

Tutorial

## Lingual resting postures

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## Table Clinics

The following are summaries of Table Clinics presented at the annual convention of the International Association of Orofacial Myology held in Kansas City, Missouri, June, 1992. (Ed.)

### Lingual Resting Postures

Katha Phair

Whenever the mouth is not talking, swallowing, drinking, chewing, kissing, yawning, sneezing, laughing or singing, it should be resting. Resting is a very important function of the mouth. Function means the specific, natural, or proper action or activity; to perform as expected or required. When the normal resting function of the mouth is performed correctly it has medical, dental, anatomical, physiological and cosmetic benefits.

#### STEPS OF NORMAL RESTING POSTURE

It doesn't require any muscles for the mouth to drop open. Gravity alone will do that. But it does require well toned muscles to close the mouth and maintain it in its normal resting posture. There are three muscle groups that provide for a normal resting posture: the lips, the tongue and the jaw muscles. The steps for a normal resting posture are to close the mouth, suck the tongue against the rugae, allow the teeth to separate, and maintain good head and body posture.

##### 1) *Close the mouth*

In the first step, the lips close comfortably. The individual will need lip competency to achieve this. Lip competency is defined as the lower lip resting in contact with the upper lip on the upper incisors. To determine lip competency, the top lip should cover two thirds of the upper incisor tooth surface when the lips are open. The lower lip should come up during the closure and cover the lower one third of the upper incisor tooth surface.

Lips continue to grow until approximately 17 years of age. What appears to be lip incompetency in a younger child may be a case in which lips have not reached their growth potential.

The closure of the lips is multi-beneficial. One of the most important aspects of lip closure is that it promotes nose breathing. Nasal breathing is essential to the normal well-being of the body. In addition to housing our smell receptors, the nose acts as a very complex filtering system designed to clean, warm and moisten the air before it reaches the lungs. A person who lacks the filtering effect of nose breathing becomes more susceptible to upper respiratory infections. The bacteriostatic action of the nasal secretions is lost in mouth breathing, and a pathway is permitted whereby disease, particularly viral infections, may enter. When an individual does not breathe through the nose, the

turbinate become swollen and engorged. The nasal mucosa becomes atrophic from disuse. The speech may acquire a nasal tone. The sense of smell is dulled and with it taste sensations and appetite. The nostrils become narrowed and pinched from disuse. On the positive side, nose breathing helps prevent the above conditions. Also, studies have shown that 40% more oxygen is delivered to the brain per breath when a person breathes through the nose instead of the mouth. Research indicates that nose breathing, with its increased delivery of oxygen, helps to reduce stress. The majority of individuals that come to my office do not know that is normal to breathe habitually through the nose, let alone the benefits of nose breathing. Individuals not only need to be encouraged to breathe through their nose and educated on the benefits of nose breathing, but should be encouraged to clean their nose daily so that nasal breathing will become easier.

From a physiological standpoint, normal lip resting posture aids in the development of the upper lip muscles, preventing shortening of the upper lip and its subsequent elevation over the upper incisors. Keeping the lips closed aids in the growth and development of the lower lip muscles, keeping the lower lip toned and inverted so that it is positioned on the upper incisors not under them.

Dentally, keeping the lips closed helps to hold the anterior teeth in place, reduces plaque formation and helps to keep the gingiva moist. Closure of the lips provides support for the mandible, maintains it in its physiologic rest position, and aids in its growth and development.

Lip closure is not only beneficial for medical, dental, anatomical and physiological reasons, but it is cosmetically pleasing as well. When the lips are parted the appearance is dull and drawn. In cartoons, movies, books or comedy, when the creator wants to depict the character as stupid or slow, the character is portrayed with lips and jaw hanging open. "It is better to keep one's mouth shut and be thought a fool than to open it and look like one."

Lip closure is preparatory for the second step in the process of achieving a normal rest posture. Closure of the lips provides a labial seal to assist with the suction of the tongue onto the rugae.

##### 2) *Suck the tongue onto the rugae*

It is normal to have a very mild suction on the anterior



portion of the tongue during rest. The suction serves to hold the tongue on the rugae counteracting the downward pull of gravity.

