# Temporal - Acoustic Measures in the Speech of Stutterers and Normally Nonfluent Children

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Historically more attention has been paid to adult stutterers than to young stutterers. Stuttering is a disorder of early childhood. Available data show that approximately 75% of reported cases of the disorder develop between the second and seventh year of life (Andrews and Haris 1965). Children during this period experience dysfluencies, some of which are similar to stuttering. Johnson refers to this period as a period of normal non-fluency. It has been difficult to diagnose normally non-fluent children from stuttering children. Though some attempts have been made to differentially diagnose stuttering and normal non-fluency it is not yet very clear.

The present study is an attempt to measure the acoustic temporal parameters in the speech of normally non-fluent and stuttering children and to find out whether these features assist in differentially diagnosing stuttering and Normal non-fluency.

Two normally non-fluent children and two stuttering children with an age range of 6-7 years and with no other speech or hearing disorder served as subjects. The material comprised of pictures of those Kannada words which consisted of all consonants in initial and medial position and pictures for story narration.

The subjects were seated comfortably and were instructed to name the pictures and narrate the story IThe pictures were presented one at a time). All these were recorded on a high fidelity magnetic spool and were subjected to spectrographic analysis. Wide band bar type of spectrograms were obtained. Using these spectrograms the temporal parameters measured were

1. Vowel duration
2. Closure duration
3. Burst duration
4. VOT
5. Transition duration of F1 & F2
6. Speed of transition of F1 & F2
7. Fricative and nasal durations

Results indicated that there was significant difference between normal non-fluency and stuttering in the parameters.

1. Vowel duration
2. Burst duration
3. Transition duration of F2 and
4. Speed of transition of F1.

The other measures revealed no significant differences. Vowel duration, burst duration were longer and speed of transition was faster and transition duration was shorter in stutterers compared to Normally non-fluent children.

Also, it aids in parent counselling, in avoiding labelling of a child as a stutterer and in providing parents with more realistic expectations of fluency.

Continued research in the temporal acoustic aspects of stutterer's fluency may increase the understanding of the probable underlying speech physiology associated with both the fluent and stuttered speech of stutterers and hold diagnosic and therapeutic implications. Hence, it is suggested that the other spectral and perceptual parameters of normally non-fluent and stuttering children be studied in detail in a large population. It may provide insight into the cause of stuttering and hopefully in treatment also.