Selection and arrangement of teeth in rpd

upon completion of the articulator mounting and a thorough assessment of the occlusal requirements, the practitioner should be able to perform the proper arrangement of prosthetic teeth. While selecting the replacement teeth, the clinician must carefully consider the esthetic and functional requirements of the patient, the structural requirements of the RPD and the materials to be used in prosthesis construction.

TYPES OF REPLACEMENT TEETH (MATERIALS):

1- Commercially available acrylic resin teeth (Ant. & Post.)
2- Commercially available porcelain teeth (Ant. & Post.)
3- Commercially available composite resin teeth (Ant. & Post.)
4- Metal replacement for posterior teeth (gold)

PORCELAIN TEETH

ADVANTAGES:

1- Greater translucency and depth of color give a natural appearance.
2- Harder than acrylic
3- Resist wear
4- Resist staining
5- They easily removed from the base of because there no chemical reaction between porcelain and acrylic denture base (benefit in rebasing).

DISADVANTAGES:

1- Clicking sound of the teeth covert the denture being noisy
2- brittle
3- detachment of tooth from the denture base
4-difficult to fabricate and trim
5-cause wearing of opposing natural teeth.

**ACRYLIC TEETH**

**ADVANTAGES:**
1- easy to adjust and trim
2- chemical bonding to denture base
3- easy to fabricate
4- lighter

**DISADVANTAGES:**
1- susceptible to abrasion
2- easily stained
3- in rebasing (difficult to remove the teeth from the denture base)

**ANTERIOR TEETH ARRANGEMENT**

the most difficult part of arranging anterior denture teeth is directly related to a loss of restorative space. Unless anterior teeth are replaced immediately following their extraction, the natural teeth adjacent to the space will either drift or tilt into the space and produce decrease in the restorative space. An attempt should have been made to regain the original width of the space by reshaping the proximal surfaces of the adjacent teeth.
If the entire width cannot be recovered, consideration should be given to overlapping the artificial teeth so that a normal sized tooth may be used to harmonize with the patient's face and remaining teeth.

Because of their availability, ease of adjustment, and surface wear characteristics, acrylic resin teeth are more commonly used than are porcelain teeth. While esthetically pleasing porcelain brittle and cause accelerated wear of opposing enamel, gold, and acrylic resin surfaces.

When selecting denture teeth, the dentist should use shade guide provided by the tooth manufacturer. Artificial teeth should be matched as closely as possible to the adjacent tooth by using natural light, the ability to discriminate between shades decreases rapidly as a result of eye fatigue.

After shade selection the practitioner should select appropriate mold. Each mold exhibit a defined size and shape, as well as distinctive surface characteristics.

**The practitioner must estimate the sizes of the patient's natural maxillary central incisors**, this accomplished by :-

The **HOUSE TECHNIQUE** : coordinates the width and length of each maxillary central incisor, the dentist determine the patient’s bizygomatic width and divided by (16), to estimate the length of the clinical crown, the dentist estimate the length by chin to hairline distance and divided by 16.

The overall form or shape of the teeth is established by **LEON WILLIAMS** : The shape of anterior teeth is closely related to facial form. Teeth are usually divided into four basic form (square, tapering, square tapering and ovoid).
GIUD LINE FOR SETTING ANTERIOR TEETH

1. Replace the acrylic resin record base attached to the framework with the base-plate wax base.

2. Set the Central Incisor first if the teeth are missing across the midline to reestablish the midline.

3. If required – reshape the ridge lap portion of the artificial tooth without shortening the clinical crown length substantially.

4. Place the teeth as nearly as possible where the original natural tooth was located.

5. Proximal surface of the artificial tooth may need to be re-contoured for better adaptation to the adjacent natural tooth, without losing its morphology.

6. The denture base flanges should be carefully contoured & smoothed. Remove the excess wax from the teeth and the framework.
POSTERIOR TEETH SELECTION AND ARRANGEMENT:-

posterior teeth must not only fit into the available edentulous spaces, but also must be in harmony with the opposing occlusal surfaces. the following must follow the posterior arrangement teeth:-

1- The dentist should not be overly concerned with replacing the exact number and type of teeth , for examples, the edentulous space may have been occupied by a second premolar and 1st molar but because of drifting of the remaining teeth the most suitable replacement may well be two premolars.

2- acrylic teeth are also indicated in posterior teeth . Porcelain teeth are indicated only if they will oppose similar porcelain surfaces.

3- shade selection should be accomplished.

4- The practitioner should then choose the appropriate mold .

5- The practitioner must consider the occlusogingival height for each replacement tooth.

6- one of the primary goals in establishing an effective occlusal scheme is to develop an acceptable pattern of maxilla- mandibular contacts. To do this , it is necessary to set the denture teeth at a height that is slightly greater than the proposed occlusal vertical dimension. The operator may then perform corrective grinding procedures which(1)return the teeth to the proposed occlusal vertical dimension and (2)provide maximum planned contact between opposing occlusal surface. This done by increase the incisal pin setting by 0.5mm
then marked using articulating paper and adjusted by using appropriate burs in a laboratory handpiece.

**POSITIONING A DENTURE TOOTH ADJACENT TO A CLASP ASSEMBLY**

Positioning the denture tooth adjacent to the abutment having a clasp or a Minor Conn. usually requires,

a. trimming of the proximal surface and the ridge lap portion of tooth carefully - Not to over-reduce the height of the buccal surface for esthetic reasons

b. The tooth should first be adjusted to fit the cast without framework and then readjusted after placing the framework on the cast.
The remaining teeth should then be positioned in maximum intercuspation. Some occlusal adjustment or leaving small spacing between two denture teeth may be necessary.

For the mandibular posterior teeth, central groove should be placed over the crest of the ridge.

The desired occlusal contacts for artificial teeth for removable partial dentures vary according to the class of partially edentulous arch being treated. The following is a brief summary of the various occlusal schemes that may be used in removable partial denture therapy.

1- Simultaneous bilateral occlusal contact of opposing posterior teeth should be present.
2- For a tooth born removable partial denture, the occlusion should be similar to a harmonious natural dentition.
3- For a removable partial opposing a complete denture, balanced articulation is desirable.
4- In class IV application, it is desirable to have light contact with opposing natural teeth in maximal intercuspal position.
5- Artificial teeth should not be positioned on the upward incline of the mandibular ridge (as it ascends the mandibular ramus).