Relining materials

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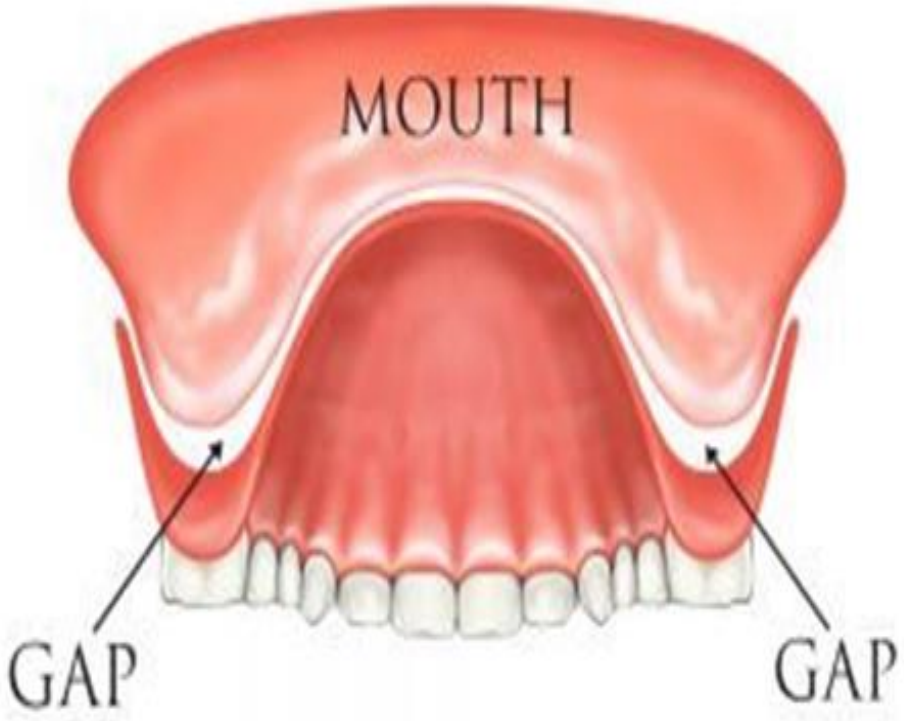
What is meant by DENTURE RELINING?

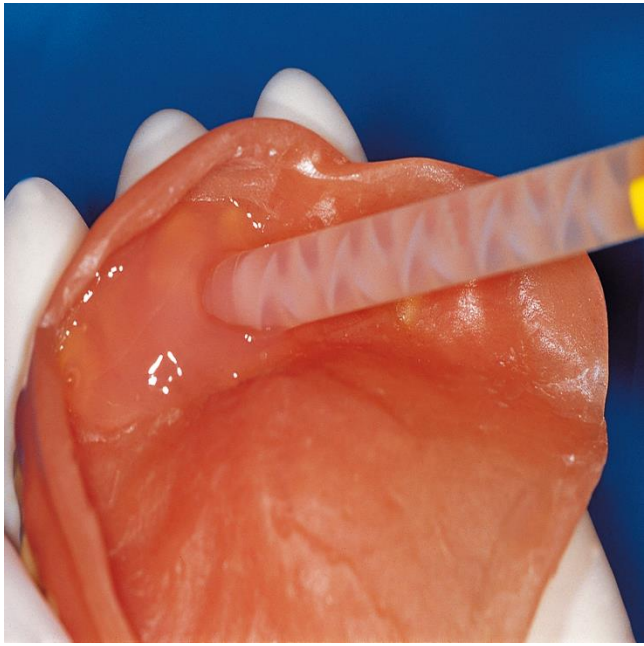


Relining materials

- Relining is the procedure used to ***resurface*** the tissue side of the denture with new base material to make it fit more accurately .
- Several types of lining materials are used to improve the fit of the denture .
- In this case, there are two options; either the whole of the denture base can be replaced with fresh heat curing acrylic resin ***(rebaseing)*** ,or a lining may be applied to the fitting surface of the existing base ***(relining).***

Relining materials

- Sometimes it is necessary to apply a *very soft material* to the fitting surface of a denture in order to act as a *'cushion'* which will enable traumatized soft tissues to recover before recording an impression for a new denture.



Reline Indications

1. Whenever the denture loses or has poor adaptation to the underlying tissues.
2. Loss of retention.
3. Instability.
4. Food under denture.

Relining materials.

The relining materials can be classified into three groups:

- Hard reline
- Soft liners.
- Tissue conditioner

Hard reline materials

Hard reline materials

- Two methods, chair side and laboratory relining.
- In both methods polymethyl methacrylate powder is used.
- The major difference between the two types is that the liquid:

Hard reline materials

- Laboratory relining *methylmethacrylat* monomer,
- Chair side material contains *butylmethacrylate* monomer.

