

# Preparation of Porcelain laminate veneers

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# introduction

- ▶ From the initial introduction of porcelain, the use of it in porcelain-fused-to-metal (PFM) applications has achieved the most popularity.
- ▶ However, this technique, or the metal used, impairs the transmission of light. If the gingival tissues are thin, the marginal soft tissues near the metal collars that have been placed subgingival may appear to be dark.



# introduction

- ▶ Laminate veneer is defined as:
- ▶ Conservative method of restoration the appearance of discolored ,pitted or fractured anterior teeth. consists of bonding thin ceramic laminate veneer on the labial surface of affected teeth



# Advantages

- ▶ Minimal Tissue Response
- ▶ Strength
- ▶ natural fluorescence and absorb, reflect, and transmit light exactly as does the natural tooth structure
- ▶ Long-lasting results with the successful
- ▶ less invasive procedures
- ▶ Wear and stain resistance



# Disadvantages

- The process is irreversible
- More costly than composite veneers
- Not suitable for patients with clenching or grinding habits
- Not repairable should they chip or crack
- Tooth may become more sensitive to hot and cold foods and beverages
- They can dislodge and fall off
- Technique sensitive

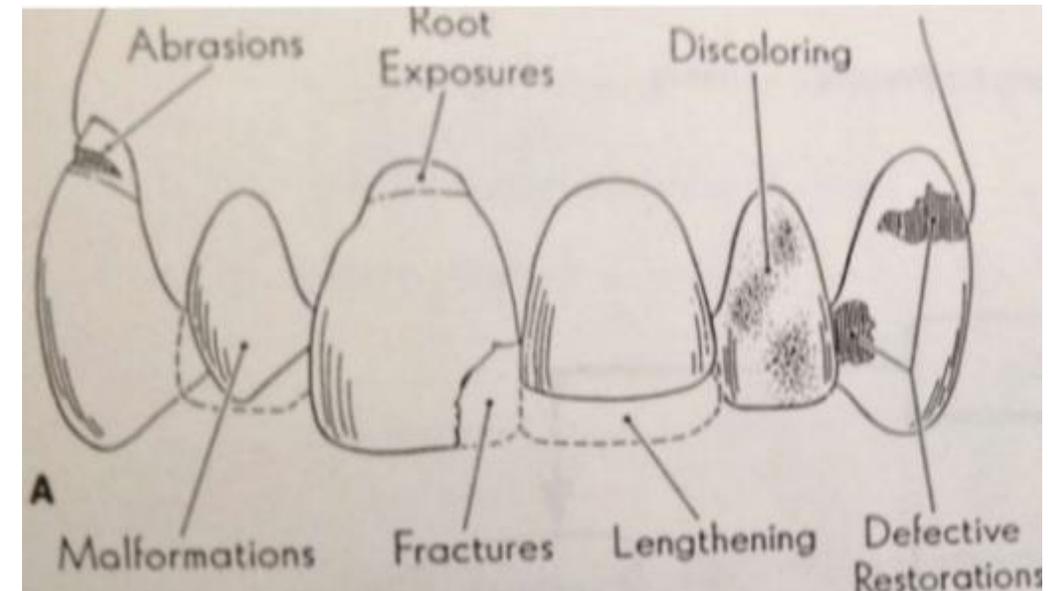


# Porcelain Laminate Veneers versus Composite Veneers

- ▶ The longevity of composites is questionable
- ▶ They are susceptible to discoloration, marginal fractures and wear
- ▶ The biocompatibility and nonporous surface of the porcelain that prevents plaque adherence
- ▶ excellent periodontal health

# Application

- ▶ Small proximal lesions and moderate incisal chipping
- ▶ Developmental defects on the facial surface of the tooth
- ▶ Anterior teeth that have been damaged by severe staining
- ▶ Successfully used to close diastemata
- ▶ Correct misalignment,
- ▶ cover discolored or misshapen teeth



# Contraindications

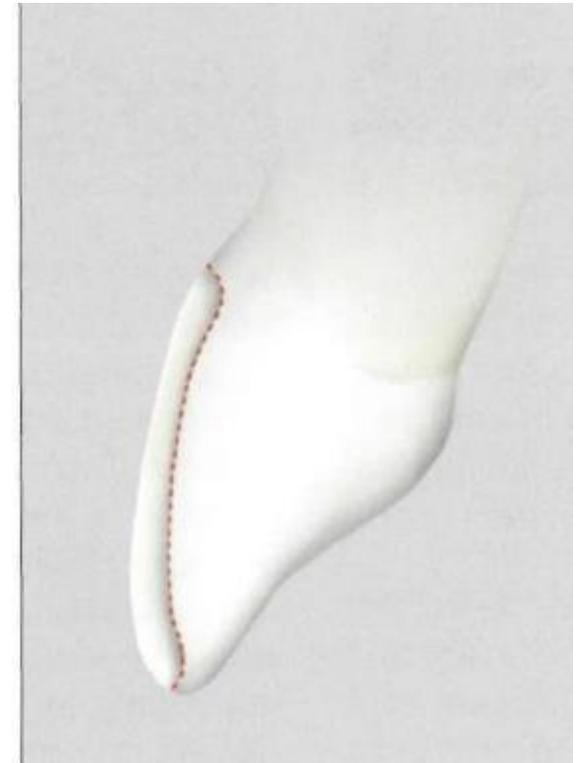
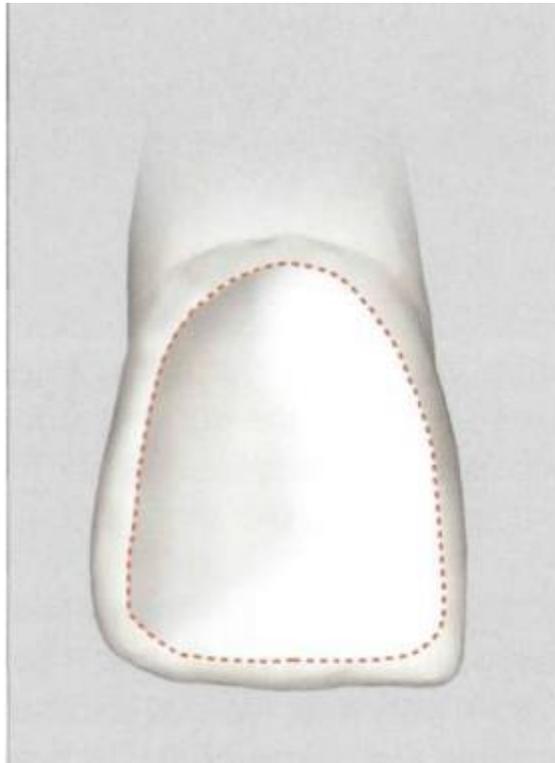
- ▶ Lack of marginal enamel
- ▶ High caries index and poor plaque control
- ▶ Unrealistic patient expectation
- ▶ Unresolved functional issues
- ▶ When orthodontics is the right choice
- ▶ When bleaching will work
- ▶ Multiple composite restorations
- ▶ More than 2 mm of unsupported porcelain

