



# Enteral Feeding Tubes

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# Key Concepts

- Indications
- Procedures: G-tube, G-tube with Nissen, GJ tube
- Feeding strategies
- G-tube “issues” and trouble shooting

# Indications

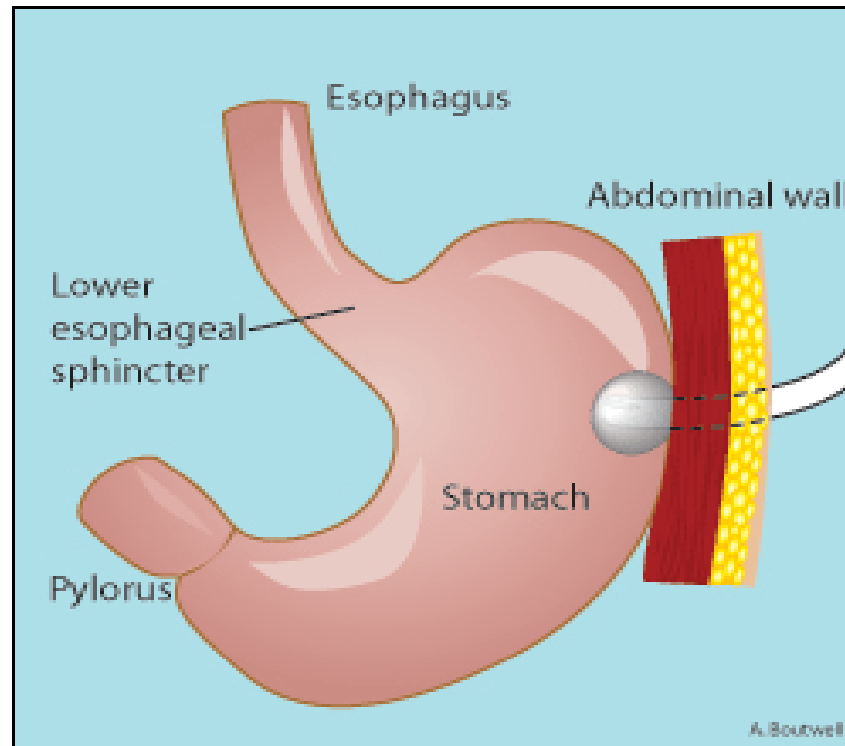
- Children unable to take nutrition by mouth
  - Congenital anomalies of upper GI tract (esophageal atresia, oropharyngeal anomalies)
  - Severe systemic illness (extreme prematurity, altered consciousness, congestive heart failure)
  - Feeding aversion
  
- Children at risk for “aspiration”
  - Abnormal oropharyngeal coordination
  - Extreme hypotonia/hypertonia
  - Anatomic disorders – laryngeal cleft, paralyzed cords..

# Procedures

## I. Simple Gastrostomy tubes

- Operative gastrostomy (Stamm)
- Laparoscopic Gastrostomy
- Percutaneous endoscopic gastrostomy (PEG)

# Gastrostomy tube





# Procedures

- Anti- reflux procedures
  - Nissen Fundoplication
  - Gastro-jejunostomy

# Nissen Fundoplication



## Nissen fundoplication



**Normal stomach**



**After surgery**

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# Gastrojejunostomy (GJ) tube



# Indications for ant-reflux procedures

- Severe reflux refractory to medical therapy
- Reflux-induced respiratory symptoms
  - aspiration pneumonia
  - bronchospasm,
  - Apnea
- Abnormal airway protection mechanisms
  - Absent gag
  - Abnormal neurological control of swallowing

# Nissen vs GJ tube

## Nissen

- Pros
  - Allows for bolus feeding
  - Low maintenance
- Cons
  - Gas bloat/retching
  - Discomfort with feeds

## GJ tube

- Pros:
  - Minimal reflux
  - Low risk of 'gas bloat'
- Cons:
  - No gastric reservoir
  - High risk of dumping
  - No bolus feeding

# Feeding Strategies

- Bolus feedings
  - Gravity (feeding bag on IV pole)
  - Pump (slow drip over 30 min- 90 min)
  - Syringe (slow push)
- Continuous Feedings
  - All GJ feedings have to be continuous
- Mixed
  - Eg: Bolus during day and continuous at night

# G- tube Care

- Clogging:
  - Prevention: Always flush the tube with water after giving medicine or feedings
  - If clogged, try to flush tube with 15-20 ml of warm water. Gentle pressure. Do not force.
  - Never put any object into the tube to unclog it.
  - No consensus on utility of acidic solutions (cola, cranberry juice..)
  - If warm water unsuccessful – call medical facility

# G-tube care

- Clogged tube – warm water flush unsuccessful
  - Bring to medical facility
    - Try devices per protocol
      - » Declogger (Bionix)
      - » In TRO-Reducer
      - » Clog zapper
  - Obtain Radiograph
  - Remove/Replace

(<http://www.modernmedicine.com/modernmedicine/article/articleDetail.jsp?id=142656>)

# G-tube care

- Leakage
  - Small amount of tan or clear drainage is normal
  - Make sure balloon is inflated
  - Make sure there is no infection of surrounding tissue
  - Make sure tube is sized appropriately

# G-tube care

- Irritation of surrounding skin
  - Report if redness and pain is noted to rule out cellulitis
  - Irritation from leakage of gastric contents
    - Paste with Mylanta, cholyseramine and zinc oxide
    - Barrier tape (polysorb)
  - Excessive granulation tissue
    - Silver nitrate cauterization



# G-tube Care

- Bleeding

- Scant crusty drainage – normal. Clean with Q-tip soaked with soap and water
- Small amount of bleeding from granulation tissue may occur due to friction and contact irritation
- Report if bleeding (red, coal colored, coffee ground) noted from inside the tubing.

# G-tube care

- Tube falls out accidentally
  - If 'new tube' (less than four weeks since placement), - deflate balloon, insert tube and call medical facility.
  - If healed gastrostomy, check integrity of balloon, deflate, replace and secure with 5ml water in the balloon

# G-tube care

- Gas/Discomfort/Retching during feeding
  - Decreased gastric volume or compliance
  - Gas bloat – Vent, Farrell valve
  - Dumping
  - Intolerance to components in formula
  - “Visceral hyperalgesia

# G-tube “issues”: Gas/ Discomfort/ Retching during feeding

## Interventions

- Decrease volume
- Slow feeds
- Decrease concentrations
- Vent – Farrell valve
- Medications:
  - Promotility meds
  - Cyproheptadine
  - Antibiotics for small bowel overgrowth