Vocal Impact of a Prolonged Reading Task in Dysphonic versus Normophonic Female Teachers

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Background

- PhD about vocal loading
- Previous study[1]: vocal impact of a 2-hour reading task in normophonic females without professional voice use
- This study[2]: vocal impact of a 2-hour reading task in normophonic and dysphonic female teachers

(1) Remacle A, Finck C, Roche A, Morsomme D. Vocal Impact of a Prolonged Reading Task at Two Intensity Levels: Objective Measurements and Subjective Self-Ratings. *J. Voice. In press*
(2) Remacle A, Morsomme D, Berrué E, Finck C. Vocal Impact of a Prolonged Reading Task in Dysphonic versus Normophonic Female Teachers. *J. Voice. In Press*

Methods: participants

16
normophonic
female teachers
(34.1 years)

16
dysphonic
female teachers
(33.8 years)

Methods: loading task

Reading a novel in French for imaginary students during 2 hours at 70-75dB(A)

T0 (Before) → T1 (After 30 min) → T2 (After 1H) → T3 (After 1H30) → T4 (After 2H)

Methods: evaluation protocol

Before the task and every 30 minutes

- Acoustic analysis (MDVP)

  F0, Jitter%, Shimmer%
- Voice range measurements (VRP)

  Frequency and intensity
- Aerodynamic measurements (Aerophone II)

  Maximum Phonation Time

  Subglottic Pressure, SPL

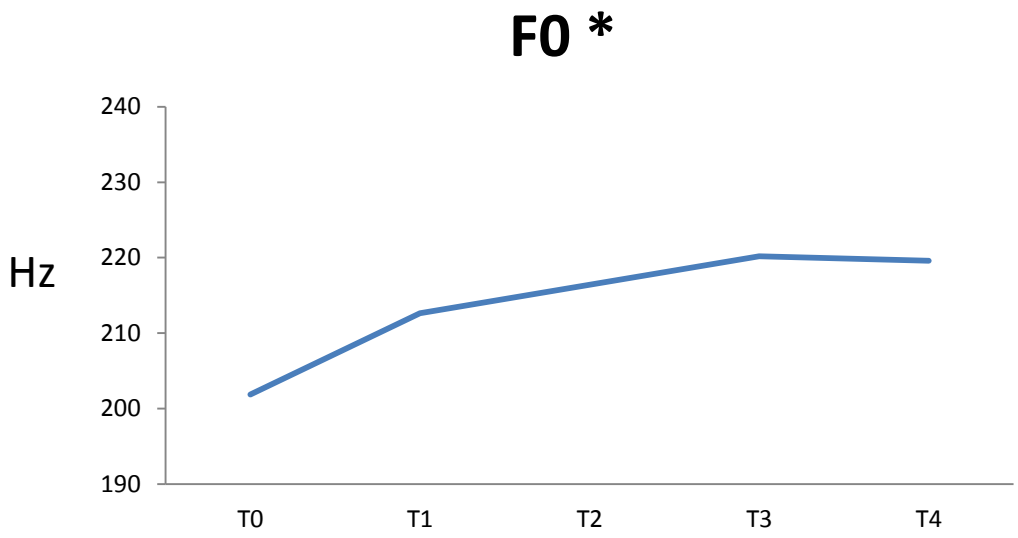
The questions are:

- What are the effects of a two-hour reading task on teachers' voice?
- Does the vocal load affect differently the dysphonic teachers than the healthy teachers?

