



THERAPY OF THE CARIES

REMINERALIZATION, DIRECT AND INDIRECT RESTORATIONS

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CARIES



localised, chronic
infectious,
multicausal D.

▣ REVERSIBLE

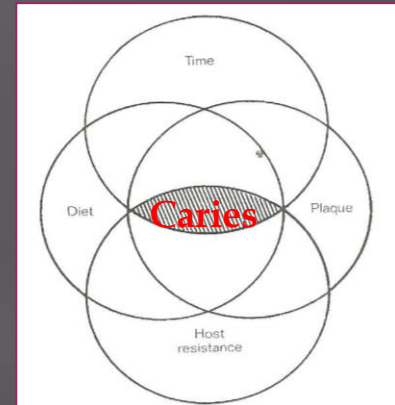
Microscopic material loss
Th: Secondary prevention

▣ IRREVERSIBLE

Macroskopic material loss
Th: Restoration

Primer factors: cause the caries

Secondary Factors: modify the effect of primer factors



Klassic , or funkcional definition of caries

DEMINERALIZATION > REMINERALIZATION



THERAPY OF CARIES



▣ **PREVENTION**
(secondary)

Incipient caries

(REVERSIBLE)

▣ **RESTORATION**

caries superficialis
caries media
caries profunda

(IRREVERSIBLE)

Therapy of incipient caries prevention

Incipient caries can be: (in most cases)

- on the smooth surface (between the biggest curvature and the gingiva)
- into the fissure and pits

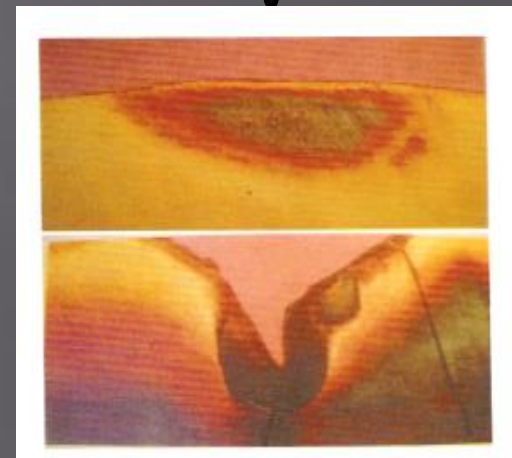
Clinical picture: generally different

1. on the smooth surface (white spot lesion)
chalky white, opak areas vestib/oral surface
proximal difficult X-ray
2. into the fissure (darker/opaker)

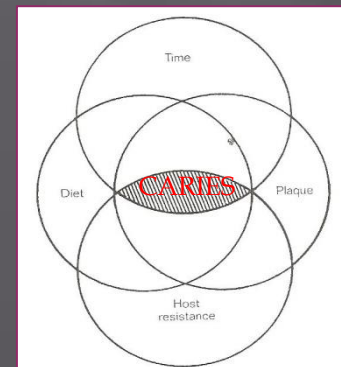
Therapy: medical and dental history, examination...

Evaluation of the data

- optimale oral hygiene
- dietary *counseling*
- remineralization
- fissure sealent: (occlusale surface) (F)



Konz.fog . book



PREVENTION

Fluoride (S/T)
dietary counselling (C)
oral hygiene
fissure sealants

Incipient caries

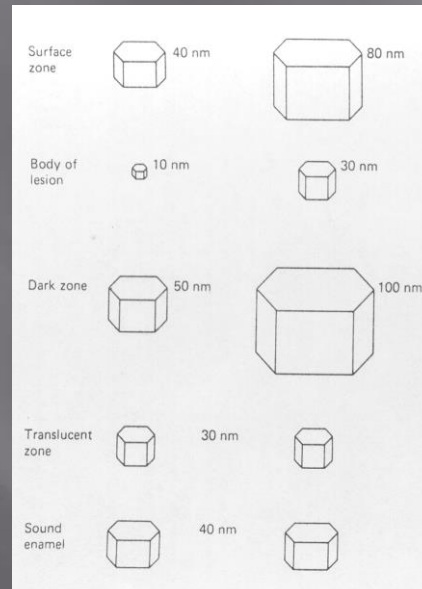
Noninvasive therapy

Secondary prevention

Remineralization: means the precipitation of minerals, rebuilding, reincreasing crystalline structure, and a more compact crystalline-structure develops in the enamel

What is the consequence of the demineralisation and remineralisation ?

