

Tube Feeding: Small Bore Enteral Feeding (Entriplex). ACUTE CARE ONLY

Site Applicability

PHC Acute Care units only

Practice Level

Basic:

- RN, RPN, LPN
-

Requirements

1. Inserted by physicians, NPs, RNs with additional education and Critical Care Registered Dietitians with advanced skills.
2. Placement must be confirmed by x-ray
3. Physician/NP order is needed to remove feeding tubes

Content Quick Links

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2. [Checklist](#)
3. [Flushing the tube](#)
4. [Site Care](#)
5. [Feeding through the tube](#)
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Need to Know

- Small bore tube means narrow tube diameter. These tubes are made of flexible material.
- These tubes are meant for short-term use only (less than 4 weeks).
- Amount and frequency of flushes, and rate of feed must be ordered by Physician or Dietitian
- Only 60 mL syringes may be used
- Enteral feeding tubes are inserted when the patient is not able to meet their nutritional needs by mouth.

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- These tubes can be used throughout acute and critical care. They are not appropriate for residential care, unless otherwise stated.
- Tube feeds are stopped prior to transferring the patient for hemodialysis. Ensure that the tube is [flushed](#) as per guidelines when disconnected from continuous feeding.
- PPE should be worn when there is a risk for splash injury (e.g. medication administration). See Infection Control guidelines on [SHOP](#)

Protocol

Assessment and Interventions Immediately Post Insertion

1. Temporarily secure the tube using a fixation device ([see below](#)) or tape so it remains in position until placement checked.
2. Tube placement checked by x-ray, x-ray read by physician and confirmed it is in the right place.
***Leave Stylet in place until placement confirmed so that if the tube needs to be moved it can be re-x-rayed. The tip of the stylet is radiographic.

Removing the stylet (wire) after placement confirmed (RN, RPN, LPN)

1. Mark the position of the tube with a permanent red marker at the level it is coming out of the nares. RATIONALE: the red marker is more obvious; the mark itself lets you know if the tube has moved at any point after insertion.
2. Secure the tube with a fixation device (preferred) or tape ([see below](#))
3. Flush the tube with 10 mL of water. The water lubricates the stylet and allows it to come out.
4. While holding the tube securely remove the guidewire with one hand. If a lot of resistance is felt STOP. Do not continue to pull. Notify physician or NP.
5. Secure a 'Lopez valve' to the end of the tube



Cavelon: Barrier Film



Fixation Device



Lopez Valve



Red Marker

Securing the Fixation Device

Apply devices immediately after insertion of small-bore nasogastric feeding tube.

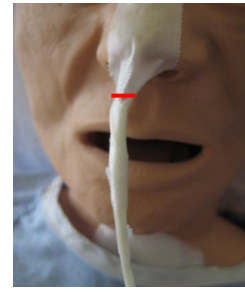
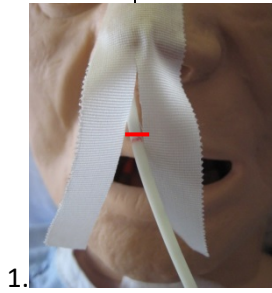
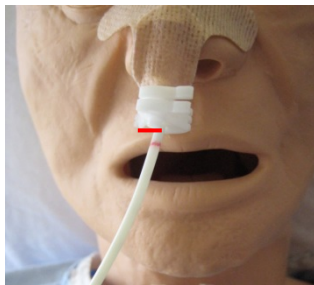
This will prevent tube from moving out of place and possibly causing aspiration. Also allows the next nurse to be able to check that the tube has not moved

- 1) Clean the skin on the tip of the nose, and apply Cavilon: barrier film.
- 2) Apply the tape or fixation device. Make sure that the tube is not pressing up on the inside of the nose as this can cause skin breakdown.

FIXATION DEVICE: Remove adhesive backing. Apply to bridge of nose. Close the plastic clip around the tube. Make sure it is not occluding the tube.

TAPE: Tear off a piece of tape and tear half of it lengthwise. Put the intact part of the tape on the bridge of the nose, and then wrap the other ends around the tube.

