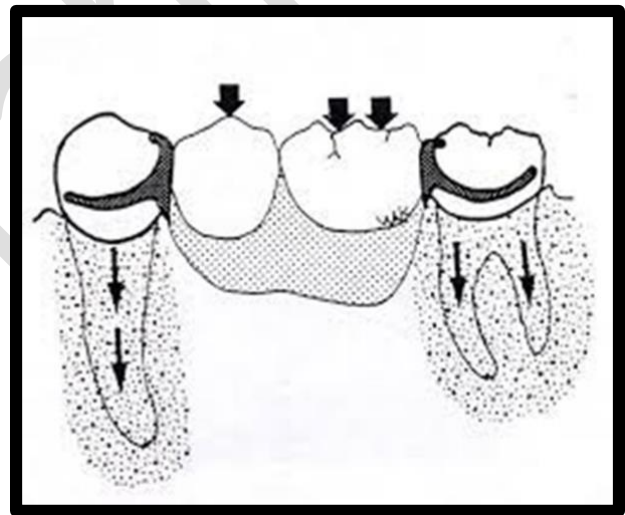
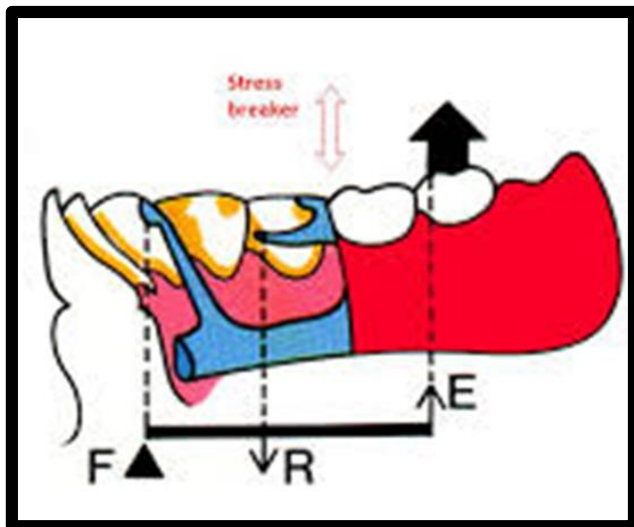


Stress Breaker –Stress Equalizer

Support is derived from **the residual ridge and abutment teeth** in the distal extension RPD. The variation in consistency provides this support and allows some rotational movements of the free end base **towards** the soft tissues. Harmful tissue-ward movements of distal extension under occlusal load are transmitted to the abutment teeth, resulting in the loosening of these teeth. A rigid connection between the denture base and supporting teeth must account for base movement without causing tooth or tissue damage.

Stress breakers are devices that permit some hinge or rotational movement between the denture base or its supporting framework and the direct retainers (whether they are intracoronary or extracoronary retainers). This device separates the action of the direct retainers from the base movement, so it was used to minimize strain on the abutment teeth to which the partial denture is attached and transfer them to the denture-bearing areas.



It is indicated in a distal extension restoration. All vertical and horizontal forces applied to the artificial teeth are distributed throughout the supporting portions of the dental arch. The rigid major connectors, minor connectors, and stabilizing components achieve a broad distribution of the force.

Aims of Stress-Breaking

- To direct occlusal forces in the long axis of the abutment teeth.
- Stress breakers play a crucial role in preventing harmful loads from being applied to the remaining natural teeth, thereby protecting the patient's natural dentition.
- To share the load as early as possible between the natural teeth and saddle areas according to the ability of these different tissues to accept the loads.

- d. To ensure that part of the load applied to the saddle is distributed as evenly as possible over the whole mucosal surface.
- e. Stress breakers significantly enhance the comfort of the patient, a key consideration in dental prosthetics.

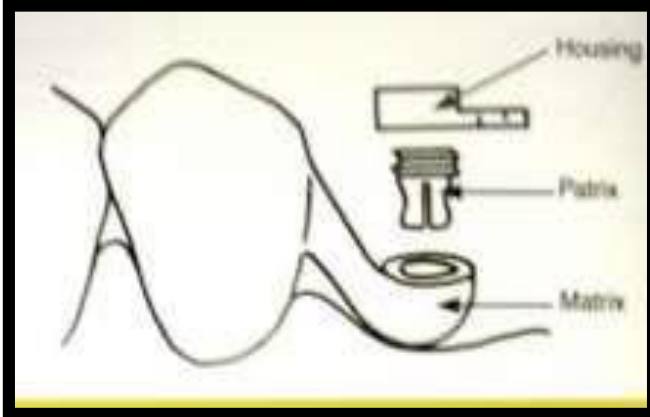
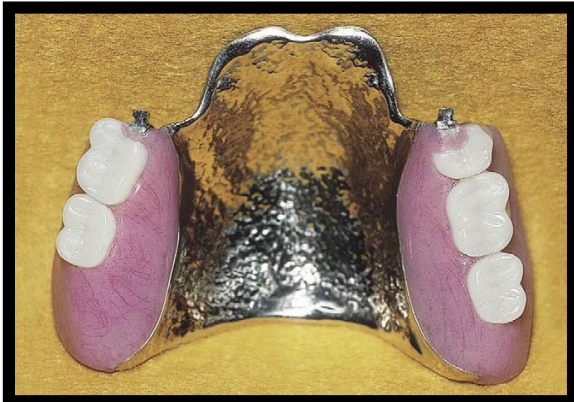


There are several stress breakers, each with unique features and benefits. These include:

Type one: These types have a movable joint between the direct retainer and the denture base and permit vertical movement. The hinge action of the distal extension denture base includes:

- Hinge
- Sleeve
- Cylinder
- Ball and socket device







Type two: Flexible connection between direct retainer and denture base.

