

INTRODUCTION

Swallow Right is a tongue thrust correction program useful for young children, adolescents, and adults, both in individual and small-group therapy.

This manual is divided into five parts:

1. An extensive introduction for therapists to the definition, etiology, anatomy, diagnosis, and treatment of tongue thrust swallowing patterns and resting postures
2. Clinical procedure notes for the therapist to accompany each lesson
3. 12 therapy lessons for young children
4. 12 therapy lessons for adolescents and adults
5. Appendixes that include forms and logs useful during therapy, as well as suggestions for eliminating thumb and finger sucking and nail biting

WHAT IS TONGUE THRUST?

Tongue thrust is one of several terms describing a swallowing pattern in which the individual pushes the tongue against or between the teeth. This disorder has been referred to in the literature as *deviate swallow*, *deviant deglutition*, *reversed swallow*, *perverted swallow*, *oral myofunctional disorder*, *visceral swallow*, *infantile swallowing pattern*, and *abnormal swallow*. A review of the literature indicates that each author was describing essentially the same oral behavior.

The term *tongue thrust* is most widely used because it describes the behavioral pattern simply and effectively. The primary characteristic is the protrusion of the tongue while swallowing and at rest. This term has certain limitations, however, because there are a number of muscles and anatomical structures in addition to the tongue that may function differently in a correct swallowing pattern versus an incorrect one. In recent years, the term *orofacial myofunctional disorder* has gained popularity because it is more inclusive of the associated oral behaviors and musculature than is tongue thrust. There is also widespread agreement among specialists that the resting posture of the tongue, lips, and mandible is as important as the swallow to good speech articulation and dental occlusion.

The Correct Swallowing Pattern

Historically, most definitions of the correct swallowing pattern have included these components:

- The food, liquid, or saliva to be swallowed is gathered and trapped on the dorsum (top surface) of the tongue. The tongue is raised, and a seal is formed with the tongue in contact with the alveolar (gum) ridge anteriorly (toward the front) and touching the lingual (inside) surface of the molars and adjacent gums laterally (on the sides). The tip of the tongue presses against the spot, a position on the alveolar ridge behind the upper front teeth. The middle and back of the tongue push upward against the palate (roof of the mouth).
- The molars (back teeth) are firmly occluded (together).
- The swallow is accomplished with no tensing of the facial muscles.

Some clinicians and researchers have included the movement and/or position of additional muscles and structures. The basic elements of the correct swallowing pattern are shown in Figure 1.1.

The Incorrect Swallowing Pattern

Any deviation from the above constitutes an abnormal swallowing pattern. The characteristics most frequently associated with an incorrect swallow include the following:

- The food, liquid, or saliva to be swallowed is usually scattered throughout the mouth. The tongue is positioned against or between the teeth. It may or may not contact the lips. The muscles in the tongue appear to push down and forward instead of up and back.
- The molars (back teeth) are apart during swallowing.
- The labial (lip) and facial muscles tense, perhaps to keep the food, liquid, or saliva from being pushed forward out of the mouth.

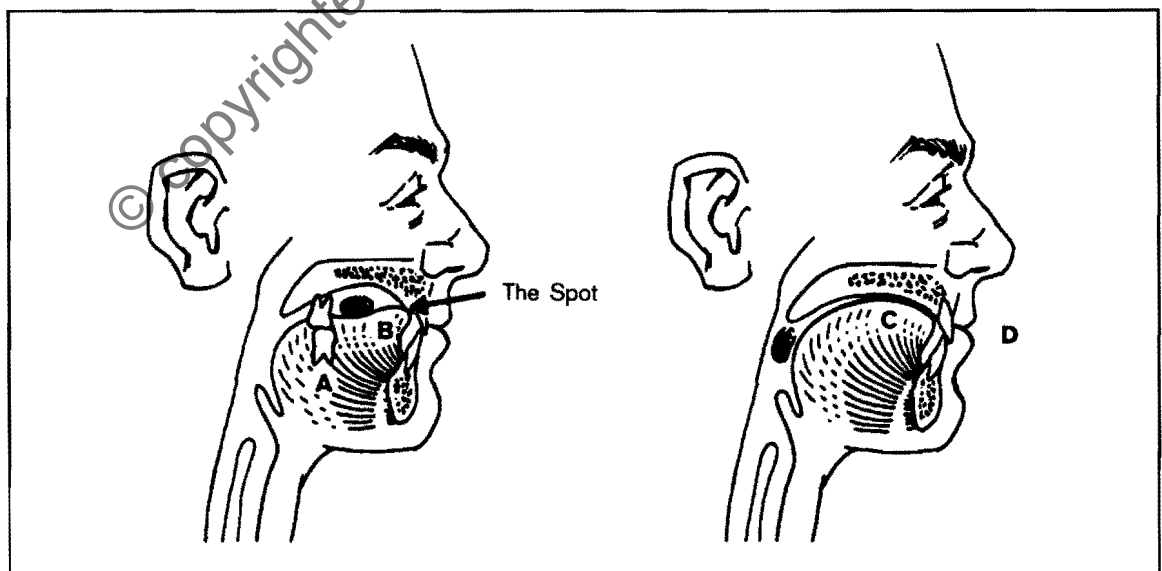


FIGURE 1.1. The correct swallowing pattern: A, back teeth are firmly together; B, tip of the tongue is on the spot; C, tongue presses against the roof of the mouth; D, lips and chin are relaxed.

The possible variations of an incorrect swallow are limitless. Barrett and Hanson (1974) have classified and described eight different types of tongue thrust and related each type to its resulting malocclusion.

A comparison of Figures 1.1 and 1.2 indicates the differences between tongue placement and movement in the correct and incorrect swallowing patterns.

ETIOLOGY

Patients and parents always want to know what causes tongue thrust. There are no easy answers. The books and articles listed in the References and Recommended Reading section at the end of the book offer much insight into etiology, correlation between swallowing and speech, and the declining incidence of orofacial myofunctional disorders during the mixed dentition years. When a clinician is considering doing tongue thrust therapy with a young child, it is very important that he or she understands and appreciates the incidence studies.

