



# Removable Prosthodontics





## Terminology

### Prosthetics

The art and science of artificial replacement of any absent parts of the human body.

### Dental Prosthetics (Prosthodontics)

The branch of dental art and science that deals with the replacement of missing teeth and oral tissues to restore and maintain oral form, function, appearance, and health.

### Prosthesis

Artificial appliance that replaces any missing part of the human body, e.g., eye prosthesis, leg prosthesis.

### Dental Prosthesis

Artificial appliance that replaces one or more teeth (up to the entire dentition in either arch) and associated dental/alveolar structures.

## ⚙️ Basic Prosthodontic Principles

- Retention: Ability of the prosthesis to resist dislodging forces along the path of placement.
- Support: Ability of the prosthesis to resist vertical tissue-ward forces.
- Stability: Ability of the prosthesis to resist displacement by horizontal or rotational forces.

## 🕒 Removable Prosthodontics

- Prosthesis designed to be removed by the wearer.



Dentulous patient: Patient having a complete set of natural teeth.

Edentulous patient: Patient missing all natural teeth (needs complete denture).

Partially edentulous patient: Patient missing one or more but not all natural teeth (needs RPD, fixed bridge, or implant).



## Classification of Prosthesis

### Removable

- ➡ Complete Dentures
- ➡ Removable Partial Dentures

- Conventional مؤقت -
- Attachment



Retainer = Extra-coronal retainer = Clasp = Flexible clasp

### Fixed

- ➡ Crowns, Onlays 11
- ➡ Fixed Partial Dentures (Bridges)

### Implants

## Treatment Options for Partially Edentulous Patients

- ➡ Removable Partial Denture (RPD)
- ➡ Fixed Partial Denture (FPD)
- ➡ Implant



### Removable Partial Denture (RPD)

Dental prosthesis that replaces one or more natural teeth and associated oral structures.

### Objectives of RPD

#### ➡ 1. Preservation of Remaining Teeth and Tissues

- Ⓐ Preservation of remaining teeth.
- Ⓑ Prevention of muscle and TMJ problems.
- Ⓒ Preservation of residual ridge.
- Ⓓ Preservation of tongue contour and space.

**Principle:** Preservation of that which remains has priority over replacement of that which has been lost.  
(DeVan, 1952)



 **2. Improve Masticatory Function** By restoring continuity of the dental arch.

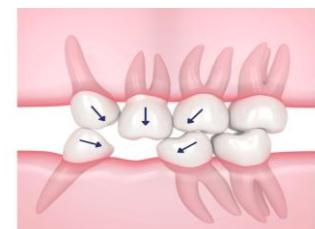
 **3. Improvement of Esthetics** Providing support to lips and cheeks.

 **4. Enhance Psychological Comfort**

 **5. Restoration of Impaired Speech** Dentolabial sounds (F, V).

## ⚠ Sequelae of Tooth Extraction Without Replacement

-  A Drifting and rotation of remaining teeth.
-  B Continuous eruption of unopposed teeth.
-  C Overclosure and protrusion of the mandible.
-  D Trauma to oral mucosa.
-  E Facial or TMJ pain.



Replacement of lost teeth prevents migration of teeth into the edentulous area.

