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IAOM INTERNATIONAL ASSOCIATION of OROFACIAL MYOLOGY

Norms For Obicularis Oris Muscular Strength For Normal Swallowing Children In Grades Three Thru Six

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There have been many publications pertaining to reverse swallowing patterns (RSP) that describe the symptoms as being the following: 1) anterior positioning of the tongue, 2) lack of molar contact while swallowing, 3) the presence of anterior or lateral movement of the tongue while swallowing, 4) the presence of circumoral pressure upon swallowing, 5) the presence of open mouth breathing, 6) anterior openbite malocclusion, 7) contraction of the mentallis muscle while swallowing, and 8) the presence of digital sucking.

Earlier studies have shown that persons with RSP may have all of the above mentioned patterns or some of them. There has also been some mention in the literature pertaining to generalized muscular weakness and facial asymmetry accompanying this swallowing behavior. Picard (1959) refers to the lower labial tissue as being somewhat everted, and also describes the lips as being apart. The general explanation for this particular form of the labial tissue is often attributed to digital sucking, and persistent anterior movement of the tongue. Some of the leading researchers in this area such as Straub (1962) and Barrett and Hanson (1974) include in their regimen specific exercises for strengthening the orbicularis oris muscle, however normative data for orbicularis oris strength has been unavailable for individuals with RSP as well as individuals with non-reverse swallowing patterns (NRSP). One of the primary reasons for being interested in obtaining norms for labial strength is because that most of the diagnostic methods for identifying the presence of RSP rely heavily on subjective observation techniques, which may lack uniformity. If labial strength has been reported as being associated with RSP, then normative data is absolutely necessary.

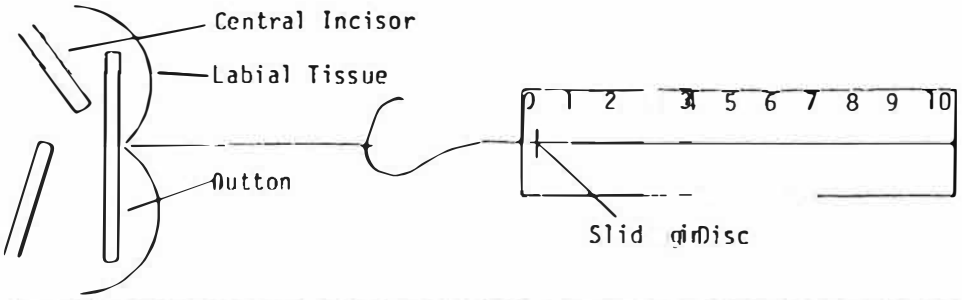
This report focuses on a study which attempts to establish norms for a group of children who had been identified as having non-reverse swallowing patterns (NRSP), and no sibilant distortions. The subjects represented school aged children in grades three to six.

METHOD

114 subjects in grades 3 thru 6 represented the NRSP sample. These subjects were tested in the Campus Learning Laboratory at the State University College at Buffalo. The subjects ranged in age from 8 to 13 years.

Each of the subjects was given a button 28 mm in diameter with a string attached to it. They were instructed to insert the button immediately behind the labial tissue. One end of the string was attached to a scale for the purpose of measuring in pounds the amount of pressure the labial tissue could withstand. The subjects were instructed to hold on to the button as long as they could. The scale had a movable disc which remained stable after maximum pressure had been obtained, which made it possible for obtaining the labial pressure readings. Figure 1 displays the scale and button.

Figure 1.



RESULTS

The results of the labial measurements for the 114 NRSP subjects ranged from 1.75 lbs. to 8.75 lbs., producing a mean of 4.45 lbs. Further investigation of the NRSP subjects attempted to determine the existence of significantly different means for each grade level. This data when subjected to unpaired t test statistics did not reveal significant differences between any two grades.

TABLE 1
Labial Pressure Results by Age for the NRSP Subjects

CA	N	Mean	S.D.
8	20	4.64	1.35
9	21	4.65	.98
10	24	4.23	1.16
11	29	4.27	1.46
12	17	4.09	1.20
13	3	4.66	.62

SUMMARY AND DISCUSSION

Subjects were used for establishing norms for labial strength. The group consisted of 114 NRSP subjects, all of whom were elementary school children in grades 3-6. The data of the 114 NRSP subjects shows the mean labial strength as being 4.45 lbs. There also appears to be some support for using the labial strength measurements as part of the diagnostic criteria for identifying the presence of RSP. In addition, it is suggested that a measurement level well below the normative mean can be used successfully while a measurement of 4 lbs. and above could represent normal labial pressure. This procedure is strongly suggested in as much as most assessment presently utilized in determining the presence and/or absence of RSP have been essentially subjective observations. If the procedure mentioned herein is utilized, at least one objective measurement can be used along with the subjective observa-

tions. This writer feels that labial strength can be used along with the traditional observations for the successful diagnosis of reverse swallowing patterns.

BIBLIOGRAPHY

Barrett, R. H. and Hanson, M. L. **Oral Myofunctional Disorders**. C. V. Mosby Co., Saint Louis, 1974.

Straub, W. J. **Malfunction of the Tongue. Part III. American Journal of Orthodontics**, 48, 1962, 486-504.