Relining and rebasing

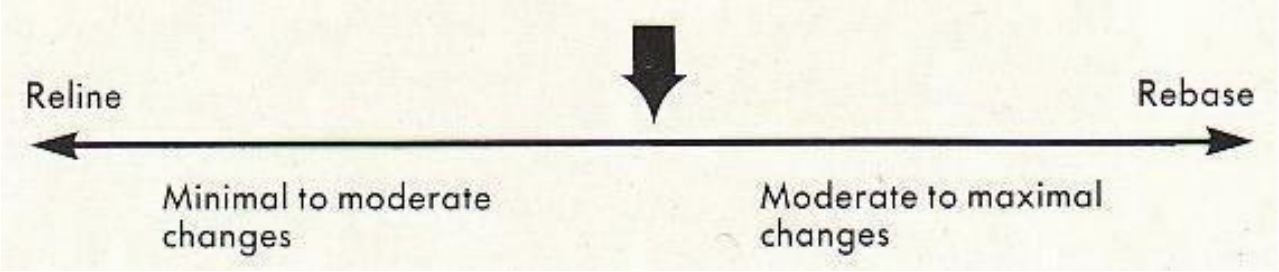
Relining: The process used to resurface the tissue side of a denture with new material layer, thus producing an accurate adaptation to the denture foundation area.

Rebasing: The laboratory process of replacing the entire denture base material on an existing prosthesis.

The indications for relining or Rebasing:

Observed clinical changes which include:

1. Loss of retention and stability.
2. Loss of vertical dimension of occlusion.
3. Loss of support for facial tissues.
4. Horizontal shift of dentures, incorrect occlusal relationship.
5. Reorientation of occlusal plane.



Contraindication of relining and rebasing:

1. When there is increased vertical dimension (insufficient inter-arch space).
2. Poor esthetic and incorrect position of teeth.
3. Unsatisfactory jaw relationship in the denture.
4. Excessive resorption of residual ridge.
5. Sever osseous undercuts.
6. Dentures causing major speech problems.
7. TMJ problems.

The impression techniques for relining and rebasing could be:



The chair-side relining technique(Direct):

Several attempts have been made to produce a **cold cure acrylic or other plastic materials(Self-curing resin repair material)** that can be added to the denture and allowed to set in the patient mouth, ***but these have been failed for several reasons:***

1. The material has often produced a chemical burn on the mucosa (exothermic reaction).

2. Color stability is very low, and bad odor due to porosity of the material since no flasking procedure is used.

3. Liability for errors and wrong positioning of the denture is great with difficulty in correction and removal of set material to start again.

4. Improvement in the denture requirement is very little and low.





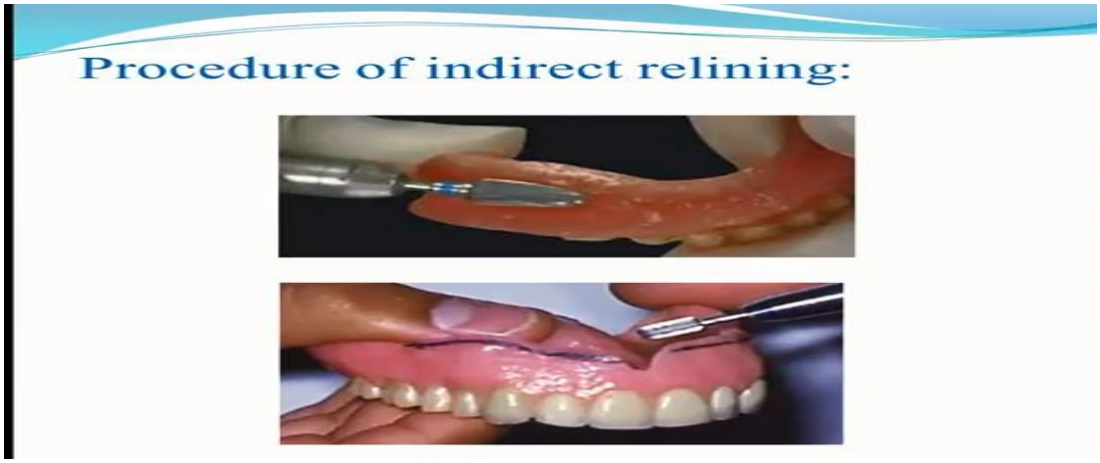




Laboratory procedures for relining (In Direct):

