Endodontics I.

Morphology
Pulp disease
Indication
Contraindiction
Instrumentarium

Endodontics

Pulp and periodontal diseases – diagnosis, therapy, prevention

Aim of endodontic treatment

Healing of pulp diseases or removal bacteria from the root canal system and regeneration of damaged periodontal tissues. (Canal shaping, cleaning and filling)

„ Endodontist helps nature only “

W.D.Miller

Endodoncie I.

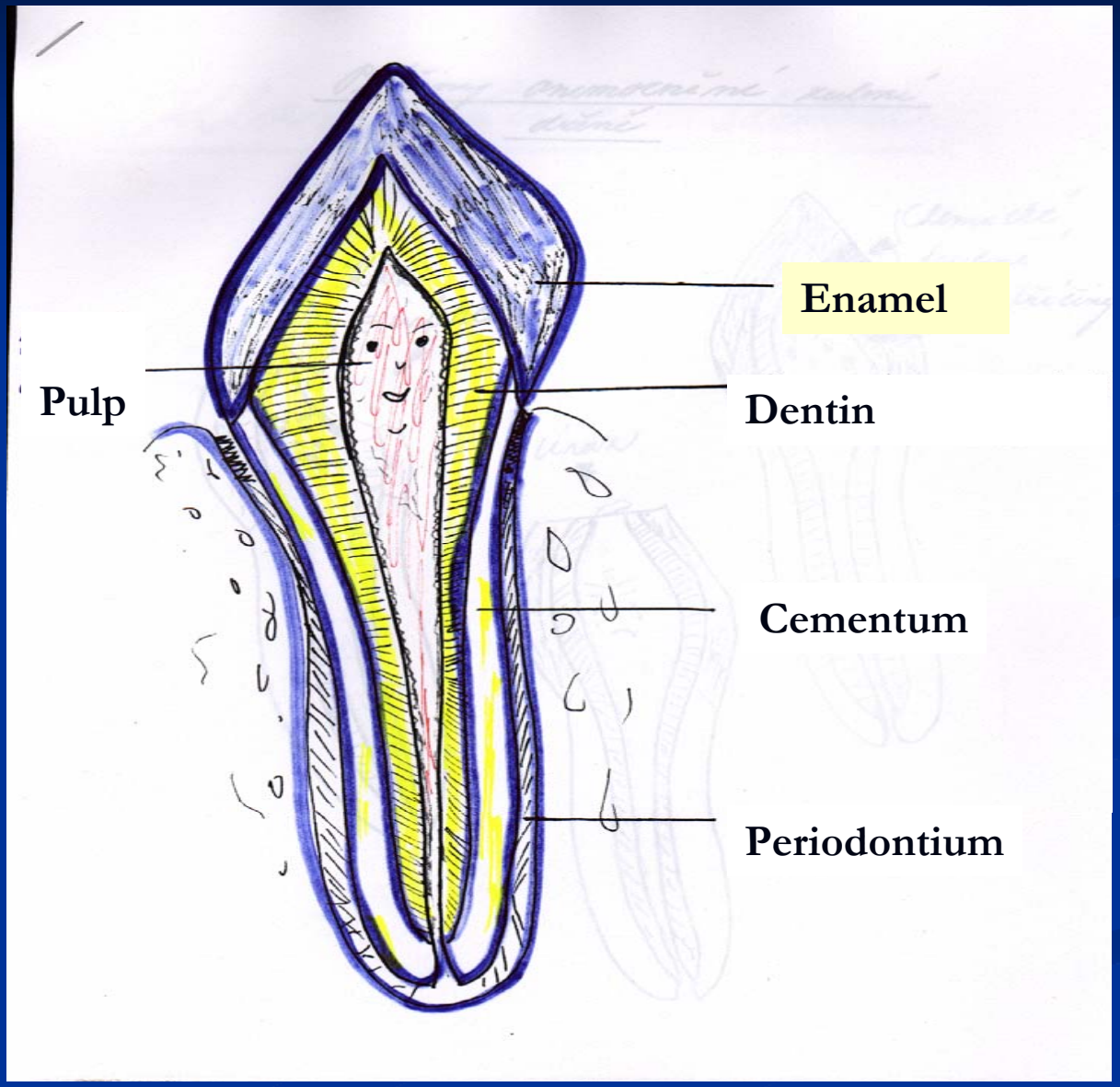
Morphology

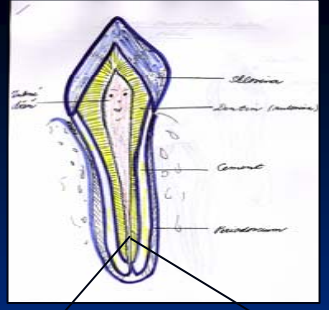
Onemocnění zubní dřeně

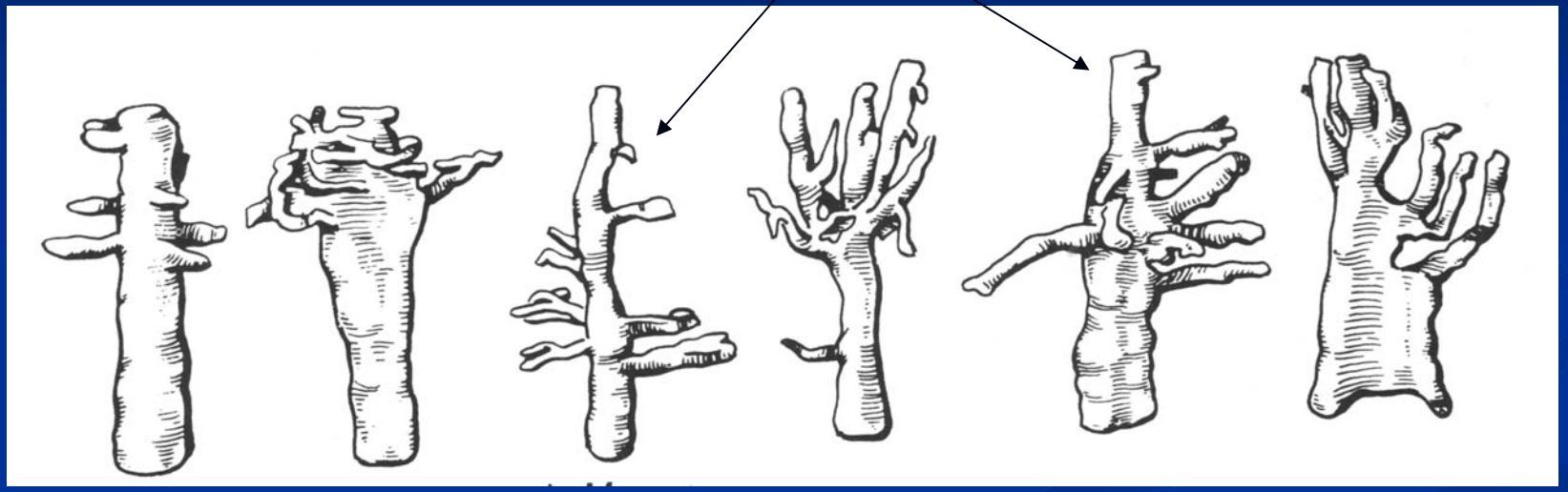
Indikace a kontraindikace endodontického ošetření

