

Bleaching

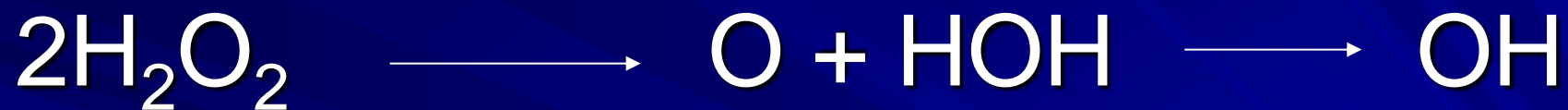
„Principle of bleaching is a chemical reaction based on oxidation.

The coloured material is transformed into less coloured up to colourless material.



Chemical reactions

➤ Hydrogen peroxide \longrightarrow free radicals



➤ Radicals \longrightarrow split of double bonds

Opening of cyclic compounds (chromofors)

Changes of the molecular structure \longrightarrow

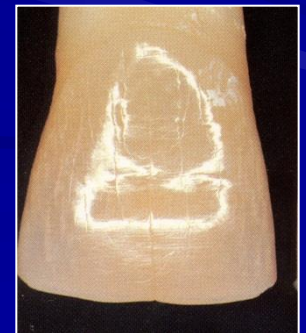
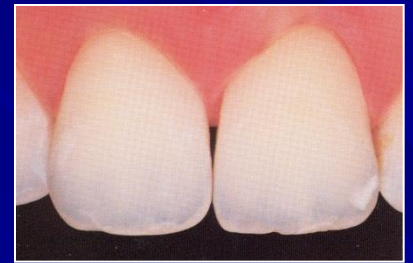
Shift of spectrum of absorption

Colour of teeth and its changes

Natural optical properties of teeth

Artificial discoloration

Developmental reasons



Vývojové vady



arteficiální změny



Typy bělení

- Zevní bělení
- Vnitřní bělení
- Kombinace

Bleaching agents

Hydrogen peroxide

3% – 35 %

Carbamide peroxide

10% - 30%

Sodium parborate

Calcium peroxide

Effective chemical

- Hydrogen peroxide

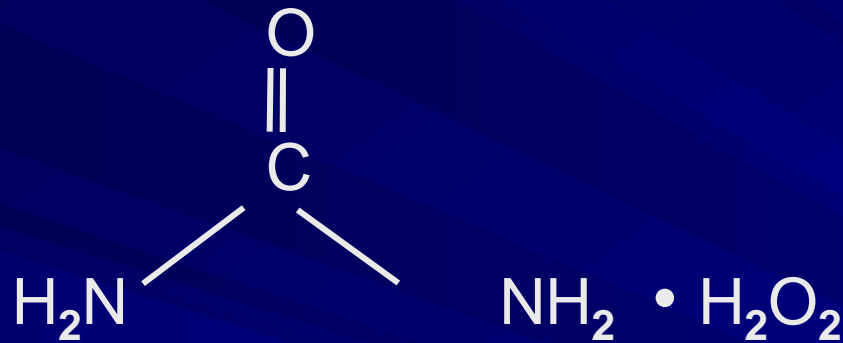
3% – 38 %

- Carbamide peroxide

10% - 30% → urea and hydrogen peroxide

- Sodium perborate → sodium metaborate
and hydrogen peroxide

Carbamide peroxide



Močovina

Peroxid vodíku

6% CP: \approx 2% H_2O_2

10% CP: \approx 3% H_2O_2

16% CP: \approx 5% H_2O_2

20% CP \approx 7% H_2O_2

30% CP: \approx 11% H_2O_2



Ways of bleaching

Strong (intense)

Weak

External

Internal

In dental office

Home bleaching

Dentist controlled

OTC

Differences

- The only difference is in rapidity

External bleaching - indications

Artificial discoloration

External bleaching - contraindications

1. Dental caries
2. Fillings and crowns with gaps
3. Multiple frontal fillings
4. Cervical defects
5. Dentinal hypersensitivity
6. Active periodontitis
7. Systemic diseases
8. Gravidity and breast feeding
9. Age to 12

External bleaching

Strong

- Direct bleaching
- Assisted bleaching

Strong external bleaching

Hydrogen peroxide is applied on teeth (35-38%)

