

Esthetic considerations in diagnosis and treatment plan

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Esthetic Parameters

- Personal taste modified by social norms
- Creating beautiful smile dentist should know esthetic parameters

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- Although there are many things to consider when planning an esthetic case, many principles and guidelines exist that can help direct treatment.
 - It is important to have a good understanding of the overriding ethical principles as well as the elements of **microesthetics** and **macroesthetics** prior to performing esthetic dentistry.
 - A simple rule is to start with the **large features** and work **toward** the **smaller features**. Look at the **face, lips, and gingiva** before individual tooth assessments are performed.
 - In other words, look at the forest before you look at the trees.

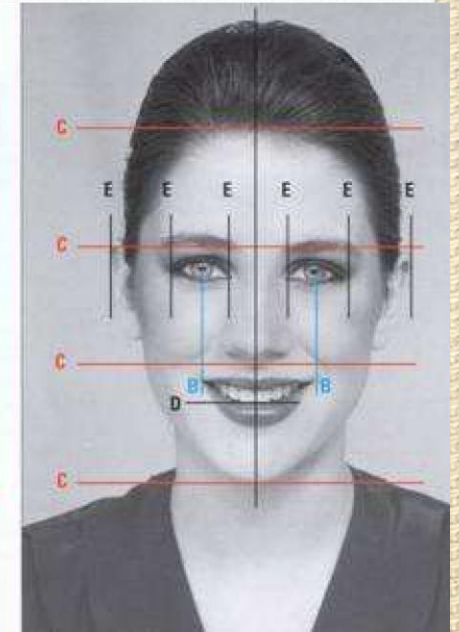
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- Knowledge of esthetics helps the dentist to achieve *a pleasing appearance*.
 - Esthetics is often the primary motivating factor for patient seeking dental care.
 - A successful restoration will provide the patient with excellent *long-term function*;
 - it should also produce an *attractive smile*.

Esthetic parameters

- Face height
- Lip length
- Lip mobility
- Symmetry
- Incisal plane
- Posterior occlusal plane
- Buccal corridor
- Lower lip
- Upper lip
- Lip asymmetry

Esthetic parameters face height

- The face can be divided horizontally into thirds
- The middle third (from glabella to subnasale) should be equal to the lower third (subnasale to menton)
- Excessive length of lower third of the face
- most common the result of maxillary excess
- and accompanied by excess display of gingiva



Ethetic considerations

Lip length

- Measured from subnasale to inferior border of upper lip
- Average lip length in female 20-22mm, male 22-24mm
- Mobility measures from repose position to high smile position
- Average lip mobility 6-8mm



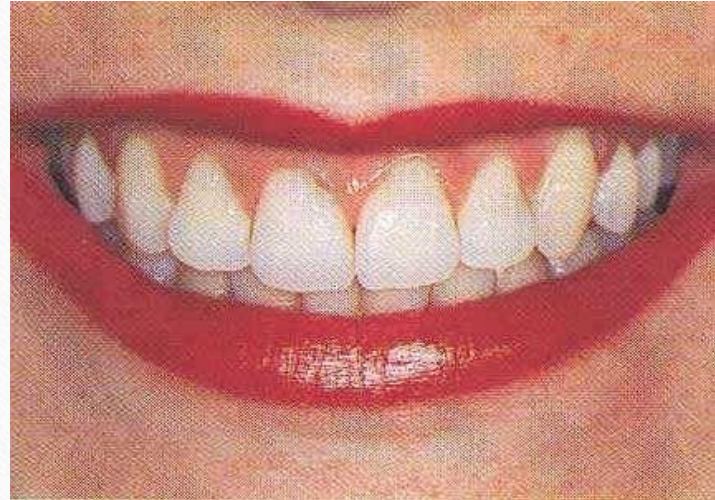
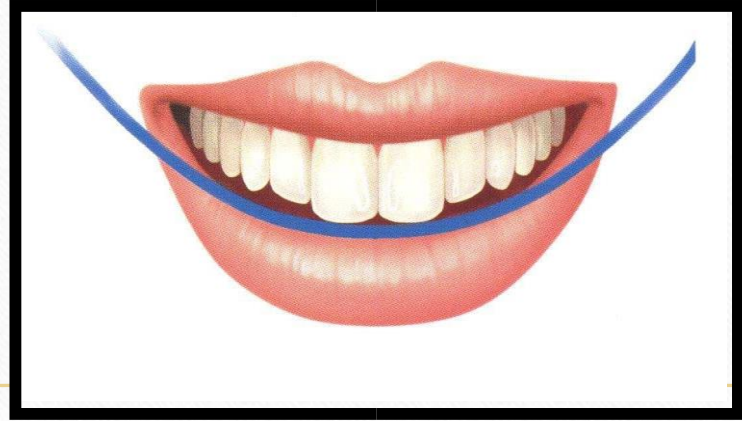
Esthetic considerations symmetry

