

**3. What is the Lee Silverman Voice Treatment Program  
(LSVT) (CM) ?**

**The Lee Silverman Voice Treatment Program is the only scientifically documented effective speech treatment program for people with Parkinson's disease. It is named for a former individual with Parkinson's disease and was developed from 1987-1989 by Lorraine Olson Ramig, Ph.D. CCC-SLP and Carolyn Mead Bonitati M.A., CCC-SLP as they studied and treated 150 people with Parkinson's disease. As this researcher and clinician reviewed the literature on past and current therapy, it became clear that there were key concepts that made the progress last well beyond the walls of the therapy room.**

**The five key components of the LSVT<sub>(CM)</sub> are:**

- 1. The focus of therapy is VOICE, not speech.**
- 2. A high effort level is required during every voicing attempt.**
- 3. The treatment is intensive, consisting of 16 individual sessions in one 4 week period.**
- 4. Each person is "calibrated" to understand how it feels to produce a good voice.**
- 5. The results of each therapy session are quantified with measures that give immediate feedback on the progress you are making. "Before" and "After" video tapes are common.**

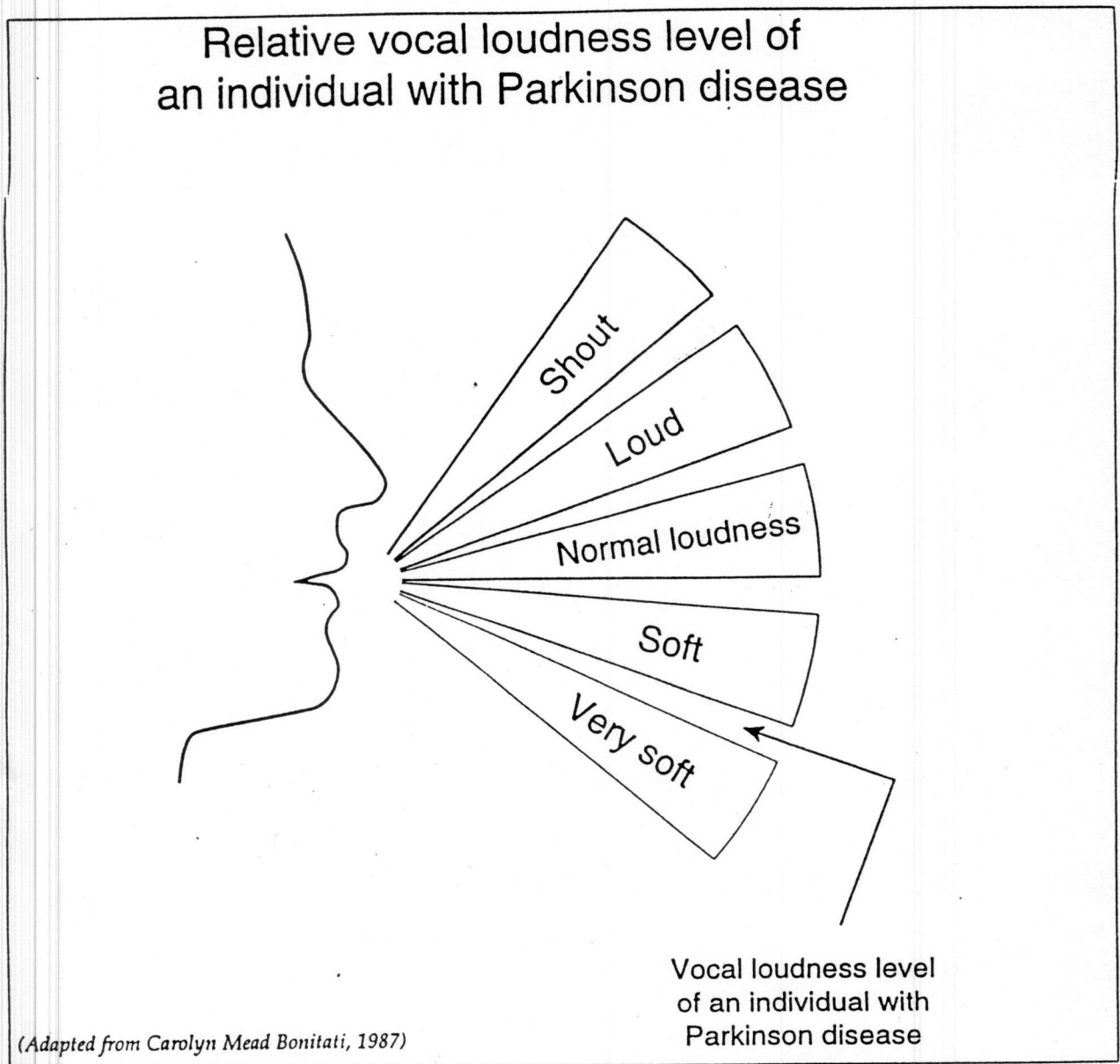
## LSVT<sub>(CM)</sub> Homework Practice

When you practice, have a timer or clock with a second hand, a pencil, a straight-back chair to sit in. Remember to use *maximum phonatory (voice) effort* for all tasks!

