Research Article

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Vevi Hahn

Hermann Hahn

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Efficacy of Oral Myofunctional Therapy

Vevi Hahn, PhD
Hermann Hahn, DDS

After ten years of practicing oral myofunctional therapy (MFT) in our office, we contacted 131 finished cases. Of the 131, ninety-eight responded to the invitation to come for a post-treatment check-up. Three basic questions were asked of these patients:

1. Can reflex patterns such as swallowing and breathing be corrected and stabilized permanently? Can this be achieved regardless of age of patient?

2. Does the success of the therapy endure over the years, or are there relapses following treatment deemed successful at its completion?

3. What are the patients' subjective perceptions of the program's effectiveness?

PROCEDURES

To answer the first two questions, we used the same diagnostic procedures as for the original examinations of the patients. A dentist reviewed occlusion and dental conditions, a speech pathologist examined articulation, and an orofacial myologist examined the position of the tongue at rest, the swallowing of saliva, liquids, and solids, and examined chewing. The Payne technique and palpation were used in the evaluations. Habitual mouth closure and nose breathing were assessed, and

measurements of the strength of the orofacial muscles were made using a Myo-scanner and a spring scale. These measurements were compared with pretreatment data on the patients.

The patients were divided into three age groups: 6 to 11 year olds; 12 to 16 year olds; and 17 to 57 year olds. The three groups demonstrated differing needs for myofunctional therapy, differing degrees of maturity, motivation, understanding, and body awareness. Table 1 shows the age distribution.

Treatment of the youngest group: The principal aim of therapy with these children is to guide orofacial development and maturation. Therapy provides a basis for speech therapy and for orthodontic treatment.

Treatment for teenaged group: Teenagers are readily motivated by focusing on improved appearance. Treatment may prepare the patient for orthodontic treatment, may be connected with orthodontic relapse, chronic lipps, mouth breathing, or damage due to harmful body postures.

Treatment for adults: Problems common with adults are threatened or missing teeth due to periodontal pathologies, difficulties with partial or total dental replacements, functional disturbances which express themselves through pain in the face or head, and temporomandibular joint problems. There may be parafunctional behaviors needing attention, such as teeth grinding, tongue or cheek sucking, nail biting, or conditions such as mouth breathing, phoneme distortions, and psychological problems. Adults were often skeptical and asked, whether reflexes and habits could be changed at their ages. They can, with proper cooperation.

RESULTS

Question 1: Can patterns be successfully and permanently modified? The findings are reported by age-groups.

Group I: 6 to 10 year olds

1. Eighty-one percent of these children were still swallowing saliva, solids and liquids correctly. Nineteen percent had not completely habituated new swallowing patterns and could be termed "not completely corrected." They may have been swallowing food correctly but liquids incorrectly, for example,

2. Seventy-two percent maintained cor-

AGE DISTRIBUTION

Table 1

rect tongue resting position during the daytime, and in the morning upon awakening. Children consistently answered their mothers' questions with "My tongue is in the right place."

3. Two-thirds of the children had habituated consistent breathing through the nose. Among the remaining third, most breathed predominately through the nose, but displayed mixed breathing patterns. Only 8% demonstrated no change from mouth-breathing.

4. Improvement in muscle tone was evident in 72% of the treated children.

Group II: 12 to 16 year olds

Results with this group do not differ significantly from those of Group I..

1. Eighty-three percent had gained a permanently normal physiological pattern of swallowing.

2. Seventy-one percent maintained correct lingual rest positions, day and night.

3. Sixty-four percent had retained their muscle patterns in lingual and facial muscles.

4. Thirty-six percent had improved patterns significantly.

Group III: Adults

1. One hundred percent had normalized their patterns permanently for saliva, food and liquids.

2. Eighty-seven percent were continuing to maintain correct tongue resting position.

3. Eighty-six percent were breathing nasally.

4. Sixty-seven percent were demonstrating improved orofacial muscle patterns (*Table 2*).

and stable success of MFT over the years, or was there a partial relapse, and why? We examine the following two sets of data: the final examination after each completed MFT, and the examination connected with the 10-year study.

