

# Influence of Unilaterally Constricted Arrangement of Artificial Teeth on Pronunciation

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Asymmetric arrangement of artificial teeth with the natural dentition adversely affects articulation, in which the difference between of right and left configurations in the dental arch exerts a functional influence on the contact between a tongue and palate. A previous study showed that 4–5mm bilaterally constricted inner arrangement of upper molar teeth led to the habituation of sound production with particular monosyllables right after the set-up of constricted appliance. By contrast, in this study, the effect of the unilaterally constricted arrangement of artificial teeth on articulation was examined on the analysis of the time duration of consonant sounds in certain monosyllables. Five monosyllables /ki/, /shi/, /zi/, /chi/, /pi/ were examined with Computer Speech Labo®.

The results were as follows :

1. The effect of the unilaterally constricted arrangement appeared in monosyllables /ki/, /shi/, /zi/, /chi/.
2. The time duration of the consonant sounds were extended in 3–5 days after the placement of the artificially constricted appliance.
3. The time duration of consonant sound in /ki/, /shi/, /chi/ reverted to the value before the placement of the appliance in 7–14 days.
4. The extended time duration of consonant sound in /zi/ was still observed 14 days after the placement of the appliance with the constriction of 4 mm or more.

These results indicated that the unilaterally constricted arrangement of artificial teeth affected the articulation on alveolars and palatals with the succeeding vowel /i/.

Key words : constriction, dental arch form, pronunciation, consonant sound, time duration

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