Teeth selection for edentulous and partially edentulous patients

Balqees almuflelh
BDS, Certi (Prosth), MSc
• Artificial teeth selection for complete denture
  Anterior teeth selection
  Posterior teeth selection

• Artificial teeth selection for removable partial denture
  Anterior teeth
  Posterior teeth
Artificial teeth selection for complete denture
One of the objectives of complete denture prosthetics is to produce a harmonious appearance of the denture when in the patient’s mouth.

A denture is usually perceived esthetic when the teeth and bases are in harmony with the facial musculature as well as the size and shape of the head.
Selection of the anterior teeth
Selection of the anterior teeth

• Study casts:

They are the most reliable guides in selecting the size, shape and position of the natural
Selection of the anterior teeth

- Photographs:
  Helps in determining the placement of teeth, arch form, lip support than the actual size or shape of teeth
Use close up photo
Use the most recent
Selection of the anterior teeth

• Intra-oral radiographs:
  Can supply information about width, length and shape of teeth
  May be distorted??
Selection of the anterior teeth

• Extracted teeth:
Can supply information about size and mold of teeth
colour??
Selection of anterior teeth

Guides for selection of

Size

Form or shape

shade

Width MD

Length OG

Thickness BL
Guides to select anterior teeth size
Selection of anterior teeth

Guides for selection of teeth width

- Bizygomatic width
- BL centers of hamular notch
- Corners of mouth
- Lateral surfaces of nose
- Cranial circumference
- Ridge size and contour
- Incisive papilla
• Post extraction guides to determine width:
  Bi zygomatic width
  Combined width of six maxillary anterior may be estimated by dividing the maximum bizygomatic width of skull by 3.3
  The width of maxillary central incisor may be estimated by diving the maximum bizygomatic width by 16
WIDTH

• Post extraction guides to determine width:

**Buccolinguinal centers of hamular notches**

Combined width of six maxillary anterior equals the distance between the buccolinguinal centers of hamular notches plus 5 mm
WIDTH

• Post extraction guides to determine width:

Corners of the mouth

The distal surface of many natural upper canines is positioned at the corner of the relaxed mouth
• Post extraction guides to determine width:

**Canine eminence**

If it is well defined, the distance between lines drawn on the master cast of the upper jaw at the distal aspect of the eminence may be taken as the mesiodistal width of the six anterior teeth
 WIDTH

• Post extraction guides to determine width:

Width of nose

Distance between lateral extremities of the ala of nose can be measured with dividers and then transferred to the occlusion rims

Approximately 6 mm should be added to give the width of the six anterior teeth

Clinical way.... Pic?
WIDTH

- Post extraction guides to determine width:

**Size and contour of residual ridge**

The growth of alveolar bone requires presence and eruption of teeth. Therefore the size of residual ridges on casts have a relationship to size of anterior teeth.

Bone resorption after extraction will result in loss of contour and incorrect choice.
• Post extraction guides to determine width:
  Size and contour of residual ridge
  Pattern of alveolar bone loss after extraction
Maxilla: ant. Vertical and palatal direction
Post. Vertical and medial direction
Mandible: ant. Vertical and lingual direction
Post. Vertical and slight lingual direction
• Post extraction guides to determine width:

**Lateral surface of the nose**

Imaginary line through the lateral surface of nose and the center of brow line will indicate the distal aspect of the canine tooth at the point where the projected line passes through the occlusal plane
• Post extraction guides to determine width:

The Incisive papilla

Imaginary transverse line bisecting the incisive papilla will pass through the middle of the upper canines
• Post extraction guides to determine width:
  Maxillomandibular relation
  Any disproportion in size between the maxillary and mandibular arches influences length, width and position of teeth
• Post extraction guides to determine cranial circumference

The horizontal circumference of the cranium at a plane passing through the glabella and maximum occipital point is said to be 10 times the width of the maxillary anterior teeth.
LENGTH

- Post extraction guides to determine length:
  
  **Vertical distance between the ridges**

  Length of teeth is determined by the available space between the alveolar ridges
Post extraction guides to determine length:

The lips:

Length of anterior teeth can be determined from relaxing lips

Amount of central incisor visible below the lip when lip is relaxed and teeth apart is about 2-3 in young people and less in older individuals