Decomposition is accelerated by

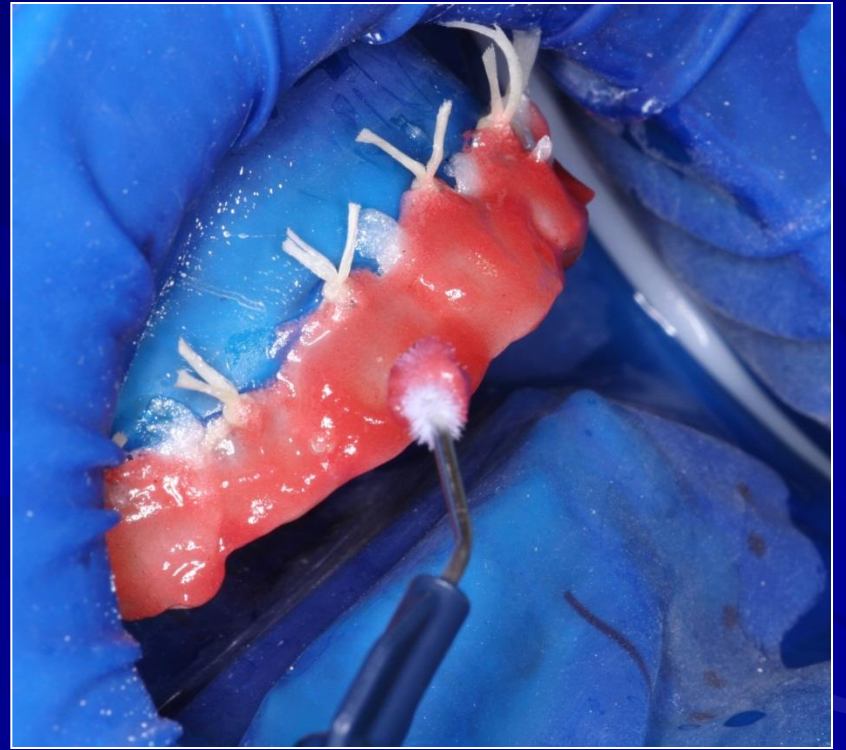
- heating
- light
- chemically

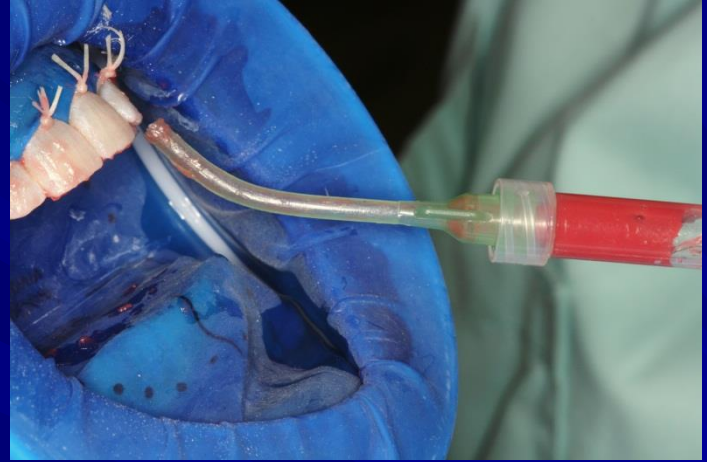


■ Chemical activation

















Assisted bleaching

- Tray
- Control during the procedure





Strong bleaching



Weak bleaching

External bleaching step by step

- Control of colour



Custom tray



Fabrication of the tray



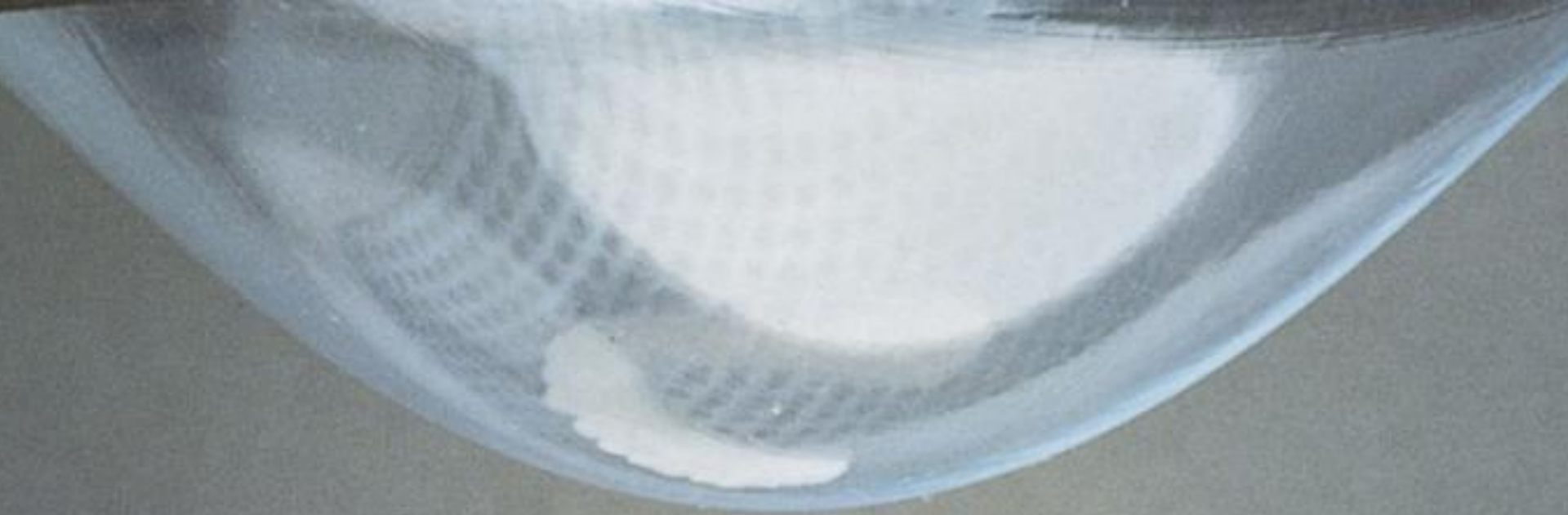


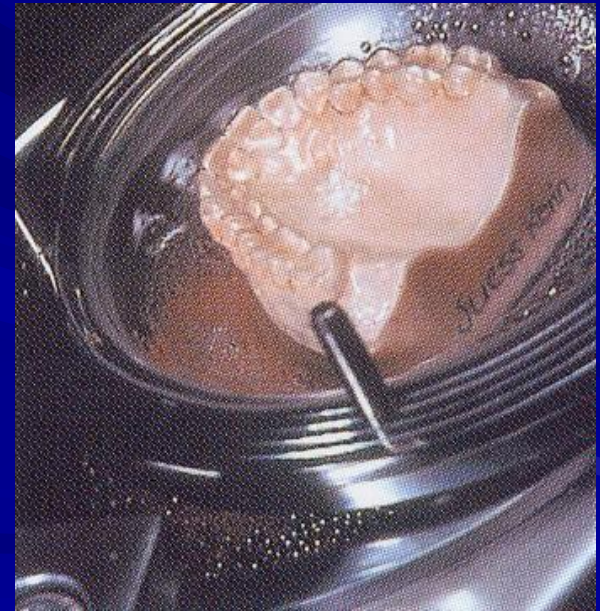
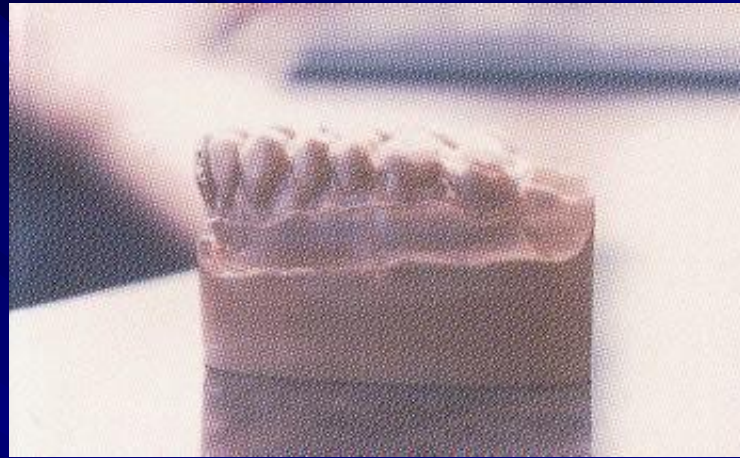
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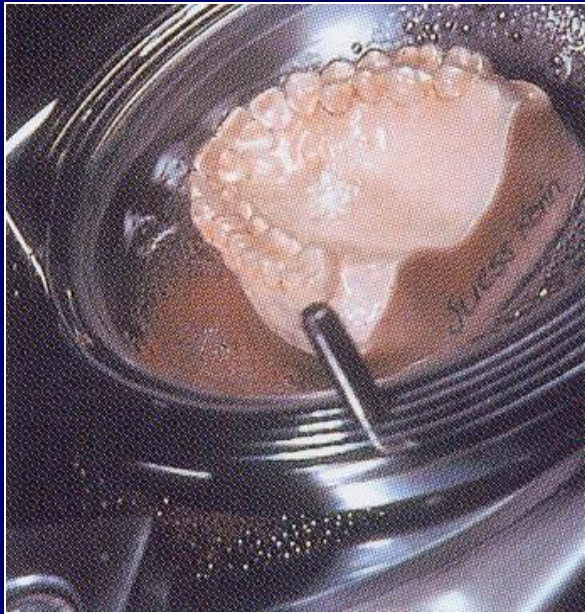
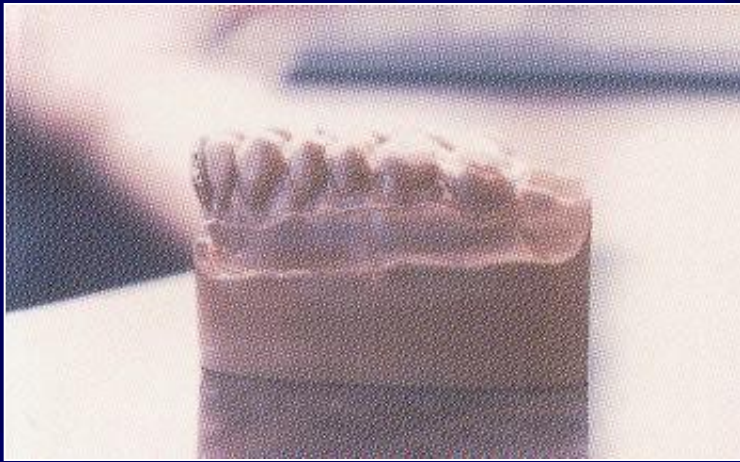


