Speech, Swallow, & Respiratory Considerations in Parkinsonian Disorders

Nicole Herndon, MS, CCC-SLP, BCS-S

November 7, 2026

From Guidelines to Action: Movement Disorders Care Through Regional & Multidisciplinary Collaboration
Miami, Florida, USA | November 7-8, 2026

International Parkinson and Movement Disorder Society
Pan American Section

In collaboration with:
Baptist Health

Learning Objectives

- Describe the sensorimotor swallow deficits that occur in Parkinsonian disorders
- Characterize the motor speech disorder(s) that occur in Parkinsonian disorders
- State treatments for speech, swallow, & respiratory deficits in Parkinsonism

Topics

1. Speech-Language Pathology
2. Swallow Evaluation and Management
3. Oropharyngeal Sensory & Motor Changes – Case Examples
4. Motor Speech Evaluation and Characterization
5. Dysarthria Type(s) - Case Examples
6. Speech Treatment
7. Summary
8. References

What is the Role of Speech-Language Pathology?

"The *speech-language pathologist* (SLP) is defined as the professional who engages in professional practice in the areas of communication and swallowing across the life span. *Communication* and *swallowing* are broad terms encompassing many facets of function. *Communication* includes **speech** production and fluency, **language**, **cognition**, voice, resonance, and hearing. *Swallowing* includes all aspects of **swallowing**, including related feeding behaviors."

American Speech-Language-Hearing Association. (2016). *Scope of practice in speech-language pathology* [Scope of Practice]. Available from www.asha.org/policy/.

Movement Disorders
CLINICAL PRACTICE
REVIEW

Breathe, Eat, Talk: Three Essential Ingredients to Quality-of-Life Outcomes in Movement Disorders

John Dean, MA, CCC-SLP,[1] Lena C. O'Flynn, MA,[2,3] Michelle Ciucci, PhD, CCC-SLP,[4] Cynthia Fox, PhD, CCC-SLP,[5] Jessica E. Huber, PhD, CCC-SLP,[6] Supraja Anand, PhD,[7] Maira Rozenfeld Olchik, PhD, CCC-SLP,[8,9] Jibrin S. Usman, PhD,[10,11] Adam P. Vogel, PhD,[12,13] Bettina Aguiar, MD, SLP,[14] Diana Khasanova, MD, PhD,[15] Dharshini Manoharan, BASc,[16] Lorraine Ramig, PhD, CCC-SLP,[5] Angela Roberts, PhD, CASLPO,[17,18] Federico Rodriguez-Porcel, MD,[19] Kristina Simonyan, MD, PhD, DrMed,[2,3,20] and Julie M. Barkmeier-Kraemer, PhD, CCC-SLP[21,22,*]

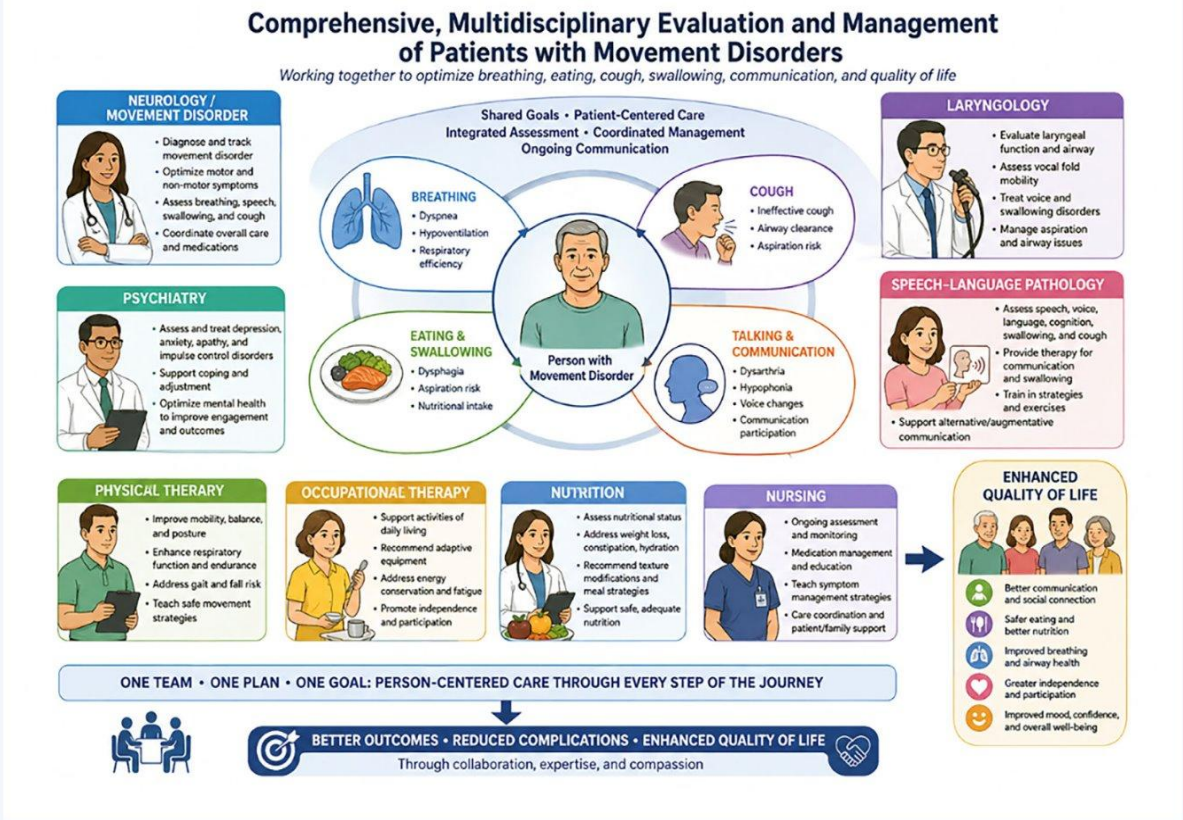
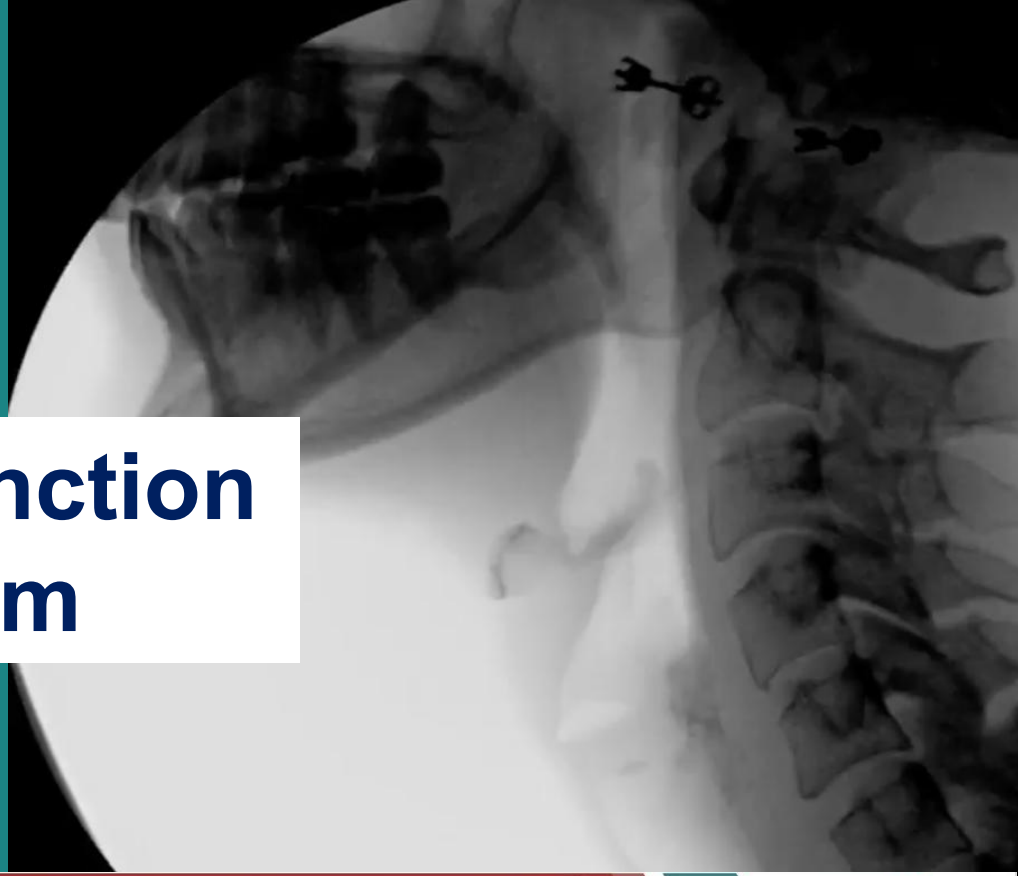


