

Clinical Perspective

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Forum

Let's Take A Rational Look at Myofunctional Therapy

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The fact that any controversy exists in regard to myofunctional therapy is indeed surprising. Consideration of the factors involved — the mechanics of the normal swallow, the mechanics of the deviate swallow, the claims of myofunctional therapy and the evaluation of these claims as sound physiological principles — makes the answer quite clear and facilitates an objective evaluation of myofunctional therapy.

The normal swallow is two phase. In the initiation of the swallow, the tip of the tongue touches the cinguli of the lower incisor teeth and not the incisive papilla as the speech pathologist erroneously imagined some years ago. (It was a natural mistake. For years they have taught tongue control in phonetics by starting with tip at the incisive papilla.) As the swallow progresses, the dorsum of the tongue rises to touch the palate.

In the second stage of the swallow the tip flips up to start the peristaltic wave and the bolus of food back toward the oropharynx.

For the purpose of this paper only one type of deviate swallow is considered significant, that which leads to dental open-bite. In the tongue thrust swallow the tongue is seen to flatten instead of rising, and it is seen to spill over the buccal teeth or between anterior teeth or both. If the tongue activity is vigorous, there invariably will be an open-bite with anterior open-bite being most commonly manifested.

As far as this author is concerned, no other manifestations of deviate swallow hold any significance since they do not affect the occlusion.

Therefore, the only proof which is acceptable for absence of tongue thrust is tooth to tooth or tooth to tissue contact during swallowing. That is, when teeth are in contact no open-bite exists anteriorly or buccally.

Since Straub's 1960 publication (1) on tongue training to correct anterior open-bite and eliminate the deviate swallow, many similar publications have appeared. Most have been essentially handbooks on how to train the tongue. In all those years not one scientifically documented study has been published to show even minimal success with myofunctional therapy.

It is truly amazing that a technique producing no demonstrable success in 15 years' time could still be viable today. What, of course, is not a mystery is the reason why the technique has failed. Simply stated, one cannot expect success when one violates the physiological law which affirms, "It is impossible to retrain a reflex act by cortical activity." Or more simply, an involuntary act cannot be permanently changed by conscious activity. Swallowing is a reflex act. To change it one must bring swallowing to the conscious level at all times — or one must provide a subconscious reminder every time a person swallows. The former would be impossible to achieve; the latter is also impossible with the efforts applied in myofunctional therapy.

Myofunctional exercises succeed only in bringing swallowing to the conscious level during the time of the exercise activity. In the vast majority of cases a successful swallow is being made; hence, the delusions of achievement. However, soon after practice ceases, when swallowing returns to involuntary control, the patient reverts to pattern.

Energetic exception must be taken to the usual evidence that is being presented as depicting success with myofunctional therapy.

Among other things the therapist is taking credit for having induced normal eruption. Nonsense! He will show incisor open-bite pictures at age six or seven and then the same case a year or two later with some over-bite.

Since Nature performs the same miracle countless times each year, I, for one, refuse to be duped by such confused reasoning.

Further, those claiming success with myofunctional therapy are attempting to take credit for the spontaneous correction of open-bite and apparent change in swallowing pattern which occurs during physiologic maturation in a significant number of cases. As Brodie, (2) Subtelny (3) and others have pointed out, there are far more tongue thrusters

evident in a young population sample than there are in a mature population sample. Brodie (2,4) has written often of the change in muscle influence on teeth with growth and maturation. That is, the influence on the teeth changes from lingual to labial. Recently Posen (5) with his "pometric" (perioral Musculature) studies has documented this phenomenon beyond a question. Since few, if any, of the adult samples referred to above even know what myofunctional therapy is, certainly we cannot permit the therapist to be so crass as to credit his intervention as being responsible for the spontaneous corrections.

Most success is claimed in those cases which are concurrently undergoing orthodontic treatment. Quite naturally the highest percentage of "success" would occur in these cases, as it is the action of the appliances which is producing the change in overbite. As an orthodontist, it is proper to chide our group for a posture of naivete which approaches the ridiculous.

