

Classification of Partially Edentulous Arches

Need for classification:

1. To formulate a good treatment plan.
2. To anticipate the difficulties common to occur for that particular design.
3. To communicate with a professional about a case.
4. To design the denture according to the occlusal load usually expected for a particular group.

Requirements of an acceptable method of classification:

1. It should permit immediate visualization of the type of partially edentulous arch that is being considered.
2. It should permit immediate differentiation between the tooth-supported and the tooth- and tissue supported removable partial denture.
3. It should be universally acceptable.
4. Serve as a guide to the type of design to be used.

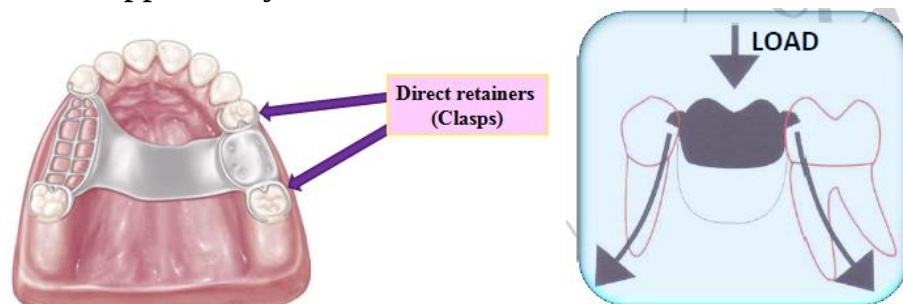
****Removable partial dentures may be classified according to the type of support into:***

1. **Tooth supported prosthesis:** is a prosthesis or part of the prosthesis that depends entirely on the natural teeth (abutments) for support.

For partially edentulous patients the prosthetic options available include:

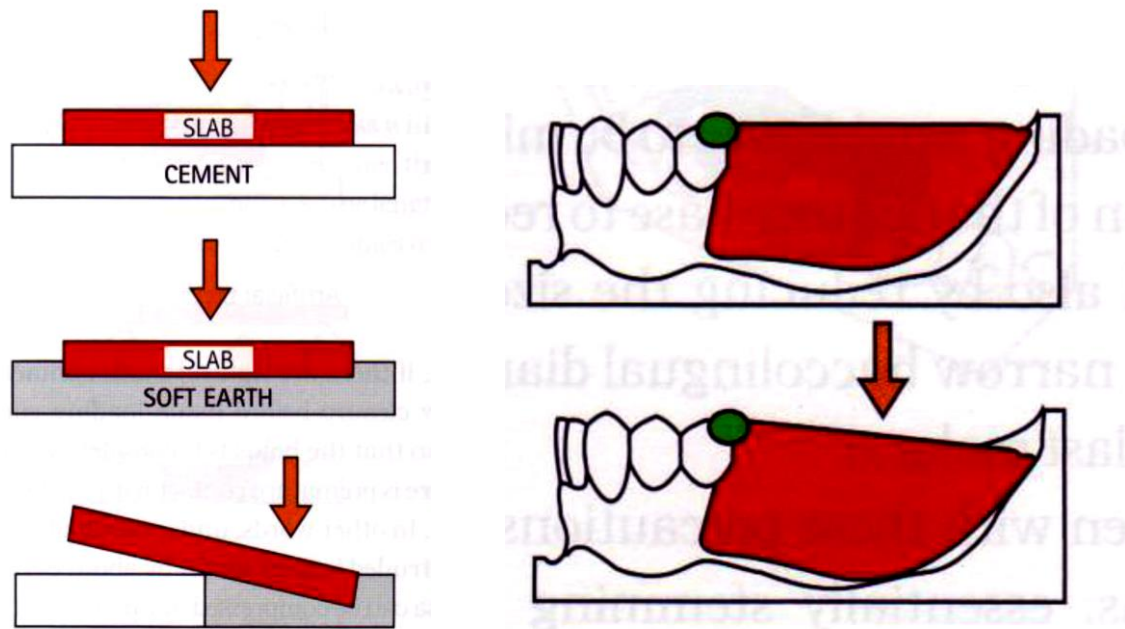
- Natural tooth - supported fixed partial dentures.
- Natural tooth – supported removable partial dentures.
- Implant - supported fixed partial dentures.