# Contraindications



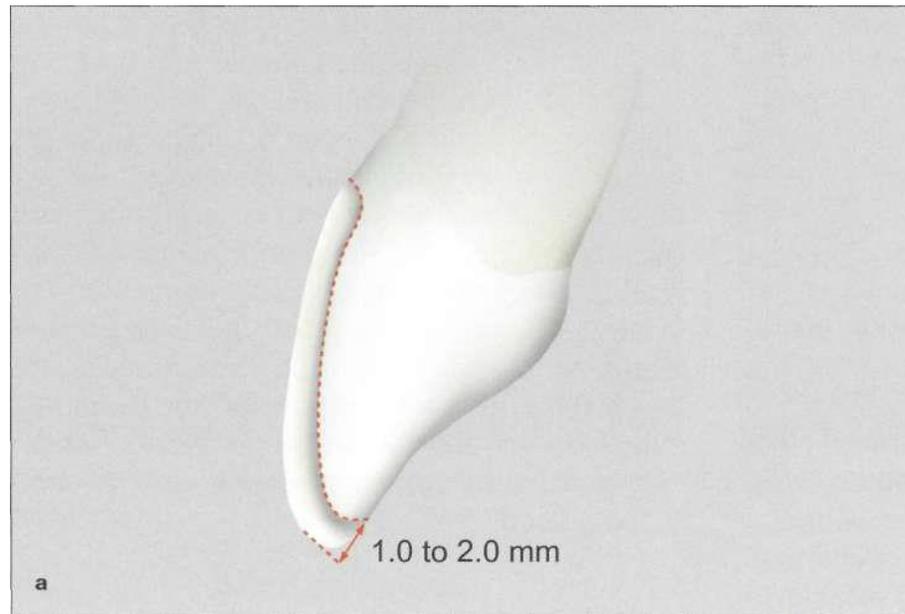
# Variation in veneer preparation

## 1. Window preparation



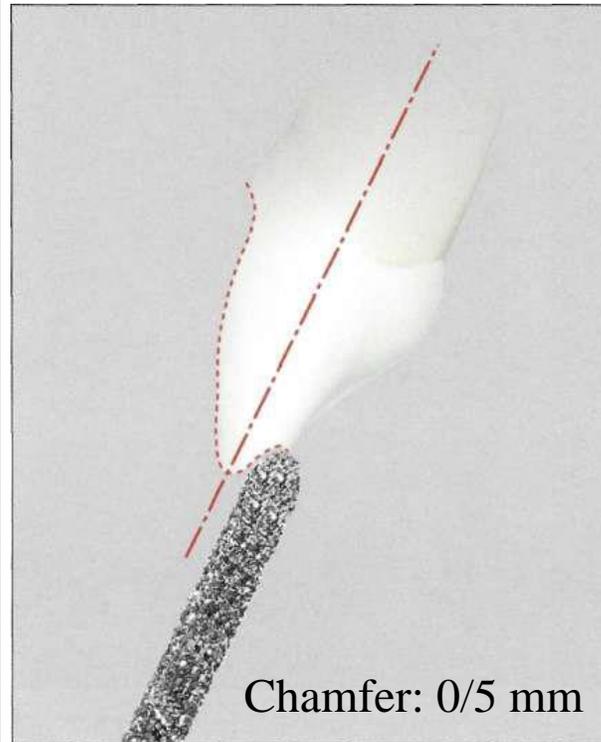
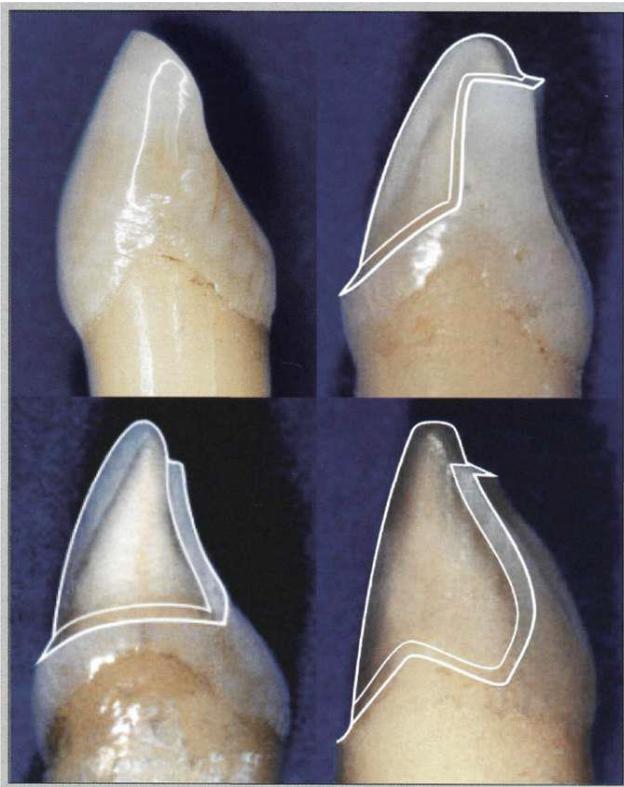
# Variation in veneer preparation