1. All the 6 to 11 year olds except one had learned the physiological act of swallowing by means of MFT. The later examination showed a permanent change of the distorted pattern of swallowing in 81%. In 19%, the new swallowing pattern had not been habituated completely, i.e. not in all media. Sometimes they extended their tongues to the cup when drinking.

2. After completion of MFT, 79% of the children maintained a correct tongue position. At the later examination, 72% did. A correction was termed "partial," when the tongue was not always positioned correctly during daytime or when the person awoke. Thus, the correct function of swallowing remained permanent more often than the correct position of the tongue. We interpret this as follows: the process of oral swallowing can be trained with more awareness than can the rest position of tongue. Secondly, the physiological position of the tongue is correlated with habitual lip closure and normal breathing.

3. While less than 50% of the children had changed to nose breathing through therapy, two-thirds of the children breathed through the nose during the later examination. Breathing through the nose had become more habitual over the years. An additional 26% breathed predominantly through the nose. Only 8% of the children had no change. The better result during the later exami-

PERMANENTLY CORRECTED

	Group I	Group II	Group III
Swallowing pattern	81%	83%	100%
Rest position of tongue	72%	71%	87%
Breathing	66%	71%	86%
Orofacial muscle balance	72%	63%	67%

Long-term Study

Table 2 - Percents of permanent corrections by age group and function

DISCUSSION

For patients of all ages, the MFT was not the single treatment, but part of a team treatment concept, with contributions from the dentist, orthodontist, prosthodontist, oral surgeon, and speech pathologist. This long-term study investigated the practicality and effectiveness of MFT in correcting orofacial dysfunctions. It demonstrated that, indeed, a permanent change of oral reflexes and a maturing of oral functions could be achieved at any age.

To determine permanence of results, we discuss only the biggest group — the children. Was there a continuing

nation is apparent. This can be explained by the phenomenon that as the children get older (at about 12 years), the lymphatic tissue recedes and the relative dimensions within the mouth become more favorable for the tongue.

4. Orofacial muscle balance remained stable in 72% of the children and had been improved in all of them. There was no difference between the measurements after treatment and those of the long-term control. The measurement of orofacial muscle patterns was done by myoscanner and force scale. Measurements consisted of force of orbicularis oris when pressing lips together,

resistance of orbicularis oris when pulling a button, force of masseter muscles (isometric contraction), force of mentalis exerted during swallowing, force of tongue when pressing anteriorly against the gauge. Of importance is not the general level of the muscle tone, but the relation between these muscles. We found in an earlier study with normal patients an average relationship of tongue pressure (100), lip strength (77), each masseter (79), and mentalis (3). We compare this measurement with clinical observation and palpation.

The comparison between the results at the end of therapy and those after several years demonstrates the necessity of a long-term surveillance of the habituation of newly learned tongue functions, breathing, and lip closure. The surveillance should be long enough so that all treatments with which the MFT has been integrated are completed. That means that the controls should continue until orthodontic treatment is finished.

We believe that this long-term study answers the skepticism of critics and demonstrates beyond doubt, that orofacial functions can be actively changed by training. These results are supported by the Position Statement of the American Speech Language Hearing Association of 1990, which states, *There is published research that demonstrates that oral myofunctional therapy is effective in modifying disorders of tongue and lip posture and movement.*

Some critics claim that the MFT is a form of therapy with little promise and call it a questionable procedure, unacceptable for children and parents. Concerning this, the results of our poll concerning the subjective acceptance and the judgement of success among patients show that 61% rated the results of orofacial myofunctional therapy as very good, 30% satisfactory. Seventy-five percent found the effort required appropriate; 22% rated it tolerable.

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