All children are born thrusting. Most of them switch over to a mature swallowing pattern by age 10. In determining etiology, the clinician should try to identify factors present during the mixed dentition stage that might have prevented the patient from developing the correct swallowing pattern. The following are the most commonly cited causes of tongue thrust in the literature:

- Improper infant feeding
- Enlarged tonsils and adenoids
- Mouth breathing
- Thumb and finger sucking
- Genetic factors, such as inherited tendencies toward malocclusion

Figure 1.3 shows the causes of tongue thrust. For in-depth discussions of etiology, see Hanson and Barrett (1988), Pierce (1978), and issues of *The International Journal of Orofacial Myology*, from 1975 to present.

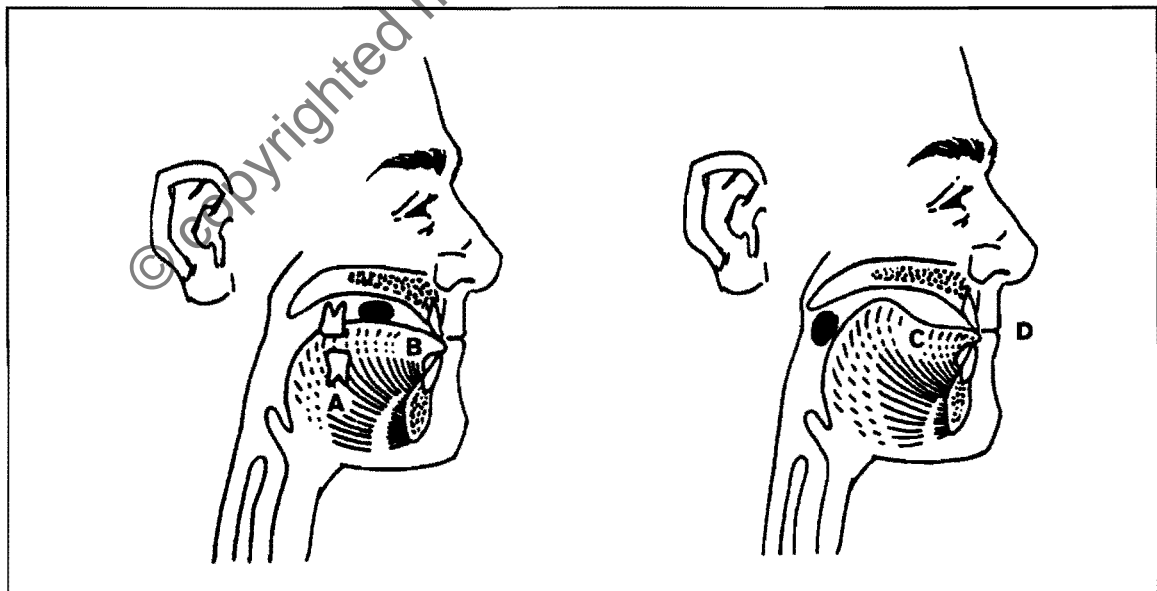


FIGURE 1.2. The incorrect swallowing pattern: A, back teeth are apart; B, tip of the tongue is against or between the teeth; C, middle of the tongue is somewhat depressed and the back somewhat elevated; D, lips and chin are tensed.

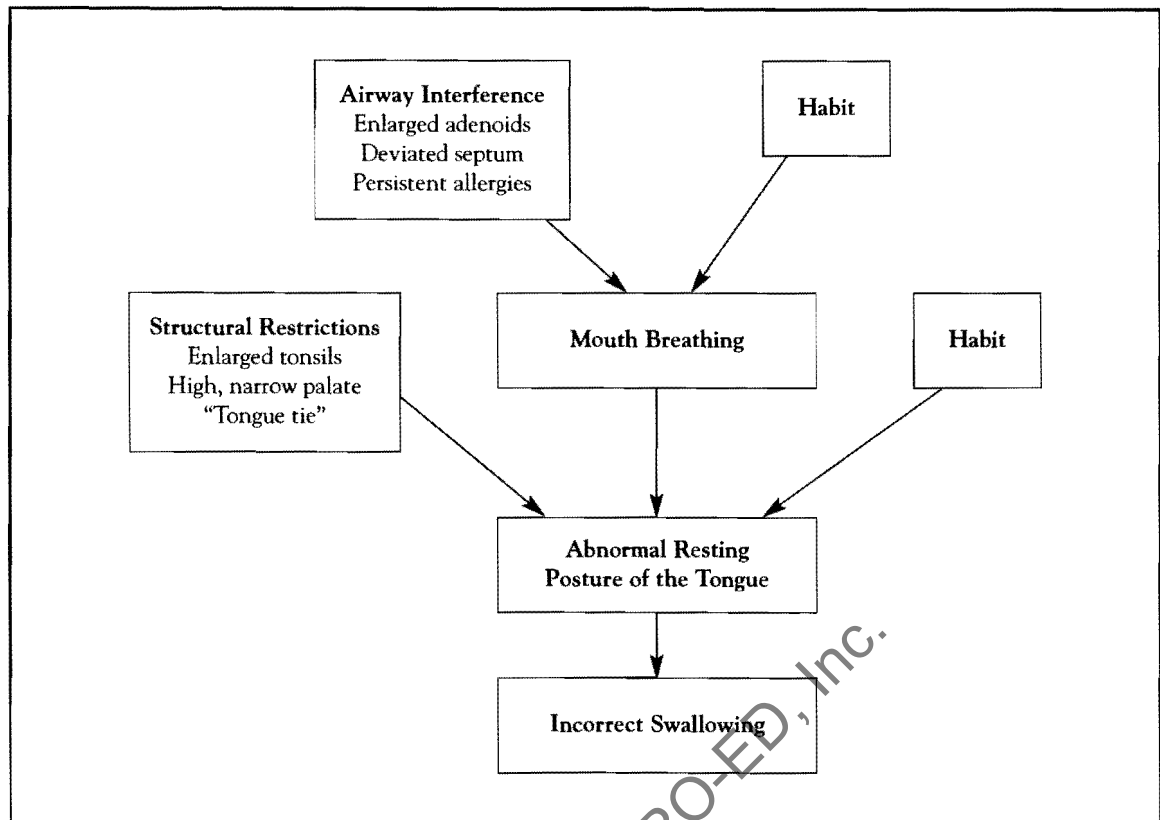


FIGURE 1.3. The causes of tongue thrust. From *Tongue Thrust: A Look at Oral Myofunctional Disorders* (p. 21), by R. Pierce, 1978, Lincoln, NE: Cliffs Notes. Copyright 1978 by Hungry Minds, Inc. Reprinted with permission.