## ▶ Incisal butt



# Variation in veneer preparation

## ► Lingual wrap



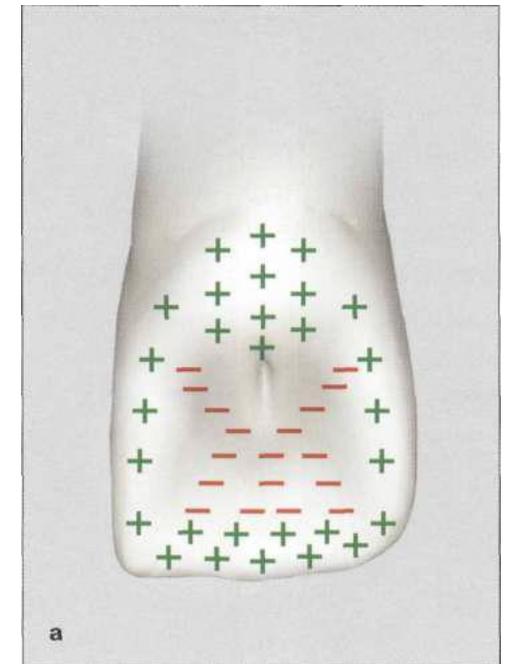
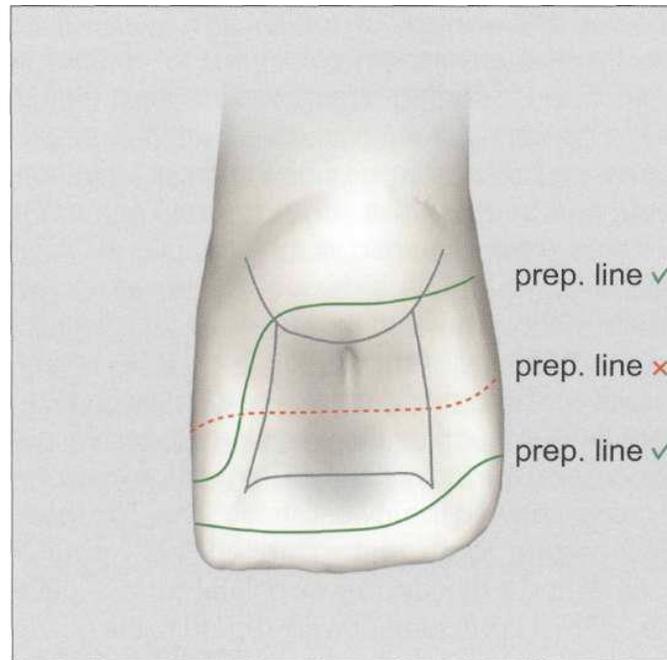
# Lingual wrap

- ▶ Less than 50% of enamel remains
- ▶ Lingual tooth structure involve
- ▶ More than 2mm of unsupported ceramic
- ▶ Margins may be on dentin

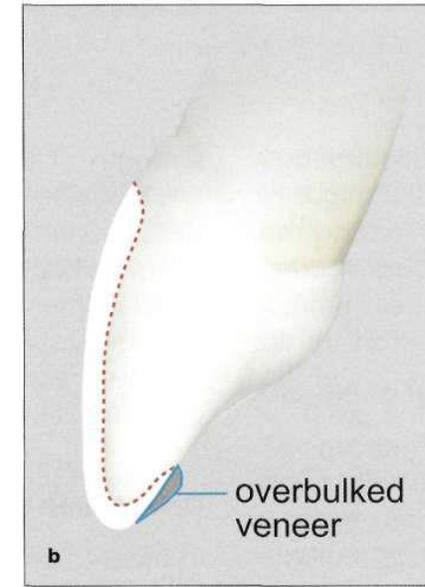
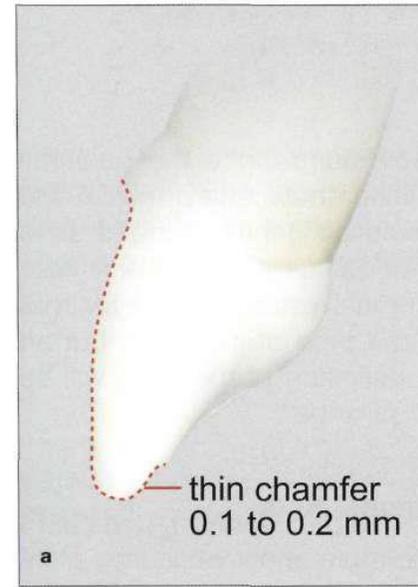
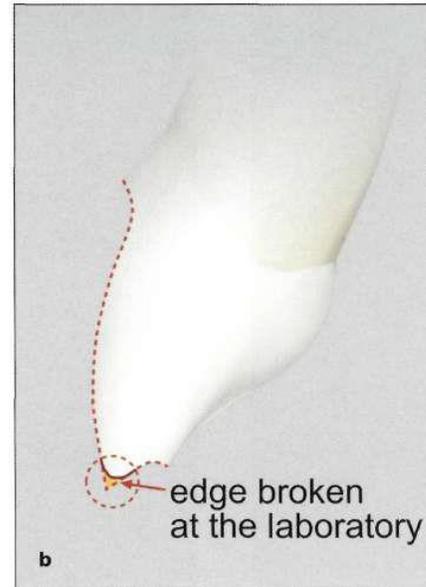
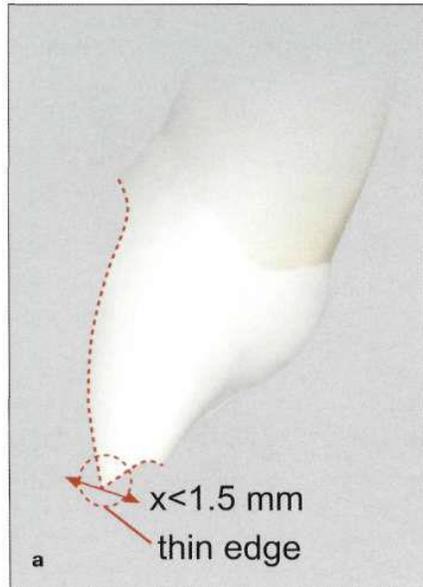


# Margin Placement

- ▶ The preparation lines on the lingual should not be located on the palatal concavity. It should be placed either above the concavity or below on the smooth convex area of the cingulum so that they will be subject to low tensile forces.



# Incisal Edge

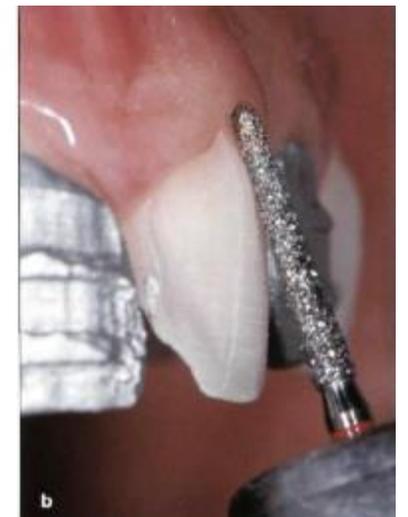
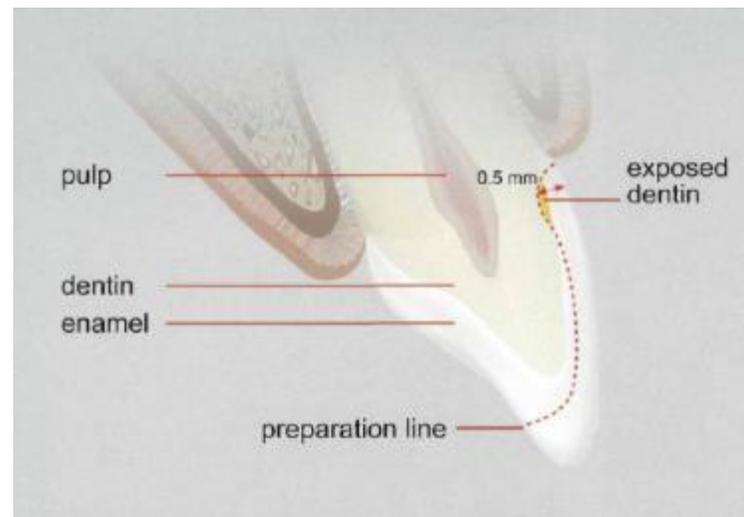


