



Dental Materials

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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 conditioners
2. Soft liners
3. Hard relined materials



Tissue conditioners:

They're soft plastic materials used primarily to treat irritated mucosa supporting the denture. They're used for

short term applications & should be replaced every 3 days.

The purpose of using tissue conditioner is to absorb some of the energy produced by the impact of masticatory forces. It serves as shock absorber between occlusal surface of the denture & underlying oral tissue, they improve healing of the inflamed tissue.

Some of the Indications:

1. It allows patient to adapt to his new denture with minimum discomfort
2. Improve soft tissue healing underneath the denture

It comes as powder & liquid; powder is PolyEthylMethAcrylate & the liquid is ester plasticizer alcohol.

They are mixed & placed in the inner side of the denture & then the denture is placed inside patient's mouth. The mix after mixing will pass into gelation phase then elastic phase which lasts for several days then becomes hard & rough because the plasticizer & alcohol in the mix leached rapidly & water is absorbed.

Soft liners:

Requirements

1. High bond strength to denture base
2. Dimensional stability of the relining material during & after processing
3. Low solubility & water absorption
4. Permanent softness & resiliency

5. Color stability
6. Easy to manipulate & process
7. Biocompatible
8. Odorless & tasteless

Soft liners are classified into:

1. Silicon elastomers
 - i) Auto polymerized
 - ii) Heat polymerized
2. Soft acrylic
 - i) Auto polymerized
 - ii) Heat polymerized

Silicon elastomer soft liners:

1. It is the most successful material of all soft liners because they don't depend on plasticizers that leach therefore they retain resiliency for prolonged period of time.
2. They're well tolerated by oral mucosa.
3. Odorless & tasteless.
4. Excellent elastic properties
5. But their only disadvantage is that they have poor adhesion to polymethylmethacrylate denture

Auto cured silicon supplied as paste & liquid. The polymerization reaction here is condensation reaction. Heat cured silicon liner is supplied as one component system.

Soft acrylic liner

They compose of plasticized acrylic polymers which could be chemically activated or heat activated. Self cure type (chemically activated one) comes as powder & liquid. They are similar to tissue conditioners but they're not as soft as them & also retain their softness for longer time.

Some of the Uses of soft liners:

1. Improve the comfort or fit of the old denture until the new denture is made which may take several weeks
2. Provide comfort for patients who can't tolerate occlusal pressure such as severely resorbed ridge

ABRASIVES: FINISHING & POLISHING

Dental restorations are finished before placement inside patient's mouth to provide:

1. Good oral health: smooth surface of the filling inside the oral cavity will resist accumulation of food debris & bacteria.
2. Function: food glides more freely over smooth surfaces of the restorations inside patient's mouth.
3. Esthetic.

Abrasive material: is the material which is harder than the material which needs to be

abraded (filling or denture or crown). The abrasive particles should have sharp edges that cut rough surface of the material.

The abrasive particles could be bonded to form grinding wheel or bonded to bristles of a brush or bonded to a piece of cloth or paper.



The smoothness of the surface depends on:

1. Hardness & shape of the abrasive particles: the abrasive particles should be harder than the material which is abraded & should be strong.
2. Size of particles: large particles have wide cutting edge & cut more than smaller size. When you start polishing, you should start with large size then fine size.
3. Speed of movement: the slower the speed of movement, the deeper the scratches.
4. Pressure: always, only slight pressure should be used while polishing.

Types of abrasive material:

1. Diamond dust
2. Sand
3. Quartz
4. Carbide
5. Pumice: fine abrasive, powder is obtained from pumice stone. It is excellent for denture resin, gold alloy & tooth surface & amalgam. Pumice is mixed with water.



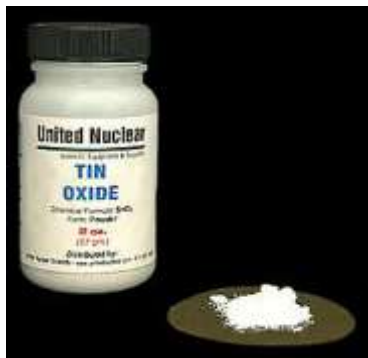
Polishing

Material which causes the fine scratches after using abrasive material to be filled to produce smooth surface. The rapid movement of the polishing agent across the surface heats the top layer of the material & causes the material to flow & fill in the scratches.

Types:

1. Iron oxide: it is red powder, dirty to handle but produces excellent shine surface after polishing in gold alloy. (fig.a)

2. Precipitated chalk (whiting): it has mild abrasive properties & used with softer materials & polymers
3. Tin oxide (extremely fine): used for polishing teeth & restorations inside the mouth. (fig.c) (fig.b)

**a****b****c**

Denture cleansers are of four types:

1. Powder & paste: it is abrasive & should not be used strongly over a period of time
2. Peroxide cleansers: it comes as powder mixed with water & denture is immersed in it for a period of time
3. Diluted chlorine solutions: should not be used with metals. The chlorine should be diluted because high concentration of the chlorine bleaches the denture resin
4. Diluted hydrochloric acid: this material dissolves calcified deposits; this is why it is applied locally to the calcified area on the denture to remove them.



Denture cleansers:

The best way to keep the denture clean is by regular cleaning it with soft brush, soap & water. Home cleansers & bathroom cleansers are contraindicated. Also tooth paste with chloroform is contraindicated.