

### Midline Deviation: Catch the Match

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#### Abstract

Smile aesthetics is one of the most important reason for patients to seek orthodontic treatment. One of the goals of orthodontic treatment is to achieve coincident maxillary dental midline with facial midline. A properly placed midline contributes to the desirable effect of balance and harmony of the dental composition.

#### Objective

The aim of our study is to determine the perception of maxillary dental midline deviation from facial midline and to evaluate how much is considered aesthetically acceptable by the laymen and by orthodontists.

#### Methods

Frontal facial smiling photographs of one male and one female individuals were captured, these images were digitally altered to create two other images with maxillary dental midline shifted 1mm and 3mm from the facial midline, respectively. A total of 200 individuals

including 100 laymen and 100 orthodontists served as evaluators for comparing the images. Responses were tabulated and statistical analysis was performed.

#### Results

Orthodontists were found to be more critical in evaluating dental aesthetics than the laymen, when the midline discrepancies exists. With midline discrepancy of 3mm both laymen and orthodontists were sensitive in perceiving the deviation. Laymen could not accept the same in females and orthodontists did not accept in both males and females

#### Conclusion

Matching midlines are the preferred choice for a pleasing smile. Orthodontists are more sensitive in perceiving midline deviation than laymen. Deviation of more than 3mm is aesthetically unacceptable by both orthodontists and laymen.

## **Keywords**

Smile, Midline, Aesthetics.

## **Introduction**

Smile aesthetics is one of the most important reason for patients to seek orthodontic treatment.[1] Since the patient decision to undertake orthodontic treatment is based primarily on aesthetic considerations, the evaluation and understanding of factors that influence their decision is of key importance to the orthodontists.[2] One of the goals of orthodontic treatment is to achieve the dental midline which coincides with the facial midline which acts as an important functional component of occlusion and also contributes to the desirable effect of balance and harmony in facial es

## **Materials and Method**

The study is designed to quantify the extent to which the deviation of maxillary dental midline from the facial midline would be acceptable between two group of evaluators namely laymen and orthodontists. Frontal facial smiling photographs of one male and one female individuals were captured, these images were digitally altered to create two other images with maxillary dental midline shifted 1mm and 3mm from the facial midline, respectively(Fig 1). Thus there were 3smile images each of male and female. thetics.

## **Results**

The frequency of attractive smiles by laymen and orthodontists are summarized in Table 1 and 2 respectively.

The results of our study showed that only 4% of laymen could perceive abnormality in smile in 1mm midline deviated cases of male image and 16% of the defect was perceived in female image for the same. More than 55% of laymen could detect abnormality in 3mm midline deviated cases of both male and female images.

3mm deviation in female photograph was not acceptable by 44% of laymen and 28% of laymen could not accept the smile with 3 mm midline deviation in male photograph. 1mm of deviation was acceptable in both male and female photograph by most of the laymen with a 72% acceptance

## **Statistical Analysis**

The measured values were evaluated for comparing statistical significance with Mann –Whitney test using SPSS version 2.1.

P value ( $P < 0.005$ ) was used to determine statically significant difference between smile esthetics and midline shift. Karls Pearson correlation test was used to correlate the smile esthetics with midline deviation.

## **Discussion**

Facial aesthetic evaluation is an important part of orthodontic treatment planning.[8] Achieving coincident dental midline with facial midline is an important component of aesthetic smile and functional occlusion. Hulsey et al quoted that a symmetrical dental arrangement is an important component of attractive smile.[9]

Achieving coincidence between maxillary dental and facial midline can be vexing. Complete correction of midline can result in a prolonged treatment time, multiple tooth extractions and complex mechanics.

## **Conclusion**

1. Matching midlines are the preferred choice for a pleasing smile.
2. Orthodontists are more sensitive in perceiving midline deviation than laymen.
3. Deviation of more than 3mm is aesthetically unacceptable by both orthodontists and laymen.

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