The nasogastric tube, inserted into the stomach through the nose, has diagnostic and therapeutic uses.

1. A nasogastric tube can be used to assess and treat upper gastrointestinal tract bleeding, to collect gastric content for analysis, to perform gastric lavage, to aspirate gastric secretions and to administer medications and feedings. The nasogastric tube is commonly used to prevent vomiting after major surgery, by decompressing the stomach and to assist in the resolution of paralytic ileus. Normally, the tube remains in place about 48 to 72 hours after surgery, by which time peristalsis usually returns.

2. Insertion of nasogastric tube requires close observation of the patient while the tube is passed, followed by verification of proper placement. Insertion must be performed cautiously in a pregnant patient and in the patient with an aortic aneurysm, myocardial infarction, gastric hemorrhage and esophageal varices, maxillofacial or skull trauma. In addition, if the patient is a Bariatric surgical patient, consult a bariatric surgeon if an NG tube is indicated.

NOTE: For a gastrectomy or ENT patient, the physician must be notified prior to the insertion or adjustment of the NG tube.

3. The physician should enter orders pertaining to the patient’s oral intake. If orders are not present, the nurse will contact the physician for clarification.

4. The liquid nutrient solution used for gastric tube feeding comes in various formulas. The formula can be administered through a gastric tube. Tube feeding solutions can be administered continuously at a slow rate or instilled intermittently.

5. An NG tube is irrigated at regular intervals to ensure patency. If the condition of the patient contraindicates irrigations, as in gastric surgery patients, the nurse will obtain an MD order prior to irrigation.
EQUIPMENT: Assemble the following: (for Insertion)

1. Nasogastric tube, usually #16 or #18 French for the adult.
2. Anti-reflux valve (depends on MD preference)
3. Towels or linen saver pads
4. Non-allergenic tape or Band-Aid
5. Exam gloves
6. Water-soluble lubricant
7. Glass of water (or glass of ice water)
8. Tongue blade
9. Stethoscope
10. Safety pin
11. Irrigation set
12. Sterile normal saline
13. Emesis basin

PATIENT EDUCATION:

1. The patient’s cooperation during this procedure is essential.

2. Instruct the patient regarding the reason for the nasogastric tube, and the possible discomforts to be expected.

3. Ask the patient if he has had any nasal surgery or injury and avoid the area of previous fracture or surgery.

PROCEDURE: INSERTION:

1. Confirm physician’s order and identify patient per SMH Policy 01.PAT.09 Patient Identification: Inpatient/Outpatient.

2. Explain the procedure to the patient, provide privacy and perform hand hygiene. Have emesis basin available at bedside.

3. In order to determine the length of tube needed to reach the pylorus, place the end of the tube at the tip of the patient’s nose. Then extend it to the earlobe and down to the xiphoid process. With small piece of tape placed around the tube, mark length that will be inserted (Perry & Potter, 2014).
   Elevate the head of the bed 45 degrees or higher as tolerated. Place towel over patient’s chest to protect gown. Arrange with the patient a signal (such as lifting his/her hand) to indicate a need for a rest during procedure.

4. Tell the patient to blow his/her nose gently to clear his/her nostril. To determine which nostril is more patent, occlude
PROCEDURE: (Continued)

1. Choose the nostril with better airflow.

5. Don exam gloves. The nurse may cool the insertion end of NG tube in ice water and then curve end for ease of entry.

6. Lubricate the coiled portion of the tube with the water-soluble lubricant to prevent injury to the nasal passages.

7. Instruct the patient to hold his/her head straight and upright.

8. Grasp the tube with the curved end down and insert it into the nostril.

9. Aim the tube downward and toward the ear.

10. When you feel the tube begin to curve down the pharynx, tell the patient to tilt his/her head forward to close the trachea and open the esophagus. If needed, support patient’s head in flexed position.

11. Unless contraindicated, give the patient a glass of water and instruct him/her to sip the water through the straw.

12. As the patient swallows, advance the tube until the tape mark reaches the nostril. Advance tube 3-5 inches with each swallow. In case of persistent gagging, inspect back of throat with tongue blade, flashlight to check if coiled at back of throat. Observe for any respiratory distress: if any, withdraw tube and reinsert.

13. Once the tube is inserted to the tape mark, place the stethoscope just below the xiphoid process and attach catheter-tipped syringe and instill about 15ml of air. A whooshing sound means the tube is patent and properly placed in the stomach. If the patient belches, the tube may be in the esophagus.

14. Keep the catheter-tipped syringe attached to the tube and try to aspirate stomach contents.

NOTE: When confirming placement, never place the tube’s end in a container of water as the patient could aspirate water if it’s in the trachea.

15. Cut a three-inch length of one-inch cloth tape or get a Band-Aid. Cut one end up the center about 1½ inches. Tape the un-torn end to the nose and crisscross the two free ends around the tube. Apply another piece of tape over the bridge of the nose to make sure the tube is
secure.

