Prosthetics I.
Completed material with feedback

Rehabilitation of the masticatory apparatus

Damaged teeth

– reconstruction of the crown

Missing teeth

- appropriate prothesis (denture)

Prothesis

- Individually made, situation in patients is different.
- 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

Prothesis (denture) – the goal

Rehabilitation of:

- Function
- Comfort
- Aesthetics
- Fonation

Fixed dentures

- Cemented on the teeth – crowns, bridges, inlays

Inlay – reconstruction of a part of damaged tooth

Crown – reconstruction of anatomic form of the whole tooth

Bridge- replacement of missing tooth/teeth

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) – fabrication of denture. Operations in dental office and in dental lab.

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 regitration - wax

Manufactoring of dentures

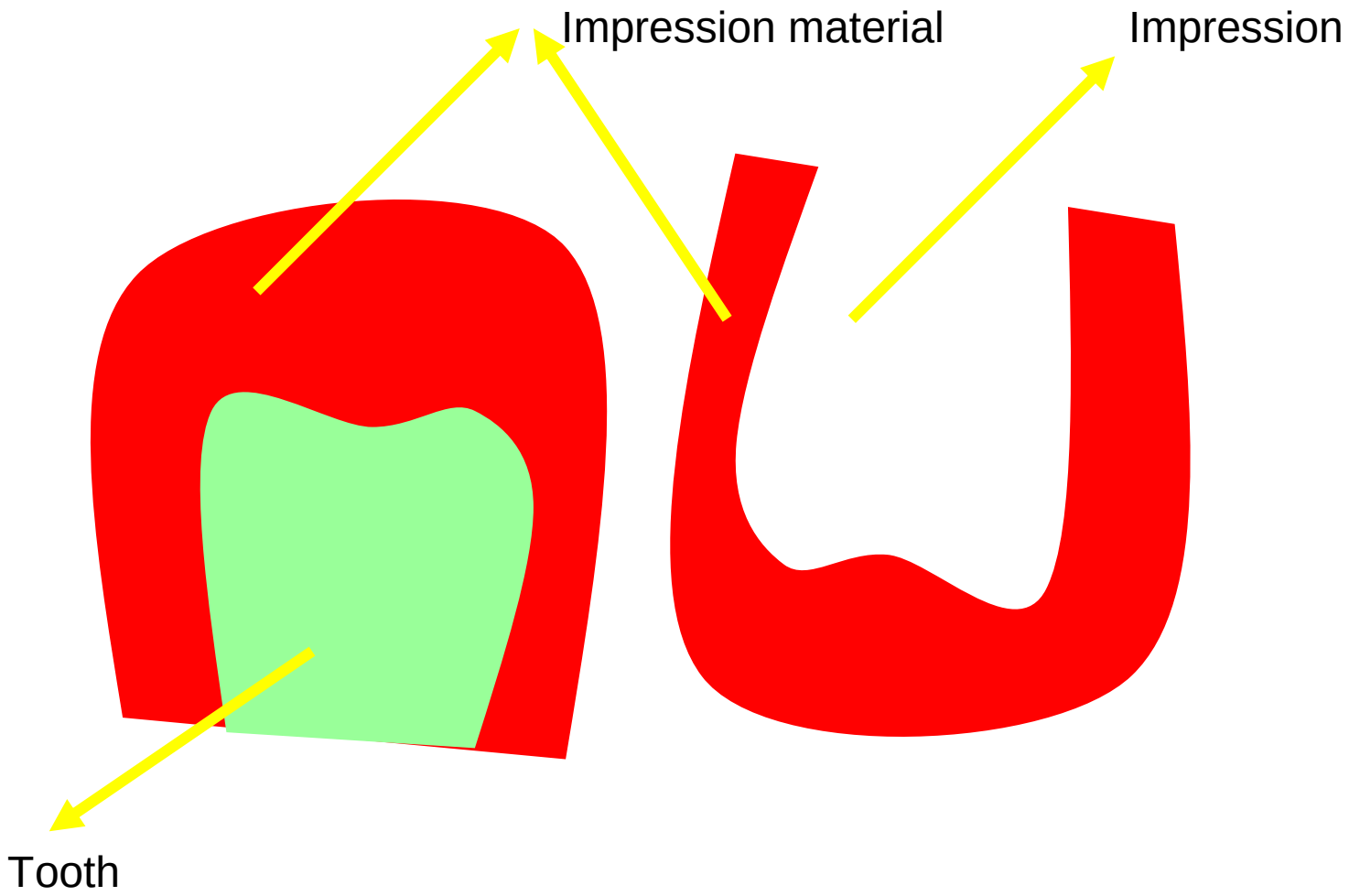
- The denture (not the denture itself but the model of the denture) is produced on the working model.
- The model of the denture is made of the carving wax.
- The wax is replaced by the main (base) material.