- ❑ If a very thin notch is left at the incisal edge (b) it may break at the lab.

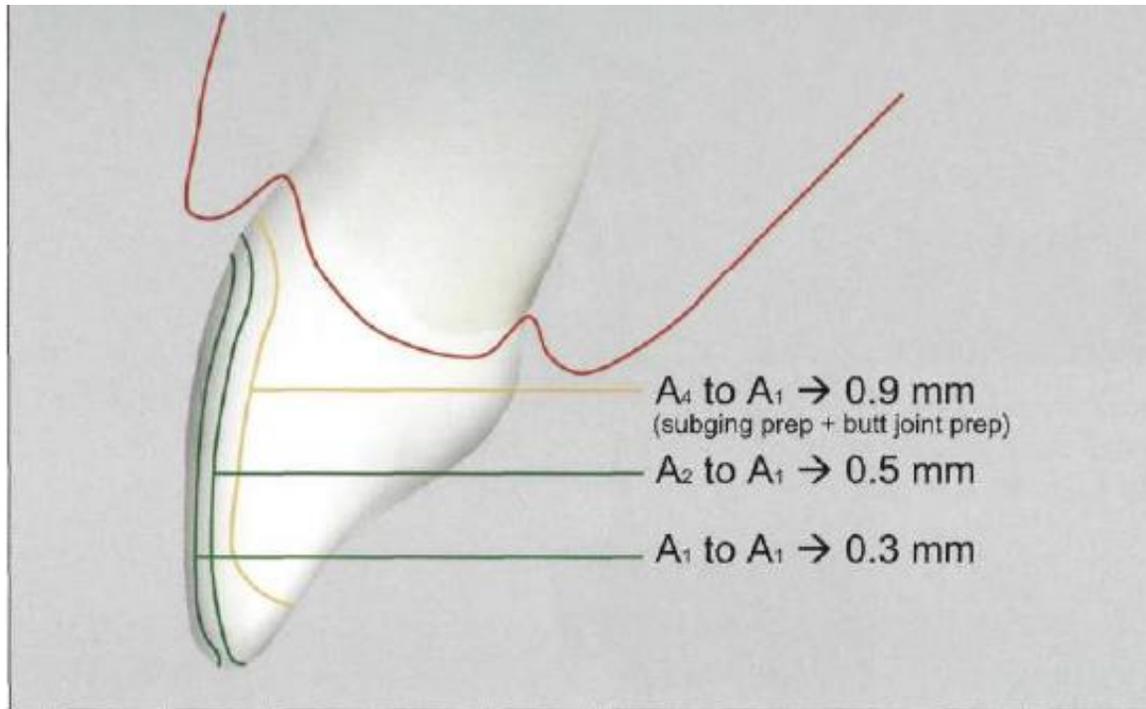
- ❑ If the palatal chamfer is prepared thinner than it should be, the result is an overbulked lingual extension.

# Enamel Thickness

- ▶ Enamel has different thicknesses at the gingival, middle and incisal 1/3rds of the facial surface of the tooth. They can be 0.3-0.5 mm at the facial gingival third, up to 0.6-1.0 mm at the middle third and 1.0-2.1 mm at the incisal third.



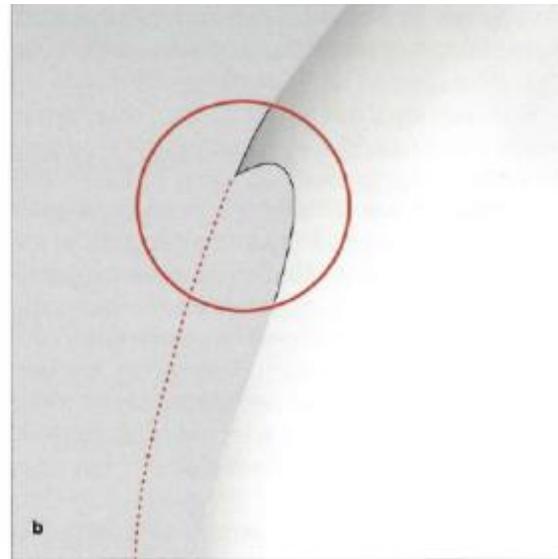
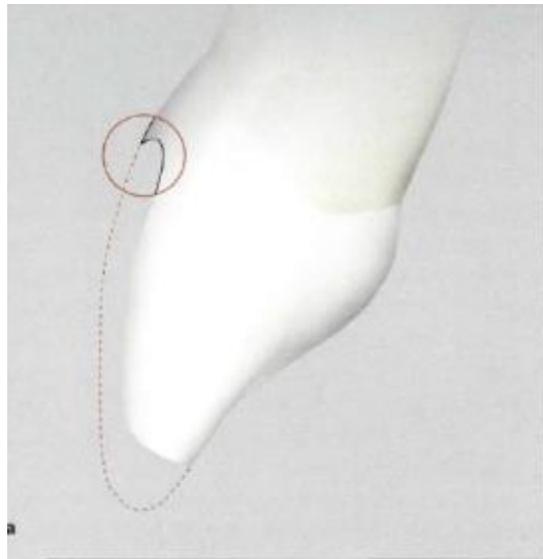
# Enamel Thickness



