

Prosthetics I.

Rehabilitation of the masticatory apparatus

Damaged teeth

– reconstruction of the crown

Missing teeth

- appropriate prosthesis (denture)

Prosthesis

- Individually made
- Differences
 - in the type of defect, extent and location
 - in the size, shape and position of teeth
 - in the quality of hard and soft tissues of the oral cavity
 - in intermaxillary relations

Prosthesis (denture)

Rehabilitation of:

- Function
- Comfort
- Aesthetics
- Phonation

Fixed dentures

- Cemented on the teeth – crowns, bridges, inlays

Removable dentures

- Partial
- Complete (full)

Procedures

- In dental surgery
- In dental laboratory
- Special instruments
- Basic (main) materials
(metal alloys, ceramics, polymers)
- Auxilliary (accessory) materials
*(impression, carving, die, insulating
investing, grinding, polishing)*

Manufacturing of dentures

Model of gypsum (plaster) – model of a denture (wax pattern).

Model of a denture (wax pattern) directly in the mouth – rarely.

Denture is formed without a wax pattern in the dental lab.

Manufacturing of dentures

Model of gypsum (plaster) – model of a denture (wax pattern).

Impressions of the jaw - negativ

The impression is filled with a casting material (gypsum) – poured into



Model
(various purpose)

Models

- Working model – the denture is produced on this model (special procedures)
- Opposing model (antagonal) - necessary for the recognition of intermaxillary relationship
- Bite registration - wax

Manufactoring of dentures

- The denture (not the denture itself but the model of the denture) is produced on the working model.
- The model of the denture is made of the carving wax.
- The wax is replaced by the main (base) material.

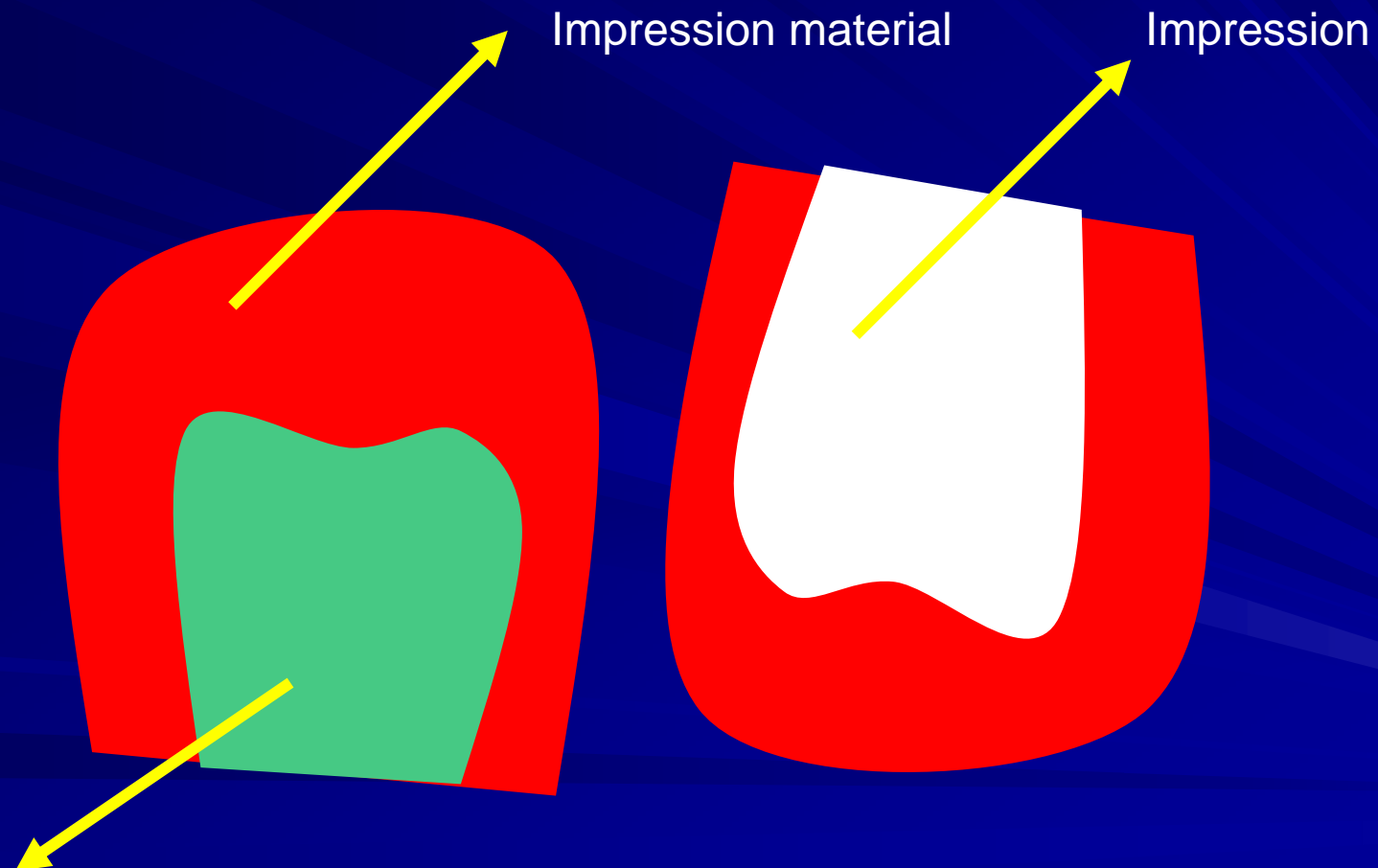
Fabrication of dentures

The model (wax) of the denture is invested

The wax is removed from the form and the base material is placed into the form.

