

Selection of Anterior Teeth

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The learner should be able to understand

- The functions expected from the artificial teeth i.e esthetics, phonetics, mastication and comfort
- Criteria for selection of anterior teeth- Shade, Size and Shape
- Dentogenic concept

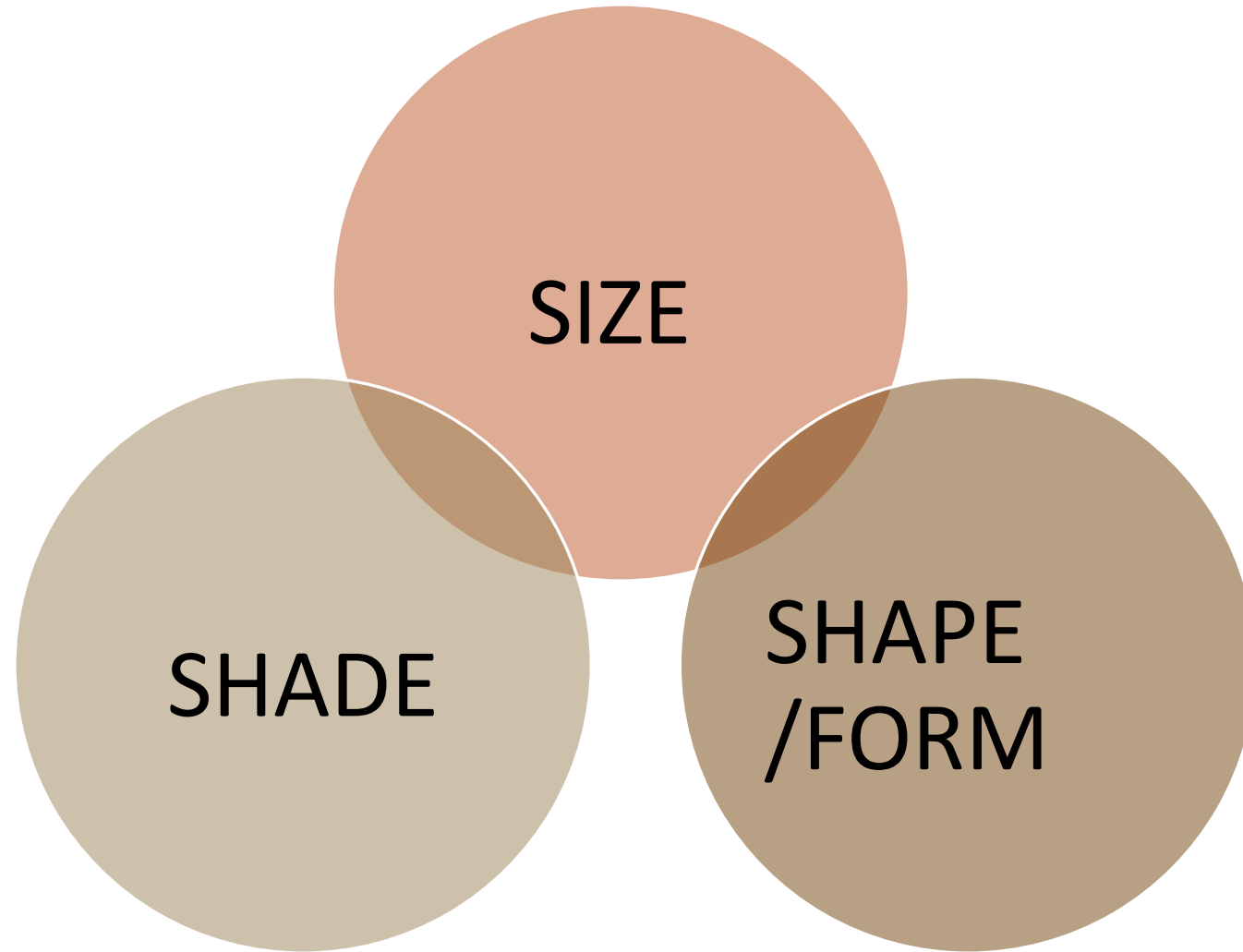
Selection of Anterior teeth

Anterior teeth play an important role in the aesthetics of a patient.