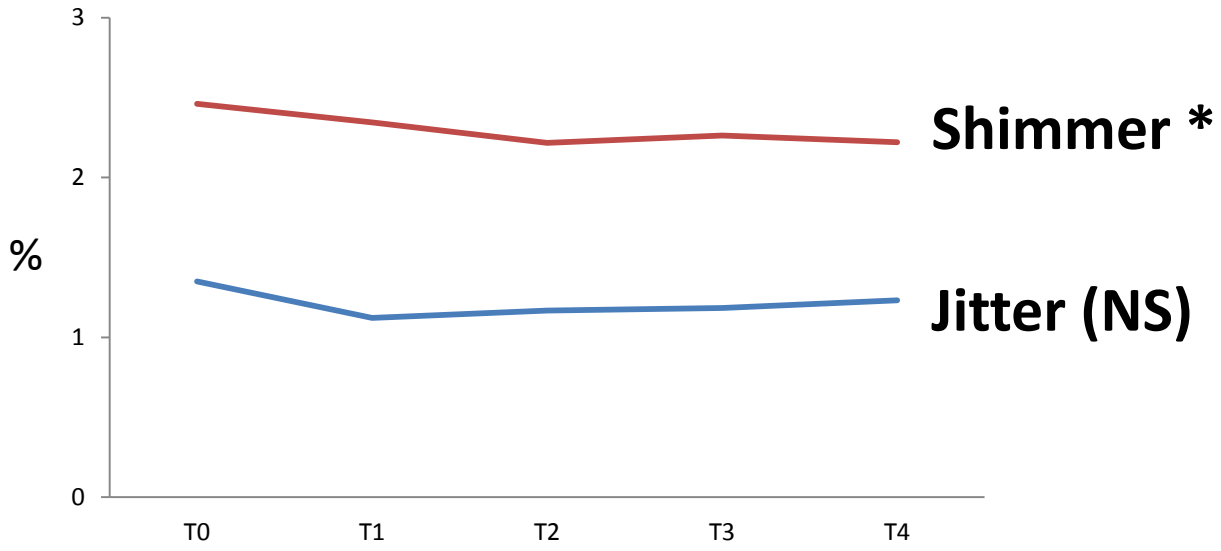
Statistical analysis: repeated measures ANOVA

