



HPN CONNECTION PROTOCOL

1-WORK AREA

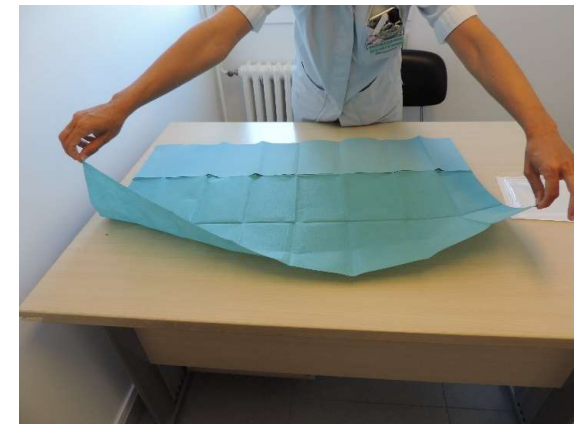
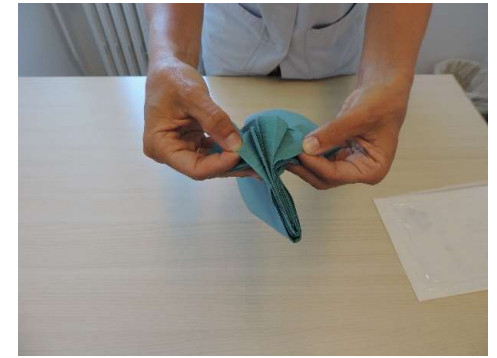
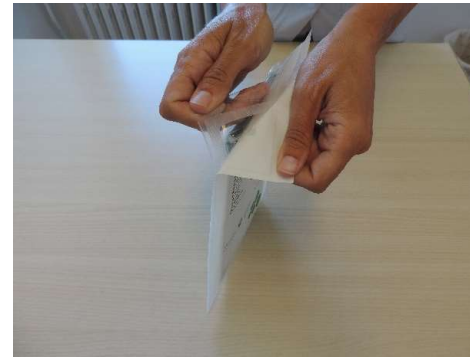
After putting on the mask and cleaning our hands, we proceed to prepare the work area. The following are recommended:

- An area/room of the house that is not so frequented, and free from pollution and drafts.
- A smooth surface that is easy to clean, of at least 50x50 cm. This surface must be cleaned before each procedure (with water and bleach, well rinsed and properly dried).
- A chair that allows you to be seated, a needle disposal container, and a bin to throw away any waste material.
- There should be no pets nearby.

2. PREPARATION OF THE STERILE FIELD

If you have followed the hand cleaning protocol properly, you do not need to wear sterile gloves for this point.

- ☐ • Open the sterile cloth container pulling the tab that indicates so.
- ☐ • Look for the top corners of the cloth and hold them using two fingers of each hand.
- ☐ • Lift it with your arms extended. Be careful not to touch the table, your body, or other elements with the cloth.
- ☐ • Put the cloth on the table.
- ☐ • The surface of the sterile cloth that is visible will be called the "sterile field".



*Use the boxes ☐ to mark each step you complete ☒

3. MATERIAL NEEDED

Next, we detail how to place all the materials that you will need on the sterile field, without touching them with your fingers nor the surface with contaminated elements.

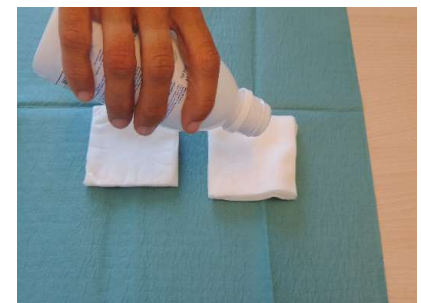
- ☐ • Antiseptic solution and hydroalcoholic solution
- ☐ • Sterile field
- ☐ • Sterile gloves
- ☐ • 2 packs of gauze dressing
- ☐ • 2 10 ml syringes
- ☐ • 1 dispensing needle 0.9 x 25 mm
- ☐ • 2 10 ml ampoules of 0.9% saline solution or 2 10 ml sterile pre-filled syringes
- ☐ • Needle disposal container