They are not subjected to heavy occlusal load like the posteriors.

Hence, **aesthetics** is given more importance during anterior teeth selection.

Selection of Anterior teeth





SIZE

Size of the Anterior Teeth

The tooth size should be appropriate to the **size of the face** and **gender** of the patient. The following methods are used as a guide to select the size of the teeth:

- **Methods using pre-extraction records.**
- **Methods using anthropological measurements of the patient.**
- **Methods using anatomical landmarks.**
- **Methods using theoretical concepts -**
 1. Winkler's concept - physiological, psychological and biomechanical.
 2. Leon Williams concept
 3. Temperamental theory: Dr.Sparzheim
 4. Concept of Harmony: J.W.White

SIZE

- Methods using pre-extraction records.
- diagnostic casts,
- photographs,
- radiographs,
- teeth of close relatives
- preserved extracted teeth

SIZE

- Methods using pre-extraction records.

- DIAGNOSTIC CASTS,
- PHOTOGRAPHS,
- RADIOGRAPHS,
- TEETH OF CLOSE RELATIVES
- PRESERVED EXTRACTED TEETH

SIZE

- Methods using pre-extraction records.

Diagnostic casts:

They are prepared before the extraction of the teeth. The operator can obtain an idea about the size and shape of the teeth from these casts. The actual size and shape required can be determined but the shade of the teeth cannot be determined using this method.

SIZE

- Methods using pre-extraction records.

Photographs:

These photographs must show at least the incisal edges of the anterior teeth. This method is useful to determine the exact width and outline of the teeth.

SIZE

- Methods using pre-extraction records.

Radiographs:

With radiographs, **occluso-gingival height** and the outline of the teeth can be recorded. But the **contour and size cannot be** accurately determined, because the radiograph is a two-dimensional image.

Teeth of close relatives: This method is usually followed only if the other records are not available. The **size and contour** of the **patient's son or daughter's tooth** is taken as reference.

Preserved extracted teeth: This is the **best method** to determine the size of the anterior tooth. The **exact details about the size and contour** can be recorded from this method.

SIZE

- Methods using Anthropological Measurements of the Patient

Anthropological measurements are usually **post-extraction records** made directly from the edentulous patient.

SIZE

- Methods using Anthropological Measurements of the Patient

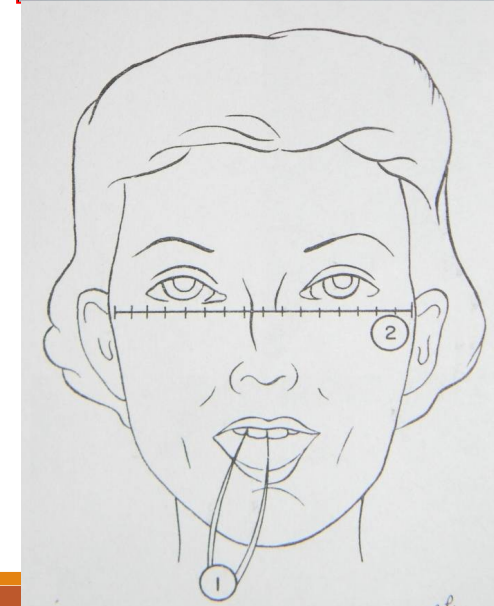
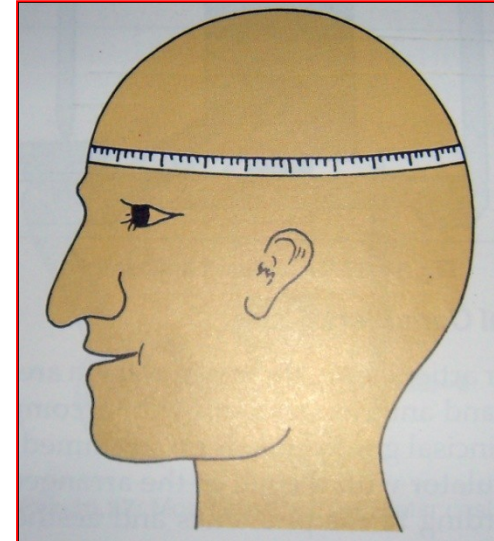
➤ ANTHROPOMETRIC CEPHALIC INDEX:

