with an AV fistula should be taught:
 - a) To compress a bleeding access
 - b) To wash the skin over an access with soap and water daily
 - c) To avoid carrying heavy items over the access arm
 - d) To palpate for a thrill/pulse daily
 - e) All of the above

Answers

1. As professional nurses what standards guide our decision making regarding management of hemodialysis vascular accesses?
[CRNBC & BCPRA Vascular Access Guidelines www.bcrenalagency.ca/health-professionals/clinical-resources/vascular-access](http://www.bcrenalagency.ca/health-professionals/clinical-resources/vascular-access)
2. List the three categories of cannulators.
 Novice, Skill, Advanced
3. What does a new hemodialysis nurse need to accomplish to be a Novice Cannulator?
 Complete a self learning package; demonstrate steps of cannulating a well developed vascular access on a practice arm if available; under the observation of advanced cannulator, successfully cannulate 2 AVFs & 3 AVGs designated as easy using two needles and attaining prescribed blood pump speed with no infiltrations.
4. What does the novice cannulator need to accomplish to move to the Skilled Cannulator level?
 Practice under the guidance of a skilled or advance cannulator.
5. Can a novice cannulator cannulate a new HD access?
 No
6. What are the key principles to successful cannulation?
 Assessment (look, listen & feel) and mapping the depth and direction of the fistula/graft to determine best needle placement.
7. List things you should be checking when you are assessing the access for needle placement.
 Thrill, bruit, depth, map the access to ensure there is an area long enough for the needle.
8. How do you determine which needle should be arterial (access) and which should be venous (return)?
 Identify the direction the blood is flowing through the AVF or AVG, and place the arterial fistula closest to the arterial anastomosis and the venous needle down stream from the arterial needle.
9. Explain the difference between a native fistula and an artificial graft.
 Both connect an artery to a vein; however, in an artificial graft, a piece of plastic is placed between the artery and the vein.
10. What is steal syndrome and what is a possible outcome?
 Too much blood is being diverted from the hand/foot into the fistula or graft “stealing” the blood from the access limb.
11. Needles should be place into a fistula at ____ degree angle to the skin.
 25 – 30 degree angle to the skin
12. Needles should be placed into a graft at ____ degree angle to the skin.
 45 degree angle to the skin
13. What is an aneurysm? Can an aneurysm be cannulated?
 An aneurysm is an area of weakness in the fistula or graft wall usually due to excessive cannulation in one area or from previous needle pokes for blood sampling or intravenous cannulation prior to access creation.

 No, an aneurysm should not be cannulated as cannulation continues to weaken the fistula/graft wall causing the fistula/graft to rupture. Also, there tends to be recirculation with in aneurysms.

14. When should the MD or VA Coordinator be consulted regarding a specific access?
 Poor quality bruit/thrill, edema, pain, signs of infection, aneurysm, cannulation difficulty, unable to attain adequate BPS, too low arterial pressures or too high venous pressures, unexplained prolonged bleeding on 3 consecutive runs.

15. List & describe two recommended cannulation techniques and when each should be used.
Rope ladder (AVF & AVG): cannulate approx 1/4" above or below the last needle site each HD session.

Buttonhole (AVF only): cannulate the exact same hole each HD session. Cannulation is usually done by the patient themselves.

16. What are the pros and cons of each cannulation technique?
 For rope ladder there needs to be a long straight section of fistula/graft.

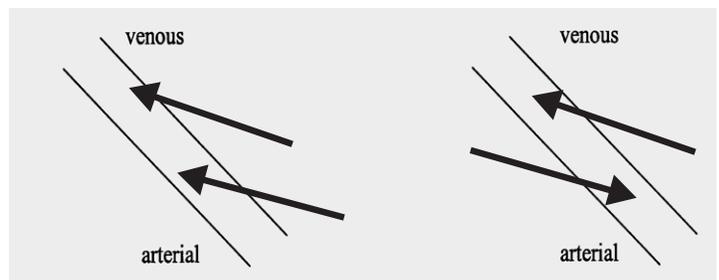
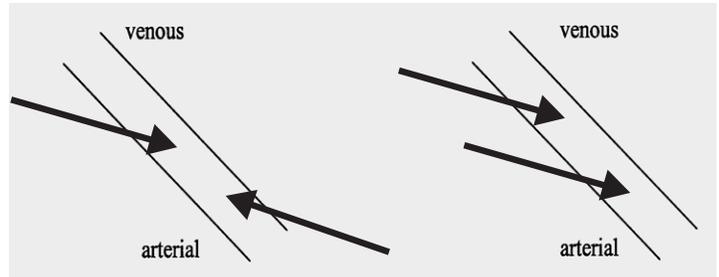
Buttonhole can be used for tortuous vessels. However due to using the same hole each time there is a high risk of infection. Special care needs to be taken disinfecting the buttonhole.

17. Is the use of local anesthetics recommended?
 No

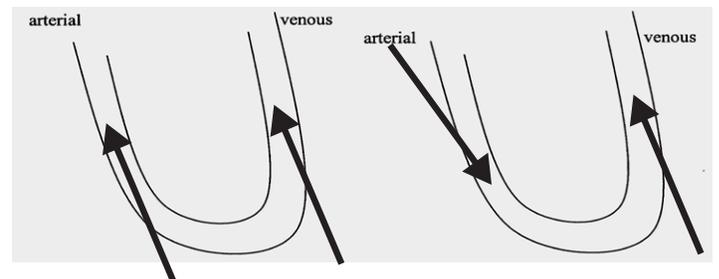
18. If local anesthetic is needed what is the recommended type?
 Topical

19. How far apart should the needle tips be?
 >7.5cm (3") to reduce recirculation.

20. Draw 2 variations of correct needle placement for a fistula.



21. Draw 2 variations of correct needle placement for a graft.



22. If a fistula needle infiltrates what steps should be taken?
 Stop the pump, remove the needle & apply digital pressure and apply ice. If possible allow area to rest.

23. What is the recommended disinfectant for use on vascular access devices?
 Chlorhexidine 2%

24. Compared to AV grafts, an AV fistula is associated with which of the following?
 a) Better long-term survival

- b) Less intervention to maintain patency
- c) Lower infection rates
- d) Less healthcare expenditure
- e) All of the above

25. Describe two important points in removing a fistula needle at the end of the dialysis treatment and why.

- Remove needle at the angle of insertion so as to not increase the size of the hole;
- Do not put pressure on the needle until it is all the way out to prevent cutting the vessel and also causing the hole to become bigger. Both can lead to prolonged bleeding.

26. How many times should you try cannulating before asking for assistance?

Maximum of twice.

27. Patients with an AV fistula should be taught:

- a) To compress a bleeding access
- b) To wash the skin over an access with soap and water daily
- c) To avoid carrying heavy items over the access arm
- d) To palpate for a thrill/pulse daily
- e) All of the above