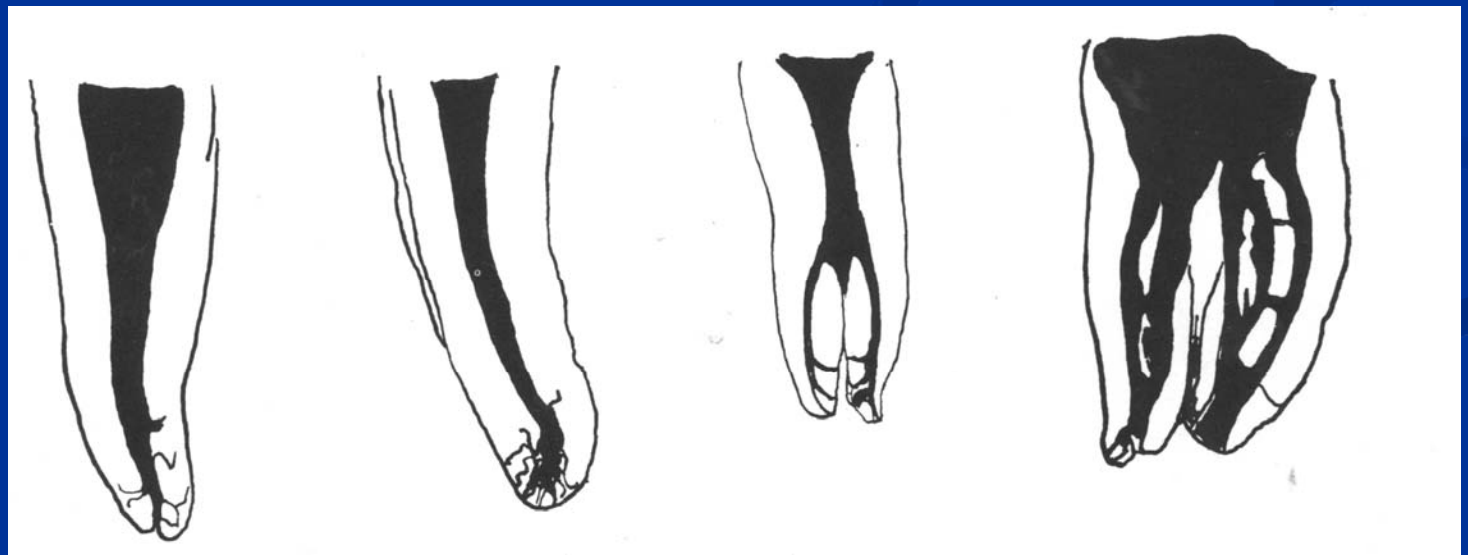
Instrumentarium

Morphology









3D

Meyer´s conclusions

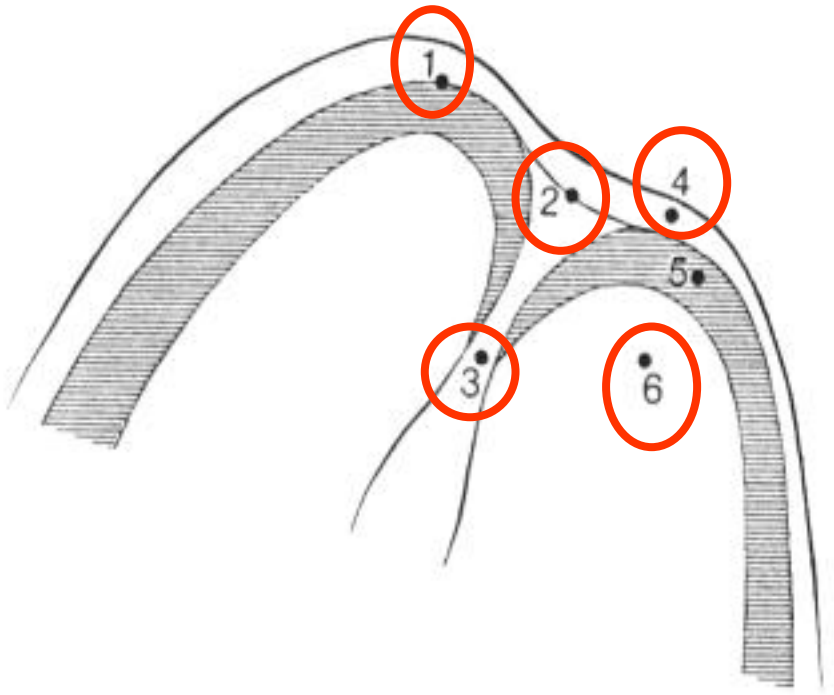
- The root canal is not round but oval (long axis mesiodistal)
- The root canal does not go straight but it deflects distal
- The outfall is not on the top of the root but below (distal or distooral)

Meyer´s conclusions

- The form of the outfall is funnel - shaped
- The root canal system has usually more outfalls (ramifications)
- The ramifications are situated mostly in apical area (first apical mm)
- All outfalls are situated in cementum

Basic forms of the root canal systém (Weine)

