

Prosthetics I.

Rehabilitation of the masticatory apparatus

Damaged teeth

– *reconstruction of the crown*

Missing teeth

- *appropriate prosthesis (denture)*

Function of dentition

- Food admission Trituration (comminution) of food
- Phonation
- Aesthetics - psychology

Consequence of not treated dentition – malfunction of dentition

- Insufficient comminution of food – digestive disorders – irritation, diseases of the digestion apparatus.
- Disorders of phonation
- Alteration external appearance (teeth support soft tissues, keep intermaxillary relations)
- Psychological aspect of lost teeth (sign of health, good social position, self-realization)

Prosthesis – prosthetic treatment

- Dentures are 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

Aim of prosthetic treatment

Rehabilitation of:

- Function
- Comfort
- Aesthetics
- Phonation

Fixed dentures

- Cemented on the teeth or implants – inlays, crowns, bridges,

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, models, 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.

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 impressioons – study models
10. Detail evaluation of the abutment teeth (pilots) – most important teeth –canines, premolars

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

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

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
- Study model – for study purposes (planning dentures, orthodontics etc.)

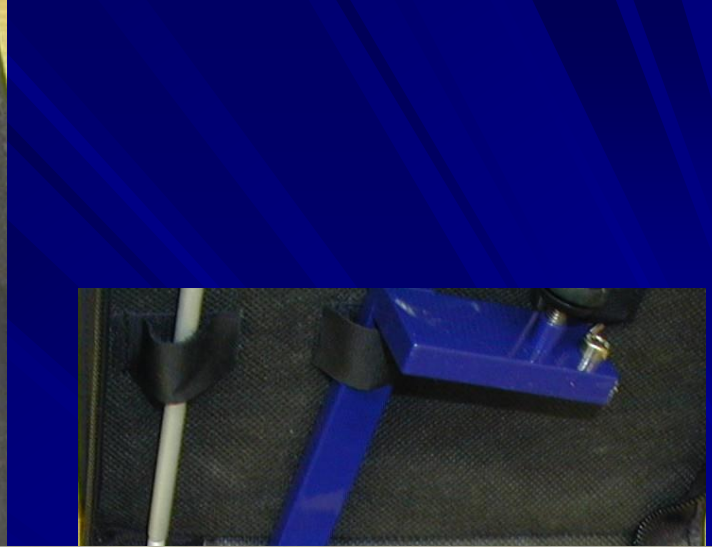
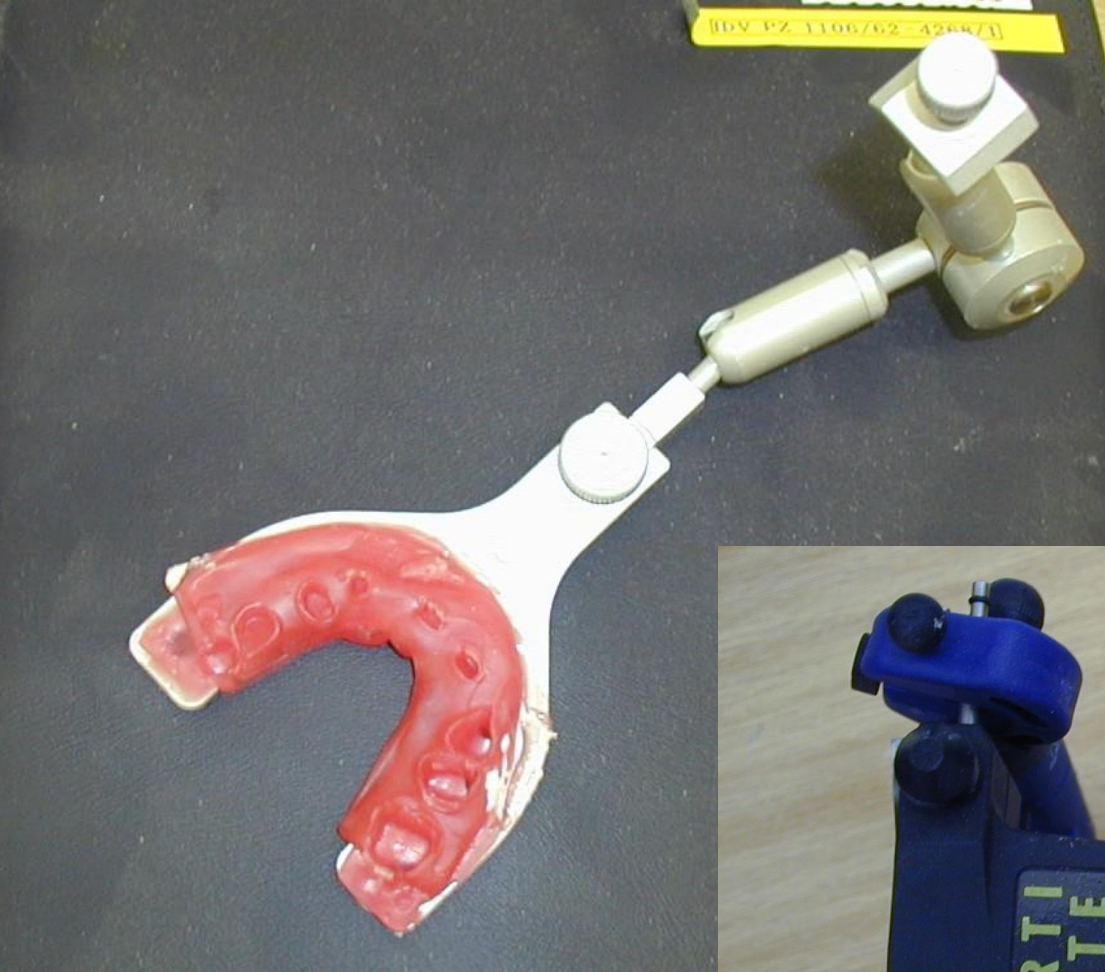
Impressions

- Impression of the dental arch (where we intend replacement of teeth)
- Impression of opposite dental arch
- Registration of intermaxillary relationship





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Manufacturing of dentures

- The denture is made on the working model.

