

N7 — AVF/AVG Assessment and Cannulation

FRONT

Look, listen, feel, and test before every needle. The access exam is the surveillance.

When: before every cannulation, and at needle removal.

Do this

1. **Wash and look.** The patient washes the access arm before cannulation. Look for redness, swelling, drainage, skin breakdown, thin or shiny skin over an aneurysm, a cool or discolored hand, and neck or chest collaterals [5].
2. **Listen.** Normal: low-pitched, continuous bruit. Abnormal: high-pitched, systolic-only, or absent.
3. **Feel.** Normal: soft, compressible vessel with a thrill. Abnormal: hard pulsatile segment, weak thrill, “mushy” graft, or no thrill.
4. **Test.** Raise the arm — a fistula should collapse. Occlude above the anastomosis — the pulse should augment.
5. **Confirm flow direction** before placing needles; use ultrasound for a new or difficult access if trained.
6. **Rope ladder:** rotate both sites along the full length of the access. No area puncture [5].
7. **Needles:** gauge matched to the prescribed blood flow per your unit protocol. Venous needle always antegrade; avoid a retrograde, bevel-down arterial needle [6].
8. **First cannulations of a new fistula** go to the most skilled cannulator.
9. **After dialysis:** firm pressure on the puncture site — enough to stop bleeding, not enough to lose the thrill.

Call the nephrologist when

- **Same day:** no thrill **and** no bruit; a rapidly expanding hematoma; a cold, pale, painful, or weak hand; bleeding you cannot control; thin, shiny, ulcerated, or scabbed skin over an aneurysm.
- **Before the next session:** pus, spreading redness, or fever — cultures before antibiotics.
- **At rounds:** new difficulty cannulating, clots aspirated, prescribed blood flow not reached, needle sites bleeding longer than usual for 3 sessions in a row, an unexplained Kt/V drop of more than 0.2, or arm, face, or breast swelling [5].

Don't

- Don't cannulate a fistula within 14 days of creation [3], or before the access team has cleared it.
- Don't buttonhole a graft — ever. Don't start a buttonhole without an order and an indication [2].
- Don't needle the top of an aneurysm.
- Don't allow BP cuffs, IVs, or blood draws on the access arm (per your unit protocol); flag any PICC request to the nephrologist.
- Don't press on the vessel downstream of a bleeding point.

Why

1. Physical exam by trained staff agreed with angiography in about 89% of outflow and 80% of inflow stenoses [1].
2. Buttonhole cannulation carried 2.6 times the access-related bloodstream infection risk of rope ladder in national CDC data [2]; *S. aureus* bacteremia was 13% versus 0% at 1 year in a randomized trial [7].
3. Cannulating a fistula within 14 days of creation was associated with 2.1-fold higher risk of fistula failure [3].
4. A major infiltration added a median of 97 days on a catheter, and 26% of infiltrated fistulas clotted [4].
5. KDOQI 2019: examine the access before every cannulation; surveillance numbers are supplementary — act on clinical findings [5].

Go deeper

- Mastery page: [Examining and Cannulating the AVF and AVG](#)
- [All dialysis nursing reference cards](#)

References

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