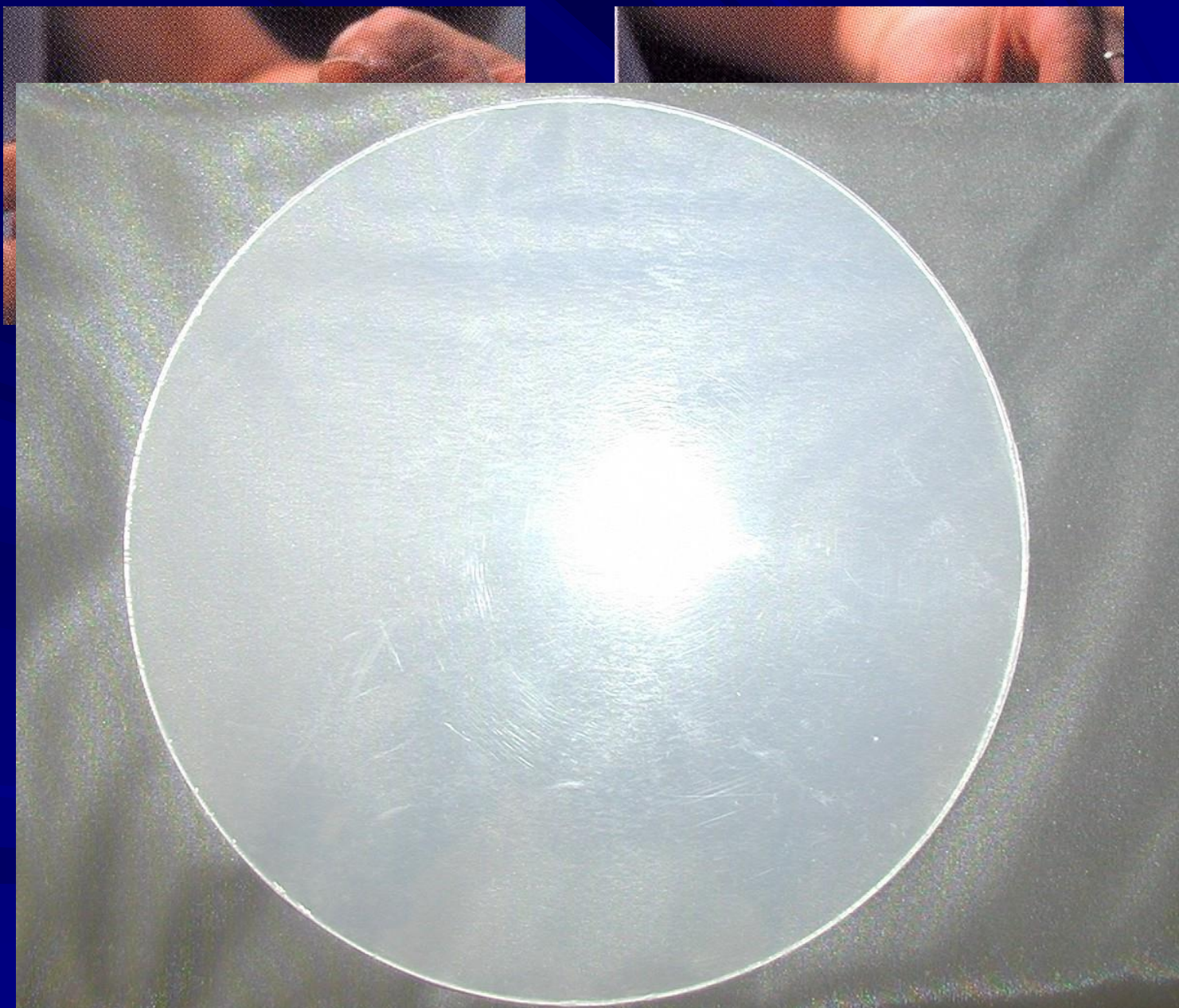
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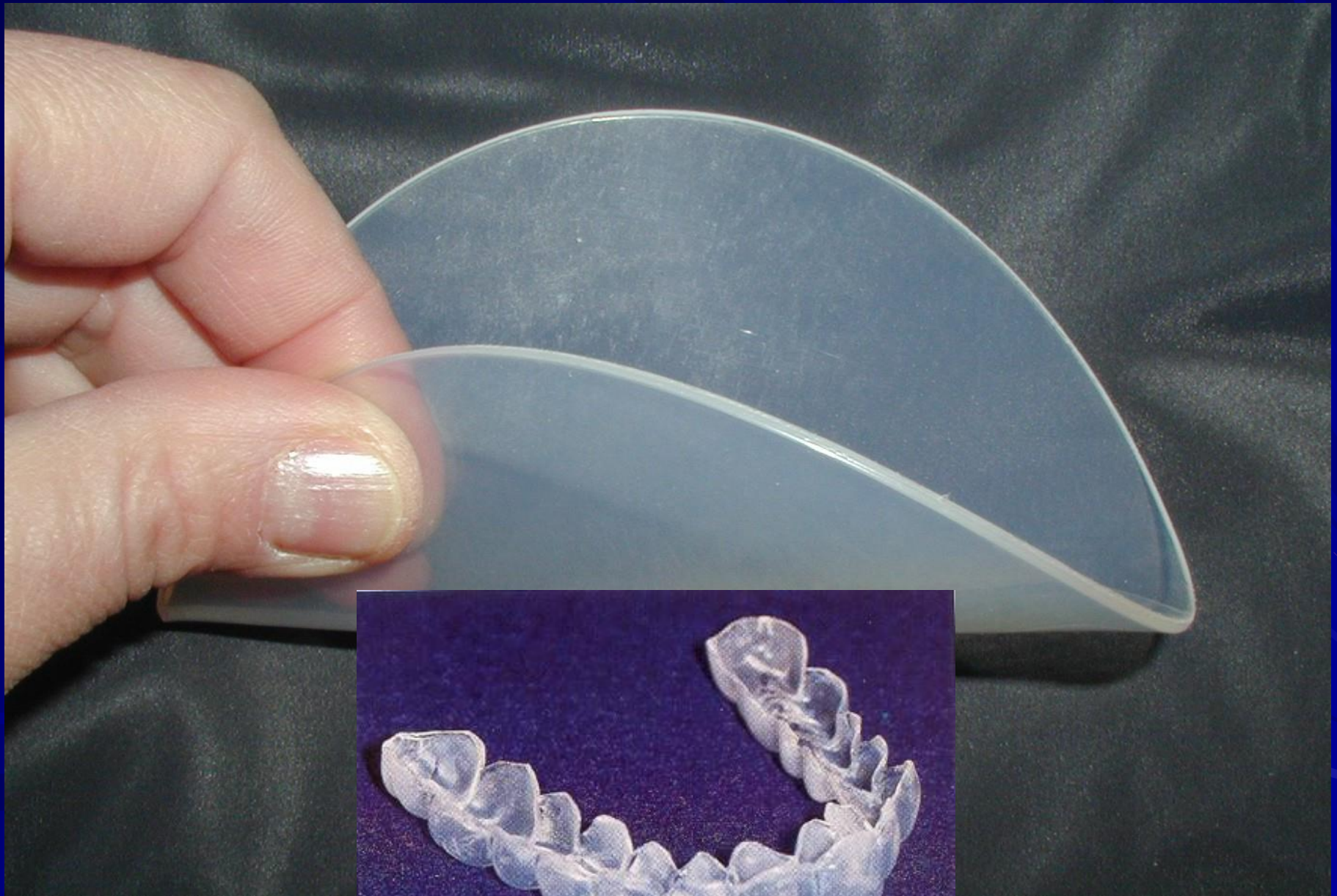