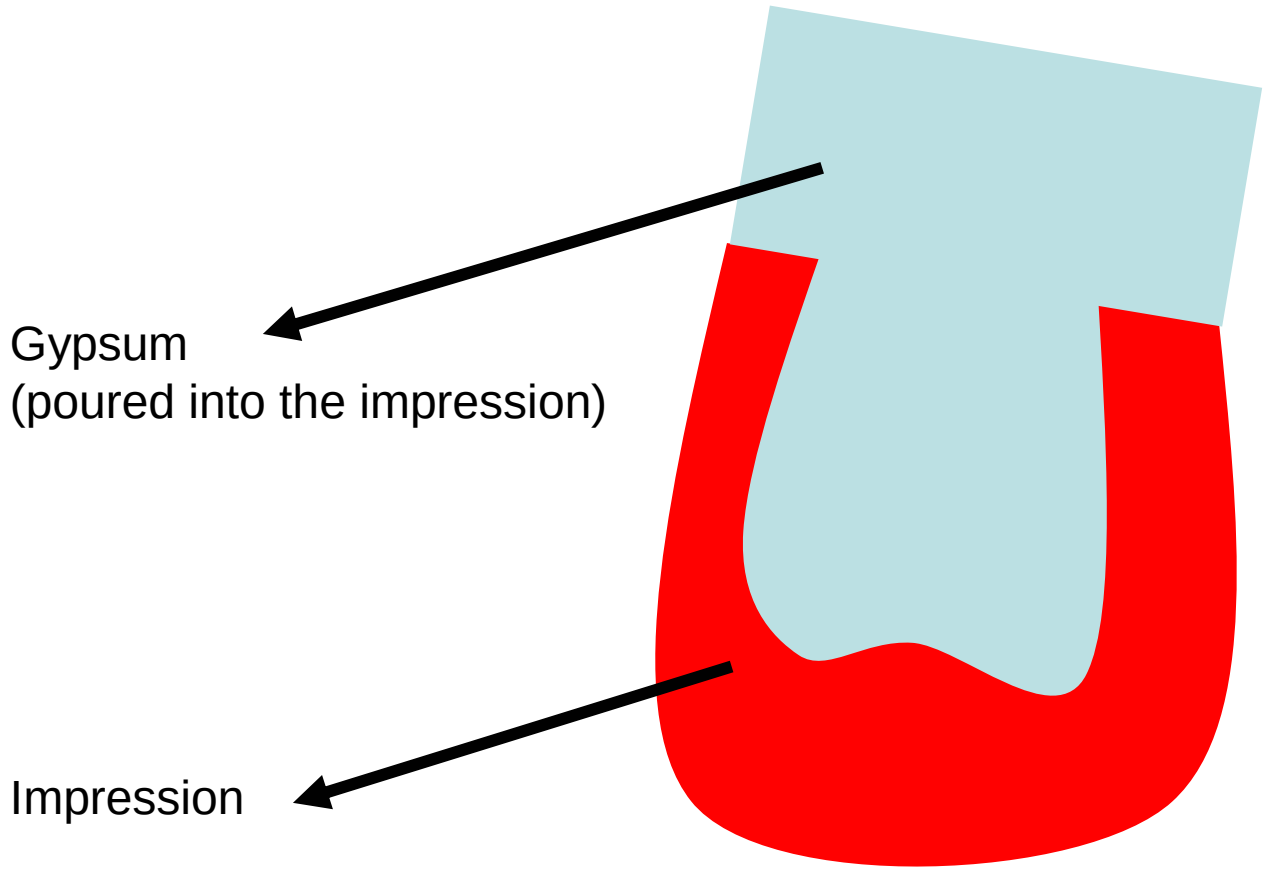
Fabrication of dentures