ANATOMY

The Muscles of the Tongue

The tongue's many muscles allow it to perform the oral gymnastics required for mastication (chewing), deglutition (swallowing), and speech. These muscles can be classified as *intrinsic* and *extrinsic*.

The *intrinsic* muscles are contained completely within the tongue. They are responsible for finely coordinated movements, such as lengthening and shortening the tongue, narrowing and flattening the tongue, and elevating and depressing the various parts of the tongue. The four intrinsic muscles important in swallowing and speech are shown in Figure 1.4: the *superior longitudinal muscle*, the *inferior longitudinal muscle*, the *transverse muscle*, and the *vertical muscle*.

The *extrinsic* muscles have their origin (point of beginning) outside of the tongue and their insertion (point of attachment) within the tongue. As such, they connect the tongue to its supporting structures. The largest and strongest of the extrinsic muscles is the *genioglossus*, which forms the bulk of tissue of the tongue. Other extrinsic muscles include the *styloglossus*, *hyoglossus*, and *palatoglossus*, shown in Figure 1.5.

The Muscles of Mastication

Figure 1.6 shows the muscles of mastication. Chewing is accomplished by movements of the mandible (lower jaw). The maxilla (upper jaw) remains stable. Four muscles are primarily



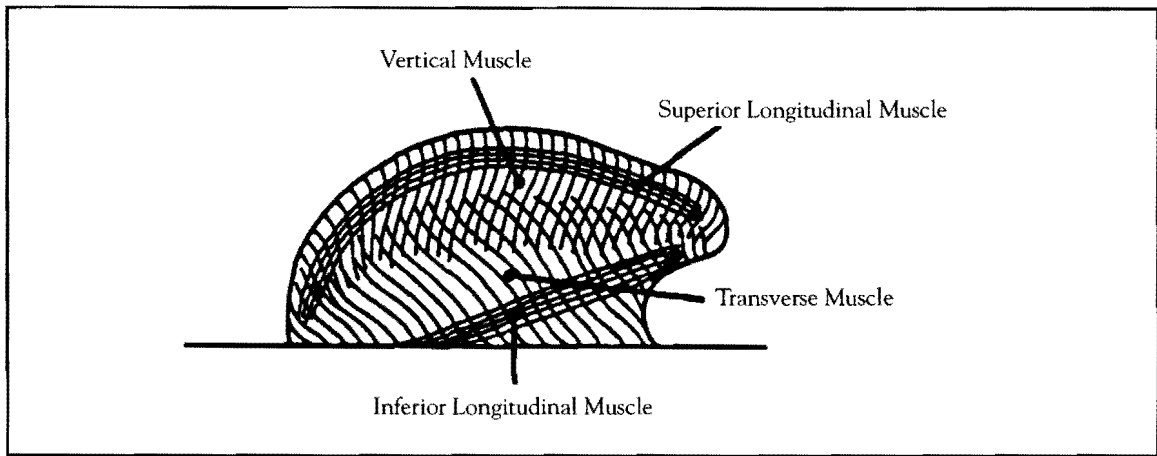


FIGURE 1.4. The intrinsic muscles of the tongue.

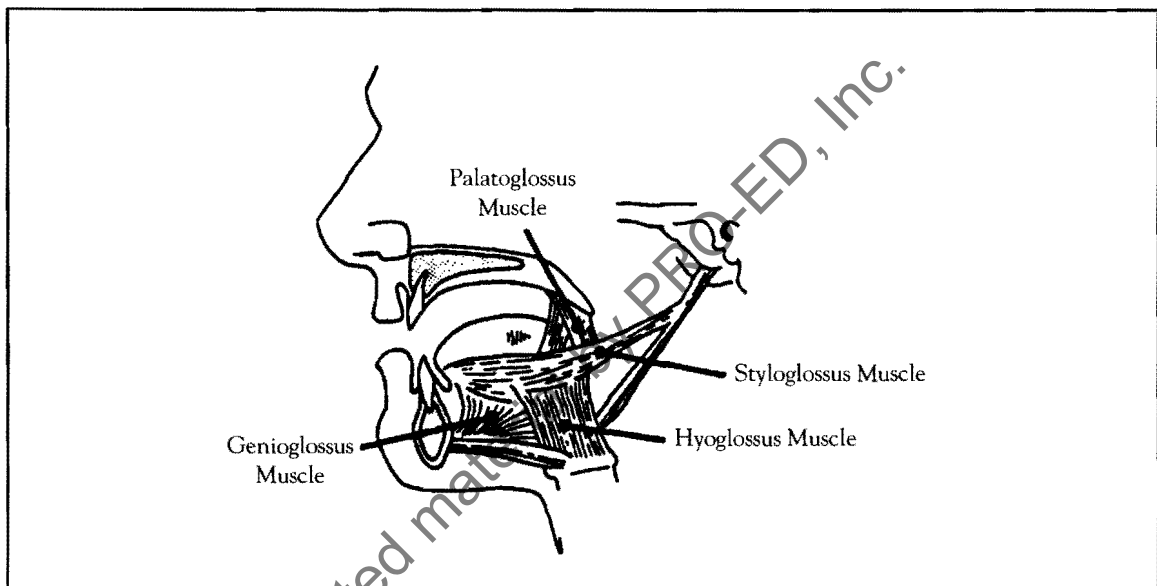


FIGURE 1.5. The extrinsic muscles of the tongue.

responsible for lowering and protruding (moving forward) the mandible: the *digastric*, *mylohyoid*, *geniohyoid*, and *external pterygoid*. Three muscles, referred to as “antigravity muscles,” are primarily responsible for raising the mandible: the *masseter*, *temporalis*, and *internal pterygoid*. The *genioglossus* muscle of the tongue and the *buccinator* muscles in the cheeks move the food in and out between the teeth during mastication.