When teeth are in occlusion lower lip is supported by incisal third of upper central incisor
• Post extraction guides to determine length:
The lips:

On smiling amount of tooth show is related to:
1. Length of upper lip
2. Mobility of upper lip
3. Vertical dimension of occlusion
4. Vertical overlap of teeth
THICKNESS

• Post extraction guides to determine thickness:

Thickness of teeth has a considerable effect on phonetics as well as esthetics
Guides to select anterior teeth form
Post extraction guides to determine shape of anterior teeth:

1. **Shape of the arch**

There is a relation between the shape of the upper arch and incisor teeth. It may be square, tapering and ovoid.
• Post extraction guides to determine shape of anterior teeth:

2. Shape of the face
Leon Williams classification
The shape of the upper central incisor usually coincide with the inverted form of the face. It may be square, tapering or ovoid.
• Post extraction guidelines to determine the shape of anterior teeth.

2. Shape of the face
Leon Williams classification
The shape of the upper central incisor usually coincide with the inverted form of the face
Basic facial forms: square, tapering square, tapering and ovoid
• Post extraction guides to determine shape of anterior teeth:
2. Shape of the face
  The outline form or shape of the anterior teeth should harmonize with the shape of the patient’s face
Post extraction guides to determine shape of anterior teeth:

2. Shape of the face
Trubyte indicator is used for determination of the facial outline
The form of the face is observed by noting the outline form as it appears in comparison with the vertical lines of the tooth indicator.
• Post extraction guides to determine shape of anterior teeth:
2. Shape of the face

It is helpful in observing the relative straightness or curvature of the profile
The **forehead**, the **base of the nose** and the **point of the chin** should be checked
If the three points are in line the profile is straight
If the three points are recessive, the profile is curved
• Post extraction guides to determine shape of anterior teeth:

3. **Sex**

Curved facial features are associated with femininity and square features are associated with masculinity

Ovoid tooth is more feminine and square tooth is more masculine

Curved labial surface is more feminine and a flat labial surface is more masculine
• Post extraction guides to determine shape of anterior teeth:

4. Age

With age incisal edges and interproximal surfaces wear

Labial surfaces seem flatter and the outline form appears more square
Guides to select anterior teeth shade
SHADE

- Post extraction guides to determine shade:

  Patient’s age
  Dark teeth are more suitable for old patients while lighter teeth are more suitable for younger
• Post extraction guides to determine shade:

Must be in harmony with the surrounding environment
Patient’s skin colour
Light teeth for fair skin, blue eyes
dark teeth usually for dark skin and eyes
Maxillary central incisor are the lightest teeth in the mouth, maxillary laterals and lower incisors are slightly darker, canines are darker
Mandibular anterior teeth

Each set of upper anterior teeth has a corresponding set of lower anterior teeth which matches it in

- Size
- Form
- color
Mandibular anterior teeth

Exceptions:
When selecting teeth for class II anterior teeth relationship, use mandibular teeth smaller and lighter in shade than that recommended by the mould guide because of retruded and narrow mandibular arch the space is less.... Narrower Lighter shade creates illusion that teeth are more anterior than they really are
Mandibular anterior teeth

Exceptions:
When selecting teeth for class III anterior teeth relationship, use mandibular teeth larger and less brilliant than that recommended by the mould guide because of protruded and wider mandibular arch providing more space.... Larger teeth Less brilliant teeth so they do not look as brighter
Dentogenic concept

Introduced by Frush and Fisher in mid-1950s

Based on patient’s age, sex and personality

Old, male, smokers with bold vigorous personality tend to have darker teeth

Female with delicate personality….lighter shade
Dentogenic concept

It advises dentists to select, arrange and alter teeth, carve the gingiva according to the patient’s age, sex and personality.
Posterior teeth selection

Factors for consideration when selecting posterior teeth:
Ridge morphology
Interarch distance
Arch relationship
Patient’s age and neuromuscular control
Esthetics
Comminution of food
Previous denture wearing experience
Posterior teeth selection

It is more empirical than anterior teeth selection

• The **shade** should harmonize with that of anterior especially premolars

• **SIZE:**

Posteriors should have smaller mesiodistal width to minimize stresses on supporting structures, increases the tongue space and improves the shape of the polished surface
Posterior teeth selection