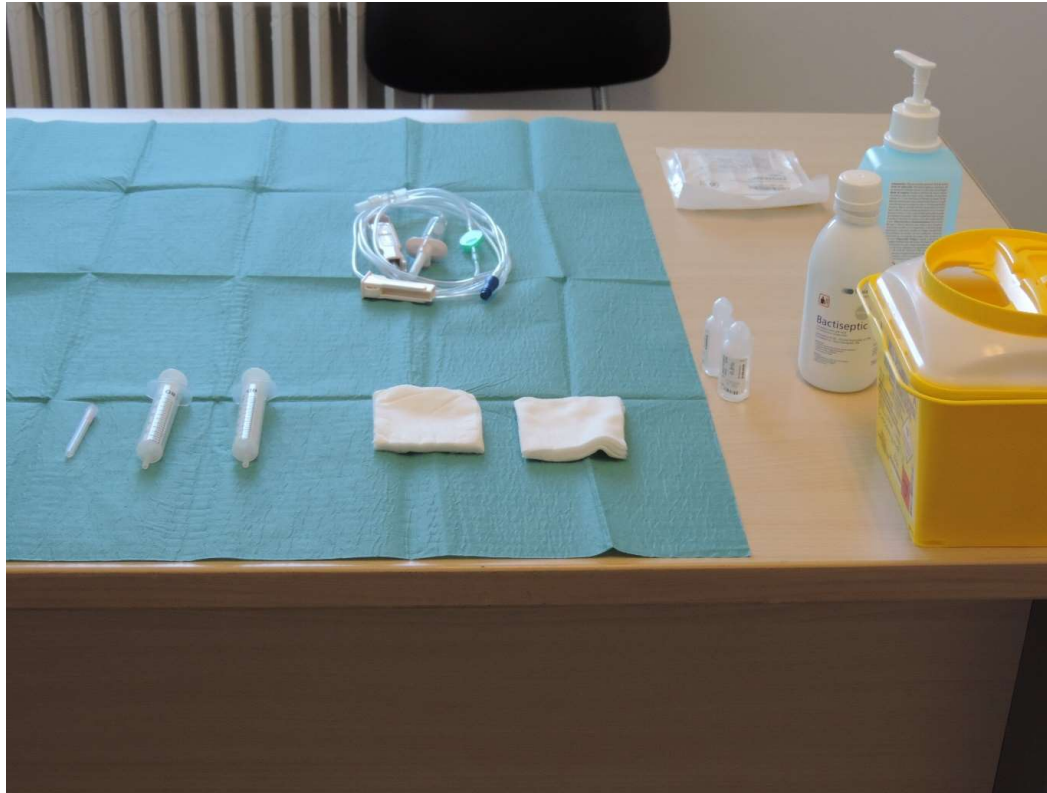


- ❖ Have a needle disposal container near the work area and the drip stand (with the pump and the parenteral nutrition bag hanging on it).
- ❖ Uncover the area where your catheter is placed, removing any clothing to prevent problems when manoeuvring, and exposing the area of the bio-connector (which will be changed once a week, along with the change of dressing). If apart from the bio-connector you also have the cap on the preloaded syringe, remove it.

1. Open 2 packs of **gauze dressing** and place them on the sterile field (dropping them from their container, without touching them with your fingers).
2. In the same way, open 2 10 ml **syringes** and 1 dispensing **needle** (0.9 x 25 mm), and place them on the sterile field.
3. Without breaking the container and using the tabs for this purpose, open the **infusion system** and place it on the sterile field.
4. Pour the chosen **antiseptic** (aqueous chlorhexidine in a concentration > 0.5%) onto one of the opened gauze dressing packs. It will be used to disinfect the bio-connector.
5. Leave 2 0.9% saline solution ampoules of 10 ml open, but outside the sterile field.

If you use 10 ml pre-filled saline solution syringes, remember that not all types are sterile. If you have a sterile type, you will not need other syringes, needles or saline solution ampoules. Place the syringe on the sterile field in the same way as the gauze dressing.





Material prepared inside and outside the sterile field

4. PREPARATION OF SALINE SOLUTION SYRINGES

IF JUST ONE PERSON IS DOING THIS PROCEDURE, THEY SHOULD WEAR ONE STERILE GLOVE ON THE DOMINANT HAND AND NO GLOVE ON THE OTHER.