1. Circumference of Head

Width of Upper Central Incisor = Circumference of Head / 13

2. Bizygomatic Width

Total Width of Upper Anteriors = Bizygomatic Width / 3.3



SIZE

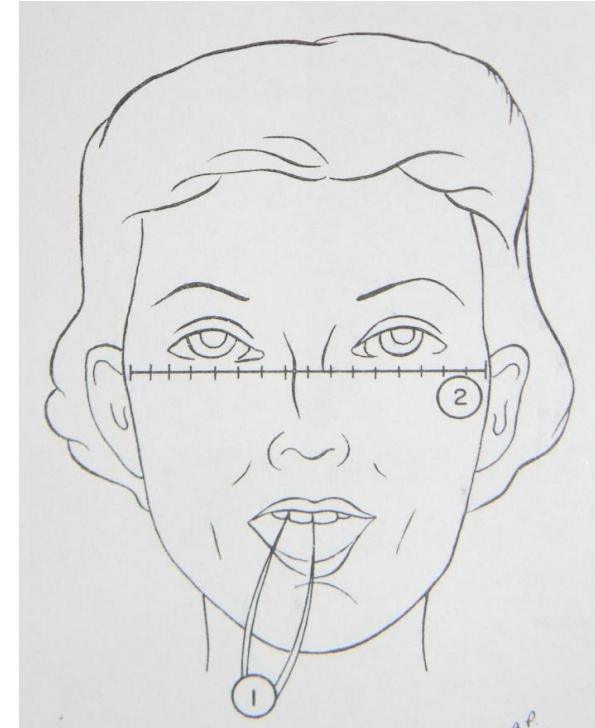
- Methods using Anthropological Measurements of the Patient

ANTHROPOMETRIC CEPHALIC INDEX:

Berry's biometric ratio method: Berry (in 1906)

$$\text{The width of the maxillary central incisor} = \frac{\text{Bi-zygomatic width}}{16}$$

$$\text{The width of the maxillary central incisor} = \frac{\text{Length of the face}}{20}$$



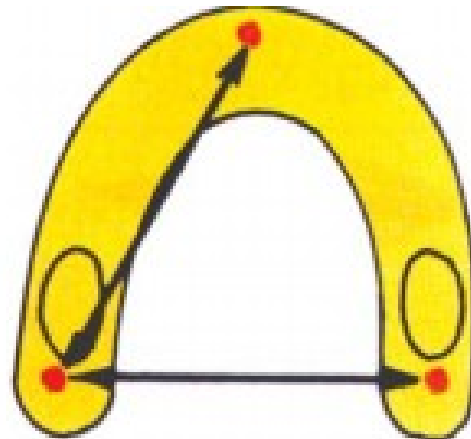
- The formula using the length of the face cannot be used for edentulous patients.

SIZE

- Methods using anatomical landmarks.

Size of the maxillary arch

The distance between the incisive papilla and the hamular notch on one side is added with the distance between two hamular notches. This gives the combined width of all the anterior and posterior teeth of the maxillary arch.



SIZE

- Methods using anatomical landmarks.

Location of canine eminences:

A canine eminence is formed in the region between the canine and the first premolar after extraction of teeth.

The distance between the two canine eminences is measured along the residual ridge.