1. Beading and boxing of the impression, then pouring the boxed impression with stone material.

2. The denture and the cast are not separated, but any excess impression on the teeth or facial surfaces of the base is removed, then the denture flasked in the usual manner.
3. Wax elimination by heating in hot water for 5 minutes, then separated and all impression materials cleaned from the cast and the denture base.
4. Painting the cast with a separating medium.
5. Paint the surface of the denture with cotton pellet moistened with monomer.
6. Mix the acrylic resin and place it in the flask.
7. Curing for 9 hours at 165 F.
8. The denture deflasked and the cast removed from the denture then polish the denture and remount the cast.
9. The maxillary and mandibular dentures remounted on articulator after correction of occlusion, the relined denture is ready to be inserted in the patient mouth.





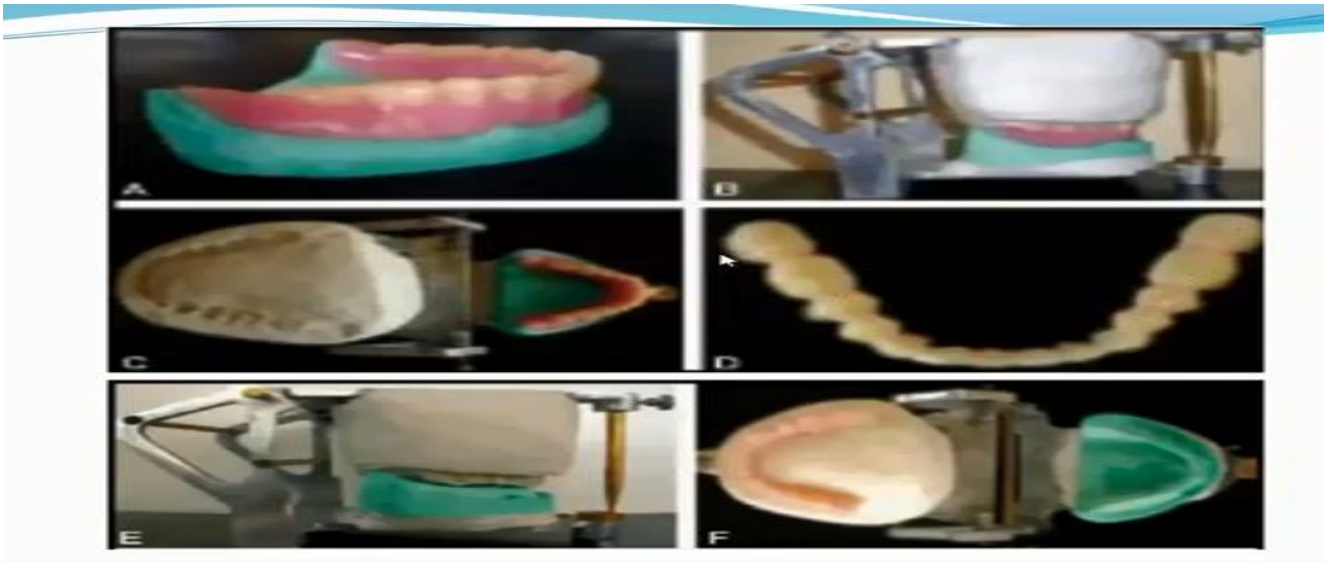


Rebasing:

Rebasing procedure is the same as those for relining with some differences:

