

RELINING MATERIALS

Relining is the procedure used to resurface the tissue-side of the denture with new base material to make it fit more accurately.

Relining materials are classified into 3 types

- 1- Tissue conditioner.
- 2- Soft liners.
- 3- Hard reline materials.

Tissue conditioner

They are soft plastic materials used primarily to treat irritated mucosa supporting the denture. They are used for short term application and should be replaced every **3 days**.

The purpose of using tissue conditioners is to absorb some of the energy produced by the impact of masticatory forces. It serves as shock absorber between the occlusal surface of the denture and the underlying oral tissue therefore they promote healing of the inflamed tissue.

Figure (11-1): Denture tissue conditioner supplied for the purpose of applying a temporary soft layer to the fitting surface of a denture. The two large containers contain the powder and liquid components. The powder component consists of beads of polyethyl methacrylate. The liquid component consists of a mixture of a plasticizer and a solvent, normally ethyl alcohol. The various other items shown are the containers used for measuring out, mixing and applying the material.





Figure (11-2): Tissue conditioner applied to the surface of an upper denture.

INDICATION AND USES

- 1- It allows the patient to adapt to the new denture with minimum discomfort.
- 2- Tissue conditioning before denture fabrication.
- 3- Record base stabilization.
- 4- Improve soft tissue healing underneath the denture.
- 5- Functional impression.

COMPOSITION

I- **Powder** (Polyethyl methacrylate).

II- **Liquid** (Ester plasticizer as butyl phthalate, butyl gluconate, and ethyl alcohol up to 30 %).

They are mixed and placed in the inner side of the denture and seated in the patient mouth. The mix passes into several phases from mixing to gelation to elastic phase which lasts for several days then become hard and rough as the plasticizer and alcohol are leached rapidly and water is absorbed. There is weight loss of 4-9 % after 24 hours.

Soft liner

REQUIREMENTS

- 1- High bond strength to the denture base.
- 2- Dimensional stability of the liner during and after processing.
- 3- Low solubility and water absorption.
- 4- Permanent softness and resiliency.
- 5- Color stability.
- 6- Easy manipulation and process.
- 7- Biocompatible to tissue.
- 8- Absence of odor and taste.

Soft liners are classified into two types

- a- Silicon elastomer (autopolymerized or heat polymerized).
- b- Soft acrylic (autopolymerized or heat polymerized).

SOFT ELASTOMER LINER

It is the most successful material for soft liners, they are not dependent on leachable plasticizer therefore, they retain resiliency for prolonged period they are well tolerated by oral mucosa, odorless, tasteless, excellent elastic properties but they have poor adhesion to polymethyl methacrylate denture.

Autocured silicon is supplied as *paste* and *liquid*.

Composition

- I- **Paste** (Hydroxyl terminated polydimethyl siloxane).
- II- **Liquid** (Tetraethyl silicate and dibutyl tindilurate).

Setting is condensation reaction. Heat cured silicon liner is supplied as one component system.



Figure (12-1): Silicone denture soft lining material. It is provided in the form of a cartridge containing two pastes which are mixed when the pastes are extruded through the nozzle. The other items shown are those which are required to achieve bonding of the silicone to the acrylic denture base, for trimming the soft lining material and for coating the soft lining material after setting.

SOFT ACRYLIC LINER

They are composed of plasticized acrylic polymers or copolymers which could be chemically activated or heat activated. Self-cure type is supplied as powder and liquid.

Composition

- I- **Powder** (Polymethyl or polyethyl methacrylate and peroxide initiator).
- II- **Liquid** (Ester such as dibutyl phthalate and methyl methacrylate and tertiary amine activator).

They are similar to tissue conditioner but they are not as soft as them and retain their softness for longer time.



Figure (12-2): Acrylic type denture soft lining material used for applying a permanent soft lining to the fitting surface of an acrylic denture. It consists of a powder and a liquid which are mixed and applied to the fitting surface of the denture. The two other items of equipment shown are used for proportioning the powder and liquid.

USES OF SOFT LINERS

- 1- Improve the comfort or fit of old denture until the new denture is made for a period of several weeks.
 - 2- Provide comfort for patients who cannot **tolerate occlusal pressure** such as in case of (alveolar ridge resorption, knife edge ridge, and sharp lingual mylohyoid ridge when surgery is contraindicated), **chronic soreness** because of (heavy bruxism, poor health, vitamin deficiency, with oral cancer).
 - 3- Treatment of congenital or acquired defects of palate.
- None of soft liners is permanent; it may last **6 months**.