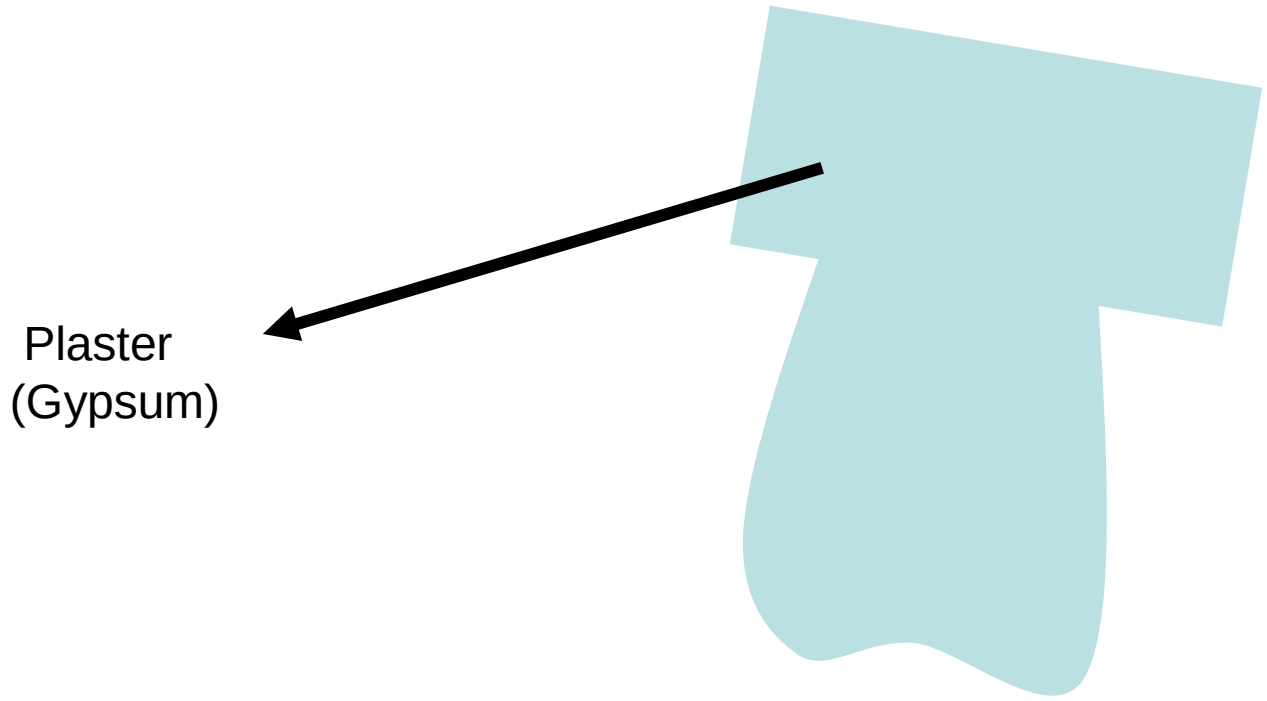
The model (wax) of the denture is invested

