

# Current Trends in Dysphagia Intervention Part I

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Illinois Speech-Language-Hearing Association Convention  
February 12, 2010

## Outline

- I. Introduction – it takes a team.....key players and dynamics
- II. Trends in Dysphagia Screening
  - a. Who, what, when, where and how?
  - b. Traditional screening tools
  - c. Novel screening tool in development
- III. Diagnostic Treatment Package
  - a. Determining the best diagnostic tools for your patient
  - b. Bedside/office assessment
    - i. What should it include?
    - ii. How confident should we be with our results?
  - c. Dining – swallowing as an endurance activity = eating
    - i. Oropharyngeal fatigue
    - ii. Age effects
  - d. Oropharyngeal kinematic and bolus flow assessment - radiography
    - i. Materials
    - ii. Methods for optimizing your radiographic evaluation
    - iii. The UES and below
  - e. Laryngeal and bolus flow assessment (but not during the swallow!)- endoscopy
  - f. Kinetic Assessment – strength as measured by pressure/force devices
    - i. How does strength evaluation inform the diagnostic process?
    - ii. Methods for assessing strength
- IV. Theoretical Basis for Oropharyngeal Strengthening Exercises
  - a. Why are patients weak?
    - i. Sarcopenia
    - ii. Atrophy
    - iii. Changes in neural underpinnings
  - b. Who is at greatest risk for oropharyngeal weakness?
  - c. Why does exercise improve swallowing
    - i. Muscle hypertrophy
    - ii. Neural plasticity
- V. Overview Q&A

# Current Trends in Dysphagia Intervention Part II

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## Outline

- I. Evidence-based Swallowing Strategies and Interventions
  - a. Compensatory strategies including dietary interventions
    - i. Is there support for frequently implemented strategies?
    - ii. Results from largest clinical trial in dysphagia
    - iii. Creating a successful dining environment for dysphagic patients
  - b. Rehabilitative Exercises
    - i. Augmenting upper esophageal sphincter opening
    - ii. Lingual Strengthening
      1. clinical trial outcomes
      2. methods and modalities
    - iii. Expiratory muscle strength training
  - c. Neuromuscular electrical stimulation
  - d. Combined interventions
- II. Documenting Change in Swallowing across Multiple Domains
  - a. Physiologic Measures you can use every day
    - i. Penetration/Aspiration Scale
    - ii. Post-swallow Residue
    - iii. Strength
    - iv. You make the call!! – group review and scoring of videofluoroscopic studies
  - b. Quality of Life
  - c. The Importance of Objective Information – a real life example
- III. Learning From Our Patients
  - a. Myasthenia Gravis
  - b. Breast Cancer
- IV. Overview Q&A

