

The Role of Speech- Language Pathologists in Parkinson's Disease

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Objectives

- Introduction
- What can Parkinson's affect?
- How to identify functional changes relating to Speech Therapy
- How to treat those changes through therapy
- Conclusion
- References

What Does a Speech Therapist Do?



Speech-Language Pathologist (SLP)



An SLP works with clients along the entire spectrum of life.



Often, an SLP will assess and treat clients with Parkinson's Disease (PD).

What Do We Target?



Speech: how your speech sounds (clear vs. mumbled or slurred; fast vs. slow; stuttered)

Language: effectively forming thoughts into sentences, word finding, comprehension (understanding others)

Cognition: memory, problem solving, safety awareness, executive functioning, organization, attention, impulse control

Voicing: how does your voice sound (loud vs. quiet, strong vs. weak, clear vs. hoarse/raspy/breathy)

Swallowing: safe consumption of solids, liquids and pills while using safe swallowing strategies



Parkinson's Disease and Speech and Voicing

How might PD impact the speech and vocal system?

PD and Speech and Voicing



YOUR VOICE MAY SOUND
"NORMAL" OR "THE SAME"
BUT MIGHT SOUND QUIET OR
MUMBLED TO FRIENDS AND
FAMILY.



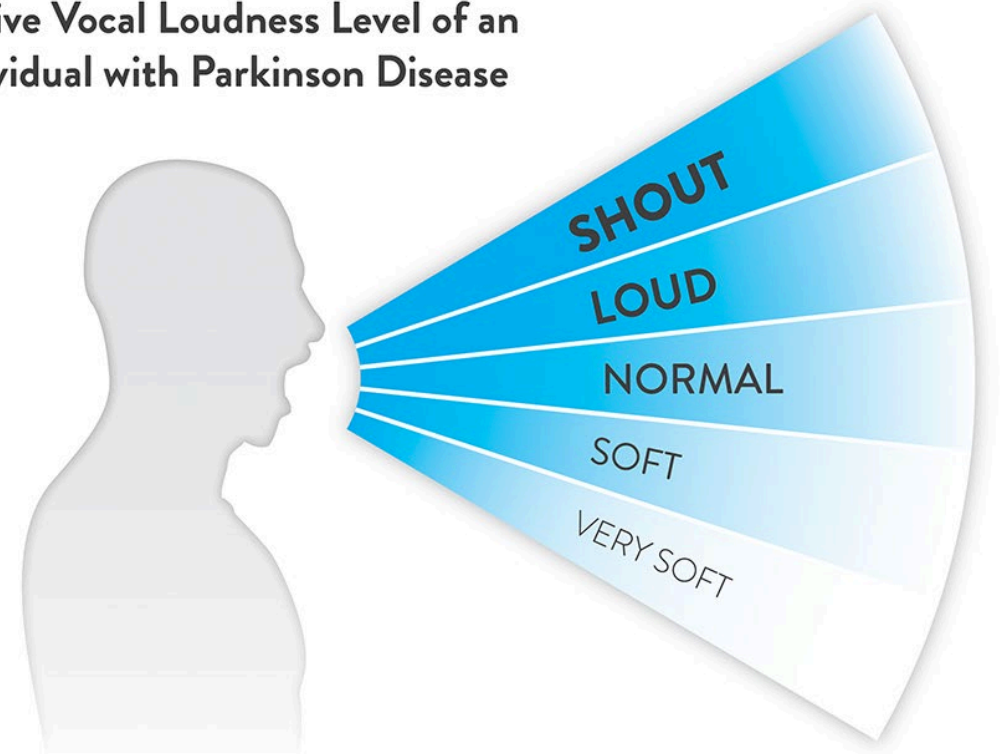
YOU MIGHT FEEL LIKE YOU ARE
SHOUTING WHEN REALLY YOU
ARE SPEAKING AT A MORE
APPROPRIATE VOLUME FOR
CONVERSATION (~65-70 DB).