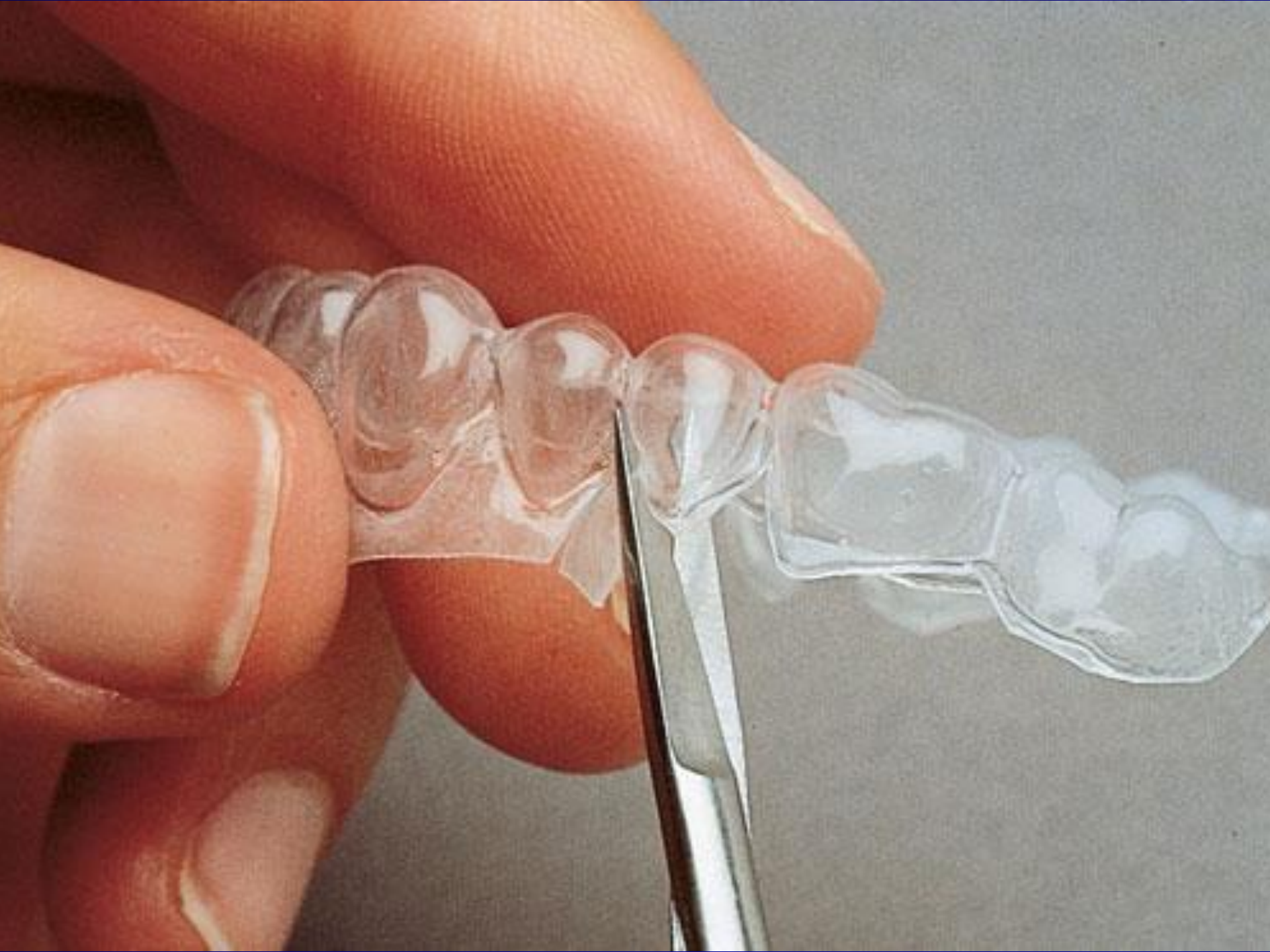














trèswhite™
by Opalescence®









Remove from package



Center tray on arch



Lightly press into place



Remove outer tray



Lightly adjust inner tray



Wear 30 to 60 minutes







Bleaching without the tray

Blea



| | |
|------------------|---------------------|
| Ivoclar Vivadent | VivaStyle Paint On |
| GoSmile | GoSmile |
| Dexcel | Xantia |
| Colgate | Simply White |
| Denmat | Rembrandt Plus |
| Procter & Gamble | Crest White Strips |
| Procter & Gamble | Crest Night Effects |
| Brite Smile | Brite Smile To Go |

Bleaching without the tray



- Gely s carbamid peroxidem, peroxidem vodíku nebo perkarbonátem sodným

- Aplikace

Štětečky

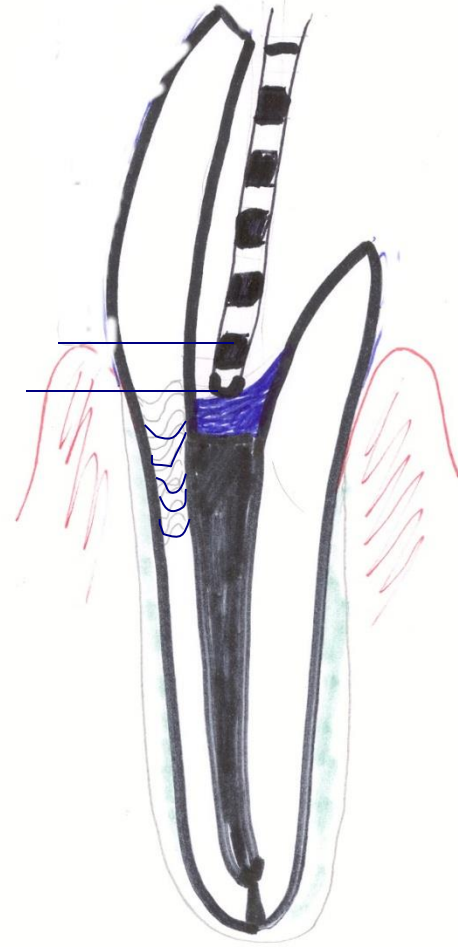
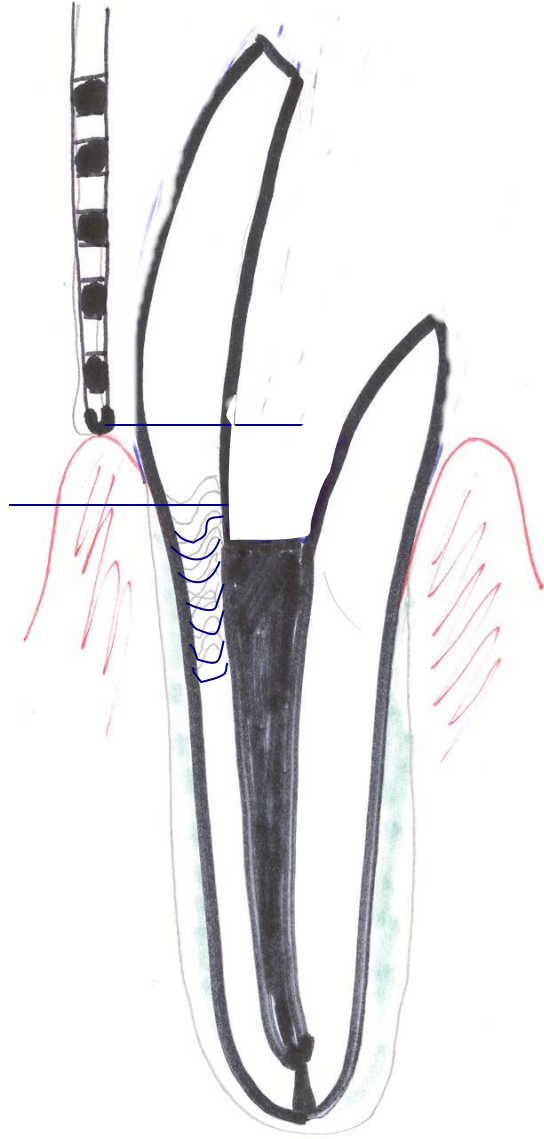
Polyetylénovými proužky

