

**Adult Non-Fluoroscopic Bedside Insertion of a Small Bore Feeding Tube (SBFT): Stomach (Gastric) or Small Bowel Placement**

**Approval Date:**  
March 2020

**Pages:** 1 of 13  
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**PURPOSE AND INTENT**

- To provide a standard of practice, information on processes and guidance for health care professionals regarding access for enteral feeding in patients unable to meet their nutritional requirements orally.

**1. GLOSSARY OF TERMS:**

- 1.1. **High Risk Patient:** this term refers to patient's that have risk factors (an endotracheal tube, a tracheostomy, sedated, or with an altered mental status that prevents them from assisting with insertion) that make them more vulnerable for tracheopulmonary placement.
- 1.2. **Intensive Care Unit (ICU) Physician:** this term refers to any of the following: the Adult Critical Care Program Attending Physician, ICU residency program resident or fellow, ICU House Medical Officer (HMO) and/or designated ICU Clinical Assistant, Acute Coronary Care Unit Acute Cardiac Care Unit (ACCU) or Intensive Care Cardiac Surgery (ICCS) Attending Physician, Cardiology or Cardiac surgery residency program resident or fellow. This individual shall be referred to as the "ICU Physician" throughout this procedure, and shall be capable of **completing orders, reviewing diagnostic imaging, providing support, and documentation**. A resident from other programs rotating in the above mentioned units shall not independently order or document for this procedure nor independently review diagnostic imaging related to this procedure. However, they can order and document under Attending physician direction.
- 1.3. **Physician:** this term refers to a non-ICU Attending Physician.
- 1.4. **Prior Experience:** this term refers to having previously assisted with and placed a small bore feeding tube successfully.
- 1.5. **Small Bore Feeding Tube (SBFT):** this refers to a single lumen tube with a stylet passed through either the nasal or oral (Critical Care and Cardiac Sciences ICUs only) route into either the stomach or small bowel.

**2. GUIDELINES:**

- 2.1 An ICU Physician/Physician order is required for the initial insertion of a SBFT and after the SBFT is in place, confirming that it is ready to be used.
- 2.2 On **general units** all SBFTs shall be inserted by nurses during the day shift Monday to Friday (0730-1530) to facilitate confirmation of placement by radiology. SBFTs on **general units** can only be advanced to the stomach. If advancement to the small bowel is required, and the patient is not in ICU, notify Fluoroscopy department for tube advancement.
- 2.3 In **ICU**, all SBFT insertions may be performed at any time by a healthcare provider with prior experience.

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- 2.4 Some sites may have a policy in place providing direction that the small bowel feeding tube will be inserted entirely by the radiology department under fluoroscopy. Where this policy exists, it is to be followed and nurses are not to insert the small bore feeding tube on the unit.
- 2.5 Contraindications to any nasopharyngeal insertion shall be discussed with the ICU Physician/Physician prior to SBFT insertion to facilitate determination of risk vs. benefit. This includes patients who have a history of:
  - a) Acute basal skull fracture;
  - b) Acute facial, nasal or sinus injuries;
  - c) Esophageal or gastric abnormalities (i.e. stricture, pharyngeal pouch, pharyngeal compression, perforation or fistula);
  - d) Recently bleeding or banded esophageal and/or gastric varices (within 7 days), ulceration, hemangioma (risk of causing trauma);
  - e) Active duodenal and/or gastric ulcers;
  - f) Active bleeding hemangioma;
  - g) Postoperative upper GI surgery with upper GI fistula;
  - h) Postoperative GI surgery proximal to and including duodenum should be discussed with Surgeon.
- 2.6 **ICU Only:** Gastric insufflation shall be discussed with and ordered by the ICU Physician/Physician prior to commencing the procedure if contraindications are present. Contraindications to gastric insufflation include:
  - a) Active gastric ulcer;
  - b) Esophageal, stomach or duodenal surgery;
  - c) Active bleeding, esophageal varices within 7 days.
- 2.7 **ICU Only:** Oral insertion of a SBFT shall be performed in patients with an acute basal skull fracture (less than 6 weeks from time of injury) or nasal injury/obstruction. Oral insertion may also be attempted in patients when the nasal route fails to pass the cricopharynx.
- 2.8 Initial SBFT insertion into the esophagus (to 35 cm) **or** stomach SHALL be performed by a nurse, whom must have Prior Experience with SBFT insertions or must be under the guidance of a nurse with Prior Experience.
- 2.9 No more than two attempts to insert a SBFT into the stomach or small bowel shall be permitted, per inserter. The third attempt must be by a nurse with Prior Experience. If unsuccessful, the ICU Physician/ Physician shall be contacted to discuss an alternative means to insert a SBFT or to provide nutrition. Rationale for further action shall be documented in the health record by the nurse.
- 2.10 **For all patients prior to use**, confirmation of tip placement via X-ray and authorization to advance tube (if applicable) must be a written order in the patient's health record by an ICU Physician/Physician or radiologist.