The normal resting position of the tongue requires and is a product of normal muscle tone within the tongue. The tongue is an epithelial sac filled with muscles. These muscles allow for tongue movement as in speech, swallowing or chewing and affect the tongue's shape and position. The muscles that comprise the tongue are divided into two categories: the intrinsic muscles which start and end solely within the tongue and the extrinsic muscles which originate outside of the tongue and run into it.

The intrinsic muscles help to shape the tongue. The extrinsic muscles shape as well as control the tongue's position due to their attachment to the skull, the mandible and the hyoid bone. When the intrinsic and extrinsic tongue muscles are toned properly they hold the tongue in its correct or neutral position. The neutral position is defined as the physical relationship between the back sides of the tongue and the upper molar area with the front of the tongue positioned on the rugae a few millimeters behind the upper incisors.

The neutral position is an important component in the understanding of all oral functions. The tongue rests in the neutral position. Chewing and swallowing food, swallowing drinks and the suction and swallowing of saliva all occur in the neutral position. In mature connected speech, all sounds except the /th/, are based in the neutral position.

There are numerous benefits gained by the correct tongue resting position. When the tongue is sucked up on the rugae it helps to maintain the mandible in its physiologic rest position thereby aiding in its normal growth. The hard palate, the maxillary sinuses, nasal cavity and maxillary arch are also positively affected. The correct tongue resting position supports the muscle development in the intrinsic and extrinsic tongue muscles subsequently helping the tongue to remain in the neutral position. Research indicates that as little as 5 grams of constant pressure is required to inhibit the eruption of the anterior teeth and 15 grams of constant pressure to inhibit the eruption of the posterior teeth. For normal tooth eruption and dental stability, the tongue needs to be in the neutral position, not positioned against or between the teeth. It is cosmetically unattractive for the tongue to be showing between the teeth and in some cases can be quite painful. A young patient, with a pronounced forward tongue posture, was referred to my office for tongue repositioning after two trips to the surgeon to have his tongue stitched back together.

Many of the cases that are referred for orofacial myofunctional therapy exhibit a tongue that is large, flat, wide and forward in appearance. What at first glance appears to be an excessively large tongue may be

misdiagnosed as macroglossia. It should be noted that the tongue grows faster than the mandible and is its adult size by age 8 years. The mandible continues to grow through the teens and into the early 20's. To determine if there is a true macroglossia, ask the individual to bite down. If a person can bite down on the back teeth and not bite the tongue, there is no macroglossia, but a flaccid tongue with low tone affecting its shape and position.

### 3) *Relax the jaw muscles allowing the teeth to separate*

The jaw closing muscles, the masseter, temporalis, and medial pterygoids act as a sling for the mandible. The mandible is a heavy suspended bone subject to downward gravitational pull. The tone in the jaw closing muscles, coupled with the closure of the lips and the suction of the tongue onto the rugae help counteract the effect of gravity, allowing the mandible to drop slightly, between 1.3mm to 3.0mm. This results in the separation of the teeth and creation of freeway space. During normal function throughout the day and night, the total times the teeth come into contact, is approximately 6 minutes. Resting with the teeth parted is invaluable information for the individual that reports bruxing or clenching during the day or night. It is beneficial to the temporomandibular joints in general. In a normal resting posture, the temporomandibular joints should be "loose-packed" so that there is sufficient space within the joint capsule to allow the retrodiscal tissue to be positioned properly and for the articular disc to be in its normal place on the condyle.

### 4) *Maintain good head and body posture*

When an individual has forward head or torso carriage, the tongue, due to the effect of gravity, has a tendency to be positioned down and forward. The weight of the tongue resting on the mandible is oftentimes enough to depress the mandible slightly and open the mouth, resulting in mouth breathing. Studies show that in habitual mouth breathers, the face can become markedly elongated and narrowed due to the mandible being dropped into an open position and due to the constriction of the upper arches and palate because of the low forward tongue posture. To help maintain the normal rest position of the lips, tongue and mandible, good head and body posture should be stressed. An upright head and body posture looks attractive and projects an air of confidence.

When evaluating rest posture, determine whether the presenting problem is due to a medical etiology or is muscular in nature. The case may have components of both. Individuals with medical problems should be referred to the appropriate medical specialist. Once an adequate airway has been established, the orofacial myofunctional therapist can begin working on muscle development and retraining.