Figure 1. Person-centered, comprehensive multidisciplinary movement disorder care.

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Swallowing Dysfunction in Parkinsonism



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MDS-UPDRS

(Goetz et al., 2008)

2.2 SALIVA AND DROOLING

Over the past week, have you usually had too much saliva during when you are awake or when you sleep?

0:	Normal:	Not at all (no problems).
1:	Slight:	I have too much saliva, but do not drool.
2:	Mild:	I have some drooling during sleep, but none when I am awake.
3:	Moderate:	I have some drooling when I am awake, but I usually do not need tissues or a handkerchief.
4:	Severe:	I have so much drooling that I regularly need to use tissues or a handkerchief to protect my clothes.

2.3 CHEWING AND SWALLOWING

Over the past week, have you usually had problems swallowing pills or eating meals? Do you need your pills cut or crushed or your meals to be made soft, chopped, or blended to avoid choking?

0:	Normal:	No problems.
1:	Slight:	I am aware of slowness in my chewing or increased effort at swallowing, but I do not choke or need to have my food specially prepared.
2:	Mild:	I need to have my pills cut or my food specially prepared because of chewing or swallowing problems, but I have not choked over the past week.
3:	Moderate.	I choked at least once in the past week.
4:	Severe:	Because of chewing and swallowing problems, I need a feeding tube.

Dysphagia

- Underreported and underrecognized
- Subjective complaints ≠ objective findings
- At least 80% of those with parkinsonism develop dysphagia over the disease course (Suttrup & Warnecke, 2016; Glinzer et al., 2024; Mozzanica et al., 2023; Grunho et al., 2015)
- 3x risk of developing aspiration pneumonia compared to general population (Chua et al., 2024)
- Aspiration pneumonia can increase risk of death in parkinsonism (Hely et al., 1999; Hoehn & Yahr, 1967; Chua et al., 2024)

Allied Health Referrals in Parkinsonism

"*Despite evidence supporting multidiscipline and proactive rehabilitation in PD, the majority of referrals were made to a single service and may be reactions to falls or advancing disease. Data suggest there may be missed opportunities for optimizing care through proactive rehabilitation interventions.*"

- Roberts et al. (2021)

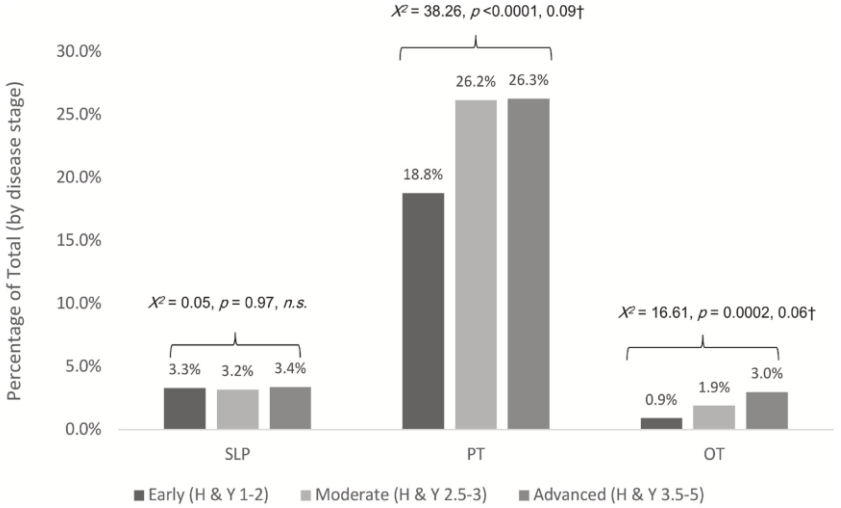


Fig. 3 Single-discipline referrals by discipline and disease stage. *Note.* Percentages calculated based on total participants at each disease stage: Early = 3088; Moderate = 1399; Advanced = 533. Significant *p*-level corrected for multiple comparison bias = 0.016. †Effect size estimate was calculated as $\sqrt{\chi^2/(n*df)}$, where χ^2 is the chi-squared test statistics, n is sample size and degree of freedom df = min (number of rows-1, number of columns-1).