It is more empirical than anterior teeth selection

• The mesiodistal width is determined by the length and slope of mandibular ridge

- Different ridge relation

- Measurement of the mesiodistal space from the distal of the canine to the mesial end of the retromolar pad
Posterior teeth selection

It is more empirical than anterior teeth selection

• The length is determined by the interarch distance

• The thickness (BL width) less than natural teeth
  Decrease stresses and provide a space for tongue and polished surfaces of denture
  Should provide enough support to the cheek
Posterior teeth selection

**Selection of teeth form:**
Anatomic teeth- 33 degrees teeth
Simulate natural teeth
Suitable for young healthy patients with good ridges
Used with balanced occlusion
Posterior teeth selection

Selection of teeth form:
Non Anatomic teeth- 0 degrees teeth
Have flat occlusal surface
Not efficient unless provided with cutting ridges, spillways
Transmit less destructive forces to the tissues
Suitable for old patients having poor ridges, and poor neuromuscular control, abnormal jaw relation or crossbites
Posterior teeth selection

Selection of teeth form:
Semi Anatomic teeth
Posterior teeth selection

Selection of teeth materials:
Esthetics
Color stability
Wear
Adjustment
Transmission of forces
Polishing
Bonding
Fracture
Repair
Noise during use
TEETH
SELECTION FOR RPD
Anterior teeth selection for RPD

Important for esthetic and incising food

Best arranged when patient is present
Anterior teeth selection for RPD

When selecting denture teeth, the practitioner should use the shade guide provided by the tooth manufacture.
Anterior teeth selection for RPD

Artificial teeth should be matched as closely as possible to the adjacent natural teeth or fixed restorations.

The matching process should be accomplished using natural light and should be completed as quickly as possible.
Anterior teeth selection for RPD

Mold selection is based upon two important factors:

• The space that has been created by tooth loss
• Overall form or shape of the teeth
Anterior teeth selection for RPD

Mold selection is based upon two important factors:

• The space that has been created by tooth loss
• Overall form or shape of the teeth

By determining the shape of the patient’s face you choose the appropriate form for the anterior teeth
Anterior teeth selection for RPD

Denture teeth on a denture base generally permit the most esthetic results. In such a situation, the denture base may be built to provide the appropriate support and contour for the lips.
Anterior teeth selection for RPD

If maxillary central incisors are missing. It is essential that these teeth be set first. This allows the practitioner to reestablish the maxillary midline in the center of the face.
Anterior teeth selection for RPD

If an anterior denture tooth is to be positioned against a natural tooth, the proximal surface of the prosthetic tooth must be contoured to permit close adaptation.

Selective recontouring of axial and incisal surfaces permits improved adaptation and appearance.
Anterior teeth selection for RPD

The denture base flanges should be contoured and smoothed to provide a pleasing appearances.

During the try-in appointment the practitioner should seek feedback regarding tooth arrangement.
Posterior teeth selection for RPD materials:

Improved acrylic resin teeth with gold occlusal surfaces are preferably used in opposition to natural teeth restored with gold occlusal surfaces.
Posterior teeth selection for RPD materials:
Porcelain teeth are generally used in opposition to other porcelain teeth
Posterior teeth selection for RPD

Posterior teeth must fit into available edentulous spaces and in harmony with opposing occlusal surfaces
Posterior teeth selection for RPD

Tooth size is determined by the length of the edentulous space.

In distal extension, tooth size is determined by the sizes of the opposing teeth as well as the length of the edentulous space.
Posterior teeth selection for RPD

Tooth size is determined by the length of the edentulous space.

When removable partial denture is opposed by a complete denture, the practitioner measures from the distal surface of a natural canine to the incline of the ramus in the mandibular arch.
Posterior teeth selection for RPD

Tooth size is determined by the length of the edentulous space.

When removable partial denture is opposed by a complete denture, the practitioner measures from the distal surface of a natural canine to the incline of the ramus in the mandibular arch.
Posterior teeth selection for RPD

The occlusogingival height of each replaced tooth must be considered.

Most posterior teeth are available in short, medium and long.
Posterior teeth selection for RPD

The occlusogingival height of each replaced tooth must be considered

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