Selection of anterior artificial teeth

This tends towards art and less to science and while the principles which follow will enable any clinician of average artistic ability to select teeth suitable for the average patient, the most pleasing results will always be obtained by those with an aesthetic sense.

Anterior teeth are primarily selected to satisfy esthetic requirements. Records of size, form and shade of teeth could be obtained from pre-extraction records which include:
1. Diagnostic casts with natural teeth.
2. Pre-extraction photographs.
3. Pre-extraction radiographs.
4. Observation of teeth of close relatives.
5. Preserved extracted teeth.

Factors to be considered when pre-extraction records are not available:
A. Shade (color).
B. Size.
C. Form.

A) Shade:
Shade mean degree of darkness of the color. There are two basic shades, the yellow and gray are the basic shades, and the other shades vary in between. Also it should be compatible with the general coloring of the skin, hair and eyes.

The factors of shade selection are:-
1. Age.
2. Sex.
3. Complexion.
4. Patient preference
1. Age:-
The younger the patient, the lighter the color is preferred. The color of natural teeth darken with age because of deposition of secondary dentin, wearing away of enamel and external staining from oral fluids, foods or tobacco.
2. Sex: -
The sex may effect color, it seems that females given brighter teeth than males.
3. Complexion:-
The color of the face should harmonize the color of teeth. Lighter teeth are suitable for lighter skin, while darker teeth are suitable for darker skin, although darker people with dark skin seemed to have very light teeth. This is because of contrast in the skin and tooth color.
4. **Patient preference (method of pair comparison):**
Show the patient a complete shade guide and select the two tabs that are lightest and
darkest, hold them against the patient lip and ask them to point to the one that they prefer.
More than two or three shades should be selected and comparison between them would help in final right selection.

**B) Size**
To select size of anterior teeth we have to consider the following:
1. Length.
2. Width.
3. Method of pair comparison.

1. **Length:**
The length of upper anterior teeth is controlled by:
* **Inter-ridge distance.**
* **Length of upper lip:**
  A. In short lip more than 2mm seen from upper central incisor.
  B. In medium lip 1-1.5 mm seen from upper central incisor.
  C. In long lip nothing can be seen from upper central incisor.

**The length of lower anterior teeth should be with level of lower lip.**

2. **Width:**
A. The width of upper central incisor equals approximately 1/16 of bi-
Zygomatic width, and width of upper ant teeth equal to 3.3 bi-Zygomatic width.
B. The width from the tip of left canine to the right canine is almost equal to the width of
the nose when measured in a straight line by a caliper.
C. Width of anterior teeth can be measured on upper occlusion rim depending on buccal
frenum, corner of the mouth and canine eminence.

3. **Method of pair comparison:**
Use the method of pair comparison to assist a patient to decide what size of tooth they prefer. Set two different sizes of teeth on a piece of wax rope. Place this under the upper lip, and find out which one the patient prefers. Two or three presentations may have to be made to reach a decision.

C. **Form:**
The form of anterior teeth depends on the following:
1. Face form.
2. Sex, age and personality.
3. Method of pair comparison.

1. **Face form:**
According to frontal out-line, face could be classified into square, ovoid and tapering. The upper central incisor form should be in harmony with patient face.

**Profile of the face can be divided into:**
Straight, convex and concave. The labial surface of Upper central incisor viewed from the mesial aspect should be in harmony with profile of the face.
2. Sex, age and personality:-
Sex: Masculine form is associated with square, cuboidal and angular form. While feminine form associated with more rounded, ovoid and tapering features.
Age: In old patients the teeth tend to have square form due to attrition, more round features disappears and line angle quite seen in those patients.
Personality: It seems reasonable that a large vigorous type of persons have teeth of a size and form with prominent markings, different from those of a delicate appearing woman.

3. Method of pair comparison
Allow the patient to select between the same size teeth but different forms. Set two different forms of teeth on the right and left sides of a piece of wax rope, and ask the patients which they prefer.

Materials of anterior teeth:-
There are two main types:
1. Porcelain,
2. Acrylic

1. Porcelain teeth:
We have vacuum fired and air fired. The vacuum is better because they are harder and have luster. Generally porcelain teeth are preferred particularly for young person because they look more vital, very smooth and difficult to abrade.

2. Acrylic teeth:
They are made from acrylic resin, indicated when there is insufficient inter-occlusal distance, and grinding becomes necessary, also in situation where there are opposing natural teeth, partial denture and gold bridge. They are inferior when they are compared with porcelain because they can not maintain luster for long time and abraded easily.

Acrylic teeth
1- Not brittle, but poor abrasion resistance.
2- Esthetic very good.
3- Chemical bonding with denture base.
4- Easily ground and polish.
5- Transmit fewer forces to the mucosa.
6- No clicking on contact.
7- Thermal expansion same as acrylic denture base.

Porcelain teeth
1- Brittle, more resistance to abrasion
2- Excellent (does not stain).
3- Mechanical bonding by pins or undercuts holes.
4- Difficult to grind and polish.
5- More forces to the mucosa.
6- Clicking on contact.
7- Much lower than acrylic causes stresses in acrylic denture base.