(Oro)pharyngeal Swallow Evaluation

Instrumental Swallow Evaluations

- Modified Barium Swallow (MBS) / Videofluoroscopic Swallow study (VFSS)
- Fiberoptic Endoscopic Evaluation of Swallowing (FEES)





Safety

Penetration: occurs when material enters the airway and stays above or reaches the level of the vocal folds

Aspiration: occurs when material enters the airway and goes below the level of the vocal folds

Efficiency

Residue: material remaining after the swallow

Score	Classification	Description
1	None	No entry of material into the larynx or trachea
2	Penetration	Entry of material into the larynx with clearing
3	Penetration	Entry of material into the larynx without clearing
4	Penetration	Material contacts the true vocal folds with clearing
5	Penetration	Material contacts the true vocal folds without clearing the larynx
6	Aspiration	Material enters the trachea and is sponta-neously cleared into the larynx or pharynx
7	Aspiration	Material enters the trachea and is not cleared following attempts
8	Aspiration	Material enters the trachea with no attempt to clear

The Penetration-Aspiration Scale (Rosenbek et al., 1996).

Efficiency Grade

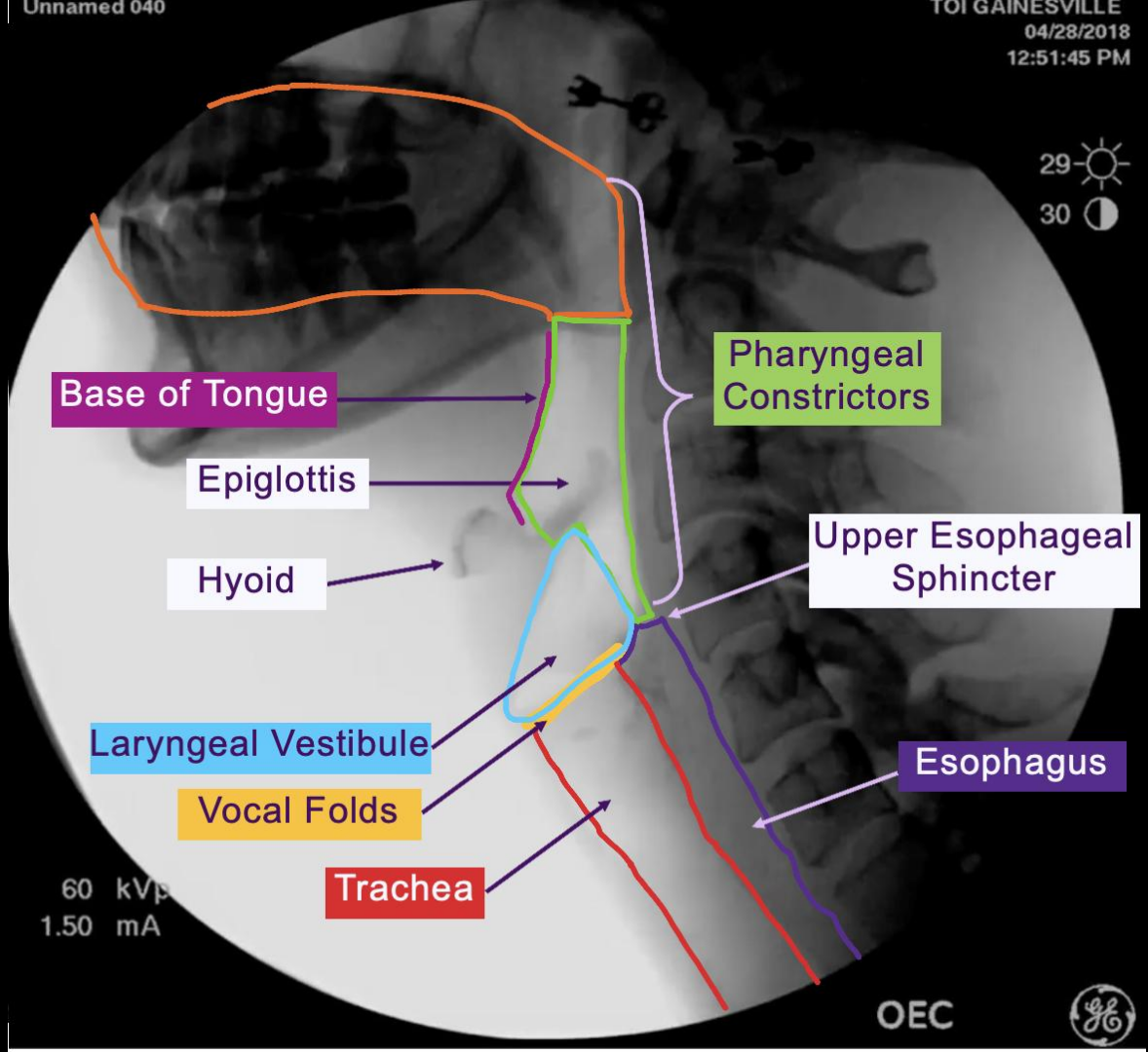
Maximum Percent of Pharyngeal Residue (% PR)

- *Maximum estimated percentage (proportion) of bolus residue in pharynx over all bolus trials*
- *Rate based on liquid, pudding, and solid (cracker/cookie) bolus presentations*
- *Rate based on estimated percent of pharyngeal residue after initial swallow attempt of each bolus*
- *Do NOT rate based on oral residue*
- *Do NOT rate a bolus trial after strategies were applied*

Digest v2
(Hutcheson et al., 2022)

- % PR: < 10% — Minimal to no residue
- %PR: 10-49% — Less than half residue
- %PR: 50-90% — Majority residue
- %PR: > 90% — Near complete residue

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Unnamed 040
TOI GAINESVILLE
04/28/2018
12:51:45 PM
29
30
Base of Tongue
Epiglottis
Hyoid
Laryngeal Vestibule
Vocal Folds
Trachea
Pharyngeal Constrictors
Upper Esophageal Sphincter
Esophagus
60 kVp
1.50 mA
OEC

Normal

Impaired Safety

Thin Liquid

Impaired Safety

Nectar-thick Liquid

Impaired Efficiency

Swallowing in Parkinsonism - Motor

Phase of swallowing	Observed impairments
Oral preparatory/transit	Impaired mandible movement
	Jaw rigidity
	Xerostomia
	Sialorrhea
	Impaired lingual movement/pressure generation
	Tongue pumping/rocking
	Premature spillage/reduced posterior bolus containment
	Reduced spontaneous swallowing
	Piecemealed deglutition
	Oral residue

