

SMILE DESIGN – A REVIEW

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ABSTRACT:

“A thing of beauty is a joy forever” is a common saying. But what is beauty? It is that which gives the highest degree of pleasure to the mind & suggests that object of delight approximates to one's conception of an ideal. In the era of so many beauty pageants, involvement of anatomists and esthetic dentists in defining the beauty is well understood. The present article reviews the various anatomical parameters for assessing a beautiful face and a beautiful smile. These may be of help to anatomists, dentists and of course to aspirants.

Key words: Beauty, Beautiful Face, Smile, Anatomy.

INTRODUCTION

The concept of esthetics has fascinated mankind for centuries. The interpretation of what is “esthetic” is as broad an issue as one can envision. Our ultimate goal as clinician is to achieve a pleasing composition in the smile.

The two main objectives in dental esthetics are:

1. To create teeth of pleasing inherent proportions and of pleasing proportion to one another and
2. To create a pleasing tooth arrangement in harmony with the gingiva, lips, and face of the patient. These two objectives established by using references and are reinforced with perspective and illusion¹.

Expression has many dimensions....but... ..A Smile is what makes the difference!!!

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PRINCIPLES OF SMILE DESIGN:⁷

The principles of smile design require an integration of the dental facial composition and the dental composition. The dental facial composition includes the lips and the smile as they relate to the face, and the dental composition relates more specifically to the size, shape, and positions of the teeth and their relationship to the alveolar bone and gingival tissues².

SMILE ANALYSIS:

Achieving a successful, healthy and functional result requires an understanding of the interrelationship among all supporting oral structures, including the muscles, bones, joints, gingival tissue and occlusion. The clinical examination should include a smile analysis and the evaluation of teeth.

The process of Smile Design Analysis³

Smile design should involve the evaluation of certain elements in a specific sequence;

- ❖ Facial analysis (general facial balance)

- ❖ Dento-facial analysis (Maxillo-mandibular relationships to the face, and the dental midline relationship to the face)
- ❖ Dento-labial analysis (the relationship of the teeth to the lips)
- ❖ Dento-gingival analysis (the relationship of the teeth to the gingiva, and
- ❖ Dental analysis (the inter tooth and intra tooth relationships, ie, form and position along with color).

SMILE COMPONENTS:

A smile is something that bridges the large gap between any two individuals. Of all the components of a smile, the teeth play a very important role in creating a perfect effect. It is not just necessary to have good perfect teeth, it is also necessary for the teeth to be in harmony with the face, the lip line, the curvature of the mouth, etc.

Beautiful Smile: ^{1,4,5,6,7}

A beautiful smile is an added asset to a beautiful face. *Goldstein (1998)* described certain parameters of a beautiful smile which are described below:

(A) Facial Analysis:

1. **Full Smile:** Following parameters judge the beauty of a face in full smile.

- (i) Relationship between interpupillary line (AB) & occlusal plane of teeth (CD): Ideally these should be parallel to each other but may be canted to right or left side.
- (ii) Midline relationship of teeth (Central incisor) to face (philtrum). In the most beautiful face, this relationship would be symmetrical; in others it may be to right or left of centre.

2. **Profile:** Following parameters are considered in a profile

(i) Nasolabial angle-This is the angle between columella of nose & anterior surface of upper lip.

$$0 = 90^{\circ} \quad (\text{Normal})$$

$$0 = <90^{\circ} \quad (\text{Convex})$$

$$0 = >90^{\circ} \quad (\text{Concave})$$

In men the nasal-labial angle is generally 90° to 95° , whereas In women it is generally 100° to 105.9° .

(ii) Ricketts E-Plane - It is drawn from tip of the nose to the chin. Then the distance between this plane & the lips is measured. Ideally the upper lip should be at a distance of 1-2 mm & lower lip at a distance of 2-3 mm from this plane.

(B) Dentofacial Analysis: —It has following parameters:

(i) *Position of upper lip* – while smiling, upper lip should be neither too high so that to expose the upper gums, nor too low so as to cover more than half of upper teeth. It should be ideally covering not more than $\frac{1}{4}$ th of teeth.

(ii) *Alignment of upper incisal edge to lower lip*– The best position is a convex curve downwards, but it may be straight or even concave downwards.

(iii) *Tooth-lower lip position* – The teeth may be just touching the lower lip or there may be a slight gap.

(iv) *Number of teeth exposed during full smile:* The smile may be canine to canine (6 teeth exposed); premolar to premolar (8-

10 teeth exposed); molar to molar (16 teeth exposed).

(v) *Midline relationship of central incisors to philtrum* – A midline through philtrum should ideally pass through the centre of two central incisors. However, it may pass right or left of the centre of central incisors.

(vi) *Midline skewing to left or right* – Ideally, there should be no skewing. But there may be left or right skewing.

(vii) *Bilateral negative space* – under normal conditions, there is little space visible between angles of mouth & teeth while smiling is called as negative space.

(C) Dental analysis:—

(i) *Proportions of central incisors* – Height & width of central incisors is measured with callipers. The most ideal width to height ratio is 80%

(ii) Proportion of central incisor to lateral incisor to canine- The ideal ratio should be 1.6: 1: 0.6.

(iii) Interdental contact area and point - It is defined as the broad zone in which two adjacent teeth touch. It follows the 50:40:30 rule in reference to the maxillary central incisor. The increasing ICA helps to create the illusion of longer teeth by wider and also extend apically to eliminate black triangles.

(iv) Incisal embrasures - The incisal embrasures should display a natural, progressive increase in size or depth from the central to the canine. So that the contact point moves apically as we proceed from central to canine. If the incisal embrasures are too deep, it will tend to make the teeth look

unnaturally pointed. As a rule, a tooth distal to incisal corner is more rounded than its mesio incisal corner.

(V) Zenith points - The most apical position of the cervical tooth margin where the gingiva is most scalloped. It is located slightly distal to the vertical line drawn down the centre of the tooth. The lateral is an exception as its zenith point may be centrally located.

(D) Dento Gingival Analysis

1. Healthy gingiva - Healthy gingiva is usually pale pink in color, stippled, firm and it should exhibit a matte surface; located facially – 3 mm above the alveolar crestal bone and interdentally – 5 mm above, the intercrestal bone papilla should be pointed and should fill the gingival embrasure right up to the contact area.

2. Gingival level and harmony - Establishing the correct gingival levels for each individual tooth is the key in the creation of harmonious smile. The gingival margin of the lateral incisor is 0.5–2.0 mm below that of the central incisors. The least desirable gingival placement over the laterals is for it to be apical to that of the centrals and or the canines.

Conclusion:

Smile design is a relatively new discipline in the area of cosmetic dentistry, and it involves several areas of evaluation and treatment planning, which simply means that cosmetic dentistry has to be a multispecialty branch, wherein all treatments like orthodontics, periodontics, and surgical procedure have to be performed whenever deemed necessary. So smile we create should be

esthetically appealing and functionally sound too⁵.

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