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

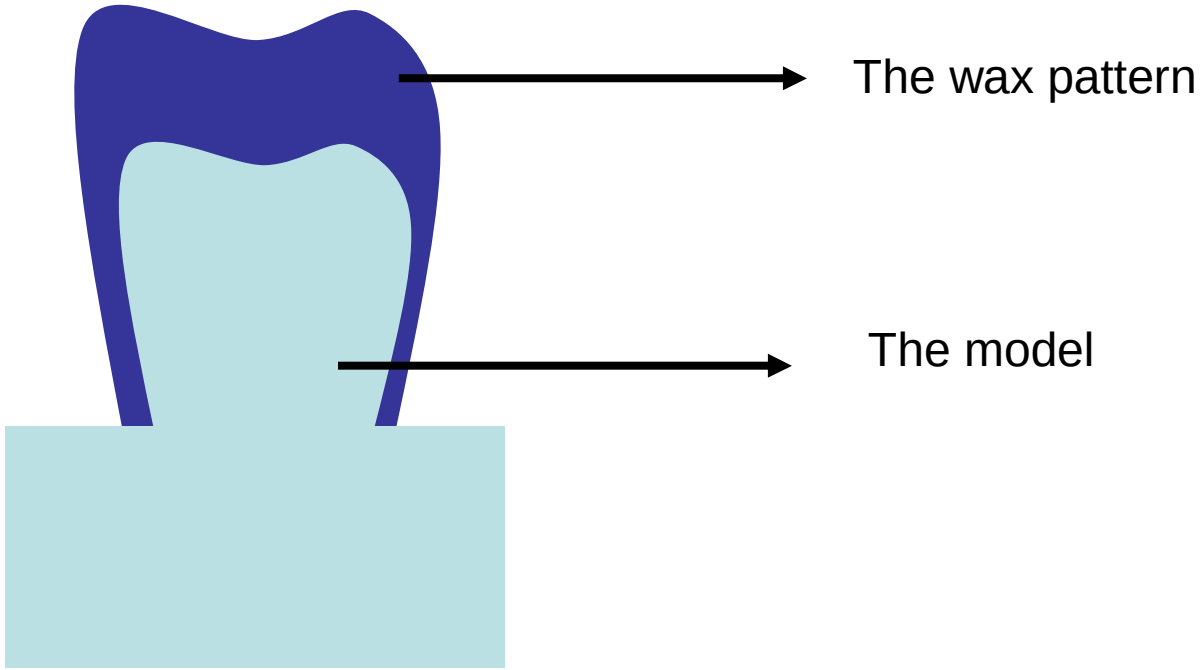
Wax removal:
The wax is burned out (for metal alloys)
or removed by hot water (for polymers – acrylic part of dentures)