This measured value gives the combined width of the anterior teeth

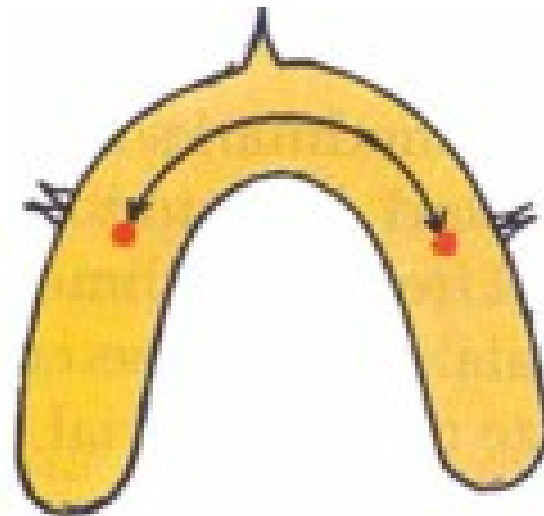


SIZE

- Methods using anatomical landmarks.

Location of the buccal frenal attachments:

The attachments of the buccal frenum are marked on the residual ridge. The distance between the two markings recorded along the residual ridge gives the combined width of the maxillary anteriors.



SIZE

- Methods using anatomical landmarks.

Location of the corners of the mouth:

The corner of the mouth marks the distal end of the canine. The corners of the mouth are recorded on the occlusal rim and the distance is measured between these markings. The anterior teeth are set within these markings .

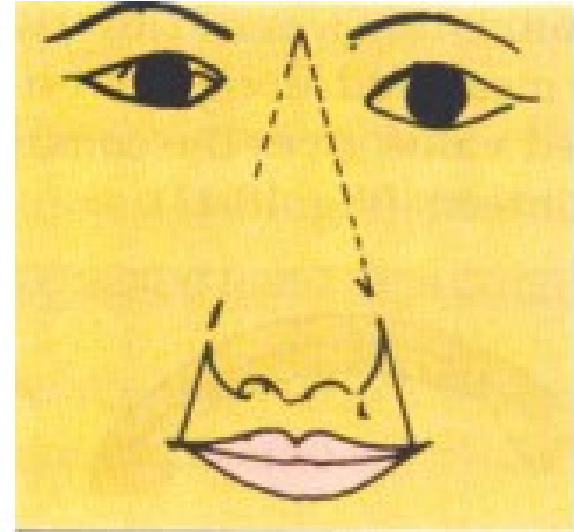


SIZE

- Methods using anatomical landmarks.

Location of the ala of the nose:

The patient is asked to sit upright and look straight. A line passing through the midpoint between the eyebrows and the lateral end of the ala of the nose extended onto the occlusal rim gives the combined width of the anterior teeth.





Shape

- Form of the Anterior Teeth

Form/Shape of the Anterior Teeth :

The form or outline of the anterior teeth can be determined using the following factors:

- Shape of the patient's face or facial form.
- Patient's profile.
- Dentogenic concept

Shape

- Form of the Anterior Teeth

Shape of the patient's face or facial form:

