

## MYOFASCIAL RELEASE - NOT PART OF OROFACIAL MYOLOGY!

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### ABSTRACT

On occasion, myofascial release has been mistakenly considered part of orofacial myology treatment. Since this procedure is a physical therapy technique, it is not appropriate for use by non-physical therapists.

### WHAT IS MYOFASCIAL RELEASE?

Myofascial release (also known as fascial adhesion release) is touted as a gentle touch massage procedure designed to relieve tight muscles and reduce the lactic acid buildup in muscles that can cause muscle-related pain. Myofascial release deserves some brief attention and discussion since this therapy is not part of course training in orofacial myology and should not be advocated as such.

Orofacial myofunctional therapy is not “physical therapy for the face”, as some have incorrectly concluded. Physical therapy procedures are not a part of orofacial myology, nor are the techniques compatible with the goals and scope of practice in orofacial myology. Orofacial myologists must assure that the management of pain, and massage therapy, are not within their scope of practice. Those who may wish to incorporate myofascial release into their practices should be advised that they are practicing physical therapy without a license and are placing their license at risk.

### WHO SHOULD PROVIDE MYOFASCIAL RELEASE THERAPY?

According to Spine-Health.com, "Many different types of health professionals can provide myofascial release therapy, including appropriately trained osteopathic physicians, chiropractors, physical or occupational therapists, massage therapists, or sports medicine/injury specialists. Specific training and courses in Myofascial Release Therapy are generally necessary and can be extensive to attain a high level of competency."

### MYOFASCIAL RELEASE AND FACIAL MUSCLES

While myofascial release has some useful applications by physical therapists, the technique cannot be applied appropriately to the facial muscles. While the muscles of mastication have distinct fascial sheaths covering them and separating them from adjacent muscles, the facial muscles do not; that is, they are not covered by fascial sheaths.

This phenomenon well known among anatomists. For example, Zemlin (1968) reported from his dissection studies: "The facial muscles, and in particular those of facial expression, are unique in that they are devoid of fascial sheaths characteristic of skeletal muscles. Also, many of their fibers insert directly into the skin." Instead of fascial sheaths supporting the facial muscles, a layer between the muscles and the skin called the SMAS (superficial musculo-aponeurotic system) serves to support the face.

### DISCUSSION

Why, you may wonder, are there no fascial sheaths covering the muscles of facial expression while there are fascial sheaths covering and separating the muscles of mastication? One of the reasons why there are no fascial coverings of the facial muscles is that these muscles blend in with adjacent muscles either near their origin or insertions and benefit from not being separated by fascial coverings. The blending-in of facial muscles makes it efficient for these muscles to work in unison (as groups), by blending in with one another. There is, however, a thin fascial plane in the skin into which many muscles insert. The direct connection of skin with the facial muscles permits the many facial expressions that characterize humans. If the facial muscles were covered by fascia, the consequence would be no direct connection between skin and muscles, so facial expressions would be greatly diminished.

Any therapy to manually manipulate the muscles of mastication for pain localized to the TMJ apparatus is not a part of orofacial myology and is strictly prohibited as per the clinical practice guidelines of the International Association of Orofacial Myology (IAOM). One reason for this guideline that precludes such therapy in orofacial myology is the recognition of potential risks and damage to the TMJ, especially the disc (meniscus), by physically manipulating either the muscles of mastication or the anteroposterior position of the mandible. No orofacial myologist can or should claim competence or expertise in pain management. In short, the elimination of pain is not a part of orofacial myology.

#### WHAT IS FASCIAL SUPPORT TAPING?

Recent discussions among orofacial myologists have included fascial taping. What is this?