This is an indirect method.

Indirect method requires impression.

Manufacturing of dentures

Indirect method

Indirect method requires taking impression.
The denture is made in dental laboratory.

Manufacturing of dentures

The denture is made without any impression

This is direct method

Direct method does not require impression

Manufacturing of dentures

Direct method

No impression

The model of the denture is made directly in the mouth (of special wax or resin)

For some cases only

CAD CAM method

- The denture or its part is made using special devices.

The treated area is scanned directly in oral cavity or on a model (SCANNER)

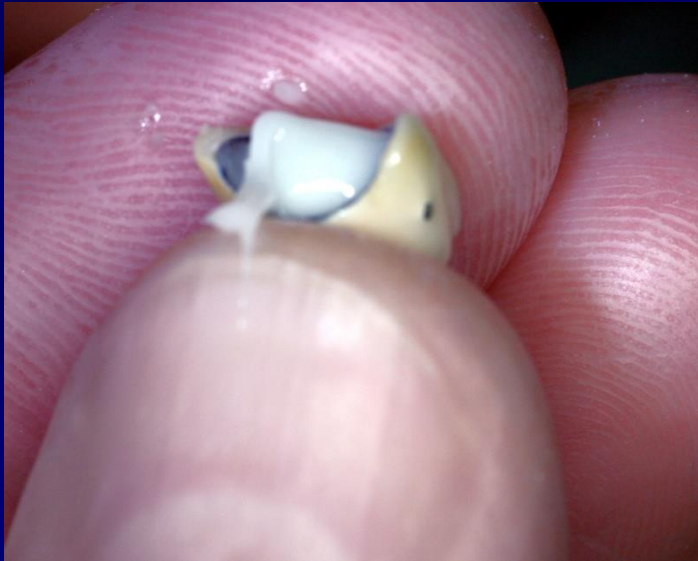
The denture is planned in computer

The denture (or its part) is made by computer assisted procedure – cutting or sintering (SPECIAL DEVICE – MILLING MACHINE OR SINTERING MACHINE)

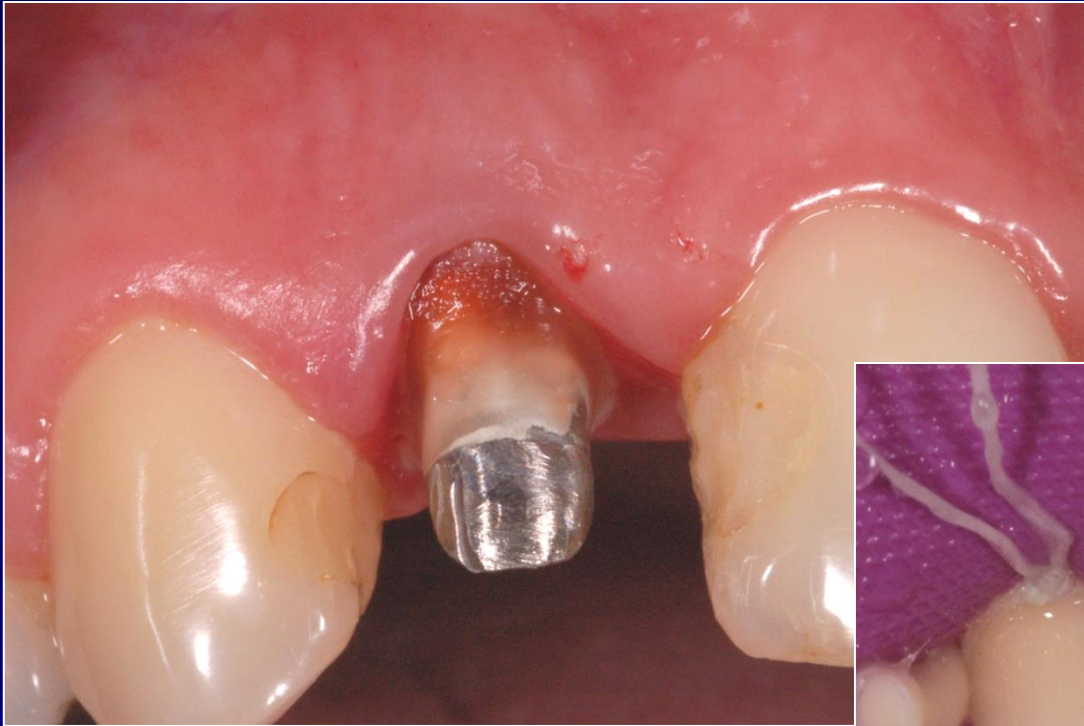
Inlays



Crown and its cementation



Root canal inlay and crown



Bridge



Removable partial dentures, complete dentures