We have forgotten our basic lessons in physiology and believed that we could repeal one of Nature's basic laws. We have produced changes with our appliances and permitted others to take credit for these changes.

Mechanically excluding the tongue from a space and causing that space to be closed will frequently result on the tongue altering its function. Hence, it is relatively easy to correct lateral open-bite simply by causing teeth on the affected side to come into occlusion at the instant of swallowing. Under such circumstances the patient would bite the edge of the tongue if the thrust were continued. Whether this action of just the elimination of the space accounts for the tongue's readaptation is immaterial.

Occasionally one encounters an orthodontist who claims his mechanics are more effective as a result of a concomitant program of myofunctional therapy. If he were to take a control group and work as hard on general cooperation with the treatment mechanics he could diminish no difference in response. The fact is that his patient, who is showing excellent progress, is not only an excellent patient with regard to cooperation with the myofunctional exercise, but much more importantly, he is also an excellent patient with regard to cooperation with the treatment mechanics. It is, also, for this latter reason that the treatment is progressing so well and not the effect of some myofunctional program.

One of the first lessons in model diagnosis that the tyro in dentistry learns is that teeth erupt until they occlude with teeth in the opposing arch. It is recognized that in the Cl. II case incisors may erupt until the lower incisors contact the palate and the upper incisors until they are impeded by the curl of the lip. Therefore, an open-bite at any position in the dental arches is pathognomonic of a tongue thrust swallow or some digital sucking habit!

If the sucking habit or the tongue thrust swallow are eliminated, the open-bite will always close by the passive eruption which tooth physiology demands.

Thus, successful elimination of a tongue thrust swallow by means of myofunctional therapy must be characterized by the elimination of the anterior open-bite through the use of myofunctional exercise and nothing else. Such a case has never been demonstrated.

For those readers who take exception to the author's view, the following experiment could resolve whose opinion is the more correct. Before starting the experiment, permit me to observe that I have issued this same challenge for over 15 years and have yet to be called on it.

The therapist should select 10 cases prior to treatment. I must impose certain conditions — all patients be nine years old or older. This would obviate misjudgment of bite closure due to normal physiologic eruption. The only records needed would be pre- and post-treatment photographs of the incisor teeth — not photos made from straight on, but with the head tipped back 45° to 60° to show the true overbite condition of the incisor. Figure 1 demonstrates such a view. Further, a period of

Figure 1. Before and after treatment photographs of the same case.



Figure 1A



Figure 1B

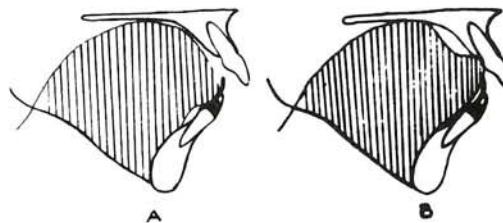
one year should be more than sufficient time to determine success or failure. We do not want to run the risk of someone taking credit for a spontaneous correction after several years. Of course, no orthodontic treatment is to be given during the experimental time. Thus the only allowable variable is the imposing of a program of myofunctional exercises on the existing swallowing pattern. I contend that of the 10 cases not one will show a remission of the open-bite. The percentage of success would be zero.

So as not be criticized as a negative clinician, I offer a suggestion for a very positive means of control of tongue thrust. It is not a new method. Dr. Edward H. Angle was using this method at about the turn of the century.

The diagram in Figure 2 shows the placement of lingual tongue spurs on lower incisor bands (and later on a lower fixed lingual retainer). The spurs span most of the interincisal space. They are curved toward the tongue, cut and left as sharp as the pliers cuts them. Contrary to first reaction these spurs are rarely, if ever, difficult for the patient to adapt to. A patient may have slight irritation for a day or two the same as they might have from playing the tip of the tongue against a new restoration and for the same reason. Never will there be trauma due to impalement during swallowing.

The spurs work beautifully to promote an ideal swallow. They force the tip of the tongue on to the cinguli of the lower incisors. Now when a swallow starts, if the tongue were thrust the tips would impale on the spurs. The subconscious is aware of the spurs.