(Patel et al., 2020)

Pharyngeal	Delayed swallow reflex
	Decreased hyolaryngeal elevation
	Impaired laryngeal/pharyngeal movement due to anterocollis
	Impaired pharyngeal contraction
	Aspiration
	Diminished/absent cough response to aspiration
	Decreased cricopharyngeal opening
	Residue in the valleculae and pyriform sinuses

Cough impairments in PD, PSP, & MSA

(Hegland, Okun, & Troche, 2014; Mir et al., 2025; Mir et al., 2024)

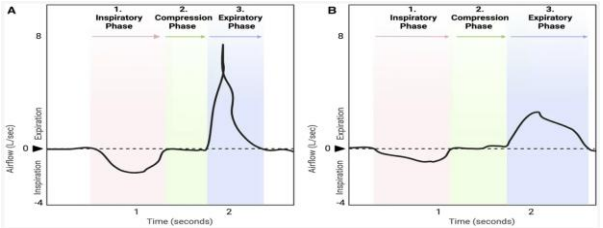


Figure from: Dallal-York & Troche (2024)

Swallowing in Parkinsonism - Sensory

- Silent aspiration
- PD: UTC sensitivity and # of coughs reduced as dysphagia severity worsened (Troche et al., 2014; Troche et al., 2016; Hegland et al., 2014)
- PSP more sensitive vs. PD? (Mir et al., 2025)

Sensorimotor Cough Dysfunction - Treatment?

- Sensorimotor Training for Airway Protection (smTAP) (Troche et al., 2023)

Dysphagia Management

Individualized based on "Big Clinical Picture"

- Functional deficits identified
  - Diminished pharyngeal stripping wave
    - Improve efficiency: Effortful swallow; chin tuck; head turn
    - Residue clearance: Secondary swallow; alternate bites/sip
  - Delayed laryngeal vestibule closure
    - Improve safety: single vs. sequential sips; bolus hold;
    - Residue clearance: secondary swallow; cough after each swallow; chin tuck
- Outcome of modifications trialed
- Consider the disease
  - Impulsivity (PSP, HD, LBD): large bites/sips, or eating/drinking too quickly
    - Limit bolus amount; single sips; smaller utensils
  - Cognitive deficits (HD, LBD): environmental vs. patient-strategies
    - Limit distractions in meal environment
- Patient (Health; Wishes; QOL)



SafeStraw™ by Bionix

White = thin liquids
Blue = thick liquids



Provale Cup® by ProvaMed

Dysphagia Exercises

ASHA American Speech-Language-Hearing Association
AJSLP

Review Article

Effectiveness of Interventions for Dysphagia in Parkinson Disease: A Systematic Review

Pooja Gandhi[a,b] and Catriona M. Steele[a,b]

Expiratory Muscle Strength Training (EMST)

(Troche et al., 2011; Claus et al., 2021; Srp et al., 2025; Villarreal-Cavazos et al., 2025; Mancopes et al., 2020)

Effortful Swallow

(Bahai & Lowell, 2020; Gandhi et al., 2023)

Masako Maneuver

(Bahai & Lowell, 2020; Gandhi et al., 2023)

X Neuromuscular Electrical Stimulation (NMES)

(Xu et al., 2026; Wen et al., 2022)

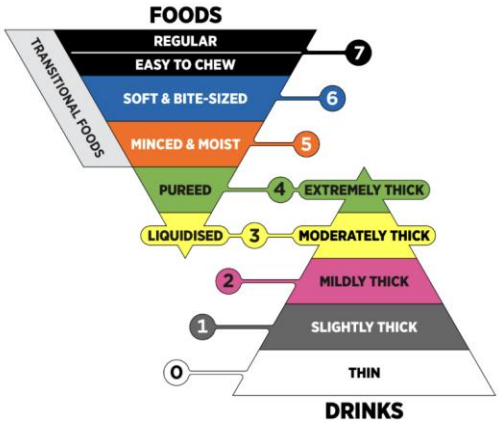
X Oral Motor Exercises

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Thickened Liquids

Consider impact of thickened liquids on:

- QOL & patient's wishes
- Hydration & malnutrition
- Bioavailability of medications (Atkin et al., 2024; Cichero, 2013)
- Cost
- Can increase residue
- May not reduced instances of aspiration or lower aspiration pneumonia risk
- May increase risk of aspiration pneumonia (Logemann et al., 2008; Robbins et al., 2008)



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

Reiterates the importance of VFSS or FEES to evaluate whether thickened liquids are helpful

Reduce Risks from Dysphagia

"...dysphagia and aspiration are necessary, but not sufficient conditions for development of pneumonia. Other risk factors must be present as well."

(Langmore, Terpenning, Schork, Chen, Murry Lopatin, & Loesche, 1998)

3 Pillars of Aspiration Pneumonia (Ashford, 2024)

Compromised Immune System

Presence of Aspiration

Poor Oral Care

- Xerostomia
- Sialorrhea
- Dysphagia
- Cognition
- Apathy

(Barbe et al., 2017; Martimbianco et al., 2021)

Reduce Risks from Dysphagia

3 Pillars of Aspiration Pneumonia (Ashford, 2024)

- Compromised Immune System
- Presence of Aspiration
- **Poor Oral Care**

Neurol Ther (2021) 10:391–400
https://doi.org/10.1007/s40120-021-00237-4

PRACTICAL APPROACH

Evidence-Based Recommendations for the Oral Health of Patients with Parkinson's Disease

Ana L. C. Martimbianco · Fabio C. Prosdocimi · Camillo Anauate-Netto · Elaine M. dos Santos · Gustavo D. Mendes · Yara D. Fragoso