In areas other than the face where there is pain related to the fascia, the fascia can be protected and supported by the application of strategically placed adhesive taping (sports tape) that spans any damaged portion of the affected fascial area. Taping can provide a dramatic relief of pain, and immediate restoration of the range of movement, allowing the individual to return to normal activities. The use of sports tape for purposes of fascial support is not an appropriate procedure for orofacial myologists

#### INSIGHTS FROM PLASTIC SURGERY CADAVER DISSECTION STUDIES

The question of whether or not there are fascial sheaths covering the facial muscles is very relevant to the work of plastic surgeons. Pertinent research findings from dissection reports of plastic surgeons reveal the following insights:

"The facial soft-tissue architecture can be described as being arranged in a series of concentric layers: skin, subcutaneous fat, superficial fascia, mimetic muscle, deep facial fascia (parotidomasseteric fascia), and the plane containing the facial nerve, parotid duct, and buccal fat pad. The anatomic relationships existing within the facial soft-tissue layers are (1) the superficial facial fascia invests the superficially situated mimetic muscles (platysma, orbicularis oculi, and zygomaticus major and minor) {Dr. Mason's note: but not the other more commonly referenced facial/mimetic muscles}; (2) the deep facial fascia represents a continuation of the deep cervical fascia cephalad into the face, the importance of which lies in the fact that the facial nerve branches within the cheek lie deep to this deep fascial layer; and (3) two types of relationships exist between the superficial and deep facial fascias: In some regions of the face, these fascial planes are separated by an areolar plane, and in other regions of the face, the superficial and deep fascia are intimately adherent to one another through a series of dense fibrous attachments. The layers of the facial soft tissue are supported in normal anatomic position by a series of retaining

ligaments that run from deep, fixed facial structures to the overlying dermis. Two types of retaining ligaments are noted as defined by their origin, either from bone or from other fixed structures within the face." (Stuzin, Baker & Gordon, 1992).

The cadaver dissections of Ghassemi et al (2003) revealed: "Despite the relevance of the superficial musculoaponeurotic system (SMAS) in facial rejuvenation a clear anatomic definition of the SMAS is still lacking. Therefore, the morphology of the SMAS in 18 cadavers was investigated using different macroscopic and microscopic techniques. The region-specific anatomy of the SMAS is described in the forehead, parotid, zygomatic, and infraorbital regions, the nasolabial fold, and the lower lip. The SMAS is one continuous, organized fibrous network connecting the facial muscles with the dermis. It consists of a three-dimensional scaffold of collagen fibers, elastic fibers, and fat cells. Two different types of SMAS morphology were demonstrated: type 1 SMAS architecture is located lateral to the nasolabial fold with relatively small fibrous septa enclosing lobules of fat cells, whereas type 2 architecture is located medial to the nasolabial fold, where the SMAS consists of a dense collagen-muscle fiber meshwork. Overall, it was demonstrated that different facial regions show specific morphological characteristics, and thus region-specific surgical interventions may be necessary in facial rejuvenation."

Delmar (1994) reported: "A macroscopic anatomical and histological study, performed on 60 dissections of hemifaces with several preparations defined the anatomy of the superficial musculoaponeurotic system (SMAS), jugomalar adipose planes and the nasolabial fold. The SMAS is a strictly superficial surgical anatomy structure derived from the primitive platysma muscle, and does not possess any bony insertion. It is composed exclusively of platysma and risorius muscles. There is no parotid aponeurosis. The parotid is surrounded by a capsule. Its is limited in depth by the superficial cervical aponeurosis which lines the styloid curtain."

Gardetto et al (2003) contributed the following: "An exact knowledge of the subcutaneous layers in the different regions of the face and neck is important in several surgical disciplines. In the parotid region, a superficial musculoaponeurotic system (SMAS) has been described. The existence of a SMAS as a guiding structure for the surgeon in the other regions of the face and neck has been discussed but is controversial. Therefore, the authors investigated the development of the subcutaneous connective-tissue layers in the different facial regions and in the neck. They studied these regions in 22 human fetuses using the technique of plastination histology and in three newborn and three adult specimens using sheet plastination. In addition, they dissected the neck and face in 10 fresh adult cadavers to identify the SMAS as in the surgical situation. The results show that no SMAS could be detected in any facial regions other than the parotid region. In the parotid region, it is thick and attached to the parotid sheath. However, it becomes very thin, discontinuous, and undissectable in the cheek area. No SMAS can be found in the neck, in which the authors are the first to describe a fascia covering both sides of the platysma. This fascia has close topographical connections to the subcutaneous layers of the adjoining regions. On the basis of these findings, the surgical pathways have to be defined regionally in the face. A "platysma fascia" can be considered as a surgical landmark in the neck. Therefore, the authors conclude that it is not justified to generalize a SMAS as a surgical guiding structure."

