



MANITOBA RENAL PROGRAM

SUBJECT <ul style="list-style-type: none"> Single Needle (Click-Clack) Hemodialysis for Fresenius 5008 Dialysis Delivery system 	SECTION 30.10 Hemodialysis Procedures and Equipment
	CODE 30.10.12
AUTHORIZATION <ul style="list-style-type: none"> Professional Advisory Committee, Manitoba Renal Program Nursing Practice Council, St. Boniface Hospital 	EFFECTIVE DATE March 2014
	REVISION DATE April 2016 October 2018

PURPOSE:

- To provide instruction in performing Single Needle Hemodialysis (Click-Clack).

POLICY:

- Nurses working in Hemodialysis who have received instruction from the renal educator or delegate may perform this procedure.
- Single needle (SN) (Click-Clack) hemodialysis can only be used if the functioning needle is not situated below an interstitial needle site (i.e. a “blow”) and not placed retrograde (i.e. returning into the anastomosis).
- SN (Click-Clack) hemodialysis does remove fluid effectively but provides minimal diffusion. Recirculation value is very high (~80%). The On-Line Clearance Module (OCM) and the Blood Temperature Module (BTM) do not function in this mode and there will not be a recorded Kt/V.
- Notify the physician if patient will be receiving SN (Click-Clack) hemodialysis. It may be necessary to obtain pre and/or post hemodialysis bloodwork to determine if the patient will require Kayexalate and when the next hemodialysis treatment should be scheduled.
- Both steel needles and Teflon needles can be used for SN (Click-Clack) hemodialysis. Using a steel needle will increase the percentage of recirculation. A central venous catheter with one functioning lumen could also be used with approval from a physician.
- Heparin free hemodialysis is not recommended for SN (Click-Clack) hemodialysis due to the frequent starting and stopping of the pump and thus increased likelihood of the blood lines and dialyzer clotting.
- SN (Click-Clack) hemodialysis can be initiated at start of treatment or after double needle hemodialysis has been started. It is also possible to return to or start double needle hemodialysis at any time (i.e. if a second needle has been established).

EQUIPMENT:

- Y-line connector (Gambro S-660-C)
- 3 -10mL syringes containing 0.9% NaCl
- Forceps (optional)

KEY POINTS:

PROCEDURE:

A. Initiating SN (Click Clack) Hemodialysis

1. Prime Y-line using the syringes with 0.9% NaCl.
2. On the OPTION screen select SINGLE NEEDLE menu.
3. Confirm the settings entered for arterial and venous pressure.
4. Touch the **CLICK-CLACK I/O button**. The blood pump will stop and the following message will appear:

Connect both the arterial and venous blood lines to the same vascular access

5. Attach the Y-line to the functioning needle or CVC. Make sure access is clamped. If attaching to a Teflon needle ensure that both clamps on the Y-line are clamped.
6. Attach the arterial and venous bloodline to the limbs of the Y-line. Unclamp the Y-line clamps and the clamp on the fistula needle. Select **Start**.
7. A prompt may appear requiring a lower UF rate to be set if the effective blood flow rate is too low. (The displayed effective blood flow may rise several minutes after starting SN.) If possible maximize the Qb to allow for arterial pressure maximum negative measurement of -250 mmHg. If it is not possible to raise the QB, the UF rate will need to be lowered.
8. If performing hemodialysis heparin free, it is recommended to provide intermittent boluses of normal saline or substitute as described in MRP Policy 30.10.13 *Providing Hemodialysis without Heparinization*.
9. When treatment is complete, perform reinfusion as per procedure 30.10.01 *Use of Fresenius 5008 Delivery System* or 30.10.03 *Initiation and Termination of Treatment Using the Fresenius 5008ONLINEplus™ System*.

B. To return to double needle hemodialysis

KEY POINTS:

- SN (Click-Clack) hemodialysis can be initiated at the start of HD treatment or any time after double needle dialysis is initiated.
- The venous pressure limits are set at 50 and 400 mmHg.
- If not previously primed with 0.9% NaCl, fill the limbs of the Y line using blood from access. Ensure that the line is de-aerated prior to connecting patient. Clamp both limbs of the Y-line.
- If SN (Click-Clack) hemodialysis is chosen at the beginning of the treatment, it will take longer to get the prompt that blood has been detected and to start the treatment.
- The SN screen will display an effective blood flow and arterial and venous pressures. The venous pressure reflects the pressure within the system (not the return access) and may climb to 400 or slighter higher.
- The Venous Access Monitor (VAM) is deactivated for SND HD.
- The risk of clotting in the extracorporeal circuit is increased due to frequent stopping of the blood pump.
- Continuous infusion of normal saline is not recommended due to the constant addition of fluid to the extracorporeal circuit and may interfere with the venous pressure readings (the mechanism by which the blood pump starts and stops).
- When reinfusion is started, SN Click Clack is automatically switched off as only one access is required for reinfusion.

PROCEDURE:

1. Select the Single Needle menu and touch the **Click-Clack I/O** button.

Message will appear:

“Connect the arterial and the venous blood line to the respective vascular access”

2. Remove the Y-line from the needle and connect the arterial and venous blood lines to their respective fistula needles. (Ensure clamping as required).
 3. Touch the **Start** button. Regular HD will resume.
- The OCM and BTM function will not be available for the remainder of the treatment.

DOCUMENTATION:

- Integrated Progress Notes
- Hemodialysis treatment record W-00411

REFERENCES:

Fresenius Medical Care: *5008 Hemodialysis System; Instruction for Use*, 2015, Software version 4.57
Edition:10B-2015

Fresenius 5008 CorDia: Resource Nurse Training Binder. Revised 14 November 2014.