Wax removal:

*The wax is burned out (for metal alloys)
or removed by hot water (for polymers)*



Impression material

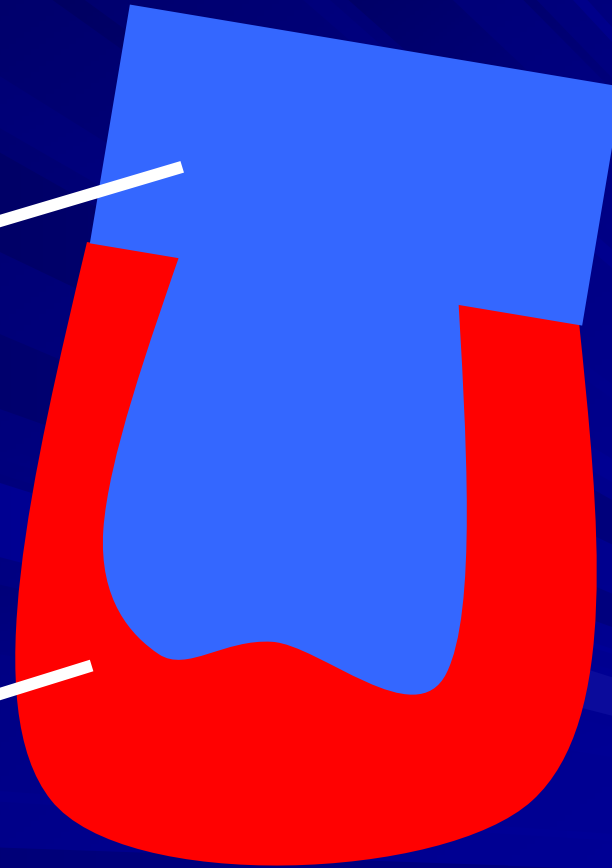
Impression

Tooth

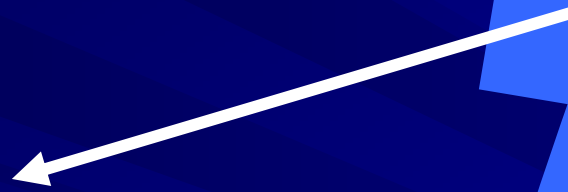
lenka.roubalikova@tiscali.cz