PD and Speech and Voicing

Commonly Reported Speech and Voicing Issues:


- Soft Voice
- Hoarseness/Raspiness
- Monotone
- Mumbled/Slurred Speech
- Rapid, Slow or Varied Speaking Rate
- Breathlessness

Relative Vocal Loudness Level of an Individual with Parkinson Disease



As a result of Parkinson disease you will need to use more vocal effort to have a voice within normal loudness limits.

PD and Speech and Voicing: What to look for.



Voice Handicap Index (VHI-10)

Name: _____ Date: _____

Instructions: These are statements that many people have used to describe their voices and effects of their voices on their lives. Circle the response that indicates how frequently you have the same experience.

0 = never 1 = almost never 2 = sometimes 3 = almost always 4 = always

| | | | | | |
|---|---|---|---|---|---|
| 1. My voice makes it difficult for people to hear me. | 0 | 1 | 2 | 3 | 4 |
| 2. I run out of air when I talk. | 0 | 1 | 2 | 3 | 4 |
| 3. People have difficulty understanding me in a noisy room. | 0 | 1 | 2 | 3 | 4 |
| 4. The sound of my voice varies throughout the day. | 0 | 1 | 2 | 3 | 4 |
| 5. My family has difficulty hearing me when I call them throughout the house. | 0 | 1 | 2 | 3 | 4 |
| 6. I use the phone less often than I would like to. | 0 | 1 | 2 | 3 | 4 |
| 7. I'm tense when talking to others because of my voice. | 0 | 1 | 2 | 3 | 4 |
| 8. I tend to avoid groups of people because of my voice. | 0 | 1 | 2 | 3 | 4 |
| 9. People seem irritated with my voice. | 0 | 1 | 2 | 3 | 4 |
| 10. People ask, "What's wrong with your voice?" | 0 | 1 | 2 | 3 | 4 |

Osato, C. Lee, A. Ostrows, J. Dolko, T. and Murray, T. (2004). Development and Validation of the Voice Handicap Index-10. *Laryngoscope* 114(9): 1849-1858

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Website: www.southheathservices.com

My voice makes it difficult for people to hear me.

People have difficulty understanding me in a noisy room.

My voice issues limit my personal and social life.

I feel left out of conversations because of my voice.

I cannot participate in telephone calls because of my voice.

PD and Speech and Voicing: What to look for.

My voice problem causes me to lose income.

I have to strain to project my voice.

My voice clarity is unpredictable.

My voice problem upsets me.

My voice makes me feel handicapped.

People ask, "What's wrong with your voice?"

THE VOICE & SWALLOWING CENTER
A Division of State Health Services, PC

Voice Handicap Index (VHI-10)

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Instructions: These are statements that many people have used to describe their voices and effects of their voices on their lives. Circle the response that indicates how frequently you have the same experience.

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Voice Treatment Options

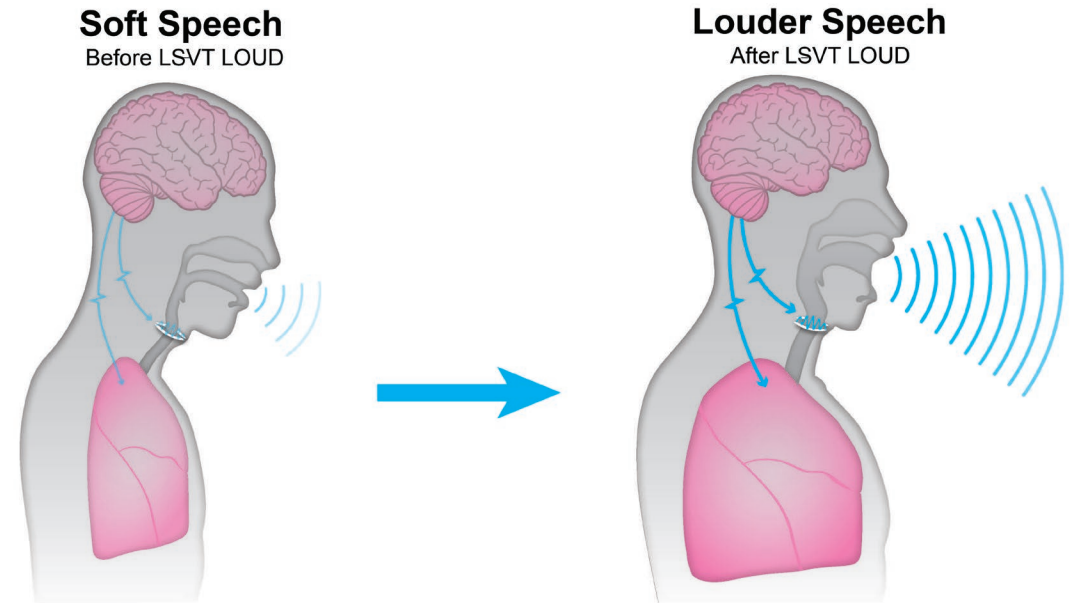
- LSVT LOUD
- SPEAK OUT!
- PhoRTE
- Traditional Speech Therapy