* $p<.05$

Results: acoustic measurements

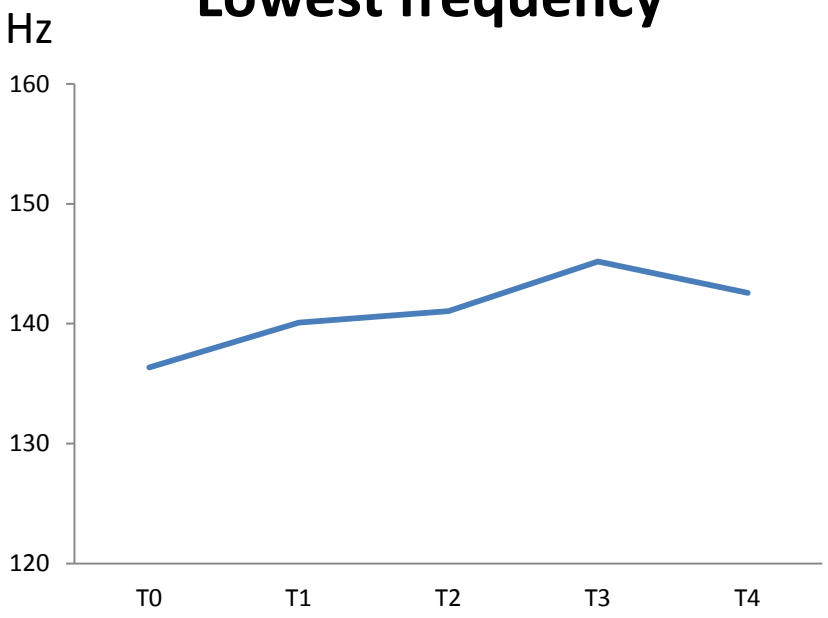


Results: acoustic measurements

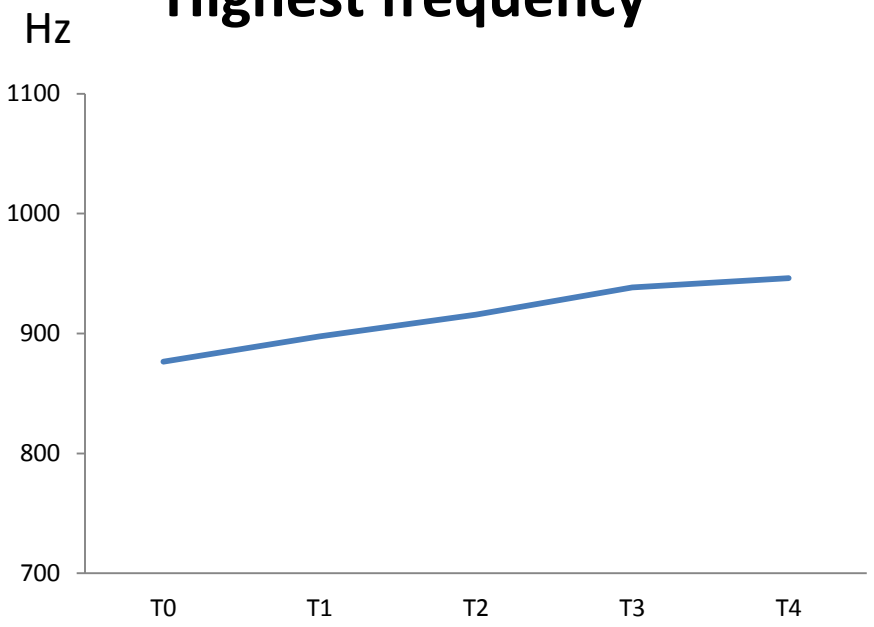


Results: voice range measurements