**NOTE:** A pre-packaged product that secures and cushions the nose can be used to secure tube.

16. Use tape to secure tube to the patient’s gown with a safety pin to prevent tugging on the tube when the patient moves.

17. Attach the tube to suction equipment, if ordered, and set the designated suction pressure. If tube is to be clamped, use the plastic plug provided. Depending upon physician preference, an anti-reflux valve can be used to prevent stomach contents exiting the vent lumen.

**NOTE:** If the patient is unconscious, tilt his/her chin toward his/her chest to close the trachea and advance the tube between respiration’s to make sure it does not enter the trachea. While advancing the tube in the unconscious patient (or in any patient who cannot swallow) the neck can be stroked to facilitate passage down the esophagus.

**NOTE:** Never instill fluid into blue port!

Check canister lid and machine to see if it is secure, and check all attachments. Check if machine is functioning by placing the end of the tubing in water. If the machine is functioning correctly, it should suck the water into the canister.

If the nasogastric tube is not functioning, the patient may need to be repositioned or, if possible, rotate the tube and reposition it. **If the tube was inserted during surgery, do not reposition it as it may interfere with gastric or esophageal sutures. Notify the doctor.**

**FEEDING:** (Initiate the “Tube feeding order set in SCM)

**NOTE:** A small-bore feeding tube is recommended for tube feeding. If a nasogastric tube (or a small-bore feeding tube) is to be used for enteral feedings, a chest film should be done prior to initiating feedings and/or medications or any time the position of the tube is suspect. The radiology tech may need to do an abdominal film depending upon the patient.

**NOTE:** A Lopez enteral valve is needed for feeding. Attach Lopez valve directly to the salem sump tube. Insert the feeding set securely into the universal adapter. Turn the “OFF” indicator towards the medication port. The arrows will show the fluid flow from the feeding device to the patient.
The most common change protocol for the valve in an acute care setting is weekly. (ICU Medical, Inc.)

**EQUIPMENT:**
(for feeding)

**CLOSED TUBE FEEDING SYSTEM:**
1. Kangaroo Epump Safety Screw Spike with flush bag
2. Ordered 1-liter Enteral nutrition container (feeding).
3. Infusion pump.
4. 60 ml syringe
5. Stethoscope
6. Water to fill flush bag, if used.

**IF CLOSED TUBE FEEDING SYSTEM NOT USED:**
Assemble the following:
1. Kangaroo Epump Safety Spike with flush bag
2. Prescribed tube feeding formula.
3. Infusion pump
4. 60 ml syringe
5. Stethoscope
6. Water to fill flush bag, if used.

NOTE: Check the date on all formula containers. Discard all powdered formula within 24 hours of mixing it.

**CLOSED TUBE FEEDING SYSTEM – 24 HOUR SYSTEM (this is the preferred method for continuous feedings)**
1. Provide privacy and perform hand hygiene.

2. Inform the patient about the procedure for receiving nourishment through a tube.

3. Elevate the patient’s bed to a high or semi-Fowler’s (at least 30 degrees) position to prevent aspiration by gastroesophageal reflux and to facilitate digestion.

   **CAUTION NOTE:** May need to clarify with the physician if feeding can be interrupted for procedures (i.e., CPT, diagnostic tests, therapy) or if the head of the bed cannot remain elevated during a continuous tube feeding.

4. Remove the cap or plug from the feeding tube. To check its patency and position, use the syringe to inject 10 ml of air through the tube while auscultating the patient’s stomach with a stethoscope. Listen for a whooshing sound. Aspiration of stomach contents also confirms that the tube is patent and properly positioned.

5. Fill or spike feeding container and water bag prior to setting up pump. Turn pump on by pressing power button. **(FEEDING SET BAG MUST BE 18 INCHES ABOVE THE**
TOP OF THE FEEDING PUMP) Select “keep settings” or “clear settings” Load the set per diagram on panel (DO NOT OVERSTRETCH).


7. Setting the feeding rate: Select “adjust feed” then “feed rate” using the buttons adjust from 1 ml to 400 ml as ordered by physician. Select “enter” when ordered rate is set.

8. Setting the flush rate: Select “adjust flush” then “flush volume” set the volume of water per flush cycle from 10 to 500 ml's. Select “enter” when physician ordered flush rate is set.

Select “flush interval” to define the time interval between the start of each flushing cycle from 1 to 24 hours as ordered by physician. Select “enter” then “done” then Select “done”

9. The use of this closed tube feeding system replaces the need for routine flushing procedures as the pump will automatically flush what has been entered. Check with MD to see if they want the automatic flush administered.