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## VIDEOFLUOROSCOPIC STUDIES OF SWALLOWING

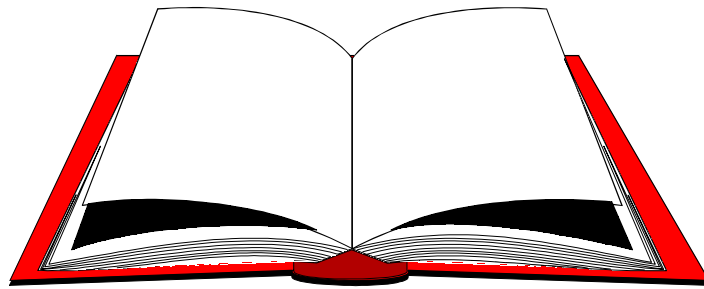
I. OROPHARYNGEAL SWALLOW STUDY (OPSS)	II. ESOPHAGRAM	III. OROPHARYNGEAL ESOPHAGRAM (OPE) aka DYSPHAGIA EVALUATION (=I & II)	IV. POST ESOPHAGECTOMY OROPHARYNGEAL ESOPHAGRAM
<p>A. Patient participation</p> <ol style="list-style-type: none"> <li>1. Posture – sits upright</li> <li>2. Method of intake                             <ol style="list-style-type: none"> <li>a. administered (“fed”) controlled amounts by examiner</li> <li>b. then may self administer uncontrolled amount</li> </ol> </li> </ol>	<p>A. Patient participation</p> <ol style="list-style-type: none"> <li>1. Posture – stands, lies on stomach rolled up 30°</li> <li>2. Method of intake                             <ol style="list-style-type: none"> <li>a. self administered</li> <li>b. drinks uncontrolled amount</li> </ol> </li> </ol>	<p>A. Patient Participation</p> <p style="text-align: center;">SEE IA &amp; IIA</p>	<p>A. Patient participation</p> <ol style="list-style-type: none"> <li>1. Posture – stands</li> <li>2. Methods of intake                             <ol style="list-style-type: none"> <li>a. administered controlled amount by SLP, if no aspiration then</li> <li>b. self administer uncontrolled amount of liquid</li> </ol> </li> </ol>
<p>B. Focus of Study</p> <ol style="list-style-type: none"> <li>1. Assess oral, pharyngeal &amp; laryngeal movement parameters (biomechanics)</li> <li>2. Assess oropharyngeal sensorimotor integrity (e.g. accommodation to various bolus volumes, consistencies, etc)</li> <li>3. Assess bolus direction, transit times &amp; clearance</li> <li>4. Examine structure and function of UES. If abnormal, why?</li> <li>5. Evaluate cervical esophageal bolus transport</li> <li>6. Assess if patient penetrates or aspirates and why</li> <li>7. Determine response to therapy strategies</li> </ol>	<p>B. Focus of Study</p> <ol style="list-style-type: none"> <li>1. Assess pharyngeal outline for abnormalities</li> <li>2. Define motility (structures and bolus)</li> <li>3. Examine structure &amp; function of UES</li> <li>4. Evaluate cervical esophageal structures and bolus transport</li> <li>5. Assess if patient aspirates</li> <li>6. Evaluate motility, structure and mucosal integrity of thoracic esophagus</li> <li>7. Examine function of LES</li> </ol>	<p>B. Focus of Study</p> <ol style="list-style-type: none"> <li>1. Assess oral, pharyngeal, laryngeal and esophageal structure</li> <li>2. Define motility (structures and bolus) of esophagus</li> <li>3. Examine structure and function of UES If abnormal, why?</li> <li>4. Evaluate cervical esophageal structure and bolus transit</li> <li>5. Assess if patient aspirates and why</li> <li>6. Determine response to therapy strategies</li> <li>7. Evaluate motility, structure and mucosal integrity of thoracic esophagus</li> <li>8. Examine function of LES</li> </ol>	<p>B. Focus of Study</p> <ol style="list-style-type: none"> <li>1. Assess oral, pharyngeal, laryngeal and esophageal structure and function</li> <li>2. Rule out leak</li> <li>3. First, assure safe oropharyngeal swallow. That is, define if patient aspirates. If so, SLP determines intervention to prevent aspiration (e.g. chin tuck). If cannot safely swallow, stop here  If safe, proceed to #'s 3, 4 &amp; 5</li> <li>4. Assess emptying</li> <li>5. Re-evaluate oropharyngeal swallow (assessing fatigue now)</li> </ol>
<p>C. Types and amounts of Material</p> <ol style="list-style-type: none"> <li>1. Three different consistency categories                             <ol style="list-style-type: none"> <li>a. liquid (water or nectar or honey consistency)</li> <li>b. semi-solid (E-Z paste or pudding)</li> <li>c. solid (barium cookie)</li> <li>d. pill with water, thin or nectar thick liquid</li> </ol> </li> <li>2. Three swallows of the liquid and semi-solid material. One cookie bolus. One or ½ pill.</li> <li>3. Small amounts (1/2 teaspoon, full teaspoon)</li> <li>4. Mouthful of liquid</li> </ol>	<p>C. Types and amounts of Material</p> <ol style="list-style-type: none"> <li>1. Liquid (thin and thick consistency)</li> <li>2. Repeated swallows with minimum of 6</li> <li>3. Mouthful</li> </ol>	<p>C. Types and amounts of Material</p> <ol style="list-style-type: none"> <li>1. Three different consistencies                             <ol style="list-style-type: none"> <li>a. liquid (thin and thick consistency)</li> <li>b. semi-solid (E-Z paste or pudding)</li> <li>c. solid (barium cookie, bread, bagel, marshmallow, barium pill)</li> </ol> </li> <li>2. Three swallows of the liquid and semi-solid paste for oropharynx, 6 for esophagus</li> <li>3. Small amounts (1/2 teaspoon) and large amounts (mouthful)</li> </ol>	<p>C. Types and amounts of Material</p> <ol style="list-style-type: none"> <li>1. Two different materials                             <ol style="list-style-type: none"> <li>a. Omnipaque (2, 3 &amp; 4 above)                                     <ol style="list-style-type: none"> <li>1. swallows given by SLP to assess swallow safety.</li> <li>2. Administer teaspoonful – if aspiration, attempt intervention such as chin tuck with a second teaspoonful.</li> <li>3. To rule out leak, drink Omnipaque administered by radiologist</li> <li>4. If no leak, drink barium administered by radiologist &amp; assess emptying</li> </ol> </li> <li>b. Varibar Swallows                                     <ol style="list-style-type: none"> <li>1. Varibar thin liquid, nectar and honey thick liquids (if aspirates thin) and pudding</li> <li>2. If no leak and empties, SLP dispenses:   <ol style="list-style-type: none"> <li>a) teaspoonful of thin liquid to assess oropharyngeal swallow if aspirates</li> <li>b) 2 swallows of nectar thick or honey thick liquid</li> <li>c) 2 teaspoons of pudding</li> </ol> </li> </ol> </li> </ol> </li> </ol>