- Outline symmetry is essential at the midline
- Maxillary incisors should be mirror images of each other
- Line drawn between central incisors should be perpendicular to the horizon
- Maxillary midline should be coincident with the facial midline

Incisal plane

- Incisal plane is evaluated from cusp tip of maxillary
- right canine to same point on left one
- Should be parallel to the horizon
- Should curve simillary to curve of lower lip





Posterior occlusal plane

- The buccal cusp tips of the maxillary posterior teeth should provide a visual progression from canine cusp tips with no steps

Buccal corridor

- the space between the buccal surfaces of the maxillary posterior teeth and the cheek In full smile should be almost filled with the teeth
- Excess buccal corridor space usually due to a development problem or constricted maxillary arch

Lower lip

- Incisal edges of maxillary anterior teeth should be cradled by the lower lip, in full smile
- None of the incisal edges of maxillary anterior teeth should be concealed by lower lip in full smile

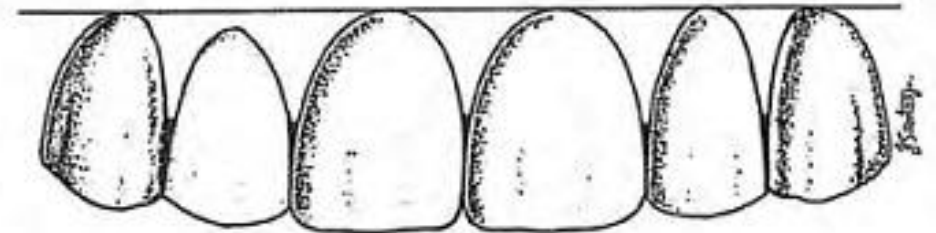


Upper lip

- In full smile the upper lip should ideally translate up to the gingival line(70% population)
- High smile line(10%) „gummy smile
- Low smile line(20%)

Gingival line

- To evaluate: the straight line is drawn from the tooth gingiva interface of right maxillary canine to same point on left one
- The tooth gingiva interface of both central incisors should be on this line
- The tooth –gingiva interface of lateral incisors may either fall on the gingival line or be up to 1.5mm below it



Upper lip

- In full smile the upper lip should ideally translate up to the gingival line
- If the upper lip does not translate up to the gingival line during full smile, some of the clinical crowns of maxillary anterior teeth remain covered
- This results in loss of dynamism of the smile
- If the upper lip translates above the gingival line
- this results in gingival display above clinical crowns

Lip asymmetry

- if a patient has an asymmetric upper lip translation, resulting in excess gingival display on one side, esthetic crown lengthening surgery may be accomplished to provide more symmetry in the posterior gingival display
- brighter restored teeth will draw attention to the smile and accentuate the asymmetry.



- If a patient has a lower lip asymmetry during full smile that results in a unilateral increase in negative space between the maxillary incisal edges and the lower lip, smile symmetry is lost
- The treatment for the asymmetric lower lip is Botox (Allergan).



Incisal edge

- Determination of the correct position of incisal edges of maxillary central incisors is the first and essential step in the provision of anterior restorative dentistry

Position of incisal edges

- In full smile should be cradled by the lower
- In full smile the buccal cusp tips of the posterior maxillary teeth should provide visual progression from canine cusp with no step



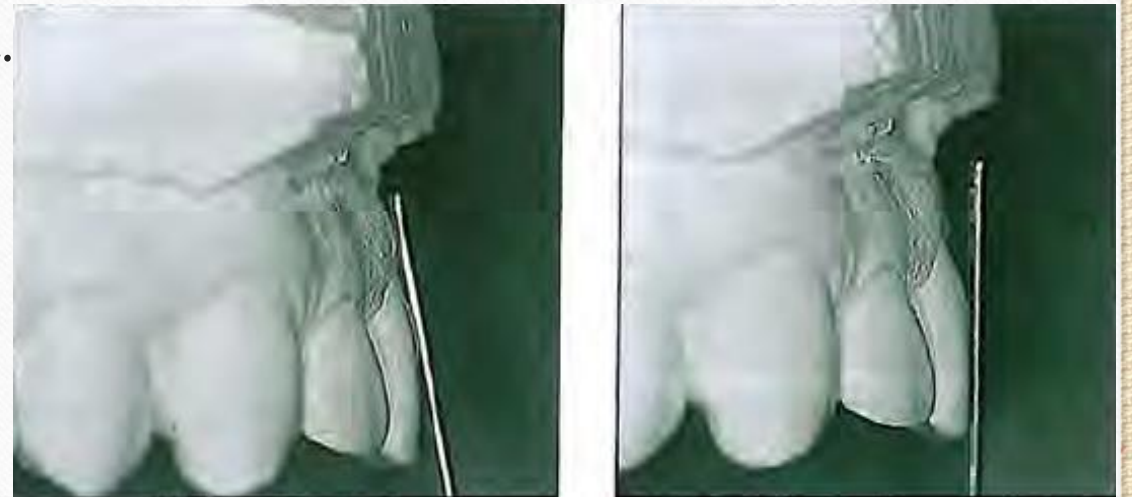
- In gentle repose have patient say M (EMMA) approximately 4 mm of the incisal edges of the maxillary central incisors are displayed
 - When patient says E a space between the upper and lower lip is apparent
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- If the patient has a high smile line, lengthening may be taken into consideration with the gingival tissues correction in this esthetic zone.
 - A general rule suggested by Spear (1999) is the more mobile the lip, the less incisal edge can be shown at rest
 - The less mobile the lip, the more incisal edge should be shown at rest to achieve a pleasing full smile.