Divided major connector into:

- Split significant connectors.
- Wrought wire soldered to major connector.
- Clasps having stress breaking effect:

1- split bar: by using this type of stress breaker, the vertical forces applied on the distal extension base must pass anteriorly along the lower bar and then back along a more rigid upper bar to reach the abutment tooth; therefore, the tipping forces that would otherwise be transmitted directly to abutment teeth are dissipated by the flexibility of lower bar and distance travelled.

2- wrought wire: soldered to major connector

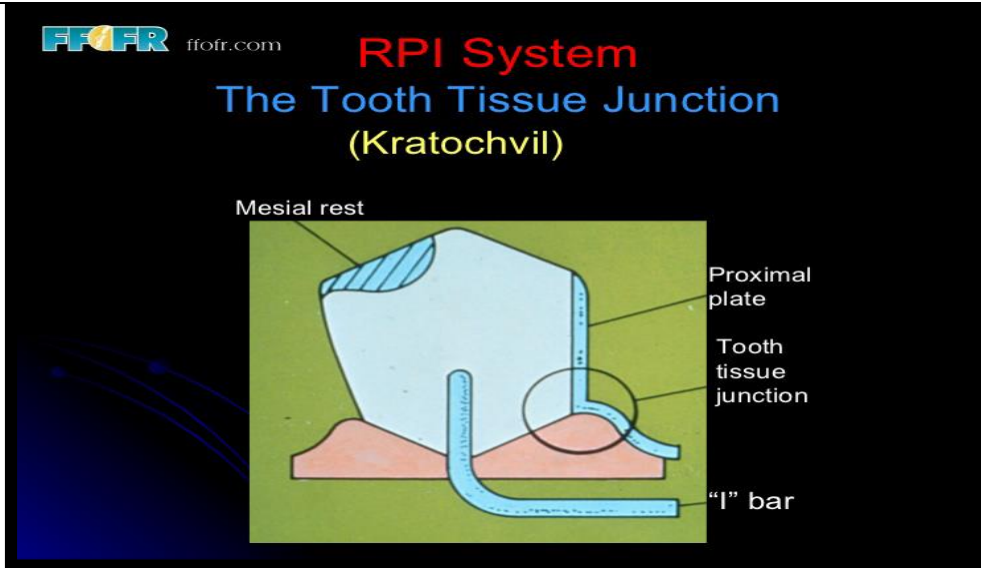
3- clasps: having stress-breaking effect:

a- RPI system

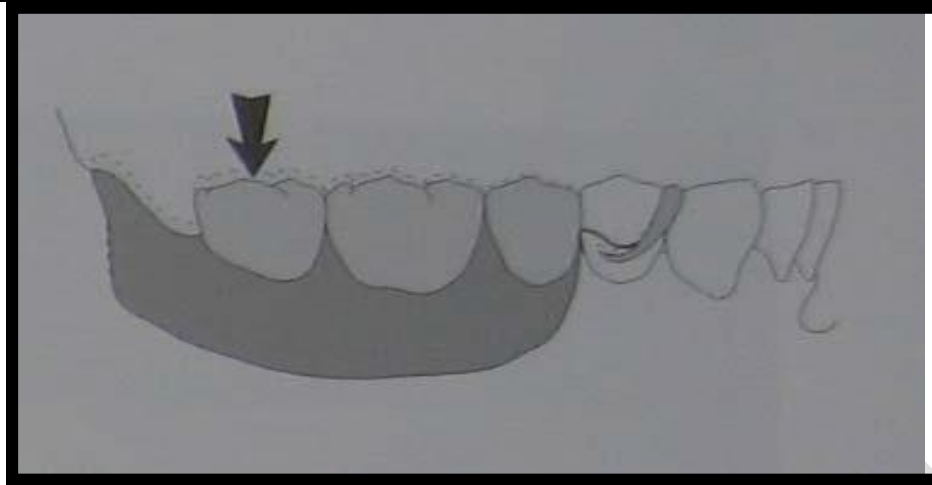
R= rest mesially located.

P proximal plate on abutment distally.

I= I bar.



b- Reverse Aker clasp



c- RPA system

R= rest mesially located.

P= proximal plate.

A= Aker clasp

RPA Clasp

- ❑ Similar to RPI except except suprabulge wrought wire clasp is used instead of I-bar
- ❑ Used where infrabulge approach not possible *



d-wrought wire clasp

Advantages:

- 1- Preservation of alveolar support of abutment teeth by minimizing the horizontal forces acting on the teeth.
- 2- The flexible stress breaker creates a stress balance between the abutment teeth and the residual ridge.

- 3- The physiologic stimulation of the mucosa prevents bone resorption and eliminates the need for relining.
- 4- If relining is needed but not done, the abutment teeth are not damaged quickly.
- 5- The flexible (non-rigid attachment) of the distal extension base to the major connector makes splinting of weak teeth by the denture framework possible.

Disadvantages:

- 1- Lack of occlusal stability.
- 2- Not provide bracing for lateral forces.
- 3- Improper control of force distribution between the dentulous and edentulous areas.
- 4- The denture is more difficult to fabricate and, therefore, more costly.
- 5- If relining is not done when needed, excessive resorption of the residual ridge may result.
- 6—Flexible connectors may be bent and fractured by careless handling and repeated flexing, which will apply more stress to the abutment.
- 7- Repair and maintenance of any stress breaker are difficult, costly, and frequently required.
- 8—All mechanical devices that are free to move in the mouth collect debris and become unclean. Some split connectors are used as stress breaker, pinching the underlying soft tissue or the tongue as they open and close under function.