Voice use and effects of biofeedback in Parkinson's disease, studied with a newly developed portable voice accumulator, VoxLog

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The proposal presents data from an ongoing project studying voice use in daily life from field recordings of patients with Parkinson's disease, PD, and effects of biofeedback regarding voice intensity in the same group of patients.

To date, voice function has primarily been studied in laboratory or clinical settings via analyses of controlled recordings. Using a portable voice accumulator, the VoxLog, phonation time, intensity and fundamental frequency can be registered outside the clinic (Lindström et al., 2009). The VoxLog can also provide biofeedback on voice intensity or fundamental frequency. In Parkinson's disease reduced voice intensity and difficulties perceiving voice intensity are dominating symptoms (Ramig et al., 2008).

In this project long-term registrations of phonation time, voice intensity and fundamental frequency from work and leisure activities and compared to controlled studio-recordings. Following registrations of phonation time and voice intensity in the field, biofeedback is administered every other day during ten days when voice intensity goes below a certain threshold. Preliminary results regarding biofeedback with the VoxLog from a pilot-study of eight patients with PD showed statistically significantly increased voice intensity when feedback regarding voice intensity was given. The use of biofeedback thus seems promising for this patient group.

References

Lindström F., Ren K., Li H., Weye K. (2009) Comparison of two methods of voice activity detection in field studies. J Speech Lang Hear Res, Dec;52(6):1658-63.

Ramig LO, Fox C, Sapir S. (2008) Speech treatment for Parkinson's disease. *Expert Reviews in Neurotherapeutics*, 8(2):297-309.