Lowest frequency *

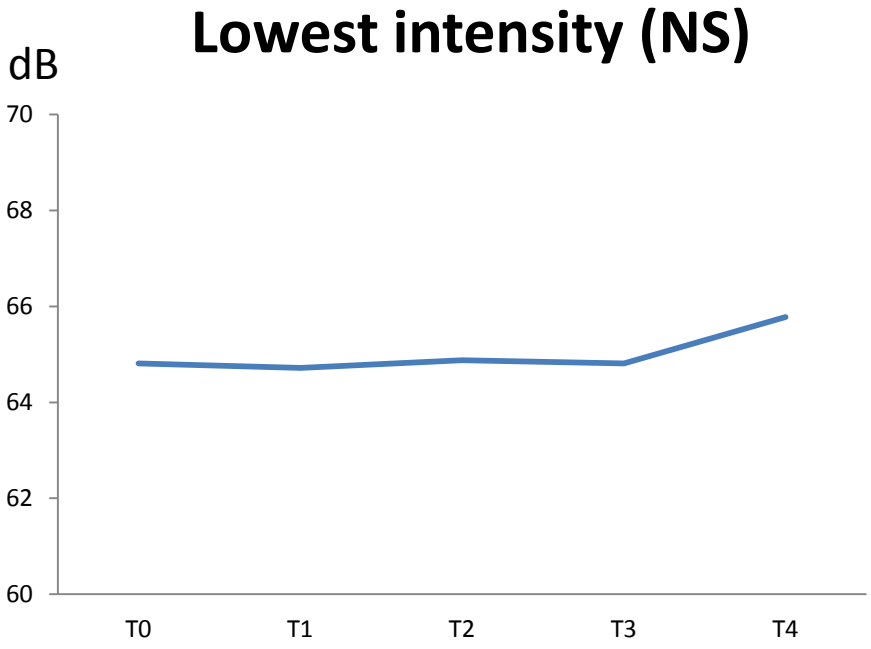


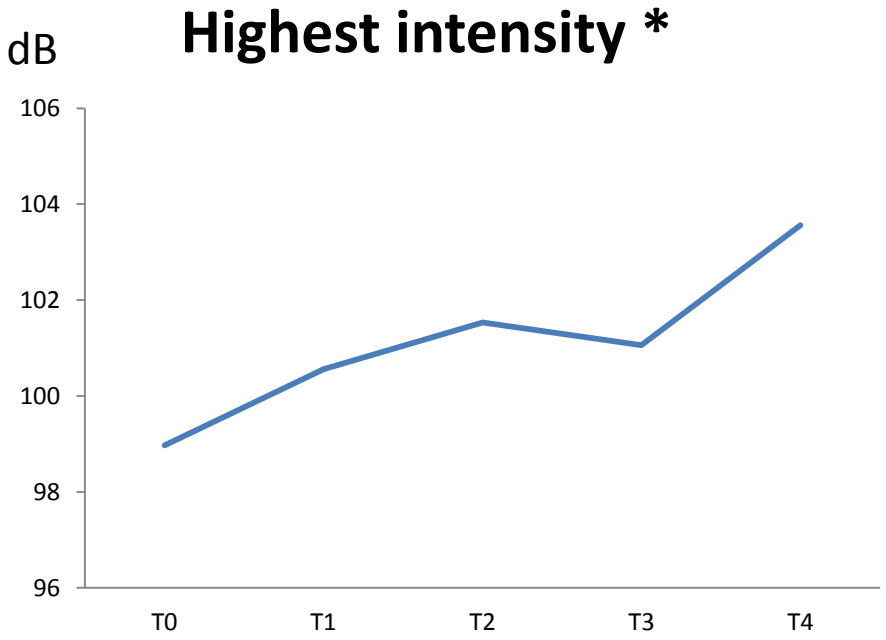
Highest frequency *



Frequency range: no significant effect of duration