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- 2.11 A minimum of two X-rays shall be required to confirm SBFT placement for **all High Risk Patients:**
- a) The first X-ray shall be required once the SBFT is inserted to a depth of 35 cm to confirm midline esophageal placement before advancement to the stomach.
  - b) The second X-ray shall be required to confirm placement in the stomach or small bowel. A chest X-ray shall not be required if fluoroscopy occurs within one hour for placement of SBFT in small bowel.
  - c) All X-rays **SHALL** be viewed by an **ICU Physician/Physician or Radiologist within 2 hours.**
- 2.12 Initial placement shall only be confirmed as listed in 2.10 and 2.11. The following **shall not be** confirmed by auscultation with air bolus, characteristics of aspirates, or pH testing.
- 2.13 **Placement must be confirmed by xray BEFORE a SBFT can be irrigated or used for medications or enteral feeding.**
- 2.14 **The stylet is left in place** until the x-ray is read and final placement is confirmed by a ICU Physician/Physician or Radiologist. The stylet must **NEVER** be reinserted once removed from SBFT.
- 2.15 If a SBFT needs to be advanced to the small bowel under fluoroscopy, coordinate insertion with the department to avoid unnecessary delays with placement confirmation. **Do not leave an unconfirmed SBFT in situ for more than two hours without x-ray confirmation of tip placement.**
- 2.16 A 20-30 mL enteral syringe must be used when attempting to draw in aspirate or when flushing the SBFT. Using a smaller syringe can cause excessive pressure resulting in collapse or rupture of the tube.

**3. EQUIPMENT:**

- 3.1. Non-weighted or weighted enteral feeding tube
- 3.2. Non-sterile procedure gloves
- 3.3. 20-30 mL enteral syringe
- 3.4. Water for flushing (Note: if quality issues with water i.e. brown water or if there are site specific recommendations, utilize sterile water)
- 3.5. Incontinent pad or towel
- 3.6. Feeding tube securement device or adhesive tape
- 3.7. Skin adhesive preparation swab
- 3.8. Tongue depressor
- 3.9. Tape
- 3.10. Kidney basin
- 3.11. Tissues
- 3.12. Safety pin
- 3.13. Oral suction device
- 3.14. Glass of water and a straw (optional)
- 3.15. Flashlight (optional)
- 3.16. Elastic band (optional)

## 4.0 PROCEDURE

### PART A: PREPARATION AND STOMACH (GASTRIC) INSERTION

#### 4.1 Procedure Steps:

#### Special Considerations:

Perform hand hygiene. Review “ICU Physician/Physician” order and identify two patient identifiers (see WRHA policy for Client Identification <http://home.wrha.mb.ca/corp/policy/files/110.000.370.pdf> ), and explain procedure to the patient.

4.2 Collect and assemble equipment. Ensure suction is in working order and available at the bedside.

Oral suctioning may be required during insertion procedure.

4.3 Perform hand hygiene, apply non-sterile gloves.

4.4 Position patient in fowlers or semi-fowlers, with the head of bed 30° to 45°, if not contraindicated.

This helps prevent reflux and aspiration. It also decreases irritation of the tube against the posterior pharynx.