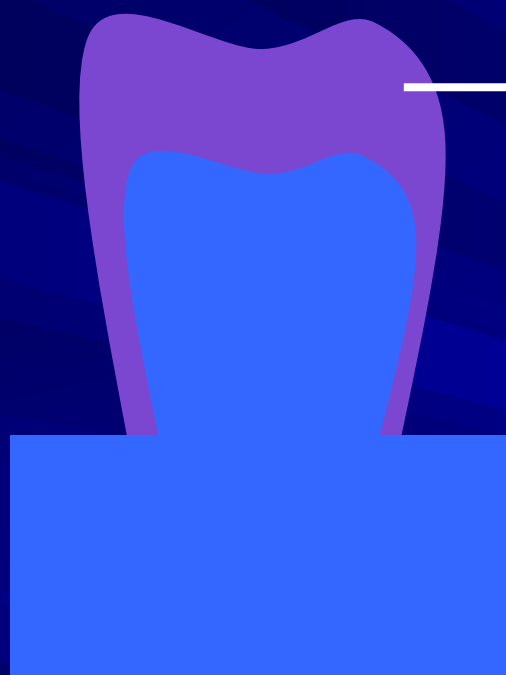
Gypsum

Impression

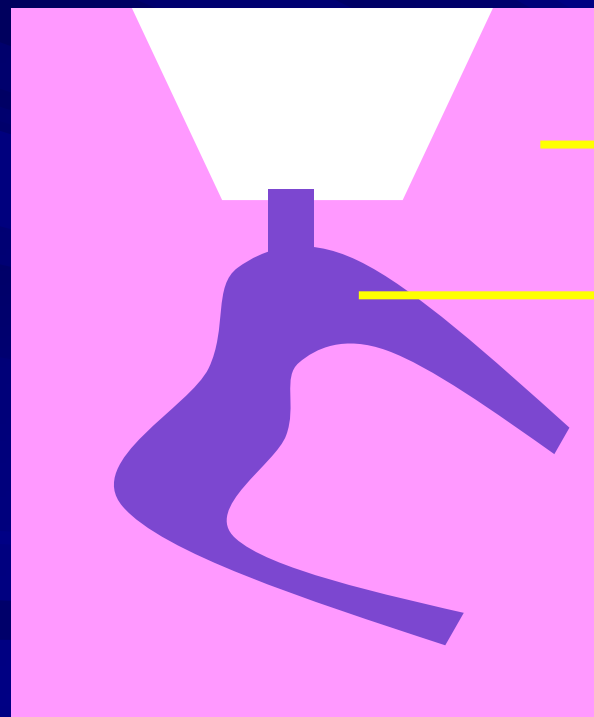


Plaster



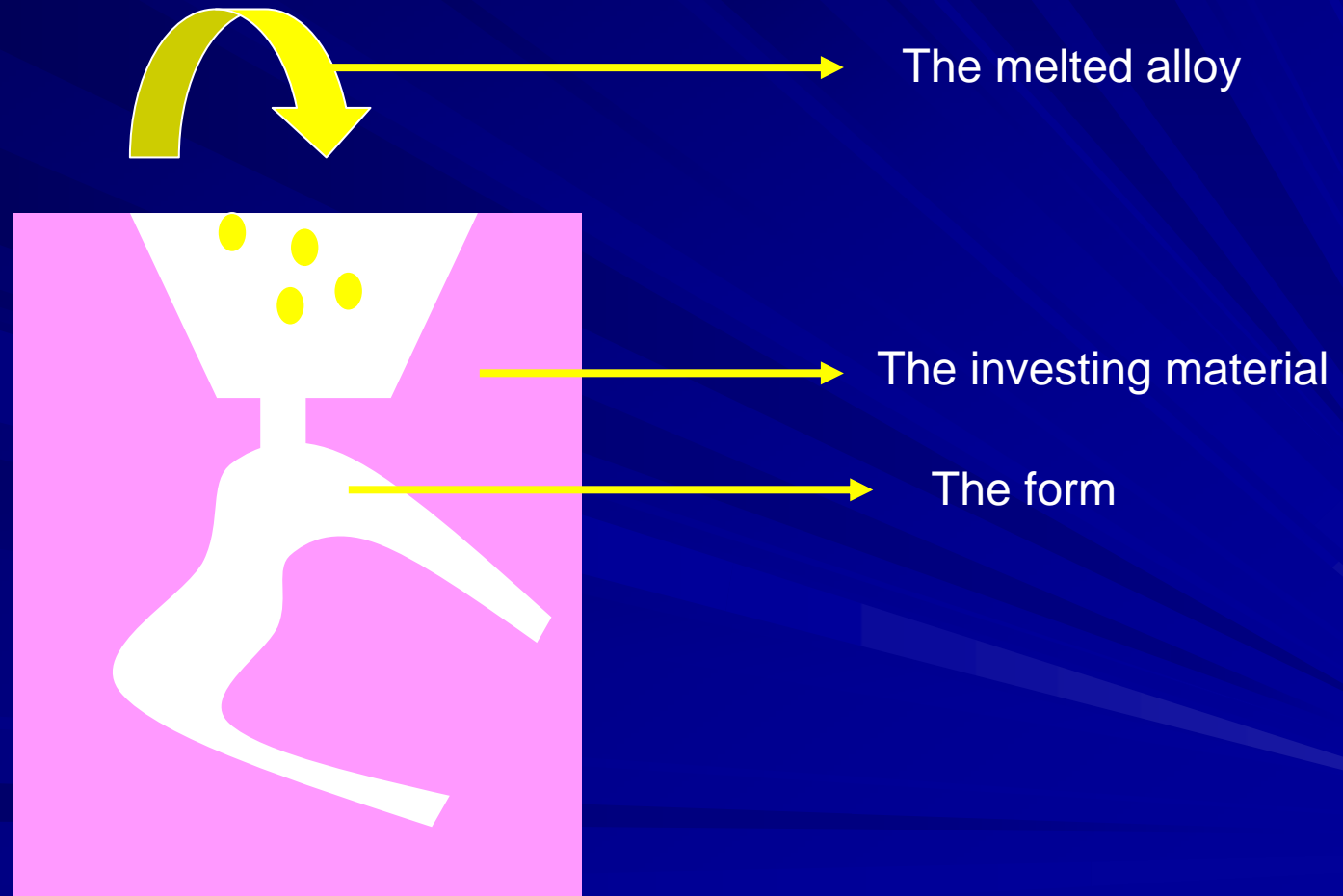


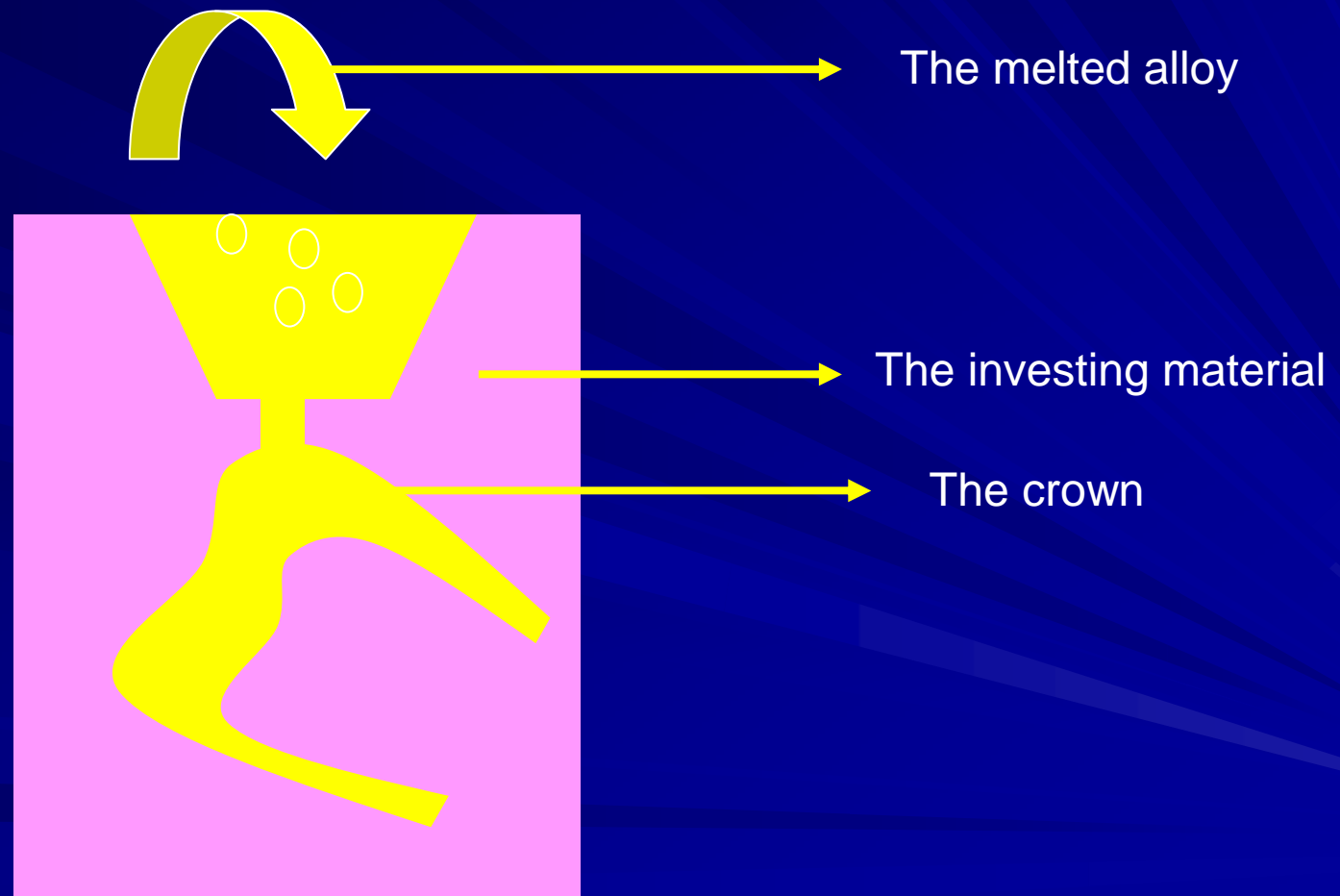
The model (wax pattern)

