Stress Equalization or Stress Breaker

A stress breaker is defined as, “A device which relieves the abutment teeth of all or part of the occlusal forces”

Or,

“is a device that allows movement between the denture base and the direct retainer which may be intracoronal or extracoronal”.

Dentures with a stress breaker are also called as a broken stress partial dentures or articulated prostheses. We know that the soft tissues are more compressible than the abutment teeth. In a tooth-tissue supported partial denture, when an occlusal load is applied, the denture tends to rock due to the difference in the compressibility of the abutment teeth and the soft tissues

(Stress breakers can be added to the junction between the tooth supported portion and tissue supported portion of the denture to avoid leverage forces)
As the tissues are more compressible, the amount of stress acting on the abutments is increased. This can produce harmful effects on the abutment teeth.

In order to protect the abutment from such conditions, stress breakers are added to the denture. A stress breaker is something like a hinge joint placed within the denture framework, which allows the two parts of the framework on either side of the joint to move freely.

**Types of stress breakers**

**Type I**

Here a movable joint is placed between the direct retainer and denture base. This joint may either be:

- a hinge or
- a ball and socket
- or a sleeve and cylinder.

Adding these stress breakers to the junction of the direct retainer and the denture base, allows the denture base to move independently.

This decreases the amount of force acting on the abutment. The combined resiliency of the periodontal ligament and the stress director will be equal to the resiliency of the oral mucosa overlying the ridge.
(The denture base shows independent movement with type I stress breakers)

**Type II**

It has a flexible connection between the direct retainer and the denture base. It can be a wrought wire connector, divided or split major connector or a movable joint between two major connectors.

The major connector is split by an incomplete cut parallel to the occlusal surface of the teeth into two units namely the upper unit (more near to the tooth) and the lower unit. The denture base is connected to the lower unit and the rests and direct retainers are connected to the upper unit.
**Advantages**

1. The alveolar support of the abutment teeth is preserved as the stress acting on the abutment teeth are reduced.
2. The stress on the residual ridge and the abutment teeth are balanced.
3. Weak abutment teeth are well splinted even during the movement of the denture base.
4. Abutment teeth are not damaged even if relining is not done appropriately (after the denture wears out).
5. Minimal requirement of direct retention.
6. Movement of the denture base produces a massaging effect on the soft tissues.
7. This avoids the frequent need for relining and rebasing.

**Disadvantages**

1. Design is complicated and expensive.
2. The assembly is very weak and tends to fracture easily. Distorts to rough handling.
3. It is difficult to repair.
4. It can be used only to counter the vertical forces on the denture. Inability to counteract lateral stress acting on the ridge leads to ridge resorption.
5. Reduced stability against horizontal forces.
6. Both vertical and horizontal forces are concentrated on the ridge leading to resorption.
7. Inappropriate relining leads to excessive ridge resorption.

8. Reduced indirect retention.

9. The split major connector tends to collect food debris at the area of split.

Best wishes