Soft reline materials

Soft liners

They are soft and elastic in nature at the time immediately after setting; they give ***cushion effect*** under dynamic condition loading (visco- elastic material)

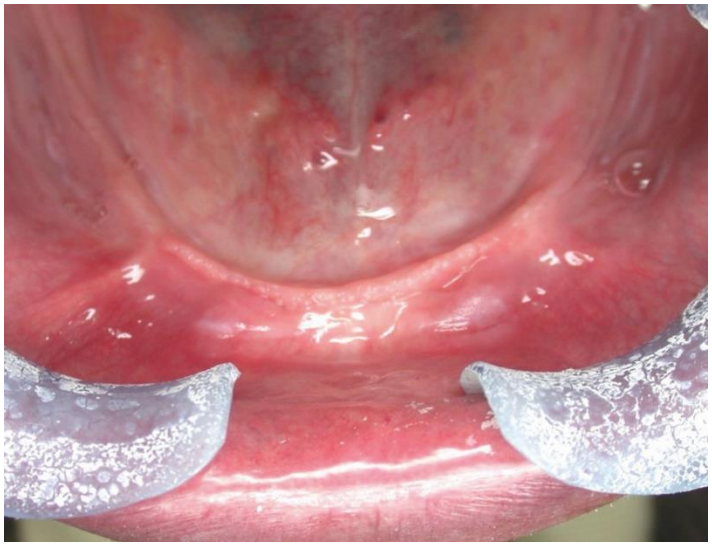
Soft liners

Application

1- They are used with patients with *irritating denture bearing mucosa:*

✓Thin, non resilient mucosa cover.

✓Knife edge mandibular ridge, irregular resorbtion or sever undercut.



Pain: Denture Base

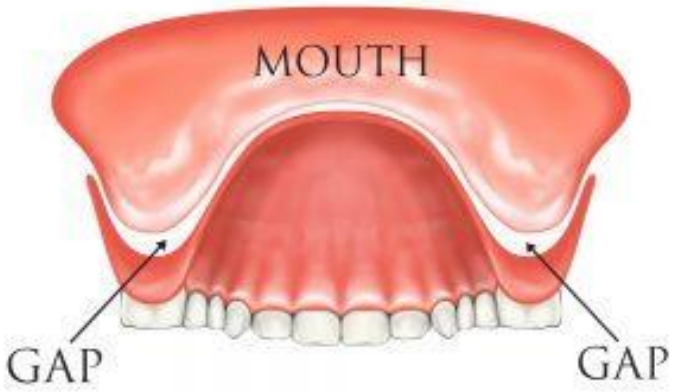
Severe Tissue Undercuts

If the ridge is severely undercut, the flange cannot be placed to the depth of the vestibule, otherwise the denture will not seat or ulceration will occur

Soft liners

Application

2- Temporary improve of ill-fitting denture (several weeks) till construction of new denture.



3- In case of congenital or acquired defect of lips or palate and oral cancer.

Soft liners

Requirements

1. Provide cushion effect
2. Non toxic and non irritant to the underlying tissue.
3. Should have dimensional stability during and after processing.
4. High bonding strength to the denture base.
5. Permanent softness and resiliency.
6. Low water absorption and solubility.
7. Hygienic (no chance for bacterial growth and fungi)
8. Color stability .
9. Absence of odor and taste.
10. Easy of manipulation and processing.

Types of soft liners:

1-Soft acrylic (auto polymerized or heat polymerized).

2-Silicon elastomeric (auto polymerized or heat polymerized).

Soft acrylic liners

- The main advantage of acrylic soft liner is the *high bonding strength to the denture base plastic and no need to adhesive material. (WHY????)*
- Low water absorption and more acceptable polished surface.
- Softness decreased by leaching out of the plasticizer.???
- Residual monomer release cause dimensional change. and????
- Two types available:

Soft acrylic liners

Cold cure acrylic

- Powder: polyethyl methacrylate, peroxide initiator and pigments.
- Liquid: methyl methacrylate, Dibutyl phthalate and tertiary amine activator.

Hot cure acrylic

- Powder : polyethyl methacrylate, peroxide initiator and pigments.
- Liquid: butyl methacrylate, Dibutyl phthalate.

Silicon elastomeric soft liners

❖It is the most successful material for soft liners .

❖Main advantages are

- not depending on leachable plasticizer therefore they retain resiliency for prolonged period ,
- no residual monomer release ,
- more tolerated by oral tissue ,
- odorless tasteless
- excellent elastic properties.