**** Make sure red mark on tube is still visible****



Ongoing Assessment and Interventions

Small Bore Feeding Tube Checklist (Q Shift)

- ☐ Tube is in correct position. Mark on tube is at exit of nares. Fixation device is in place.
- ☐ Check skin inside mouth
- ☐ Mouth care
- ☐ Skin around nares checked (pink, moist) and cleaned if needed
- ☐ Patient as upright as possible for feeding (HOB 45°)
- ☐ Correct formula is infusing at correct rate
- ☐ Supplies changed at 0600 today (tube feed bag, syringe, cylinder) and labeled with date
- ☐ Weight done and recorded as ordered
- ☐ Flush tube: Every 4 hours, pre & post feeding, and pre & post medication as per prescribers order with warm water (Immunosuppressed patients use Sterile Water)
- ☐ Ensure suction equipment at bedside is set up and functional

Flushing the Feeding Tube

Flushing the feeding tube is the key to keeping the tube free of blockages. The tube can be flushed using tap water, or sterile water. For Immunosuppressed or critical care patients use sterile water only. Normal Saline should not be used unless ordered.

Flushing should be done:

- According to specific prescribers orders (at least every 4 hours), usually 30 to 50 mL
- Pre & post medication administration
- Pre & post feeding
- Flushing should be done manually. The pump does not deliver enough pressure to clear the tube

For continuous feeding mode with a feed & flush set loaded, to adjust the flush rate and timing, press ADJUST FLUSH button. Press FLUSH VOLUME to define the volume per flush occurrence. Press arrow buttons to program the flush volume in increments of 10 to 500 mL. Press ENTER to exit the menu. Press FLUSH INTERVAL to define time interval between starts of flushing. Press the arrow buttons to program the time interval from 1 to 24 hours in increments of one hour. Press ENTER to exit the program.

Flush now:

During running mode the pump can be diverted to immediately perform a flush (flush on demand) by pressing FLUSH NOW in the RUNNING menu. When FLUSH NOW is pressed the screen will prompt for the volume to be immediately flushed. Setting the FLUSH NOW flushing volume is temporary and will not change the main/periodic flushing volume previously programmed.

*Immunosuppressed patients use sterile water - it does not need to be warm but room temp.

Site Care: Nares and Mouth

The nasogastric tube is inserted through one of the nares. Each shift you must make sure that the skin and mucosal tissue around and in the nares is moist, pink and healthy looking. Check for skin break down where the tube rests on the nares as well as where the fixation device is secured.

The following should be done at least once per shift

- 1) Check Mouth: inside of mouth should be moist and pink
 - a) Provide mouth moisturizer if mouth extremely dry
- 2) Encourage patient to brush teeth OR brush teeth for patient
- 3) Encourage patient to moisten lips with lubricant or do for the patient

Mouth Care Tools

Tooth Paste



Toothbrush



Mouth Moisturizer



Suction Toothbrush



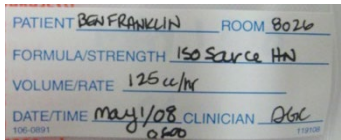
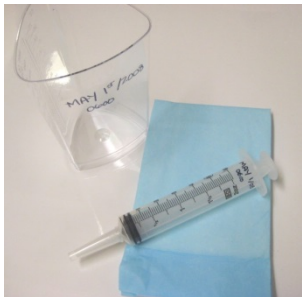



Mouth Wash

Feeding the Patient

Equipment List

- Kangaroo e-pump on an IV pole (if on prescribed rate and not gravity feeding)
- Prescribed tube feed formula
- Feed/flush set
- Fixation device and Lopez valve (if not already applied)

	The equipment below is to be changed every 24 hours at 0600		
Kangaroo Pump	Feeding Bag and Label	Bedside Equipment Set-up	Lopez Valve and Fixation Device
	 		

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Continuous feeding of a patient with a small bore nasoenteric tube

1. Gather needed supplies and bring to bedside
2. Wash hands and swab off the top of the formula container with an alcohol swab.
3. Close roller clamp on feeding bag
4. Pour formula into feed/flush set (no more than 4 hours worth of formula) or spike closed system feeding bag after shaking.
5. Hang the bag on the IV pole. Ensure that the bottom of the bag is at least 18" higher than the top of the ePump.
6. Squeeze drip chamber $\frac{1}{2}$ full of formula and prime the tubing (Machine cannot see the drips if it is more than $\frac{1}{2}$ full)
7. Raise the head of the patients bed as upright as possible (at least 45°)
8. Flush the feeding tube (as per procedure)
9. Connect the feeding bag tubing to the nasoenteric tube
10. Set the drip rate
 - a. Program the kangaroo epro pump with prescribed rate (if not using gravity method)
 - b. For Gravity feedings use the roller clamp to control the rate of feeding
11. Put tubing into kangaroo e-pump
12. Open roller clamp
13. Allow to run for the length of time prescribed
14. Record amount of formula and flushes on the fluid balance record
15. For open systems, change feeding bag, syringe, and cylinder every day at 0600. For closed systems change every 48 hours at scheduled time.