Apical morphology

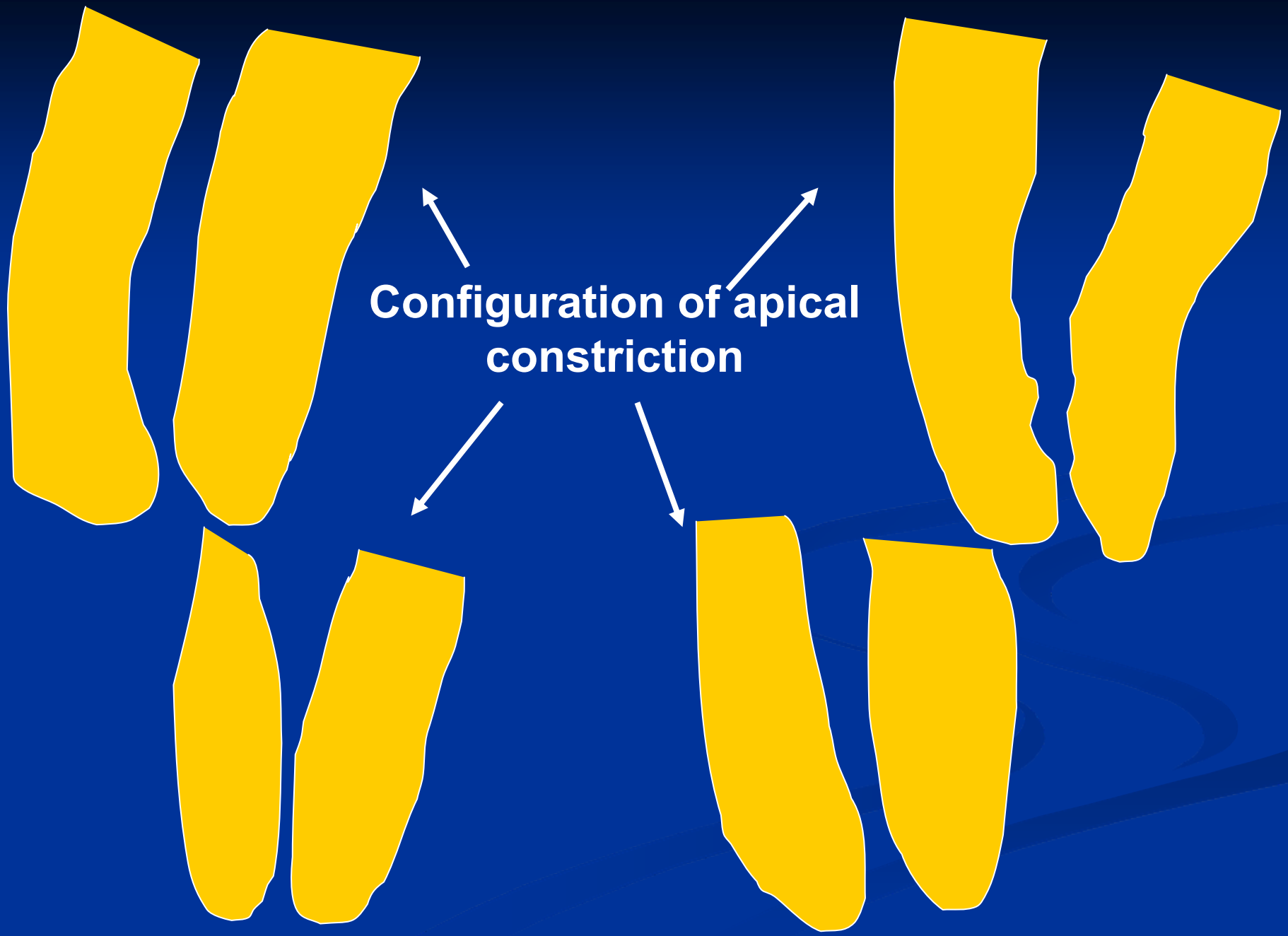


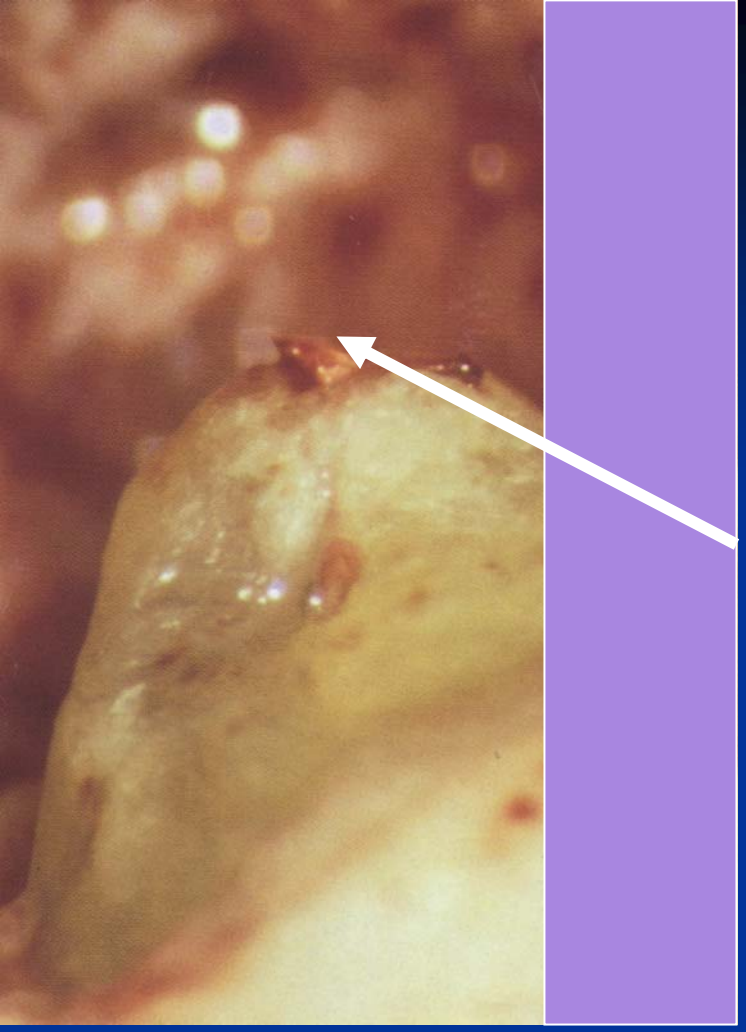
1. X – ray apex
2. Foramen apicale
3. Apical constriction
4. Periodontal ligament
5. Root cementum
6. Dentin

Acc. to Guldener a Langeland

Canal shaping terminates in apical constriction

- Small communication
- Less risk of periodontal damage
- Prevention of overfilling
- Prevention of apical transport of infectious material
- Possibility of good bacterial decontamination
- Possibility of good condensation of the root filling