Facial contour of maxillary incisors

- The incisal half is tapered back for ease in speaking and swallowing
- chronic gingival inflammation
- lip pressure, causing linguoversion of the overcontoured teeth or interference with the path of lip closure.



Lingual contour of maxillary incisors

- the position of the incisal edges of the mandibular incisors in relation to the maxillary central incisors when the patient makes an "S" sound must be determined.

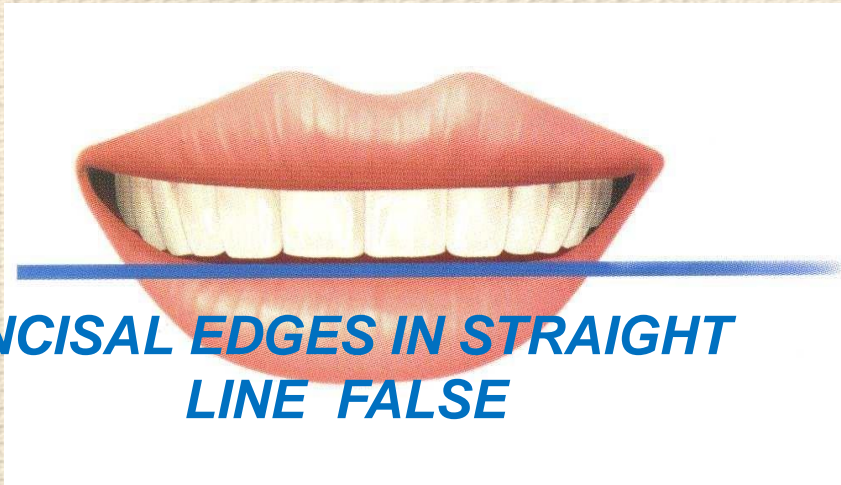
Gingival zenith



Interproximal contact areas

- black triangle

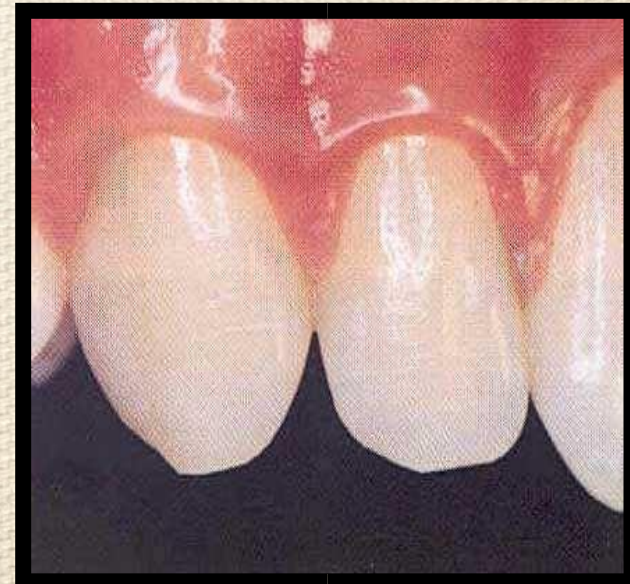
ESCAPE FROM ARTIFICIALITY

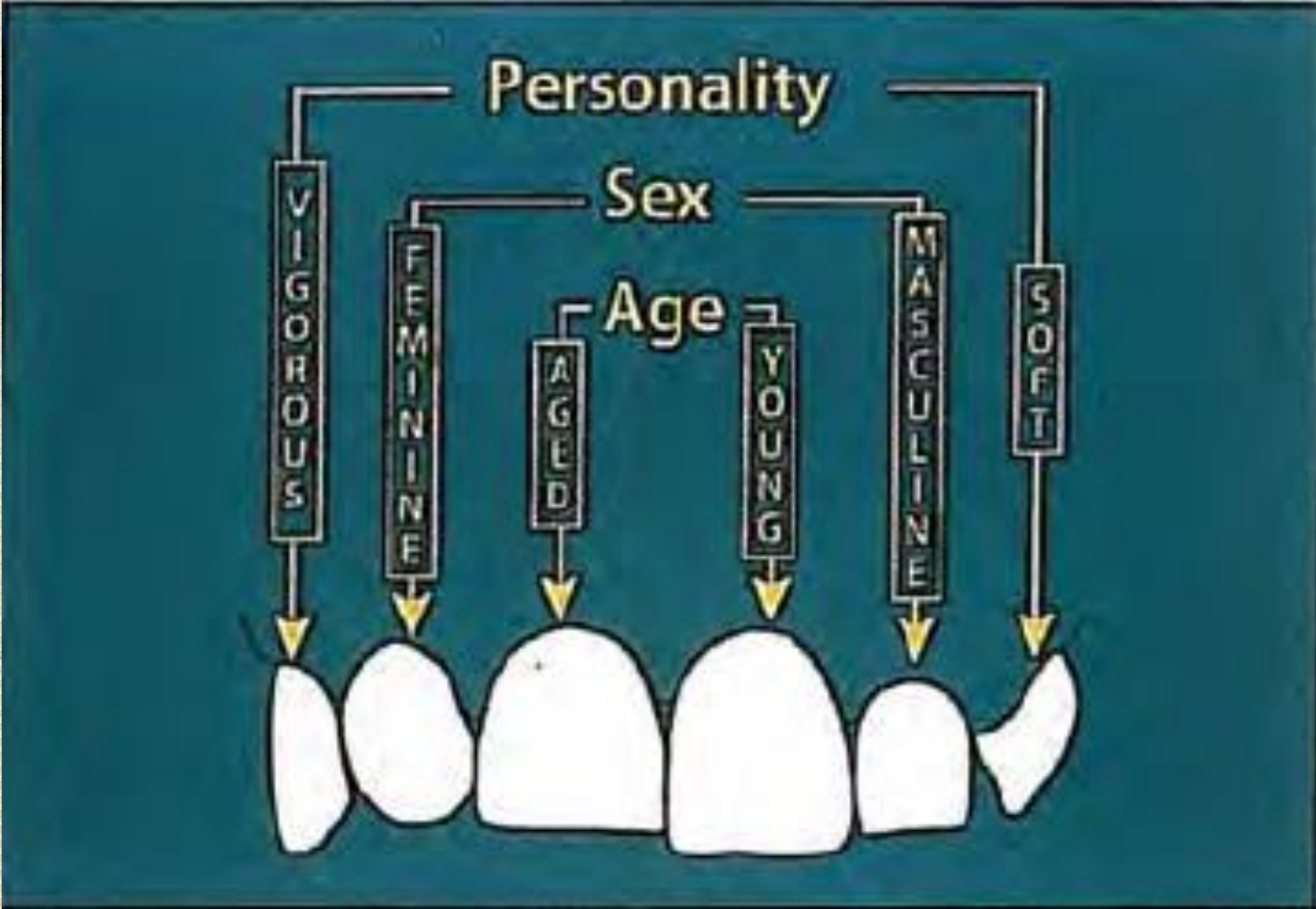


The proximo incisal angles must be carefully verified as they affect the incisal embrasure size.

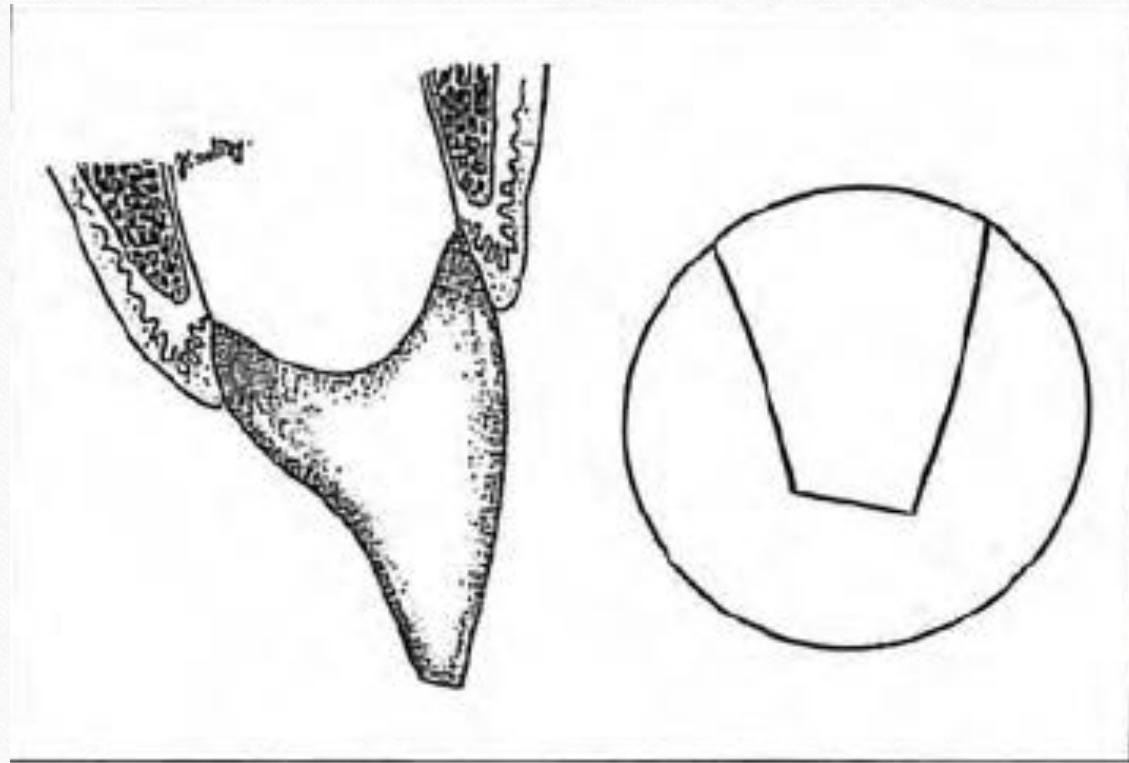
Giving the proper size and form to each embrasure is very significant in creating a pleasing esthetic effect.

