



**NEPHROLOGY PROGRAM  
DEPARTMENT POLICIES AND PROCEDURES**

**Hemodialysis - Section 10 - Gambro Artis - Neph 10-01  
Preparing the Gambro Artis Machine for Double Needle Hemodialysis  
No.: 01160 (TOH Standardized Policy Number)**

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**ISSUED BY:**

Hemodialysis Clinical Practice Committee

**DATE OF APPROVAL:**

N/A

**APPROVED BY:**

Program Clinical Director and Division  
Head

**LAST REVIEW/REVISION DATE:**

2018/04

**CATEGORY:**

Gambro Artis

**IMPLEMENTATION DATE:**

2011/04

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**PURPOSE:**

- To prepare the Gambro Artis hemodialysis machine for a hemodialysis treatment maintaining aseptic technique and adhering to Routine Practices

**BACKGROUND STATEMENTS:**

1. The Gambro Artis will be prepared (concentrates opened and conductivity attained) **no more than three hours prior to the patient's hemodialysis treatment**
2. Supplies (0.9% NaCl, Blood lines, Dialyzer) are to be opened just prior to preparing the machine
3. Always use aseptic technique when making or breaking any fluid path connection
4. Bloodlines are sterile if package is not damaged and the protective sterility caps are in place. If these caps are found loose in the package and sterility of the bloodlines is not compromised, the caps or a syringe may be applied to maintain sterility
5. Expiry dates should be checked for all supplies
6. Hand [Hygiene](#): As per Corporate Policies and Procedures Hand Hygiene Policy #00014

**DEFINITION(S):** N/A

**ALERTS:** N/A

**SUPPLIES:**

- Gambro Artis Hemodialysis Machine
- Acidified dialysate concentrate- as prescribed
- Acid concentrate wand
- BiCart cartridge (Bicarbonate powder)
- ArtiSet blood tubing
- Two-1 liter bags of 0.9% NaCl (NS)
- Dialyzer- as prescribed

**PROCEDURE:**

**Machine Preparation**

1. Perform Hand Hygiene
2. Ensure that the Gambro Artis is connected to:
  - Purified treated water source
  - Drain
  - Grounded Emergency electrical outlet
  - Internet connection at patient station into the 'non-labelled' port
3. Ensure that:
  - The sensor bar and the blood pump door are both closed
  - The arterial and venous dialysate connectors are firmly connected to their ports
  - The EvaClean doors are firmly closed
4. If the machine is in the 'low power mode' indicated by the power light on the front panel being illuminated green, press the on/off key to resume power. If the power light is not illuminated, turn the machine on by pressing the POWER switch on the right side of the machine.
5. **For each machine use, you must verify the date of last disinfection.** Press 'Disinfect/Rinse Settings' and verify that the last disinfection was completed **within 48 hours** (there will be a completed date and time in the stop column). This will be documented in the pre-screen in Nephrocare by putting a checkmark in the box beside "machine disinfected".
6. If the main water treatment system loop has been disinfected, the machines will be labeled by the technologists indicating the need to test for residual peroxide. **The machine must be checked for residual peroxide before connecting the patient to the equipment.** Obtain a fluid sample by attaching a 10 mL syringe to the sampling port on the arterial dialysis tube. **For residual testing use a peroxide test strip.** If the result is greater than 1 PPM, do a rinse procedure, and then re-test the machine. If testing remains greater than 1 PPM contact a nephrology technologist and use a different machine.

- **If the machine has been set-up and primed**, the nursing staff is to obtain a fluid sample by attaching a 10 mL syringe to the sampling port on the arterial dialysis tube. **For residual testing, use a peroxide test strip.** If the result is greater than 1 PPM, discard the entire circuit and put the machine through a rinse cycle. Repeat the residual testing, using a peroxide test strip. If the result is greater than 1PPM, change to a new machine. If the result is not greater than 1 PPM, prime the machine.
7. If there is a used CleanCart in the BiCart bracket, remove it. Lift the upper BiCart arm up and outwards, remove the used CleanCart disinfection cartridge from the BiCart holder. If there is no CleanCart in the BiCart holder, pull the lower arm of the BiCart holder down, and pull the upper arm up and outwards.
  8. Remove the protective caps from either end of the BiCart cartridge and save the caps. Insert the BiCart cartridge into the lower BiCart arm. Support the lower arm with one hand while lowering and pressing the upper arm to pierce the cartridge. Ensure that the BiCart holder has perforated the BiCart cartridge.
    - If using Acidified jug: Place the acidified concentrate wand in the prescribed acidified dialysate concentrate jug. Remove the red acidified connector from the front of the machine and attach the red acid connector to the white wand.
    - If using Central Delivery acidified: remove the red acidified connector from the front of the machine and attach to the appropriate acidified port on the front of the machine (these ports will be labeled K2, K3).
  9. Touch the Prescription Icon (Blue Person), scroll down to 'Acidified' and confirm the acidified concentrate by matching the K<sup>+</sup> and Ca<sup>++</sup> concentrate to the options on the parameter screen. Highlight the concentrate that matches the prescribed acid bath and confirm.
  10. Hang 2-1 liter bags of NS on the machine IV pole
  11. Remove the prescribed dialyzer from its package and place it in the dialyzer holder Arterial end up. Ensure that both protective dialyzer caps (blood pathway) are in place. Save the white dialysate port caps for the end of treatment.
  12. Peel the sticker with the Artisets lot number off the package and stick onto the R-191
  13. Open the ArtiSet tubing package on a flat surface. Verify that the white spike is securely attached to the NS re-infusion line and that the NS re-infusion line is attached to the venous medication administration port. Check that the blue heparin back-check valve is secure. Verify that all end caps are in place. Remove ArtiSet blood tubing from the package.
  14. Follow all prompts step-by-step on Hemodialysis machine screen and confirm steps are completed when the machine requests it. Please note the following addition to the instructions:
    - Clamp the NS re-infusion line before spiking the bag of NS or spike the bag of saline as the last step in the sequence.