- ❑ A depth of 0/2 mm is needed to change the hue of the tooth by one shade

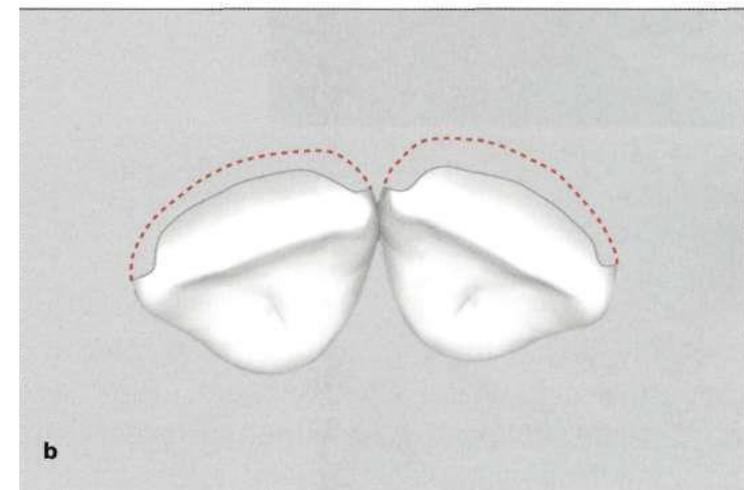
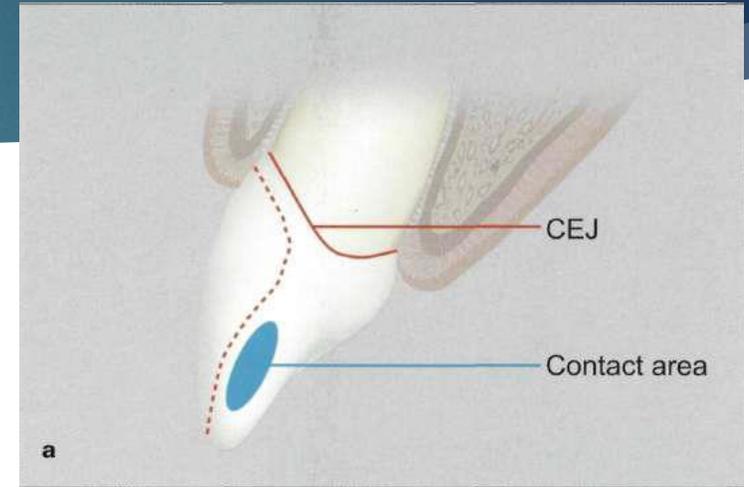
# Enamel Thickness

- ▶ It is important to control the depth of the preparation in relation to the radius of the round-ended diamond bur to avoid the formation of a reverse margin.



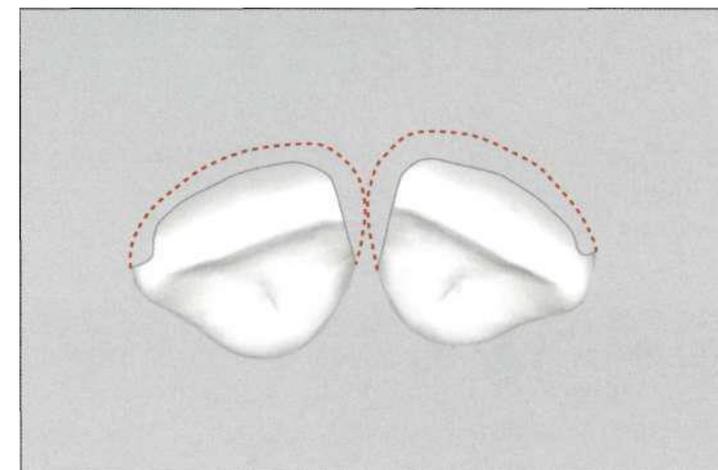
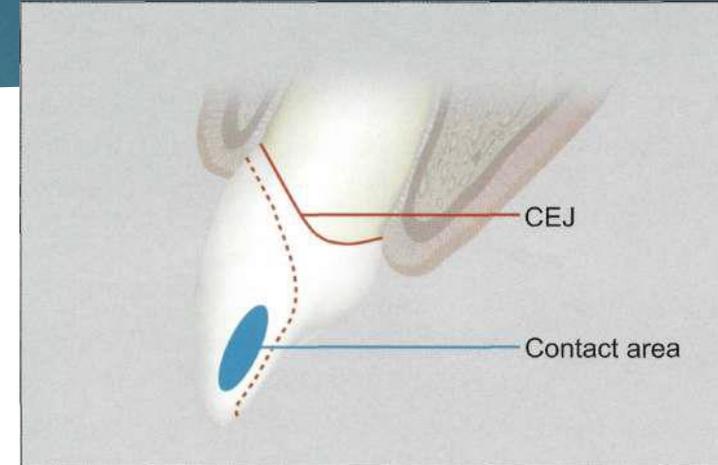
# Interproximal Contact Area

- ▶ There are numerous factors that determine how deep to prepare the contact area. Whenever possible, it is best to preserve the contact area, as it is an anatomical feature that is difficult to reproduce.

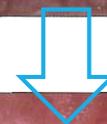
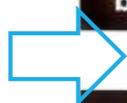
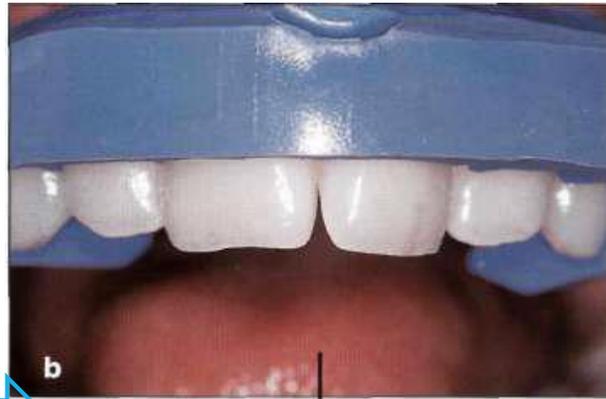
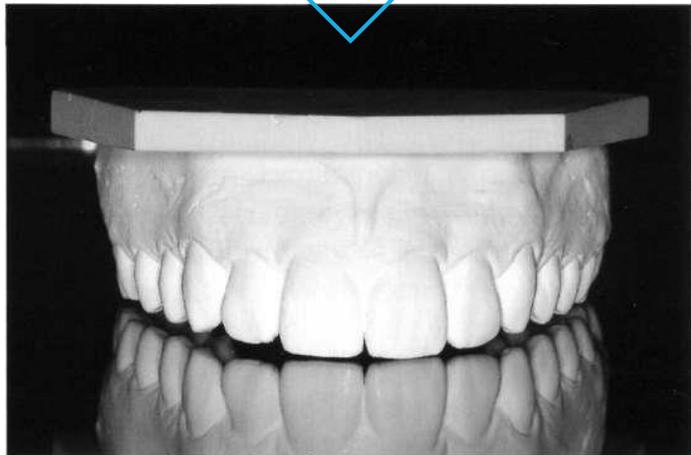
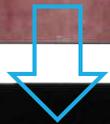
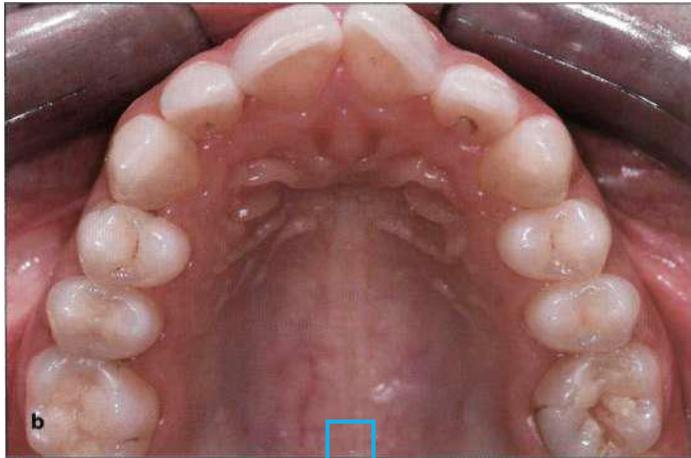