A lack of incisal embrasure space causes restorations to visually appear as one unit, there by producing an unnatural tooth appearance.

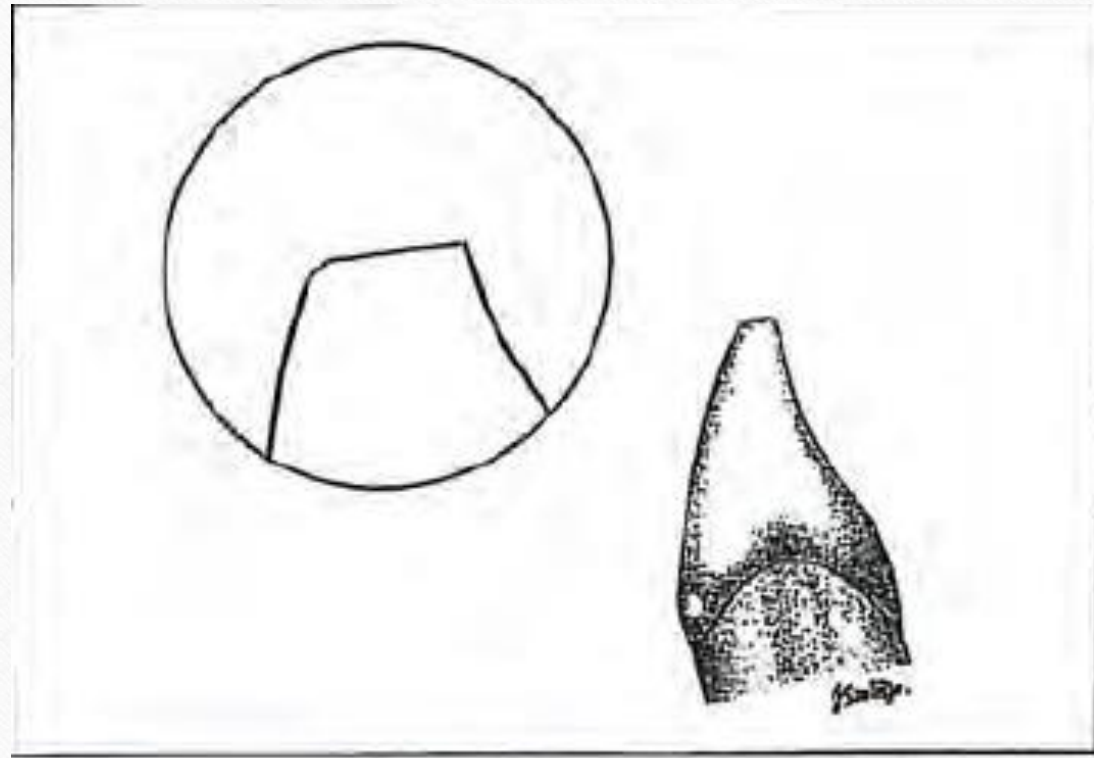




Maxillary incisal edge shape (buccolingual)