- Swallow  
First.
- A. Say "ah" for as many seconds as possible! Try to make each "ah" loud and clear. Take a deep breath and go! Open your mouth wide! Use the pushing exercises we have done in therapy if that makes you louder. Record the duration of your "ahs" on the attached practice sheet.
- B. Say "Ah" six times as high and as low in pitch as you can and hold it there. Record completion of this exercise on the attached practice sheet.
- C. Say these words loudly and clearly. Take a deep breath before each word. If you need it use the pushing technique to get you louder and stronger. After you become bored with the "A" words you may create your own "B", "C", "D", words etc.

- |               |              |
|---------------|--------------|
| 1. apple      | 11. another  |
| 2. ankle      | 12. apology  |
| 3. adopted    | 13. animal   |
| 4. awkward    | 14. amiable  |
| 5. aunt       | 15. alumni   |
| 6. accident   | 16. always   |
| 7. affect     | 17. accent   |
| 8. already    | 18. airplane |
| 9. admire     | 19. agenda   |
| 10. accordion | 20. adore    |

## LOUDNESS DIAGRAM



In the example above, the middle box indicates Normal loudness. Notice the "amount of effort" necessary to move from Normal loudness to the higher boxes labeled Loud or Shout.

For an individual with Parkinson disease, her vocal loudness has dropped to one of the two lower boxes labeled Soft or Very soft.

As a result, the individual with Parkinson disease will need to use more vocal effort to be able to speak at the Normal loudness level. The amount of vocal effort she needs to use to reach a level of Normal loudness feels similar to the amount of vocal effort previously used to be Loud or to Shout.

## VOICE TREATMENT FOR PARKINSON DISEASE AND OTHER NEUROLOGICAL DISORDERS

### Articles evaluating the effectiveness of the LSVT<sub>(CW)</sub> for individuals with Parkinson Disease

- Countryman, S., Hicks, J., Ramig, L., and Smith, M. (1997). "Supraglottal hyperadduction in an individual with Parkinson disease: a clinical treatment note." American Journal of Medical Speech-Language Pathology, 6(4):74-84.
- Countryman, S., and Ramig, L.O. (1993). "Effects of intensive voice therapy on voice deficits associated with bilateral thalamotomy in Parkinson's disease: a case study." Journal of Medical Speech-Language Pathology, 1: 233-250.
- Countryman, S., Ramig, L.O., and Pawlas, A.A. (1994). "Speech and voice deficits in Parkinsonian Plus syndromes: can they be treated?" Journal of Medical Speech-Language Pathology, 2(3): 211-225.
- Dromey, C., Ramig, L.O., Johnson, A.B. (1995). "Phonatory and articulatory changes associated with increased vocal intensity in Parkinson disease: a case study." Journal of Speech and Hearing Research, 38: 751-764
- Ramig, L.O., Bonitati, C.M., Lemke, J.H., Horii, Y. (1994). "Voice treatment for patients with Parkinson disease: development of an approach and preliminary efficacy data." Journal of Medical Speech-Language Pathology, 2(3):191-209.
- Ramig, L.O., Countryman, S., O'Brien, C., Hoehn, M. and Thompson, L. (1996) Intensive speech treatment for patients with Parkinson disease: short and long-term comparison of two techniques. Neurology, 47:1496-1504.
- Ramig, L.O., Countryman, S., Thompson, L., and Horii, L. (1995) "A comparison of two forms of intensive speech treatment for Parkinson disease." Journal of Speech and Hearing Research, 38: 1232-1251.
- Ramig, L.O., and Dromey, C. (1996). Aerodynamic mechanisms underlying treatment related changes in SPL in patients with Parkinson disease. Journal of Speech and Hearing Research, 39: 798-807.
- Smith, M.E., Ramig, L.O., Dromey, C., Perez, K.S., and Samandari, R. (1995). "Intensive voice treatment in Parkinson's disease: laryngostroboscopic findings." Journal of Voice, 9: 453-459.

