ACRYLIC REMOVABLE PARTIAL DENTURE

It is a dental prosthesis which artificially supplies teeth and associated structures in a partially edentulous arch, made of acrylic resin and can be removed from the mouth at will. An acrylic removable partial denture consists of an acrylic resin denture base, artificial teeth, and wrought wire clasps.

Types of acrylic partial dentures

1- Temporary removable partial denture:
   It is a removable prosthesis used temporarily for a period of time until a more definite prosthesis can be provided.

2- Interim removable partial denture:
   A dental prosthesis to be used for a short intend of time as an artificial substitute for missing natural teeth.

3- Transitional removable partial denture:
   A partial denture which is to serve as a temporary prosthesis and to which more artificial teeth will be added as more teeth are lost and which will be replaced after post-extraction and tissue changes have occurred.

4- Treatment partial denture:
   A dental prosthesis used for the purpose of treating or conditioning the tissue.

5- Immediate partial denture:
   It is prosthesis used to replace one or more teeth and is inserted on the day of extraction of teeth. It is a partial denture constructed before the extraction of unwanted teeth and is inserted immediately after this extraction.
INDICATION OF ACRYLIC REMOVABLE PARTIAL DENTURE

1- In young patients when the pulp chamber is so large that a fixed prosthesis is not feasible.

2- As space maintainer: recent extraction or premature loss of teeth resulting in a space, to maintain this space we have to make an acrylic temporary treatment.
   A- In young patient: it is important to maintain the space until adjacent teeth have fully erupted to be used as abutments for fixed restorations.
   B- In adult: the maintenance of space can prevent migration of adjacent teeth, extrusion, or over-eruption of opposing teeth.

3- Elderly patients, whose general health contraindicate lengthy procedure.

4- Cost: acrylic removable partial denture is considerably less than that for metallic partial denture or fixed partial denture.

5- Serviceable for periodontically weakened standing teeth.

6- Interim (temporary) prosthesis: may be used:
   A- When denture is needed while healing is progressing after extraction or surgery.
   B- Denture is needed while prolonged treatment is being accomplished.
   C- The patient has no enough time at the moment for lengthy definite treatment.

7- Transitional partial denture: during the periodic shift from a partial denture to complete denture.

8- Treatment partial denture: may be used:
   A- As vehicle to carry tissue treatment material for abused oral tissue (tissue conditioner).
   B- To reestablish the vertical dimension of occlusion on temporary bases, while the results of the increase can be observed.
   C- As a splint for surgical correction in the oral cavity.
   D- As a night-guard or mouth protective device to correct or control undesirable oral habits or to protect the mouth and teeth from trauma.

9- As immediate partial denture.
ADVANTAGES

1- Not expensive.
2- Light weight.
3- Simpler design.
4- Easily constructed.
5- Easily added artificial teeth, if natural teeth are extracted.
6- Easily relined if bone resorbed.
7- Easily repaired if fractured.
8- Good appearance if extended labially or buccally because it is color resembles that of gingiva.
9- Easily adjusted by grinding at chair-side.

DISADVANTAGES

1- Less patient response and tolerance for acrylic dentures than metallic dentures.
2- Poor thermal conductivity.
3- Lower strength, therefore:
   A- Easily broken.
   B- Must be constructed in thick section.
   C- The denture is somewhat larger and bulkier.
4- Not rigid enough for ideal connection.
5- Tendency for warpage if overheated during polishing or during recurring in repair or reline.
6- Design difficulties:
   A- Ideal tooth support is difficult.
   B- Ideal indirect retainer is difficult.
   C- Unnecessary tissue coverage because of strength considerations.
   D- Impossible to use more sophisticated components (precision attachments, stress breaker).
1- The acrylic denture base:
   The base acts as a saddle and as connectors and has a reciprocal function for the retentive wrought wire clasp arm.

2- Wrought wire clasps:
   Wrought stainless steel wire clasps are used with acrylic partial dentures; they are attached to the acrylic denture base by embedding their non-retentive portion into the denture base.
   The wrought wire clasps consist of a retentive portion and non-retentive portion, which should be looped or twisted to help anchorage it in the acrylic resin of the base.

   The most commonly clasp design used for acrylic partial denture:
   A- Simple circular clasp:
      It is used for the teeth adjacent to the edentulous ridges. It starts lingually and passes over the relieved ridge along the proximal surface of the clasped tooth to engage buccal undercuts. It should pass 3-4 mm away from the proximal surface of the clasped tooth, to allow grinding.

   B- Half Jackson clasp:
      It finds its application on molars and premolars when no edentulous space exists on either side of the tooth. It starts lingually and passes up to cross the occlusal plane on the embrasure between two neighboring teeth, then down to the buccal surface to engage the undercut.

   Generally wrought wires are either:
   A- Embedding a portion of the wire in an acrylic resin denture base.
   B- Soldering to a fabricated framework.
   C- Casting the framework to the wire.

3- Acrylic teeth:
   They are attached by chemical bond to acrylic denture base.