Bolus or intermittent feed of a patient with a small bore nasoenteric tube

1. Gather needed supplies and bring to bedside
2. Wash top of can with tap water
3. Perform hand hygiene using alcohol sanitizer or soap and water
4. Close roller clamp on feeding bag
5. Pour formula into feed/flush bag (no more than 4 hours worth of formula) or spike closed system formula bag.
6. Hang the bag on the IV pole
7. Squeeze drip chamber $\frac{1}{2}$ full of formula and prime the tubing (Machine cannot see the drips if it is more than $\frac{1}{2}$ full)
8. Raise the head of the patients bed as upright as possible (at least 45°)
9. Flush the feeding tube (as per procedure)

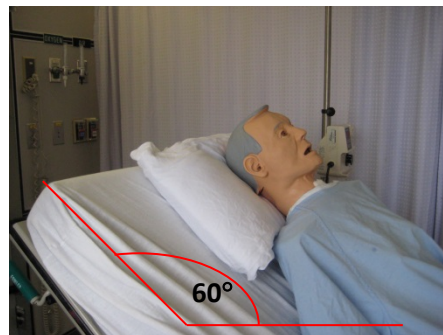
10. Connect the feeding bag tubing to the nasoenteric tube
11. Set the drip rate
 - a. Program the kangaroo e-pump with prescribed rate (if not using gravity method)
 - b. For Gravity feedings use the roller clamp to control the rate of feeding
12. Put tubing into kangaroo pump
13. Open roller clamp
14. Allow to run for the length of time prescribed
15. Flush the feeding tube (as per procedure) and replace tube cap
16. Discard feeding bag and tubing
17. Record amount of formula and flushes on the fluid balance record

Positioning

Patient needs to be sitting as upright as possible (at least 45°). If the patient can tolerate being out of bed have them sit in a chair for as much of the feed as possible. Refer to the pictures for appropriate positioning. Patient's that are positioned properly will have less risk of aspiration.

If you need to lay the patient less than 45° for any reason (i.e. repositioning, changing attends, transport to a test) during their feed you must:

1. Turn off their feed
2. Wait 30 minutes
3. Then move or turn the patient



Proper position in bed for feeding

Medication Administration

Enteroflex and EN tubes have a very small internal diameter this is why they are referred to as 'Small Bore' feeding tubes. Keep this in mind when giving medications through this type of tube.

In order to keep the tube un-blocked you must flush it with at least 30 mL of water before and after you give medications.

Use liquid preparations of medications whenever possible. This will help to decrease the chance of the tube blocking. (Tylenol, multi-vitamins, and potassium are key medications to consider)

1. **Do Not** Mix medications with the feeding formula, or in the feeding bag

2. **Do Not** Use normal saline for flushing unless prescribed
3. **Do Not** Crush extended release medications, or anything with an enteric coating
 - a) Consult a pharmacist and the physician to have all medications ordered in the most appropriate form.
 - b) If you are unsure whether or not you can crush a drug please call the pharmacy

Procedure for giving medications through a small bore nasogastric tube

- 1) Prepare medication: This may include crushing medication. Check with pharmacy if it is okay to crush the medication. If suitable to crush make sure it is crushed as finely as possible this will help prevent the tube from blocking
- 2) Check that tube is still in the right place by looking at the mark at the exit of the nares
- 3) Check that tube is still patent; Program flush now on e-pump to flush with 30 mL of water (If tube is not patent – see troubleshooting guide).
- 4) Connect the syringe to the end of the tube and gently push the medication through
- 5) Flush the tube with 5 mL of water using flush now function.
- 6) Administer next medication. Repeat flush and medication administration until all meds are given.
- 7) Manually flush the tube with at least 30 mL of water when all medications have been given
- 8) Reconnect the feeding bag to the tube and resume feeding if appropriate to do so as per the specific patient plan of care.

7 Rights of Medication Administration	Ask these questions before giving meds via the nasogastric tube
<ul style="list-style-type: none"> • Right Drug • Right Client • Right Dose • Right Time • Right Route • Right Reason • Right Documentation 	<ul style="list-style-type: none"> • Does this patient take anything by mouth? • Can this medication be given in a liquid form? • Can this medication be crushed for administration via nasogastric tube? • Does this medication have any interactions (other medications or tube feed formula)?

PLEASE NOTE: If you have any doubt about giving a medication via the nasogastric tube please phone pharmacy for medication information @SPH 62173 @MSJ 78515 or page the physician caring for your patient.