Retention is derived from direct retainers on the abutment teeth, tooth supported RPDs do not move appreciably in function.



2. Tooth - tissue supported prosthesis: is a prosthesis or part of the prosthesis that depends on the natural teeth (abutment) as well as the residual ridge and tissue for support. Also called **true partial denture**, it includes a free end extension.

The tooth – tissue supported RPD supported at one end by natural teeth, which essentially do not move, and at the other end by the denture bearing tissues (mucosa overlying bone) which moves because of the resiliency of the mucosa.



3. Tissue supported prosthesis: is one which is supported entirely by mucosa and underlying bone.

Tissue supported RPDs are primarily supported by tissues (mucosa overlying bone) of the denture foundation area. Tissue supported RPDs usually have plastic major connectors and are, therefore, usually interim RPDs. Tissue supported RPDs will move in function because of the resiliency of the mucosa.

Retention for tissue supported RPDs is customarily provided by wrought wire retentive clasp arms on selected natural teeth.

Tissue supported RPDs have the potential to cause soft tissue damage and periodontal attachment loss and accordingly should be used for only a short period of time.



****Removable partial dentures may be classified according to the type of material used into:***

1. **Acrylic (Temporary RPDs):** is the RPD made of acrylic and artificial teeth, retentive wires (clasp) may be used for retention.
2. **Cr/Co (Chrome/Cobalt)-metal RPDs (Definitive RPDs):** is the RPD made of metal or alloys and artificial teeth, acrylic may be used as a denture base.

Removable partial dentures may be classified according to the type of treatment:

1. Definitive RPDs:

Definitive RPDs are constructed after extensive diagnosis, treatment planning, and through preparation of the teeth and tissue for the prosthesis. The length of service of definitive RPDs is intended to be many years this meaning the cobalt chromium alloy removable partial dentures.

2. Interim RPDs:

Interim RPDs are usually constructed as part of the preparation of the mouth for definitive RPD, FPD or implant treatment. The length of service of interim RPDs is generally planned to be a year or less, they are frequently referred to as ***temporary RPDs*** example of that is the acrylic removable partial dentures.

*** *Classification based on arch configuration:***

The most widely accepted system of classification of RPDs and partially edentulous arches was proposed by **Dr. Edward Kennedy** in 1923. It is based on the configuration of the remaining natural teeth and edentulous spaces. This system was further defined and expanded upon by **Dr. O.C. Applegate** and **Dr. Jacques Fiset**.

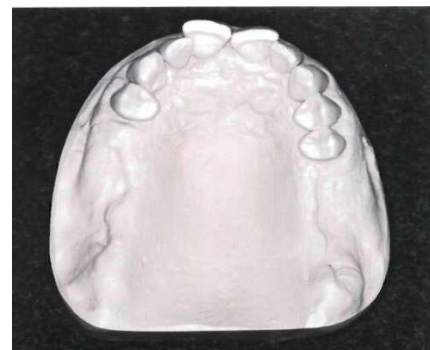
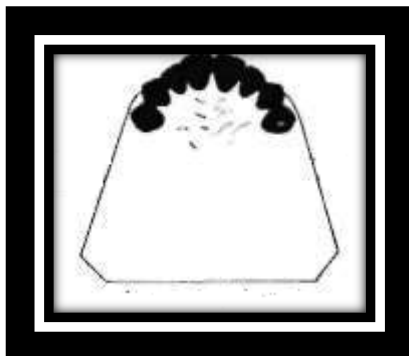
*The values of the **Kennedy – Applegate – Fiset classification system** are that:*

1. It is relatively simple and easy to remember.
2. Extremely comprehensive and very practical.
3. Universally accepted.
4. It permits logical approach to the problem of design.
5. It permits immediate visualization of the partially edentulous arch or RPDs designed for that arch.
6. It indicates the type of support for the RPD, which suggest certain physiological and mechanical principles of treatment and RPD design.

