# ACOUSTIC AND TEMPORAL ANALYSIS OF SWALLOWING SOUNDS: USE OF ELECTRONIC STETHOSCOPE ON CERVICAL AUSCULTATION

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**Introduction:** Swallowing is a physiologic function con-sisting in the propulsion of the bolus into the stomach, with effective respiratory protection. Clinical intervention of Speech and Language Therapists requires improved and reliable methods of swallowing evaluation. Cervical Auscultation (CA) is especially appreciated as a noninvasive method. However, conventional stethoscopes do not provide quantitative measures to complement the percep-tive auditory analysis of the swallowing sounds.

**Objective:** To verify the applicability of the Electronic Stethoscope (ES) in the collecting of swallowing sounds using CA, by means of studying the intra and inter-in-dividual variations in acoustic sound temporal patterns.

**Methods:** A transversal observational descriptive study was conducted to test a protocol, designed by an experts' panel, to collect and analyse swallowing sounds using CA with ES. Assessments included swallowing analysis of different quantity and consistencies of food in a sample of 8 young adults with normal swallowing patterns. Results: No statistical differences were found for the intra and inter-subject variations neither for the food quantities and consistencies on the selected acoustic temporal parameters (number of bursts, apnea duration, time of bursts and their respective intervals and intensity peak). Three bursts were found to typically describe normal swallowing pat-terns. A temporal pattern was also found for the first burst duration and for the first inter-bursts interval, shorter than the second interval.

**Conclusions:** The ES allowed the collecting and acoustic analysis of swallowing sounds, proving to be a viable and capable tool to be applied in CA, with potential applications in research and clinical settings.

**Descriptors:** Cervical Auscultation; Electronic Stethoscope; Swallowing; Acoustic Analysis swallowing sounds; Speech Therapy.

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