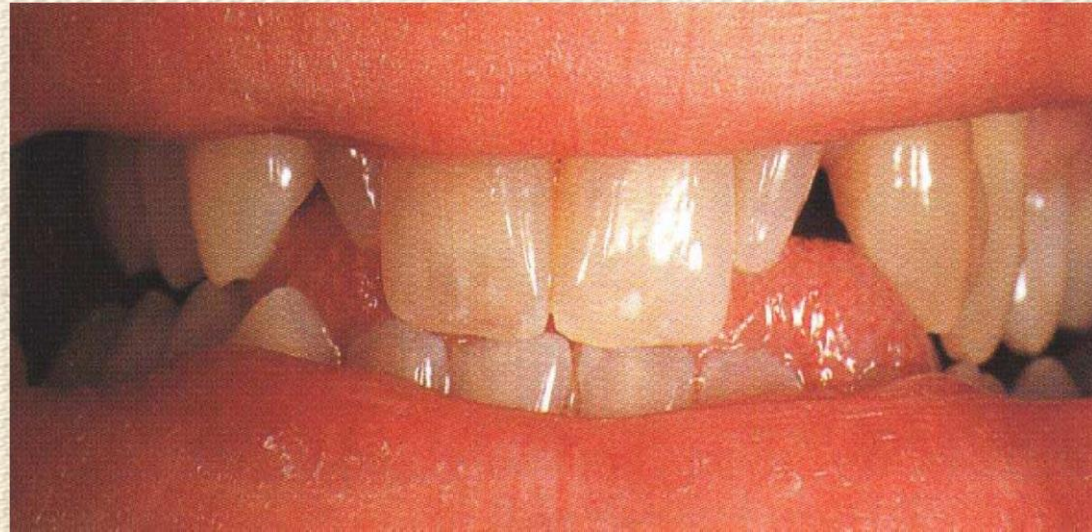
Mandibular incisal edge shape



Outline symmetry

- peg-shaped lateral incisor





Facial contour of the maxillary incisors

- The facial surfaces of the maxillary incisors should not be rounded mesiodistally but rather should be flat, with resulting bold mesial and distal line angles and deep facial embrasures



Outline form of maxillary canines



Tooth-to-tooth proportions

- tapered maxillary arch



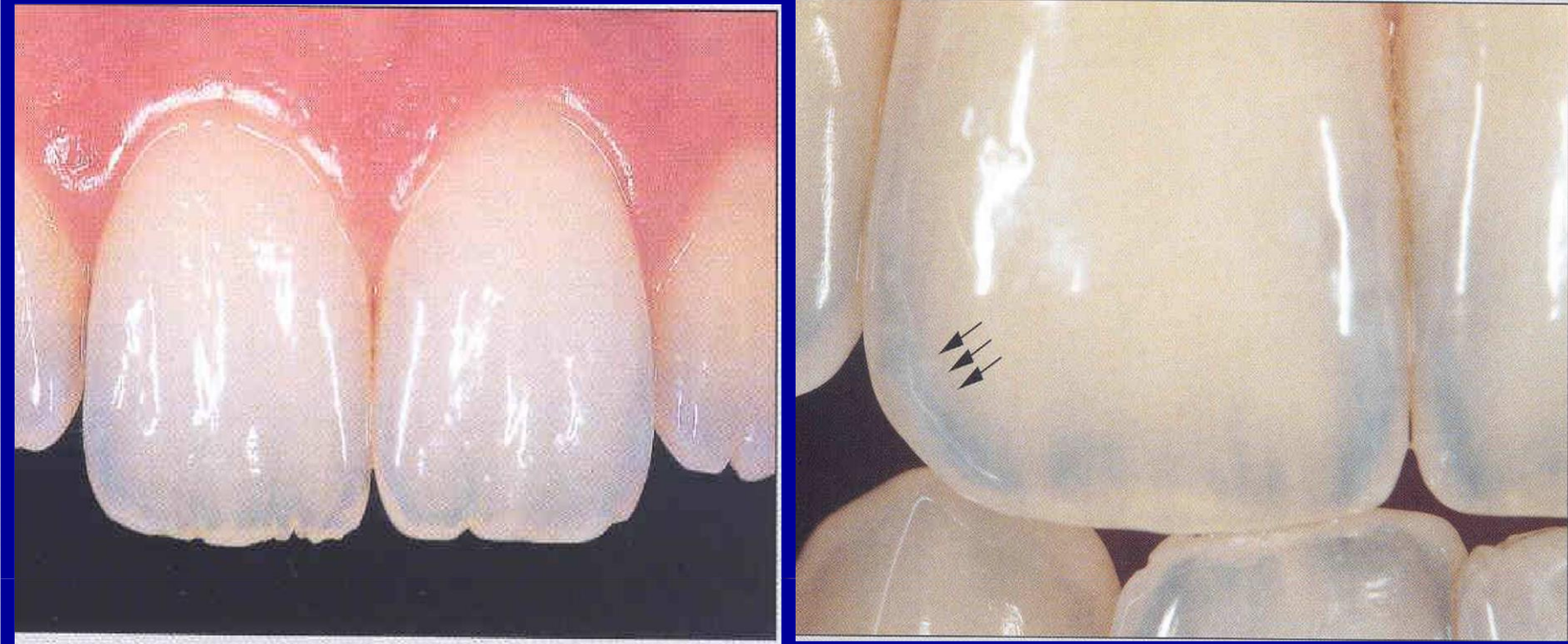
COLOR

- In dentistry color described four dimensions
- HUE the basic color of the tooth
- CHROMA the saturation and intensity of the hue
- VALUE measure of brightness of the tooth
- MAVERIC colors are concentrated areas of the color that are different from overall background color

COLOR of natural teeth

- Natural teeth are polychromatic
- Generally have higher CHROMA in the gingival third
- Lower CHROMA and higher VALUE in middle third
- Incisal third is characterized by the transition to incisal translucency
- MAVERIC colors can appear anywhere and individualize the tooth

VARIATIONS WITHIN A TOOTH



cervically more dentin than enamel. -

**Incisally the enamel is thicker than the dentin,
which increases the translucency.**

**Different areas of coloration within
the same tooth Separate shade selection
for each color zone to be used in the
appropriate areas.**