LSVT LOUD: LSVT Global

“LSVT LOUD is an effective speech treatment for people with Parkinson’s Disease and other neurological conditions.”

Speak LOUD.

This treatment method is aimed at helping people recalibrate their perceptions of their voice, so they know how loud or soft they sound to other people and to feel more comfortable using a stronger voice at a more typical loudness level.



LSVT LOUD has been documented to improve vocal loudness, breath support, voice quality, intonation, and speech articulation (Mahler et al., 2015). The goal is always healthy vocal loudness.

LSVT LOUD

Treatment Plan:

4x/week for 4 weeks (16 sessions)

1-hour long sessions

Includes daily homework and carryover exercises

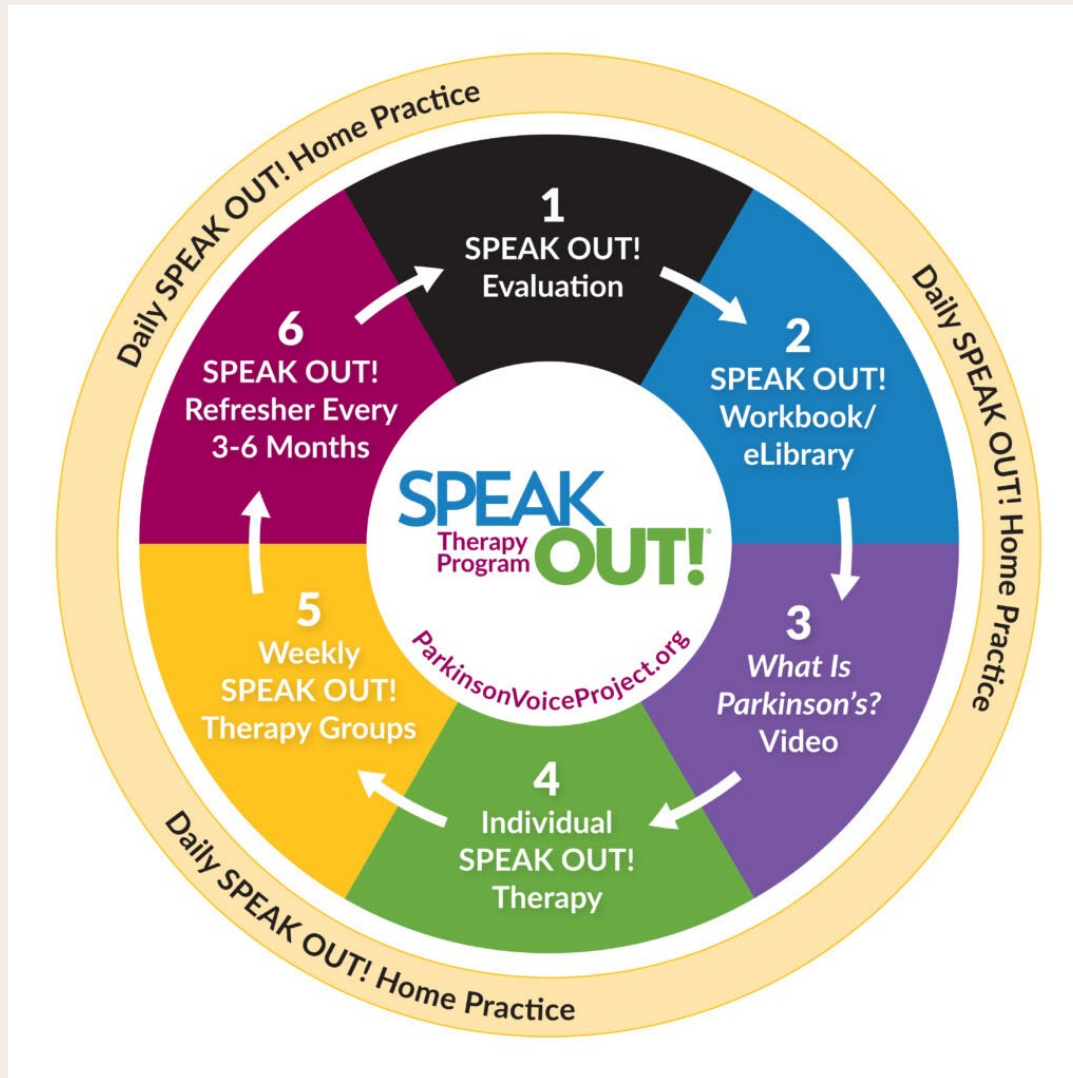
After Discharge:

