This review covers the appropriate order for trialing compensatory strategies according to Logemann (1993).

Part 1: Postural techniques

Part 2: Techniques to enhance oral sensation and swallowing maneuvers

Part 3: Diet modifications and thickened liquids
We’re going to play a little game called, “If I see this, perhaps we should try this…”

**When you see:** Poor bolus control, poor oral transport  
**You can try:** Head tilt back to 60 degrees  
**Why?** This allows gravity to slow down the bolus for oral transport to the pharynx.

**When you see:** Poor oral containment  
**You can try:** Chin down posture  
**Why?** This keeps the bolus in the anterior oral cavity which helps to prevent premature spillage.

**When you see:** Poor tongue base retraction  
**You can try:** Chin tuck or chin down posture  
**Why?** This helps to reduce the distance between the tongue base and posterior pharyngeal wall.

**When you see:** Delayed swallow  
**You can try:** Chin down posture  
**Why?** This widens the valleculae to accommodate the bolus prior to the initiation of the swallow.

**When you see:** Vallecular residue  
**You can try:** Chin tuck and/or effortful swallow  
**Why?** This helps to narrow the vallecular space and pharynx.

**When you see:** Unilateral pharyngeal paresis  
**You can try:** Head rotation to the weak side, OR head tilt to the strong side  
**Why?** The bolus is channeled down the stronger side using gravity, and by closing off the weaker side pyriform sinuses when using a head tilt.

**When you see:** Unilateral vocal fold paresis  
**You can try:** Head rotation to the weak side  
**Why?** Head rotation increases vocal fold closure through external pressure on the thyroid cartilage.

**When you see:** Pyriform sinus residue  
**You can try:** Head rotation to the weak side  
**Why?** This helps to increase UES opening and duration, and reduce UES resting pressure. This can decrease pyriform sinus stasis after the swallow.

**When you see:** Poor airway protection  
**You can try:** Chin down posture OR breath hold and/or effortful swallow  
**Why?** This can help flex the epiglottis into a more protective position and also narrow the laryngeal vestibule. The breath hold helps to increase medialization of the vocal folds.
Feel free to print out this chart, laminate it, high level disinfect it, and bring it in with you when you do your instrumentals… your patients deserve better than a sip, sip, DONE!

*Try an effortful swallow here also

<table>
<thead>
<tr>
<th>WHEN YOU SEE THIS:</th>
<th>YOU CAN TRY THIS:</th>
</tr>
</thead>
<tbody>
<tr>
<td>POOR BOLUS CONTROL, ORAL TRANSPORT</td>
<td>TILT HEAD BACK 60 DEGREES</td>
</tr>
<tr>
<td>POOR ORAL CONTAINMENT</td>
<td>CHIN DOWN POSTURE</td>
</tr>
<tr>
<td>POOR TONGUE BASE RETRACTION</td>
<td>CHIN TUCK OR CHIN DOWN POSTURE</td>
</tr>
<tr>
<td>DELAYED SWALLOW</td>
<td>CHIN DOWN POSTURE</td>
</tr>
<tr>
<td>VALLECCULAR RESIDUE</td>
<td>CHIN TUCK *</td>
</tr>
<tr>
<td>UNILATERAL PHARYNGEAL PARESIS</td>
<td>HEAD ROTATION TO WEAK SIDE, OR HEAD TILT TO STRONG</td>
</tr>
<tr>
<td>UNILATERAL VOCAL FOLD PARESIS</td>
<td>HEAD ROTATION TO THE WEAK SIDE</td>
</tr>
<tr>
<td>POOR AIRWAY PROTECTION</td>
<td>CHIN DOWN POSTURE, BREATH HOLD *</td>
</tr>
<tr>
<td>PYRIFORM SINUS RESIDUE</td>
<td>HEAD ROTATION TO THE WEAK SIDE *</td>
</tr>
</tbody>
</table>
Compensatory Strategies Part 2
What else can I try, how do I do it, who's it for and WHY?

**Strategy:** Temperature
**How do I do it?** Present ice chips or a cold bolus
**Who’s it for:** Anyone with a swallow delay
**What’s it do?** Provides increased sensory input

**Strategy:** Carbonation
**How do I do it?** Present carbonated water, soda
**Who’s it for:** Anyone with a delayed swallow, post swallow residue, or needing to minimize airway invasion
**What’s it do?** Provides increased sensory input

**Strategy:** Taste - sour bolus
**How do I do it?** Present real lemon juice
**Who’s it for:** Anyone with discoordinated oral transit, delayed pharyngeal swallow
**What’s it do?** Increases sensory input from CN V which can lead to increased tongue pressure generation

**Strategy:** Thermal-tactile stimulation (TTS)
**How do I do it?** Stroke the anterior faucial pillars with a cold laryngeal mirror or frozen stick
**Who’s it for:** Anyone with a swallow delay
**What’s it do?** Provides increased bilateral cortical activation which can improve the swallow

**Strategy:** 3-second prep
**How do I do it?** Tell the patient to silently count to 3 then provide a verbal cue to swallow
**Who’s it for:** Anyone with discoordinated oral transit, delayed pharyngeal swallow
**What’s it do?** The swallow can improve by changing the swallow from an automatic behavior to a more volitionally controlled action