Classification of the **Leon Williams**

(A) Square

(B) Ovoid

(C) Tapering

(D) Square tapering

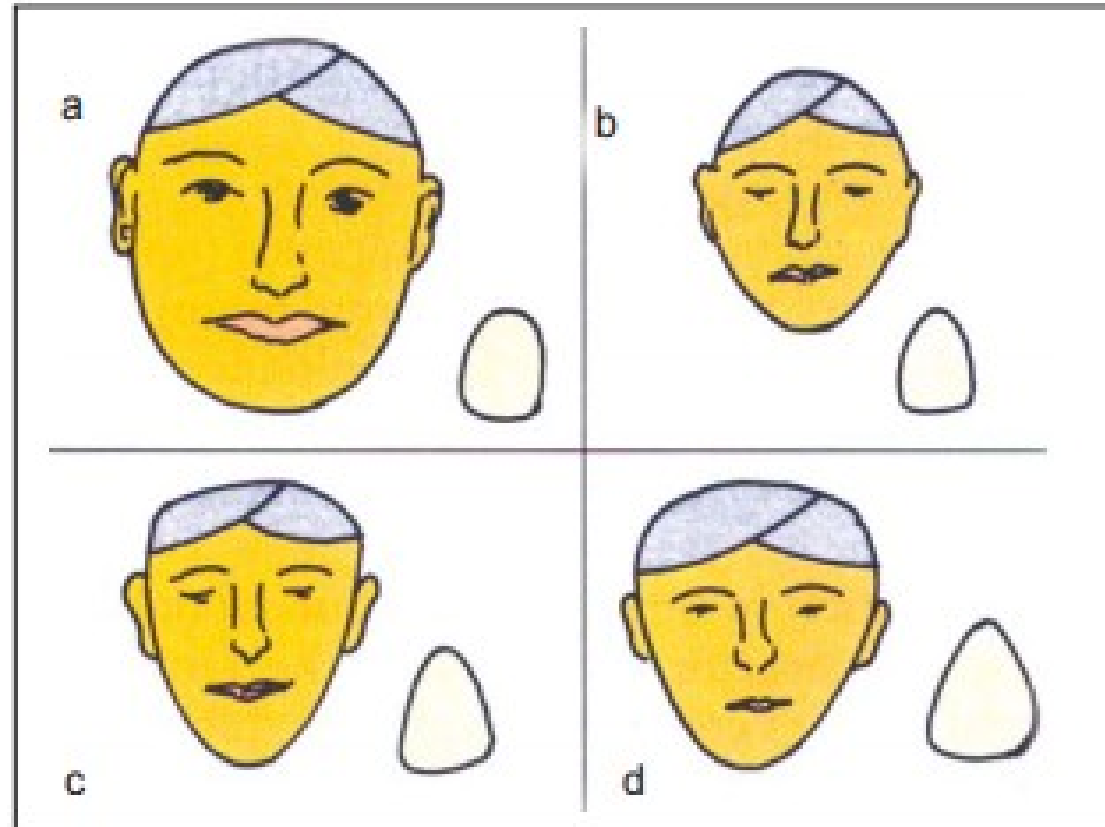


Fig. 10.50: Facial form and tooth shape (a) square, (b) oval, (c) tapering, (d) combination

Shape

- Form of the Anterior Teeth

Patient's Profile :

The patient may have a **convex**, **straight** or a **concave** profile.

The labial form of the anterior teeth should be similar to the facial profile of the patient.

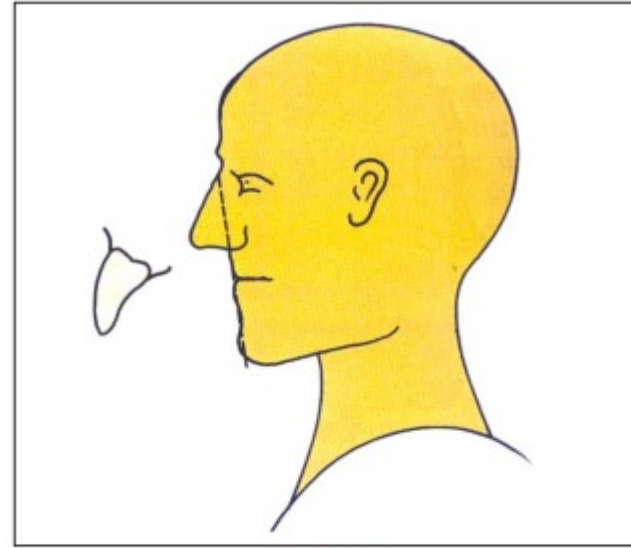
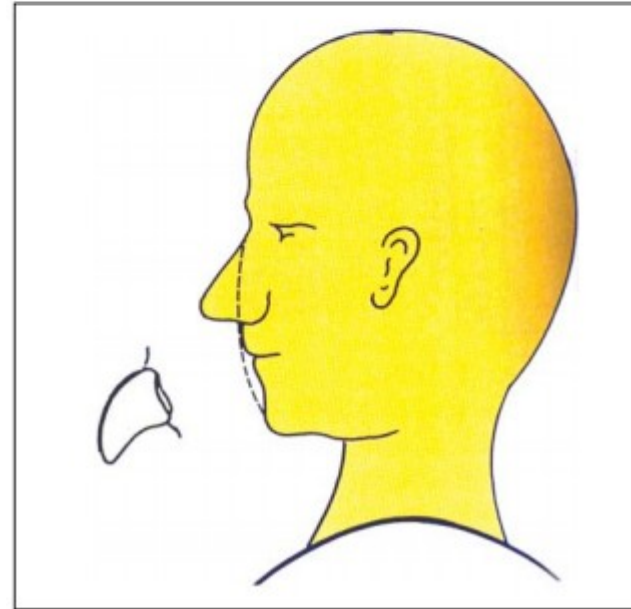


