

Critical Care Nutrition

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ICU GUIDELINE: CARE AND MANAGEMENT OF NASODUODENAL FEEDING TUBES

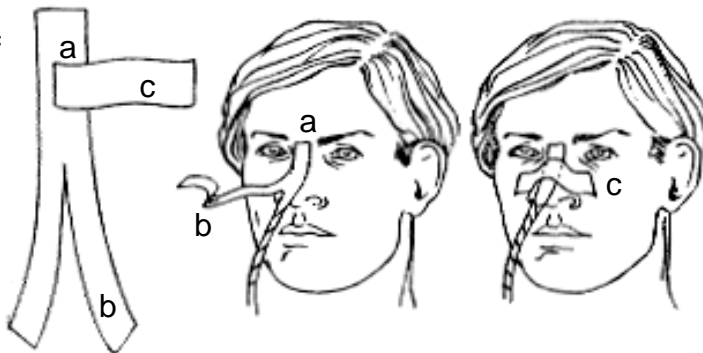
A) GENERAL CONSIDERATIONS:

Nasoduodenal feeding tubes (NDFT) allow for enteral nutrition (EN) when gastric stasis and/or aspiration risk (e.g. gastroesophageal reflux) precludes the nasogastric (NG) route. NDFT can be placed manually (for direction re bedside manual placement technique refer to resource entitled "ICU Guideline: Manual ND Feeding Tube Placement"), endoscopically, or by fluoroscopic technique. NDFT must be managed carefully in order to ensure safe and cost-effective EN.

B) GENERAL GUIDELINES

1) PREVENTING TUBE DISLODMENT: SECURING THE NDFT

- 1) Wipe nose with alcohol swab to remove oil.
- 2) Prepare nose with a barrier/adhesive product
- 3) Prepare silk tape.
- 4) Place tape on nose (a); pinch (tent) tape at nostril to reduce contact pressure.
- 5) Wrap legs (b) of tape along a 3-inch (8 cm) length of tube.
- 6) Secure tape (a) on nose with 2nd piece of tape (c).
- 7) Check tube security daily (tug tube).
- 8) Replace tape as indicated.



2) FEED INITIATION AND TITRATION:

Initiate feeds at 25 ml/hr and increase by 25 ml/hr Q4H to goal rate (refer to resource entitled "ICU Guideline: Post-pyloric Feeding"). Do not automatically decrease the feed rate based on gastric residual volumes (GRV) (refer to section #5).

3) PREVENTION OF ASPIRATION:

a) CONCURRENT GASTRIC DECOMPRESSION:

Gastric secretions account for approximately 2400 ml of the fluid handled by the gastrointestinal tract each day. If gastric stasis is a concern, place a decompression tube such as an Argyle Salem Sump NG tube® (Sherwood Medical, St. Louis, MO, USA.) to allow for gastric decompression. Clamp the NG tube; decompress and discard GRV Q4H. Do not place the NG tube on suction as this may result in gastric mucosal irritation, fluid and electrolyte imbalance, and decompress feed from the small bowel. If hourly decompression is required place the NG on straight drainage. NG tubes can be removed once gastric decompression is no longer required.

b) PATIENT POSITIONING:

Unless contraindicated, elevate the head of bed 45°. If this is not feasible, elevate the head of bed as much as possible.

4) TUBE OCCLUSION:

a) PREVENTION: In order to keep the lumen and tip of the NDFT clear, flush the NDFT with 20 ml water every 4 hours and anytime feeds are held; instill a pancreatic enzyme mixture (see section 5 page over) every 4 hrs.

b) MEDICATION FORM: Avoid liquid formulations (elixirs, solutions, suspension, and syrups) as

they may gel or form globular particles when in contact with feed, increasing the risk of NDFT occlusion. Do not deliver bulk-forming agents via the NDFT; they congeal quickly and will obstruct the NDFT. Tablets are preferred over liquid medications where possible. Crush tablets well and dilute with 15-30 ml water.

c) MEDICATION ADMINISTRATION: Whether using a liquid or solid medication, flush the NDFT with 20 ml water before and after each medication is given. The risk of tube occlusion can be reduced by using the NG decompression tube for medication delivery rather than the NDFT. (Note: only use the NG tube for medications if gastric residual volumes are <250 ml Q4H).

d) RESOLUTION OF TUBE OCCLUSION: Refer below.

5) TROUBLESHOOTING GUIDE FOR NDFT:

<u>PROBLEM</u>	<u>ACTION</u>
1) Elevated GRV	<p>A) Ensure NG not on suction. If on suction, gastric residuals will not reflect gastric emptying. Clamp NG; decompress Q4H or place to straight drainage via gravity.</p> <p>B) Ensure GRV are being discarded, not refed.</p> <p>C) As a general rule, a problem does not exist unless the GRV contains feed. If the GRV contains feed, see point 2 below.</p>
2) GRV contains feed	<p>A) Ensure NG not on suction (suction may decompress feed from small bowel).</p> <p>B) Obtain an abdominal x-ray* to locate tube tips. If NDFT has migrated out of duodenum, reposition. If NG has migrated into duodenum, gently pull tube back into stomach.</p> <p>C) If both tubes are in good position, rule out constipation, paralytic ileus, or other (e.g. mechanical obstruction, gut ischemia).</p> <p><u>Constipation:</u> Continue EN; minimise narcotic agents; escalate cathartic agents.</p> <p><u>Small bowel/colonic ileus:</u> Discontinue or decrease feed rate (e.g. 10 - 25 ml/hr) as indicated; resolve constipation if present (see above); correct any electrolyte imbalances (e.g. hypokalemia); minimise narcotic agents. Consider TPN* (time frame to initiation requires individual assessment).</p> <p><u>Obstruction/gut ischemia:</u> Discontinue feeds; MD intervention as indicated; consider TPN* (time frame to initiation of TPN requires individual assessment).</p> <p>D) If all of the above corrected or ruled out, the problem is probably simple duodenal reflux. To decrease reflux, reduce the amount of fluid provided via the gut (e.g. concentrate feeds*, discontinue extra water*); ensure HOB >45°; minimise narcotic agents*; initiate an IV motility agent* (or second motility agent such as erythromycin*).</p> <p>E) If no response to above and feed reflux persists, reposition the NDFT tip into the jejunum.</p> <p>F) If reflux persists, decrease feed rate to 10 - 25 ml/hr and consider initiating TPN (time frame to initiation requires individual assessment).</p>

**3) Occluded
NDFT**



Technique: Using a red IV cap, cap off 2nd port of tube; insert a water-filled 5 mL syringe fitted with white ribbed graduated connector (see diagram) into main port; *pump syringe repeatedly*. If ineffective, instil pancreatic enzyme mixture (1 crushed pancreatic enzyme tablet, 1 – 324 mg sodium bicarbonate crushed tablet, 5 ml water) filled syringe into main port; gently *pump syringe repeatedly*. If ineffective, leave mixture in NDFT for 2 – 4 hrs (or overnight).
Remove the NDFT only after several serious attempts have been made.

• *** Requires MD order**

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