

# A Survey of the Speech Disorders of Individuals with Clefts

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## Introduction

Articulatory defects and nasal voice quality generally have been associated with the speech of individuals with cleft palates. However, it also would seem reasonable to expect persons with clefts to exhibit other speech disorders, such as stuttering and delayed speech, at least as often as that incidence shown by the general population. Indeed, Brooks and Shelton (1) have reported a high incidence of voice disorders other than nasality in a group of children with cleft palate. The purpose of this study was to survey the speech of persons with cleft lips, cleft palates, or cleft lips and palates to determine the incidence of speech disorders within this population.

## Procedure

Over the past 10 years more than 1000 persons with cleft lips and palates have been examined at the Lancaster Cleft Palate Clinic by one of the present authors (R.T.M.). These persons were of various ages and at various stages of treatment of the cleft. Some had received previous speech therapy at the time of examination while others had not.

The data required for this survey were obtained from the speech evaluation reports written at the time of diagnosis. Articulation defects, nasality, articulation defects plus nasality, stuttering, cluttering, delayed speech, voice disorders (other than nasality), cerebral palsy, and disorders associated with bi-lingualism were the categories used. Those persons exhibiting adequate speech in the opinion of the examiner were also tabulated. No distinction was made concerning the severity of the cleft other than classification of cleft type by the Veau system and use of two other categories: palatal insufficiency and miscellaneous. The group classified as palatal insufficiency had no structural cleft; the miscellaneous classification included various types of labial and palatal anomalies such as cleft lip only, high-arched palate, and combination of cleft lip with bifid uvula.

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## Results and Discussion

Table 1 shows the distribution for age and sex of the large sample used in this study. The high number in the two youngest categories undoubtedly reflect the fact that the data were obtained from a clinic providing treatment. The distribution for sex is consistent with the findings of Hixon (2), Kessler (3), and Morley (6). In each of those studies more males were found with clefts than females.

The distribution of the subjects used in this survey according to sex and classification of cleft is shown in Table 2. The unilateral cleft lip and palate was most common among males (41.9%) and among the total group (34.1%), while clefts of the palate only occurred most often in females (38.7%). These percentages are consistent with the findings of Mazaheri (4) in an earlier survey of the Lancaster Clinic patient group.

The incidence of speech disorders for the subject group according to sex is presented in Table 3. As anticipated, the combination of articulation defects with nasality was most commonly found. The next most frequently reported problem was nasality alone. In both of those categories the sex distribution was nearly equal. Misarticulation without nasality was the third most common disorder, occurring slightly more

TABLE 1. Distribution of subjects according to age, in years, and sex.

<i>Age</i>	<i>Males</i>		<i>Females</i>		<i>Total</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
5-10	217	35.2	127	28.5	344	32.4
11-20	220	35.7	168	37.8	388	36.6
21-30	88	14.3	74	16.6	162	15.3
31-40	43	7.0	47	10.6	90	8.5
40 and older	48	7.8	29	6.5	77	7.3
Total	616	58.0	445	42.0	1061	

TABLE 2. Distribution of subjects according to cleft type and sex.

<i>Cleft Type</i>	<i>Males</i>		<i>Females</i>		<i>Total</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
Soft palate cleft	35	5.7	49	11.0	84	7.9
Palate only cleft	117	19.0	172	38.7	289	27.2
Lip and palate cleft unilateral	258	41.9	104	23.4	362	34.1
Lip and palate cleft bilateral	146	23.7	62	13.9	208	19.6
Palatal insufficiency (noncleft)	41	6.7	42	9.4	83	7.8
Miscellaneous	19	3.1	16	3.6	35	3.3
Total	616	58.0	445	42.0	1061	

TABLE 3. Distribution of subjects by sex and by type of speech disorder.

<i>Speech Disorder</i>	<i>Males</i>		<i>Females</i>		<i>Total</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
Articulation defect and nasality	167	27.1	126	28.3	293	27.6
Nasality	134	21.8	94	21.1	228	21.5
Articulation defect	109	17.7	65	14.6	172	16.5
Delayed speech	6	1.0	6	1.3	12	1.1
Voice disorders	3	.5	3	.7	6	.6
Stuttering	3	.5	1	.2	4	.4
Cerebral palsy	2	.3	1	.2	3	.3
Bi-lingualism	3	.5	0	.0	3	.3
Cluttering	2	.3	0	.0	2	.2
Adequate speech	187	30.4	149	33.5	336	31.7
Total	616	58.0	445	42.0	1061	

in males (17.7%) than females (14.6%). Delayed speech was observed in approximately one percent of the population (1.0% for males and 1.3% for females). This was slightly higher than the Mid-Century White House Conference survey (5) reported for the general population. However, this slightly higher occurrence may be explained by the known higher incidence of hearing loss present among cleft palate subjects than for the general population. Voice disorders other than nasality were noted only slightly more often than the incidence rate reported by the Mid-Century Conference survey and were not diagnosed as frequently as reported by Brooks and Shelton (1). A small percentage of the population exhibited stuttering, cluttering, disorders associated with cerebral palsy, and disorders associated with bi-lingual homes.

The greatest number of subjects surveyed exhibited what was diagnosed as adequate speech. Again this does not mean that speech disorders are not frequently associated with clefts, but may reflect the efficiency of previous treatment and therapy.

### Summary

A survey of speech disorders associated with cleft palate, lip or combination of both was carried out on 1061 records from the files of the Lancaster Cleft Palate Clinic. Articulation defects plus nasality, nasality alone, and articulation defects alone were found to have the highest incidence of occurrence. Except for a slightly higher incidence of delayed speech, other disorders occurred at nearly the same percentage as found in the general population.

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