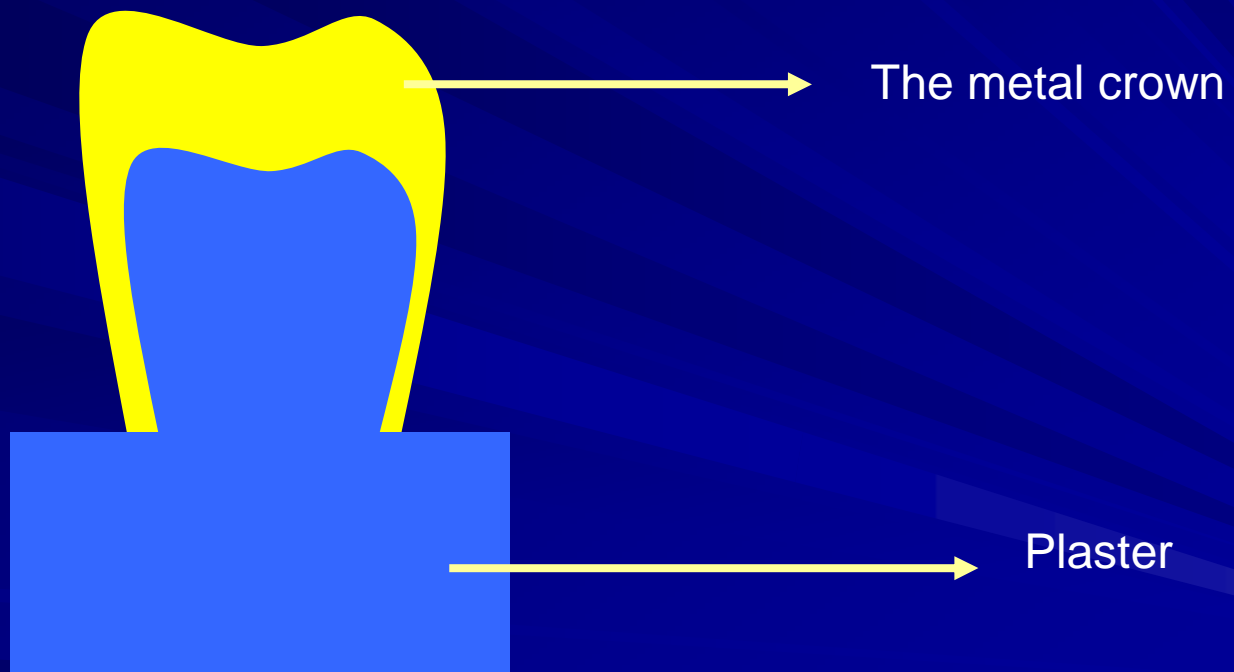


→ The investing material

→ The model
(wax pattern)







Manufacturing of dentures

The method described above = indirect method

Manufacturing of dentures

Direct method

Manufacturing of dentures

Direct method

No impression

The model of the denture is made directly in the mouth

For inlays only

Planning of the denture

Complex examination

1. Extent and location of the defect
2. Damage of the involved teeth (caries, fillings atc.)
3. Periodontium
4. Shape, size, position of teeth, relationship to the neighbours
5. Occlusion, articulation – relationship to the antagonists
6. Quality of the alveolar process
7. The level of oral hygiene
8. X-ray examination
9. Study impressions – study models
10. Detail evaluation of the abutment teeth (pilots) – most important teeth – canines, premolars

Classification of defects Voldřich

I. Class

One or more teeth are missing

Small gaps – 1 – 2 teeth

Big gaps 3 – 4 teeth at most. This big gaps must be demarcated by pilot of the best quality. (canine, 1st or second molars – pilots of 1st class or their equivalents)

Classification of defects Voldřich

II. Class

Reduced dental arch, then last tooth is the second molar.