Alternatively the patient may be positioned, left side down as this may help guide the SBFT into the stomach.

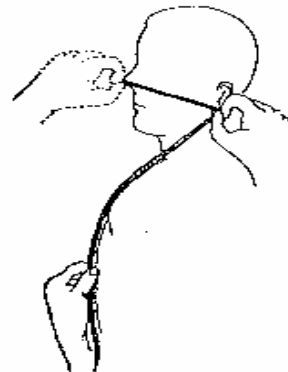
Right lateral decubitus (when advancing to small bowel).

4.5 **High Risk Patients:** Note the 35 cm mark on the SBFT.

See definition for high risk patient.

4.6 Measure the required length of tube to insert into the stomach by placing the internal tip of the tube at the tip of the nose and measuring from the tip of the nose, to the tip of the earlobe and then to the tip of the xiphoid process of the sternum.

Note this measurement.



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**4.7 Procedure Steps:**

4.8 For **small bowel** placement, add an additional 40 cm of length to this measurement. Mark this location on the tube with a piece of tape.

Place waterproof pad or towel across the patient's chest and ensure tissues and kidney basin are within reach of the patient.

4.9 Request the patient blow their nose, if able. Perform hand hygiene and apply clean non-sterile gloves.

4.10 Determine preferred nostril for insertion:

- Inspect nostrils and observe for obstruction.
- Occlude each nostril and have patient breathe to determine which nostril is more patent and select side with greatest airflow.
- Alternate nostrils if a tube has previously been in place.

4.11 Apply skin adhesive preparation and allow it to dry, attach tube securement device to patient's nose.

4.12 Close side access port on tube and ensure stylet connector is firmly seated and not protruding through the tube's distal opening.

4.13 Activate lubricant on guide tip by dipping the tip of tube in water for at least 5 seconds.

4.14 With patient's head in neutral position, insert the tube into the nare, directing it posteriorly. Aim the tip of the tube parallel to the nasal septum and superior to the surface of the hard palate.

**Special Considerations:**

This ensures the tip of the tube will be in desired location: 4<sup>th</sup> part of duodenum or proximal jejunum.

**Note:** This step is omitted if order indicates final location is gastric (stomach).

Remove ill-fitting dentures, if applicable.

Stylet connector shall stay firmly seated throughout procedure.

If more than several minutes elapse before insertion, additional dipping of tube tip in the water shall be required.

If resistance is encountered, stop advancing the tube. Slightly withdraw the tube and re-attempt insertion. If still unsuccessful attempt other nare.

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**4.15 Procedure Steps:**

Instruct the patient to flex their head towards their chest after the tube has entered the nasopharynx.

4.16 Advance the tube through the nasopharynx, allowing the tip to seek its own passage.

4.17 Once past the nasopharynx, if patient is able, instruct them to take small sips of water through a straw or to dry swallow and continue to advance tube with each swallow to required placement.

4.18 For **High Risk Patients**, advance the tube in small increments to 35 cm and secure tube with attachment device at this depth. Obtain an x-ray to confirm placement of tube before proceeding further.

4.18.1 Obtain written confirmation of tube placement in the midline esophageal position by the ICU Physician/Physician.

4.19 Release from attachment device and advance tube slowly to the pre-measured distance to gastric depth. If resistance to passage or a spring back of the tube is felt, pull back, rotate tube (one wrist rotation) and attempt to re-advance.

Once desired tube position obtained, anchor tube with securement device/alternative.

4.20 If ordered placement is in the stomach (gastric), perform abdominal x-ray for placement confirmation.

If ordered placement is in the small bowel, proceed to Part B.

**Special Considerations:**

A flashlight may be required to visualize the tube as it passes through the nasal / oropharyngeal passage. Particular care should be taken if an endotracheal tube is in place, as it may guide the tube into the trachea.

All x-rays SHALL be viewed by an ICU Physician/Physician or staff Radiologist within 2 hours.

