

COMMUNICATION CHANGES AND CHALLENGES TO CONSISTENT HEP COMPLETION

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SPEAKER INFORMATION

- 20 years of experience
- Acute Care, Inpatient Rehab, Home Care, Outpatient Rehab
- Neurodegenerative Diseases (Movement Disorders and Neuromuscular Diseases)
- Lead SLP for the DBS, PD, ALS and NMD Clinics
- LSVT LOUD certified since 2013, LSVT LOUD for Life certified 2017, SPEAK OUT! Certified in 2019
- Co-lead a weekly PD exercise class

LEARNING OBJECTIVES

- Define and discuss frequently occurring speech changes
- Describe common/popular treatment programs
- Explore and address obstacles to consistent Home Exercise Program (HEP) completion

FORMAT

- Brief review of the Basal Ganglia and Dopamine
- Present and explain challenges
- Provide information as to why the particular challenge exists
- Explore solutions

BASAL GANGLIA

- Located deep in the brain, beneath the cerebral hemispheres.
- **Substantia Nigra, Globus Pallidus Internus, Subthalamic Nucleus and the Striatum**
- The basal ganglia is part of a circuit that is integral to voluntary motor function, motivation and reward.
- More specifically, the basal ganglia specializes in processing information on movement and in **fine-tuning the ideal response** in a given situation (e.g., using the hands to catch a ball or using the feet to run).

SUBSTANTIA NIGRA

- Produces the Neurotransmitter Dopamine
- Parkinsonism occurs when cells within the SN become unable to uptake, use or produce dopamine.
- Damage results in the characteristic reduction in movement and other motor symptoms seen in Parkinsonism.

ROLE OF DOPAMINE

- CONTROL OF VOLUNTARY MOVEMENT
- MODULATING BEHAVIOR AND MOOD
- MOTIVATION
- PUNISHMENT AND REWARD
- SLEEP
- COGNITION: ATTENTION, WORKING MEMORY, NEW LEARNING

CHALLENGE #1: THERE'S NOTHING WRONG WITH MY SPEECH/VOICE

- Everyone except my husband/wife/partner hears me fine.
- **My spouse (he/she) needs hearing aids.**
- Yeah, I've heard of LOUD or SPEAK OUT! but I don't need that right now.

DID YOU KNOW?

- 90% people with PD experience changes in their speech pattern and voice (dysarthria)
- The perception of movement changes secondary to the lessening of dopamine production but the PwP doesn't realize it.

THE PROBLEM

- My movement has become smaller and I don't recognize it.
- People don't change what they don't realize needs changing.
- What do you mean speech?
- Incomplete understanding of everything that goes into speech production.

SPEECH CHANGES: HYPOKINETIC DYSARTHRIA

- **Respiratory**
- **Phonatory**
- **Articulation**
- **Prosody**

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- **Prosody**-disordered stress, intonation, fluency and rate, difficulty initiating speech, speech arrest, inappropriate silences, palilalia

SPEECH CHANGES: HYPOKINETIC DYSARTHRIA

- Function of Basal Ganglia: processing information on movement and in fine-tuning the ideal response
- Motor Symptoms of PD: Hypokinesia, Rigidity, Bradykinesia, Tremors
- Reduced amplitude/restricted ROM for respiration, chest wall, vocal folds, articulators (articulatory space)
- Initiation difficulties, abnormal timing (coordination)

PLAN OF ATTACK

- Become educated
- Understand (and accept) that there is a disparity between your perspective of movement and others' perspective of your movement
- Identify and approach your Communication Circle (5 people)
- Record audio samples at regular intervals (every 3 or 6 months)
- Strongly consider enrolling in LOUD or SPEAK OUT!

LSVT LOUD AND SPEAK OUT!

- Two different programs
- Based on principles of neuroplasticity, exercise physiology and motor learning (more on that in a moment)
- Efficacy is supported by a large body of research demonstrating that the large majority of people benefit and maintain benefits for a period of time afterwards

LSVT LOUD AND SPEAK OUT!

LSVT LOUD

- 4 days/week
- 55-60 minute sessions
- 4 weeks
- 16 treatment sessions
- Carryover tasks (30 days)

SPEAK OUT!

- 3 days/week
- 45 minute sessions
- 4 weeks
- 12 treatment sessions
- Stronger emphasis on cognitive-communication difficulties

LSVT LOUD AND SPEAK OUT!

LSVT LOUD

- Max duration sustained vowel
- Pitch range exercise
- Personally Relevant Functional Sentences
- Choral reading: hierarchy
- Carryover tasks

SPEAK OUT!

- Warm up: may me my moe moo
- Sustained vowel x 10 seconds
- Pitch range exercise (glide)
- Counting
- Functional but generic sentences: hierarchy
- Cognitive and word finding activities

CHALLENGE #2: WHAT IF SOMEONE HEARS ME?

- **That's the point**, that people hear you, right?
- People are often reluctant to practice their LOUD HEP because they worry what their spouse, neighbors or DOG will think/say/do.

DID YOU KNOW?

- You are not alone.
- Fear of being heard doing the LOUD and SPEAK OUT! exercises is extremely common.
- If you are concerned about this, or any other aspect of how, where or when to do your therapy, your SLP needs to know.

THE PROBLEM

- If you feel you must hide from people, you will fail.
- It takes too much effort and time to hide.

PLAN OF ATTACK

Your carepartner wants you to exercise. They want you to practice. They want you to take ownership and maintain your level of function for as long as possible.

Work out a time that is acceptable to both you and your spouse.