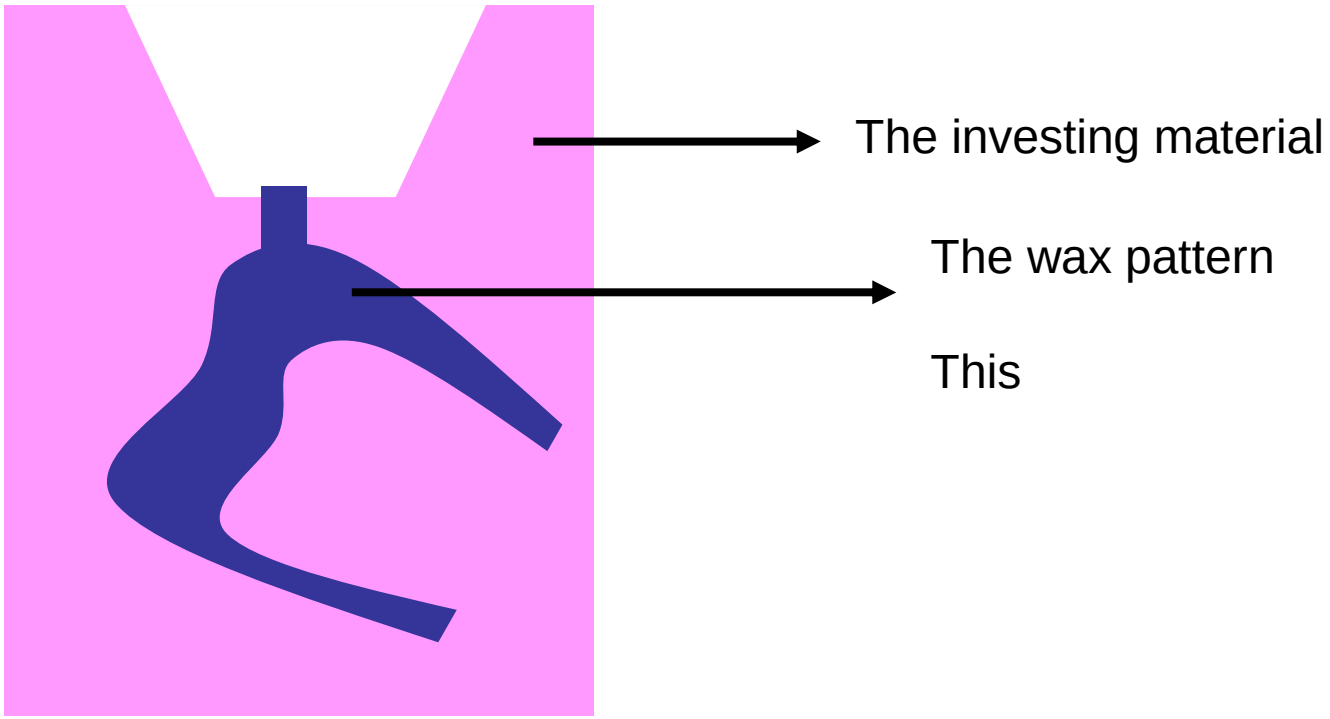

Impression material
Impression
Tooth

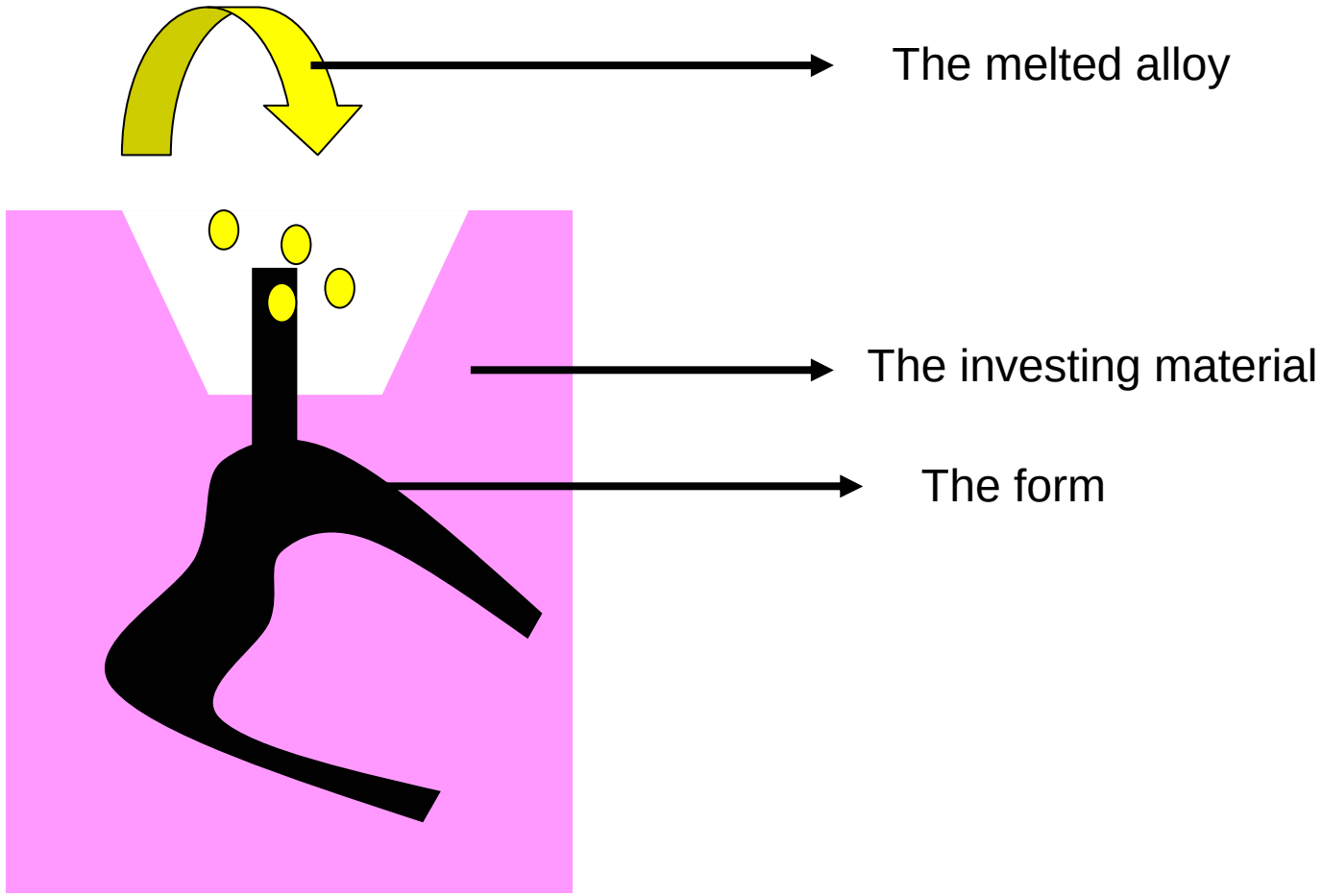

