

Relining and rebasing of complete denture

Relining: is a process of resurfacing the tissue side of the denture with a new denture base material to make it fit more accurately without changing the occlusal relations of the teeth.

Rebasing: is a process of replacing the whole denture base material without changing the occlusal relations of the teeth.

Reasons of making relining and rebasing:

1. Discoloration or deterioration of denture base.
2. Looseness of denture, soreness, chewing inefficiency or esthetic changes.
3. Observed clinical changes like:
 - * Loss of retention and stability.
 - * Loss of vertical dimension of occlusion (V.D.O).
 - * Loss of support for facial tissues (esthetic).
 - * Incorrect occlusal relationship.
 - * Reorientation of occlusal plane.

In minimal to moderate previous changes, relining can be used but in moderate to maximal changes, rebasing must be used to solve the problem.
4. When the dentures are to be worn for indefinite period, the tissue surface should be adapted by rebase procedure.
5. When the dentures are to be used temporarily or during the treatment of abused tissues, the tissue side should be fitted by relining procedure.
8. Dentures that can't be stabilized by border refining or dentures in which the occlusal disharmony is beyond the correction are not suitable for relining or rebase procedures, the dentures must be reconstructed.

Indications of relining and rebasing:

1. Patient with immediate denture usually after 3-6 months.
2. Diabetic patient that complains of continuous poor retention and stability due to bone resorption.
3. Geriatric patient and very poorly health patients that can't bear the visits of new denture construction.
4. Socioeconomic status and economic consideration.

Contraindications of relining and rebasing:

1. Severely resorbed ridge, it is better to make new denture with advanced impression techniques or make implant or over denture.
2. Esthetically not acceptable dentures, especially teeth shade.
3. Flabby tissue covering the residual ridge, unless the condition is treated.
4. Speech problems due to incorrect setting of teeth.

Preliminary treatment:

1. In soft tissue changes, the soft tissues should be in optimal health before making relining or rebasing e.g. in upper denture in the presence of lower anterior natural teeth, there will be more pressure of the anterior teeth leading to bone resorption of upper arch anteriorly which is replaced by flabby tissue.

Also inflammation, papillary hyperplasia and denture fissuratum can be caused by ill-fitted denture. Old dentures and systemic conditions can cause also soft tissue changes.

*In minor changes —————> ask the patient to leave the denture at least 2 days before taking the impression.

*In denture hyperplasia —————> it can be corrected by reduction of the denture borders.

*in major changes —————> tissue conditioner should be used.

2. In change in occlusion —————> it can be corrected by selective grinding.
3. Reestablishment of the V.D.O, in sever changes, we can use combinations of compound stops and occlusal adjustment.

4. Reorientation of the occlusal plane by compound stops.
5. Reestablishment of the centric relation.
6. Correction of the tissue side surface of the denture.
7. Facial support and esthetic should be restored by wax.
8. Speech and phonetic consideration if can be corrected like decrease the thickness of palate to increase tongue space for more accurate sounds pronunciation.
9. Check posterior palatal seal area of upper denture if need repostdaming.
10. Check the presence of sever undercuts, large tori, high muscle and frenal attachments if need pre-prosthetic surgery.

Impression techniques used in relining and rebasing

1. Closed and open mouth static impression technique

***closed mouth technique:** the dentures are used as impression trays and if the centric relation (C.R) is correct the final impression can be taken **while** the patient is close his mouth in the existing centric occlusion (maximum intercuspation).

If the C.R is not correct, it must be recorded by using of a wax placed over the occlusal surface of the dentures **before** the impression is made.

***Open mouth technique:** the dentures are used as trays for making the new impressions, the existing centric occlusion is not utilized and a new C.R record is obtained **after** impression making.

Clinical Procedures:

1. reduction of the borders and inner side of the denture base about 1-2mm to allow space for the impression material.
2. if the denture borders are over extended, it should be shortened to the correct length and thickness. If they are short, they may extend to the correct length during imp.
3. in case of reduced V.D.O and to reestablish the occlusal plane, four stoppers are placed on the tissue side of the

denture at the premolar and molar areas by using tracing compound until getting the correct V.D.O.