Work with your spouse to identify a location within your home that buffers sound (other than the basement next to the furnace)

CHALLENGE #3: IT'S NOT REALLY EXERCISE



THE PROBLEM

- You don't think it's exercise because you are sitting down and don't get sweaty.
- If you don't think it's exercise, you won't approach it with a mindset focused on intensity, amplitude and effort.

DID YOU KNOW?

- Speech and voice production are two of the most complicated motor acts?
- Functional versus Exercise (ex: walking to get somewhere vs walking for exercise)
- Difference: Effort and amplitude,
- Speech/voice exercises result when we use maximal effort and intensity, focus on the quality of specific movements and repeat those movements over and over again.

NEUROPLASTICITY, EXERCISE PHYSIOLOGY, MOTOR LEARNING

- **Intensity**. Intensive practice is important for maximal plasticity.
- **Repetition**. Required for changes in synaptic strength, increases in synapse number.
- **Salience**. Practicing rewarding tasks activates basal ganglia circuitry. Incorporate patient specific meaningful tasks.
- **Use It or Lose It**: Failure to drive specific brain functions can lead to functional degradation. Inactivity can speed rate of decline.
- **Use It and Improve It**: Training that drives a specific brain function can lead to an enhancement of that function.
- **Specificity**: Train the deficits

PRINCIPLES OF LSVT LOUD AND SPEAK OUT!

- Target: A single overlearned goal.
- Mode: Intensive. High Effort.
- Calibration: Addresses the fundamental challenges and barriers to patient success.

PLAN OF ATTACK

Be fully engaged. Use full effort.

Focus on the quality and size of movement.

Stand

Pair your speech exercises with your **BIG** and other exercises.

Pair exercises with functional tasks

Break exercise up over the course of the day

Examples:



CHALLENGE #4: I DO SOME OF MY EXERCISES



DID YOU KNOW?

- Then you are only getting some of the benefit.
- Each exercise targets a different type of impairment in the motor speech system.
- This is more likely to occur if you don't like a given exercise, if that exercise is challenging, if you don't understand the role of each exercise or how the individual exercises benefit speech and voice production.

DID YOU KNOW?

- Long Loud /a/: addresses.....
- Pitch tasks
- Functional phrases
- Choral Reading
- Carryover Tasks
- May me my moe moo
- Cognitive/word finding activities

PLAN OF ATTACK

- Ask your SLP to explain what each exercise does, how it helps, why you need to do it.
- Write that explanation down and refer back to it when you feel like skipping an exercise.
- If you forget: or lose your cheat sheet, ask again. Call or email her, even months or years later.

CHALLENGE #5: IT'S BORING

- Ok, so maybe it is exercise, but it's still boring.

DID YOU KNOW?

- Neuroplasticity and Exercise Physiology
- Overlearning is necessary to perform “at will”
- The basal ganglia is associated with motivation and reward. You may have to make yourself do the exercises.
- We do plenty of boring things everyday because they are good for us.
- Since when are squats, pushups and sit ups fun?

PLAN OF ATTACK

- Drill is a key component to optimal performance.
- Optimal performance requires consistent practice and effort.
- Routine. Habit
- Knowing why the exercises are necessary/helpful.
- Just do it. Boring or not. Communication is essential. Exercises are essential for effective communication.

CHALLENGE #6: I DON'T HAVE TIME

- If I do my exercises, your exercises, the ones the PT/OT gave me, I'd be exercising ALL DAY!
- If I do all the exercises I'm supposed to do, I'd never get anything else done.
- I'm too busy.

DID YOU KNOW?

- Exercise is the only thing that has been shown to slow the progression of PD.
- If we don't make time for exercise now, we will lose functional ability and won't be able to do the things we love as well as we want to later.

PLAN OF ATTACK

- Understand and accept that fighting PD is the #1 priority.
- Establish a routine
- Exercise earlier in the day/in the morning.
- Develop a system that rates the priority of your TO DO List tasks
- Set an alarm
- Break exercises up over the course of the day
- Intermix exercises with functional activities

CHALLENGE #7: I DON'T FEEL LIKE EXERCISING RIGHT NOW (OR EVER)



DID YOU KNOW?

- Non-Motor Symptoms of PD: pain, sleep disturbance, fatigue, depression
- People with PD often experience lower levels of motivation, higher levels of apathy related to the loss of dopamine
- The basal ganglia is part of a circuit that is integral to voluntary motor function, motivation and reward.

PLAN OF ATTACK

- Establish a consistent habit of exercising early in the dx of PD (the sooner the better).
- This serves to establish a routine.
- As the disease progresses, exercises can be added to the already existing program, or modified.
- You will never always be motivated. Instead you must be disciplined.
- We need to let go of the idea that motivation matters.

CHALLENGE #8: YOU MEAN I HAVE TO DO THIS FOREVER?!



DID YOU KNOW?

- You only have to exercise on the days you have Parkinson's.
- It's a marathon, not a sprint
- The mindset and discipline are entirely different for PD than it is for a hip, knee or shoulder replacement.
- Exercise is the only thing that has been proven to slow progression.

PLAN OF ATTACK

- Look for exercises and activities that you do enjoy
- Group exercise classes
- Support groups
- Communication Circle
- Empower your carepartner, family and friends

IN CONCLUSION

- Consistent HEP completion is a challenge.
- Exercise doesn't have to be sweaty to be working the muscles that need it most.
- Drill is repetitive by nature and boring at times but effective
- Exercise doesn't come natural to all of us, but we ALL have to work at it.

IN CONCLUSION

- Is this challenge real or imagined?
- The exercises and the obstacles are part of PD.
- Remember your WHY?
- Lean on your support system. If you don't have one, **GET ONE.**
- In the tug of war battle against PD, am I pulling (for myself) as hard as I can?





Thank you!