COLOR

- CHROMA of lateral incisor is commonly the same as central incisors
- The VALUE of lateral is slightly lower
- Maxillary canine has higher CHROMA and VALUE lower with minimal translucency

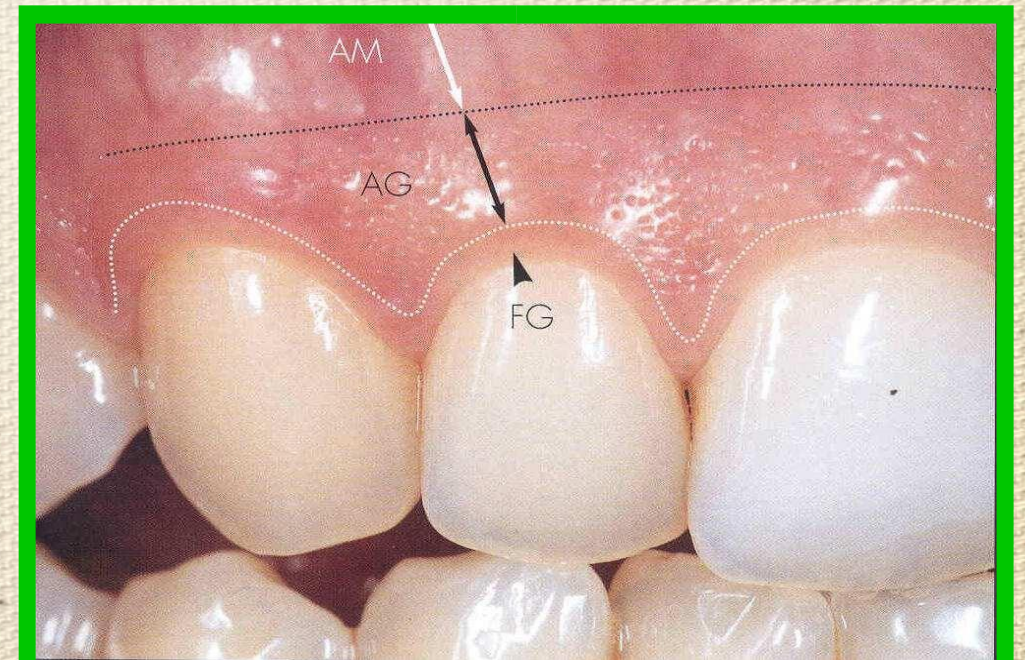
SHADE SELECTION

- *Many factors can be responsible for poor color match:*
 - *A poor selection may have been made from available shades, or it may not be possible to match the natural teeth with the available composite colors.*
 - *Use of special colour code made from composite doctor will use in this particular time eliminates possible mistakes*
 - *Hybryd composite better mimic color of dentin and microfil composites better mimic color of enamel*
- *Color match should be made with wet teeth and without rabber dam*



VARIATIONS AMONG TEETH

- *Maxillary anterior teeth*
- canines > chroma related to the dentine
- lateral incisor -----slightly less pigmentation than the central incisor, related to the faciolingual dentine thickness, which is often slightly less on a maxillary lateral incisor



Mandibular anterior teeth

- *The canines exhibit the greatest color intensity, with the incisors usually appearing the same.*
- *If a variation in the incisors exists, it is the opposite of that found in the maxillary incisors. The lateral incisor > pigmentation owing to the larger crown dimension.*

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- *Posterior teeth exhibit same degree of pigmentation, less than canine. Occasionally, the molars > pigmented than the premolars*

Color modifiers

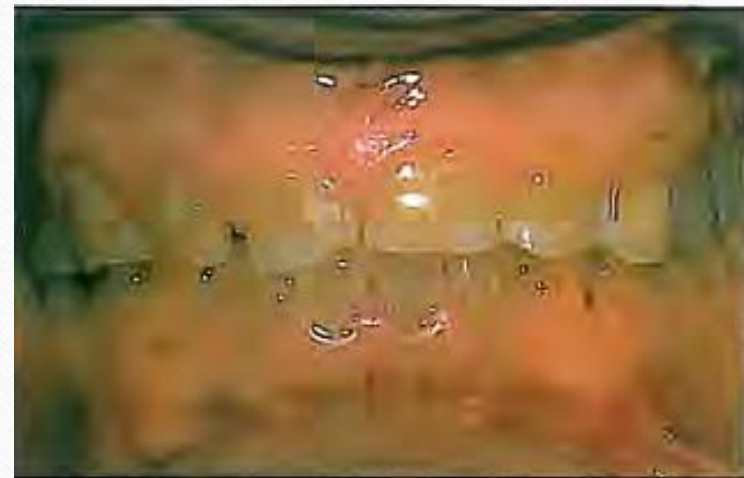
- hair color, skin color, and lipstick color
- skin color is by far the most important.
- A given tooth shade will look lighter and higher in value in a patient with darker skin

Age characteristics of teeth

- Both tooth color and surface texture relate information about the age of the patient

Chroma and value

- The value, or brightness, of a tooth is higher in young patients
- The chroma is lower in young patients and increases with age.