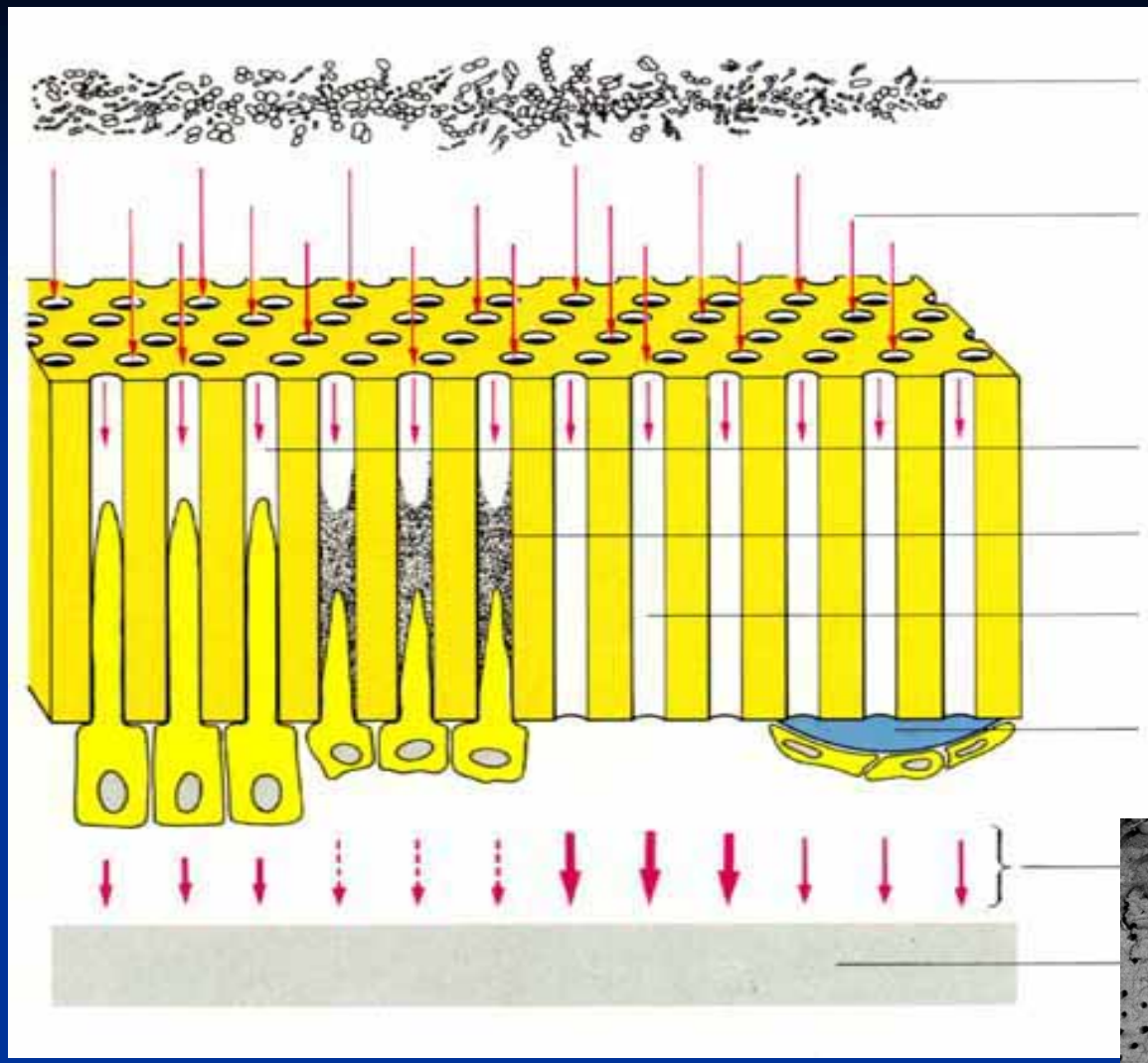

Configuration of apical constriction

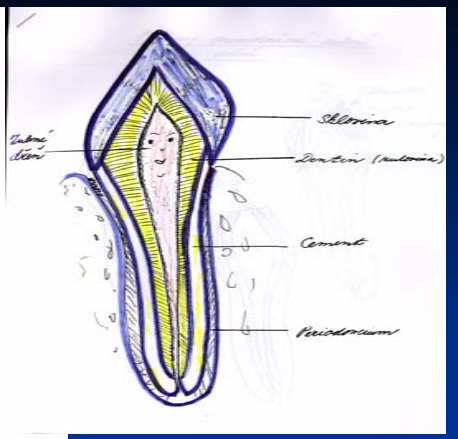


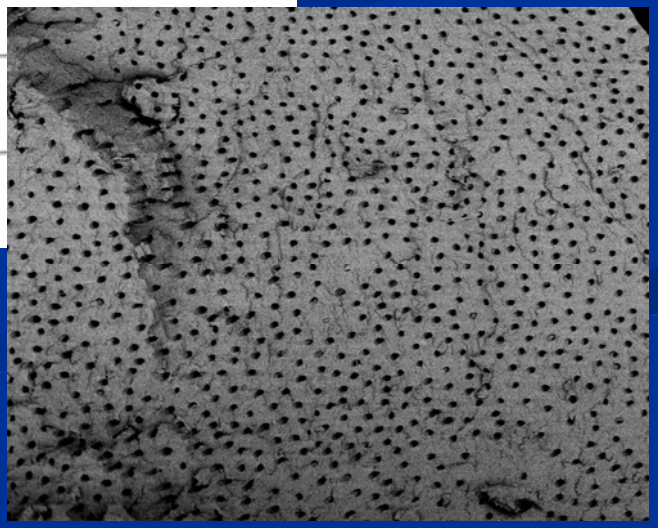
Real situation

X- ray apex

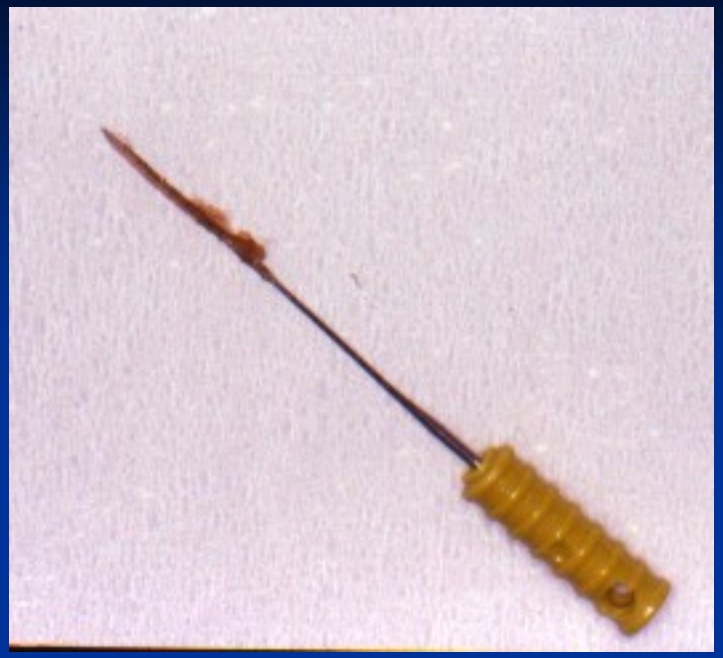
- Macrocanal system
- Microcanal system



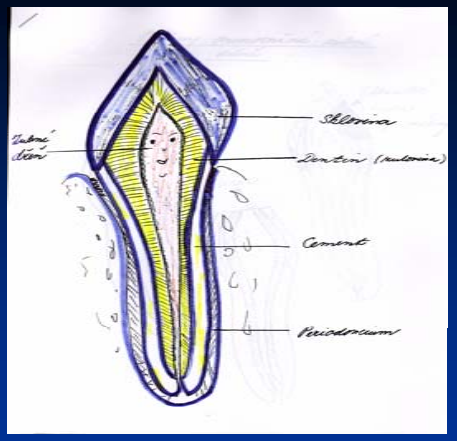


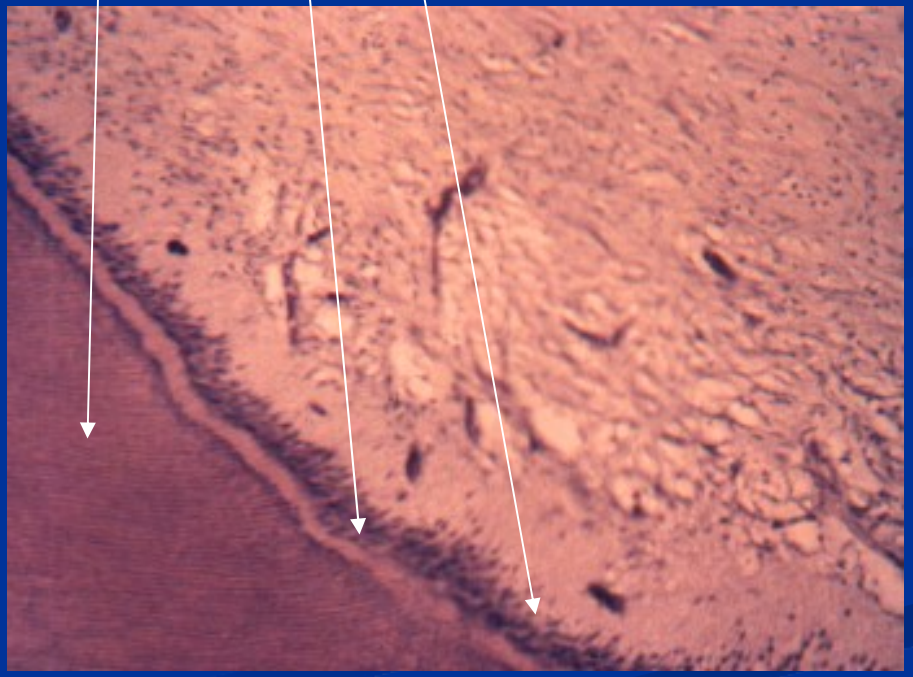


Endodont: dentin and pulp (morphological and functional unit)