Try “spin technique” while holding tube taut, spin tube between thumb and index finger while gently advancing (a piece of adhesive tape on the tube can facilitate this maneuver).

**Tube location SHALL be confirmed radiographically prior to use.**

**X-ray SHALL be read by an ICU Physician/Physician or Radiologist and reported within 2 hours of tube advancement.**

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**Procedure Steps:**

Do not remove stylet until correct placement is confirmed by x-ray.

**PART B: SMALL BOWEL PLACEMENT  
“IN ICU ONLY”.**

**NOTE: If patient is NOT in ICU and placing in small bowel – fluoroscopy is required. Notify fluoroscopy department for tube advancement.**

- 4.21 If a gastric motility agent is ordered, it should be administered 10 minutes before advancing the tube into the small bowel.
- 4.22 Position patient in right lateral decubitus position unless contraindicated.
- 4.23 If no contraindications to gastric insufflation (2.6) are identified, using the 20-30 mL enteral syringe, insufflate the stomach with 200 mL of air through tube stylet port or NG tube (if in place).
- 4.24 Continue to advance tube slowly to the pre-measured distance. If mild resistance to passage or a spring back of the tube is felt, pull back 10 cm and re-advance by rotating the tube (one wrist rotation).
- 4.25 Once desired tube position obtained, anchor tube with securement device/alternative. Return patient to supine position.
- 4.26 Confirm tube placement in small bowel by performing an abdominal x-ray.

**Special Considerations:**

Administer gastric motility agent per order. The preferred gastric motility agent is Metoclopramide 10-20 mg IV although Erythromycin 250 mg IV may also be used.

Position on the right side helps to navigate the tube through the pylorus. Some patients may have activity restrictions that prohibit right lateral decubitus position i.e. a right craniotomy patient.

Insufflation of air facilitates passage of the tube through pylorus.

If NG tube insitu, clamp NG tube to prevent escape of air used for insufflation.

Try “spin technique” while holding tube taut, spin tube between thumb and index finger while gently advancing (a piece of adhesive tape on the tube can facilitate this maneuver).

**Tube location SHALL be confirmed radiographically prior to use.**

**X-ray SHALL be read by an ICU Physician/Physician or Radiologist and reported within 2 hours of tube advancement.**

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**Procedure Steps:**

**Special Considerations:**

**PART C: REMOVAL OF STYLET**

**NOTE: Do not remove stylet until correct placement is confirmed by x-ray.**

- 4.27 To remove the stylet activate internal lubricant by:
- Instilling 10 mL water, using a 20-30 mL enteral syringe into the adapter on the end of the stylet.
- 4.28 Gently withdraw the stylet and discard in appropriate waste container.
- 4.29 Place an indelible ink mark on the tube at the entry point to the nare. Measure the external length of the tube in cm from the nare to the distal tip of the feeding adapter and document. Also indicate which nare is used (right or left).

Failure to lubricate the stylet prior to removal may result in kinking of the tube or dislodgement.

Remove the stylet with care, as occasionally this can dislodge SBFT.

The stylet introducer wire should never be forcefully removed from a SBFT while it is situated in a patient. If the wire is stuck, notify ICU Physician/Physician prior to removal of the SBFT.

Stylet should **NEVER** be re-inserted once removed from SBFT.

Any change in external measurement may indicate SBFT dislodgement.

External length of the tube and the indelible ink mark acts as a visual cue for possible tube dislodgement, however neither method can confirm tip placement.

An x-ray to confirm placement may be necessary if dislodgement is suspected. Contact ICU Physician/Physician for further direction.



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**5. DOCUMENTATION:**

5.1 On clinical record or EPR:

The inserter will document the SBFT external length as well as insertion depth on insertion, each shift for external length, and PRN if position is in question.

- Indication for SBFT placement including which nare was used.
- Patient response and outcome.
- Location of SBFT as confirmed on x-ray and order obtained to proceed with use.
- Document external length of the tube in cm from the nare to the distal tip of the feeding adapter. Also indicate which nare is used (right or left).