Fig. 10.51a





Shape

- Form of the Anterior Teeth

DENTOGENIC CONCEPT:

(Sex, Personality, Age or SPA factor)

It was first described by Frush and Fisher.

According to them, the sex, personality and age of the patient determine the form of the anterior Teeth and could be used as guidelines for tooth selection, arrangement, and characterization to “*enhance the natural appearance of the individual.*”

Shape

- Form of the Anterior Teeth

DENTOGENIC CONCEPT:

(Sex, Personality, Age or SPA factor)

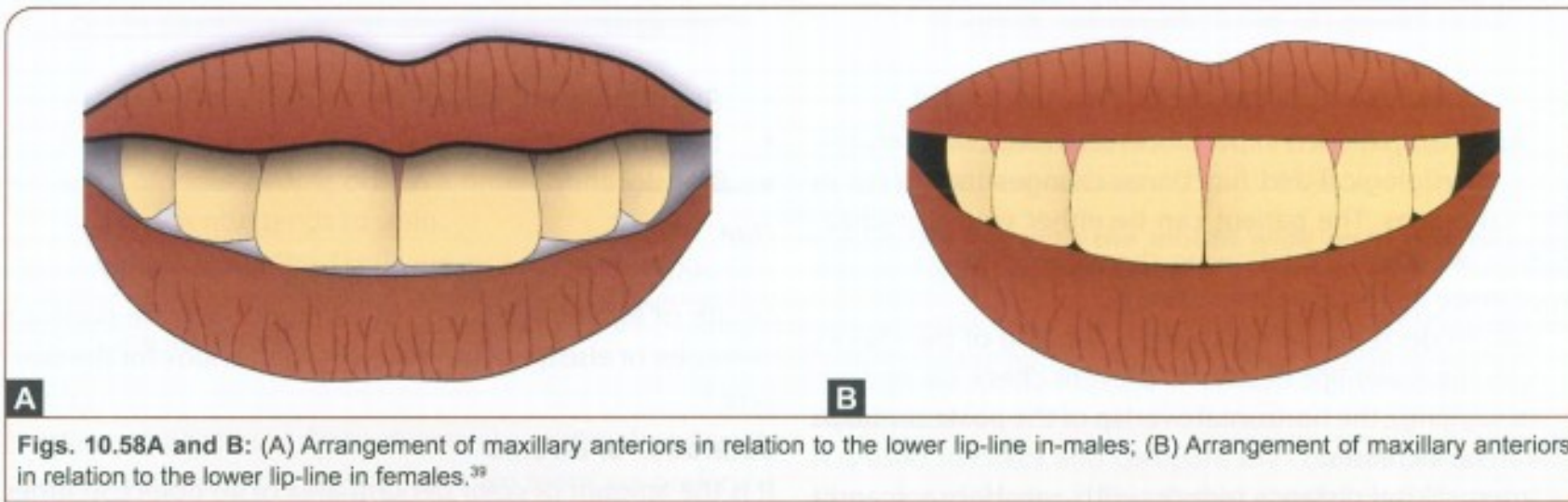
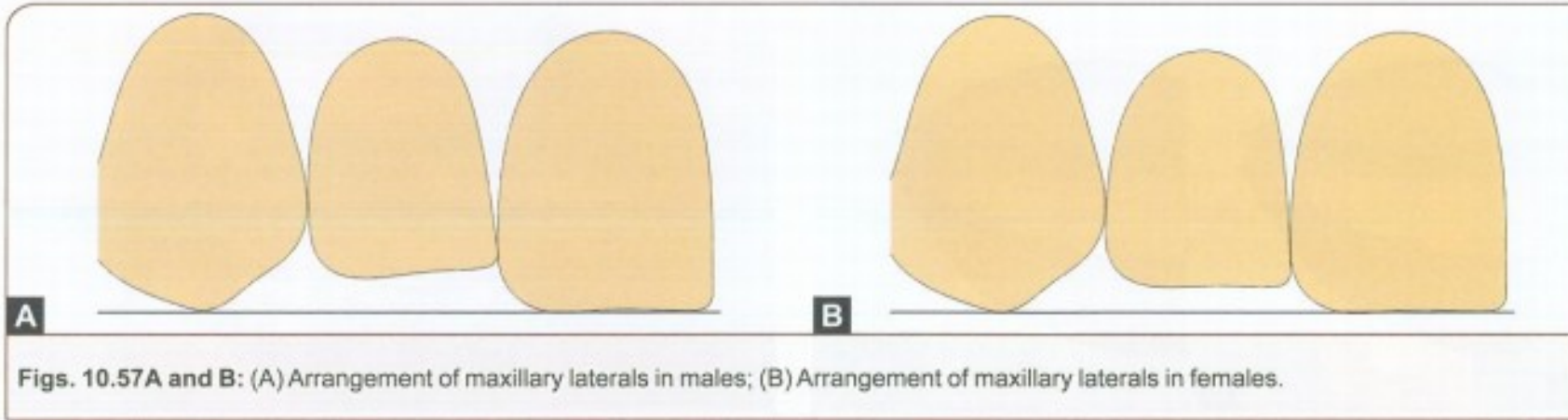
➤ Sex