# Breaking the Contact

- ▶ closing a diastema
- ▶ changing the shape or position of a group of teeth
- ▶ the existence of caries or defects
- ▶ Preexisting composite fillings

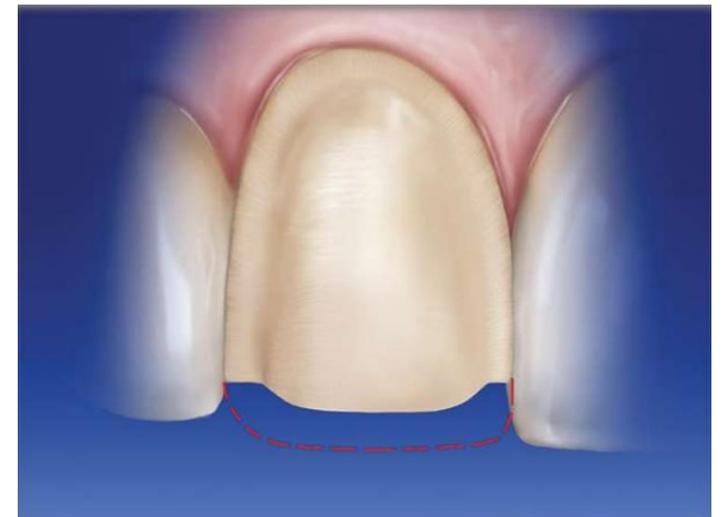


# Facial Contours

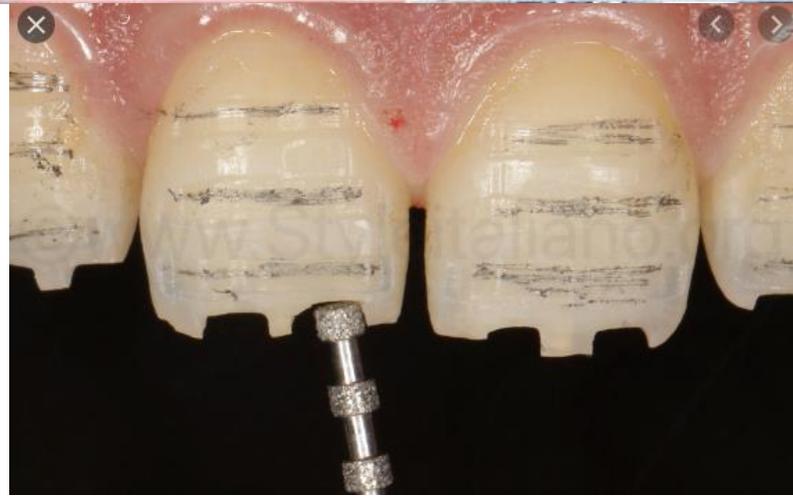


# Preparation(incisal reduction)

- ▶ A 2mm incisal reduction
- ▶ The distal depth cut is the most gingivally positioned ,followed by the mesial and then the center depth cut



# Preparation (labial reduction)



# the depth cutter

- ▶ the depth cutter
- ▶ No 1: 0/5 mm reduction
- ▶ No 2: 0/3 mm reduction

Proportion 5:1



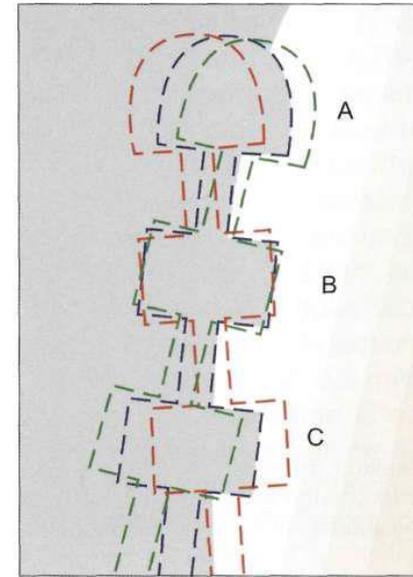
Cutting depth 0/3 mm



Cutting depth 0/5 mm

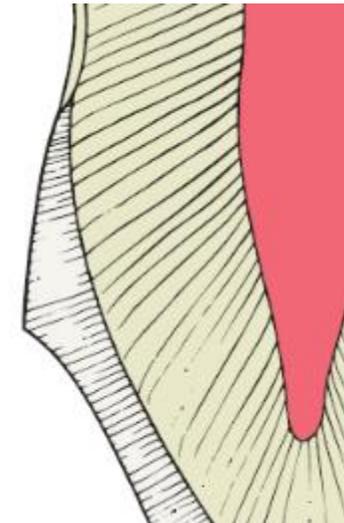
# the depth cutter

- ▶ The surface after the depth cutter is used in only one angle. Note that the only true depth is gained in the area of B (middle 1/3rd, black dots). To reach the necessary depth on points A (gingival 1/3rd, green dots) and C (incisal 1/3rd, red dots), the bur should be used in three different angulations.



# Labial Margin

- ▶ The recommended margin (long chamfer) for facial veneers has an obtuse Cavo surface angle, and so the ends of the enamel prisms are exposed for differential etching.



# Location of labial margin

- Should it terminate short of free gingival crest
- At the level of gingival crest ?
- Apical to gingival crest ?

