

Format:

Abstract ▾

Send to ▾

Folia Phoniatr Logop. 2017 Dec 12;68(6):274-281. doi: 10.1159/000481530. [Epub ahead of print]

## Use of a Novel Device to Assess Intraoral and Intraparyngeal Baropressure during Sound Production.

Sakuma T<sup>1,2</sup>, Kurose M<sup>1</sup>, Okamoto K<sup>1</sup>, Hasegawa M<sup>1,3</sup>, Fujii N<sup>3</sup>, Nakatani Y<sup>1,4</sup>, Takagi R<sup>4</sup>, Sato T<sup>5</sup>, Kodama Y<sup>4</sup>, Ominato R<sup>4</sup>, Yamamura K<sup>1</sup>, Yamada Y<sup>6</sup>.

⊕ Author information

Abstract

**OBJECTIVE:** We developed a novel device that simultaneously measures oral and intraparyngeal baropressure. The transducer has the advantage that it can be placed in any region. We determined the effect of different speech samples on baropressure in these regions.

**PATIENTS AND METHODS:** Seven healthy individuals produced speech samples comprising vowels and consonants (e.g., /aka/, /apa/, and /ash/). Two transducers were installed into the experimental plate at the incisive papillae and center of the Ah-line; a third transducer was placed in the mid-pharyngeal cavity. During each task, 3 parameters were analyzed: peak pressure, mean pressure, and the temporal relationship between sound signals and pressure changes.

**RESULTS:** The mean pressure did not change during the production of a single vowel; however, the pressure transiently increased during the production of the speech samples, depending on the place of articulation. Moreover, the place of articulation affected the onset and peak timing of pressure changes.

**CONCLUSIONS:** These findings indicate that pressure changes during the production of speech samples reflect the functional aspects of speech production. In particular, simultaneous pressure recordings at multiple locations would provide precise information about speech production, compared to pressure studies that used a single pressure transducer.

© 2017 S. Karger AG, Basel.

**KEYWORDS:** Aerodynamic; Oral; Phonation; Pressure; Sound pressure level; Speech production; Velopharyngeal function

PMID: 29232672 DOI: [10.1159/000481530](https://doi.org/10.1159/000481530)

Full text links



Save items

★ Add to Favorites ▾

Similar articles

Intraoral air pressure and oral air flow under different bleed ar [J Speech Hear Res. 1986]

The effect of oral articulation on the acoustic characte [J Acoust Soc Am. 2010]

Differential Response Pattern of Oropharyngeal Pressure [Dysphagia. 2017]

**Review** Non-speech oral motor treatment for chil [Cochrane Database Syst Rev. 2015]

**Review** Consonantal intraoral air pressure characteristics [Braz J Med Biol Res. 1989]

See reviews...

See all...

Search details

29232672 [uid]



Search

See more...

LinkOut - more resources



### PubMed Commons

[PubMed Commons home](#)

0 comments

[How to join PubMed Commons](#)

### Recent Activity

[Turn Off](#) [Clear](#)

29232672[uid] (1)

PubMed

Use of a Novel Device to Assess Intraoral and Intraparyngeal PubMed

See more...

You are here: [NCBI](#) > [Literature](#) > [PubMed](#)

[Support Center](#)

#### GETTING STARTED

- [NCBI Education](#)
- [NCBI Help Manual](#)
- [NCBI Handbook](#)
- [Training & Tutorials](#)
- [Submit Data](#)

#### RESOURCES

- [Chemicals & Bioassays](#)
- [Data & Software](#)
- [DNA & RNA](#)
- [Domains & Structures](#)
- [Genes & Expression](#)
- [Genetics & Medicine](#)
- [Genomes & Maps](#)
- [Homology](#)
- [Literature](#)
- [Proteins](#)
- [Sequence Analysis](#)
- [Taxonomy](#)
- [Variation](#)

#### POPULAR

- [PubMed](#)
- [Bookshelf](#)
- [PubMed Central](#)
- [PubMed Health](#)
- [BLAST](#)
- [Nucleotide](#)
- [Genome](#)
- [SNP](#)
- [Gene](#)
- [Protein](#)
- [PubChem](#)

#### FEATURED

- [Genetic Testing Registry](#)
- [PubMed Health](#)
- [GenBank](#)
- [Reference Sequences](#)
- [Gene Expression Omnibus](#)
- [Map Viewer](#)
- [Human Genome](#)
- [Mouse Genome](#)
- [Influenza Virus](#)
- [Primer-BLAST](#)
- [Sequence Read Archive](#)

#### NCBI INFORMATION

- [About NCBI](#)
- [Research at NCBI](#)
- [NCBI News & Blog](#)
- [NCBI FTP Site](#)
- [NCBI on Facebook](#)
- [NCBI on Twitter](#)
- [NCBI on YouTube](#)

National Center for Biotechnology Information, U.S. National Library of Medicine

8600 Rockville Pike, Bethesda MD, 20894 USA

[Policies and Guidelines](#) | [Contact](#)