In all, these studies from plastic surgery dissections further reinforce the common knowledge among anatomists that the primary mimetic muscles are devoid of fascial sheaths while some adjacent muscles that intersect with the muscles of the face (particularly the platysma, orbicularis oculi, the zygomaticus, and the muscles of mastication) are invested by fascia.

## WHAT ABOUT FASCIAL SPACES?

Clinicians should also appreciate that there are several areas in the face where a fascial space is located. When a fascial envelope encloses a muscle and its associated nerve and blood vessels, some anatomists describe this situation as a fascial space, but in a strict anatomical sense, only those spaces filled with loose connective tissue should be described as fascial spaces. This information recognizes that there are different

descriptions by different anatomical investigators as to what a fascial space is. For our purposes, we will accept the explanation in italics above.

There are some fascial spaces in the face that serve to separate muscles and also facilitate the transmission of blood vessels and nerve fibers. Some fascial spaces can limit or even aid in the spread of infections in the head and neck. The prevertebral fascia, for example, permits an infection starting in the nasopharynx to spread downward through the prevertebral fascia and end up in the viscera.

One of the most superficial fascial spaces is the buccal space, which surrounds the buccal fat pad in the vicinity of the buccinator and masseter muscles. This space also extends backward to the pterygomandibular space and upward to the pretemporal space. The parotideo-masseteric fascial space is important in limiting the spread of infections, particularly from the parotid gland.

The fascia covering the masseter muscle, the mandible, and the pterygoid muscles is described according to what structures are enclosed in parts of this fascia. The masseteric space has been described as enclosing all three groups of these structures.

## SUMMARY

Myofascial release is a clinical procedure used in physical therapy, while the technique is not an appropriate part of orofacial myology. Having described the fact that there are no fascial coverings over the facial muscles, with the exception of fascial sheaths covering the muscles of mastication, and having described some distinct spaces that separate facial and masseteric muscles, it should become obvious that attempting to implement the physical therapy technique of myofascial release with the facial muscles would be foolhardy.

For all of the factors stated and discussed above, there is no appropriate application of myofascial release for patients with orofacial myofunctional disorders (OMDs). The possible exception is manipulating the muscles of mastication for TMJ-related pain. While this may be effective, it is prohibited by IAOM guidelines since orofacial myologists have no credentials in pain management.

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## ADDENDUM

In case some orofacial myologists reading this document may have been told otherwise, that myofascial release is an appropriate inclusion in the treatment options of orofacial myologists, you may be tempted to dismiss what is presented here or even question my qualifications in this regard. Accordingly, I offer the following history to support my background and expertise in the area of anatomy and physiology:

My training in anatomy began at the University of Illinois - Urbana, under the famous speech scientist Grant Fairbanks, and later under speech scientist Willard R. Zemlin, whose anatomy text has been the primary teaching text in speech pathology since 1965.

Under a unique experimental program in which the first year of my doctoral program in speech pathology was spent in residency at the University of Illinois Medical Center - Chicago taking medical and dental courses and participating on the U. of I Cleft Palate Team, I also studied under the famous anatomist E. Lloyd DuBrul, and dissected cadavers with the ENT residents at the University of Illinois Medical Center.

My professional history includes teaching anatomy and physiology of the speech and hearing mechanism in 3 university speech and hearing training programs during the ten years prior to dental studies when I was a university professor in speech pathology. I have also taught cadaver dissection to advanced students in speech pathology and have co-authored the text: *Applied Anatomy and Physiology of the Speech and Hearing Mechanism*, by Hugh E. Bateman and Robert M. Mason, Charles C. Thomas, Springfield, Il, 1984.

For more than 30 years, I have had an academic and teaching appointment in the Duke University Division of Plastic and Reconstructive Surgery. Although now fully retired, I remain a tenured Professor of Surgery at the Duke University Medical Center in the Division of Plastic and Reconstructive Surgery.

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