بسم الله الرحمن الرحيم
Preprosthetic Surgical Procedures

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**Definition**

Preprosthetic Surgery is the Surgical Improvement of the Denture bearing area and Surrounding Tissues to Support the Best possible Prosthetic replacement.

**OBJECTIVE**

Creation of proper supporting structures for subsequent placement of prosthetic appliances.
The goal of preprosthetic and reconstructive surgery in the twenty-first century is to establish a functional biologic platform for supportive or retentive mechanisms that will maintain or support prosthetic rehabilitation without contributing to further bone or tissue loss.

This environment will allow for a prosthesis that restores function, is stable and retentive, preserves the associated structures, and satisfies esthetics.
Characteristics of the Best Denture Support

1. No evidence of Extra or Intra-Oral Pathologic conditions.
2. Proper Jaw Relationship.
3. Proper Configuration of the Alveolar Process (broad U-shaped ridge with Vertical components as Parallel as possible).
4. No Bony or Soft tissue protuberances or undercuts.
5. Adequate attached Keratinized mucosa in the primary denture-bearing area.
6. Adequate Vestibular Depth.
7. Adequate form and tissue coverage for possible Implant placement.
Many Minor Modifications of the alveolar ridge and vestibular areas can greatly improve denture stability and retention.

**Surgical Techniques, may be employed for:**

**Bony Recontouring of Alveolar Ridges**
- Simple alveoloplasty (mult. Teeth Ext.).
- Intraseptal alveoloplasty.
- Maxillary tuberosity reduction.
- Buccal exostosis and extensive undercuts.
- Lateral palatal exostosis.
- Mylohyoid ridge reduction.
- Genial tubercle reduction.

**Tori Removal**
- Maxillary tori.
- Mandibular tori.

**Soft tissue Abnormalities**
- Maxillary tuberosity reduction.
- Mandibular retromolar bad reduction.
- Unsupported hypermobile tissue.
- Inflamm. Fibrous hyperplas.
- Inflammatory papillary hyperplasia of the palate.
- Labial Frenectomy.
- Lingual Frenectomy.

**Immediate Dentures.**

**Overdenture Surgery.**
Advanced (Major) Preprosthetic Surgery

In Cases of Severe Bony changes or Soft tissue abnormalities; prior to Implant placement or the Prosthetic appliance can be properly constructed and worn.

*Surgical Techniques, may be employed for:*

**Mandibular Augmentation**
- Superior Border.
- Inferior Border.
- Pedicle or Interpositional Grafts.
- Hydroxyapatite.

**Maxillary Augmentation**
- Onlay Bone Grafting.
- Interpositional Bone G.
- Hydroxyapatite.
- Sinus lift.
- Tuberoplasty.

**Soft tissue Surgery for Mandibular Ridge Extension**
- Transpositional Flap Vestibuloplasty (Lip Switch).
- Vestibule and Floor of mouth Extension.
- Relocation of Mental Nerve.

**Soft tissue Surgery for Maxillary Vestibule Extension**
- Submucosal Vestibuloplasty.
- Skin-Grafting Vestibuloplasty.

**Correction of Abnormal Ridge Relationships**
- Segmental Alveolar surgery in PEP.
- Correction of Skeletal Abnormalities in TEP.
In the late 1970s, Brånemark and colleagues demonstrated the safety and efficacy of the implant-borne prosthesis.

In the 1990s,Implantology
Distraction osteogenesis
Guided tissue regeneration significantly expanded the capabilities of today’s reconstructive and preprosthetic surgeon.

Genetically engineered growth factors will soon revolutionize our thoughts about reconstructive procedures.

As a result, more patients are able to tolerate procedures because they are given increased freedom and satisfaction with regard to their prosthetic devices and, in many cases, undergo less-invasive techniques.
Principles of Patient Evaluation & Treatment Planning

A. Define & Outline the Problem.
B. Understand clearly the desired design of Final Prosthesis.
C. Develop a Detailed Treatment Plane.