❖ Need to adhesive material for bonding to the denture base.

Silicon elastomeric soft liners.

Two types available:

- ***Cold cure silicon :***

paste and liquid

✓On mixing a condensation cross linking reaction takes place and the paste is converted to rubber at room temperature.

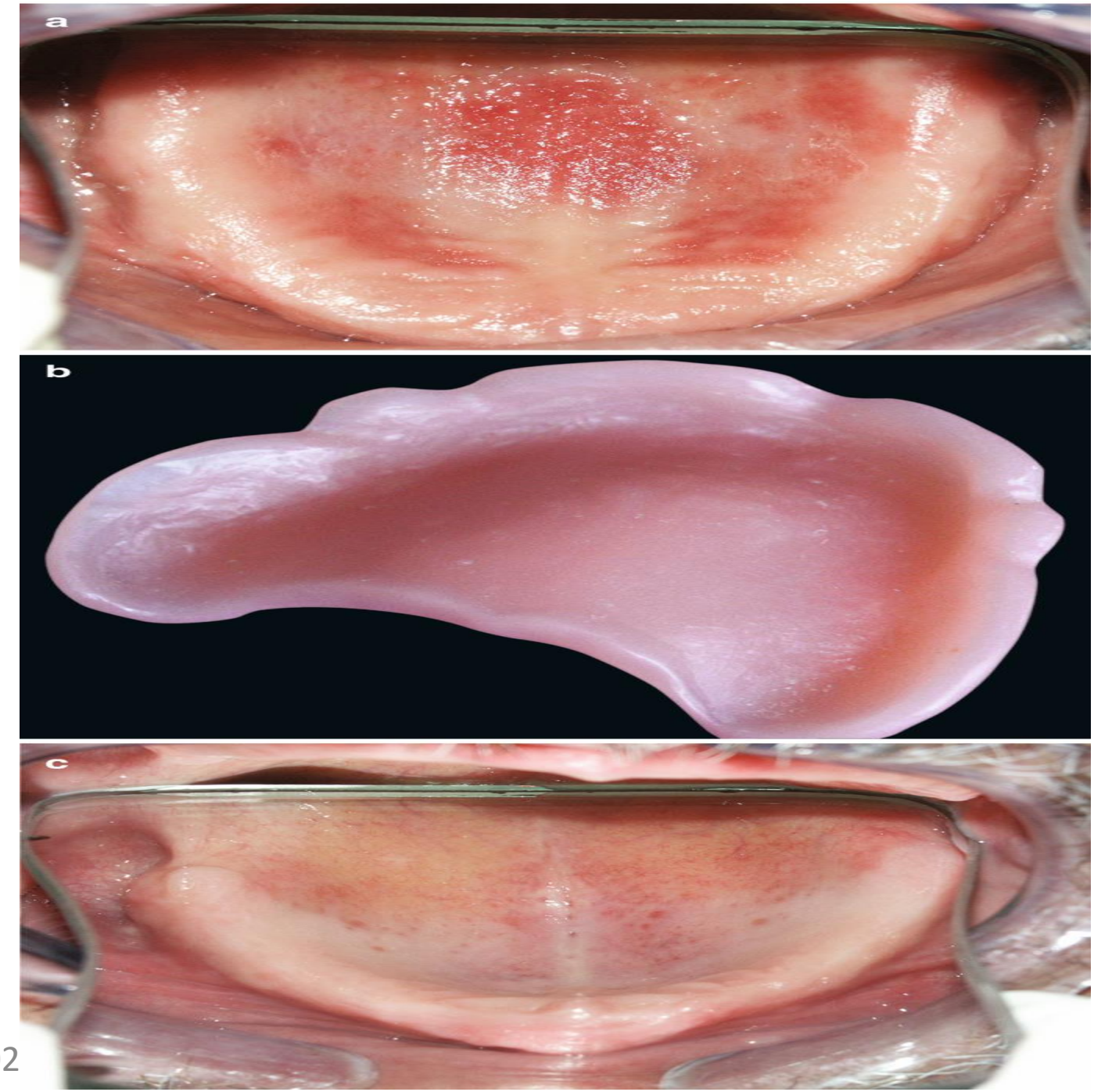
- ***Hot cure silicon rubber :***

(one component system)

Tissue conditioners

Tissue conditioners:

- 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.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Tissue conditioners:

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.