VivaStyle Paint On

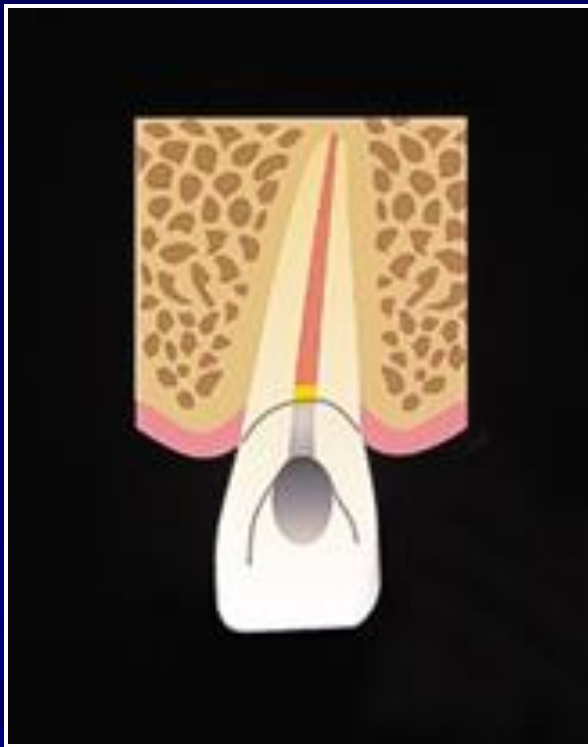


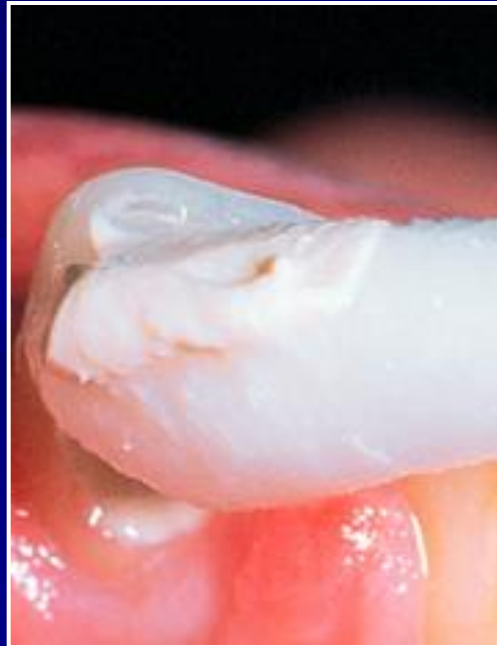
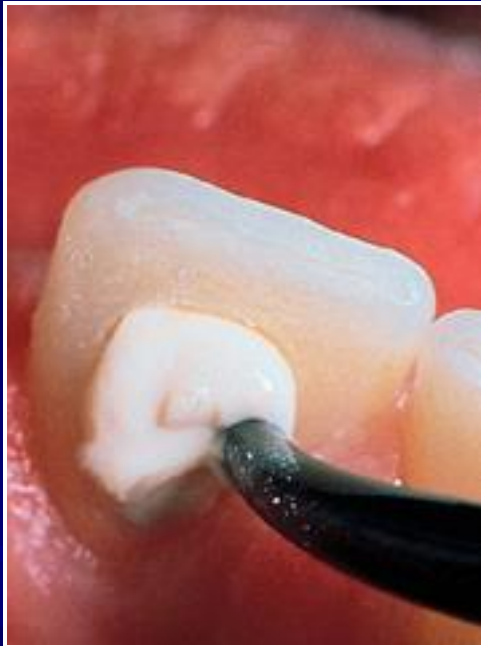
Varnish for home bleaching

Internal bleaching



Procedure



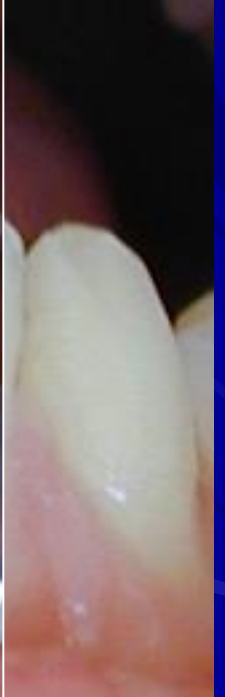
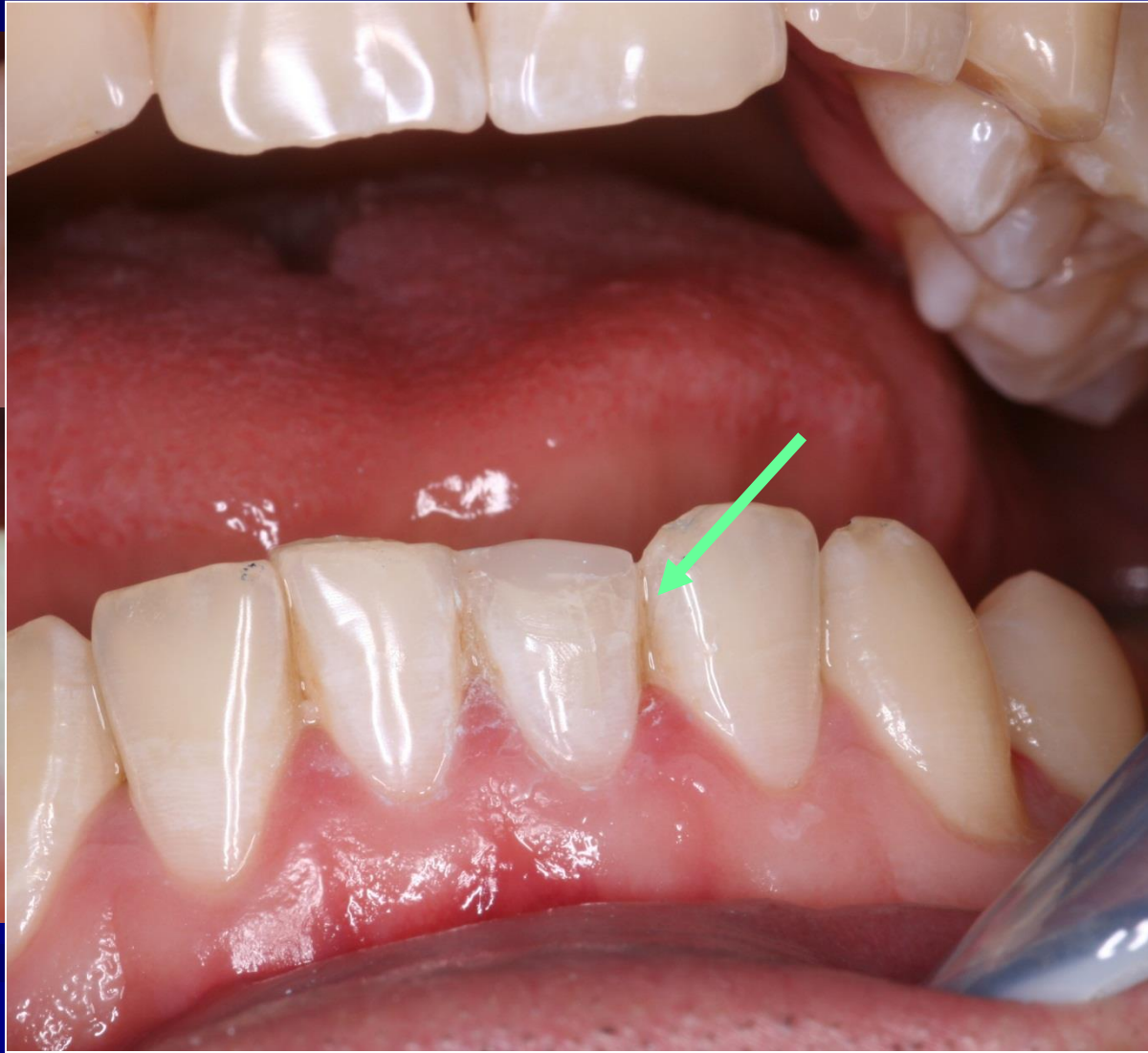


