

Parkinson's disease and speech

Lyssa Rome, MS CCC-SLP
Speech-language pathologist

Introduction

Lyssa Rome, MS CCC-SLP

- Speech-language pathologist (SLP) in private practice.
- Specialist in neurogenic communication, cognition, and swallowing difficulties in adults.
- Part-time staff member at the Aphasia Center of California.
- Experience in hospitals, skilled nursing, and outpatient settings.
- One of my primary areas of clinical interest and experience is Parkinson's and related neurodegenerative diseases.

Speech problems are common in Parkinson's

- Up to 90% of people with PD experience difficulty with their speech.
(Ma, Lau & Thayagarajan, 2019; Perez-Lloret, et al., 2012)
- Changes in speech can start early in PD. Some studies have suggested that early speech changes might be used as a potential biomarker for PD.
(Hlavnicka et al. 2017; Moreau & Pinto 2019)
- The onset and severity of speech changes varies from person to person.

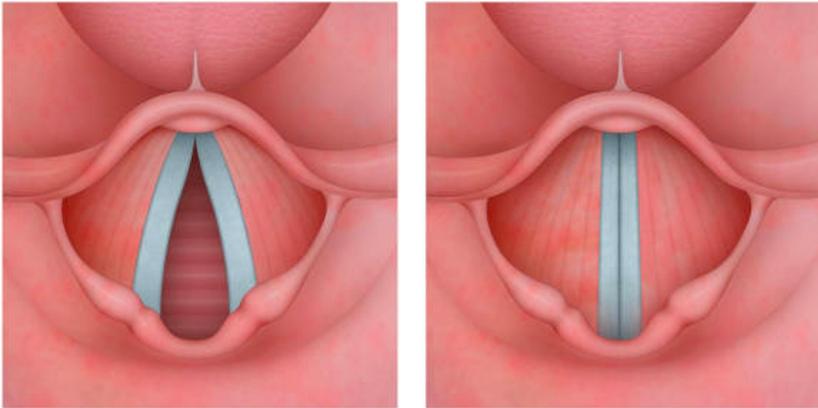
Common communication difficulties

- Softer or quieter speech
 - Slurred/imprecise articulation
 - Speaking too fast or speeding up
 - Hoarse or weak voice
-
- Requests to speak up or repeat
 - Reduced participation

Dysphonia

Dysphonia is the medical term for a voice problem.

Hypophonia is the term for a quiet or weak voice.



Dysarthria

- *Dysarthria* is the medical term for a neurogenic speech disorder that causes unclear speech.
- Dysarthria is caused by a neurological disease or damage which results in weakness, slowness, or reduced coordination or control over the muscles used for speech.
- There are a number of different types of dysarthria, which are associated with different disease processes and/or areas of damage.

Hypokinetic dysarthria

Hypokinetic dysarthria is the dysarthria type typically associated with PD.

- Reduced loudness/quiet or soft speech
- Imprecise articulation
- Monotone speech
- Rate problems – speaking too fast, speeding up while speaking
- Hoarse, breathy, weak voice (dysphonia)
- Stuttering-like repetitions, usually of whole words or phrases

(Duffy, 2019)

Why speech problems happen

- Dopamine contributes to the ability to plan and control automatic movements. Speech is one of the most highly complex and highly automated human behaviors.
(Alm, 2021)
- Rigidity of laryngeal muscles can lead to vocal fold bowing and reduced vocal fold closure, which in turn leads to weak, breathy voice.
(Blumin et al., 2004; Duffy, 2019)
- Hypokinesia and bradykinesia of the mouth, lips, and tongue can lead to articulation problems and difficulty being understood.
(Kearney et al., 2017; Duffy, 2019)

Why speech problems happen, continued

- Sensorimotor impairments can lead people with PD to have difficulty accurately monitoring their speech in real time. What feels like normal loudness is often actually quiet, and normal loudness often feels like shouting.

(Clark et al., 2014; Hammer & Barlow, 2010; Railo et al., 2020; Sapir, 2014)

- Hypomimia, or facial masking, can lead to difficulty with social communication and may respond to intensive speech therapy.

(Gunnery et al., 2016; Dumer et al., 2014)

Speech and language assessment

- A speech-language pathologist (SLP) can assess speech and voice to determine whether there is a speech and/or voice disorder.
- An assessment usually consists of a detailed medical history, a cranial nerve exam, and a series of speech and non-speech tasks.
- Typically SLPs also ask people to describe and rate their own perception of their speech/voice. They may also ask for input from family members.
- Depending on the findings, the SLP might refer to an otolaryngologist (ear nose and throat doctor, or ENT) to visualize the larynx and rule out other voice problems.

Treatment

- The goal is to maintain the best possible communication throughout all stages of the disease.
- Early intervention is important, but it's never too late.
- All speech therapy should be individualized and take into account not just the person's communication problem, but also their goals, preferences, and needs.

Treatment, continued

- Two common standardized programs:
 - LSVT LOUD (Lee Silverman Voice Treatment)
 - SPEAK OUT! (Parkinson Voice Project)
- Both require the speech therapist to be specifically trained and certified in that program and to follow the program protocol.
- These are not the only approaches. Some speech therapists draw from different techniques. For some people and in some settings, a different treatment method might be more appropriate or logistically feasible.

Treatment, continued

- Respiratory muscle strength training
 - Personal amplification devices
 - Other wearable devices
 - Pacing techniques
 - Environmental modifications
-
- The need for speech therapy and speech/voice exercise continues over time.

Main takeaways

- Speech changes are common in PD and can start early in the disease process.
- Typical speech difficulties include quiet speech; weak, breathy, or hoarse voice; articulation difficulty; and speech that is too fast.
- Early intervention is preferable.
- It's never too late to get help with communication.
- Speech therapists help people with PD not only with speech and voice, but also with cognition and swallowing.

Thank you!

Feel free to email me with questions: lyssa@lyssarome.com