Continue practicing once a day for 10-15 minutes

Other Resources:

- LOUD for LIFE: Community-based exercise class for graduates of the LSVT LOUD program to practice their exercises in a group session.
- Tune-up Sessions: Stay in touch with the clinician for regular check-ups and short bouts of therapy to keep your voice strong.
- LSVT Coach: Speech exercise computer program to practice exercises while it provides results and feedback.
- LSVT LOUD Homework Helper Videos.

SPEAK OUT!: Parkinson's Voice Project



“To help people with Parkinson’s and related neurological disorders regain and retain their speech and swallowing.”

Speak with INTENT.

This program combines: education, individual and group speech therapy, daily home practice and continuous follow-ups.

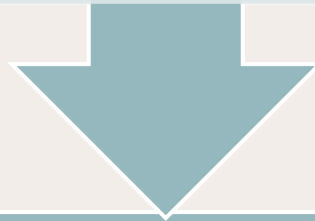
SPEAK OUT!

Treatment Plan:

2-3x/week for 4 weeks
(8-12 sessions)

30—40-minute long
sessions

Daily homework: 2x/day
during treatment, 1x/day
after graduation



After Discharge:

Continue practicing your exercises once a day.
SPEAK OUT! Refresher: every 3-6 months.

Other Resources:

- Online SPEAK OUT! Home Practice Sessions: Monday-Friday. Free sessions provided to practice your daily exercises.
- SPEAK OUT! Workbook and Flashcards
- E-Library
- Parkinson's Sing-Alongs via Zoom



PhoRTE: Phonation Resistance Training Exercises

“Voice therapy for pathologic age-related voice changes that occur in older adults”.

Uses high-intensity vocal exercise to systematically rehabilitate the vocal mechanism and improve vocal endurance.



Treatment Plan:

1x/week x4-8 weeks completing 5 vocal tasks

1-hour long sessions

Home Practice: 12-15 minutes, 6 days/week



Traditional Speech Therapy

- May be beneficial if:
 - Unable to locate a certified provider near your home.
 - Time constraints - you are unable to attend therapy multiple times a week.
 - Transportation issues.
- Can be very beneficial if working on a variety of concerns, such as voicing, speech and cognition.