4. border molding of the denture borders and posterior palatal seal area of maxillary denture by tracing stick compound as what is made in the special tray during final impression making so as to have a proper extension and peripheral seal area of the denture.
5. Vents application or vented denture which include two holes are made on each side of labial flanges of upper and lower denture and (3-4) holes on rugae area of upper denture to provide escape way for excess impression material and minimize dislodging pressure that may lead to denture movement or sliding anteriorly from its supporting structures.
6. Light body silicon or zinc oxide eugenol final impression material is mixed and a thin layer is evenly distributed on the tissue side of the denture and inserted in the patient mouth with a slight pressure with border molding then ask the patient to close the teeth of his upper and lower dentures in centric relation and do border molding until material is set.
7. Remove the denture with the setted impression material and inspect it for any fault or bubble, check its retention and stability, vertical dimension and esthetic, if every thing is good we must do the laboratory procedures.

Laboratory procedures:

1. Beading and boxing of the impression denture to facilitate pouring by stone.
2. After complete stone setting, the denture should not separated from the cast i.e. we must not open the impression and any excess impression material should be removed.
3. Flasking of the denture with the cast and impression is done in the usual manner as in the new denture but here the impression material will be replaced by hot cure acrylic during the flasking procedure.
4. After a curing cycle of 9hours at 165°F, deflasking is done and finishing of the denture is done.
5. Remounting and selective grinding of the relined dentures is

done to improve occlusion and all minimal errors resulted during laboratory procedures.

6. The relined/rebased denture is ready for insertion and checking in the patient mouth.

2. Function impression technique:

It is simple and practical method used in ill-fitted denture with the presence of a variable hyperemia of the mucosa accompanied by sore spots in the denture bearing mucosa.

Clinical procedure:

1. Prepare the dentures, as in the first four points of the static impression technique.
2. **(Tissue conditioner liner)** is mixed and a thin layer is placed inside the denture evenly covering all the denture borders and impression or tissue side, this material has a tendency to slump from the borders during setting unless they are adequately supported by tracing compound.
3. Ask the patient to close in maximum intercuspation until setting, remove excess material by a hot scalpel.
4. The material that is used in this technique is tissue conditioner which is composed of polymethyl methacrylate (powder) and aromatic ester alcohol(liquid), when the alcohol evaporates, the material will pass in three different stages (plastic, elastic and firm stage) during a period of time.

Plastic stage: It takes from few hours to few days, it will response to the functional and parafunctional stresses, the denture fit is improved and this also allows the displaced tissues to recover and assume their original position.

The patient is instructed regarding care of the prosthesis and its lining material by simple rinsing of the lined denture and gentle brushing with a soft brush.

Elastic stage: It takes from 1-2 weeks, it acts as a cushion for the stresses and tissue recovery takes place.

Hard stage: It becomes similar to a polymerized resin surface except it is vulnerable to deteriorate, in this stage you can pour the impression on the denture and make the same laboratory procedures of static impression technique.

3. Chair side impression technique:

Several attempts have been made to produce an acrylic or other plastic material that could be added to the denture and allowed to set in the mouth to produce an instant chair side reline/rebase but until recently, this technique is of little use clinically because of the following **disadvantages:**

1. It produces a chemical burn of the mucosa because of its exothermic reaction.
2. The reline often is porous leading to bad odor and decreasing its strength and resulting in fracture.
3. Its color stability is poor so is esthetically not acceptable
4. Difficult to remove from the denture to repeat the relining.

Visible Light-cured (VLC) resin: The recent introduction of resin in chair side technique has produced promising results. It is nontoxic and biocompatible material, they have improved properties and **advantages** are:

1. Well fit to underlying tissues.
2. Good strength.
3. Ability to polymerize without residual components (less irritant to the mucosa).
4. Ease of fabrication and manipulation.
5. Patient acceptance and minimal color changes.
6. Ability to bond with other denture base resins.
7. Low bacterial adherence.

Clinical procedure: prepare the old denture as in the previous methods and load the denture with the material and insert it in the patient mouth, ask the patient to close in centric and eccentric, partial intraoral polymerization with a hand-held curing light of the light cured resin is carried out in the clinic then send to laboratory for immediate and final polymerization of the new layer of material in the relined denture.

Rebasing:

Its procedures are essentially the same as those of relining:

- *Impression is made in the prepared denture and poured by stone.
- *The denture with the cast produced are mounted on a device called (hooper duplicator) that maintain the relationship of the denture teeth to the cast.
- * The old denture is removed or destroyed and the original teeth are rewaxed in its previous position in the cast.
- *Then the denture is processed in the laboratory as described for relining.

The End