

## Anatomy of 'A Beautiful Face & Smile'

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**Abstract.** — "A thing of beauty is a joy for ever" 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. Standards for measuring beauty are actually comparison of everything you have experienced. In the era of so many beauty peagants, involvement of anatomists and esthetic dentists in defining the beauty is well understood. The authors in the present article have reviewed 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 :

Beauty is that "which gives the highest degree of pleasure to the senses or to the mind and suggests that the object of delight approximates one's conception of an ideal." (Webster, 1988) Ever since primitive people first smeared their faces and bodies with pigments from the earth and admired the result, the quest for beauty has been expressed by every human culture.

### Standards of Beauty :

The human brain works much like a computer, storing information and recalling it at a later time. Standards for measuring beauty are actually a compilation and comparison of everything you have seen or experienced. When you look at a flower and think. "That's beautiful," in your mind's eye you are comparing your response to this flower in relative terms to every other flower you have seen. The same is true when you look at a smile.

It is true that standards of beauty change over time and across cultures. Members of some African tribes, for example, perforate their lips, ears, or noses in order to insert shells, colored stones, or gems. Among the Chinese nobility, the tiny bound feet of females were an important standard of beauty and status. Classical cultures of Greece and Rome based their standards of beauty on set rules of proportion and composition.(Goldstein, 1998)

While the various cultures of the world, past and present may differ widely in their standards of beauty, the response to beauty is universal and spans all time.

### The Response to Beauty :

Psychologists have amassed considerable evidence that society places a great amount of importance on appearance. Various studies show that attractive people have more success in obtaining everything from dates to jobs to favourable jury verdicts. A report by *Langlois et al (1987)* found that infants respond more positively to attractive faces than to unattractive ones, and prefer faces with soft curves to those with sharp angles. Research also demonstrates that attractive men and women tend to have higher paying and more prestigious jobs. Criminologists report that good-looking criminals are treated more leniently by juries and, in general, are more likely to receive lighter sentences than their less attractive counterparts. Teachers tend to be less harsh when disciplining attractive children, while both students and teachers perceive good-looking children to be smarter and more likely to succeed. Thus, there should be no question that it is advantageous in our society for individuals to make every effort to optimize their appearance.(Goldstein, 1993)

### Proportions of Beauty :

Many factors influence the perception of beauty, including makeup, clothing, jewelry and facial expressions. However, it is the relational proportion of our physical features that is the primary factor in determining the perception, conscious or subconscious, of beauty.

*Cunningham (1986)* attempted to mathematically assess physical beauty. In a study rating the attractiveness of 50 females, more than

half of whom were finalists in an international beauty pageant, he concluded that :

1. The width of an eye (AB) should be three-tenths that of the face (CD) as measured at eye level (Fig 1)



Fig-1

2. The chin length (AB) should be one-fifth the total height (CD) of the face (Fig. 2)

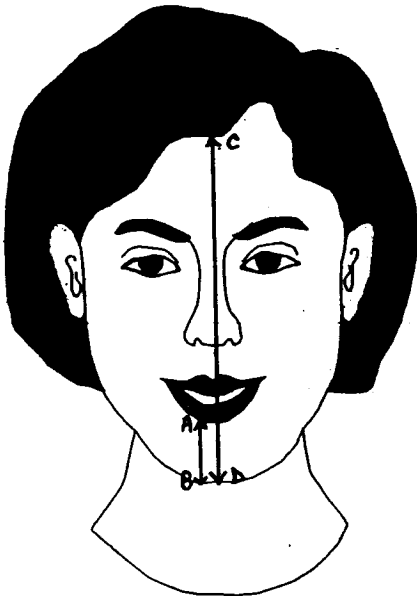


Fig-2

3. The vertical distance from the center of the eye to the bottom of the eyebrow (AB) should be one-tenth the height of the face (CD) (Fig. 3)