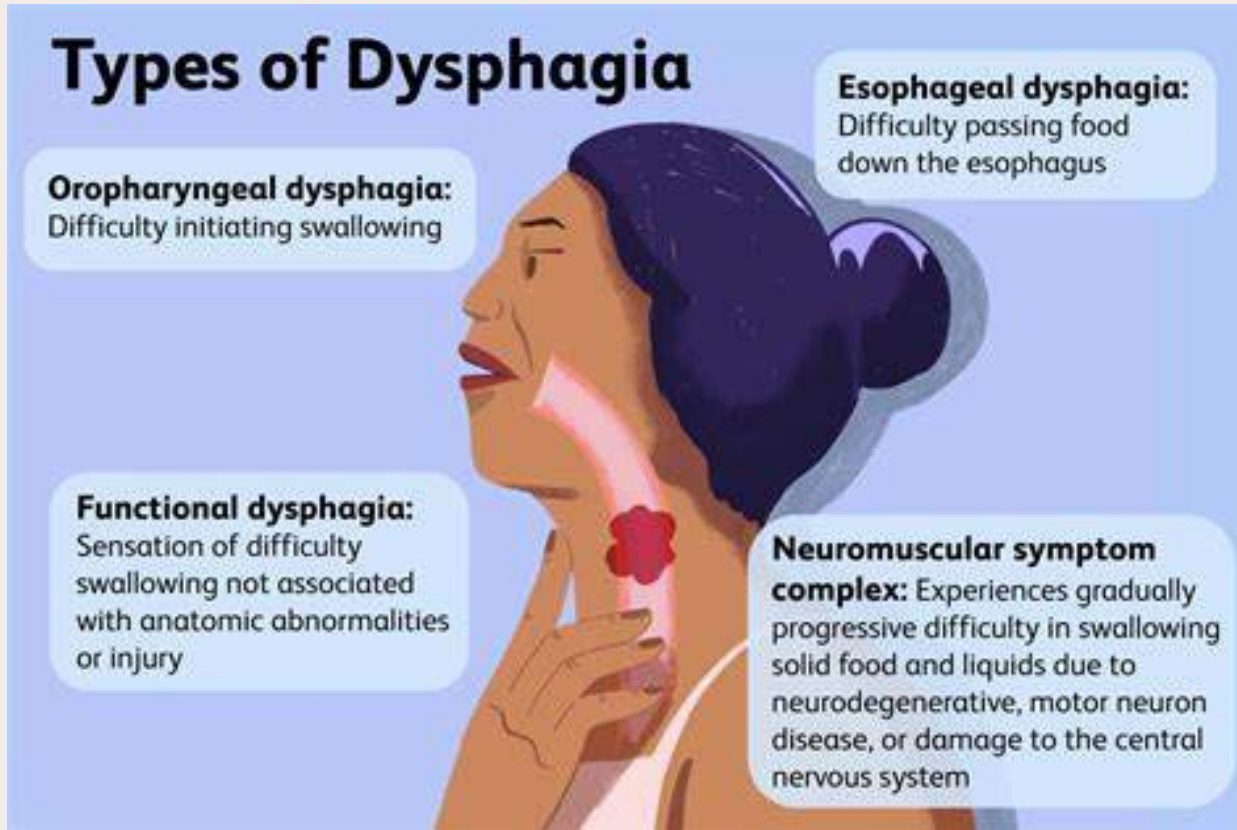
Parkinson's Disease and Swallowing

How might PD impact swallowing safety?

Swallowing Difficulties – Common Symptoms

- Globus sensation: feeling like something is stuck in your throat.
- Throat Clearing
- Coughing
- Watery eyes/runny nose during mealtimes
- Weak Cough
- Drooling
- Prolonged chewing/difficulty chewing certain foods
- Pocketing
- Longer mealtimes
- Difficulty swallowing pills, liquids or solids
- Unexpected weight loss

Dysphagia Can Lead To...



