



Feeding Tubes

Types of Devices

- Nasogastric (NG) tube: non-weighted, polyurethane tube for use more than 10 days.
- Gastrostomy tube: tube protrudes from anterior abdominal wall; most common initial gastrostomy device.
- Button/skin-level gastrostomy: access device that is flush to the skin.
 - Mushroom tip: mushroom or wing-tip portion to secure the tube to the stomach wall.
 - Balloon tip: port on external portion of catheter to inflate or deflate the balloon securing the tube to the stomach wall.

Care

- Recommend management with consultation from GI and pediatric surgery.
- Check NG tube position by aspiration of gastric fluid before each feeding, or if child has been retching/vomiting/coughing.
- NG or G-tube/button care:
 - Assess skin around tube site for redness and skin breakdown with every feeding.
 - Use ordinary soap and water to clean around the tube site to prevent build-up of debris.
 - Keep the tube open for a short time after feedings, to allow infant to “burp.”
 - Flush tube with water before and after feedings or medications to prevent occlusion.
 - Check external tube length daily to make sure tube has not migrated, and adjust as needed.
- Check G-button balloon volume 1-2 times per week, and re-inflate as needed to initial volume.
- Button devices typically last several months; replace when the valve fails and/or the tube leaks.

Complications

- NG tubes:
 - Easily displaced.
 - Risk of malplacement/pulmonary aspiration.
 - Gastric or esophageal trauma during placement.

■ Gastrostomies:

- Granulation tissue (67%).
 - Bleeding (28%).
 - Pain (65%).
 - Requiring silver nitrate (56%).
- Broken or leaky tube (56%).
- Dressing needed on a regular basis to control drainage (60%).
- Stomal infection requiring antibiotics (45%).
- Drainage of pus or clear fluid from the stoma (82%).
- Leakage of tube feed at least 1-2 times per month (49%), daily (25%).

Troubleshooting

| Complication | Causes | How to avoid/prevent/cure |
|--------------------|--|--|
| Displaced tube | <ul style="list-style-type: none"> ■ Inadequate seal | <ul style="list-style-type: none"> ■ Check tube length, balloon volume regularly. ■ If tube comes out before tract has formed (6-12 weeks), must be reinserted by a physician. ■ If replacement tube or button does not fit, place one size smaller or place catheter to maintain patency of tract until smaller tube or button is available (tract will close visibly in 12-24 hours); then gradually up-size. |
| Granulation tissue | <ul style="list-style-type: none"> ■ Leakage ■ Improper fit ■ Instability of tube | <ul style="list-style-type: none"> ■ Treat leakage promptly. ■ Ensure proper tube fit and stabilize against skin. ■ Apply petroleum to surrounding normal skin, then apply silver nitrate to granulation tissue; may require multiple applications. |
| Leaking tube | <ul style="list-style-type: none"> ■ Poor intragastric seal ■ Poor transabdominal seal (tube passing through abdominal wall) | <ul style="list-style-type: none"> ■ Check volume of water used to inflate balloon. ■ Add water to balloon (do not exceed maximum manufacturer's recommended volume). ■ Change leaking mushroom tip for a balloon tip catheter. ■ Ensure tube is perpendicular to abdominal wall. ■ May require up- or down-sizing the G-tube. |

| Complication | Causes | How to avoid/prevent/cure |
|---------------------------------------|--|--|
| Tube occlusion | <ul style="list-style-type: none"> Build-up of residue from feed or medication | <ul style="list-style-type: none"> Flush with water before/after each feed or medication (1-5 mL). Try flushing with carbonated water. |
| Pain or discomfort at peristomal site | <ul style="list-style-type: none"> Incorrect insertion Infection Failure of fixation Leakage of gastric acid | <ul style="list-style-type: none"> Check that external fixation disc is not too tight or loose. Apply gentle traction to ensure correct position of internal anchoring device. Send swab for culture and treat with appropriate topical or systemic antibiotics. Consider analgesics. Consider acid suppressant. Protect skin from excoriation. Check gastric residual volume before feeding. |

| Complication | Causes | How to avoid/prevent/cure |
|-----------------------------------|--|--|
| Regurgitation, nausea or vomiting | <ul style="list-style-type: none"> Gastroparesis/gastric stasis Infusion rate too high Inappropriate patient positioning Constipation | <ul style="list-style-type: none"> Adjust infusion rate. Position child at 30-45° angle during feeding. Alleviate constipation. Consider prokinetic drugs. Consider antiemetics. |
| Diarrhea | <ul style="list-style-type: none"> Antibiotic therapy Infusion rate/volume too high Gastroenteritis Low serum albumin Carbohydrate intolerance Malabsorption Dumping syndrome | <ul style="list-style-type: none"> Ask caregiver to record output. Review antibiotic therapy. Obtain stool sample for culture. Ask dietician to review feed and rate. Consider reducing feeding volume or replacing losses with rehydration fluid. Check stool for reducing substances. Consider continuous feedings. |
| Constipation | <ul style="list-style-type: none"> Low residue feed Dehydration GI motility disorder | <ul style="list-style-type: none"> Discuss with dietician feedings with fiber. Consider laxatives. Review total fluid intake. |

Table adapted from Khair J, Br J Community Nurs, 2003;8(3):116-126.