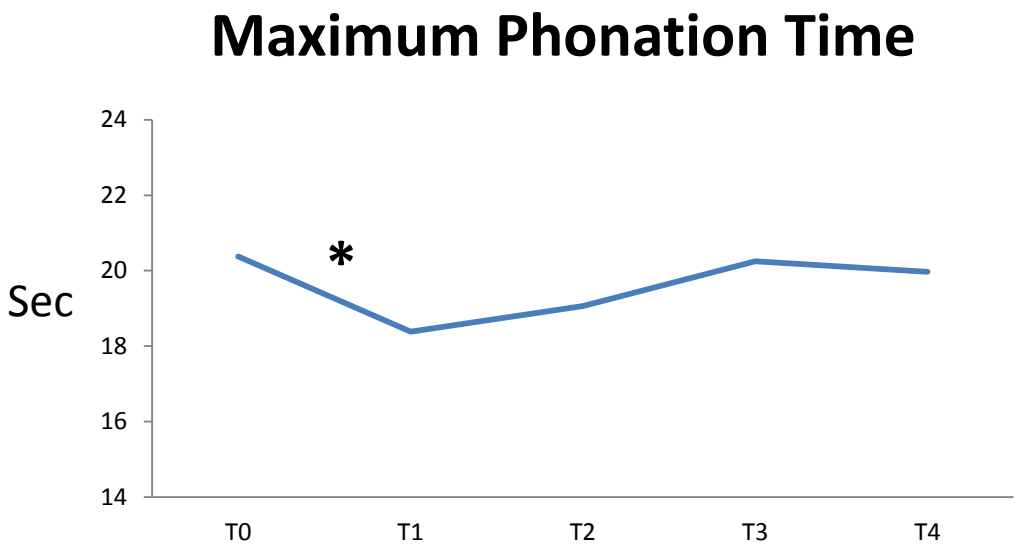
Results: voice range measurements





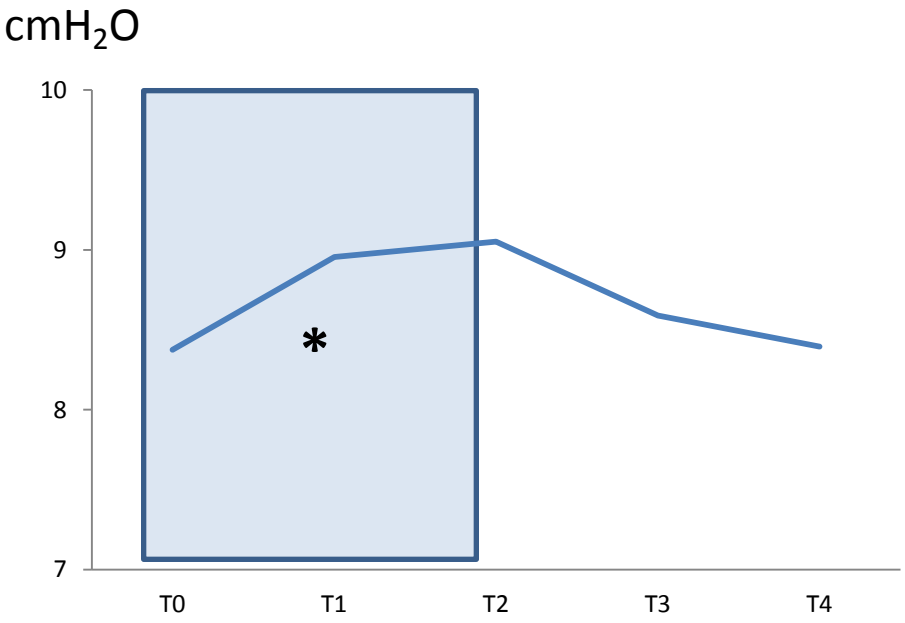
Intensity range significantly increases during the reading