The tongue will not go forward. If the tongue continued to flatten and not go forward, the bulk would be thrown back into the throat and the swallow, at best, would be uncomfortable. The tongue cannot go down since the floor of the mouth would interfere.



Figures 2A and 2B

This leaves only the possibility of the proper movement; namely, the tip remaining on the cinguli with the dorsum rising to strike the palate, as in Figure 2A. In the second stage as the tip flips up to start the peristaltic wave, it gently brushes over the spurs, as in Figure 2B. This serves as a subtle reminder to the subconscious how the tongue is meant to function. Further, this reminder occurs every time the patient swallows, whether awake or asleep.

The spurs are used on the treatment appliance and are then placed on the lower fixed lingual for an accumulated time of about three years. It is reasoned that if a person swallows correctly 600 to 2,000 times a day for three years and is reminded each time at the subconscious level, then the possibility of permanently changing the pattern is excellent. Under 12 years of age the spurs have been 90 per cent successful regarding permanent correction of tongue thrust swallow. From 12 to 15 years of age they have been about 85 percent successful and after 15 years of age, about 75 percent successful.

The case demonstrated in Figure 1 is mute and undeniable evidence that the tongue thrust swallow has been permanently corrected as the patient has been without tongue spurs for three years without maxillary retainer for two years.

The straight-on view in Figure 3 is the view presented by the myofunctional therapist as showing successful bite closure. The photograph is grossly misleading due to the posture of the head. When the head is tipped back to reveal the true overbite picture Figure 3B, one can readily see that the tongue thrust still persists as the lower incisors neither contact the upper incisors or the palatal tissue when all the other teeth come into occlusion. This is irrefutable evidence of the persistence of the tongue thrust swallow.

A recent case seen by the author is of interest. On examination, the patient depicted in Figure 4, when asked to swallow, responded in the manner seen in Figure 4A. That is the tip of the tongue positioned above the incisive papilla. My immediate comment to the parent was, "Your child has had myofunctional therapy with regard to her swallowing." The mother was pleasantly surprised and commented that the child had had two years of such therapy.

The child was asked to continue holding the cheek retractors with no other directions being given. When she found it necessary to swallow her saliva, the exposure in 4B was made.

This case serves as a dramatic reminder that when swallowing is brought to the conscious level, the subject can perform like a trained animal to reproduce a previously conditioned response. However, when swallowing reverts to the subconscious, tongue function reverts to pattern — a tongue thrust swallow!

Figure 3. Two different views of the same case.



Figure 3A



Figure 3B

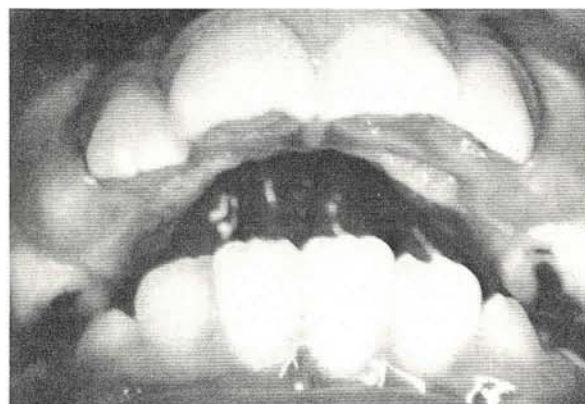


Figure 4A

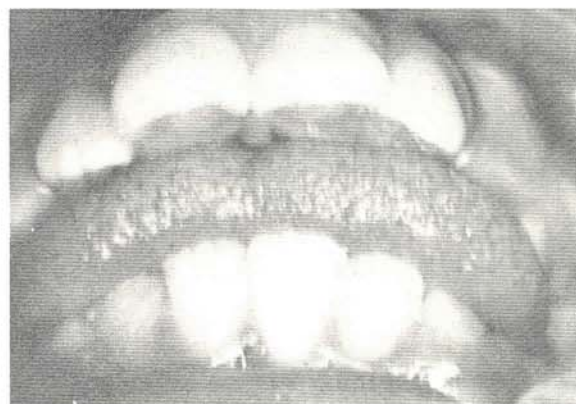


Figure 4B

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