Depends on individual situation-

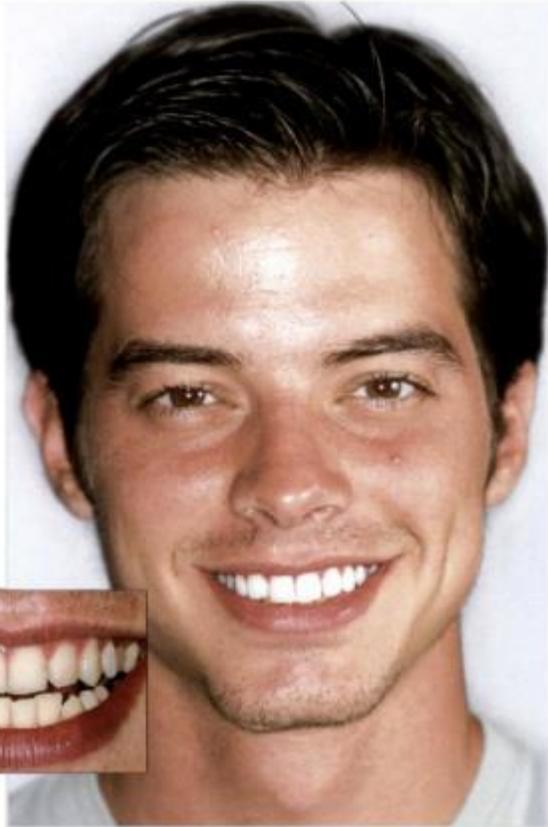
If the defect does not extended subgingivaly

- the margin should not extend subgingivaly

In case of if area is carious  
defective restoration  
dark discoloration

} extend subgingivaly

# Smile Design



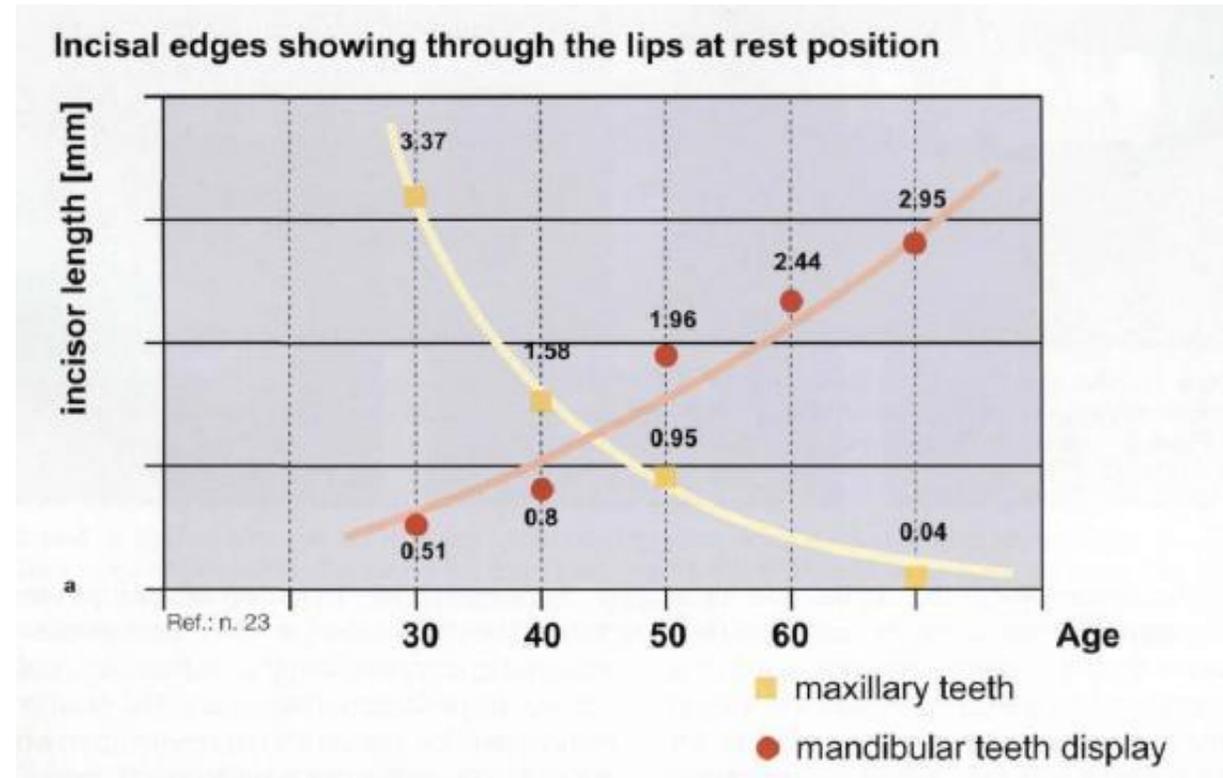
# Mid-line

- ▶ Slight deviations do not create visual tension nor do they affect the esthetics negatively, A high percentage of the patients (as much as 75%) have mandibular mid-lines that do not coincide with the maxillary.



# Incisal Length

- ▶ The reduced display is owing to the sagging of the upper lip, and the reduction is further increased by the incisal tooth wear. In the mandibular arch, even though some incisal wear does exist, the lower tooth display increases as the muscle tone of the lower lip decreases and sags down owing to gravity.



# Gingival Levels and Harmony



If the cause is wear the tooth may erupt towards the area of wear, bringing the gingival tissue down incisally.

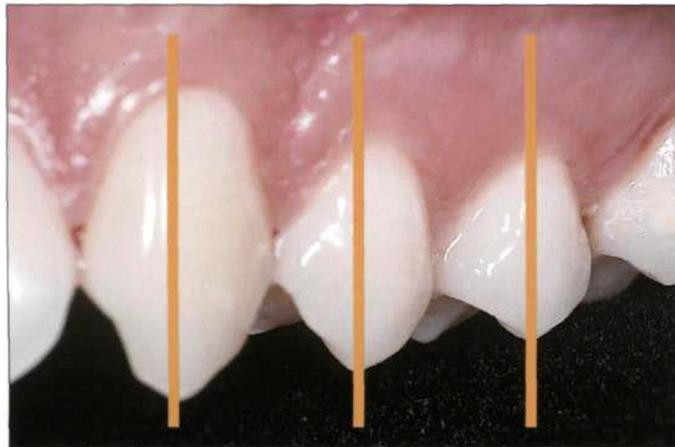


The apex of the triangle (zenith point of the lateral incisor) is 0.5 to 1 mm, positioned incisally.