Surface texture

- Surface texture is higher in the young patient
- The surface luster is a function of the amount of surface texture.
- porcelain veneers with low value, low surface texture, and high luster are not appropriate for a 25-year-old patient.

SURFACE CHARACTERIZATION

*surface texture control
the reflection of light*



When light strikes a restoration surface, it should create a reflection pattern similar to that of adjacent teeth, thus enhancing the color match.

Developing the desired light reflection on a restoration's surface by meticulous duplication of the heights of contours and depressions on the facial surface.

The number of depressions, their location, form, and depth can be recorded by close-up photographs taken from different angles and by the working cast.

Individual tooth length and proportion

- The maxillary central incisors are the centerpiece of the smile.
- 10 to 11 mm
- The ratio of height to width 1.2 to 1.0.
- 75% to 80% of its height.
- When evaluating a smile, the dentist must start with the position and size of the maxillary central incisor.
- It is difficult, if not impossible, to develop optimum esthetics with short maxillary anterior teeth.



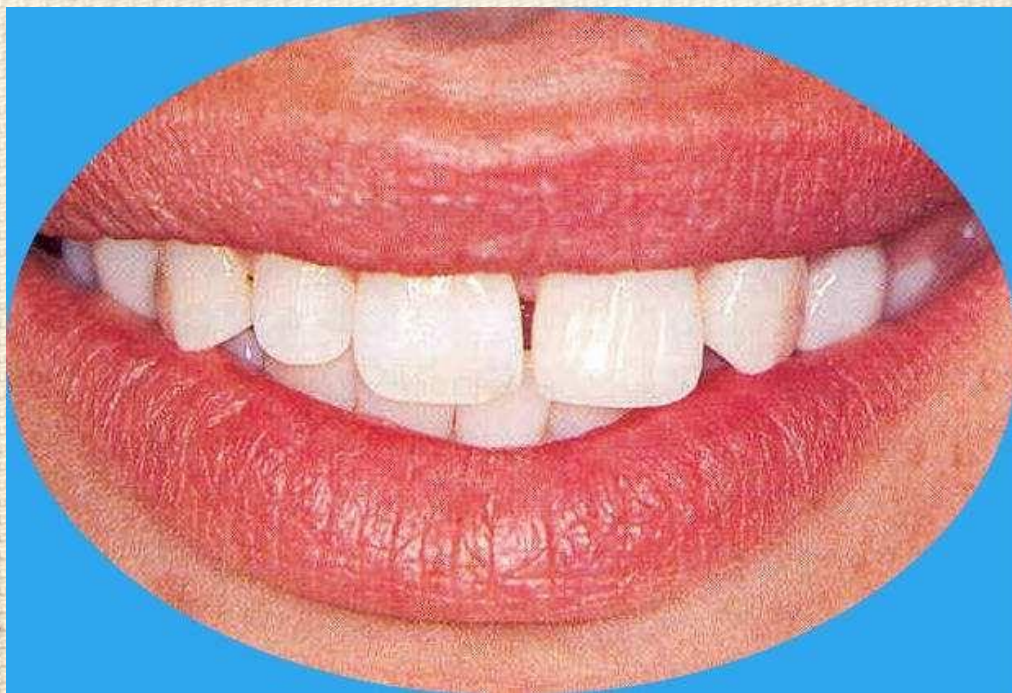
*Tooth form ,size, inclination and arch
position*





Lack of balance-----poor esthetics

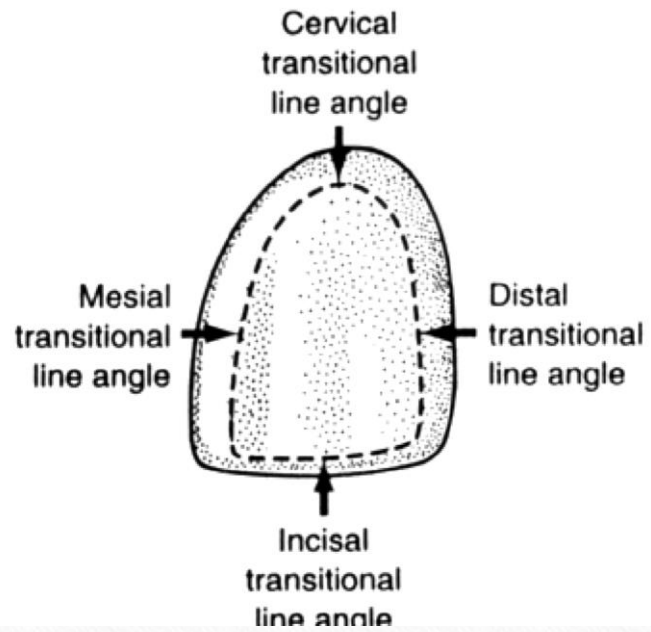
***The difference in central incisor height
Misaligned midline contribute to lack of symmetry***



Principle of illumination



Law of the face



line angle



Thank you