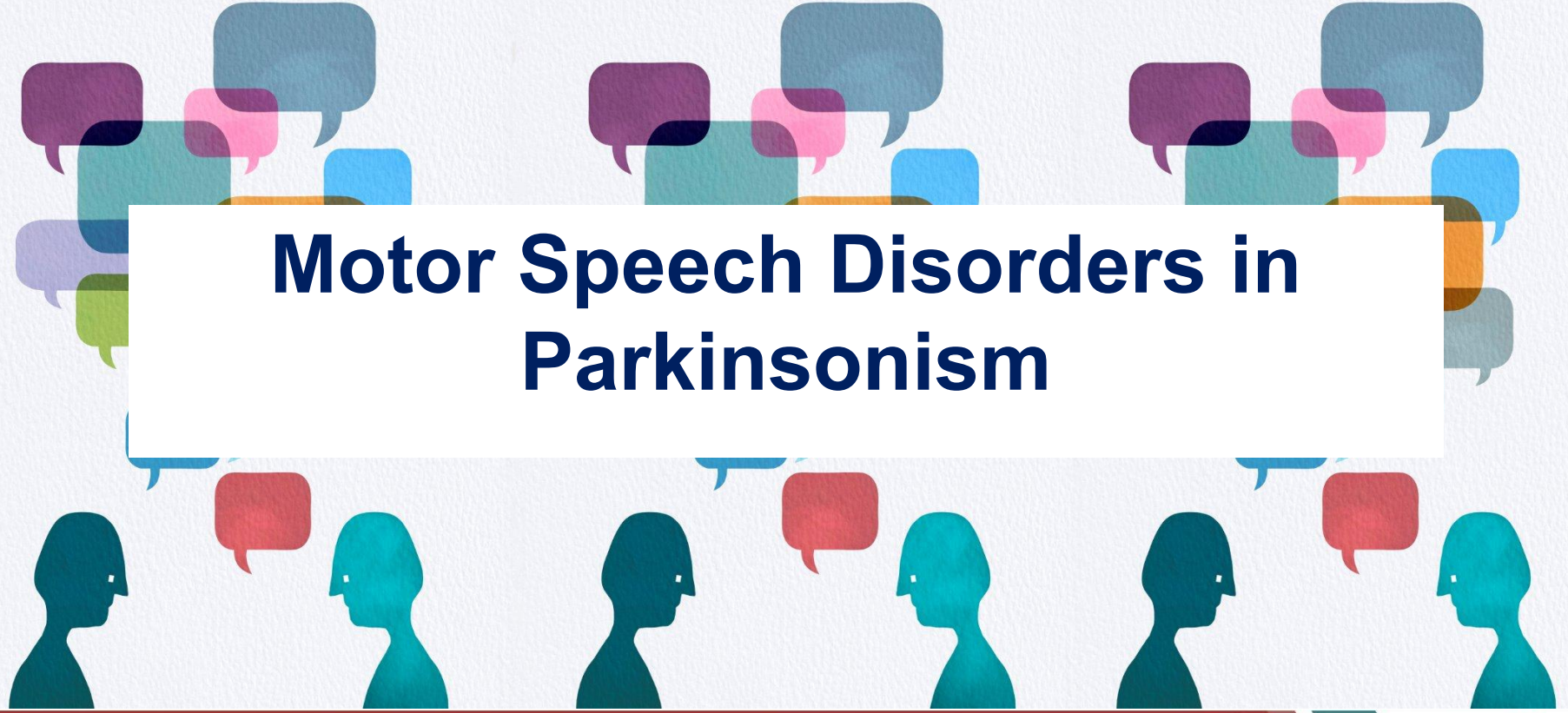
- Oral care at least 2x/day (even if edentulous)
- Regular dental follow-ups






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Motor Speech Disorders in Parkinsonism



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Motor Speech Disorders

- Motor speech disorders affect up to 93% of individuals with parkinsonism.
  - Motor speech disorders (MSDs) in people with atypical parkinsonism differ in type and severity compared to iPD
  - Speech severity worsens over a shorter period of time compared to PD
- Accurate diagnosis of MSDs (type(s) and severity) relies on an audio-perceptual evaluation typically by an SLP with expertise in motor speech disorders
- There is increasing evidence accurate diagnosis of MSD profile can aid in differential diagnosis as it may reflect the pathophysiology of the underlying disease

(Rodriguez-Porcel et al., 2026; Rusz et al., 2015; Petroi-Bock et al., 2024)

Motor Speech Disorders

Perceptual Motor Speech Evaluation

Motor Execution Deficit

- Hypokinetic
- Hyperkinetic
- Ataxic
- Spastic
- Flaccid
- Unilateral Upper Motor Neuron

→ Dysarthria

Motor Planning Deficit

- Apraxia of Speech (AOS)