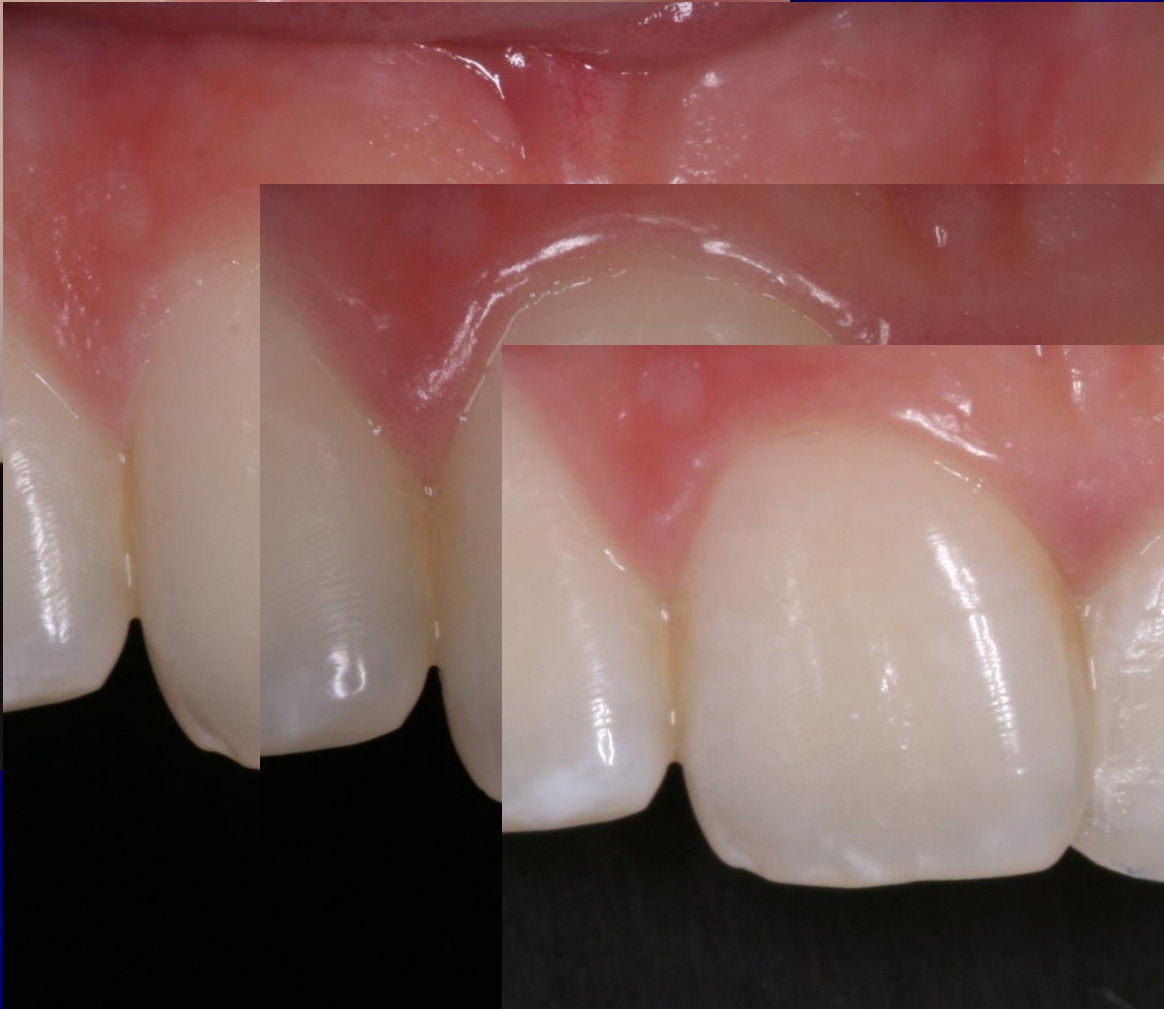
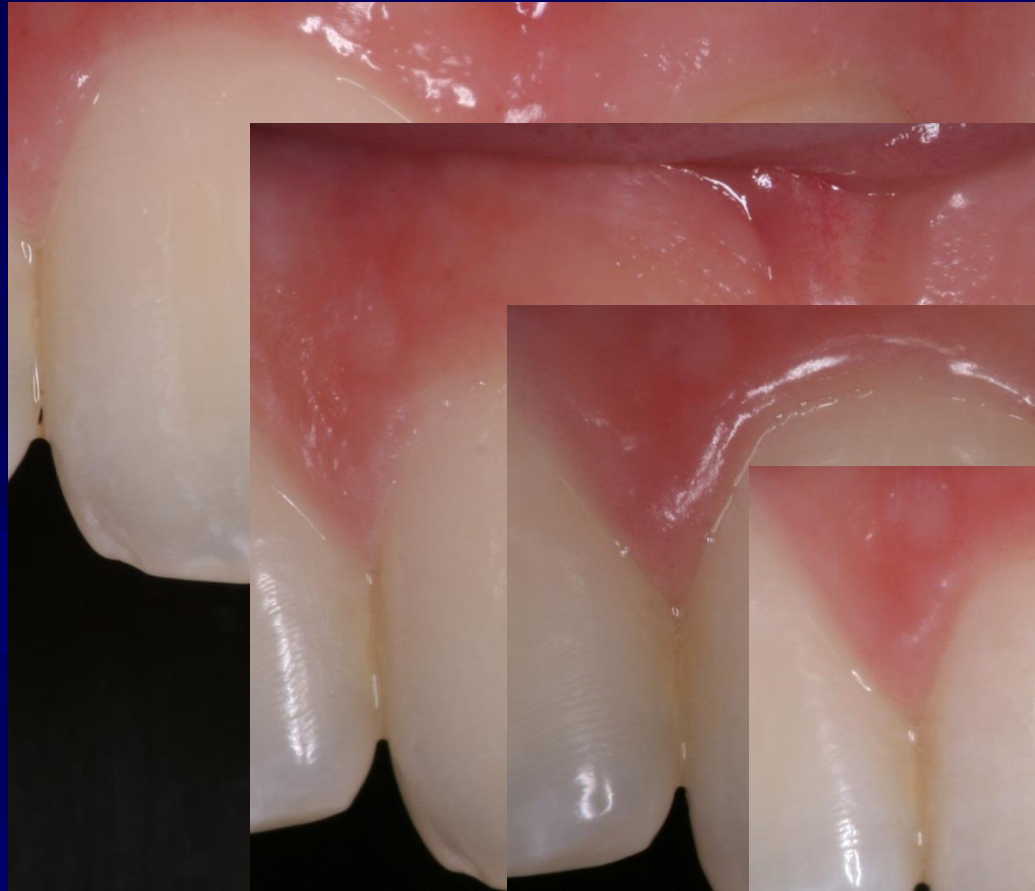