Demineralization : first of all **develops** into the subsurface area into the enamel (**body of lesion**), where the demineralization can arrive the 70%. The size of the enamel-crystalline decrease, **10-30 nm**.



Recrystallisation, remineralisation

Because of the outflow of Ca^{++} and PO_4^{-} , the solution becomes saturated, and the process turns back. Ca^{++} PO_4^{-} ions precipitate into the „surface zone” and into the „dark zone” and it causes increase in the size of crystalline. **80nm** enamel-crystalline!

Remineralization:

Local application is made. (Preventív dentistry!)
(fluoride in different form, concentration,
xilit containing sweets, and other materials)

- ▣ Possibilities for local remineralisation:
 - toothpaste: adult: 1000-1500 ppm,
children: 250-500 ppm (250mg/1 kg)
 - mouth rinses adult: 1000-1500 ppm,
children : 250-500 ppm (250mg/1 kg)
in case of high caris risiko!
 - Geels : 2 or 3 times a year
 - Resin infiltration
- ▣ Carry out:
 - individual (patient)
 - expert (dentist, dental hygenist)

FISSURE SEALANTS

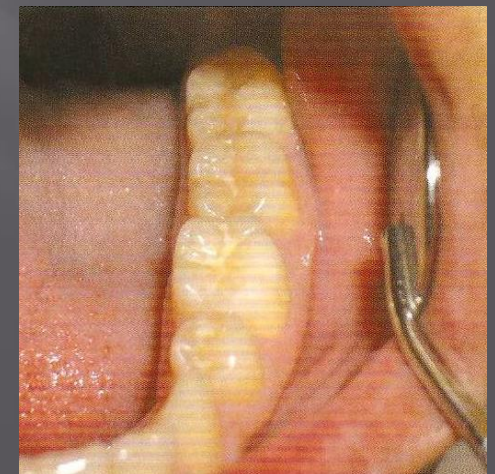
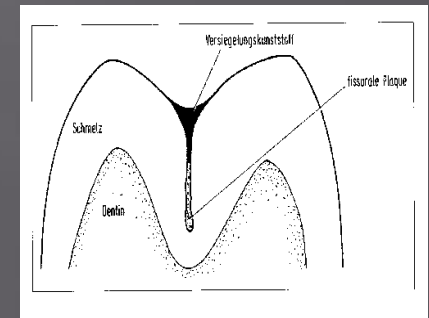
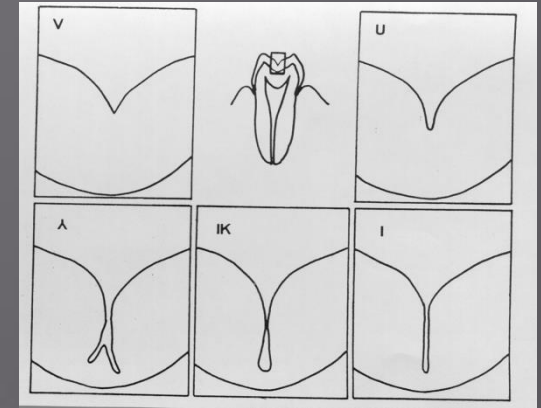
(Where can be found fissure and pits?)

- ▣ **Preventive fissure sealing :**
healthy fissure !