**Strategy:** Breath holding - Supraglottic and Super-supraglottic
***Contraindicated for cardiac issues***
**How do I do it?** For the supraglottic maneuver, instruct the patient to hold their breath, swallow during the breath hold, then cough immediately before inhalation. For the super-supraglottic, have the patient bear down during the swallow in addition to the above instructions.
**Who’s it for:** Anyone with reduced laryngeal closure
**What’s it do?** Provides true vocal fold closure for the supraglottic, total laryngeal vestibule closure for the super-supraglottic

**Strategy:** Volume Regulation
**How do I do it?** Provide a small spoon (maroon spoon, mini spoon), or flow restricting cup or straw
**Who’s it for:** Anyone with a swallow delay
**What’s it do?** Provides manageable bolus size despite compulsive behaviors or unfamiliar feeder

**Strategy:** Alternate bites and sips, and/or dry (double) swallow
**How do I do it** Present sip of liquid following each bite, or cue to swallow again
**Who’s it for:** Anyone with oral or pharyngeal residue
**What’s it do?** Clears the oral or pharyngeal cavity

Printed with permission from Theresa Richard M.A. CCC-SLP, BCS-S
www.mobiledysphagiadiagnostics.com
Feel free to print out this chart, laminate it, and stick it on your therapy clipboard, your patients deserve better than the Oprah thickened liquids method!

<table>
<thead>
<tr>
<th>WHEN YOU SEE THIS</th>
<th>YOU CAN TRY THIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTERIOR LEAKAGE</td>
<td>THICKENED LIQUIDS</td>
</tr>
<tr>
<td>INADEQUATE BOLUS PREP</td>
<td>CHOPPED/PUREED DIET</td>
</tr>
<tr>
<td>DISCOORDINATED ORAL TRANSFER</td>
<td>3-SECOND PREP, SOUR BOLUS</td>
</tr>
<tr>
<td>ORAL RESIDUE</td>
<td>DRY SWALLOW, ALTERNATE</td>
</tr>
<tr>
<td>DELAYED PHARYNGEAL SWALLOW</td>
<td>THICKENED LIQUIDS, VOLUME REGULATION, SOUR BOLUS, THERMAL TACTILE, 3-SECOND PREP</td>
</tr>
<tr>
<td>NASAL REGURGITATION</td>
<td>CHOPPED/PUREED DIET</td>
</tr>
<tr>
<td>VALLECCULAR RESIDUE</td>
<td>DRY SWALLOW, ALTERNATE, CARBONATION</td>
</tr>
<tr>
<td>UNILATERAL PHARYNGEAL RESIDUE</td>
<td>DRY SWALLOW, ALTERNATE, CARBONATION</td>
</tr>
<tr>
<td>PYRIFORM SINUS RESIDUE</td>
<td>DRY SWALLOW, ALTERNATE, CARBONATION</td>
</tr>
<tr>
<td>REDUCED LARYNGEAL CLOSURE</td>
<td>SUPER/SUPRAGLOTTIC SWALLOW</td>
</tr>
</tbody>
</table>

Printed with permission from Theresa Richard M.A. CCC-SLP, BCS-S
www.mobiledysphagiadiagnostics.com
According to *Dysphagia Following Stroke* (Daniels & Huckabee, 2014), a few key points to consider when deciding to recommend thickened liquids include:

1. **Patient Satisfaction/Quality of Life:** Your patient’s lack of compliance with a recommended diet (puree, thickened) is directly related to the dissatisfaction of the food/liquid preparation (Colony, 2005)

2. **The Risk/Benefit ratio:**
   1. **Aspiration**
      - There is an INCREASED incidence of pneumonia in patients receiving honey-thick liquid compared to nectar-thick or thin with a chin tuck. (Robbins et al., 2008)
      - Dependency for feeding and oral care, the number of decayed teeth, and tube feedings are more predictive of aspiration pneumonia (Langmore et al., 1998) <-- (This "Predictors of Aspiration" paper is a **must-read** for anyone working in SNFs and struggling with the ultimatum to thicken or not to thicken)
   2. **Dehydration**
      - The issue is not with the actual thickening agent causing dehydration, rather it is a palatability issue with the patient drinking less than they would if it weren't thickened.
      - The free water protocol may be your best bet if dehydration is a concern.
   3. **Fatigue**
      - Thickened liquids increase intrabolus pressure leading to increased effort and strength to swallow which can lead to overall fatigue during the meal with a decrease in overall intake.

According to the Corbin-Lewis, Liss (2014) textbook, the following pathophysiologies may respond better to thin or thickened liquids, however we do NOT know for sure unless seen on an instrumental!

<table>
<thead>
<tr>
<th>THICKENED LIQUIDS may be better for:</th>
<th>THIN LIQUIDS may be better for:</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIFFICULTY CHEWING</td>
<td>REDUCED TONGUE BASE RETRACTION</td>
</tr>
<tr>
<td>PROLONGED ORAL PREP</td>
<td>REDUCED LARYNGEAL ELEVATION</td>
</tr>
<tr>
<td>NASAL REGURGITATION</td>
<td>POOR CRICOPHARYNGEAL OPENING</td>
</tr>
<tr>
<td>PHARYNGEAL SWALLOW DELAY</td>
<td></td>
</tr>
<tr>
<td>LARYNGEAL PENETRATION</td>
<td></td>
</tr>
<tr>
<td>ASPIRATION</td>
<td></td>
</tr>
</tbody>
</table>
Resources:


Printed with permission from Theresa Richard M.A. CCC-SLP, BCS-S
www.mobiledysphagiadiagnostics.com