Kennedy – Applegate – Fiset classification system

According to this classification system, partially edentulous arches are classified into four basic classes:

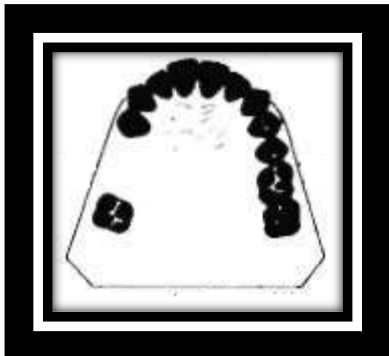
Class I: Bilateral edentulous areas located posterior to the natural teeth.



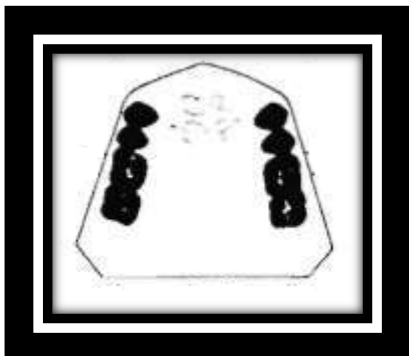
Class II: A unilateral edentulous area located posterior to the remaining natural teeth.



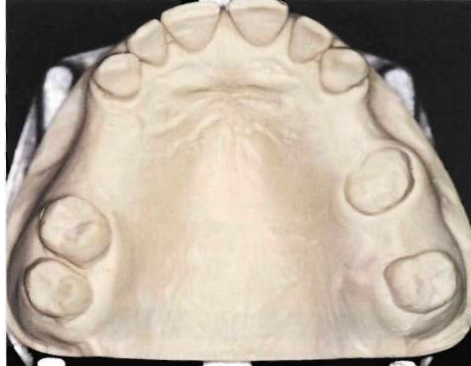
Class III: A unilateral edentulous area with natural teeth remaining both anterior and posterior to it.



Class IV: A single, but bilateral (crossing the midline), edentulous area located anterior to the remaining natural teeth.



Edentulous areas other than those determining the basic classes were designated as *modification spaces* and written as a number 1, 2, 3... depending on the number of the extra edentulous spans. Example:



Class III, modification 2

Applegate's rules governing the application of the Kennedy classification method:

***Rule 1**

Classification should follow rather than precede any extractions of teeth that might alter the original classification.

*** Rule 2**

If a third molar is missing and not to be replaced, it is not considered in the classification.

*** Rule 3**

If a third molar is present and is to be used as an abutment, it is considered in the classification.

*** Rule 4**

If a second molar is missing and is not to be replaced, it is not considered in the classification (e. g., if the opposing second molar is likewise missing and is not to be replaced).

*** Rule 5**

The most posterior edentulous area (or areas) always determines the classification.

*** Rule 6**

Edentulous areas other than those determining the classification are referred to as modifications and are designated by their number.

*** Rule 7**

The extent of the modification is not considered, only the number of additional edentulous areas.

***Rule 8**

There can be no modification areas in Class IV arches. (Other edentulous areas lying posterior to the single bilateral areas crossing the midline would instead determine the classification; see Rule 5.)

Examples of different partially edentulous arches cases



CI IV



CI II mod 2



CI I mod 1



CI III mod 3



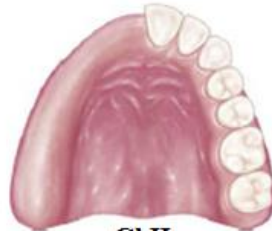
CI III mod 1



CI I mod 2



CI IV



CI II



CI III mod 5