How should we treat reflux in children with disabilities when medications aren’t enough? 
An overview of getting a fundoplication (surgery) versus “GJ” (feeding tube)

Michael Livingston, Anna Shawyer, Peter Rosenbaum, Sarah Jones, Mark Walton

### What is reflux?
- Reflex occurs when partially digested food and stomach acid backs up from the stomach into the esophagus (swallowing tube)
- Reflux is a normal thing in two out of three newborns (it’s what causes “spit ups” every so often)
- Most newborns outgrow reflux and never have any problems with it
- BUT sometimes reflux doesn’t go away and causes medical problems such as:
  - Abdominal pain
  - Difficulty with feeding
  - Difficulty with weight gain
  - Pneumonia

### How is reflux treated?
- Reflux can often be treated by changing diet or taking medications that lower stomach acid
- These treatments don’t always work well in children with disabilities. Many continue to have problems even with multiple medications
- The next step is often treatment with one of two invasive procedures:
  1. Fundoplication (surgery)
  2. Percutaneous gastrostomy tube (a special type of feeding tube)

### What is a fundoplication?
- A fundoplication (“fundus”) is a type of abdominal surgery
- The fundus (top of the stomach) is wrapped around the bottom of the esophagus to tighten (tighten) the connection between the stomach and esophagus
- This stops reflux from happening (partially digested food and stomach acid can no longer back up into the esophagus)
- Many children with disabilities who undergo fundoplication have a feeding tube placed in the stomach at the same time
- Fundoplication can be performed with a large incision (open surgery) or with a smaller incision and cameras through the abdominal wall (laparoscopy)

### What is a “GJ”?
- A percutaneous gastrostomy (“GJ”) is a special type of feeding tube
- This feeding tube is inserted with a needle through the skin (percutaneously) and into the stomach (gastro) and small bowel (jejunum)
- Tube feeds inserted into the GJ bypass the stomach and go directly into the small bowel
- This stops reflux from happening (there are no reflux in the stomach so nothing can back up into the esophagus)

### Which one is better?
- We don’t know which one is better! Both have advantages and disadvantages:

<table>
<thead>
<tr>
<th>Fundoplication</th>
<th>GJ</th>
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<tr>
<td>More invasive (requires general anesthesia and surgery)</td>
<td>Less invasive (requires sedation but no incisions)</td>
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<td>Few side effects (able to swallow and burp without any problems)</td>
<td>More side effects (retching and bloating from being unable to burp)</td>
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<td>Difficult to reverse (requires surgery)</td>
<td>Easy to reverse (remove tube at home or in clinic without sedation)</td>
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<td>Reflux feeding (2-3 times a few times per day)</td>
<td>Continuous feeding (up to 15 hours per day)</td>
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### Easy tube changes (feeding tube can be changed at home without sedation) | Tube changes require procedure (procedure must be performed in hospital with sedation)

Making a decision depends on a variety of patient and family factors:
- Distance from hospital (in case feeding tubes need to be changed)
- Support at home
- Family values and preferences
- Also, some children with disabilities may have too many medical problems to be able to safely undergo surgery. In that case, a GJ is the only option

### Where do we go from here?
- The best research we have on this issue consists of 5 small studies that looked at children with disabilities who were treated with fundoplication compared to those treated with GJ
- Unfortunately, these studies looked at rates of complications only and did not ask parents and families about their experiences with each type of treatment
- We are in the process of performing a survey of pediatric surgeons across Canada to better understand how children with disabilities are currently being treated
- We hope this survey will set the groundwork for a larger study in which we can ask parents and families about their experiences with these procedures