



**EXPRESSIONS MATTER IN PROSTHODONTICS – A NARRATIVE REVIEW**

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**ABSTRACT**

A study of normal facial landmarks is necessary before attempting to achieve the goal of natural and pleasing expression. The prosthodontist has more to do with the beauty of a face than any other beautician. Mouth plays an important role in facial expressions.

**Key words:**

Facial muscles, prosthodontics, expressions.

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**INTRODUCTION**

Mouth is not the initiator of mastication or the finalizer of speech but is the most versatile of the expressive features of a human beings. Mouth reflects a wide range of emotions. The lips, sometimes termed the mouth's curtains, actually become the main actors in facial expression.

**Muscles of facial expression:** These muscles generally donot insert into the bone. They are subcutaneous in position and produces wrinkles or fold in the skin when they contract. They are responsible for expression of different emotions of an individual. These are also called as mimetic muscles. Their movements are controlled by the muscular activity affecting the mouth's corners. The five types of movements which occur in the lip area are (1) elevation, (2) depression, (3) retraction, (4) compression, and (5) protrusion. Each is the result of the contraction and relaxation of groups of muscles.

Consequently, functional consideration of such actions should be in terms of the groups of muscles producing the action rather than in terms of individual muscles. Elevation of the lips is produced by the zygomaticus, quadratus labii superioris, 2nd caninus muscles. The lips are drawn downward by the triangularis, quadratus labii inferioris, and platysma muscles. Retraction of the lips is produced by the zygomaticus, risorius, platysma, triangularis, and buccinator. The chief compressors of the lips are the orbicularis oris, incisivi labii superioris and inferioris, mentalis, and orbicularis oris. Now, changing these group of actions will be converted into facial expressions. The lips are stretched and drawn against the teeth and tend to part and open the mouth.

The degree of the opening varies with the individual or the depth of emotion expressed. True laughter occurs when the orbicularis oris is completely and involuntarily inhibited. As such there is no literature evidence is available on the facial expressions and prostheses.

Hence, the aim of this narrative review is to highlight the different facial musculature and their role in the success of prosthodontic treatments.

**DISCUSSION**

The prosthodontic significance of a smile is the recognition that if one part of the intricate complex which produces smiling is out of position, this affects all of the other components which make up the smile. With the elevation of the maxillary lips and the retraction of the corners of the mouth, the lips are drawn against the teeth, and the placing of these teeth becomes extremely important in forming the backdrop for the smile. If the teeth are placed too far labially, the orbicularis oris is stretched, and the modioli are positioned too far anteriorly so that they are prevented from moving in the positions they were accustomed to when natural teeth were present. This stretching effect of the lips against the teeth also tends to exert a dislodging force on the maxillary denture.

Sometimes, cheek plumpers are placed in maxillary dentures near the reflective borders in an effort to raise the corners of the mouth.

An increase or decrease in the vertical dimension of occlusion can also cause strained maxillomandibular relationships, which result in damaging effects on residual ridges and distortion of facial structures.

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In general, mandibular movements associated with speech and facial expression are delicate movements and display far more numerous variations than those occurring during mastication.

Speech and expression motions are highly individual, even to the point of providing a means of identification of the person. Many patients whose oral structures and structural relationships verge on the ideal, pose a prosthodontic problem because they employ almost constantly extreme movements of facial expression and speech. Recognition of these mannerisms during diagnosis frequently leads to a better evaluation of treatment planning for these patients. With the contraction of the buccinator, as in smiling or uttering certain speech sounds, the modioli and corners of the mouth are pulled backward and draw the maxillary and mandibular frenula distally. The buccinator, having its origins on both the maxilla and mandible, is one of the first muscles to function in the infant for eating purposes in the activity of sucking. Its fibers are both superficial and deep and arise from the maxilla and mandible in the molar region as well as from the pterygomandibular raphe.

#### **Role of facial muscles in complete denture prosthodontics**

A study of normal facial landmarks is necessary before attempting to achieve the goal of natural and pleasing expression. The prosthodontist has more to do with the beauty of a face than any other beautician. The appearance of entire lower half of the face depends on the dentures. Thin, drooping upper lip that has lengthened and lost the vermilion border is typical of misplaced denture arch and lost vertical dimension. Drooping of corners of the orifice indicates thin denture borders, closed relations, misshaped and misplaced denture arches. Aged appearance may not only be because of increasing age itself but also might be due to improper replacement of the teeth. Pouched appearance of lower lip will be noted as a result of broadening and displacing anteriorly the mandibular denture arch. Vertical dimension should be maintained to prevent the wrinkles in the region of the mouth. If the vertical dimension is excess it results in stretched and expressionless appearance around the mouth. The fullness of the dentures should be monitored particularly, in case of mandibular denture to prevent overfull and flat appearance around the corners of the mouth.

Buccinator, orbicularis oris, incisivus superioris, inferioris, and buccolabial groups are the main concern to the prosthodontist. Orbicularis oris rests on the labial flange and gingival third of anterior teeth. Its tone is mainly dependent on the support it receives. Buccinator becomes a part of the denture bearing area in the mandible. It mainly prevents the dislodgement of the denture.

It helps in establishing the height of the occlusal plane of the occlusal rim. The muscles of facial expression that influence the borders of maxillary dentures are: Labial flange of the denture is influenced by orbicularis oris. Buccal flange of the denture mainly relies on levator anguli oris, orbicularis oris, buccinators. Buccal vestibule is also influenced by buccinator. The muscles of facial expression that influence mandibular denture are orbicularis oris influences in the region of labial frenum. It also affects the flange thickness. Mentalis makes the vestibule shallow. Buccal flange is supported by buccinator. Distobuccal area is influenced by the action of the masseter, which presses inward against the buccinator, thereby reducing space in that area. Though the complete denture treatment service meticulously rendered to the patient, the success may also be dependent on the neurological coordination of the facial musculature. Such as situations like Bell's palsy, the success of the complete denture may alter due to partial palsy of orbicularis oris and associated musculature.

#### **CONCLUSION**

The success of prosthodontic treatment is in direct proportion to the dentist's knowledge of functioning anatomy and his application of this knowledge to denture construction. Successful denture construction and comfortable wearing of the prosthesis is dependent on various factors, but amongst all, the role of muscles are influential one, and facial muscles are important for coordination between prosthesis performance and facial expression of emotion. Their action must be understood and recorded at all steps of fabrication of prosthesis.

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