- Malnutrition
- Weight loss
- Dehydration
- Aspiration: when food/liquid “goes down the wrong pipe”
- Silent: you do not cough or throat clear when aspiration occurs
 - Occurs in ~20% of people with PD
- Significant risk of aspiration pneumonia in people with PD

Assessment of Swallowing Difficulties (Dysphagia)

1. Clinical Swallow Evaluation
2. Modified Barium Swallow Study (MBSS)
3. Fiberoptic Endoscopic Evaluation of Swallowing (FEES)



Clinical Swallow Evaluation

Eating Assessment Tool (EAT-10)
Circle the appropriate response

| To what extent are the following scenarios problematic for you? | 0 = No problem 4 = Severe problem | | | | |
|--|-----------------------------------|---|---|---|---|
| 1. My swallowing problem has caused me to lose weight. | 0 | 1 | 2 | 3 | 4 |
| 2. My swallowing problem interferes with my ability to go out for meals. | 0 | 1 | 2 | 3 | 4 |
| 3. Swallowing liquids takes extra effort. | 0 | 1 | 2 | 3 | 4 |
| 4. Swallowing solids takes extra effort. | 0 | 1 | 2 | 3 | 4 |
| 5. Swallowing pills takes extra effort. | 0 | 1 | 2 | 3 | 4 |
| 6. Swallowing is painful. | 0 | 1 | 2 | 3 | 4 |
| 7. The pleasure of eating is affected by my swallowing. | 0 | 1 | 2 | 3 | 4 |
| 8. When I swallow food sticks in my throat. | 0 | 1 | 2 | 3 | 4 |
| 9. I cough when I eat. | 0 | 1 | 2 | 3 | 4 |
| 10. Swallowing is stressful. | 0 | 1 | 2 | 3 | 4 |
| Total EAT-10 | | | | | |

Qualitative questionnaires

- EAT-10

Oral Mechanism Exam

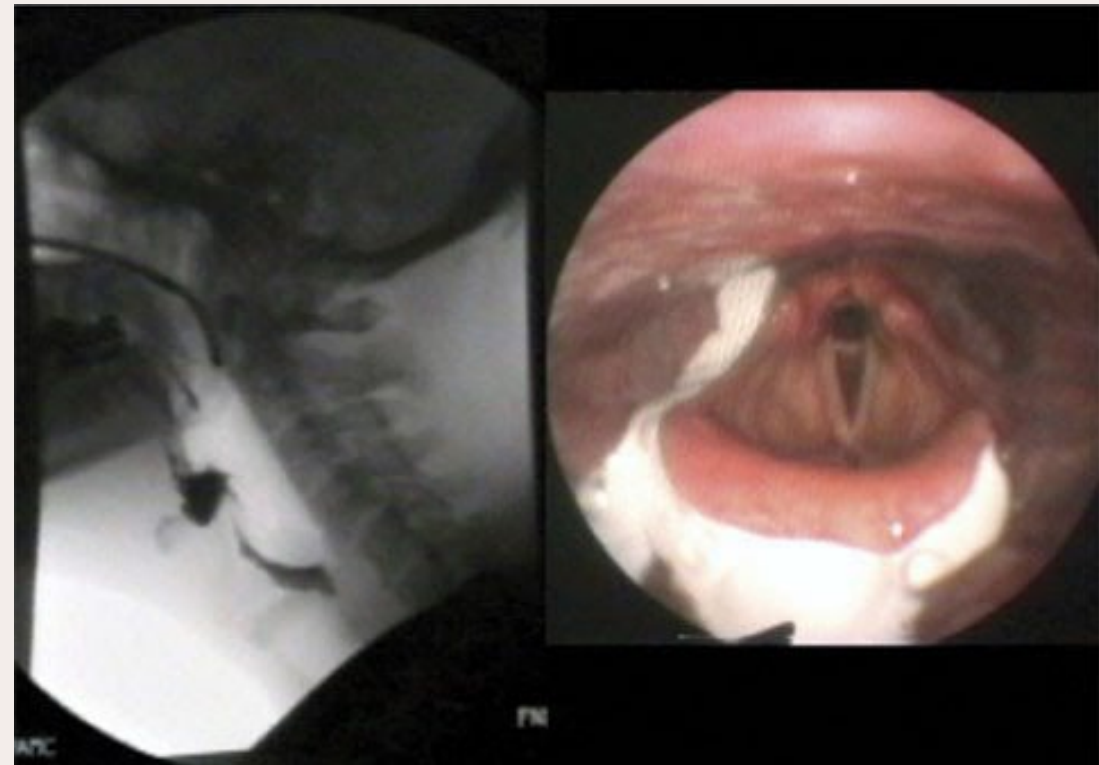
PO trials of different textures and consistencies

