1. Analysis of oral-nasal balance after intensive speech therapy combined with speech bulb in speakers with cleft palate and hypernasality.

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**Abstract:** • Intensive speech therapy associated with a speech bulb can reduce hypernasality. • Nasometry and spectrography can be used to corroborate perceptual findings. • A new method for spectrography of oral-nasal balance disorders is presented. To evaluate the efficacy of the combination of a speech bulb with an intensive speech therapy program in hypernasal participants with cleft palate. Twenty hypernasal speakers with cleft palate (12 females and 8 males, median age 28.45 years), who were wearing speech bulbs underwent an intensive speech therapy program of 45 sessions over 3 weeks. Three experienced speech-language pathologists rated the participants' speech recordings before and after intensive speech therapy, with and without the speech bulb. Nasometric recordings and long-term averaged spectra were also analyzed using repeated-measures ANOVAs. The ANOVA of the hypernasality ratings showed significant effects of therapy \[F(1,19) = 15.97; p < .001\], speech bulb \[F(1,190 = 28.54, p < .001\] and a therapy–speech bulb interaction effect \[F(1.19) = 22.30, p < 0.001\]. The most favorable listener ratings of hypernasality were obtained post-therapy when participants were wearing their speech bulbs. Without the speech bulb, intensive speech therapy by itself did not result in a significant improvement. With speech bulb, nasalance scores for high \[F(1,19) = 14.07, p < .001\] and low pressure \[F(1,19) = 14.84, p < .001\] sentences were significantly lower post-therapy, providing preliminary evidence that an intensive speech therapy program may enhance the effect of a speech bulb. Before and after comparisons of individual nasalance profiles demonstrated variable improvement in 15 participants, no progress in 2 participants and more severe hypernasality after therapy in 3 participants. Long-term averaged spectra corroborated the findings of the perceptual analysis. Based on a frequency bin from 201 to 300 Hz, there was a significant within-subject effect for with and without speech bulb \[F(1, 18) = 4.54, p = .047\] as well as for before vs. after session \[F(1,18) = 7.14, p = .015\]. The speech bulb in combination with intensive speech therapy resulted in improved oral-nasal balance for the majority of participants. More research is needed to investigate long-term outcomes as well as individual factors contributing to therapy success.

**Database:** CINAHL

2. Oropharyngeal Geometry and the Singing Voice: Immediate Effect of Two Semi-Occluded Vocal Tract Exercises

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Abstract: Purpose: The aim of this study was to verify the immediate effect of a flexible resonance tube in water and of lip trill on oropharyngeal geometry and vocal acoustic parameters of singers without vocal symptoms. Method(s): Twenty-two adult singers participated in the study. They had an average age of 27 (±4.8) years. Participants were split into two groups: a group composed of 12 singers who performed the flexible resonance tube (FRT) exercise and a group of 10 singers who performed the Lip Trill technique (LTT). Acoustic pharyngometry and acoustic analysis of the voice were used to assess oropharyngeal geometry before and after the exercises. Result(s): After performing the techniques, the vocal tract length was longer in the group that performed the FRT, compared to the one that performed the LTT. In the acoustic evaluation, there was an improvement in the glottal to noise excitation ratio and a decrease in noise in the group of singers who performed the LTT. In the analysis by sex men had a longer oral cavity compared to women and after application of the techniques greater volume of the vocal tract. Conclusion(s): There was variation in the oropharyngeal geometry with the FRT, while the LTT had a positive effect on the vocal acoustic parameters related to glottal noise.

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