5.2 On medication administration record (MAR):

- Type and dose of gastric motility agent, if indicated.

5.3 On kardex/care plan and/or whiteboard:

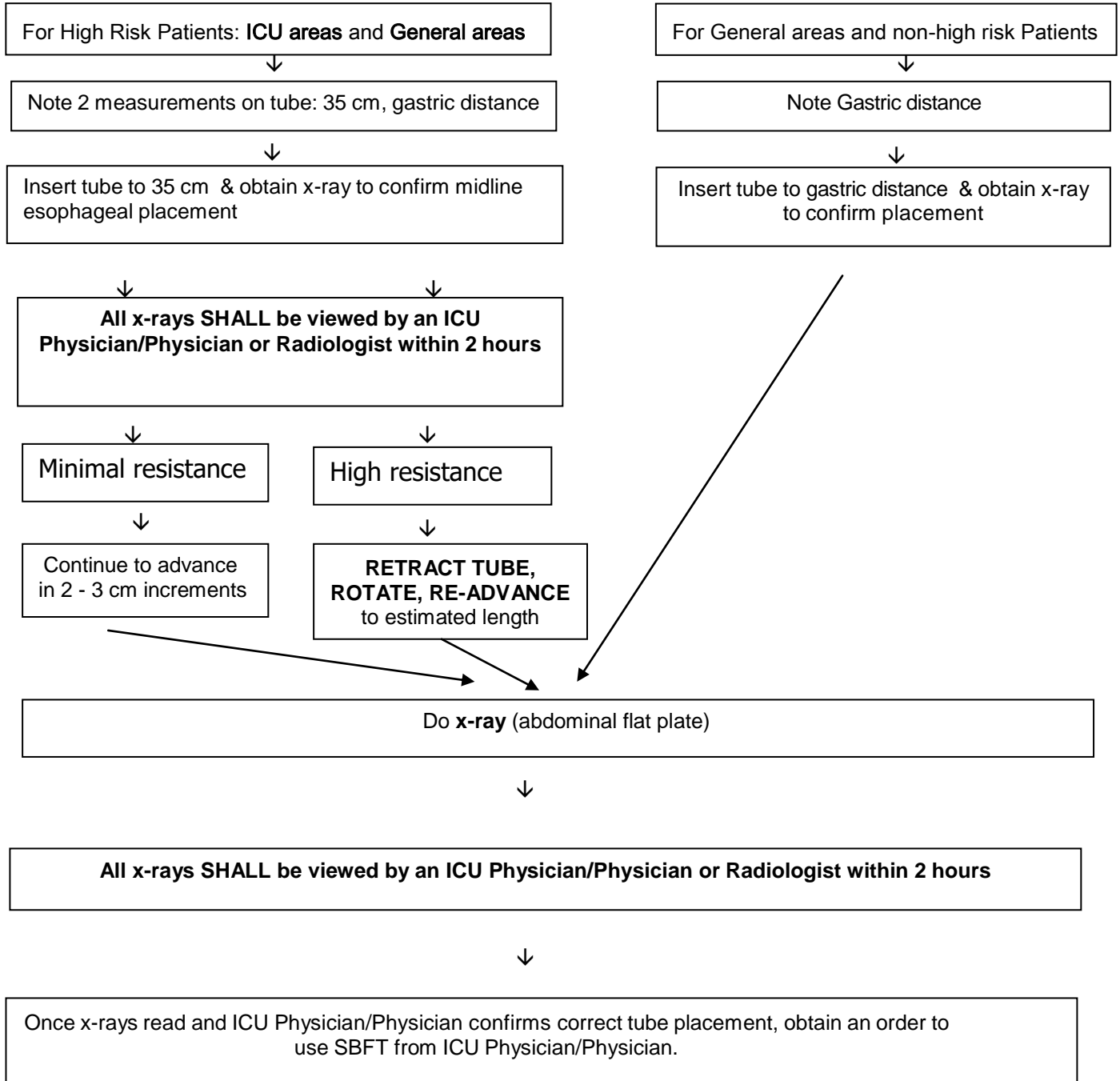
- Date of insertion, location of SBFT and measurement at the nare.