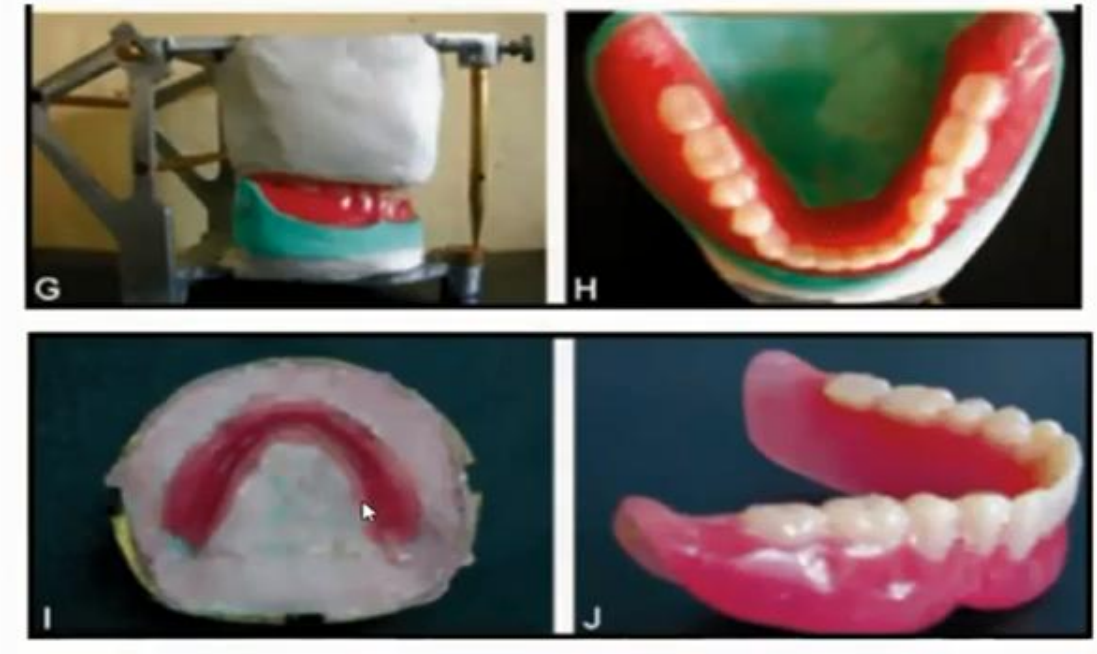
1. Impression made and a cast poured in the denture as in relining procedure.
2. The denture with cast mounted on an instrument as Hooper duplicator that maintain the relationship of teeth to the cast.





3. The old denture destroyed and removed.
4. The original teeth rewaxed in their previous positions on the cast.
5. The denture then processed in the laboratory as for relining.

Note: A Hanau articulator with a remounting jig makes a satisfactory instrument for rebasing instead of Hooper duplicator.



Repair of complete denture

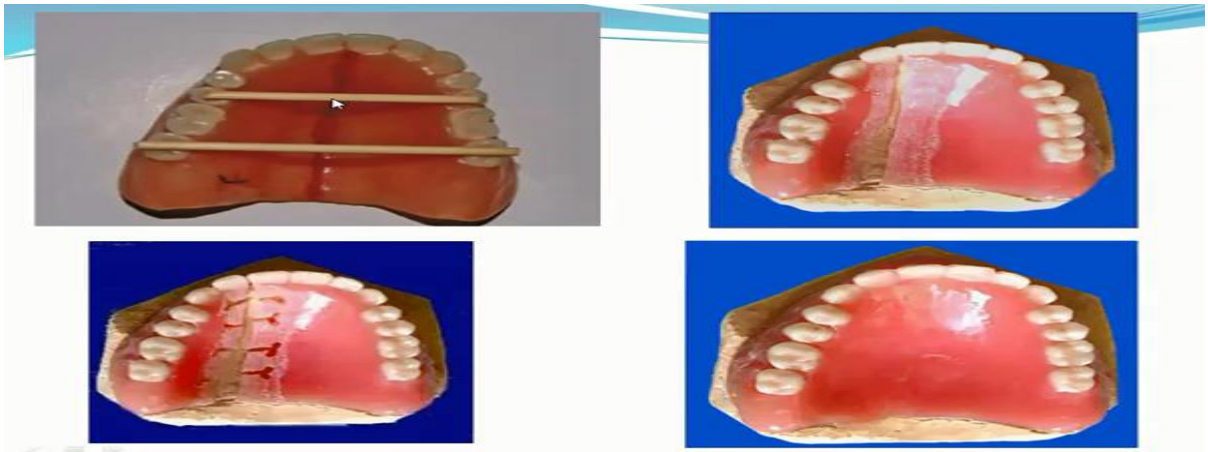
One of the advantages of using acrylic resin in denture base , it can be easy to repair , a broken denture which is useless to the patient may be repaired easy so that it is again be useful device.

In the early days repair done with heat cure acrylic resin, today self-curing repair materials, make repair even simpler and prevent warpage which happened in the denture from overheating.