With gaps

Without gaps

Bilateral

Unilateral

Classification of defects Voldřich

III. Class

Individual teeth or small groups of teeth

Classification of defects Voldřich

IV. Class

Edentulous dental arch

Classification of pilots (abutment teeth)

Pilots I. class

Canines

Molars (1st, 2nd)

Classification of pilots (abutment teeth)

Pilots II. st class

Incisors - maxillary incisors, premolars

Classification of pilots (abutment teeth)

Pilots III. class

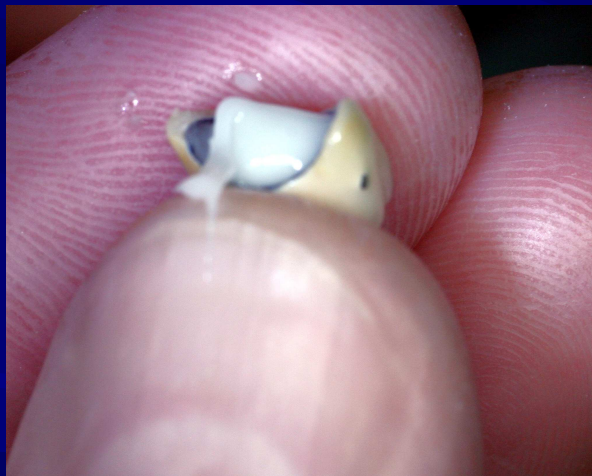
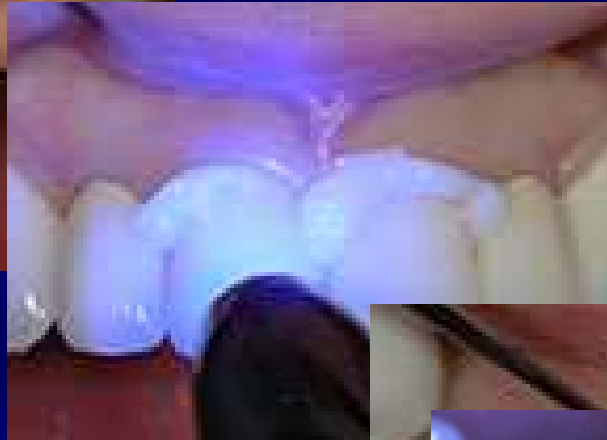
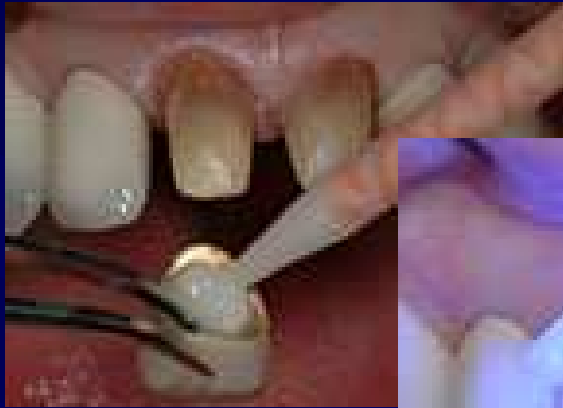
Mandibular incisors, third molars, all teeth with bad biological factor

Biological factor

- Caries
- Pulp vitality
- Level of the endodontic treatment
- Level of the resorption of the alveolar bone
- Periodontium
- Relationship to antagonists
- Relationship to neighbour teeth