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**BEDSIDE INSERTION OF SMALL BORE FEEDING TUBE (SBFT)  
STOMACH (GASTRIC) PLACEMENT**

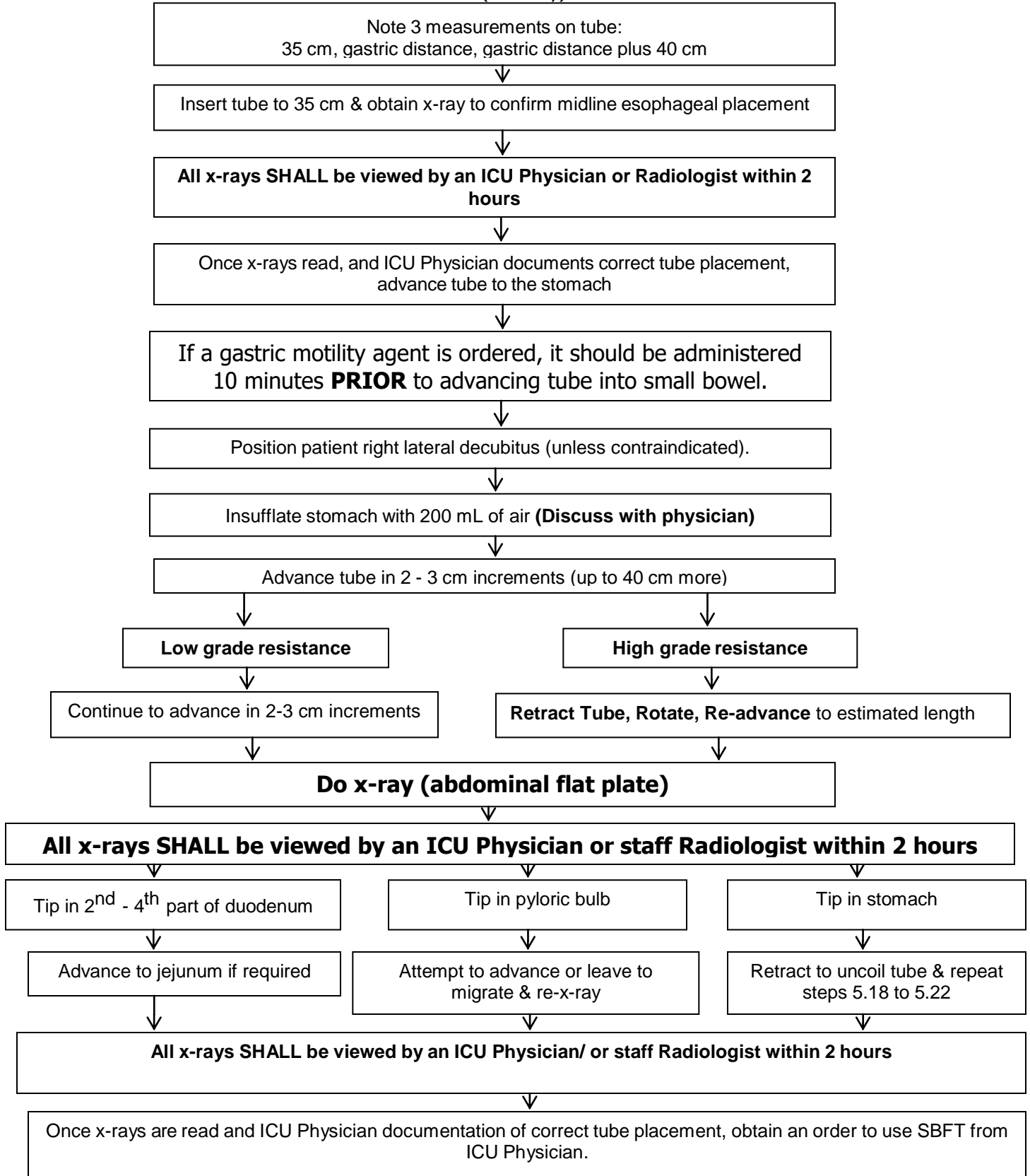


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**BEDSIDE INSERTION OF SMALL BORE FEEDING TUBE (SBFT) IN SMALL BOWEL FOR HIGH RISK PATIENTS (ICU only)**