The Muscles of Expression

The muscles of the lips and face allow us to smile, frown, kiss, and smirk. They play an important role in producing the sounds of speech and in shaping the dental arch. They should not, however, contract during swallowing.

Clinicians treating swallowing disorders are primarily concerned with the three major muscles of expression shown in Figure 1.7. The *orbicularis oris* muscle surrounds the lips. The *buccinator* muscles comprise most of the cheek area. The *mentalis* muscle originates in the mandible and inserts in the skin of the chin.

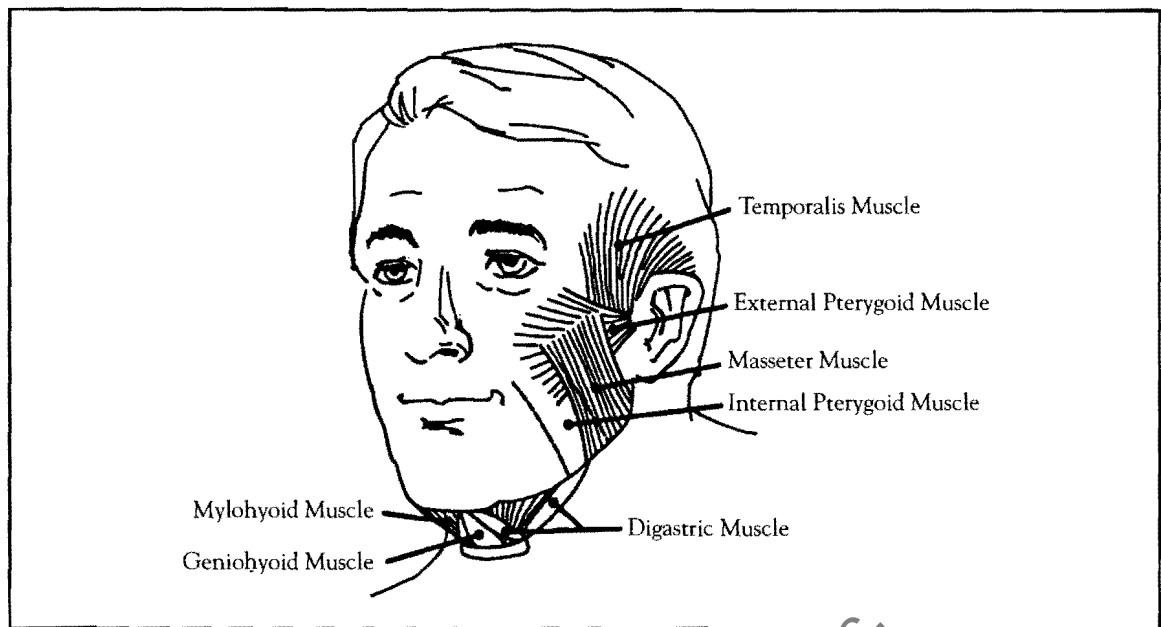


FIGURE 1.6. The muscles of mastication.

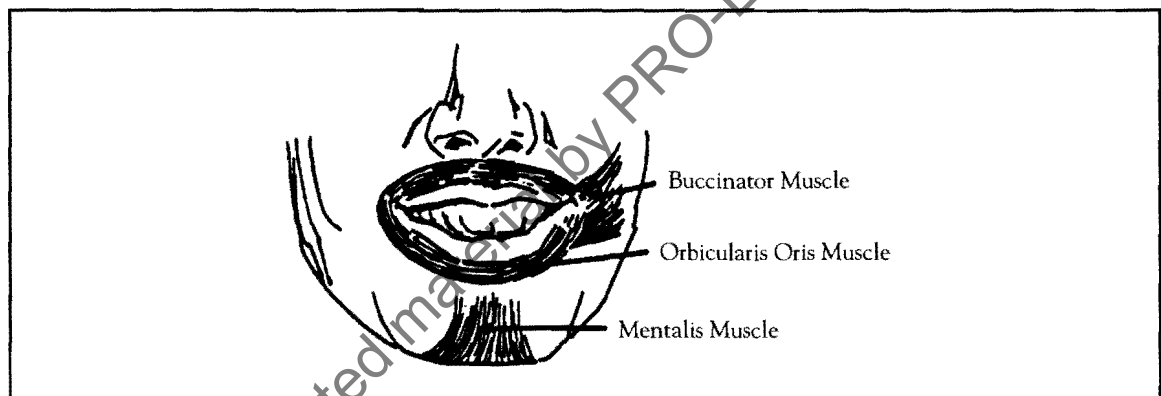


FIGURE 1.7. The muscles of expression.

Supporting Structures

The mechanism used in chewing, swallowing, and speaking is shown in Figure 1.8. The oral cavity is bound by the *maxilla* and the *mandible*. The maxilla (upper jaw) is a fixed, immovable part of the skull. The mandible (lower jaw) is the only movable part of the skull. The mandible is attached at the temporomandibular joint. It is capable of upward, downward, and lateral movement.

The roof of the mouth is called the *palate*. The palate separates the oral and nasal cavities. It consists of the hard palate and the soft palate. Approximately two-thirds of the palate, the anterior (front) portion, consists of a shelf of bone that is gently arched. This bony part is called the *hard palate*.

Posterior to the hard palate is the *soft palate*, which consists of muscles, mucous membrane, and other soft tissue. The soft palate ends in a rounded projection called the *uvula*. The soft palate is raised during swallowing so that it closes off the passageway to the nasal cavity.