## Penetration/Aspiration Scale

No Penetration or Aspiration	1	Contrast does not enter the airway
P E N E T R A T I O N	2	Contrast enters the airway, remains above vocal folds, no residue
	3	Contrast remains above the vocal folds with visible residue
	4	Contrast contacts vocal folds, no residue
	5	Contrast contacts vocal folds, visible residue
	6	Contrast passes glottis, no sub-glottic residue
A S P I R A T I O N	7	Contrast passes glottis, visible sub-glottic residue despite patient response
	8	Contrast passes glottis, visible sub-glottic residue, absent patient response

(Rosenbek et al, *Dysphagia* , 1996; Robbins et al, *Dysphagia* , 1999)

# **The SWAL-QOL SURVEY**



**Understanding  
Quality of Life  
in Swallowing Disorders**

## Instructions for Completing the SWAL-QOL Survey

This questionnaire is designed to find out how your swallowing problem has been affecting your day-to-day quality of life.

Please take the time to carefully read and answer each question. Some questions may look like others, but each one is different.

***Here's an example of how the questions in the survey will look.***

1. In the last month how often have you experiences each of the symptoms below.

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
Feel weak	1	2	3	4	5

**Thank you for your help in taking part in this survey!**

**IMPORTANT NOTE:** We understand that you may have a number of physical problems. Sometimes it is hard to separate these from swallowing difficulties, but we hope that you can do your best to concentrate **only** on your **swallowing problem**. Thank you for your efforts in completing this questionnaire.

- Below are some general statements that people with **swallowing problems** might mention. In the last month, **how true** have the following statements been for you.

*(circle one number on each line)*

	<b>Very much true</b>	<b>Quite a bit true</b>	<b>Somewhat true</b>	<b>A little true</b>	<b>Not at all true</b>
Dealing with my swallowing problem is very difficult.	1	2	3	4	5
My swallowing problem is a major distraction in my life.	1	2	3	4	5

- Below are aspects of day-to-day eating that people with **swallowing problems** sometimes talk about. In the last month, **how true** have the following statements been for you?