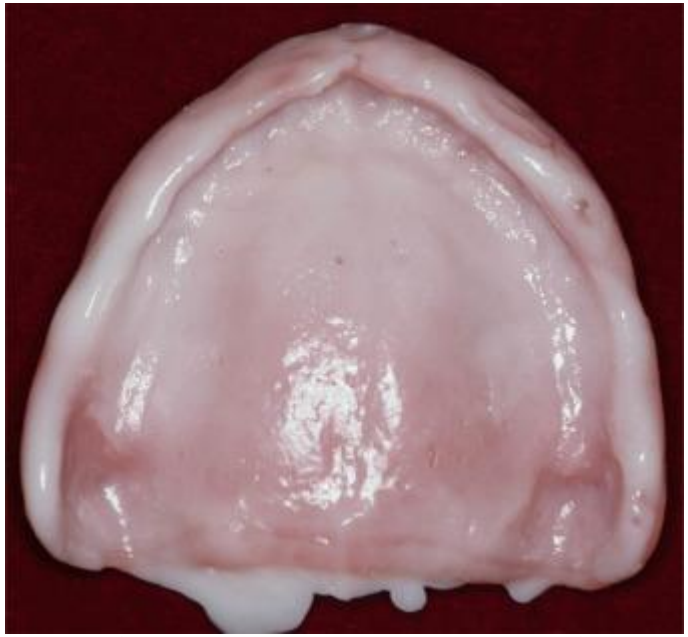
5.Functional impression.

Tissue conditioners:

Requirements

1Tissue conditioners should remain *soft* during use in order to maintain an adequate cushioning effect on the underlying soft tissues.

2Resilient: soft in order that masticatory load is absorbed without permanent deformation of the lining.



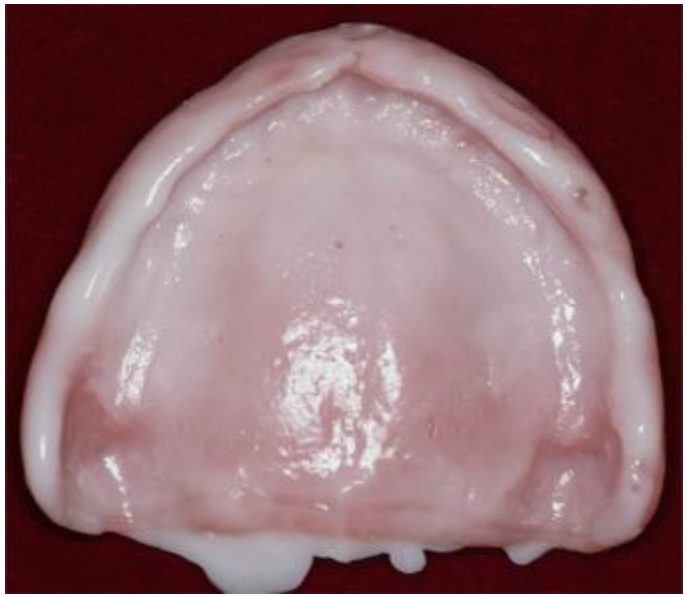
Tissue conditioners:

Requirements

3Should have certain degree of permanent deformation under load to obtain a functional impression of the soft tissue.

4Non irritant to oral mucosa (no free monomer)

5Inhibition of oral flora (bacteria and fungi) so it is essential to promote healing of the tissue.



Tissue conditioners:

Manipulation

- Powder and liquid are mixed and placed in the inner side of the denture and seated in the patient's mouth .
- The mix pass into several phases from mixing to gelation to plastic phase which lasts for several days then become hard and rough as the plasticizer and alcohol are leached rapidly and water is absorbed.
- Tissue conditioner is used only for short time about 2-3 days; when the material fails to provide adequate cushion effect and become hard it should be replaced until the tissue is recovered.

Artificial Teeth

Artificial Teeth

The materials most widely used for manufacturing artificial teeth are acrylic resin and porcelain.

Requirements

1. Good appearance.
2. Should be indistinguishable from natural teeth in shape,color and translucency.
3. Should be good attachment between the artificial teeth and the denture base.
4. They should be hard enough to resist abrasive forces in the mouth and during cleaning, but should allow grinding with a dental bur.

Acrylic resins teeth

- The resins used are highly cross-linked in order to provide resistant to ***crazing***.
- Give less realistic appearance than porcelain teeth.
- Attachment of the teeth to the base is through a chemical union.
- Low density and less brittleness.
- Does not produce clicking.
- Low hardness leading to abrasion.
- Can be used with small inter ridge space***.(WHY????)***

Porcelain teeth

- Give more realistic appearance.
- Serious mismatch in coefficient of thermal expansion with denture base material.
- Produce clicking.
- High density and brittleness
- High hardness leading to less abrasion.
- Attachment of the teeth to the base is through a mechanical means.
- Transmit higher forces to the supporting soft tissues than acrylic teeth.


Thank
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