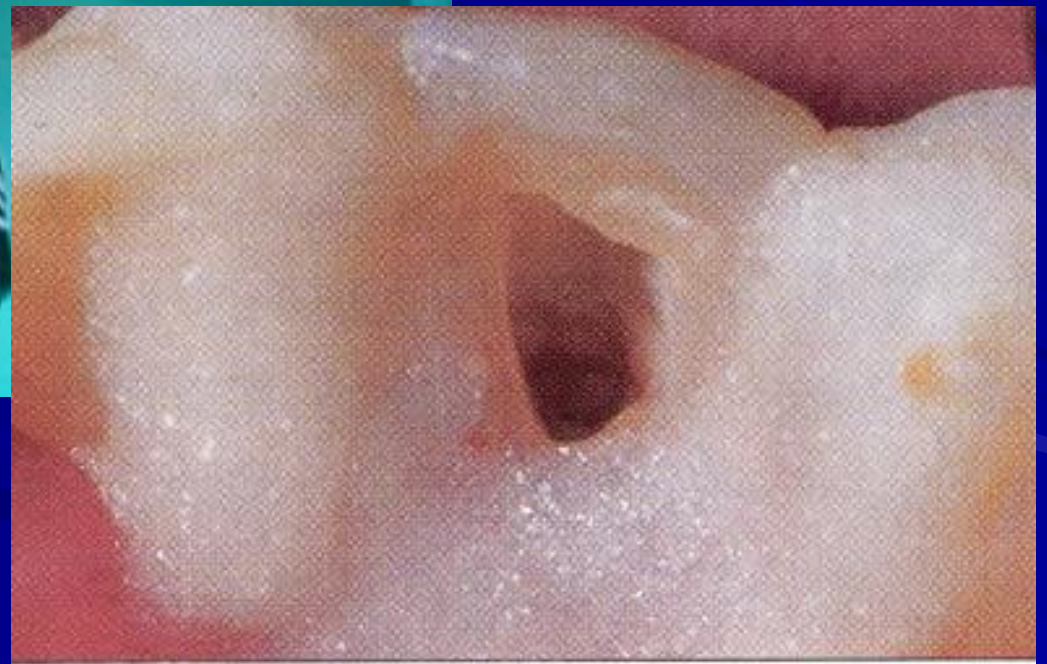
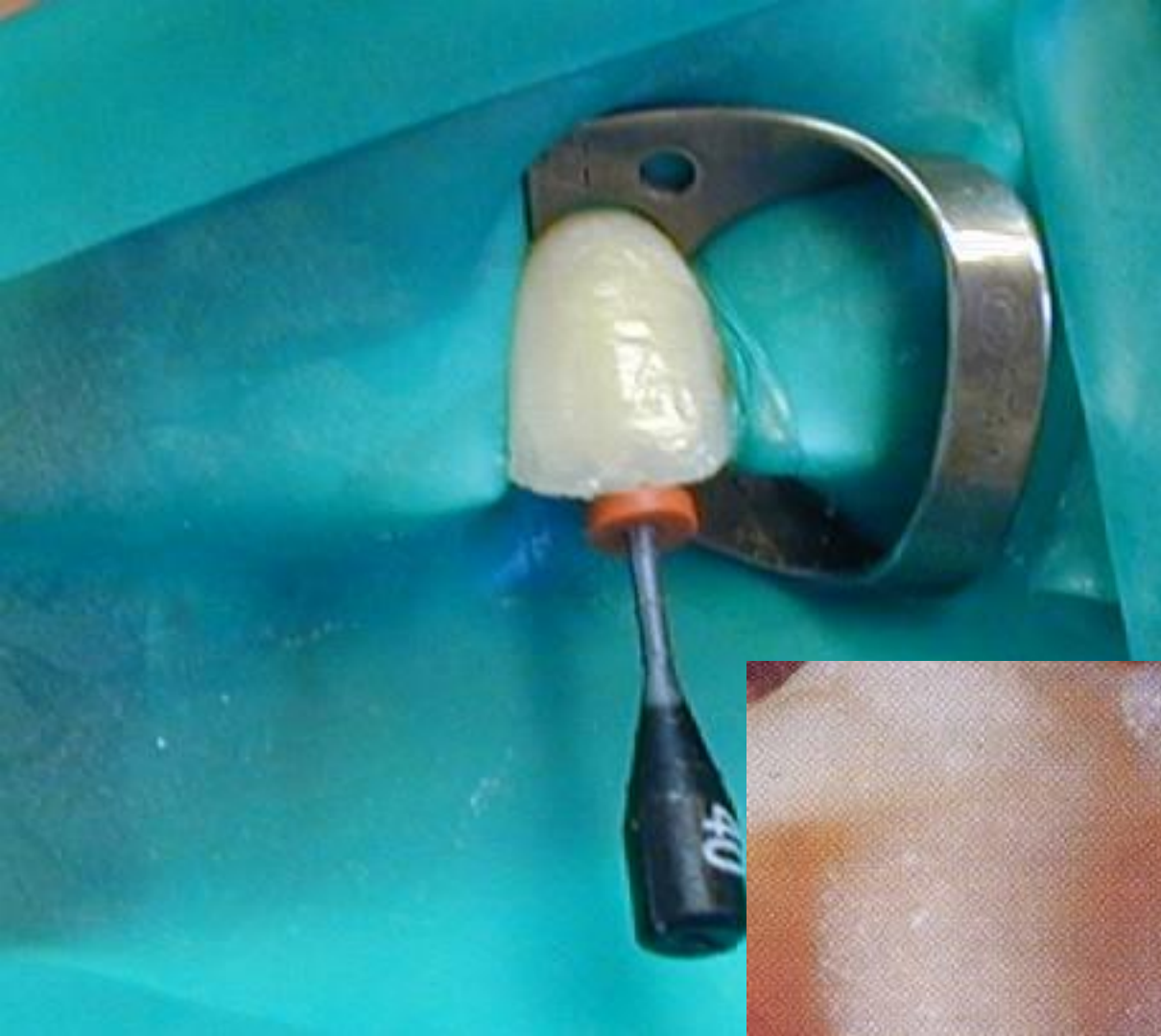