Motor Speech Disorders

Perceptual Motor Speech Evaluation

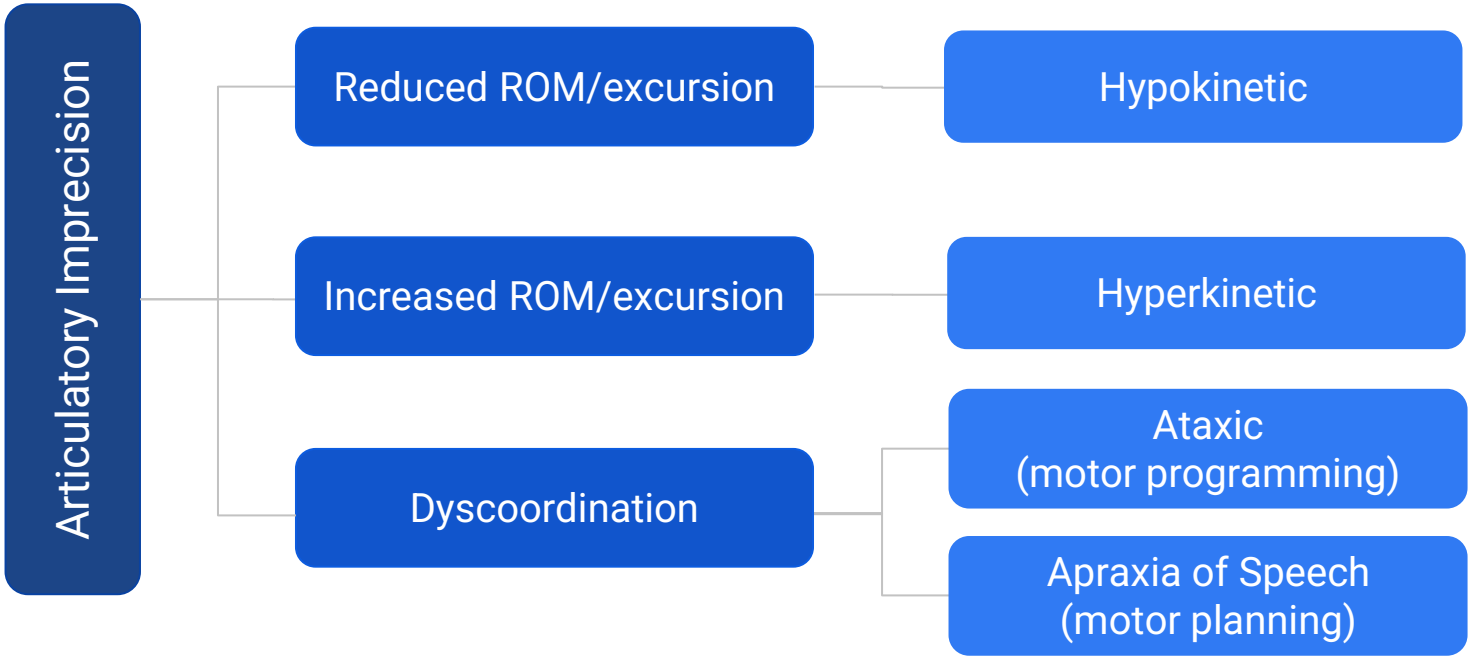
Motor Execution Deficit

- Hypokinetic → Basal Ganglia
- Hyperkinetic → Basal Ganglia
- Ataxic → Cerebellum
- Spastic → Bilateral UMN
- Unilateral Upper Motor Neuron → Unilateral UMN
- Flaccid → LMN

Motor Planning Deficit

- Apraxia of Speech (AOS) → Left Premotor Cortex / SMA / Broca's

The ‘Why?’ of Articulatory Imprecision



Dysarthria in PD

Hypokinetic dysarthria – Parkinson disease

Hypokinetic Dysarthria

Reduced ROM/excursion impacting speech execution

- Reduced respiratory drive
- Reduced loudness
- Hoarse or breathy vocal quality
- Imprecision
- Fast or variably fast speaking rate
- Monotone prosody
- Reduced stress
- Neurogenic stuttering

Mixed Dysarthria in PD

Hypo-Hyperkinetic
(e.g., dyskinesias or tremor overflow to speech)

Hypo-Spastic (post-bilateral STN DBS stim-induced dysarthria)

What Causes Changes to Speech?



Chest wall rigidity

(Hixon et al., 1973; Solomon & Hixon, 1993; Huber & Darling, 2017)



Respiratory planning difficulties

(Huber & Darling, 2011; Darling-White et al., 2022)



Reduced awareness of diminished loudness

(Fox & Ramig, 1997; Ho et al., 2000; Kwan & Whitehill., 2011; De Keyser et al., 2016)



Reduced articulatory ROM/excursion

(Huber & Darling, 2017; Walsh & Smith, 2012)

Dysarthria in dLB

Hypokinetic Dysarthria

Reduced ROM/excursion impacting speech execution

- Reduced respiratory drive
- Reduced loudness
- Hoarse or breathy vocal quality
- Imprecision
- Fast or variably fast speaking rate
- Monotone prosody
- Reduced stress
- Neurogenic stuttering

Hypokinetic dysarthria – dLB

*Note: cognitive-linguistic deficits

Dysarthria in PSP

Movement Disorders
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Research Article | Full Access

Clinical diagnosis of progressive supranuclear palsy: The movement disorder society criteria

Günter U. Höglinger MD, Gesine Respondek MD, Maria Stamelou MD, Carolin Kurz MD, Keith A. Josephs MD, MST, MSc, Anthony E. Lang MD ... See all authors

First published: 03 May 2017 | https://doi.org/10.1002/mds.26987 | Citations: 1,675

TABLE 4. *Continued*

Domain	Feature	Definition	
		3. Dysexecutive syndrome	E.g., reverse digit span, Trails B or Stroop test, Luria sequence (at least 1.5 standard deviations below mean of age- and education-adjusted norms).
		4. Reduced phonemic verbal fluency	E.g., "D, F, A, or S" words per minute (at least 1.5 standard deviations below mean of age- and education-adjusted norms).
		5. Impulsivity, disinhibition, or perseveration	E.g., socially inappropriate behaviors, overstuffing the mouth when eating, motor recklessness, applause sign, palilalia, echolalia.
C3	CBS	Defined as at least one sign each from the following two groups (may be asymmetric or symmetric):	
		1. Cortical signs	a. Orobuccal or limb apraxia. b. Cortical sensory deficit. c. Alien limb phenomena. (more than simple levitation).
		2. Movement disorder signs	a. Limb rigidity. b. Limb akinesia. c. Limb myoclonus.
Clinical clues			
CC1	Levodopa resistance		Levodopa resistance is defined as improvement of the MDS-UPDRS motor scale by ≤30%; to fulfill this criterion patients should be assessed having been given at least 1,000 mg (if tolerated) at least 1 month OR once patients have received this treatment they could be formally assessed following a challenge dose of at least 200 mg.
CC2	Hypokinetic, spastic dysarthria		Slow, low volume and pitch, harsh voice.
CC3	Dysphagia		Otherwise unexplained difficulty in swallowing, severe enough to request dietary adaptations.
CC4	Photophobia		Intolerance to visual perception of light attributed to adaptative dysfunction.
Imaging findings			
IF1	Predominant midbrain atrophy or hypometabolism		Atrophy or hypometabolism predominant in midbrain relative to pons, as demonstrated, e.g., by MRI or [^{18}F]DG-PET.
IF2	Postsynaptic striatal dopaminergic degeneration		Postsynaptic striatal dopaminergic degeneration, as demonstrated, e.g., by [^{123}I]IBZM-SPECT or [^{18}F]-DMFP-PET.

