

Submission ID #: 68532

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Project page Link: <https://review.jove.com/account/file-uploader?src=20902308>

Title: Infusion of Targeted Radionuclide Therapy Using a Peristaltic Pump

Q: Filming location: Will the filming need to take place in multiple locations? **No**

Current Protocol Length

Number of Steps: 11

Number of Shots: 29

Protocol

1. Protocol

- 1.1. To begin, insert the infusion set spike into the inlet of the 250 milliliter sodium chloride 0.9 percent bag [1]. Apply gentle pressure to fill the infusion chamber three-quarters full [2].
 - 1.1.1. WIDE: Talent inserting the spike of the infusion set into the inlet of the sodium chloride bag.
 - 1.1.2. Talent squeezing the bag to fill the infusion chamber three-quarters full.
- 1.2. Turn the perfusion set cassette upside down [1], declamp the infusion set, and slightly unscrew the flow regulator [2]. As soon as the first drops of saline enter the chamber, turn the perfusion set cassette to its original position [3].
 - 1.2.1. Talent returning the cassette upside down.
 - 1.2.2. Talent declamping the infusion set and loosening the flow regulator.
 - 1.2.3. As saline enters the chamber, talent flipping the cassette upright.
- 1.3. Now, tap line A to remove air bubbles [1] and press the flow regulator to top the purge [2].
 - 1.3.1. Talent tapping line A to dislodge air bubbles.
- 1.4. Then, switch on the pump with the on-off button [1] and lift the lever to open the pump compartment [2]. Hold the cassette by the flow regulator grip, position it in the compartment flap slots, and slide it in [3]. **NOTE: Please move this step before 1.3**
 - 1.4.1. Talent pressing the on/off button.
 - 1.4.2. Talent lifting the pump lever.
 - 1.4.3. Talent inserting the cassette into the pump compartment using the flow regulator grip.
- 1.5. Next, pull down the lever to close the compartment flap [1]. Closing the compartment presses the cassette flow regulator [2]. Hold line A coming out of the cassette using the guide above the compartment [3].
 - 1.5.1. Talent pulling down the pump lever to secure the cassette.
 - 1.5.2. Close-up on the flow regulator being pressed when closing the cassette compartment.

- 1.5.3. Talent aligning and securing line A using the guide on the pump.
- 1.6. Then, connect the closed system transfer valve to the extension kit line [1]. Remove the stylet from the 19-gauge spinal needle [2], and screw it onto the free luer lock adapter from the 2-way extension kit set. Keep the needle in its protective packaging [3].
 - 1.6.1. Talent connecting the transfer valve to the extension line.
 - 1.6.2. Talent removing the stylet from the spinal needle and attaching it to the luer lock adapter.
 - 1.6.3. Talent holding the needle within its protective packaging and connect the needle to the extension line via the transfer valve.
- 1.7. Now, connect a sterile 10-milliliter saline syringe to the straight infusion connector on the extension line [1] and connect the luer lock end of the extension line to the line B valve [2].
 - 1.7.1. Talent attaching a 10 milliliter syringe to the extension line.
 - 1.7.2. Talent connecting the extension line to line B valve.
- 1.8. Press and hold the corresponding button on the pump to begin the back-priming of line B [1] until saline flows through the 19-gauge spinal needle [2]. Purge the tubing with approximately 5 milliliters of 0.9 percent sodium chloride [3] and keep the sterile saline syringe attached to the straight infusion connector [4]. NOTE: The VO is edited as per the rearranged shots
 - 1.8.3. Talent pressing the pump button. NOTE: Shots 1.8.3.and .1.8.4 are moved before 1.8.1. and 1.8.2 as per author's request
 - 1.8.4. Shot of saline flowing through the needle.
 - 1.8.1. Talent purging the tubing with saline solution.
 - 1.8.2. Talent leaving the syringe connected to the infusion connector.
- 1.9. For infusion initiation, connect the end of line A, which has a luer lock connector, to the patient's catheter valve [1]. Move the mobile shielded screen in line with the pump and patient to provide radiation protection [2].
 - 1.9.1. Talent connecting line A's luer lock to the catheter valve on the patient.
 - 1.9.2. Talent adjusting the mobile shielded screen between the patient and pump.
- 1.10. Place the shielded container holding the TRT vial onto the inclined vial stand on the tray of the shielded paravent [1]. Remove the cap from the container [2], and using forceps,

apply an alcohol-soaked compress to disinfect the septum of the TRT vial [3]. Insert the venting filter into the septum, ensuring the needle does not touch the liquid [4].

1.10.1. Talent placing the shielded TRT container on the inclined stand.

1.10.2. Talent removing the cap.

1.10.3. Talent disinfecting the vial septum with forceps and alcohol compress.

1.10.4. Talent inserting the venting filter carefully into the vial septum.

1.11. Insert the 19-gauge spinal needle connected to line B into the septum of the TRT vial [1] and finally, press the green button on the pump to start the infusion in simultaneous mode [2].

1.11.1. Talent inserting the spinal needle from line B into the TRT vial septum.

1.11.2. Talent pressing the green button to initiate simultaneous infusion.

1. perfusion

Pronunciation link:

<https://dictionary.cambridge.org/pronunciation/english/perfusion>
[Synonyms+15Cambridge Dictionary+15How To Pronounce+15](#)

IPA: /pəˈfjuː.ʒən/

Phonetic spelling: per-FYOO-zhun

2. paravent

Pronunciation link:

<https://www.collinsdictionary.com/dictionary/english/paravent>
[Collins Dictionary+10Collins Dictionary+10JustPronounce+10](#)

IPA: /ˈpærəˌvent/

Phonetic spelling: PAR-uh-vent

3. luer (in “luer lock adapter”, “luer lock connector”)

Pronunciation link:

<https://www.howtopronounce.com/luer>
[Cambridge Dictionary+15How To Pronounce+15How To Pronounce+15](#)

IPA: /ˈluː.ər/ or /ˈluːr/ (American)

Phonetic spelling: LOO-er

4. septum (as in “vial septum”)

Pronunciation link:

<https://dictionary.cambridge.org/pronunciation/english/septum>
[Howjsay+15Cambridge Dictionary+15Cambridge Dictionary+15](#)

IPA: /'sep.təm/

Phonetic spelling: SEP-tum

5. stylet (in “19-gauge spinal needle stylet”)

Pronunciation link:

<https://dictionary.cambridge.org/pronunciation/english/stylet>
[Cambridge Dictionary+15Cambridge Dictionary+15Cambridge Dictionary+15](#)

IPA: /'staɪ.lət/

Phonetic spelling: STY-lət