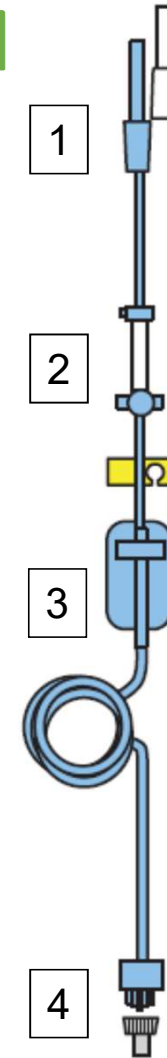
If you have pre-filled and sterile saline solution syringes, move on to step 5

- First, repeat the hand hygiene protocol.
- Take one of the syringes and connect it with the dispensing needle, using only the sterile hand. Remove the needle cap with the non-sterile hand.
- Hold the saline solution ampoule with the non-sterile hand. With the sterile hand, fill the syringe with the 10 ml of saline solution:
 - a. Properly connect the needle to the syringe
 - b. Insert the needle into the saline solution ampoule and place the bevel (end of the needle) on the cap of the ampoule. Pull the syringe plunger to absorb the liquid in while the other hand tilts the ampoule until you load the amount needed.
 - c. Remove the air bubbles that the syringe may contain. To do this, place the syringe upwards, slowly push the plunger, and release all the air it has inside.
 - d. Repeat the procedure with the other ampoule and the other syringe, using the same needle (which you must remove from one syringe and connect to the other, using your sterile hand only).
 - e. Remove the needle with your sterile hand and discard it in the sharps disposal container.



5-PURGING OF THE INFUSION SYSTEM

- 1-Sharp end: connects to parenteral nutrition bag. It will be protected with a cap
 - 2-Part that connects to the peristaltic pump rotor
 - 3-Particulate filter (1.2 microns for ternary mixtures)
 - 4-Exit point or connection adjustable to the catheter (protected with a cap)
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- Do not touch the sharp end or the connection that is attached to the catheter (1 and 4) directly with your hands.
 - Using your sterile hand, remove the cap from the sharp end of the infusion system and the protective cap from the parenteral nutrition bag.
 - Incorporate the infusion system into the parenteral nutrition bag by inserting the sharp end into the specific location of the bag. You must hold the infusion system with your sterile hand, and the bag using your bare hand.
 - After connecting it to the parenteral nutrition bag, purge the infusion system (let the nutrition substance go through the entire infusion system). Follow the specific instructions for the infusion system and the peristaltic pump you use.
 - Before connecting the infusion system to the catheter, you should check that, once it is purged, there is no air in the entire line.



6. CATHETER FLUSHING

**NOW PUT ON THE OTHER STERILE GLOVE ON YOUR NON-DOMINANT HAND.
FROM THIS POINT, YOU SHOULD WEAR BOTH GLOVES UNTIL THE END OF THE PROCESS.**

1. Take the second glove and put it carefully on your left hand.
2. With your left hand, and using a gauze dressing, take the bio-connector attached to the catheter and clean it with your right hand, using another gauze impregnated with chlorhexidine > 0.5% (only the connecting part, without dragging the rest of the cap). Leave to dry 30 seconds.
3. Connect 1 syringe filled with saline solution to the bio-connector.
4. Loosen the clamp with your left hand, using a gauze dressing to avoid touching it with the sterile glove.
5. Aspirate a small amount through the syringe to check that blood flows back. Then insert the two 10 ml syringes of saline solution one after the other, flushing the catheter using the push-stop-push-stop technique. If it is sealed with Fibrilin®, there is no need to aspirate and discard this product.



7. INFUSION SYSTEM CONNECTION

1. After flushing the catheter with the push-stop-push-stop technique, close the clamp.
2. Remove the syringe and attach the infusion system.
3. Open the catheter clamp again.
4. Now you can take off your sterile gloves.
5. Connect the infusion system to pump.
6. Set the infusion pump to the indicated speed and turn it on.
7. Open the infusion system roller clamp (not available on all models).
8. The infusion of parenteral nutrition will start.
9. Now you can discard the material you have used.



Remember that the catheter must have its clamp closed while it is not connected to the infusion system or to a syringe.

WARNING

- The protocol described in this section is provided for guidance only.
- Materials available at your centre or the indicated protocols may vary.
- We advise you to ask your reference team any questions you may have and follow the instructions given at your centre.