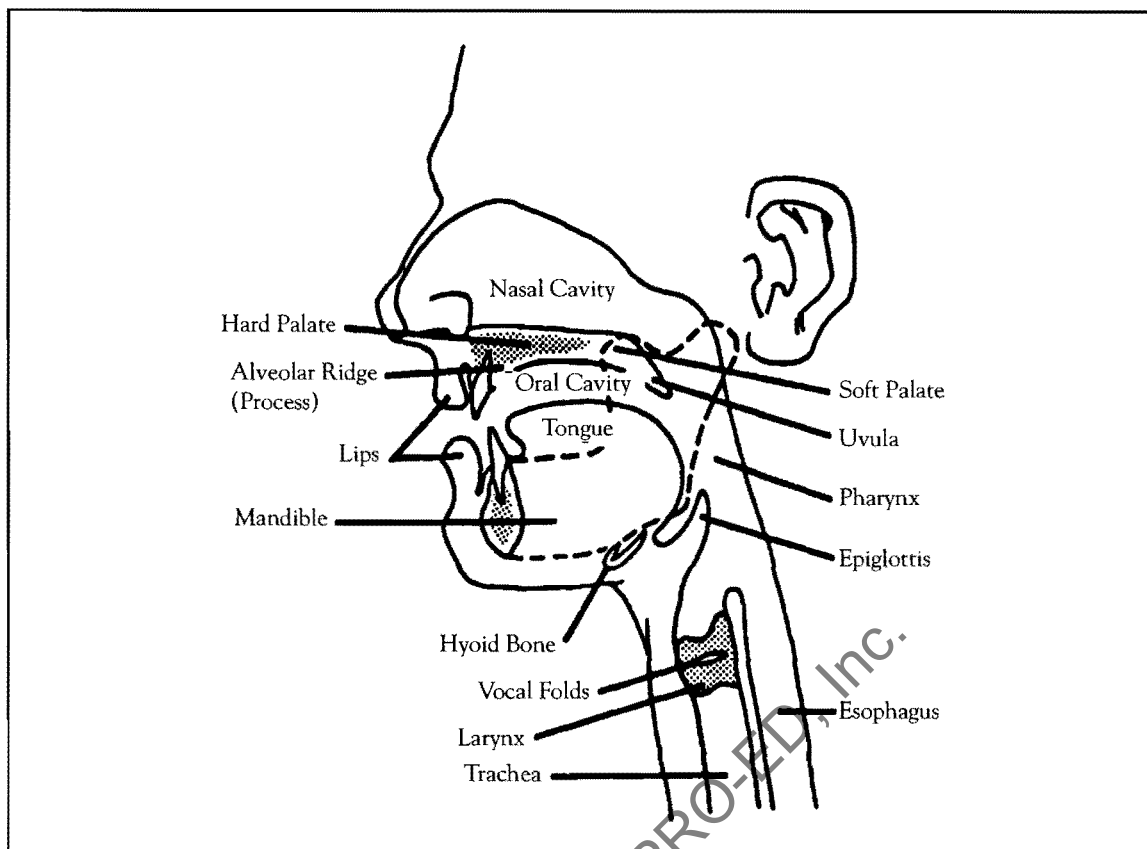


FIGURE 1.8. The oral mechanism.

The tongue is much larger than one might suspect. The *hyoid bone* is a small bone at the base of the tongue.

The *pharynx* (throat) subdivides into the *esophagus*, which food and liquid travel through en route to the stomach, and the *trachea*, the channel for air entering and leaving the lungs.

When the swallow is initiated, the larynx is elevated and the epiglottis covers the opening to the trachea so that food or liquid does not travel down the wrong path.

DIAGNOSIS

In most instances, the patient has been referred to the orofacial myologist by a dentist or orthodontist who suspects a myofunctional problem may be present. It is the responsibility of the orofacial myologist to determine specifically whether tongue thrust therapy is indicated.

Does the Patient Have Tongue Thrust?

The answer to whether a patient has tongue thrust must be based on a thorough examination of the patient's oral structures and tongue function during swallowing, speech, and rest. The patient may or may not exhibit all of the characteristics attributed to abnormal swallowing, just as there is great variation in oral behaviors among normal swallowers.

Sometimes the decision must be a quantitative one. How much pressure is the tongue exerting against the teeth? How much movement in the facial musculature is too much? How high and narrow can the palatal vault be without being too high and narrow? These questions have no easy answers, and no attempt will be made to answer them here. The orofacial

myologist learns to make these and similar judgments not by reading a book or attending a course, but by seeing hundreds of patients.

It should be clear by now that no one diagnostic criterion should be the basis for identifying a normal or an abnormal swallow. The examiner must look at all the evidence: case history information, associated oral behaviors, tongue placement and movement during swallowing and at rest, articulation, and occlusion. When this information is taken into consideration by the well-trained, experienced orofacial myologist, there is seldom any doubt about whether a particular patient is a tongue thruster.

Is Tongue Thrust Detrimental to Occlusion or Articulation?

Many individuals have swallowed with a tongue thrust pattern all their lives and have never had any problems with their teeth or speech. Some coal miners develop black lung, others do not. In either case, the reasons are unclear. Some authorities use the terms *benign* and *detrimental* to differentiate between a thrusting pattern that does not appear to be doing any damage (benign) and one closely associated with malocclusion or misarticulation (detrimental). If a dental or speech problem is not observable and identifiable, tongue thrust therapy is not recommended.

What Associated Oral Behaviors Are Present?

Certain oral habits frequently accompany tongue thrust. Some can be observed, while others must be reported in the case history information. A thorough diagnostic evaluation will determine whether the patient

- sucks the thumb, finger, or tongue;
- chews on fingernails, pencils, clothes, or other objects;
- breathes through the mouth;
- habitually rests the tongue against or between the teeth;
- drinks large amounts of liquid with meals, washing down the food; or
- protrudes the tongue to meet the liquid or food.