Odontoblasty
Predentin
Dentin

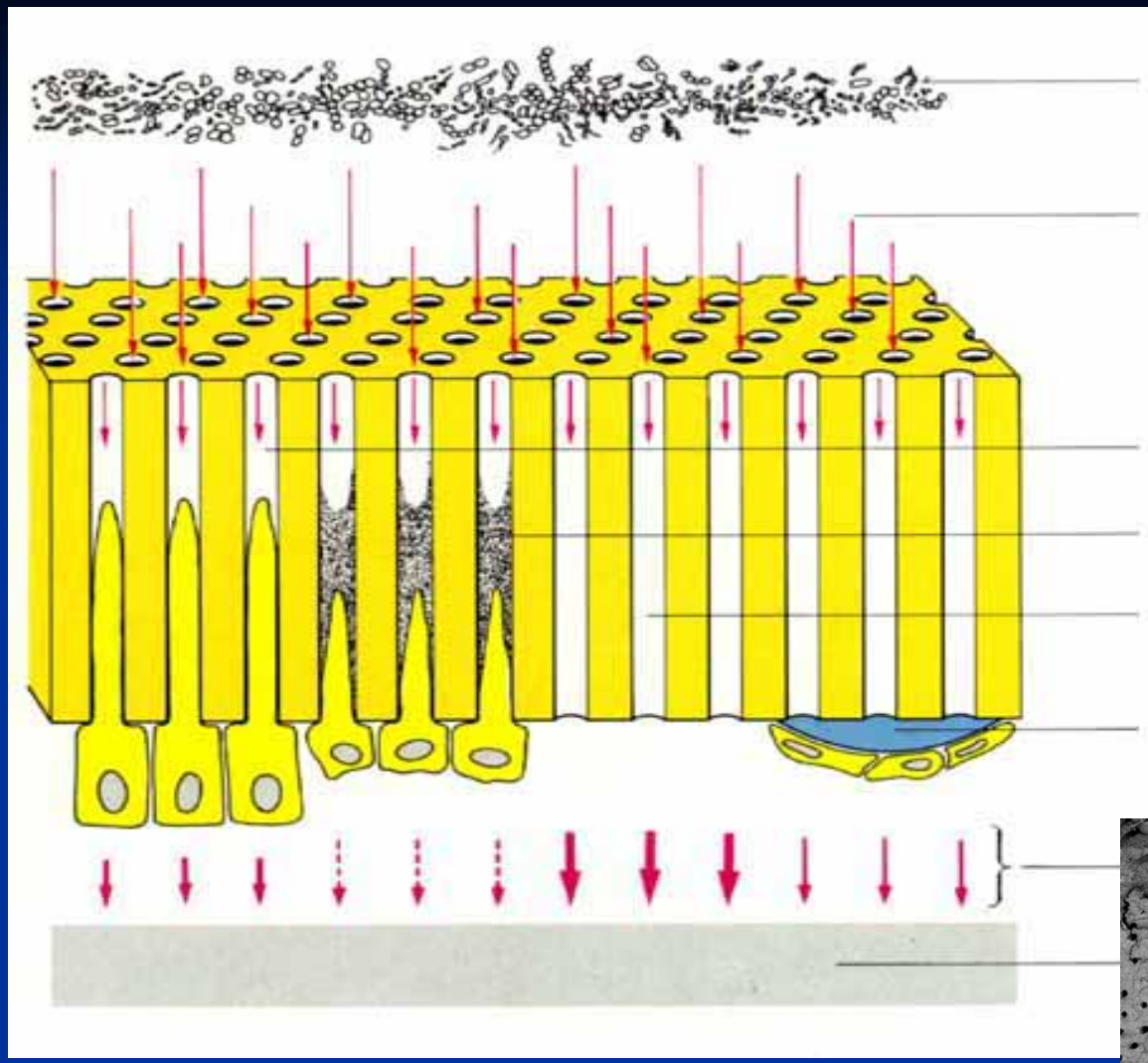


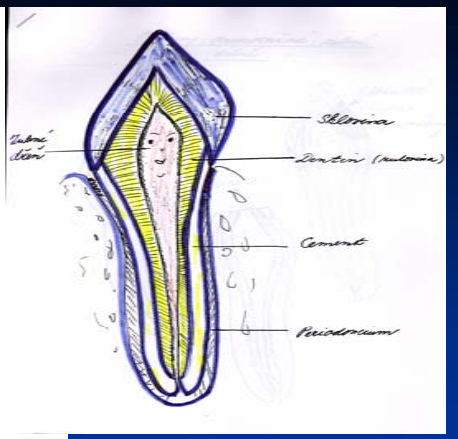


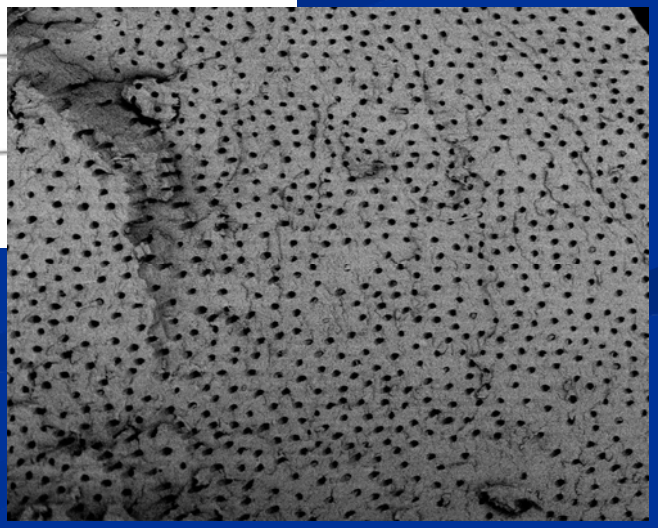
Dental pulp

Defense mechanisms of the pulp

- Sclerosis
- Tertiar dentin
- Dentin bridge







Endodont – dentin and pulp

Pulp diseases

Inflammation - pulpitis

Consequences

- Necrosis
- Gangraena
- Apical periodontitis

Reasons

- Bacteria
- Mechanical irritants (overinstrumentation, trauma)
- Chemical ieeitants (esp. phenolic based inracanal medicaments, overfilling,irrigants)

Classification of pulp diseases

- Histopatological

Hyperemia pulpae

Pulpitis acuta serosa partialis

totalis

Pulpitis acuta purulenta partialis

totalis

Classification of pulp diseases

- Histopatological

Pulpitis chronica clausa

aperta

ulcerosa

polyposa

Classification of pulp diseases

Clinical

Reversible pulpitis

Pain does not linger after stimulus is removed

Pain is difficult to localize

Normal periradicular appearance

Teeth are not tender to percussion

Classification of pulp diseases

Clinical

Irreversible pulpitis

Pain may develop spontaneously or from stimuli

In later stages heat is more significant

Response lasts from minutes to hours

When the periodontal ligament is involved, the pain is localized

A widened periodontal ligament may be seen in later stages

Úprava ad integrum ?

ZUBNÍ DŘEŇ

Zánět

Akutní

Chronický

Nekróza

Gangréna

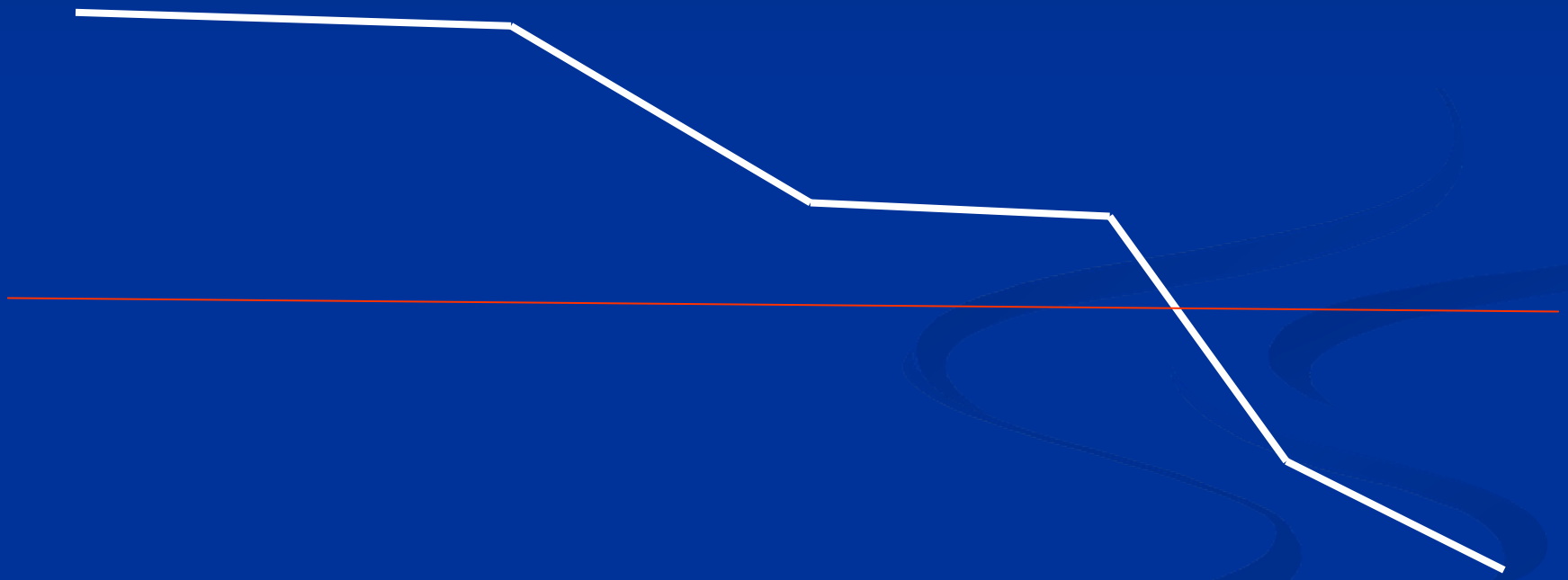
Periodontitida

akutní

chronická

enoseální, subperiostální, submukózní fáze

Cummulative trauma pf dental pulp



Diagnosis

- **History**

Presenting complaint

Medical history

Dental history

Pain history

Location

Type and intensity of pain

Duration

Stimulus

Relief (analgetics, antibiotics, sipping cold drinks)

Diagnosis

Clinical examination

Extraoral (swelling, redness, extraoral sinuses, lymph nodes, degree of mouth opening)

Intraoral examination

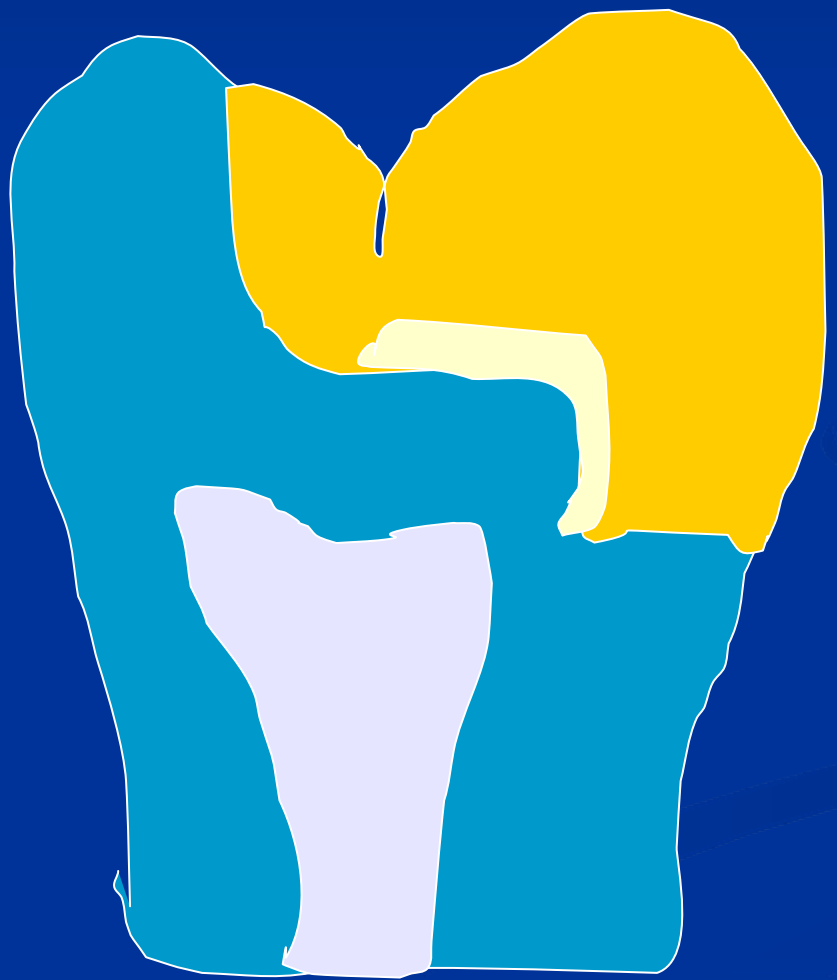
Swelling, redness,palpation, percussion, sinus tract examination, teeth mobility,pockets