The form or shape of the teeth differs in males and females. The differences in the shape of the anterior teeth in males and females are:

- In females, the incisal angles are more rounded and the teeth have a lesser angulation.
- In males, the incisal angles are rounded to a lesser degree and the teeth are more angular

Shape

- **Form of the Anterior Teeth**
DENTOGENIC CONCEPT:





Shape

- Form of the Anterior Teeth

DENTOGENIC CONCEPT:

(Sex, Personality, Age or SPA factor)

➤ Personality

The dentist should select and arrange the teeth so that it improves the patient's personality. The patient can be either vigorous or delicate.

- More squarish, large teeth are selected for vigorous people.

Shape

- **Form of the Anterior Teeth**

DENTOGENIC CONCEPT:

(Sex, Personality, Age or SPA factor)

➤ **Age**

The age of the patient is important in teeth selection. Due to decrease in muscle tone, sagging of the cheeks and the lower lips occur. To prevent cheek biting (due to sagging), the horizontal overlap of the posterior teeth can be increased.

- Inter-occlusal distance reduces with age.

Hence, **mandibular teeth are more visible than the maxillary teeth.**

- Old people usually have abraded teeth with worn out contacts. Hence, placement of contoured teeth may look artificial.
- Old patients have **gingival recession**. It can be reproduced in the dentures to provide a natural appearance.