## 💡 Clinical and Laboratory Procedures in RPD Construction

### Clinical Procedures

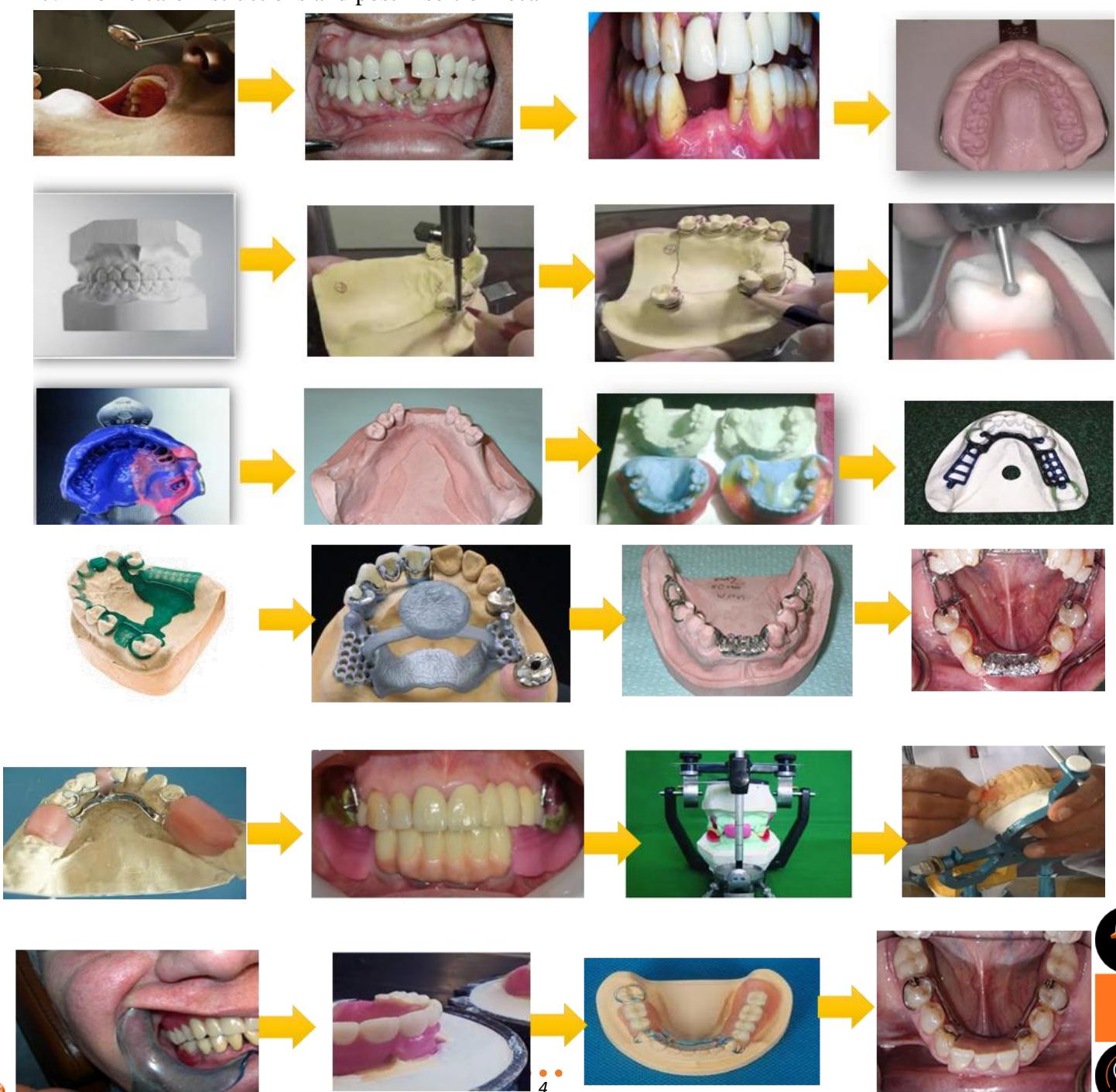
1. Clinical Examination, Diagnosis and Treatment Planning
2. Preliminary Impression
3. Study Cast and Special Tray Construction
4. Surveying
5. Preliminary Designing
6. Prosthetic Mouth Preparation
7. Final Impression and Master Cast Construction
8. Transfer of Design to Master Cast + Surveying

### Laboratory Procedures

1. Fabrication of Framework
  - Master cast preparation
  - Duplication
  - Refractory cast construction
  - Wax pattern fabrication
  - Spruing



- Investing
  - Wax elimination (burnout)
  - Casting
  - Finishing and polishing
2. Framework Fitting
  3. Trial Prosthesis Fabrication
    - Occlusion rim construction
    - Bite registration
    - Shade and tooth selection
    - Mounting on articulator
    - Teeth setting
  4. Wax Try-in
  5. Processing
  6. Installation
  7. Home care instructions and post-insertion recall



## Types of Edentulous Areas

### Bounded Edentulous Area

An edentulous area with an abutment tooth on each end.



### Free-End Edentulous Area (Distal Extension Saddle)

An edentulous area with an abutment tooth on one side only and no posterior abutment.

**Abutment :** A tooth, a portion of a tooth, or that portion of a dental implant that serves to support and/or retain a prosthesis.

## Types of Partial Dentures

### 1 Temporary (Interim) Partial Denture

- A short-term prosthesis used immediately after extraction or during the healing period.
- Maintains **esthetics** and **function**.
- Prevents drifting or tilting of remaining teeth.
- Later replaced by a **definitive prosthesis**.

