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### Naso-gastric and Naso-esophageal Feeding Tube Placement

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# **Nasoesophageal and Nasogastric Feeding Tube Placement**

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In the ICU, a part of the patient's recovery must include nutritional support. Many times that support is more than simply placing a bowl of food in the patient's cage, because a hospitalized patient will not or cannot consume enough food to meet their resting energy requirements (RER). Enteral nutrition interventions such as naso-esophageal (NE) and naso-gastric (NG) feeding tubes can be very simple to place, yet provide the patient with vital nutrition needed for recovery. Additionally, a feeding tube can be a useful tool for measuring gastric contents or giving certain liquid medications. Hospitalized patients in need of these interventions are anorexic or refuse to eat, have suffered severe trauma and are unable to eat or don't feel well enough to eat, are chronically ill, and patients under pharmaceutical influences which suppress appetite or make them feel bad enough to be disinterested with food. Enteral nutrition is preferred when possible as parenteral nutrition requires more management and has a higher risk of causing infection and metabolic disturbances. Contraindications to enteral nutrition include gastrointestinal obstruction, upper respiratory disease or trauma involving the nasal cavity, chronic vomiting, lack of a gag reflex, or if the patient is comatose or heavily sedated.

The placement of NE and NG tubes in your patients is an excellent tool for nutritional supplementation. It is very cost effective, is minimally invasive, well tolerated and easy to place. However, there are complications associated with placement and management. It is important to be familiar with proper technique when placing in order to make it a successful form of treatment. The following list is step-by-step instructions for placing NE and NG tubes.

1. Prepare all necessary equipment.
  - a. Gloves, sterile lube (can use 2% lidocaine hydrochloride jelly), numbing solution (0.5% proparacaine hydrochloride ophthalmic solution or 2% lidocaine), permanent marker, scissors, 22-20g needle, 2-O or 3-O ethilon suture, elizabethan collar, 6 or 12cc syringe for aspiration, an assistant to restrain, feeding tube.
  - b. Use this chart when choosing the correct size feeding tube.
    - i. Dogs and cats <15 kg use 5-8F, 22-43 inch tube.
    - ii. Dogs >15 kg use 8-10F, 43 inch tube
2. Place a drop of numbing solution into each nostril while holding the animal's head towards the ceiling. Allow approximately 5 minutes for it to take effect.
3. Premeasure your feeding tube for the appropriate placement and mark tube with permanent marker at the rostral end.
  - a. NE tubes measure from the nasal planum to the 7<sup>th</sup> or 8<sup>th</sup> intercostal space.
  - b. NG tubes measure from the nasal planum to the caudal aspect of the last rib.

4. Place a stay suture lateral to the nares so that you can easily secure the tube immediately after placing it.
  - a. Thread suture through a 20 or 22 gauge needle to easily place the suture where needed. It is important to get it as close to the nares as possible so that the tube is more secure.
5. Place the insertion end of feeding tube in lubricant.
6. Have the restrainer hold the patient's head and muzzle firmly, in a natural position and gently open the nares dorsally.
  - a. Sometimes sedation is needed during placement; consult your veterinarian if the patient is distressed or being very resistant.
7. Begin passing the tube in a caudoventral medial position, it should feed smoothly through the nasal cavity and into the oropharynx. The restrainer can stroke the neck to help the patient swallow the tube.
8. Once you have reached the marked point on your tube, secure the tube turning it caudally over the nose or lateral to the nose. This can be quickly secured using the attached suture and applying the Chinese finger trap method and securing it to the skin again.
  - a. Once placement is confirmed attach the tube at the top of the head or on the side of the face using tape with the butterfly technique and then staple to the skin. This can be done prior to radiographs, but if not placed correctly it would have to be undone.
9. Attach a syringe to the feeding tube and aspirate. You should receive negative pressure if in the esophagus and if in the stomach you may aspirate stomach contents or get negative pressure. If air is aspirated, inject sterile saline or sterile water to ensure it is not passed into the trachea. If a cough is elicited, pull out and try again. You can also try aspirating the tube for negative pressure prior to inserting the tube completely.
10. Once initial placement is achieved, a lateral radiograph is preferred to ensure proper placement prior to feeding.

It is possible for a patient not to cough with a NE tube in the trachea. Negative pressure can also be elicited if the tube is lodged in the pulmonary parenchyma. A simple technique to prevent potential bronchopulmonary trauma is to aspirate the tube several times prior to complete insertion and make sure negative pressure is present. When placing a NG tube, if the tube seems to bounce before you have reached the marked point, it is possible that it is at the lower esophageal sphincter, which is contracting, and preventing smooth insertion. Insert the tube a bit more forcefully or inject sterile saline while inserting. A radiograph is the only way to ensure proper placement. Once the veterinarian has confirmed proper placement, intermittent feeding boluses or constant rate infusion with a liquid diet can be started.