Refer for instrumental assessment

MBSS vs. FEES

Table 5
Advantages and disadvantages

| | MBS | FEES |
|---------------|--|---|
| Advantages | <p>Noninvasive</p> <p>Evaluates oral, pharyngeal, and esophageal phases of the swallow</p> <p>Visualization of cervical hardware after spinal surgery or cervical osteophytes</p> <p>Evaluation of hyolaryngeal elevation</p> | <p>Provides direct view of anatomy structures to evaluate laryngeal and pharyngeal structures</p> <p>May be performed at bedside</p> <p>Uses real food and liquid</p> <p>Examination can last throughout a meal to evaluate for fatigue if needed</p> |
| Disadvantages | <p>Radiation exposure so examination time may be limited</p> <p>Fluoroscopy unit is turned off between bolus presentations so possible to miss salient event if not imaging between swallows</p> <p>Examination usually requires transportation to radiology department or mobile unit</p> | <p>Whiteout period during height of swallow</p> <p>Examiner must make inferences regarding laryngeal penetration or aspiration during the swallow</p> <p>Time and expense involved with decontamination of endoscope</p> |



How to Treat Dysphagia

The IDDSI Framework

Providing a common terminology for describing food textures and drink thicknesses to improve safety for individuals with swallowing difficulties.



© The International Dysphagia Diet Standardisation Initiative 2019 @ <https://iddsi.org/framework/>
Licensed under the Creative Commons Attribution on Sharealike 4.0 License <https://creativecommons.org/licenses/by-sa/4.0/legalcode>.
Derivative works extending beyond language translation are NOT PERMITTED.

Participate in speech therapy to improve strength and coordination of the swallow.

Expiratory Muscle Strength Training: improving respiratory muscle strength to treat dysphagia and dysphonia (voice).

Diet Modifications.

Using safe swallowing strategies.

Dysphagia Exercises

- May strengthen the oral phase
 - Chewing, coordination, safe management of solids/liquids
- May strengthen the pharyngeal phase
 - Hard and fast swallows, clearing “residuals”, airway protection
- Bolus-driven therapy



Expiratory Muscle Strength Training (EMST)

The Breather



- Improves cough strength and clearance of any solids/liquids in the throat.
- Improves the movement and strength of the swallowing muscles to move solids/liquids through the throat.
- It helps elevate the larynx during the swallow, which also helps with airway protection.
- This may also help improve your volume!



EMST-150

Diet Modifications: Alterations to the consistency of solids and liquids to make eating and drinking easier and safer.



Solids:

- Regular
- Soft and bite-sized
- Minced and moist
- Pureed

Liquids:

- Thin
- Slightly Thick
- Mildly Thick
- Moderately Thick

Safe Swallowing Strategies

1. Small sips and bites.
2. Eat slowly.
3. Maintain good posture.
4. Effortful Swallows.
5. Alternate solids/liquids every 2-3 bites.
6. Double swallow as needed.
7. Throat clear and swallow as needed.
8. Take rest breaks as needed.



Aspiration Precautions

- Sit upright at a 90-degree angle when eating and drinking.
- Remain upright at least 45 degrees for 30-60 minutes after eating.
- Cut food into small, manageable pieces.
- Take your time! Your food will not run away from you!
- Minimize distractions when eating and drinking, such as watching the tv or talking to someone.



Signs and Symptoms of Aspiration



- Throat Clearing
- Coughing
- Choking
- Runny nose
- Watery eyes
- Trouble breathing
- Wheezing

Final tips & takeaways

- If you notice any changes from your baseline, inform your physician and other healthcare workers (therapists, counselors, etc.).
- If you have previously participated in therapy and notice some of your symptoms are progressing, it may be time for a refresher!
- Try to stay as mentally and physically active each day and be aware of your limits which may impact your safety.
- It is better to target any problems that may arise sooner rather than later to try and maintain your strength and independence!

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Thank
you!

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