*(circle one number on each line)*

	<b>Very much true</b>	<b>Quite a bit true</b>	<b>Somewhat true</b>	<b>A little true</b>	<b>Not at all true</b>
Most days, I don't care if I eat or not.	1	2	3	4	5
It takes me longer to eat than other people.	1	2	3	4	5
I'm rarely hungry anymore.	1	2	3	4	5
It takes me forever to eat a meal.	1	2	3	4	5
I don't enjoy eating anymore.	1	2	3	4	5

3. Below are some physical problems that people with **swallowing problems** sometimes experience. In the last month, **how often** you have experienced each problem as a result of your swallowing problem?

*(circle one number on each line)*

	<b>Almost always</b>	<b>Often</b>	<b>Sometimes</b>	<b>Hardly ever</b>	<b>Never</b>
Coughing	1	2	3	4	5
Choking when you eat food	1	2	3	4	5
Choking when you take liquids	1	2	3	4	5
Having thick saliva or phlegm	1	2	3	4	5
Gagging	1	2	3	4	5
Drooling	1	2	3	4	5
Problems chewing	1	2	3	4	5
Having excess saliva or phlegm	1	2	3	4	5
Having to clear your throat	1	2	3	4	5
Food sticking in your throat	1	2	3	4	5
Food sticking in your mouth	1	2	3	4	5
Food or liquid dribbling out of your mouth	1	2	3	4	5
Food or liquid coming out your nose	1	2	3	4	5
Coughing food or liquid out of your mouth when it gets stuck	1	2	3	4	5

4. Next, please answer a few questions about how your **swallowing problem** has affected your diet and eating in the last month.

*(circle one number on each line)*

	<b>Strongly agree</b>	<b>Agree</b>	<b>Uncertain</b>	<b>Disagree</b>	<b>Strongly disagree</b>
Figuring out what I can and can't eat is a problem for me.	1	2	3	4	5
It is difficult to find foods that I both like and can eat.	1	2	3	4	5

5. In the last month, **how often** have the following statements about communication applied to you because of your **swallowing problem**?

(circle one number on each line)

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
People have a hard time understanding me.	1	2	3	4	5
It's been difficult for me to speak clearly.	1	2	3	4	5

6. Below are some concerns that people with **swallowing problems** sometimes mention. In the last month, **how often** have you experienced each feeling?

(circle one number on each line)

	Almost always	Often	Sometimes	Hardly ever	Never
I fear I may start choking when I eat food.	1	2	3	4	5
I worry about getting pneumonia.	1	2	3	4	5
I am afraid of choking when I drink liquids.	1	2	3	4	5
I never know when I am going to choke.	1	2	3	4	5

7. In the last month, how often have the following statements **been true** for you because of your **swallowing problem**?

(circle one number on each line)

	Always true	Often true	Sometimes true	Hardly ever true	Never true
My swallowing problem depresses me.	1	2	3	4	5
Having to be so careful when I eat or drink annoys me.	1	2	3	4	5
I've been discouraged by my swallowing problem.	1	2	3	4	5
My swallowing problem frustrates me.	1	2	3	4	5
I get impatient dealing with my swallowing problem.	1	2	3	4	5

8. Think about your social life in the last month. How strongly would you agree or disagree with the following statements?