As with the various components of the swallow itself, the absence or presence of any of these associated oral behaviors does not confirm or deny a tongue thrust swallow. This information helps the therapist determine what effect the swallowing (as opposed to another factor, such as thumb sucking) has on the occlusion. The information also helps the therapist individualize the treatment program to modify or eliminate these behaviors. Appendixes D and E describe techniques to eliminate fingernail biting and thumb or finger sucking.

What Is the Prognosis for Treatment?

Nothing can take the place of on-the-job experience when it comes to assessing how successful therapy will be with a particular patient. This decision will be made at the initial visit, and first impressions are sometimes erroneous. However, the guidelines suggested here may be helpful.

Success in therapy is directly and inescapably related to patient motivation, cooperation, and understanding, and dependent upon the patient's physical and mental ability to perform the necessary tasks and assignments. The examiner must make some judgments regarding the prognosis for treatment. Answers to the following questions must be considered before deciding whether to begin treatment immediately, delay it, or suggest an alternative.



1. *Can the patient and family be sufficiently motivated?* Patient motivation is the responsibility of the therapist. Some patients are extremely difficult to motivate; the experienced examiner will know how to spot these potential “disasters.”

2. *Will the patient devote time and energy to therapy?* The treatment program is demanding, and some adolescents and adults are simply too involved in too many other activities. It may be preferable in some cases to postpone treatment for 6 months or so.

3. *Can the patient and parent or spouse work together without creating or adding to an explosive home situation?*

4. *Does the patient have the mental ability to understand all aspects of treatment?* It is not necessary for the patient to be bright, but experience shows that an alternative to therapy might be advisable for patients with limited intelligence.

5. *Are there neuromuscular problems that might interfere with the required exercises and swallows?* Minor motor disability may not preclude therapy, but should alert the examiner that progress may be slow, more exercises may be required, and other special considerations must be anticipated.

6. *Is medical treatment indicated before beginning therapy?* If the patient has airway interference or upper respiratory conditions that necessitate mouth breathing, these issues need to be addressed.

7. *Is orthodontic treatment indicated before beginning therapy?* In certain instances, orthodontic procedures should be initiated before therapy to modify the oral environment and enhance successful treatment of tongue thrust.

What Approach to Treatment Is Most Appropriate?

The examiner must determine which specific exercises would best meet the needs of the patient. This does not imply that an entirely individualized regimen of therapy is necessary for each patient. On the contrary, the orofacial myologist should have a core program of exercises that are appropriate for all patients. At this point it must be decided what exercises are needed to supplement or individualize the core treatment program.

If the upper lip appears to be flaccid, for example, then the therapist would plan to increase emphasis on lip exercises. However, if the upper lip is flaccid but the lower lip and mentalis are overactive, it would be counterproductive to use exercises (such as pulling on a button on a string) that increase upper- and lower-lip tonicity. If there is no problem with the lips, there would appear to be no need for lip exercises.

Furthermore, if the patient needs to eliminate associated oral behaviors (such as mouth breathing, thumb sucking, or fingernail biting) or to limit intake of liquids with meals, decisions regarding the inclusion and timing of these modifications should be made at the time of the evaluation.

Summary

Throughout the diagnostic session, the examiner is seeking the answers to these questions:

1. Does the patient have a tongue thrust?
2. Is the tongue thrust detrimental to occlusion or articulation?
3. What associated oral behaviors are present?
4. What is the prognosis for treatment?
5. What approach to treatment is most appropriate?

Specific diagnostic procedures will be discussed in the following section. It is important to note here, however, that the diagnostic process does not end with the initial appointment. New insight and information will be gained throughout the treatment program.

DIAGNOSTIC PROCEDURES

Specific diagnostic procedures will be discussed as follows:

- Case history
- Informal observation
- Examination of the oral peripheral mechanism
- Examination of the swallow

This organization is used only to facilitate presentation and does not imply the desired sequence of the session. For example, case history questions will be asked at appropriate times throughout the session. The informal observation starts the moment the patient arrives in the waiting room and continues until the patient leaves.

Each examiner will adopt the sequence that most comfortably and efficiently produces the desired results. In cases involving children, one or both parents should be present with the patient during the diagnostic session because this serves as a time to give information as well as gather it.

Case History

Identifying data (e.g., name, parents' names, address, telephone numbers, date of birth, dentist and/or orthodontist) should be obtained before or during the diagnostic session.

The examiner will need to determine the following by questioning the patient and the parent:

1. Early Feeding and Habit History
 - a. Was the patient breast-fed or bottle-fed? If breast-fed, how long? Did bottle-feeding continue beyond 12 months of age?
 - b. Were there early feeding problems, such as colic, special formula, or difficulty making transitions to table food?
 - c. Did the patient suck his or her thumb or finger? If so, for how long? Did the patient use a pacifier? If so, for how long?
2. Pertinent Medical Information
 - a. Is there a history of upper respiratory problems? Does the patient still have tonsils? Adenoids? Are the tonsils or adenoids enlarged? Does the patient have allergies? Sinus problems? Frequent ear infections?
 - b. What treatment has the patient had (or is receiving now) for any of the above problems?
3. Pertinent Dental Information
 - a. Did the deciduous teeth appear to be normal? Were the deciduous teeth lost at approximately normal ages? Were any lost prematurely due to accident or injury?
 - b. Has the patient seen an orthodontist? If the patient is not yet under active orthodontic treatment, what has the orthodontist done so far (e.g., X-rays,



impressions, referrals, consultation)? What does the orthodontist plan to do? When?

- c. If the patient is wearing braces, how long have they been worn? When does the orthodontist plan to take them off? How often does the patient see the orthodontist? Does the orthodontist still make adjustments at each visit?
- d. If the patient has completed orthodontic treatment, for how long were braces worn? How long ago were the braces removed? What kind of retainer did or does the patient wear?
- e. Has the occlusion gotten better, worse, or stayed the same during the last 6 to 12 months?