Results: aerodynamic measurements

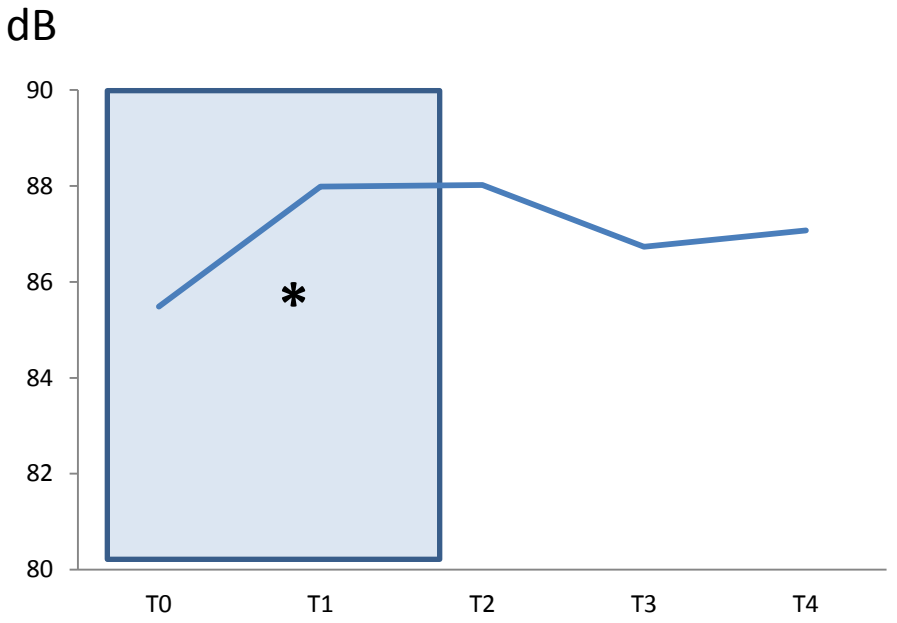


Results: aerodynamic measurements

Subglottic Pressure

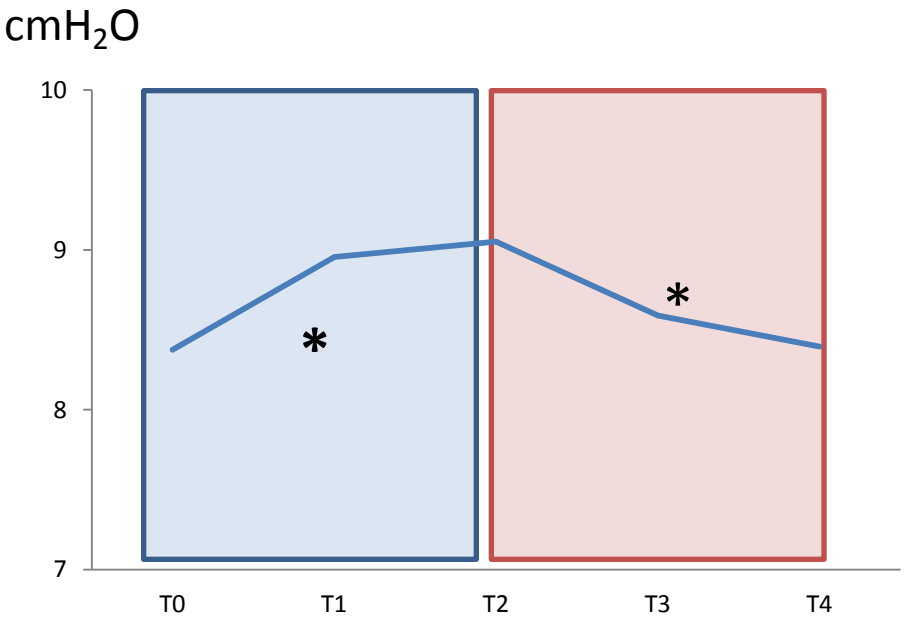


SPL

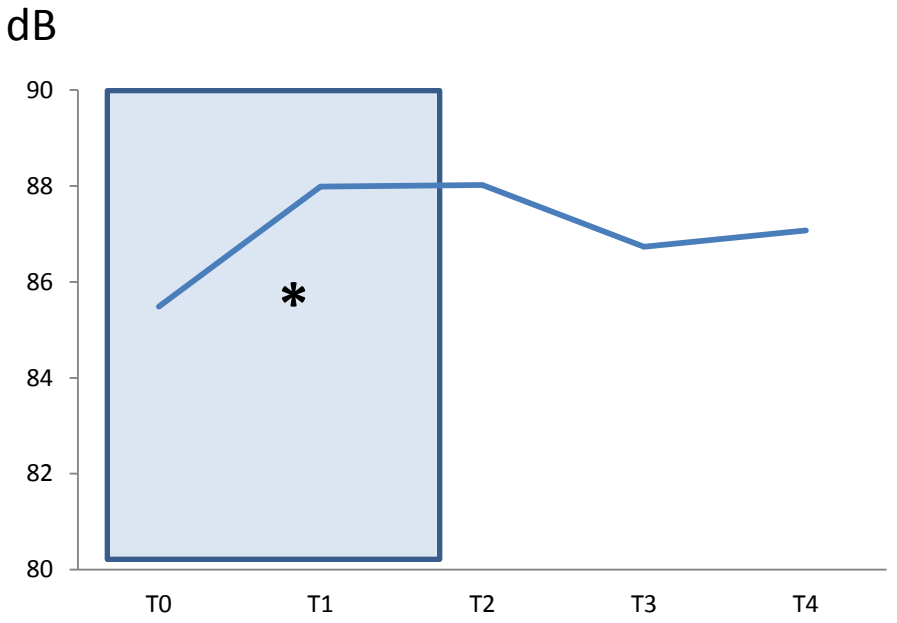


Results: aerodynamic measurements

Subglottic Pressure

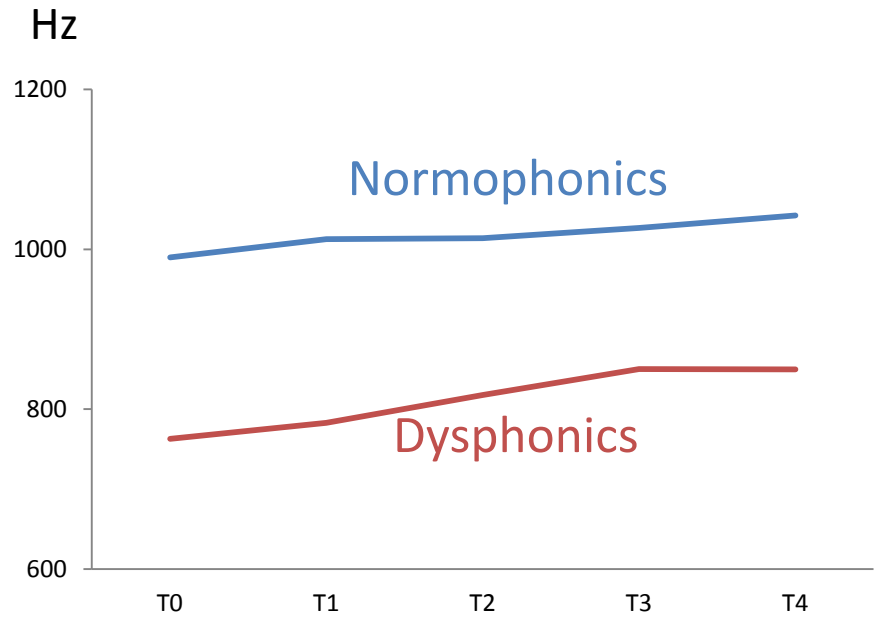


SPL

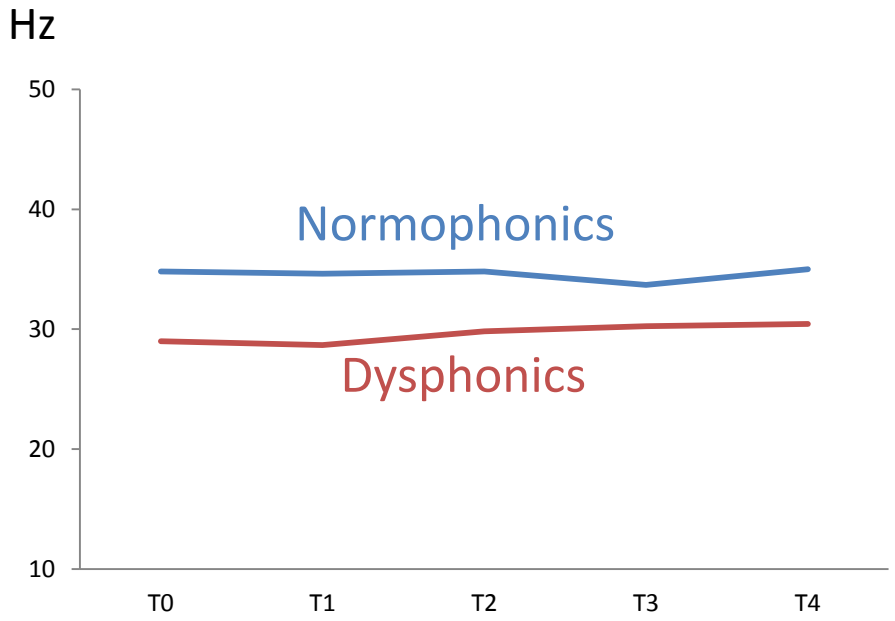


Results: few differences between normophonic and dysphonic groups