*(circle one number on each line)*

	<b>Strongly agree</b>	<b>Agree</b>	<b>Uncertain</b>	<b>Disagree</b>	<b>Strongly disagree</b>
I do not go out to eat because of my swallowing problem.	1	2	3	4	5
My swallowing problem makes it hard to have a social life.	1	2	3	4	5
My usual work or leisure activities have changed because of my swallowing problem.	1	2	3	4	5
Social gatherings (like holidays or get-togethers) are not enjoyable because of my swallowing problem.	1	2	3	4	5
My role with family and friends has changed because of my swallowing problem.	1	2	3	4	5

9. In the last month, **how often** have you experienced each of the following physical symptoms?

*(circle one number on each line)*

	<b>All of the time</b>	<b>Most of the time</b>	<b>Some of the time</b>	<b>A little of the time</b>	<b>None of the time</b>
Feel weak?	1	2	3	4	5
Have trouble falling asleep?	1	2	3	4	5
Feel tired?	1	2	3	4	5
Have trouble staying asleep?	1	2	3	4	5
Feel exhausted?	1	2	3	4	5

10. Do you now take any food or liquid through a feeding tube?

*(circle one)*

No ..... 1

Yes..... 2

11. Please circle the letter of the one description below that best describes the consistency or texture of the food you have been eating most often in the last week.

**Circle one:**

- A.** Circle this one if you are eating a full normal diet, which would include a wide variety of foods, including hard to chew items like steak, carrots, bread, salad, and popcorn.
- B.** Circle this one if you are eating soft, easy to chew foods like casseroles, canned fruits, soft cooked vegetables, ground meat, or cream soups.
- C.** Circle this one if you are eating food that is put through a blender or food processor or anything that is like pudding or pureed foods.
- D.** Circle this one if you take most of your nutrition by tube, but sometimes eat ice cream, pudding, apple sauce, or other pleasure foods.
- E.** Circle this one if you take all of your nourishment through a tube.

12. **Please circle the letter** of the one description below that best describes the consistency of liquids you have been drinking most often in the last week.

**Circle one:**

- A. Circle this if you drink liquids such as water, milk, tea, fruit juice, and coffee.
- B. Circle this if the majority of liquids you drink are thick, like tomato juice or apricot nectar. Such thick liquids drip off your spoon in a slow steady stream when you turn it upside down.
- C. Circle this if your liquids are moderately thick, like a thick milkshake or smoothie. Such moderately thick liquids are difficult to suck through a straw, like a very thick milkshake, or drip off your spoon slowly drop by drop when you turn it upside down, such as honey.
- D. Circle this if your liquids are very thick, like pudding. Such very thick liquids will stick to a spoon when you turn it upside down, such as pudding.
- E. Circle this if you did not take any liquids by mouth or if you have been limited to ice chips.

13. In general, would you say your health is:

*(circle one)*

- Poor ..... 1
- Fair..... 2
- Good..... 3
- Very Good..... 4
- Excellent ..... 5

## General Questions About You

**What is the date of your birth?**

Please write in your date of birth here:

\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 month      day      year

**What is your age today?** \_\_\_\_\_

**Are you –**

*(circle one)*

Male ..... 1

Female ..... 2

**What is your main racial or ethnic group?**

*(circle one)*

White or Caucasian, but not Hispanic or Latino ..... 1

Black or African-American, but not Hispanic or Latino ..... 2

Hispanic or Latino ..... 3

Asian ..... 4

Other ..... 5

**What is the highest year of school or college you have ever completed?**

*(circle one number)*

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	16+
Grade School								High School				College				Post Graduate

**What is your current marital status?**

*(circle one)*

- Never married ..... 1
- Married..... 2
- Divorced..... 3
- Separated ..... 4
- Widowed..... 5

**Did anybody help you complete this questionnaire?**

*(circle one)*

- No, I did it myself ..... 1
- Yes, someone helped me fill it out..... 2

**IF SOMEONE HELPED YOU FILL OUT THIS QUESTIONNAIRE, how did that person help you?**

*(circle one)*

- Read you the questions and/or wrote down the answers you gave ..... 1
- Answered the questions for you ..... 2
- Helped in some other way ..... 3

Please write today's date here:

\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
month      day      year

# Last Page

## COMMENTS:

Do you have any comments about this questionnaire? We welcome your comments about the questionnaire in general or about specific questions, especially any that were unclear or confusing to you.

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**Thank you for completing this questionnaire!**