

Hi-Dose – Step by Step Instructions

Prep Patient

1. Sign consent form
2. Explain benefits
3. Take vitals

Machine and Cuvette Line Sequence (Important)

Patient-- > Pumps-- > Champion UV Machine-- > IV Bag

Prep IV

1. Insert admin kit spike into IV bag that is a part of the Hi Dose Cuvette.
2. Hang Hi Dose bag with inputs up. Drape the site glass or reservoir across to the other side of the pole so it is laying more horizontal.
3. Draw 60 ml of saline into a 60cc syringe, using 18G needle
4. Prime the line towards the patient, by pushing saline at the Hi-Dose cuvette Y port, eliminating air from the tubing. Clamp.
5. Push the additional saline towards the IV bag to eliminate all air from the cuvette.
 - a. Clamp the line with either a blue clamp or using the roller clamp.
6. Insert cuvette into the Champion UV machine.
7. Place patient side of cuvette line into infusion pump so that the blood pumps from patient to bag.
 - a. Open the face of the infusion pump.
 - b. Lift up and push to the right, the small gray trip lever, found on the inner left side of pump.
 - c. The fluid flow of direction only goes from right to left.
 - d. Pull the cuvette line taught and load the line. Make sure the line is pushed in FULLY where the bubble sensor is located to avoid an air bubble alarm.
 - e. Close the face of the infusion pump.
8. Using the same 60ml syringe, fill with 4,000 IU of heparin/saline mixture.
 - a. Draw up 60cc of saline into the syringe.
 - b. Put the heparin in the syringe.
9. Attach the small line, included with the HD Cuvette, to the heparin/saline syringe.
 - a. Prime the line and clamp off at the distal end.
 - b. Load syringe into the syringe pump.
 - c. Program syringe pump.
 - Preset for BD, check mark
 - No to last settings
 - Rate = 150 ml/hr, check mark
 - Volume 50 cc of the 60 in syringe is the VTBI (volume to be infused), check mark
10. Program the Infusion Pump.
 - a. Choose SHINVA
 - b. No, to use the last settings.
 - c. Flow Rate = set to 1200 ml/h, check mark

d. VTBI (volume to be infused) = 330 ml of blood/saline from patient to bag, check mark.

e. Should take 16 minutes.

11. Prepare the patient, insert a 20 gauge catheter into the patient's vein.

a. Connect the cuvette line directly to the catheter.

b. Remove all clamps and open the roller clamp so the line is completely open.

c. Attach heparin/saline line to main line at Y-port with luer lock

Drawing Blood

12. Press Play on the infusion pump.

If there is a bubble warning.

a. Hit OK to clear the warning.

b. Press BOL twice and hold until the bubble is pushed through.

c. Press Play

- If you do get a bubble alarm and you do not see any air in the line, check to make sure your line has been pressed in fully at the bubble sensor.

13. Press Play to start the syringe pump.

14. Turn on all Champion Full Spectrum power switches.

Flushing Lines

15. Once blood is done transferring, the infusion pump will sound an alert. Press ok.

16. Stop the syringe pump by pressing the pause/play button.

17. Clamp the line between the infusion pump and Y port.

18. Remove syringe out of the syringe pump and flush un-heparinized blood back to the patient.

19. Once the line from Y port to patient is flushed, unclamp line and re-clamp between Y port and

patient. (You are now finished with the syringe pump and can discard the tubing.)

20. Using the empty syringe from the syringe pump, fill with normal saline.

21. Remove IV tubing from the infusion pump, be sure to open roller clamp and remove all other clamps from Y port to IV bag (leave clamp to patient).

22. Attach saline syringe to Y port or needless port and flush remaining blood towards the IV bag.

23. Close roller clamp.

24. Shut off Champion UV Lights.

Infuse Ozone

25. Connect ozone generator to the bag via the silicone tube that came with your pump, setting aside the white cap from the IV bag for reuse. (Silicone tubing needs a luer lock on each end.)

a. Bubble at

i. $\frac{1}{4}$ LPM at

ii. 70ug/ml for

iii. 4 minutes

iv. Turn off O2 Tank

26. As ozone bubbles in, periodically squeeze the bag to mix the ozone with the blood.

While Ozone is Running

27. Shut down syringe pump

28. Reinsert the cuvette IV line into the infusion pump in the reverse flow direction going from the bag, back to the patient.

- a. Open face of pump.
- b. Lift up and push to the right, the small gray trip lever on the left side of the pump.
- c. Pull the line taught and make sure the line is pushed in FULLY where the bubble sensor is located.
- d. Close the face of the pump.

29. Program infusion pump.

- a. SHINVA – yes
- b. Use the last settings? Yes, the speed is right (1200ml/h) but the volume is wrong.
- c. Tap the bottom left for volume.
- d. Set the VTBI to 500ml, check mark.

Infuse Blood Back to Patient

30. When ozone has finished, turn off the ozone unit.

31. Disconnect silicone tubing and replace white cap onto the IV bag luer port with the white non-vented luer lock cap.

32. Invert Hi Dose IV bag, hang with inputs down and ensure that there is no air in the line.

33. OPTIONAL To use secondary FILTERED drip chamber, follow instructions a1-5 below OR continue to step 34

a. Incorporate the FILTERED drip chamber into the line, to infuse blood back to patient:

- i. Unhook the primary unfiltered drip chamber
- ii. Spike the filtered drip chamber into the IV bag
- iii. Invert HD IV bag, hang with inputs down allowing the filtered drip chamber to prime with blood.
- iv. Once primed, reattach the primary chamber into the bottom side of the new filtered one.

v. Resume therapy.

34. Open the roller clamp and remove the clamp near the patient.

35. Press play on the infusion pump and pump the mixture back to the patient.

36. Turn on Champion UV Lights.

*This will take about 15-18 minutes.

37. Once the pump stops because of air in the line, turn off the infusion pump.

38. Remove line from pump and Champion 4000 and drip remainder of blood by gravity.

Unhook & Discard

39. Once blood is no longer flowing, clamp and remove needle/catheter from the patient.

40. Apply pressure using gauze and Coban to the patient.

41. Discard catheter, cuvette and IV bag.

Discharge Patient

1. Take patient vitals.
2. Explain what to expect to the patient.

You may feel a burst of energy, increased sleep quality and less pain. You may feel run down or crummy with a potential for a headache. Both outcomes are good and show change.

Please let us know at your next visit how you felt. Few patients do not notice a difference. This will change eventually. Continue with regular therapies for increased outcomes. Drink a lot of water. Rest when you are able. Do not "overdo it" if you feel great