Multi-disciplinary approach to transitioning to oral feeds following placement of enteral tubes in infants post repair of esophageal atresia/tracheoesophageal fistula (EA/TEF)

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Background
- Oral feeding post EA/TEF repair can be challenging due to strictures, dysphagia & gastroesophageal reflux disease (GERD)
- Nutrition support via enteral tubes (ET) is often necessary
- This review examines the multi-disciplinary approach to transitioning from tube to oral feeding used in our institution

Results
- 19 of 50 (38%) EA/TEF patients repaired between Jan ‘11-Sept ‘14 were discharged with ET (Table 1)
- Mean oral intake improved from discharge to first follow-up (44–31 days later); further improvement by 1 year post discharge (15.3±2.1 months of age) (Figure 1)
- 63% of patients were taking ≤10% of feeds orally at discharge whereas only 10% were taking ≥75%
- By 1 year post discharge, 7% of the population was taking ≤10% orally and 58% were taking ≥75%
- 38% of patients had their tubes removed during the study period, and average age of removal was 1.2±0.6 years.
- Occupational Therapist interventions include thickening of liquids for dysphagia, specialty bottle systems, pacing and/or positioning
- 35% of patients had their first successful oral experience with solids/spoon feeding instead of by bottle

Table 1: Patient Demographics

<table>
<thead>
<tr>
<th>EA/TEF classification A:B:C:D:E</th>
<th>4:1:13:1:0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gestational Age (weeks)</td>
<td>35.7±2.7*</td>
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<tr>
<td>M:F</td>
<td>12:7</td>
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<tr>
<td>Length of Stay in days</td>
<td>140±100*</td>
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<tr>
<td>Tracheomalacia (%)</td>
<td>5 (26)</td>
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<tr>
<td>Vocal Cord Paralysis (%)</td>
<td>2 (11)</td>
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<tr>
<td>Motility Agent Use (%)</td>
<td>15 (83)</td>
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<tr>
<td>Antacid Use (%)</td>
<td>15 (83)</td>
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<tr>
<td>Gastric:Jejunal Feeding Tube</td>
<td>14:5</td>
</tr>
<tr>
<td>Videofluoroscopic Feeding Study (%)</td>
<td>8 (42)</td>
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<tr>
<td>Thickened feeds for aspiration (%)</td>
<td>6 (32)</td>
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</tbody>
</table>

*mean ± sd

Discussion
- The transition from enteral tube to oral feeding is a lengthy process
- High rate of enteral tube use noted in this population, but oral feeding is predominant by 1 year post discharge
- Early enteral tube insertion may help to avoid negative oral experiences that lead to long-term feeding and growth complications
- Growth and weight gain was not assessed in this review, however data is available on poster: Nutritional Morbidity Following Surgical Repair of EA/TEF # P-12
- Our team’s philosophy is child-driven. It focuses on establishing trust around feeding & encourages social eating
- As eating becomes a more enjoyable experience, the child will naturally consume more
- When oral liquids or bottle feeding is refused, the introduction of developmentally appropriate solid food can help provide a novel oral experience
- Throughout oral experimentation, enteral tube feeds are manipulated to support growth while helping to drive hunger/satiation
- Adequacy of GERD management and swallowing safety are frequently assessed during admission and post discharge

Conclusion
- Creating & supporting a positive feeding environment facilitates eating for pleasure, & supports child-driven oral feeding
- A multidisciplinary approach helps to manage the complex factors that hinder exclusive oral feeding in EA/TEF

Figure 1: Proportion of diet taken orally. Significant improvement noted over time