Diagnosis

Clinical examination

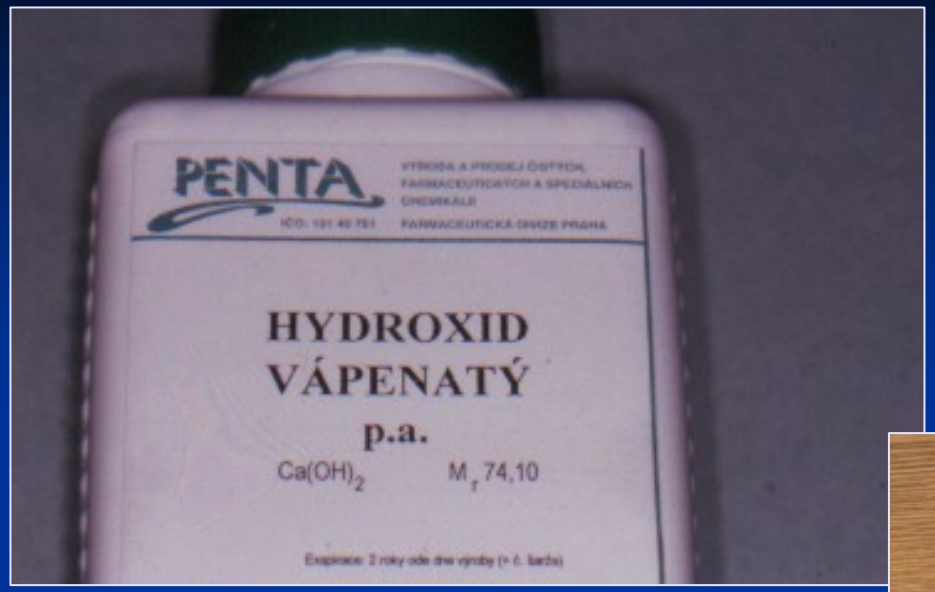
Pulp sensitivity tests, radiographic examination, transillumination.

Protection of dentin wound

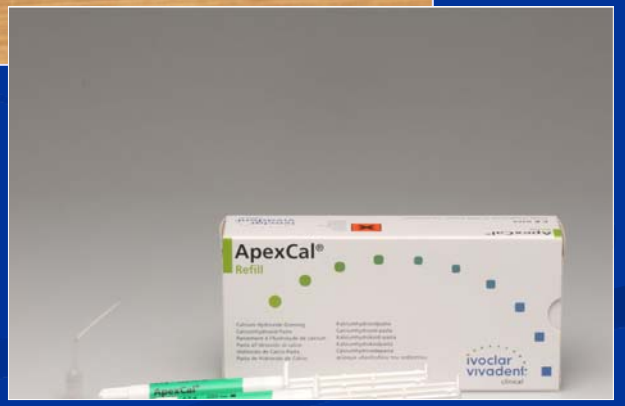


Against:

Thermal
Chemical Irritation
Electrical



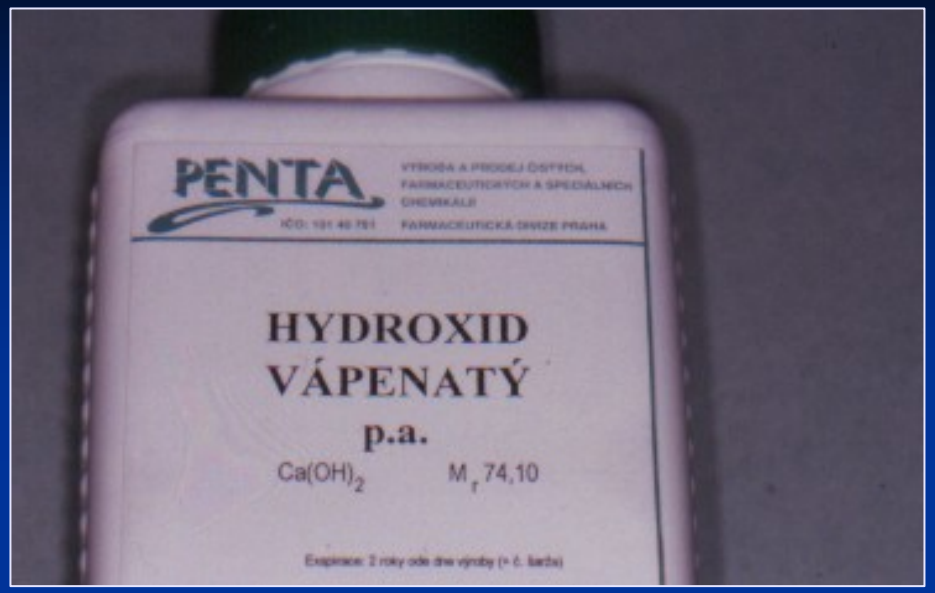
$Ca(OH)_2$



Disociace – silná alkalita

Malá rozpustnost – vápenná voda

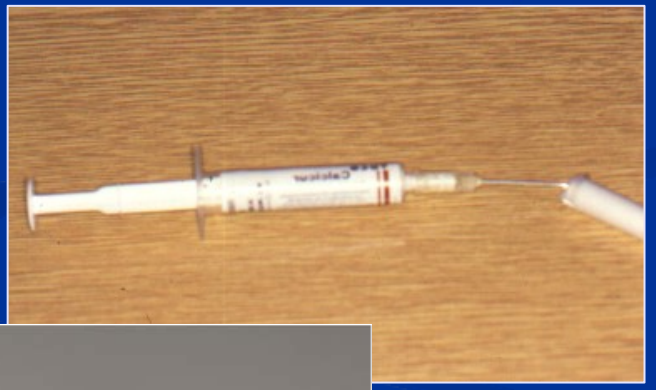
Suspenze (vápenné mléko, vápenná kaše)