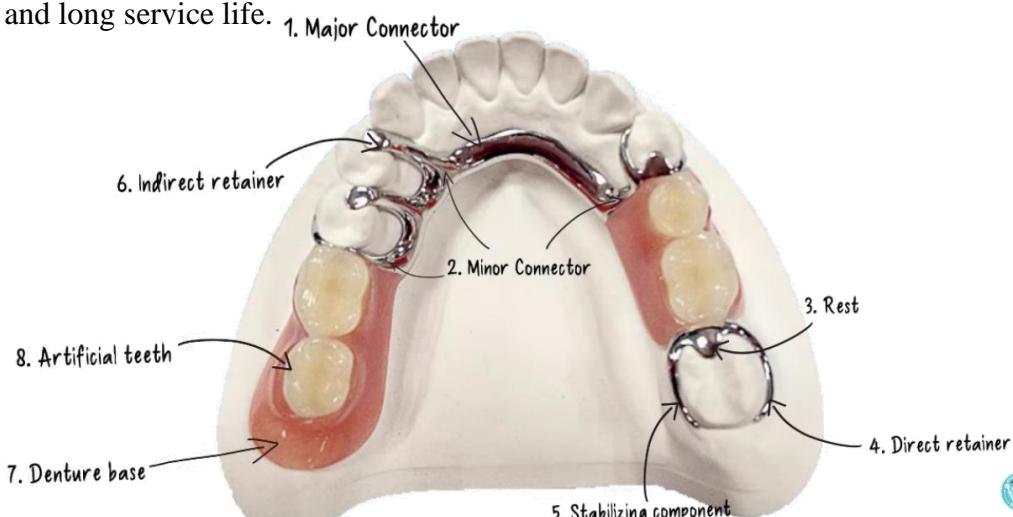


### 2 Transitional Partial Denture

- A temporary prosthesis that can be modified by adding artificial teeth.
- Used when additional teeth are expected to be extracted.
- Common in **phased treatment plans**.

### 3 (Conventional / Cast) Partial Denture

- The final long-term prosthesis.
- Constructed with a **metal framework**.
- Provides maximum **strength, support, retention, stability**.
- Accurate fit and long service life.



# Components of Removable Partial Denture

**1 Major Connector** : A **rigid component** connecting the parts of the prosthesis on both sides of the arch.

**2 Minor Connector**: Connects the major connector to other components (clasps, rests, denture bases).

## 3 Denture Base

→ The part resting on the **residual ridge**.

→ Supports the artificial teeth. Transmits occlusal forces to the supporting tissues.

**4 Artificial Teeth**: Replace missing natural teeth.- Restore: Mastication Esthetics Phonetics

**5 Direct Retainer (Clasp Assembly)** → Engages an **abutment tooth** to resist dislodgement.

## 6 Rest (Support Component)

- ✓ A **rigid component** that rests on a prepared surface of an abutment tooth.
- ✓ Primary function: **Support** (prevents tissue-ward movement).
- ✓ Directs occlusal forces along the **long axis of the abutment tooth**.
- ✓ Maintains proper position of the clasp assembly.

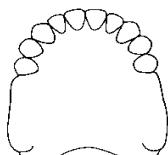
### 7 Types of Rests

Occlusal Rest – posterior teeth , Cingulum Rest – canines , Incisal Rest – anterior teeth

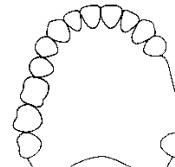
## Kennedy Classification of Partially Edentulous Arches

Class	Edentulous Area	Location	Sides	Bounded / Free end	Key Notes
I	Posterior edentulous areas	Posterior to remaining teeth	Bilateral	Free end	✗ No distal abutment on both sides
II	Posterior edentulous area	Posterior to remaining teeth	Unilateral	Free end	✓ Distal abutment on one side only
III	Edentulous area between teeth	Between natural teeth	Unilateral	Bounded	★ Most stable class
IV	Single anterior edentulous area	Anterior region	Crosses midline	Bounded	✗ No modification allowed

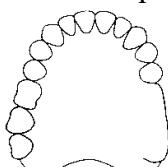
- I → Bilateral posterior



- III → Bounded space



- II → Unilateral posterior



- IV → Anterior crossing midline