4. Eating Habits

- a. Does the patient drink more than one glass of liquid with meals? Does the patient appear to wash down food?
- b. Is the patient a fast or slow eater? Does the patient chew food adequately? Belch excessively after eating? Have frequent digestive problems? Resist foods that are difficult to chew?

5. Associated Oral Behaviors

- a. Does the patient breathe through the mouth, nose, or both? While watching TV, riding in the car, and sleeping, is the mouth open or closed?
- b. Does the patient clench or grind teeth?
- c. Does the patient bite fingernails or cuticles?
- d. Does the patient chew on pencils, erasers, knuckles, blanket, or other objects?
- e. Does the patient lick lips excessively? Are the lips chapped much of the time?
- f. Does the patient prop the chin or head on palm or fist?
- g. Does the patient chew gum excessively?

6. Family Dental History

- a. Do parents, siblings, or other relatives have similar occlusion?
- b. Have other family members had orthodontic treatment? Orofacial myofunctional therapy?

Do not be surprised if the parent and patient do not agree on the answers to these questions (they frequently do not) or if they simply cannot answer some of the questions. Parents who have had four children in 5 years are not likely to remember which one consistently spit up spinach. The questions listed above concern behaviors the parents may have never noticed (or certainly never connected with a dental or speech problem), and that in itself may have diagnostic value.

Informal Observation

The patient is under scrutiny from the moment he or she enters the examiner's office. As much useful diagnostic information can be gathered from casual observation as from direct questioning and examination. In fact, informal observation verifies the information provided by the patient and parent in their responses to specific questions. For example, one rarely needs to ask whether the patient bites fingernails or licks lips or breathes through the mouth. These behaviors are obvious to the observant examiner.

Resting Posture. Examiners should look for the resting posture characteristic of patients with orofacial myofunctional disorders. The mandible is in an open position, the lips are flaccid,



and the tongue can be seen touching the teeth and/or lips. The habitual resting posture of most tongue thrusters, particularly preadolescents, is undeniable. It is often more obscure in older teenagers who have learned, through social consciousness and years of parental nagging, to keep their mouths closed.

Swallowing. The examiner has an opportunity to observe saliva swallows throughout the diagnostic session. The patient, unaware of being watched, will swallow much more naturally than during the direct examination. Watch for the facial grimaces that may accompany saliva swallows.

Speech. Informal assessment of the patient's spontaneous conversational speech will establish the presence or absence of articulatory problems. Many patients with oral muscle or dental abnormalities may be producing some sounds in a compensatory manner. This author has popularized the term "acoustically correct but cosmetically incorrect articulation" to describe speech that sounds right but looks wrong. A complete speech evaluation is usually not necessary unless the examiner needs this information for a specific purpose.

Examination of the Oral Peripheral Mechanism

The size and shape of the structures and the strength and mobility of the muscles are assessed by direct examination.

The Teeth. Determine the type of malocclusion. Take measurements of the degree of overbite, overjet (protrusion), open bite, and other abnormalities. These measurements help quantify changes in occlusion that may result from myofunctional therapy and will be helpful in motivating the patient and establishing outcome data. Orofacial myologists do not make predictions or claims of "moving teeth." However, improvement in occlusion frequently occurs during or after therapy.

Look at the spacing of teeth. Are the teeth overcrowded or are diastemas (spaces) present? Is the patient in mixed dentition or have all permanent teeth (except third molars) erupted? If the patient is in mixed dentition, the examiner can anticipate that certain "holes" may appear during the treatment program.

The Jaw. Check for discrepancies between arch size and shape of the upper and lower jaws. The teeth spacing observed above will give a clue to the possible existence of such a discrepancy. Have the patient open and close the mandible rapidly and move it laterally to identify any gross temporomandibular joint problems. It may be necessary to make certain modifications in the treatment program for patients with temporomandibular joint problems. (See clinician instructions for Lesson 3.)

The Palate. Tongue thrusters frequently (but not necessarily) have high and narrow palates. The correct resting posture positions the tongue in the roof of the mouth, which helps to shape the palatal vault and the upper dental arch. In a correct swallow, the body of the tongue pushes against the palate, shaping it into a gently curved arch. In an incorrect swallow, the tongue never touches the anterior portion of the palate.

The palatal rugae are the ridges that can be seen on the hard palate. Individuals who rest their tongues properly in the roof of the mouth and who swallow correctly tend to have rugae that are few in number and small in size. Tongue thrusters tend to have many of these ridges, usually large and either jellylike or sharp and well defined.

The Tongue. The mobility and range of movement of the tongue can be assessed by having the patient imitate gross nonspeech movements, such as rapidly protruding and retracting the tongue, lateralizing it, pointing it, and so forth. These activities also give the examiner information about how much voluntary control the patient has over tongue movements. Some patients appear to be unable to differentiate between the tongue and the mandible;



when they are asked to lateralize the tongue, the jaw goes right along with it. Other patients appear to have no concept of their oral–facial geography and may need to look in a mirror before they can imitate the examiner's movements. This difficulty should alert the examiner to the herculean task ahead. Preliminary getting-acquainted exercises may be required to familiarize the patient with his or her oral structures.

Having the patient pop his or her tongue gives the examiner a good view of the lingual frenum (the tissue that attaches the tongue to the floor of the mouth). Actual tongue tie is rare, but when it does occur it must be surgically remediated before treatment is attempted.

The strength of the tongue muscles can be assessed by having the patient push against a tongue depressor with various parts of the tongue: tip, middle, back, and sides. Many tongue thrusters show a marked decrease in the strength of the muscles in the middle and the back of the tongue.

The Lips. Functional lip competency has already been assessed through informal observation. Many tongue thrusters appear to have a short, thick upper lip that lies flaccid under the nose, exposing the upper incisors and perhaps a portion of the adjacent gums. The lower lip may be tight and overactive, or may also be weak. The tonicity of the lips must be considered as a contributing factor to malocclusion. Informal assessment of lip strength can be done by using a strain pressure gauge, by having the patient press each lip against a tongue depressor, or by placing a button on a string behind the patient's lips for a gentle tug-of-war.