Hypokinetic-Spastic (PSP-P)

Dysarthria in PSP

Hypokinetic Dysarthria

Reduced ROM/excursion impacting speech execution

- Reduced respiratory drive
- Reduced loudness
- Hoarse or breathy vocal quality
- Imprecision
- Fast or variably fast speaking rate
- Monotone prosody
- Reduced stress
- Neurogenic stuttering

Spastic Dysarthria

Reduced ROM/excursion impacting speech execution

- Strained vocal quality
- Slow speaking rate
- Reduced respiratory coordination
- Reduced loudness
- Imprecision
- Monotone prosody
- Reduced stress

Spastic-Hypokientic (PSP-RS)

Dysarthria in MSA-P

Video Example
Hypokinetic - MSA-P

Hypokinetic Dysarthria

Reduced ROM/excursion impacting speech execution

- Reduced respiratory drive
- Reduced loudness
- Hoarse or breathy vocal quality
- Imprecision
- Fast or variably fast speaking rate
- Monotone prosody
- Reduced stress
- Neurogenic stuttering

Vocal flutter in MSA
(Gandor et al., 2022; Mir et al., 2024)

Dysarthria in MSA-C

Movement Disorders
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Review | Open Access

The Movement Disorder Society Criteria for the Diagnosis of Multiple System Atrophy

Gregor K. Wenning MD,PhD, Iva Stankovic MD,PhD, Luca Vignatelli MD,PhD, Alessandra Fanciulli MD,PhD, Giovanna Calandra-Buonaura MD,PhD ... See all authors

First published: 21 April 2022 | https://doi.org/10.1002/mds.29005 | Citations: 164

TABLE 1 *Diagnostic criteria for clinically established and clinically probable multiple system atrophy*

Division into clinically established MSA-P or MSA-C according to predominant motor syndrom

Essential features	A sporadic, progressive adult (>30 years) onset disease	
	Clinically established MSA	**Clinically probable MSA**
Core clinical features	1. Autonomic dysfunction defined as (at least one is required) ○ Unexplained voiding difficulties with post-void urinary residual volume ≥100 mL ○ Unexplained urinary urge incontinence ○ Neurogenic OH (≥20/10 mmHg blood pressure drop) within 3 minutes of standing or head-up tilt test and at least one of 1. Poorly L-dopa-responsive parkinsonism 2. Cerebellar syndrome (at least two of gait ataxia, limb ataxia, cerebellar dysarthria, or oculomotor features)	At least two of: 1. Autonomic dysfunction defined as (at least one is required): ○ Unexplained voiding difficulties with post-void urinary residual volume ○ Unexplained urinary urge incontinence ○ Neurogenic OH (≥20/10 mmHg blood pressure drop) within 10 minutes of standing or head-up tilt test 2. Parkinsonism 3. Cerebellar syndrome (at least one of gait ataxia, limb ataxia, cerebellar dysarthria, or oculomotor features)

*inspiratory sigh
**vocal flutter

Dysarthria in MSA-C

Hypokinetic Dysarthria

Reduced ROM/excursion impacting speech execution

- Reduced respiratory drive
- Reduced loudness
- Hoarse or breathy vocal quality
- Imprecision
- Fast or variably fast speaking rate
- Monotone prosody
- Reduced stress
- Neurogenic stuttering

Ataxic Dysarthria

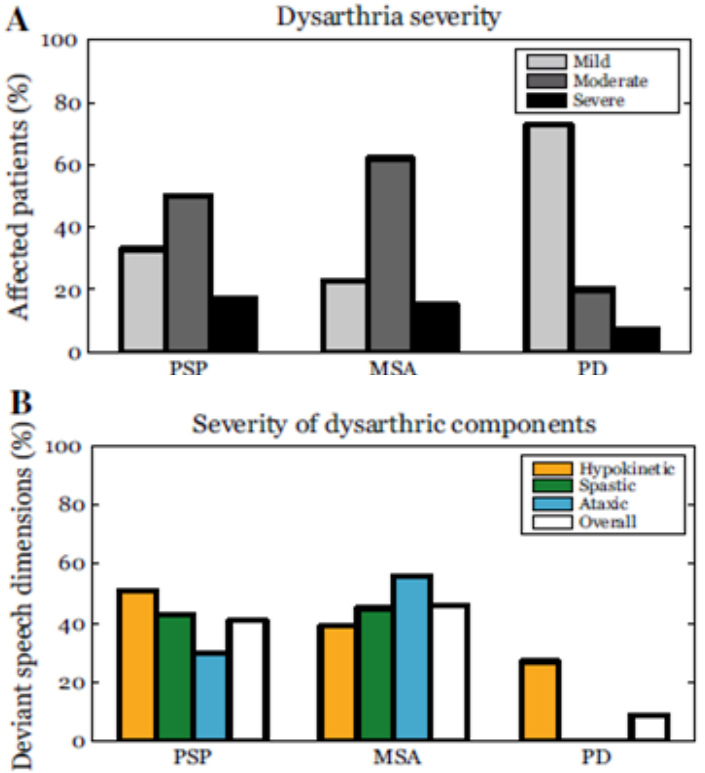
Incoordination of movements impacting speech execution

- Imprecision
- Slow speaking rate
- Reduced respiratory coordination
- Excess loudness variation
- Excess/equal stress
- Variable prosody
- Harsh vocal quality
- Intermittent hypernasality

Dysarthria Severity & Types

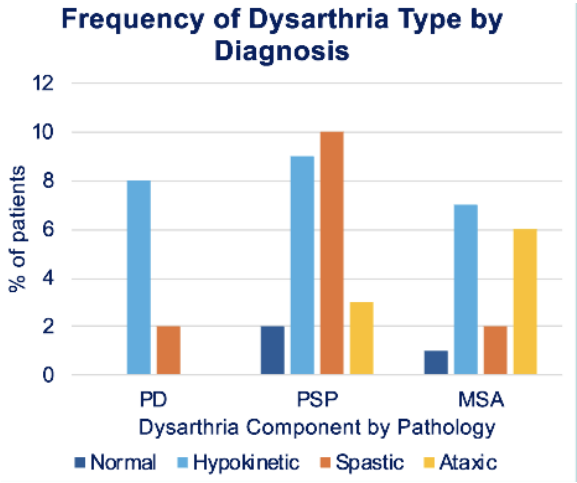
Rusz et al., 2015

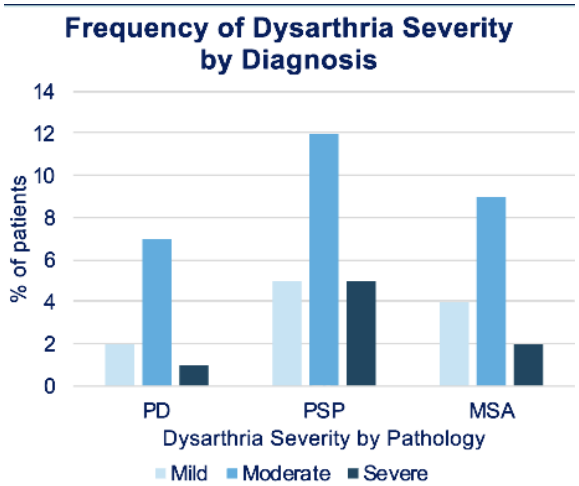
- PSP (N = 12)
- MSA (N = 13)
- iPD (N = 15)
    - Matched for disease duration



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Dysarthria Severity & Types





- Significant group differences for dysarthria type (hypokinetic, spastic, ataxic) ($p = 0.05$)
- No significant group differences in dysarthria severity ($p = 0.88$)
  - Did not match for disease duration, age, or sex

N. Herndon, B. Patel, K. Hegland, O. Carranza-Renteria, S. Prokop. Ante-Mortem Motor Speech Profiles in Postmortem Confirmed Atypical Parkinsonisms [abstract]. *Mov Disord.* 2026; 41 (suppl 1). https://www.mdsabstracts.org/abstract/ante-mortem-motor-speech-profiles-in-postmortem-confirmed-atypical-parkinsonisms/. Accessed November 4, 2026.