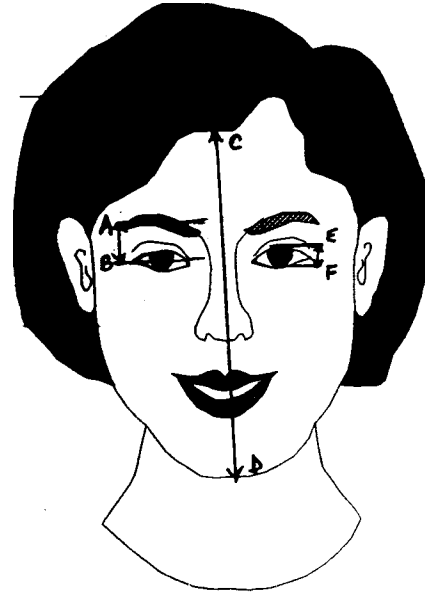


Fig-3

4. The height of the visible eyeball (EF) should be one-fourteenth the height of the face (CD) (Fig. 3).

5. The total area of the nose should be less than five percent of the total area of the face (Fig. 4).



Fig-4

6. The ideal mouth (AB) is 50 percent of the width of the face (CD) measured at mouth level (Fig.5).

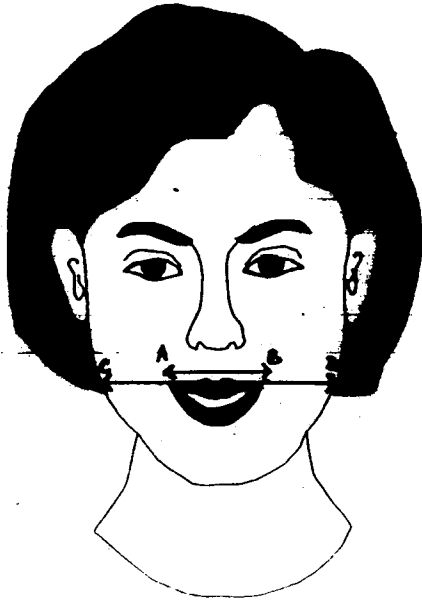


Fig-5

Cunningham's findings suggest that large eyes, a small nose and chin, high cheekbones, and a large, balanced smile are considered to be the physical attributes of a beautiful female face. Likewise, the handsome male face will have these same attributes but with the modifications of a relatively small nose, bushy eyebrows, and prominent chin.

These mathematical calculations reveal a harmony of proportion between features. When any one of these features is out of harmony, we tend to perceive that person as deviating from normal. If the features are brought into harmony and symmetry, the person is then viewed as attractive.

**Beautiful Smile :**

A beautiful smile is an added asset to a beautiful face. Former lies in the domain of an esthetic dentist. Key to the successful results in esthetic dentistry lies in a saying by Dawson (1995) i.e. "If you know where you are & you know where you want to go, getting there is easy" 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 (Fig. 6) but may be canted to right or left side.

- (ii) Midline relationship of teeth (Central incisor) to face (philtrum). In the most

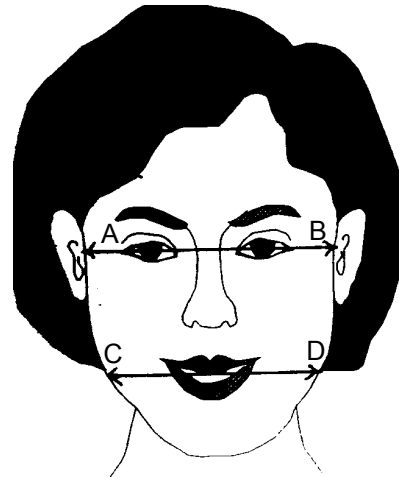


Fig-6

beautiful face, this relationship would be symmetrical; in others it may be to right or left of centre.

- (iii) Lip symmetry (Relationship of lips to face)- A symmetrical relationship adds to beauty while asymmetry subtracts.

2. *Lips at Rest* : The lips play an important part in facial beauty whether these are full or thin or average, whether prominent or retruded, height of the upper & lower teeth exposed at rest, all these constitute vital parameters for gauging a beautiful face & smile.

3. *Profile*. Following parameters are considered in a profile

- (i) Nasolabial angle-This is the angle between columella of nose & anterior surface of upper lip. (see fig. 7). The Normal angle

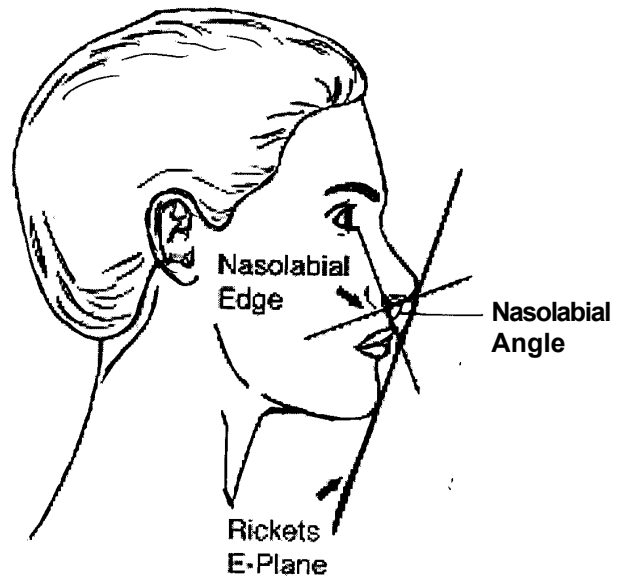


Fig-7

should be 90°. If it is <90°, the maxilla of that person is prominent & the profile is known as convex. If the angle is > 90°, the maxilla is said to be retruded & the profile concave.

between this plane & the lips is measured ideally the upper lip should be at a distance of 4mm & lower lip at a distance of 2mm from this plane.