Examination of the Swallow

The most important and perhaps most difficult aspect of the diagnostic procedure is the direct examination of swallowing behavior. The evaluation is being done because someone—the dentist, orthodontist, or speech pathologist—has said the patient swallows wrong. No one, at any age, likes to be told they are doing something wrong.

During the course of the diagnostic session, information has been given regarding correct and incorrect swallowing. The patient cannot help but be aware of how he or she is swallowing during this phase of the diagnostic procedure. Swallowing is automatic, and whenever a subconscious behavior is brought under conscious control, it will be altered somewhat. The examiner must be aware that these conscious swallows are, to some extent, a distortion of the patient's regular, ordinary, everyday swallows.

The referral source and the examiner have probably both already told the patient that in a tongue thrust swallow the tongue pushes against the teeth. Occasionally a very suggestible or very cooperative patient will obligingly push tongue against teeth, even though that is not the habitual swallow. Other patients are so determined that they are right and the clinician is wrong that they will not touch tongue to teeth at all. Either extreme results in an exaggerated tongue movement that usually can be spotted by the trained examiner. The swallows done on command will be inconsistent with what the examiner has seen during informal observation. When a marked discrepancy occurs, trust the informal observation of casual swallows.

The patient should be tested on swallows of solid food, liquids, and saliva. In each instance, the examiner should first observe several swallows for circumoral tension, followed by palpation of the masseter muscle, then finally by asking the patient to swallow with his or her lips in a wide smile exposing the front of the oral cavity. Some tongue thrusters find it extremely difficult to swallow with the lips separated. Occasionally it will be necessary for the examiner to break the lip seal by pulling down on the patient's lower lip just as the swallow is being initiated.

Solid Food Swallows. A cookie or oyster cracker can be used to evaluate chewing and swallowing. Oyster crackers are recommended because of their uniform bite size.

Observe chewing patterns. Note excessive tongue and jaw movements or facial grimaces during chewing. Determine whether the patient swallows several small portions while chewing or effectively gathers a cohesive bolus and executes one major swallow for each bite. Have the patient open his or her mouth after the swallow to reveal any residue left. If a glass of water is placed within reach, the patient may automatically take a sip of water after each bite—clear evidence of habitually washing down food.

Liquid Swallows. Use a clear plastic cup to examine liquid swallows. The increased visibility is well worth the additional cost. The tongue thruster is likely to protrude the tongue as the cup approaches the lips. This behavior will prove as difficult to modify as the swallow itself. Observe the patient doing both sip-by-sip swallows and continuous drinking. The clear plastic cup will be of particular help during continuous drinking in letting the examiner see the placement and movement of the tongue during swallowing. On the sip-by-sip swallows, ask the patient not to swallow until you say so. (This may be difficult for some patients with oral myofunctional disorders.)

Saliva Swallows. As with liquid and solid food swallows, saliva swallows are checked for each component: tensing of the orbicularis oris, overactivity of the mentalis, reduced or absent contraction of the masseter, and placement and movement of the tongue during swallowing.

Evaluation Reports

During the evaluation, the examiner can use the Checklist for Oral Muscle Evaluation (see Appendix A) to record behaviors inquired about or observed. This information can then be summarized on the Oral Muscle Evaluation form (see Appendix B) to send to the referring dentist, orthodontist, or other interested professionals.

TREATMENT

Swallow Right is a treatment program for young children, adolescents, and adults. Most of the exercises are easy to understand and explain, but the therapy should be done only by a therapist who has a working knowledge and understanding of myofunctional therapy.

The therapist should be thoroughly aware of all factors involved in changing the tongue thrust habit. This manual is a guide in correcting resting posture and swallowing pattern, but the therapist should be flexible and supplement the program with any additional exercises the individual patient needs for associated oral habits. This program has been used successfully with both individuals and small groups.

Therapy Stages and Schedule

This program is designed to cover three very important stages of the therapy process:

- Stage 1—Training the muscles and movement patterns necessary for a good swallow and correct resting posture (Lessons 1–5)
- Stage 2—Teaching the correct swallow (Lessons 6–7)
- Stage 3—Making the correct swallow a habit (Lessons 8–12)

The first eight lessons should be scheduled once a week. The remaining four lessons should be scheduled at 2-week intervals. After completing the 12 lessons, the patient should be seen at 3- to 6-month intervals for a 2-year follow-up period.



Allow 30 minutes for each lesson. Regardless of the patient's age, a parent or other observer should be present during the lesson to learn how to do the exercises so that they can effectively monitor homework assignments.

Appendix C contains a form that the clinician may want to use throughout the course of the *Swallow Right* program to track a patient's progress. The appendix also contains a sample filled-in form for the clinician's reference.

Organization of the Manual

The therapy lessons in the *Swallow Right* manual are divided into three parts:

1. Clinical Procedures—This section contains the information the clinician needs to teach each lesson, such as tips for teaching exercises, a list of supplies needed for the lesson, and a list of exercises the clinician should review with the patient from the previous week.
2. Lessons for Children—This section contains the lesson handouts that the clinician will give the young patient and his or her parent to take home after each session.
3. Lessons for Adolescents and Adults—Organized in the same way as the Lessons for Children, this section contains take-home lesson handouts for adolescent or adult patients.

In most cases, the Lessons for Children and the Lessons for Adolescents and Adults handout pages contain the same information. The Lessons for Children handouts contain motivational drawings of an alligator and are written in a style easier for young patients to understand. The Lessons for Adolescents and Adults do not contain artwork and are written for an adult or adolescent audience.

Before meeting with the patient for each lesson, the clinician should review both the Clinical Procedures section for that particular lesson and the accompanying patient handout pages for that lesson (either Lessons for Children or Lessons for Adolescents and Adults, depending on the patient's age).

Articulation Errors

It has been my experience that many children spontaneously correct articulation errors as a result of the orofacial myofunctional therapy. If the patient is still misarticulating sounds toward the end of therapy, it is advisable to schedule a few extra sessions for speech therapy or to refer the patient to a speech pathologist trained in this area.