

# Resonance Exercises – Influence on Voice Quality in Voice Professionals

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The aim of the study was to verify rehabilitative and re-educational effect of resonance exercises in voice professionals. It is a part of a larger research in voice re-education and therapy, conducted in cooperation with Voice Center Prague, MARC HAMU and KDV DAMU. (The results of the on-going research with more subjects will be published in future).

The group comprised of 5 voice professionals (4 women and 1 man), whose average age was 29.8. The therapy lasted 5 weeks, its frequency 1x60min weekly, plus individual daily training with recordings 10 – 15 min, respiratory exercises as needed, recorded in a training diary. The subjects were carefully selected out of the actors of the Y Theatre, students of pedagogical branches at KVD DAMU Praha and professional speakers. The common reasons for inclusion in the project were voice problems: voice fatigue, throat constriction and strain during louder speech or singing, husky and short of breath voice accompanied by hoarseness.

## Methods

Preliminary and final foniatic examinations including laryngostroboscopy, videokymography and examination of the voice field of speaking and singing voice (XION system), Czech version of VHI questionnaire, an objective questionnaire of perceptive voice assessment by a therapist. Acoustic methods – analysis of voice field and other acoustic parameters – RealVoiceLab programme in real time (speaking and singing tasks), sonography – spectrogram of vocals, segmental acoustic analysis of MDVP and spectral MDA parameters, electroglottographic record, listening tests – perceptual voice assessment.

Minor defects found on vocal chords in 3 subjects, in 2 more serious defects: vocal cord mucus, tapering thickening, uneven vocal chords, vocal cord insufficiency. Recommendation: Helicid, Loseprazol, voice and respiratory therapy. Therapeutic method based on assessment and analyses: a) respiratory exercises, diaphragmatic breathing, breath support training, b) resonance exercises: choice of voice position for exercising, tonal range and difficulty. Therapist devised an exercise plan including a recording, adapted the range and difficulty of exercises according to pace of learning the tasks and fixation of habits. Therapist kept checking the connection of head and chest resonance, following voice quality in vocal register transitions, the measure of resonance and tonal support. With vocal range increasing, therapist transposed the vocal exercises to higher and lower pitches.

Preliminary results show an improvement in voice quality of all the subjects, namely their vocal range, dynamics, timbre – increase in brightness glitter and carrying capacity, lowering of shortness of breath, fatigue, and increase in vocal range. In spectral analysis of vocals, an increase in higher harmonic components of the spectrum (aliquots) and strengthening of higher formants is presumed.

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