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**6. REFERENCES:**

- (1) Covidien (author). (2013). *Kangaroo, Entriflex and Dobbhoff Nasogastric Feeding Tubes: Instruction for Placement*.
- (2) Elsevier Nursing Skills Online. (2016). Feeding Tube: Small-Bore Insertion and Care. Retrieved from <http://mns.elsevierperformancemanager.com/NursingSkills/ContentPlayer/SkillContentPlayer>
- (3) Fong, E. (2016). Nasoenteric Feeding: Tube Insertion. *JBI Library of Systematic Reviews*.
- (4) Hamilton Health Sciences. (2011). *MAC-small gauge feeding tube insertion & placement confirmation protocol: adult*. Retrieved from <http://fhs.mcmaster.ca/surgery/divisions/postgrad/documents/SmallGaugeFeedingTubeInsertionandConfirmationforMACfinalized7June2011.pdf>
- (5) Kirkpatrick, Dr. Iain, (April 2016). Diagnostic Radiology. Personal Communication.
- (6) Lenart, S., & Polissar, N. (2003). Comparison of 2 methods for postpyloric placement of enteral feeding tubes. *American Journal of Critical Care*, 12(4), 357-360. Retrieved May 2, 2016
- (7) Lippincott Williams & Wilkins. (2009). *Lippincott's visual encyclopedia of clinical skills* (pp. 339-348). Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins.
- (8) London Health Sciences Centre. (2013). *Procedure for inserting an oral/nasal small bowel feeding tube in CCTC*. Retrieved from [http://www.lhsc.on.ca/Health\\_Professionals/CCTC/procedures/sbft.htm](http://www.lhsc.on.ca/Health_Professionals/CCTC/procedures/sbft.htm)
- (9) Mosby's Nursing Skills Online. (2016). Medication Administration: Continuous Subcutaneous Infusion Retrieved from [www.mosbysnursingskills.com/wrha-canada](http://www.mosbysnursingskills.com/wrha-canada).
- (10) Niv, E. (2009). Post-pyloric feeding. *World Journal of Gastroenterology WJG*, 15(11), 1281. doi:10.3748/wjg.15.1281
- (11) Perry, A. G. (2014). Enteral Nutrition. In *Clinical nursing skills & techniques* (pp. 775-794). St. Louis: Elsevier mosby.
- (12) Potter, P. A., In Kerr, J. C., & Potter, P. A. (2014). *Canadian fundamentals of nursing* (pp. 1087- 1103).
- (13) St. Boniface Hospital (2014). *Specialty Adult Critical Care Procedure: Adult non-fluoroscopic bedside insertion of a small bore feeding tube (SBFT): Stomach (gastric) or small bowel placement in the intensive care unit*. Winnipeg, Canada.

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- (14) Stone, S. J., Pickett, J. D., & Jesurum, J. T. (2000). Bedside Placement of Postpyloric Feeding Tubes. *AACN Clinical Issues: Advanced Practice in Acute & Critical Care*, 11(4), 517-530. doi:10.1097/00044067-200011000-00005
- (15) Tiancha, H., Jiyong, J., & Min, Y. (2014). How to Promote Bedside Placement of the Postpyloric Feeding Tube: A Network Meta-Analysis of Randomized Controlled Trials. *Journal of Parenteral and Enteral Nutrition*, 39(5), 521-530. doi:10.1177/0148607114546166
- (16) The Royal Marsden NHS Foundation Trust (2015). Nutrition, Fluid Balance and Blood Transfusion (Chapter 7) in L. Dougherty & S. Lister (Eds.), *The Royal Marsden Hospital Manual of Clinical Nursing Procedures* (pp 279-299). Oxford, England: Wiley-Blackwell.