10. To change rate or clear volume: Select “hold” then select “clear volume” then select “adjust settings” to adjust all settings then select “run”

11. If pump feeding is manually stopped or turned off, automatic flushing does not occur. If pump remains in OFF mode (not on HOLD), it is recommended to flush with 20-30 ml of warm water (use a 30 ml syringe) to rinse remaining product from the feeding set.

12. Check bowel sounds at least every shift or more often as indicated. Assess for complaints of fullness and/or abdominal distention.

13. Aspirate stomach contents to determine amount of residual every 4 hours or as ordered by physician. Hold feeding for two hours if residual volume greater than 400 ml. Alert MD if residual remains greater than 400 ml after two hours. Return up to 200 ml of aspirated contents to stomach to prevent electrolyte imbalance. (ASPEN, 2016)

14. Change feeding tubing and supplement every 24 hours. Apply a label with date, time/initials, formula and rate.
15. If the patient becomes distended, nauseated or vomits, stop the feeding immediately. Notify the physician.

**IF CLOSED TUBE FEEDING SYSTEM NOT USED:**

1. Provide privacy and perform hand hygiene.
2. Inform the patient about the procedure for receiving nourishment through a tube.
3. Add the tube feeding to the feeding bag. Fill flush bag with water (if ordered). **Set the rate ordered by physician as instructed above.**
4. Elevate the patient's bed to a high or semi-Fowler's (at least 30 degrees) position to prevent aspiration by gastroesophageal reflux and to facilitate digestion. **CAUTION NOTE:** May need to clarify with the physician if feeding can be interrupted for procedures (i.e., CPT, diagnostic tests, therapy), or if the head of the bed cannot remain elevated during a continuous tube feeding.
5. Remove the cap or plug from the feeding tube. To check its patency and position, use the syringe to inject 10 ml of air through the tube while auscultating the patient's stomach with a stethoscope. Listen for a whooshing sound. Aspiration of stomach contents also confirms that the tube is patent and properly positioned.
6. Connect the feeding bag tubing to the feeding tube.
7. Thread the tubing through the continuous pump device and set at **the rate ordered by the physician as described above.** **Add the** feeding formula to the bag. Use only the amount of formula to be infused in four hours. Completely infuse each 4-hour amount. Flush the tubing with warm water (50ml) every 4 hours unless physician orders automatic flush system (25 ml/hr) to be utilized.
8. Check bowel sounds at least every shift or more often as indicated. Assess for complaints of fullness and/or abdominal distention.
9. Aspirate stomach contents to determine amount of residual every 4 hours or as ordered by physician. Hold feeding for two hours if residual volume greater than 400 ml. Alert MD if residual remains greater than 400 ml after two hours. Return up to 200 ml of aspirated contents to stomach to prevent electrolyte imbalance. (ASPEN, 2016)
9. Change feeding tubing every 24 hours. Apply a label with
date, time INITIALS, formula and rate.

10. If the patient becomes distended, nauseated or vomits, stop the feeding immediately. Notify the physician.

**EQUIPMENT:**
(for bolus feedings)

**INTERMITTENT BOLUS FEEDINGS**
Assemble the following:
1. Feeding formula
2. Catheter-tip syringe, 60 ml
3. 60 ml water
4. Towel

**PROCEDURE:** (for bolus feedings)

1. Perform hand hygiene. Place a towel over the patient’s gown. Elevate the patient’s head of the bed to a high or semi-Fowlers position to prevent aspiration and to facilitate digestion.
2. Obtain the formula ordered and check the date for any expired formula.
3. Remove the cap or plug from the feeding tube. Use the catheter-tipped syringe to aspirate the stomach contents to determine the amount of residual. Hold feedings if residual volume is greater than the pre-determined amount specified in the MD order. Return up to 200 ml of the aspirated contents to the stomach to prevent electrolyte imbalance.
4. Remove the plunger and attach the 60 ml catheter-tipped syringe to the pinched-off feeding tube to prevent excess air from entering the patient’s stomach and causing distention.
5. Fill the syringe with formula and release the feeding tube to allow formula to flow through it. The height at which the syringe is held will determine the flow rate. Hold no higher than 18 inches above the patient. When the syringe is three-quarters empty, pour more formula into it (don’t allow the syringe to empty completely).
6. Administer the feeding slowly, generally 200-350 ml over 15-20 minutes depending on the patient tolerance and the MD order. This will help prevent stomach distention, which can cause nausea, vomiting, or diarrhea.
7. After administering the ordered amount of formula, flush the tubing by adding 60 ml of water to the syringe. This helps to maintain the patency of the tube.
8. Disconnect the syringe from the feeding tube, cover the end of the feeding tube with a plug or cap.
9. Leave the patient in a high or semi-Fowlers position for at least 60 minutes.
10. Rinse the syringe with water. Change the syringe every 24 hours.
MEDICATIONS:

1. Consult with a pharmacist prior to administering medications via an NG tube. Enteric-coated or sustained release medications cannot be crushed; otherwise medications can be crushed and diluted in water prior to administration. Liquid forms of the medication are the best.