Types of repair:

1- Maxillary denture base fracture all of the parts are available
2- Mandibular denture base fracture
3- Replacement of the broken or missing tooth or teeth
4- Missing labial or lingual border





Clinical and laboratory procedure:

Repairing of fractured denture base:

a- Accurate re-assembly of the broken parts , if not the denture will neither fit nor occlude properly

b- Applied sticky wax to the fractured line to maintain the two pieces in correct position , do not allow the sticky wax to flow into the fracture lines only cover the fracture line from polished surface

c- The reinforced the denture by attaching one or more wooden stick or (old bur) to the occlusal surface

d- Block any undercut in the tissues side of the denture and apply separating medium

e- A cast is poured into the denture using quick set plaster

f- After setting remove the two piece of denture gently

g- Coat the cast with tinfoil substitute (separating medium)set aside to dry

h- The edge of the fractured are beveled toward the polished surface and the polished surface reduced to form a groove of 8-10 mm wide along the fractured line

i- The pieces of the denture are re-assembled on the cast

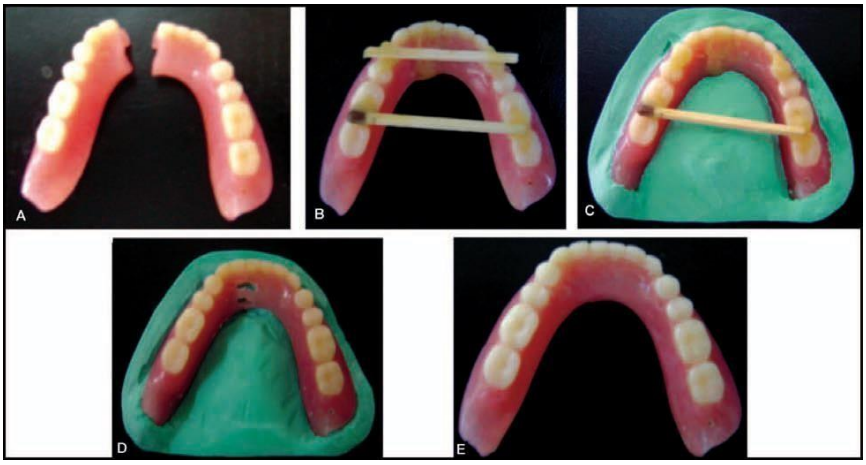
j- Self-curing resin repair material is used, an alternate applications of monomer and polymer are made until the area to be repaired is filled the area should be slightly overfilled to allow for finishing

k- Porosity in repaired material can be prevented by using pressure curing unit that will produce 30 pounds of pressure will enhance the density of resin as it cures , left in it for a minimum 10 minutes

l- The denture is removed from unit then from cast remove the excess by bur

m- Finished and polished in a conventional manner

n- Inserted in patient mouth



Replacement of broken tooth or missing tooth:

There are many techniques but the one which provide good results is:

1- The area lingual to the fractured tooth is reduced using small bur
2- The fractured tooth is then heated using a flame to soften the area surrounding it then pushed out
3- The mold and shade of the tooth is determined and selected
4- Remove the denture base material lingual to the socket left which must be large enough to accommodate the tooth without interference, the labial portion of the tooth socket is left intact to aid in repositioning the new tooth
5- Placing the new tooth in position
6- The tooth can be fixed labial by sticky wax or a matrix of plaster labially, we do the plaster matrix by applying a layer of plaster on broken tooth this should include one tooth on each side, thin layer of Vaseline can be applied on the teeth before applying the plaster to facilitate removal of matrix
7- **Self-curing resin is used to attach the tooth to the denture base.**
8- Alternate application of monomer and polymer are made until the area is overfilled
9- Place the denture in pressure curing unit containing water of 100 degree for 10 minutes
10 - Removed finished and polished.

Missing labial or lingual border:

Often piece of a broken denture may be lost or may be impossible to position, for this reason it may be necessary to replace this missing part, small piece broken of the border can be fashioned by placing warmed modeling plastic on the remaining border and then recontouring the missing area by placement in patient's mouth , after proper recounting a cast is poured into the denture, the modeling plastic is removed and self-curing resin is used to fill the area of the missing border , the resin is cured and polished.

If borders are missing from several areas of the denture or it a large piece is missing, it may be necessary to make an impression over the fractured denture, an oversized perforated tray is filled with irreversible hydrocolloid (alginate) and then the denture with the missing part or parts is placed in patient's mouth to make an impression over the denture, a cast is poured in the impression with denture by stone. After the stone became hard and the impression has been removed the cast will reveal the area to be added, self-curing resin is then used to replace these missing areas.

Recently a visible light cured resin can be used in place of conventional denture resin to repair fractured denture, the advantages of VLC resin over conventional resin are:

1- Have superior strength and dimensional stability
2- Complete polymerization without residual compounds
3- No free monomer
4- Ease of manipulation
5- The material is well tolerated by patient
6- Need minimum of time and effort