Shade

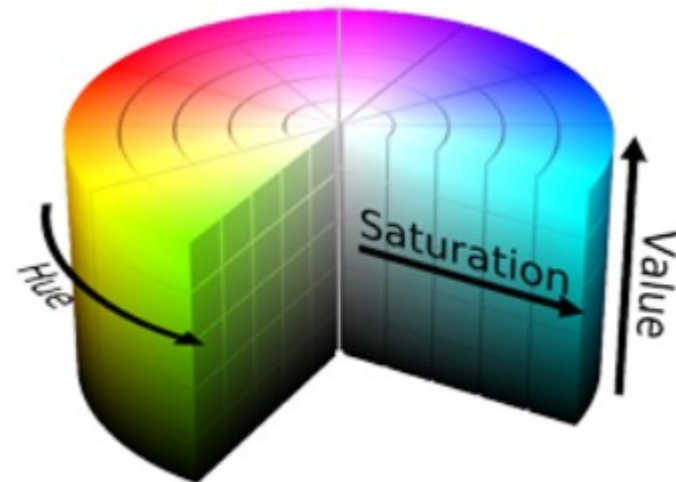
• Shade of the Anterior Teeth

Teeth must harmonic with the colour in patient face

With age natural teeth becomes dark.

Before selecting the colour for anterior teeth, some basic concepts about colour should be understood.

- HUE
- CHROMA
- VALUE



Shade

• Shade of the Anterior Teeth

➤ HUE:

It denotes a specific colour produced by a specific wavelength of light. It should be in harmony with the patient's skin colour or else it will produce an artificial look for the denture.

- A (hue of red-yellow)
- B (Hue of yellow)
- C (hue of grey)
- D (hue of red-yellow-grey)



Shade

- Shade of the Anterior Teeth

➤ CHROMA : (SATURATION)

It is the amount of colour per unit area of an object.

In other words, it denotes the **intensity** of the colour.

Hue (a color)



Chroma (the colorfulness or dullness of a color)



Value (the lightness or darkness of a color)



Shade

- **Shade of the Anterior Teeth**

➤ **VALUE:**

The relative darkness or lightness of a colour is called “value”.

It guides to produce darker or lighter shades respectively.

In people with light skin colour, teeth with lighter shades should be chosen and vice versa.

Hue (a color)



Chroma (the colorfulness or dullness of a color)



Value (the lightness or darkness of a color)



Shade

• Shade of the Anterior Teeth

The **hue** and **value** of a tooth is influenced or determined by the following factors:

- Age.
- Habits.
- Complexion.
- Colour of the eyes.

Age

- Young people have lighter teeth where the colour of the pulp is shown through the translucent enamel.
- Old people show dark and opaque teeth due to the deposition of secondary dentin and consequent reduction in size of the pulp chamber.
- Teeth are more shiny in old people as they get polished due to regular wear of the teeth.
- Teeth of older people obtain a brownish tinge because exposed dentin tends to stain.

Shade

- **Shade of the Anterior Teeth**

The hue and value of a tooth is influenced or determined by the following factors:

- Age.
- Habits.
- Complexion.
- Colour of the eyes.

Habits

Smokers, alcoholics and pan chewers have discoloured teeth due to stains. In such people, porcelain teeth are preferred because they are not porous and do not allow percolation.

Shade

- **Shade of the Anterior Teeth**

The hue and value of a tooth is influenced or determined by the following factors:

- Age.
- Habits.
- Complexion.
- Colour of the eyes.

Complexion

- The colour of the teeth chosen should be in harmony with the complexion of the patient.
- The colour of the face is more important because the teeth fall into the framework of the face.

Shade

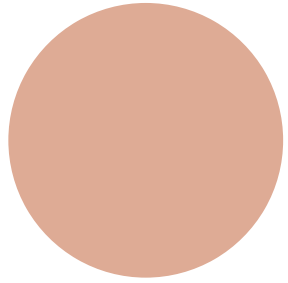
- **Shade of the Anterior Teeth**

The hue and value of a tooth is influenced or determined by the following factors:

- Age.
- Habits.
- Complexion.
- Colour of the eyes.

Colour of the Eyes

- Only the colour of the iris is considered.



Summary

Size

Shape

Shade

Dentogenic concept/ SPA factor

Hue, Value, Chroma