

Control of respiration in speech

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Abstract :

After a brief review of the physiology of respiration and the mechanics of breathing, we indicate how the respiratory cycle is altered during speech production. We revise Ladefoged's view of the linear organization of muscular activity during phonation. We consider the speech specific control of exhalation in the framework of the general theory of coordinated movements.

The following issues are discussed:

- Aerodynamic conditions and constraints,
- Synergistic action of the inhalatory and expiratory muscles,
- Methods for estimating subglottal pressure,
- Correlation between muscular activity and syllables,
- EMG V/C distinction,
- Stability of F_0 despite variations of supraglottal impedance,
- Subglottal pressure/acoustic parameters,
- Subglottal pressure/accentuation,

Finally, we indicate some of the phonetic consequences of respiratory troubles.