(primer prevention)

Caries-susceptibil
fissures and pits will be
closed. (within 6 month)

- ▣ **Incipient caries**
(secondary prevention)
fissure sealent:
(extended)



Materials of fissure sealants

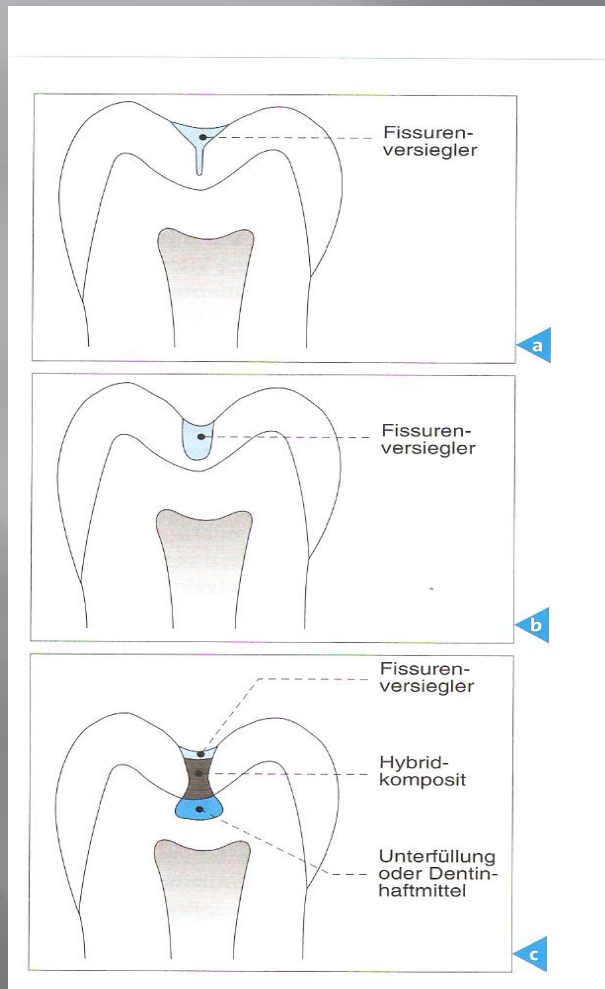
- ▣ **Composit typs fissure sealents** : 25-28% anorganic filler
UV light cure, selfs-cure, and visible light cure
Shade!
 - ▣ **Fluoride containing composit**: because of fluoride release
cariesprotektív effect
 - ▣ **Glasionomer fissure sealents** : fluoride release and
chemical adhesion to enamel. Problem: with
abrasion. It is recommended to use for short time,
after the eruption of the tooth.
 - ▣ **Kompomer fissure sealents**: less experience with them.
- ▣ **Carry out**

Carry out

- ▣ Isolation
- ▣ Cleaning/Opening
- ▣ Kondicional
- ▣ Drying
- ▣ Material
- ▣ Occlusion controll
- ▣ Recall

Opak material!

FISSURE-SEALENT



Prophylactic Fissure-sealant
(after the tooth eruption)

b. Discolored Fissuren

c. Not healthy Fissuren

THERAPY OF CARIES



▣ PREVENTION
(secondary)

Incipient caries

(reversible caries)

▣ RESTORATIONS

caries superficialis

caries media

caries profunda

(irreversible caries)

RESTORATIONS

(in conservative/operative dentistry)

Material of the restorations can be plastic or not plastic (solid) in the moment of placing .

DIRECT RESTORATIONS

Fillings

The aim of direct fillings:

- Pulp-dentin protective
- Temporary filling
- Definitív filling

According to the Material:

INDIRECT RESTORATIONS

Inlay, Onlay, Overlay

(are fixed with luting material)

According to the extension

Inlay
Onlay,
Overlay

According to the Material:



Pulp-dentin protective filling

- **Liners and bases and varnish:** are placed between the dentin and the restoration, to protect the pulp. Deep cavity.

- Protection:
 - thermal
 - electrical
 - chemical
 - mechanical
 - pulpal medication



- Difference between the liner and base:
- **Materials:** different cements, bond materials
 - Traditional liners and base!
 - Sealing effect of bond material!