15. Verify that:

- Reinfusion line from NS bag is connected to the venous infusion line
- Open the clamp on the re-infusion line
- Clamps are open on the patient blood lines going into the EvaClean
- Clamps are closed on arterial infusion lines and the ‘Y’ on the venous bloodline (located between the dialyzer and the cassette)

16. Touch ‘AutoPrime’ on Screen. The icon will now have a yellow indicator light showing that the Autoprime is programmed and will activate once self-tests are complete. Machine will do self-tests with a message on screen as it moves from 0% to 100%. Once the machine has reached 100% it will begin the Autoprime of the blood and dialysate compartments of the hemodialysis circuit.

17. Program the dialysis treatment parameters:

- If the Patient has a Prescription Card, place the card near the card reader. The patient’s ID, first and last name will appear on the screen along with the patient’s prescription. Verify patient’s first and last name and MRN #. **The treatment prescription must be verified against the orders in NephroCare or the pre-checked R-191.**
  - If all information is correct, press confirm
  - If the information is not correct then modify the card to update to correct parameters

Verify that the concentrates used match the prescription programmed on the Artis machine.

- Manually: touch the prescription Icon, scroll down through this screen and manually enter the treatment parameters—refer to Neph 3-01
- Ensure that both Hemoscan and Diascan functions are activated prior to beginning patient treatment (refer [to Neph 10-06 Utilizing Hemoscan Function with Gambro Artis](#) and [Nephrology Practice Alert #148 Diascan Update](#))
- Use the following parameters for BP settings:

	Upper Sys	Lower Sys	Upper Dia	Lower Dia	Pulse High	Pulse Low
High	180	110	90	60	100	50

**Note: These parameters should be altered after assessment of the patient**

18. The message “Priming Completed” will appear on the screen when the circuit prime and testing is complete. Touch ‘Confirm’

- **Note:** the machine will go into “Low Consumption” 2 minutes after the prime is completed (to conserve concentrate) until it is time to connect the patient

19. If the dialyzer needs to be changed once the priming is complete follow the steps below:

- Put on mask with visor and gloves

- Using 2 blue clamps, clamp the distal ends of the venous and arterial blood lines attached to the dialyzer
- Remove dialysate fluid tubes
- Remove the current dialyzer and replace with new dialyzer
- Attach bloodlines to the dialyzer taking care to maintain sterility of the venous and arterial ends of the blood lines, remove clamps
- Attach dialysate fluid tubes
- Ensure there is a new 1 L bag of NS attached for priming
- On the home screen of the Artis hemodialysis machine press “end low consumption”
- Once the machine has exited the low consumption mode, press the blood drop icon on the NAV pad
- press “priming settings”
- Press “reset prime”
- Follow machine prompts and press “auto prime”
- The circuit will be re-primed with 850 mLs NS

20. Proceed with policy [Neph 5-1 Initiation of Hemodialysis using an Established Arterio-Venous Fistula/Graft using the Gambro Artis Hemodialysis Machine](#) or [Neph 6-1 Initiating Hemodialysis with a Hemodialysis Catheter and the Gambro Artis Hemodialysis Machine for patient connection](#)

**DOCUMENTATION (S):** N/A

**RELATED POLICIES / LEGISLATION:**

1. Corporate Policies and Procedures – [Occupational Health and Safety - Hand Hygiene 00014](#)
1. Nephrology Policies and Procedures - [Hemodialysis - Section 08 - Documentation - Neph 8-1-2 \(# 00765\) Documentation of the Hemodialysis Session from the Artis Machine](#)
2. Nephrology Policies and Procedures—[Hemodialysis-Section 10-Gambro Artis Neph 10-06 Utilizing Hemoscan Function with Gambro Artis](#)
3. [Nephrology Practice Alert #148 Diascan Update](#)

**REFERENCES:**

1. Centre for Disease Control and Prevention. Recommendations for Preventing Transmission of Infections Among Chronic Hemodialysis Patients. MMWR 2001 / 50(RR05); 1-43. <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5005a1.htm>
2. Gambro Artis User Manual, 2012
3. Dialyzer Product inserts:
  - Fresenius Medical Care- Fx class capillary Haemodiafilters Fx800 and Fx1000
  - Bellco Phylther Hollow Fiber Dialyzers

**COMMENTS / SIGNIFICANT REVISIONS:**

Updated to reflect changes in Anticoagulation

Updated with information re: Diascan, Hemoscan

Specify to verify the prescription card against the orders in NephroCare to ensure card updated

Added diagram of tubing with labels as appendix

**APPENDIX A**

# ArtiSet HD-DN HC