(ii) Ricketts E-Plane - It is drawn from tip of the nose to the chin. Then the distance

**(B) Dentofacial Analysis (Fig 8) :-** A beautiful and esthetic smile has following vital parameters.

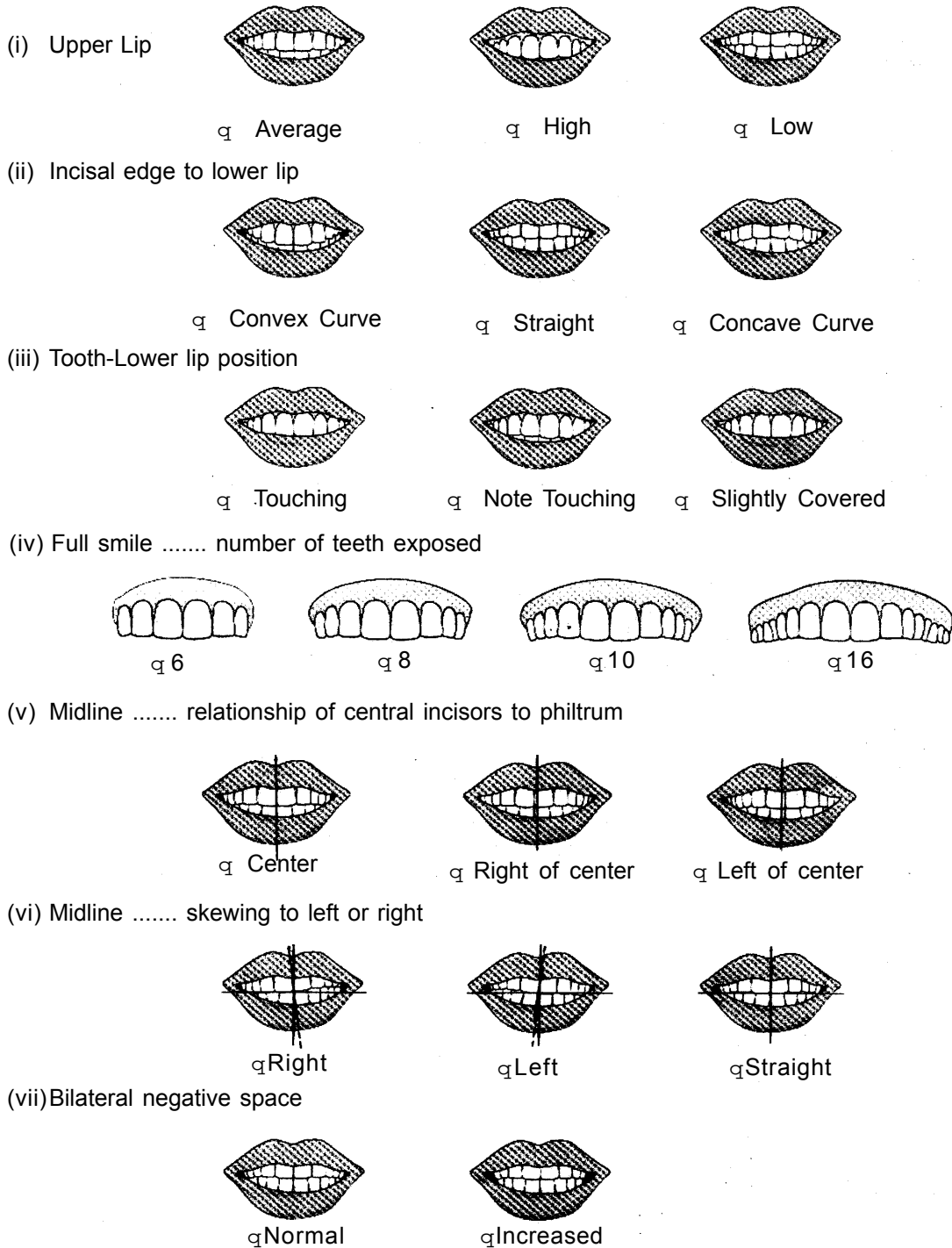


Fig-8

Dentofacial Analysis

(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.