Documentation

Document in Cerner or paper downtime tool:

1. Type and site of tube.
2. Type of formula and rate; include frequency and amount of flushes
3. [Signs or symptoms of intolerance](#).
4. Any interventions and patient's response.
5. Frequency and consistency of bowel movements

Patient and Family Education

Print health education materials available at: <http://vch.eduhealth.ca/> search for 'tube feeding'. This pamphlet has easy to understand explanations of tube feeding.

Important things to teach your patient and their family

1. Head of bed needs to be elevated during all feeding (45° at least) to decrease the risk of aspiration
2. If the patient has any nausea, vomiting, cramping, bloating or diarrhea, or if they feel hungry or thirsty or have any new respiratory difficulties they should let you know
3. The feeding pump sometimes alarms if this happens they should let you know

Discharge Considerations

If patient is to be discharged on home tube feedings consult Dietitian for instruction in self-administration of home enteral nutrition (physician consult required). Home training takes an average of 5 working days. Make sure that CNL and TST are aware of patients discharge needs **NOTE: home feeding guidelines may differ from hospital guidelines**

Related Documents

1. [B-00-07-10009](#) – Enteral Feeding Interdisciplinary Guidelines - Policy section - Ethics
2. [B-00-13-10043](#) - Tube Feeding: Long-Term Enteral Feeding
3. [B-00-13-10044](#) – Tube Feeding: Large Bore Enteral Feeding
4. [BD-00-07-40041](#) - Residential Mouth Care Practice Guidelines

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First Released Date:	February-2001
Posted Date:	12-SEP-2022
Last Revised:	12-SEP-2022
Last Reviewed:	22-JUN-2020
Approved By:	PHC
	Professional Practice Standards Committee
Owners:	PHC

Appendix A: Trouble Shooting

Problem	Nursing Intervention
<p>Tube is out of place</p> <p>The red mark is not where it should be (at the exit of the nares)</p> <p>Check for frequently for tube displacement if patient:</p> <ul style="list-style-type: none"> Is confused and pulling at tubes Is coughing, or has been vomiting 	<ol style="list-style-type: none"> Stop infusion immediately Disconnect feeding bag from nasogastric tube Remove nasogastric tube (displaced tubes should not be reinserted for infection control and correct placement) Notify physician (in critical care notify Dietitian) that tube has been displaced and a new tube will need to be inserted Keep patient seated as upright as possible, encourage deep breathing and coughing
<p>Tube is blocked</p> <p>Very little or no fluid is able to pass through the tube.</p> <p>Possible Causes:</p> <ol style="list-style-type: none"> Tubing is kinked Poor flushing Thick formula Poorly crushed medications 	<ol style="list-style-type: none"> Go along the length of the tubing, starting at the nares, to check for kinks. If there is a kink unbend the tubing to fix it. If there is no kink. Take a 60 mL syringe aspirate as much of the contents out of the tube as possible and throw away the fluid Draw up 10mL of warm water in the 60 mL syringe and using a back and forth motion apply pressure for 1-minute to help clear the blockage Clamp the tube for 5 to 15 minutes Try to aspirate and flush with warm water again <p>If tube remains clogged notify the physician (in critical care-Dietitian) caring for the patient</p> <p>** Do not instill any type of soda pop into the tube. The sugar in the pop can cause a greater blockage or provide a place for bacterial growth.</p>

Problem	Nursing Intervention
<p>Diarrhea</p> <p>Possible Causes:</p> <ol style="list-style-type: none"> 1. Contaminated feeding formula 2. Lack of fiber 3. Antibiotics, prokinetic agents, medication elixirs containing sorbitol 4. Hypoalbuminemia 5. Malabsorption 6. C-difficile toxin 7. Fecal impaction with overflow incontinence 8. Laxatives 9. Intolerance of tube feed formula 	<ul style="list-style-type: none"> • Always change all of the feeding equipment every 24 hours at 0600 • Notify the most responsible physician and the dietitian that the patient is experiencing diarrhea • Document the diarrhea in the nursing flow sheet and interdisciplinary notes or in your unit specific documentation system.

Signs and Symptoms of Tube Feeding Intolerance	
<ul style="list-style-type: none">• Nausea• Vomiting• Feeling of bloating• Diarrhea• Constipation• Abdominal distension• Abdominal pain	<ul style="list-style-type: none">• If your patient is having any of these symptoms document them on the 24-hour flow sheet or your unit specific documentation system• Communicate these issues to the other members of the medical team i.e. Physician and Dietitian