# Tooth Axis



The tooth axis of the central incisors may be positioned slightly distally towards the apex when compared to the vertical midline

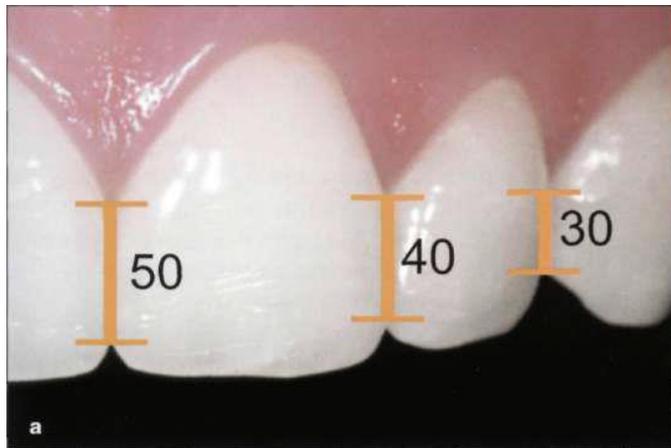


Canines and premolars follow a vertical tooth axis when viewed from the lateral aspect. However, when they are observed from the facial aspect, owing to their lingual inclinations towards the incisal edges,

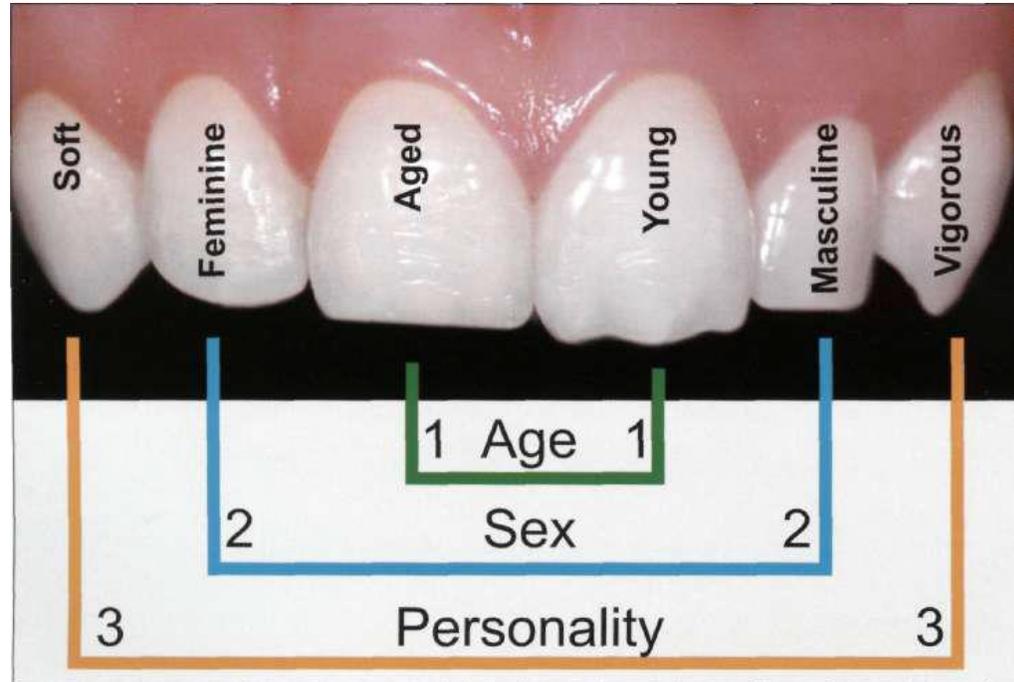
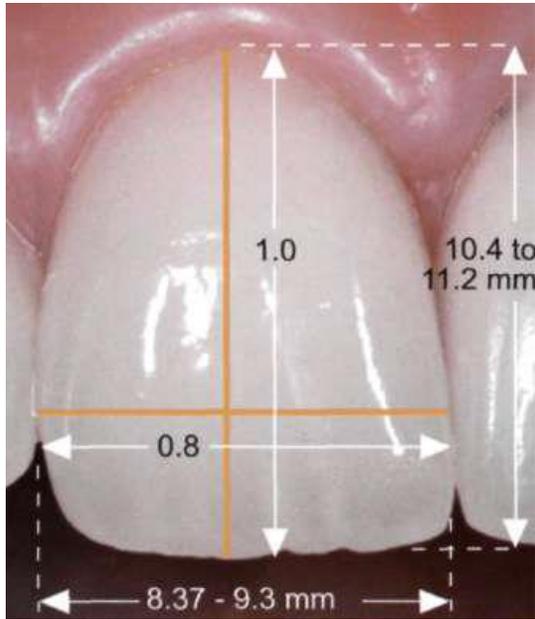
# Interdental Contact Areas and Points

The longest contact area is between the central incisors; the shortest contact is between the lateral incisor and the canine, still following a pleasing pattern.

The interdental embrasure is the smallest and sharpest in the central incisors. Continuing the observation posteriorly, the embrasures become larger and wider.

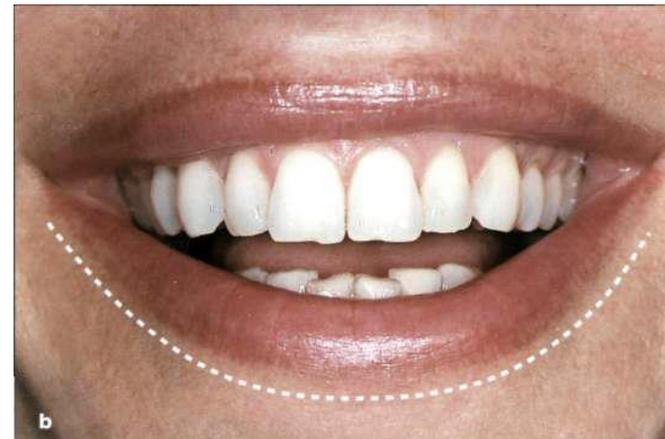


# proportion of the anterior teeth



# Smile Line

- ▶ In a pleasing smile, the incisal edges of the incisors follow convex curvature, which is parallel to the lower lip. (a) The lower lip in men is fairly straight (b) when compared to the female lip. That creates a smile line that is flattering in males.



A pair of black-rimmed glasses with clear lenses is positioned at the top of the frame, resting on a light-colored wooden surface with visible grain. Below the glasses is a small, rectangular, lined notepad. The notepad is white with light blue horizontal lines and a metal fastener on the left edge. The text "Thank you for your attention" is written on the notepad in a black, cursive script. The background is a wooden surface, and the image is framed by dark blue and light blue geometric shapes on the left and right sides.

Thank you for  
your attention