Through: Thorough History & Physical Examination:

Chief Complaint
- Expectations (Surgery & Prosthesis)
  Functional
  Esthetics
- Psychology (Previous Failures)
Medical Status
Intra & Extra-Oral Examinations
Evaluation of Supporting Bony Tissue

- Inspection
- Palpation
- Radiographic Examination
- Models Evaluation
Evaluation of Supporting Soft Tissue

Quality of primary denture bearing area
Vestibular area (Bucc. & Ling.):
- Mucosa
- Muscle attachment
Treatment Planning

Patient's Identified Oral Problems
Prosthodontic Consultation
Long-term Maintenance of:
  - Bone
  - Soft tissue
  - Prosthesis
Proper Sequence of Surgical Steps
عن أبي هريرة رضي الله عنه قال: قال رسول الله صلى الله عليه وسلم:
من قال حين يصبح وحين يمسى:

وبحمد

سبحان الله

مائة مرة
لم يأتي أحد يوم القيامة بأفضل مما جاء به
إلا أحد قال مثل ما قال أو زاد عليه

رواه مسلم
Basic (Minor) Preprosthetic Surgery

Bony Recontouring of Alveolar Ridges

Simple alveoloplasty (mult. Teeth Ext.).
Knife-edged Ridge
Bony Recontouring of Alveolar Ridges

Intraseptal alveoloplasty.
Bony Recontouring of Alveolar Ridges

Maxillary tuberosity reduction.
Bony Recontouring of Alveolar Ridges
- Buccal exostosis and extensive undercuts.
Bony Recontouring of Alveolar Ridges

- Mylohyoid ridge reduction.

Basic (Minor) Preprosthetic Surgery
Basic (Minor) Preprosthetic Surgery

Tori Removal

Maxillary tori.
Basic (Minor) Preprosthetic Surgery

Tori Removal
- Mandibular tori.
Soft tissue Abnormalities

Maxillary tuberosity reduction.
Soft tissue Abnormalities

- Unsupported hypermobile tissue.
Soft tissue Abnormalities

- Inflammatory fibrous hyperplasia.
Soft tissue Abnormalities

→ Inflammatory papillary hyperplasia of the palate.
Soft tissue Abnormalities

Labial Frenectomy: 1- Simple Excision
Soft tissue Abnormalities

Labial Frenectomy: 2-Z-plasty
Soft tissue Abnormalities

- Labial Frenectomy: 3- V-type incision
Soft tissue Abnormalities

- Lingual Frenectomy.
Factors affecting Bone Resorption:

A. General (Systemic)
- Nutritional abnormalities.
- Systemic bone disease.

B. Local
- Alveoloplasty.
- Improper Dentures.
## Patient Evaluation

<table>
<thead>
<tr>
<th>Class</th>
<th>Characteristics</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Alveolar ridge (AR) adequate in height but inadequate in width, usually with lateral deficiency or undercut areas</td>
<td>Hydroxyapatite (HA) alone</td>
</tr>
<tr>
<td>II</td>
<td>AR deficient in both height &amp; width and has a knife edge appearance</td>
<td>HA alone</td>
</tr>
<tr>
<td>III</td>
<td>AR resorbed to level of the basilar bone, producing concave form on posterior areas of the mandible and sharp bony ridge form with mobile soft tissue in the maxilla</td>
<td>HA alone or mixed with autogenous cancellous bone</td>
</tr>
<tr>
<td>IV</td>
<td>Resorption of the basilar bone, producing pencil-thin, flat mandible or flat maxilla</td>
<td>HA mixed with autogenous cancellous bone</td>
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</tbody>
</table>
Advanced (Major) Preprosthetic Surgery

Mandibular Augmentation

Superior Border.
Mandibular Augmentation

- Inferior Border.
Mandibular Augmentation
- Pedicle or Interpositional Grafts.
  (Visor osteotomy and Modifications)
Mandibular Augmentation

- Hydroxyapatite.
Maxillary Augmentation

Onlay Bone Grafting.
Maxillary Augmentation

Interpositional Bone G.
Maxillary Augmentation

Hydroxyapatite.
Maxillary Augmentation

Sinus lift.
Maxillary Augmentation
Tuberoplasty.
Soft tissue Surgery for Mandibular Ridge Extension

Transpositional Flap Vestibuloplasty (Lip Switch).

Kazanjian Tech

Clark Tech
Advanced (Major) Preprosthetic Surgery

Soft tissue Surgery for Mandibular Ridge Extension

Vestibule and Floor of mouth Extension.

Obwegeser Tech
(using skin graft)
Soft tissue Surgery for Mandibular Ridge Extension

Relocation of Mental Nerve.
Advanced (Major) Preprosthetic Surgery

Soft tissue Surgery for Maxillary Vestibule Extension

- Submucosal Vestibuloplasty.
Correction of Abnormal Ridge Relationships

- Segmental Alveolar surgery in PEP.
- Correction of Skeletal Abnormalities in TEP.

Advanced (Major) Preprosthetic Surgery
Advanced (Major) Preprosthetic Surgery

Implantology

Distraction osteogenesis
THANK YOU