Way of the transfer of masticatory forces

- Tooth
- Tooth and oral mucosa
- Oral mucosa



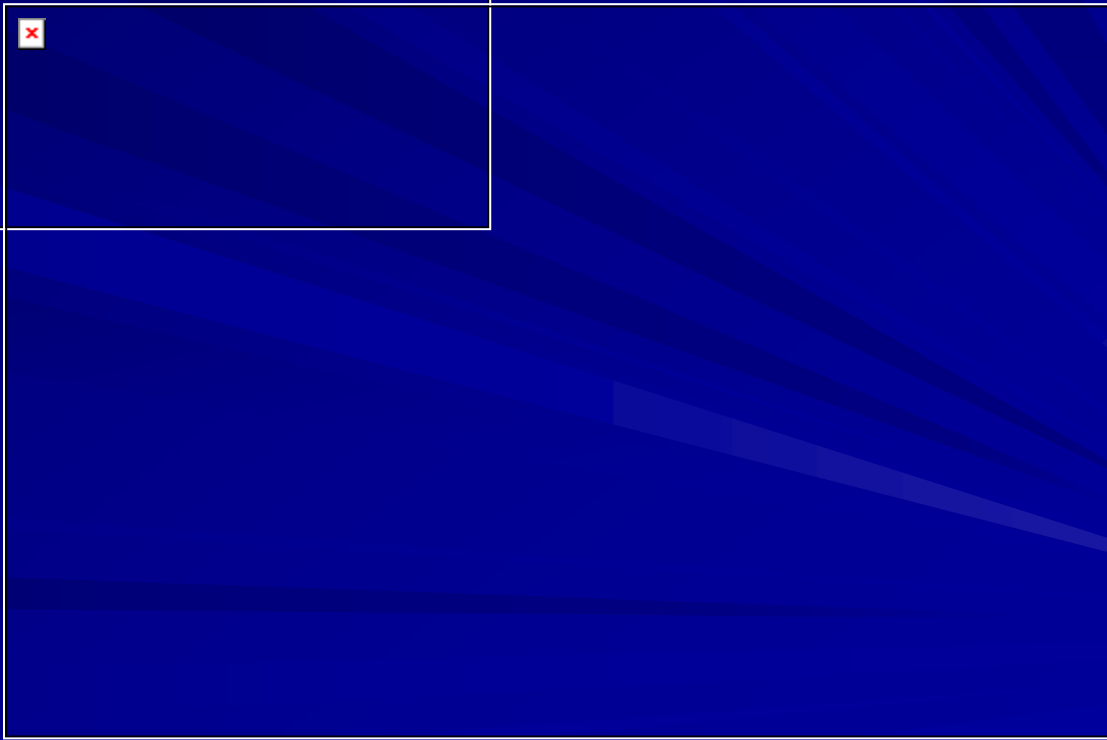






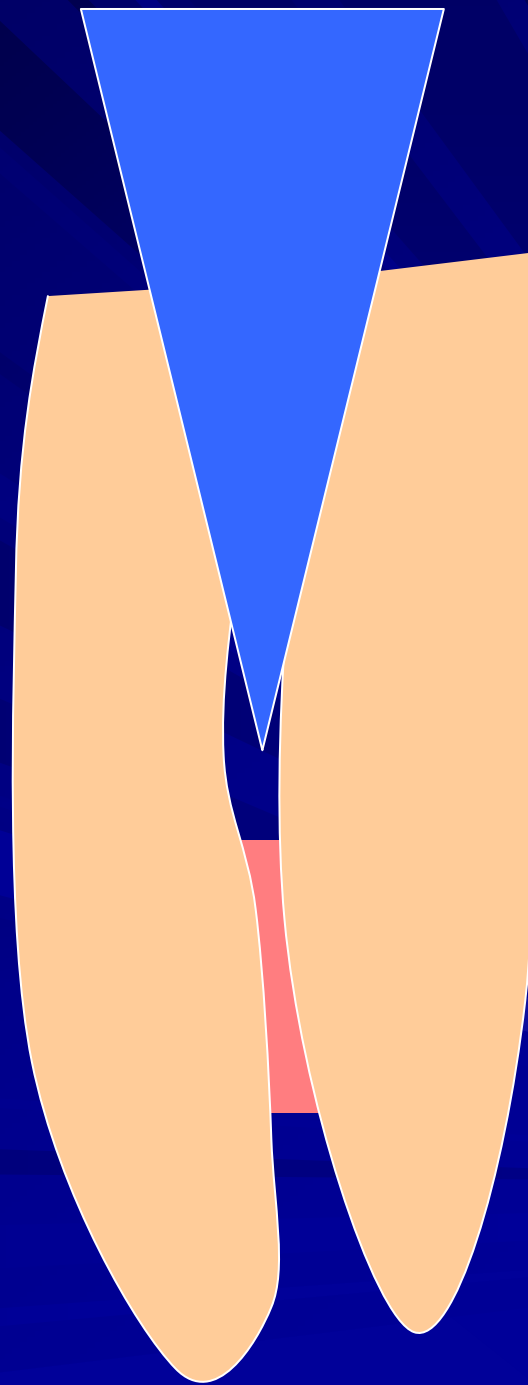
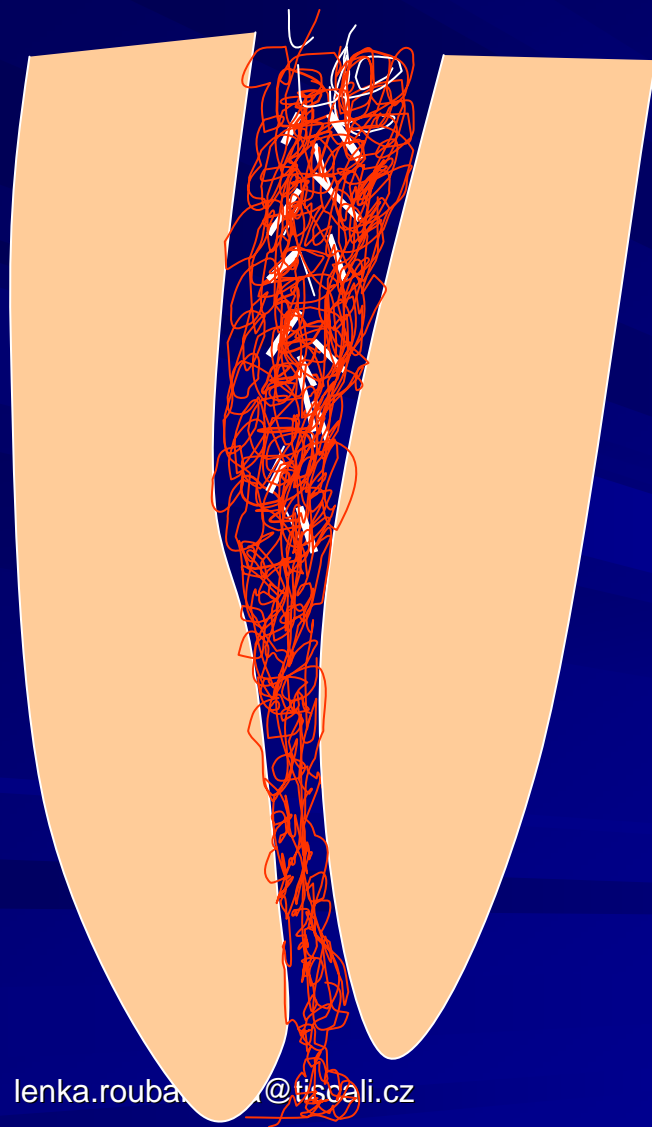








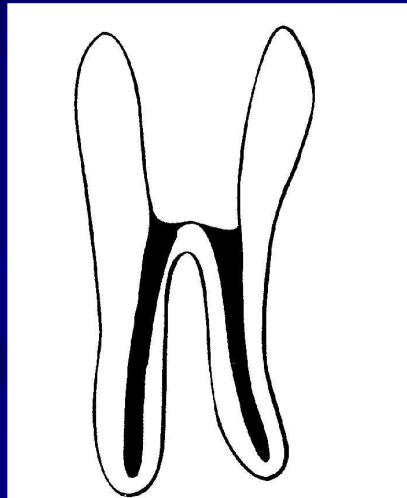
rosol=kov?

