

Evaluation of Upper Lip Elevation to the Ideal Lip Height in the Students of a Dental College

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Abstract

Aim: The aim of this research is to compare the lip elevation to the normal lip height. **Background:** Lip elevation is one of the eight parameters of a balanced smile the others being lip line, smile arc, upper lip curvature, lateral negative space, smile symmetry, and frontal occlusal plane. **Materials and Methods:** Sixty (30 males and 30 females) individuals were included in the study and were divided into 2 age groups. The age groups were between 15–20 and 21–25 years. These age groups were selected because studies show that 90% of patients reporting for orthodontic treatment are in this age group range. Two measurements were taken including (i) relaxed upper lip length and (ii) smiling external upper lip length. **Results:** The mean total lip elevation while smiling in males is 4.1 mm and for females was 4.9 mm. Maximum lip elevation was seen in the age group of 20–25 years in both males and females. The results are significant for both males and females across all measured age groups. To evaluate the lip elevation as for a balanced smile. **Conclusion:** As public awareness of esthetic dental treatment increases patient seeks to enhance and resolve several common concerns to achieve a good smile. Orthodontic case in which occlusion meets every criterion of American Board of Orthodontics for a successful treatment may not produce an esthetic smile. Thus, the goal of a clinician is to create not only an admired look but also the ability to harmonize with hard and soft tissues.

Keywords: Lip elevation, lip height, balanced smile

INTRODUCTION

A smile is a voluntary facial expression indicating happiness, pleasure, and greeting.^[1] According to Garber and Salama,^[2] the essentials of esthetic smile involve the relationship between 3 primary components: teeth, lips, and gingival scaffold. With age, there are significant changes seen in soft tissues in the human body because of the weakening of muscles that eventually results in visible soft tissue changes. While diagnosing and planning treatment for individuals, we should be thorough with the average values for that age and sex because identifying these values can help in evaluating clinical conditions more accurately helping to form more accurate treatment plans. In patients with short upper lip, due to the muscular hyperactivity, we can use botulinum toxin-A to the lip elevator muscles.^[3,4] Patients who show excessive gingival exposure during smiling as a result of vertical maxillary excess can be treated with Le Fort osteotomies.^[1,5,6]

Aim

This study aims to evaluate the upper lip height to the upper lip elevation.

MATERIALS AND METHODS

Sixty (30 males and 30 females) individuals were included in the study and were divided into 2 age groups. The age groups were between 15–20 and 21–25 years. These age groups were selected because studies show that 90% of patients reporting for orthodontic treatment are in this age group range. Two measurements were taken including (i) relaxed upper lip length which is ideally measured from subnasale to the most inferior portion of the upper lip at the midline (stomion

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DOI:
10.4103/ijofr.ijofr_25_17

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How to cite this article: Ashok NG, Ganapathy D. Evaluation of upper lip elevation to the ideal lip height in the students of a dental college. *Int J Orofac Res* 2017;2:51-3.



Figure 1: Resting external lip length

superius) [Figure 1] and (ii) smiling external upper lip length [Figure 2].

The inclusion criteria for the study were individuals who had never undergone maxillofacial surgery procedures had no history of previous or ongoing orthodontic treatment, no prosthodontic work such as crowns, bridges, or implants, no history of endodontic treatment in the smile zone, and Class I incisor relation without crowding or spacing.

The exclusion criteria were prosthodontic treatment in the smile zone comprising of crowns, bridges or implants, history of orthodontic treatment, endodontic treatment in the smile zone, craniofacial deformities, missing teeth, and attrition of the teeth in the anterior esthetic zone.

RESULTS

The mean total lip elevation while smiling in males is 4.1 mm and for females was 4.9 mm. Maximum lip elevation was seen in the age group of 20–25 years in both males and females. The results are significant for both males and females across all measured age groups.

DISCUSSION

In smiling, the upper lip is elevated by about 80% of its original length, displaying 10 mm of the maxillary incisors.^[7] Women have 3.5% more lip elevation than men.^[7] Actually, there is considerable individual variability in upper lip elevation from the rest position to the full smile,^[8] ranging from 2 to 12 mm, with an average of 7–8 mm.^[9] If a gingival smile is caused by a hypermobile lip, it would be a mistake to correct it with aggressive incisor intrusion or maxillary impaction surgery because that would result in little or no incisor display at rest and thus make the patient look older. Excessive lip elevation should therefore be recognized as a limiting factor. Likewise, if a low lip line is due to a hypomobile lip, extensive incisor extrusion would result in an overbite with excessive incisor display at rest. Due to a

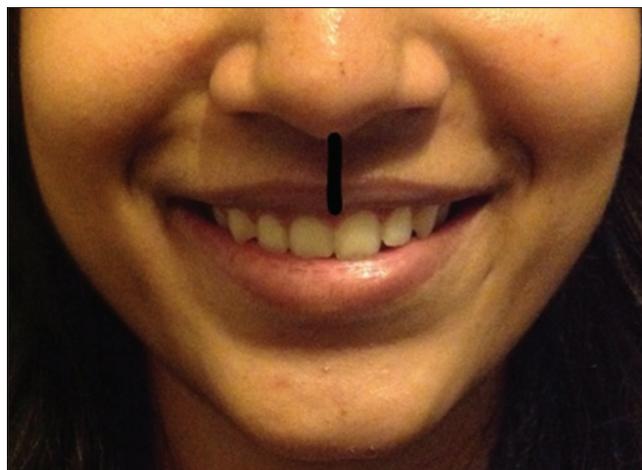


Figure 2: Smiling external upper lip length

more lip elevation seen in females, they tend to have more gingival exposure while smiling. Lip elevation is of the eight components to a balanced smile.

CONCLUSION

As public awareness of esthetic dental treatment increases patient seeks to enhance and resolve several common concerns to achieve a good smile. Orthodontic case in which occlusion meets every criterion of American Board of Orthodontics for a successful treatment may not produce an esthetic smile. Thus, the goal of a clinician is to create not only an admired look but also the ability to harmonize with hard and soft tissues.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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