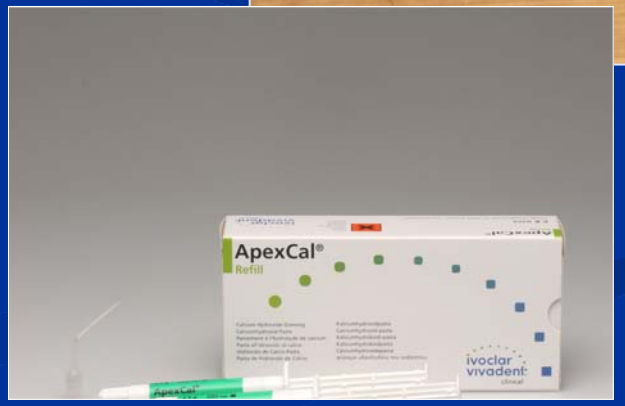
Antiflogistický

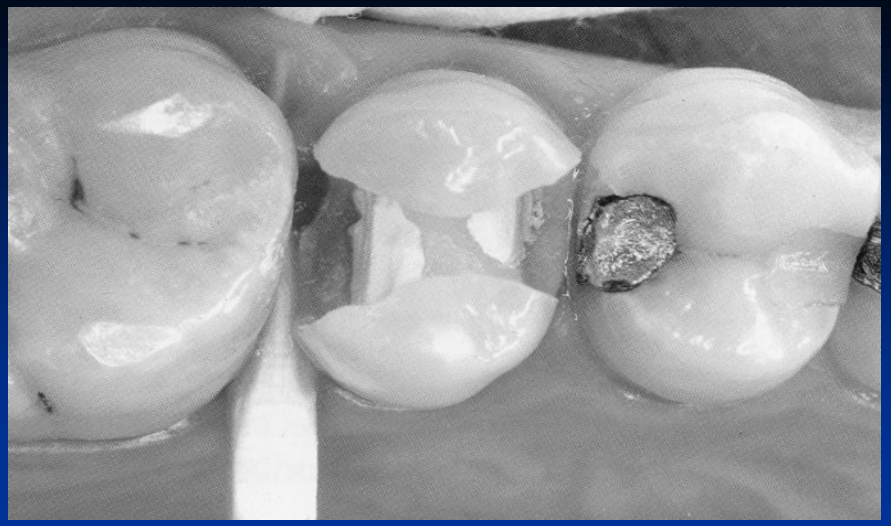
Dentinogenní

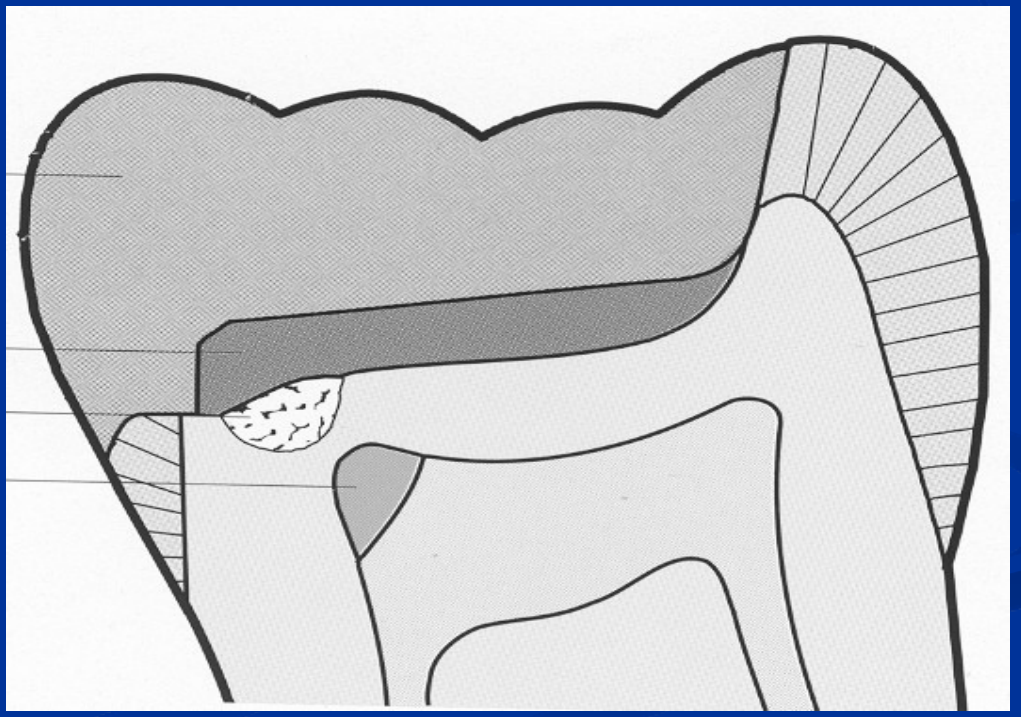
Antimikrobiální efekt



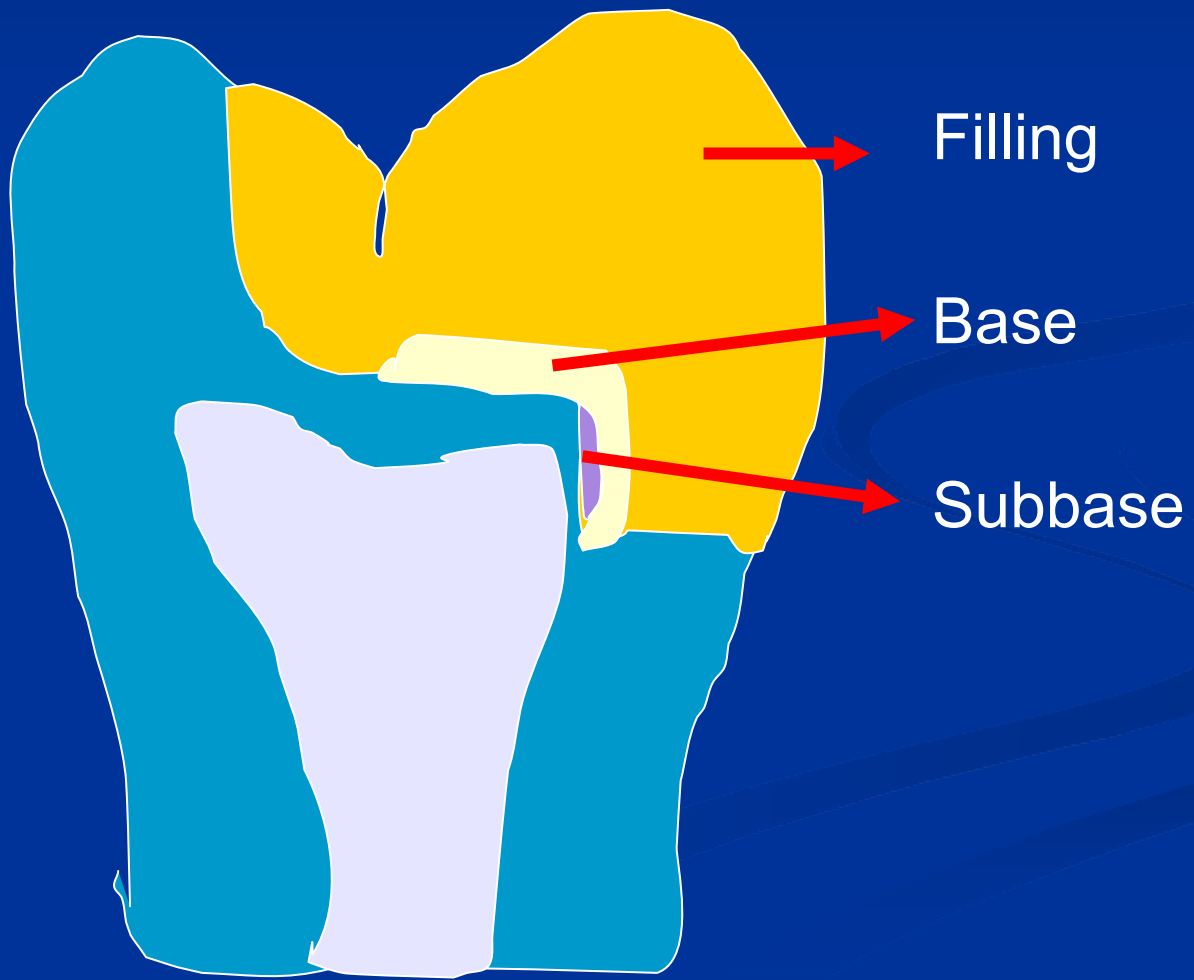
Suspenze
Cementy
Subbase
Kořenová výplň
- krátkodobě
- střednědobě
- dlouhodobě