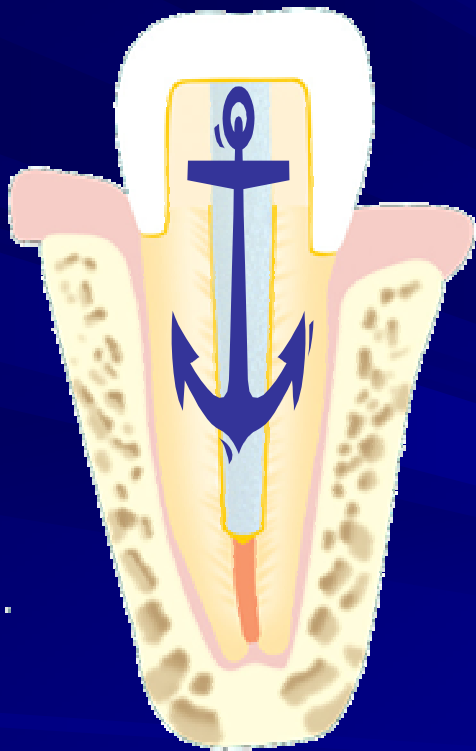


The tooth after the endodontic treatment

Risk of

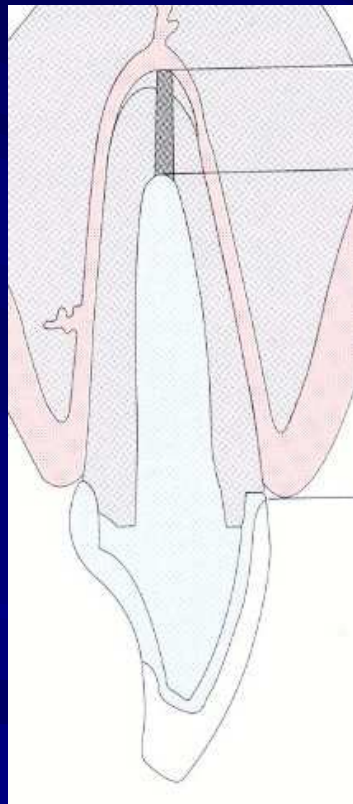
- reinfection
- fracture





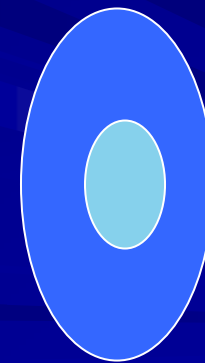
Edelhoff et al.; Core build-up of endodontically treated teeth
Scientific statement of the German Society of Dental Oral and Craniomandibular
Sciences 2003

Post



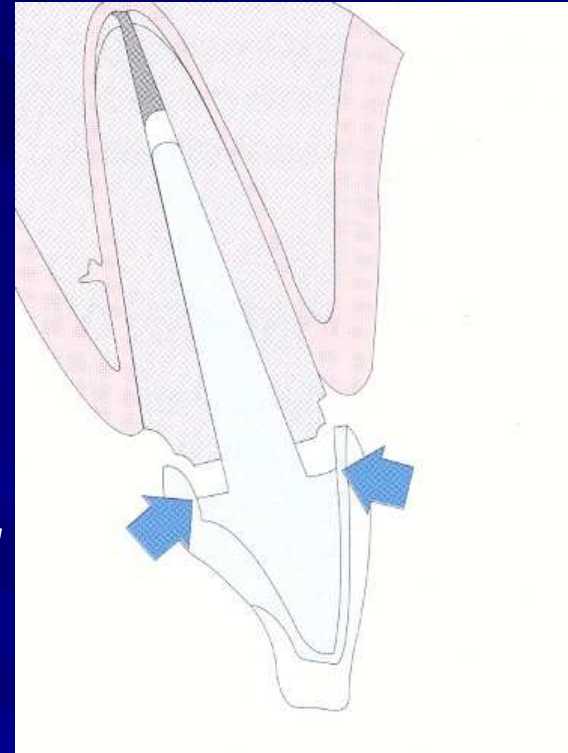
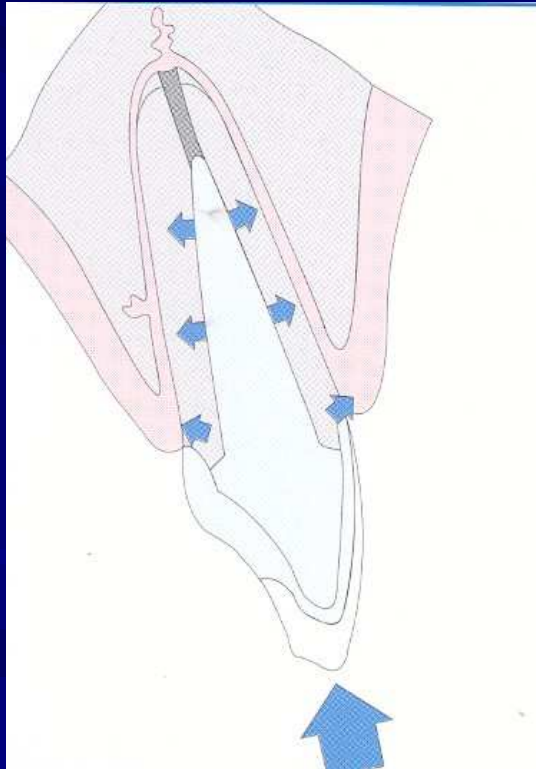
1/3