Dysarthria / AOS in CBS

Criteria for the diagnosis of corticobasal degeneration

Melissa J. Armstrong, MD, Irene Litvan, MD, Anthony E. Lang, MD, Thomas H. Bak, MD, Kailash P. Bhatia, MD, Barbara Borroni, MD, Adam L. Boxer, MD, PhD, ... SHOW ALL ... , and William J. Weiner, MD | AUTHORS INFO & AFFILIATIONS

January 29, 2013 issue • 80 (5) 496-503 • https://doi.org/10.1212/WNL.0b013e31827f0fd1

Table 4 Proposed clinical phenotypes (syndromes) associated with the pathology of corticobasal degeneration[a]

Syndrome	Features
Probable corticobasal syndrome	Asymmetric presentation of 2 of: a) limb rigidity or akinesia, b) limb dystonia, c) limb myoclonus plus 2 of: d) orobuccal or limb apraxia, e) cortical sensory deficit, f) alien limb phenomena (more than simple levitation)
Possible corticobasal syndrome	May be symmetric: 1 of: a) limb rigidity or akinesia, b) limb dystonia, c) limb myoclonus plus 1 of: d) orobuccal or limb apraxia, e) cortical sensory deficit, f) alien limb phenomena (more than simple levitation)
Frontal behavioral-spatial syndrome	Two of: a) executive dysfunction, b) behavioral or personality changes, c) visuospatial deficits
Nonfluent/agrammatic variant of primary progressive aphasia	Effortful, agrammatic speech plus at least one of: a) impaired grammar/sentence comprehension with relatively preserved single word comprehension, or b) groping, distorted speech production (apraxia of speech)
Progressive supranuclear palsy syndrome	Three of: a) axial or symmetric limb rigidity or akinesia, b) postural instability or falls, c) urinary incontinence, d) behavioral changes, e) supranuclear vertical gaze palsy or decreased velocity of vertical saccades

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Dysarthria / AOS in CBS

Hypokinetic

+/- AOS

+/- Aphasia

Speech Treatment & Management

Individualized strategies are implemented in functional speaking tasks



Increasing respiratory drive for speech

- Loudness
- Vocal quality

Over-articulation

- Precision
- Rate of speech

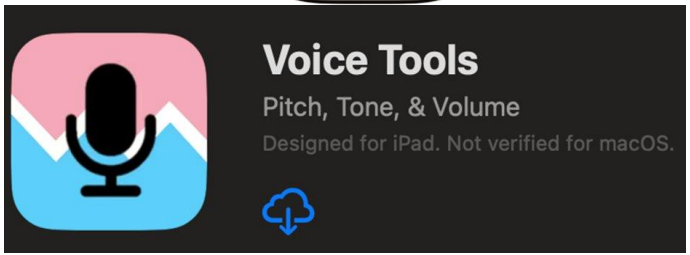


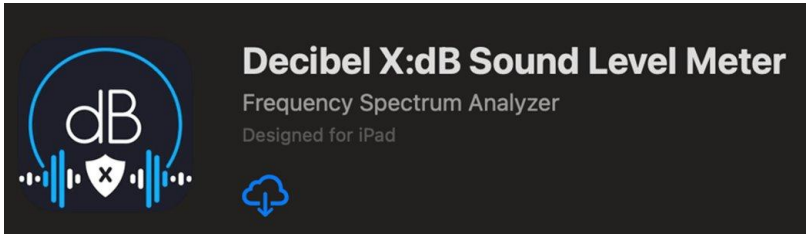


Speech Perception in Parkinsonism

- Perception of speech changes in persons with PD often do not match speech evaluation findings
- Difficulty regulating volume







Speech in Parkinsonism – Treatment (Perry et al., 2024)

- Lee Silverman Voice Treatment - LSVT Loud™ (https://www.lsvtglobal.com/LSVTLoud)
  (Mahler et al., 2015; Ramig, Sapir, Countryman, et al., 2001; Ramig, Sapir, Fox, et al., 2001)
- SPEAK OUT!® (https://www.parkinsonvoiceproject.org/OurSpeechTherapyProgram)
  (Behrman et al., 2020; Levitt et al., 2015)
- Maximum performance speech exercises



Loudness
Intonation
Vocal quality
Clarity
Perception of voice function



Speaking rate

- EMST or IMST?

(Darling-White & Huber, 2017; Reyes et al., 2020; McClutchy et al., 2026)

Summary - SLP Care Considerations in Parkinsonism

Refer early!

Proactive rehab

- Consult after dx
- Provide education
- Promote meaningful activities

Restorative rehab

- Promote functional improvements

Skilled maintenance rehab

- Help maintain or slow decline in function
- Need for skills of therapist to execute program

Individualized strategies & functional goals

Sensorimotor changes occur in both speech and swallowing

Swallow function requires monitoring with instrumental evaluation

Motor Speech Diagnosis - It Matters!

Can aid in differential diagnosis of Parkinsonism

Diagnosis	Hypokinetic	Hyperkinetic	Spastic	Ataxic	AOS
PD	++	+	+		
dLB	++				
PSP	++		+		
MSA	++ (MSA-P)			++ (MSA-C)	
CBS	++				+

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Summary - SLP Care Considerations in Parkinsonism

Swallow function requires monitoring with instrumental evaluation as it is underreported and underrecognized

Deficits can occur in oral and/or pharyngeal phases

Strategies, exercises, and diet modifications should be based on instrumental evaluation findings and "Big Clinical Picture"

Involve patient and care partners in shared decision making

- Educate regarding risks/benefits of options and document their decision.

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Questions?

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