2. If the medication is a tablet, crush finely with room temperature water until dissolved. If the medication is a capsule, empty contents into water and mix until dissolved. If medication is too thick, it may need to be thinned with enough water to allow it to pass easily through the tube.

3. Identify patient and place him in semi-fowlers position.

4. To check for proper placement of the tube for the initial feeding or administration of medications, a chest film should be done. After the initial confirmation of the tube placement, the nurse can unclamp the tube and aspirate stomach contents with a syringe.

5. Insert a catheter-tipped barrel into the tube and rinse tubing with 30 ml tepid water through the medication port of the Lopez valve. Pinch off the tubing and insert the catheter-tipped syringe filled with the medication. Release the tubing and allow the medication to flow into the stomach.

6. After the medications have been administered, flush with 30-50 ml tepid water through the Medication port of the Lopez valve (unless ordered otherwise by the MD).

7. Keep the patient in semi-Fowlers position unless contraindicated. Position the patient on their right side with head slightly elevated to minimize esophageal reflux (Lippincott, 2013).

8. If the tube was connected to suction, wait 30-60 minutes before reattaching (unless otherwise ordered) to allow for sufficient time for the medication to be absorbed.

NOTE: The absorption of the following medications is inhibited with tube feedings: Ciprofloxacin and Phenytoin (Dilantin). Hold tube feeding 1 hour before and 2 hours after administration of enteral Ciprofloxacin and 1 hour before and 1 hour after the administration of enteral Phenytoin (Dilantin).

NOTE: Liquid Tylenol is not recommended as its viscosity...
tends to obstruct the tube.

**NOTE:** Consult with the physician and/or Dietitian if tube feeding must be held due to the administration of these medications in case they want to titrate/adjust the tube feeding due to this.

---

**EQUIPMENT (for irrigation):**

**IRRIGATION**

1. Irrigating Solution (usually normal saline)
   
   **Note:** The normal saline container may be labeled as ‘single use” so discard after use.

2. Irrigation kit (includes catheter tip syringe)

3. Clean gloves

4. Stethoscope

---

**PROCEDURE (for irrigation):**

1. Confirm physician order.

2. Before beginning irrigation, place patient at a 30-45 degree elevation (unless contraindicated or not tolerated) since this helps avoid gastric reflux of irrigant.

3. Explain the procedure to the patient, provide privacy and perform hand hygiene. Don exam gloves due to standard precautions. Leaking suction tubing can cause contact with body fluids.

5. Pour the irrigating solution into the irrigation container.

6. Note the amount of irrigation solution used so that an accurate Intake & Output record is maintained.

7. Unclamp the tube or disconnect it from the suction equipment.

8. Check for NG tube placement by instilling air and auscultating at abdomen. If tube is found to be in stomach, draw up 30-50 ml of irrigant into catheter tip syringe.

9. Slowly instill the irrigant into the NG tube.

10. Gently aspirate the solution with the syringe or connect the tube to the suction equipment. Gentle aspiration prevents the exertion of excessive pressure on a suture line and on the delicate gastric mucosa.
11. After attaching the primary lumen of the Salem tube to suction, instill 10 to 20 ml of air to the vent lumen (blue pigtail) to make sure it is patent. This air instillation could create a soft hissing sound in the vent.

12. Measure the amount of drainage and record it in the Intake & Output record in EMR.

NOTE: Subtract the amount instilled for irrigation.

REMOVAL:

1. Assist the patient into semi-Fowler’s position. Drape a towel or linen-saver pad across patient’s chest to protect from spills. Give patient tissue to use post removal.

2. Un-tape the tube from the patient’s nose and unpin it from the patient’s gown.

3. Remove NG tube from suction device and clamp the tube.

4. Ask the patient to take a deep breath and hold it which closes the epiglottis. Then withdraw the tube gently and steadily.

5. When possible, immediately cover and remove the tube because its sight and odor may nauseate the patient.

6. Assist the patient with thorough mouth care, and clean the tape residue from nose.

7. Until patient is discharged, monitor the patient for signs of GI dysfunction. GI dysfunction may necessitate reinsertion of the tube.

DOCUMENTATION:

1. Nursing Reassessment Flowsheet: Document the type and size of the nasogastric tube, the time of insertion or removal, the color, consistency and amount of drainage and how the patient tolerated the procedure. Also verification of placement and patient response to the feeding and/or medications or any drug reactions.

2. EMR Intake and Output Flowsheet: Document the amount of nasogastric drainage and the amount of fluid instilled. Document the amount of tube feeding and flush instilled.

3. Medication Administration Record (eMAR): Record time and initials.