2/3



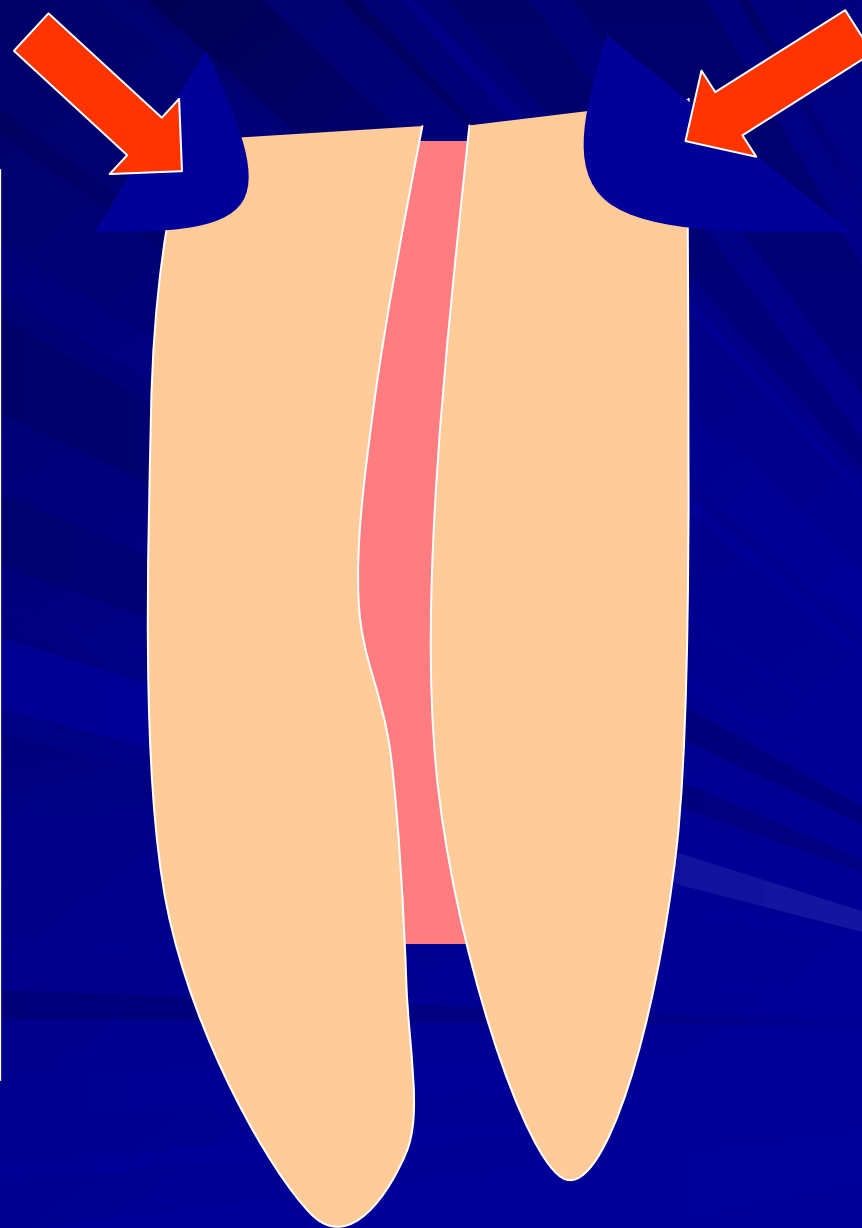
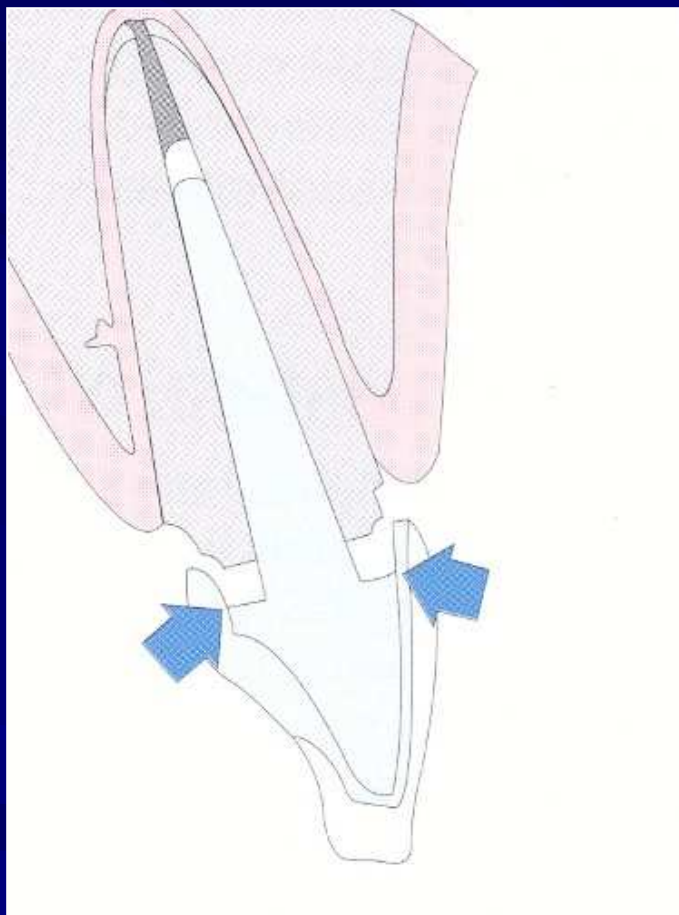
Schillinburg, Kessler, 1982

Wedge effect



Ferrule effect
Sörensen, Martinoff, 1984

Efekt obroučky – ferrule effect





Root canal inlay fabrication

- Direct method

- Indirect method