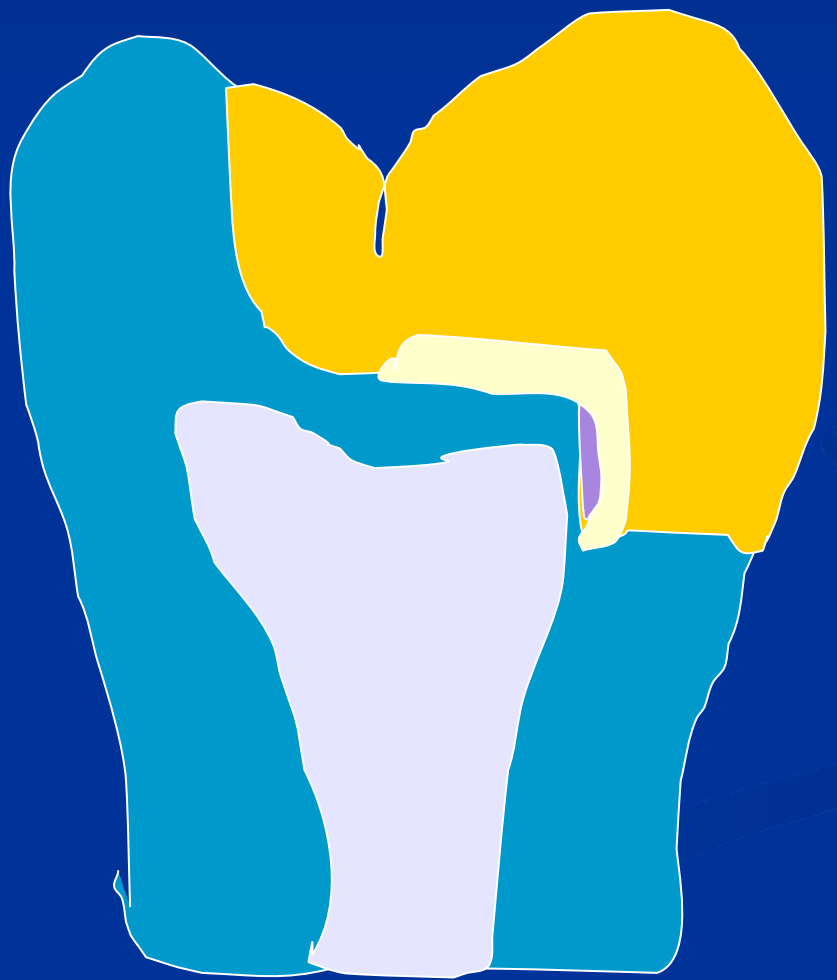




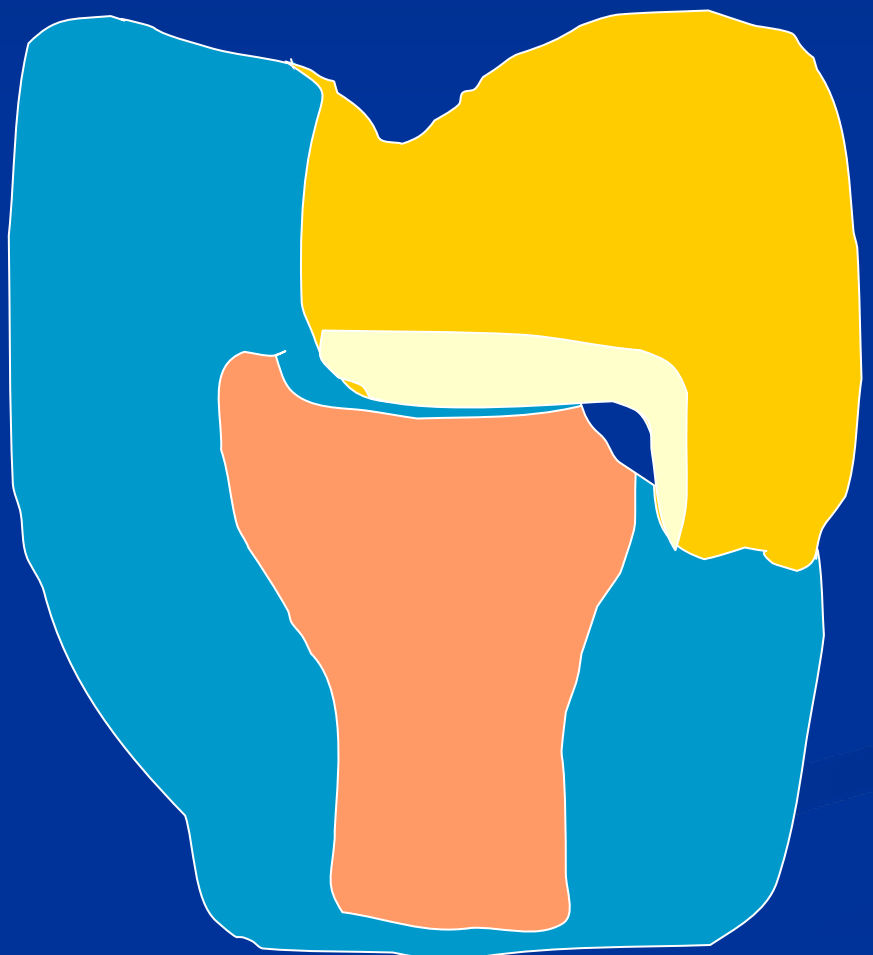
Indirect pulp capping



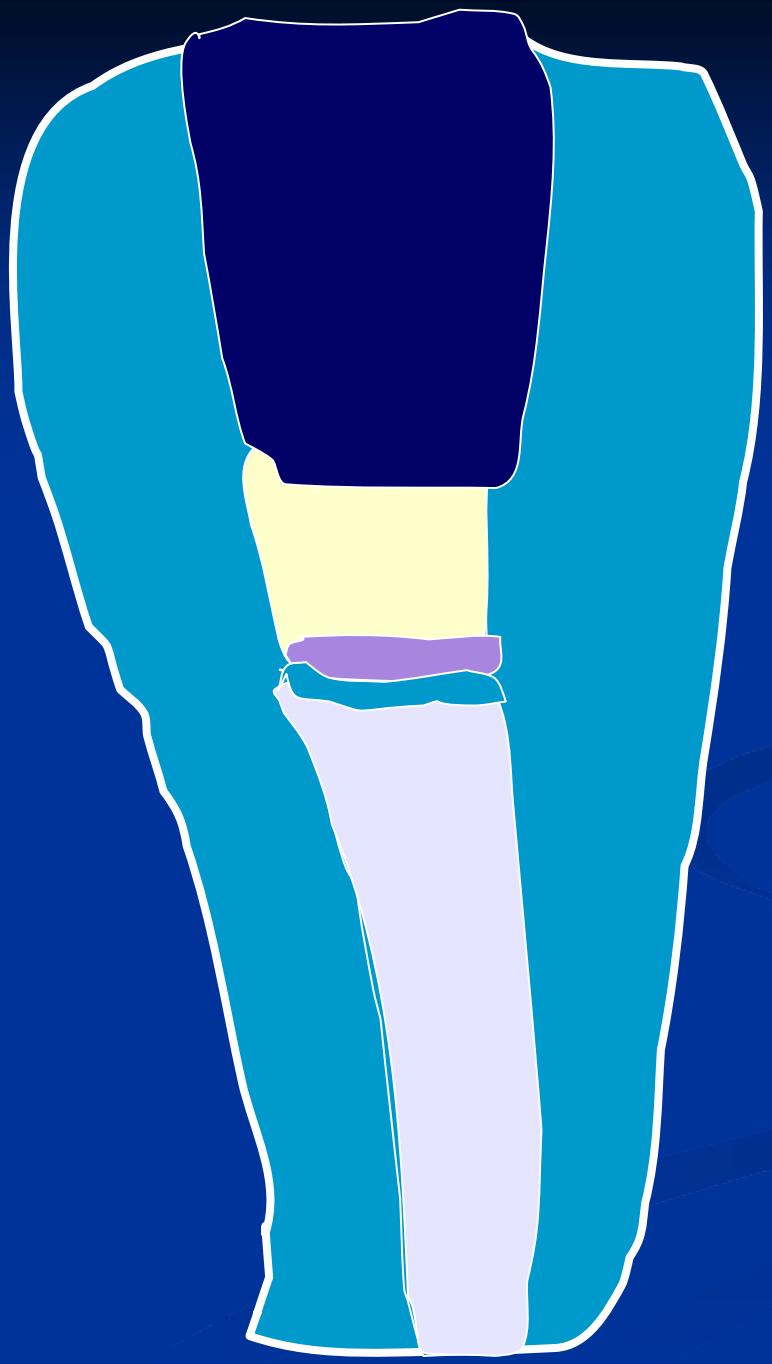
Intermitent excavation



Direct pulp capping



Necrosis
Inflammation
Dentin Bridge



Pulpotomy