

# The Oral Diadochokinesis in the Speech of the Hearing Impaired

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The study was aimed at measuring oral diadochokinesis in the hearing impaired subjects and to find out the relationship between:

- a) Degree of hearing loss and diadochokinetic rate.
- b) Diadochokinetic rate and speech intelligibility.
- c) Speech intelligibility and degree of hearing loss.

Specifically, the study aimed at answering the following questions:

- a) Is there a significant difference between normal hearing and hearing impaired subjects with respect to the oral diadochokinetic syllable production ?
- b) Is there a relationship between degree of hearing loss and speech intelligibility scores?
- c) Is there a relationship between oral diadochokinesis and speech intelligibility?

The study included 20 hearing impaired children in the age ranges of 9 years 1 month to 12 years 11 months. The subjects had a wide range of sensori-neural hearing loss.

The oral diadochokinesis was defined as "the time taken by the individual to produce 10 utterances of /pa, ta, ka/ or as the number of /pa, ta, ka/ utterances produced by an individual within 10 seconds". It was measured by 'time by count' procedure given by Fletcher.

Speech intelligibility was defined as a measure indicating how well the speaker could make himself/herself understood by a group of listeners. To assess speech intelligibility 30 disyllabic words were used, and it was assessed with help of 3 experienced listeners appropriate procedures were applied.

The study revealed the following:

- a) The hearing impaired subjects had poor oral diadochokinesis (slower rate) as compared to normal.
- b) The diadochokinetic rate showed a high negative correlation with hearing loss indicating that a good pure tone average is associated with better oral diadochokinesis and hence better motor control abilities.
- c) A high positive correlation was obtained between oral diadochokinesis and speech intelligibility scores indicating that children who had higher diadochokinetic rate also had better speech intelligibility.

Based on the results of the study following conclusions were drawn:

Abnormal hearing affects the individual's ability to perform rapid and alternate oral movements. The ability to perform the oral diadochokinesis decreases with the increases in the severity of the hearing loss. Good positive correlation between the speech intelligibility and oral diadochokinesis hints that speech therapy should also aim at improving the diadochokinetic syllable production rate of the hearing impaired speakers. Articulation drills which facilitate motor co-ordination and speed may help the hearing impaired speakers to increase their diadochokinetic rate, plus the aberrant speech respiratory patterns present if any in the speech of the hearing impaired should be modified to improve the oral diadochokinesis.