### (C) Dental analysis :—

(i) *Proportions of central incisors* – Height & width of central incisors is measured with calipers. The most ideal width to height ratio is 80%.(Fig-9).

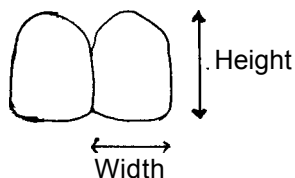


Fig-9

(ii) Proportion of central incisor to lateral incisor to canine-Width of central & lateral incisors & canine is measured with calipers. The ideal ratio of cent : lateral : canine should be 1.6 : 1 : 0.6. (Fig.-10) (See Golden proportion vide infra).

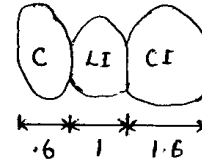


Fig-10

**(D) Other Parameters for a Beautiful Smile :** Following parameters, if present, carry a negative effect on the beauty of smile & need management.

- (i) Gingival Height Asymmetry
- (ii) Dark triangles.
- (iii) Discoloured Gingiva.
- (iv) Over contoured crowns
- (v) Poor crown margins.
- (vi) Active periodontal problems.
- (vii) Mobility and / or furcation.
- (viii) Endodontic lesion.
- (ix) Occlusion-wear facets / incisal wear.
- (x) Flared teeth
- (xi) Diastema
- (xii) Overlapped teeth
- (xiii) Chipped teeth
- (xiv) Discoloured teeth.
- (xv) Smoothness of surface texture.

**Concept of Golden or Divine Proportion** - It is a concept incorporated by the restorative dentist into arch and tooth evaluation for determining tooth

size. This theory states that for any two objects to be in esthetic harmony, they should exist in the ratio of 0.618 to 1.0 (Ricketts, 1982 a, b.)

In dentistry, certain groups of teeth are theoretically proportionate to each other in this ratio. According to Levin (1978) "the [perceived width of the [maxillary] central incisor is in golden proportion to the width of the lateral incisor." Similarly, "the width of the [maxillary] lateral incisor is in golden proportion to the width of the canine." Research by Preston (1993) states that these proportions are derived from the apparent size of the teeth as viewed directly from the anterior aspect. Preston concludes that "although the advocated ratios may provide a result that is esthetically pleasing, they are not the ratios found in nature." For many patients, this theory and the ratio of the golden proportion can be quite useful, especially as a starting point in achieving a harmonious and esthetic anterior segment.

**Proportions of a Beautiful Nose :** A beautiful & proportionate nose adds to beauty of face. The most ideal proportions of a beautiful nose are given below

- (a) Generally the columella-lip angle is :
  - 1 90 degrees in a man
  - 1 Between 105 and 110 degrees in a woman
  - 1 In younger age the angle is larger, but decreases as the age advances.
- (b) The angle at the bridge of the nose should occur near the eyelashes..
- (c) The line of the nose usually breaks a little above the tip, especially in women. Men's noses tend to be straighter.
- (d) The usual ratio between the distance the nose projects from the face (A) and the length of the upper lip (B) is 1 : 1 (Fig. 11)
- (e) A line drawn from the tip of the chin to the tip of the nose should extend about 2mm from the upper lip (Fig.7)

**Beautiful Eyes.** The eyes are one of the main focal points of the face. Proper highlighting of the eyes can enhance one's overall appearance.

Ideal eyebrow shape can be determined with simple guidelines :

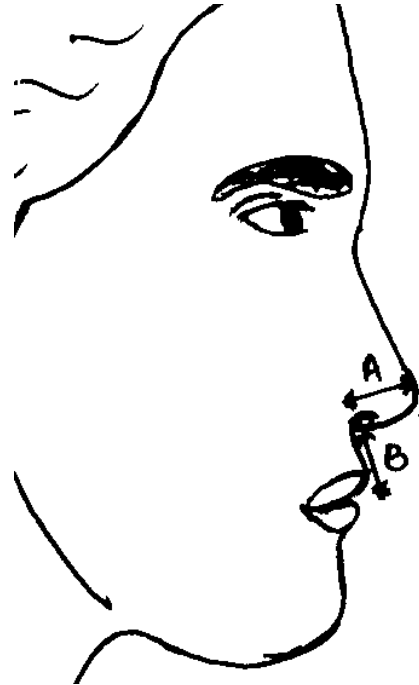


Fig-11

1. A vertical line extending from beside the nostril to be forehead will indicate where the brow should begin, unless the nose is overly broad (Fig. 12).



Fig-12

2. A line extending from beside the nostril to the outside of the eye determines brow length (Fig. 13).



Fig-13

3. The arch of the brow normally occurs immediately above the center of the pupil when the patient is looking straight ahead.

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