Liner

(very thin layer)



Lining with lightcuring
calcimol



Base Amalgam filling

Seconder caries

Cement base
phosphat cement
glassionomer cem
carboxylat cem.



Temporary filling

- ▣ Temporary filling: are placed into the prepared cavity, if the therapy needs more than one sitting.
- ▣ The reason can be different. (root canal treatment, indirect restoration)
- ▣ **Materials:** because of the reason, the materials are different.
 - root canal treatment: good marginal seal
glassionomer cement
 - indirect restoration: removing without rotating
instrument: guttapercha, special composit,
 - direct restoration: paste setting into the saliva

Rootcanal treatment Sealing of the Obturation with glass ionomer cement



Light-curing
glass ionomer



Ionoseal (Voco)



Self-curing glass ionomer

After rootcanal treatment (long term temporary glass ionomer)

- ▣ Removal of temporary filling material
- ▣ Cusp reduction
- ▣ Long term temporary glass ionomer filling placed



Indirect restoration: removing without rotating instrument:

Clip Composit



Definitív direct filling

(Indication, contraindication, advantage, disadvantage)

According to the material:

- a. amalgam
- b. composites
- c. glass-ionomer
- d. compomers



Composit filling



Composit filling

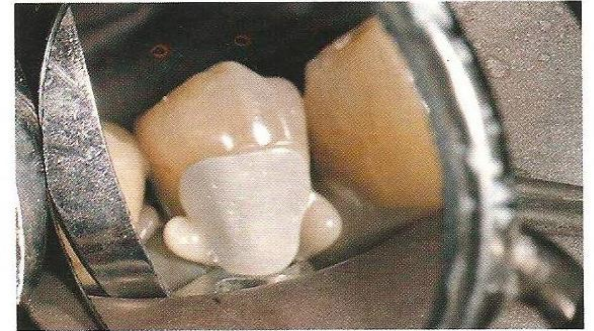


Glassionomer cement



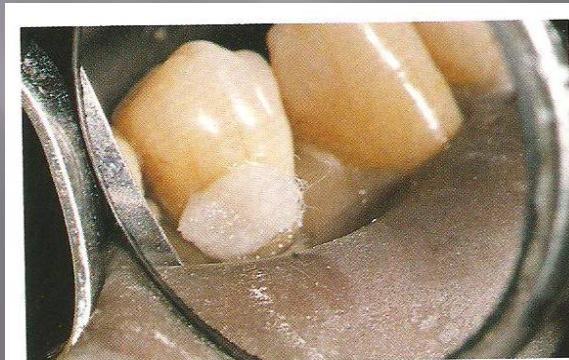
1 Removing
amalgam

4 GIC-cement
matrix



2 Cavity

5 Filling



3 Conditioning

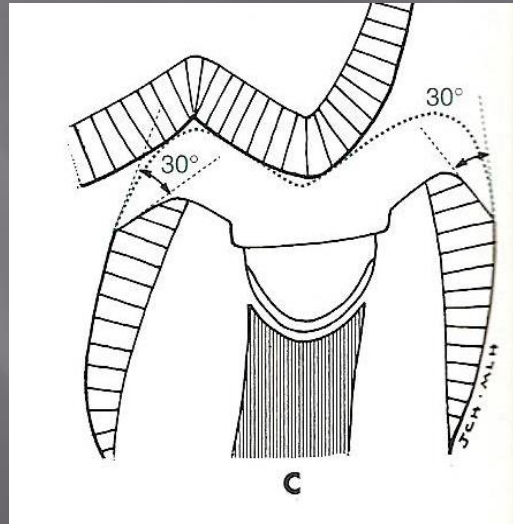
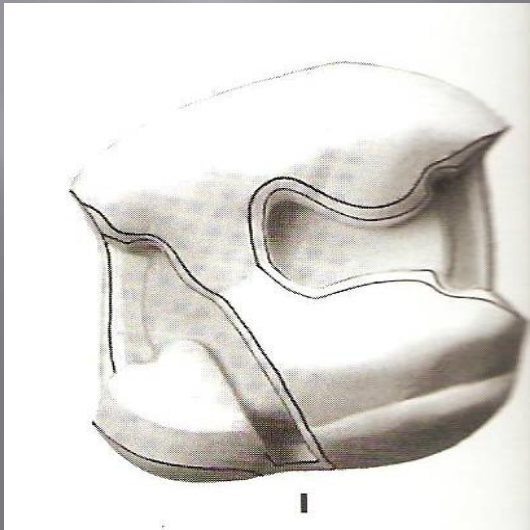
6 Finishing
Polishing