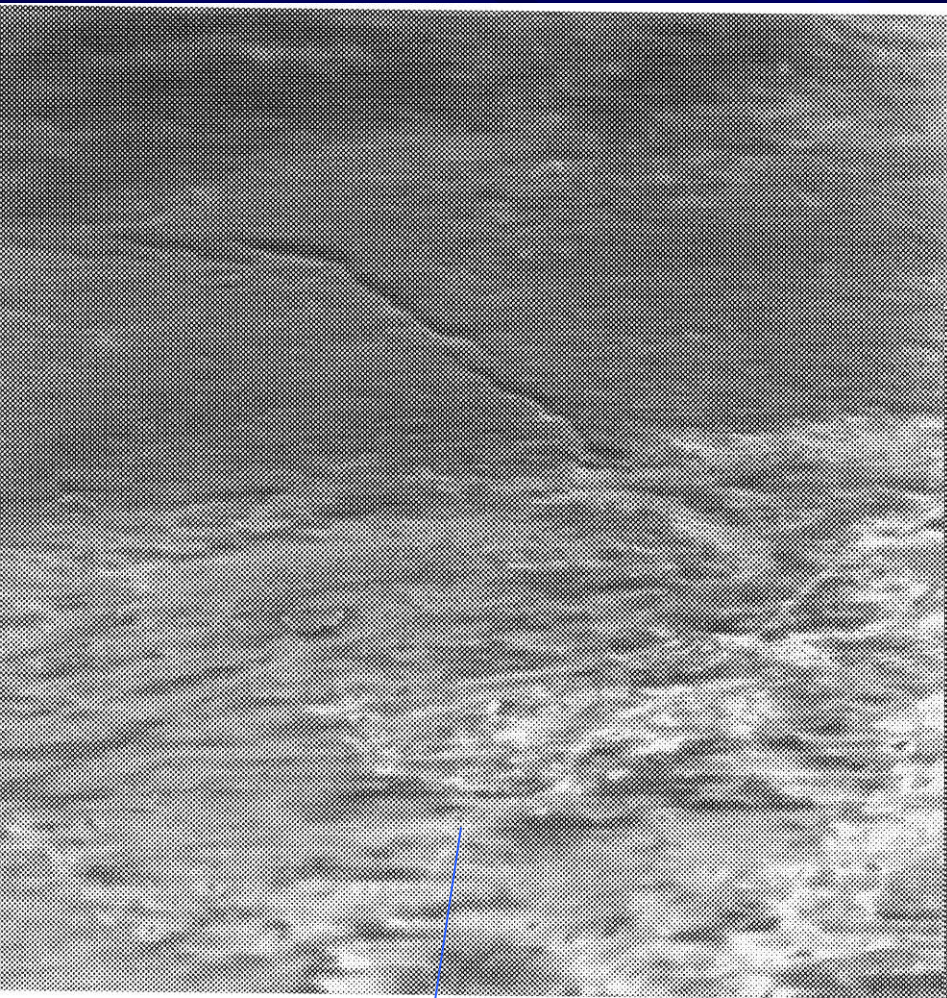


Is bleaching safe?

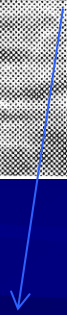


Main questions

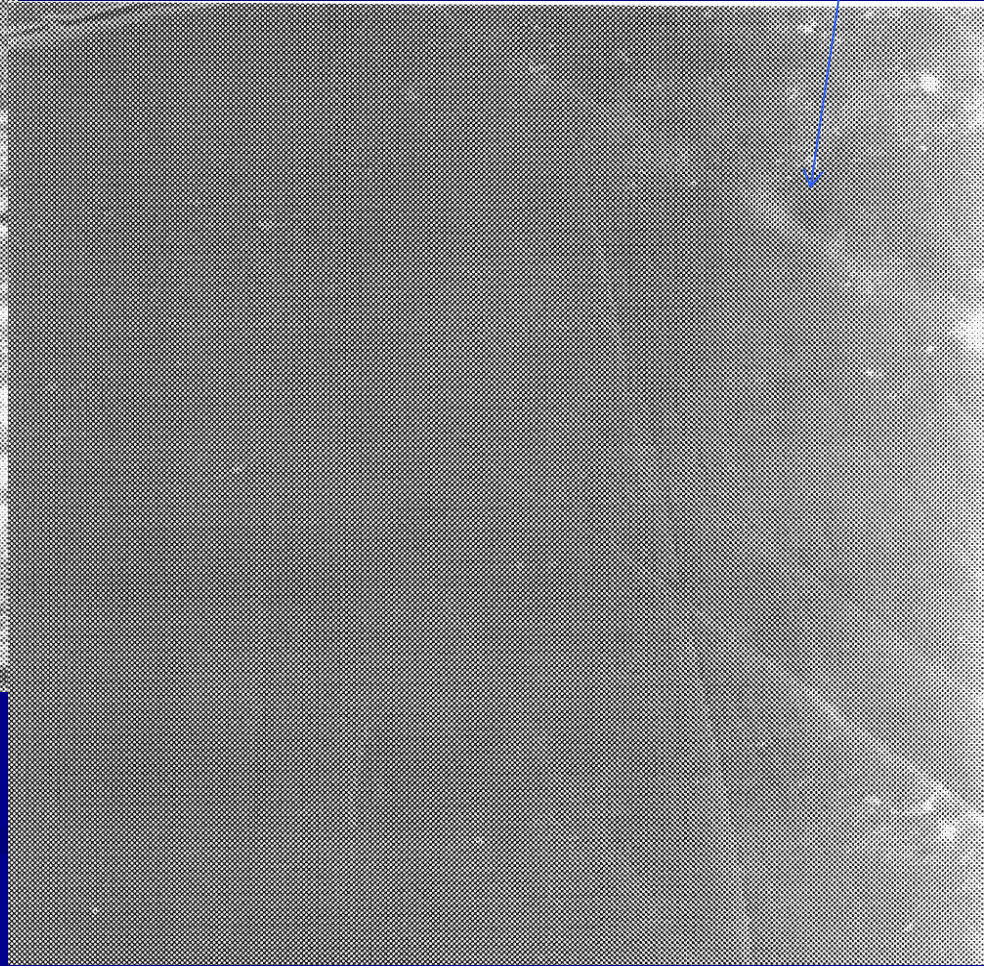
- Influence on teeth structure and their mechanical properties
- Influence on quality of fillin
- Influence on bonding
- Final effect and its longevity
- Influence on dental pulp and periodontal ligament



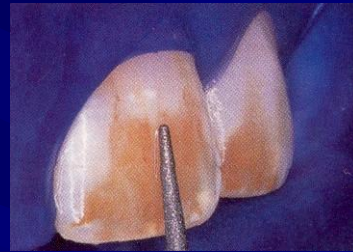
After bleaching



Without bleaching



Microabrasion



Mechanical abrasion

- Sandblasting

- Fine diamond or disc

Fluoridation