### Articles describing voice and speech in individuals with Parkinson Disease

- Baker, K., Ramig, L.O., Johnson, A.B., Freed, C.R., (1997). "Preliminary voice and speech analysis following fetal dopamine transplants in 5 individuals with Parkinson disease." Journal of Speech and Hearing Research, 40:615-626.
- Fox, C. and Ramig, L. (1997). "Vocal sound pressure level and self-perception of speech and voice in men and women with idiopathic Parkinson disease." American Journal of Speech-Language Pathology, 6:85-94.
- King, J., Ramig, L.O., Lemke, J.H., and Horii, Y. (1994). "Parkinson disease: longitudinal changes in acoustic parameters of phonation." Journal of Medical Speech-Language Pathology, 2: 29-42.
- Larson, K., Ramig, L.O., and Scherer, R.C. (1994). "Acoustic and glottographic voice analysis during drug-related fluctuations in Parkinson's disease." Journal of Medical Speech-Language Pathology, 2(3):227-239.
- Perez, K., Ramig, L.O., Smith, M., and Dromey, C. (1996). "The Parkinson larynx: tremor and videolaryngostroboscopic findings." Journal of Voice, 10(4):354-361.
- Ramig, L.O., and Gould, W.J. (1988). "Speech characteristics in Parkinson's disease." Neurologic Consultant 4(1):1-8. New York: Lawrence Della Corte Publications.

### Book chapters on neurological voice and speech disorders

- Brin, M.F., Fahn, S., Blitzer, A., Ramig, L.O., Stewart, C. (1992). "Movement disorders of the larynx." In A. Blitzer, M. Brin, C. Sasaki, S. Fahn, and K. Harris (eds.). Neurologic Disorders of the Larynx. New York: Thieme, 248-278.
- Ramig, L.O. (1992). "The role of phonation in speech intelligibility: a review and preliminary data from patients with Parkinson's disease." In R.D. Kent (ed.). Intelligibility in Speech Disorders: Theory, Measurement, and Management. Amsterdam: John Benjamin, 119-156.

- Ramig, L.O. (1995). "Speech therapy for patients with Parkinson's disease." In W. Koller and G. Paulson (eds.). Therapy of Parkinson's Disease. New York: Marcel Dekker, Inc., 539-548.
- Ramig, L.O. (1995) "Voice treatment for neurological disorders of the larynx." Current Opinion in Otolaryngology Head and Neck Surgery, 3: 174-182.
- Ramig, L.O. (1996) "Neurological disorders of the voice", In Brown, W., Vinson, B., and Crary, M. (eds.) Organic Voice Disorders: Assessment and Treatment. A Tribute to G. Paul Moore, San Diego; Singular Press. 323-343.
- Ramig, L.O. (in press). "Speech and voice disorders in Parkinson disease and their treatment." In Cherney, L. (ed.) Topics in Geriatric Rehabilitation. Gaithersburg, Maryland: Aspen Publishers, Inc.
- Ramig, L.O., and Scherer, R.C. (1992). "Speech therapy for neurologic disorders of the larynx." In A. Blitzer, M.F. Brin, C.T. Sasaki, S. Fahn, and K.S. Harris (eds.). Neurologic Disorders of the Larynx. New York: Thieme Medical Publishers, Inc., 163-181.
- Smith, M.E., and Ramig, L.O. (1995). "Neurological Disorders and the Voice." In W. Gould, J.S. Rubin, G. Korovin, and R. Sataloff (eds.). Diagnosis and Treatment of Voice Disorders. Igaku-Shoin, 203-224.

### Guidebook and treatment materials

- Ramig, L., Pawlas, A. and Countryman, S. (1995) The Lee Silverman Voice Treatment (LSVT): A Practical Guide to treating the Voice and Speech Disorders in Parkinson Disease. Iowa City, IA., University of Iowa, National Center for Voice and Speech.  
Phone: 1-319-335-6602
- Ramig, L.O. (1993). "Voice therapy for patients with Parkinson's disease." A videotape for professionals produced by the National Center for Neurogenic Communication Disorders, University of Arizona-Tucson.  
Phone: 1-520-621-1787
- Ramig, L.O., Bonitati, C., and Winholtz, W. (1994). "The Lee Silverman Voice Treatment." A videotape of home exercises for Parkinson disease patients produced by Wintronix Inc., P. O. Box 514, Blue Springs, MO 64015.  
Phone: 1-816-229-0193

### Other recent papers of general interest

- Ramig, L.O., Verdolini, K., (1997) "The efficacy of voice therapy." Current Opinion in Otolaryngology & Head and Neck Surgery, 5:153-160.
- Ramig, L.O., Verdolini, K. (in press). "Treatment efficacy: voice disorders". Journal of Speech and Hearing Research.
- Verdolini, K., Ramig, L.O. and Jacobson, B. (1998). "Outcomes Measurement in Voice Disorders". In Frattali, C. (Ed.) Measuring Outcomes in Speech Language Pathology. New York: Thieme Medical Publishers, Inc., 354-386.

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