Definitív indirect restoration

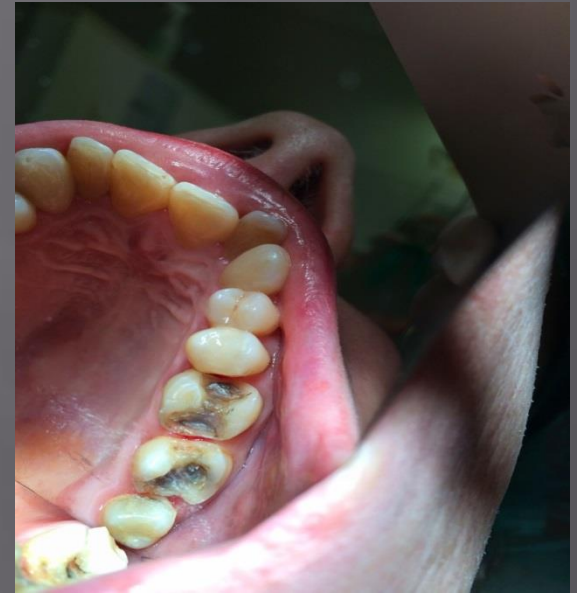
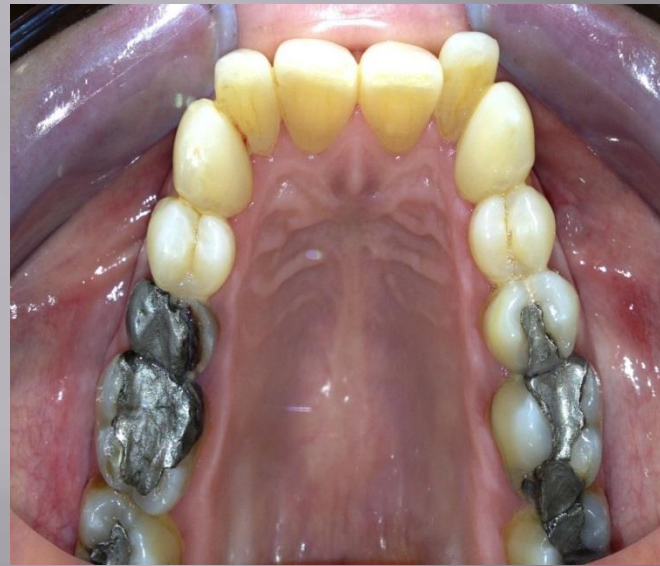
Indication, contraindication, advantage, disadvantage, materials)

- ▣ **Inlay:** All cusps are into the mouth, or one cusp is reduced, but the others are into the mouth.
- ▣ **Onlay:** All cusps are reduced.
- ▣ **Overlay:** not only the proximal, but the vestibular / oral surface is involved into the cavity.



Inlay and filling in upper arch

The amalgam fillings were removed on 15, 16, 17 and 18. After removal, small secondary caries was discovered and also removed. 15 and 18 were prepared for a composite filling, 16, 17 were prepared for inlay.



Definitív indirekt restoration



Therapie of the not vital teeth or irreversible Pulpitis

- ▣ Rootcanal treatment
in one or more Sitting
- ▣ Rootcanal treatment + Surgical tretment
- ▣ Extraction