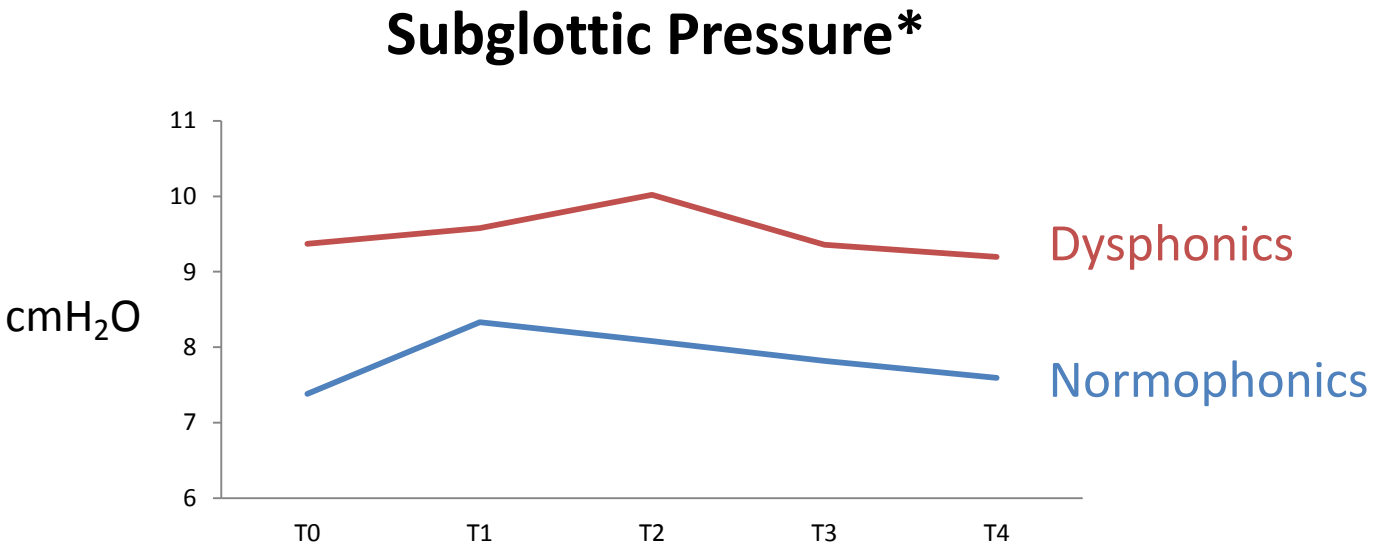
Highest frequency*



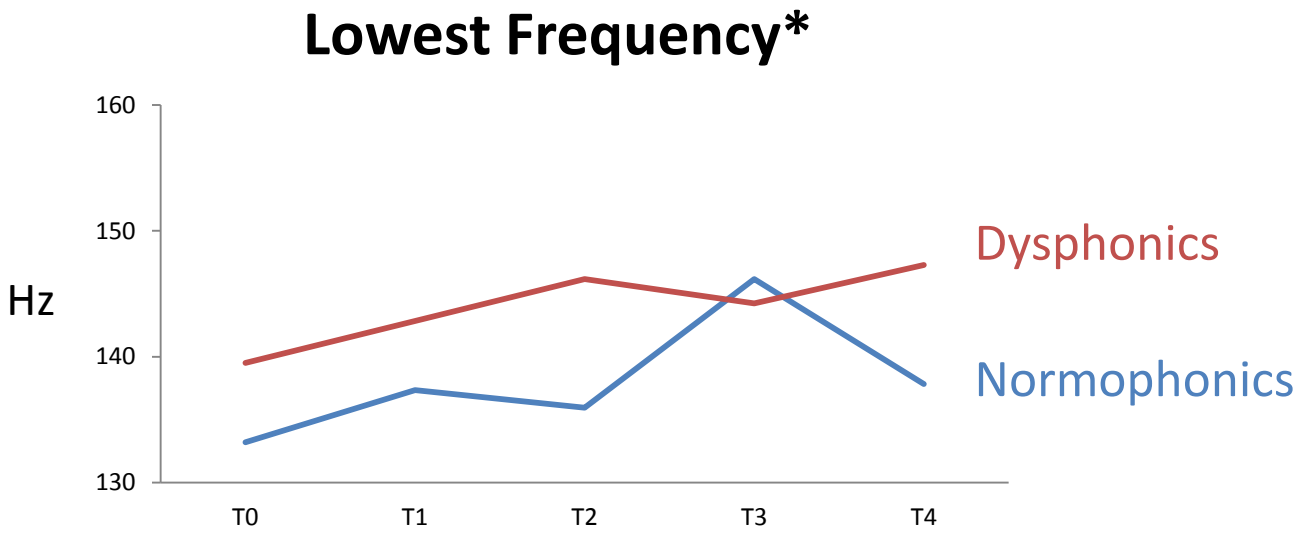
Frequency range*



Results: few differences between normophonic and dysphonic groups



Results: interaction between the duration and the group only for



Conclusions:
effects of a 2-hour reading task

- Acoustic analysis and voice range measurements suggest an increased laryngeal tension

- Aerodynamic measurements suggest

  1) lower voice efficiency – increased viscosity and stiffness of the vocal folds

  2) adaptation to vocal loading

Conclusions:
normophonic versus dysphonic groups

- Few differences between both groups

- Voice evolution through the reading task similar for the normophonic and the dysphonic groups

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Thank You!