Gypsum
(poured into the impression)
Impression

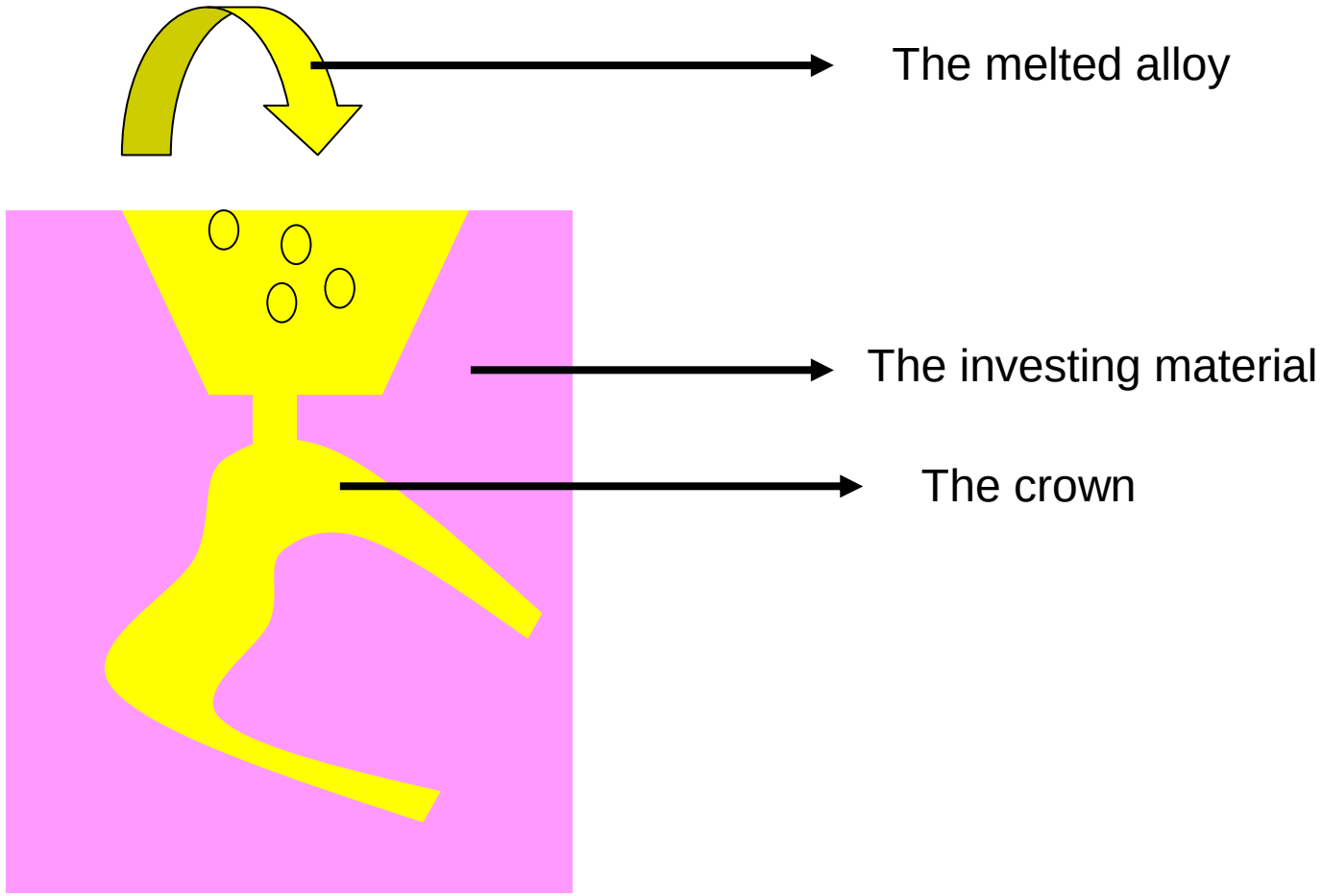


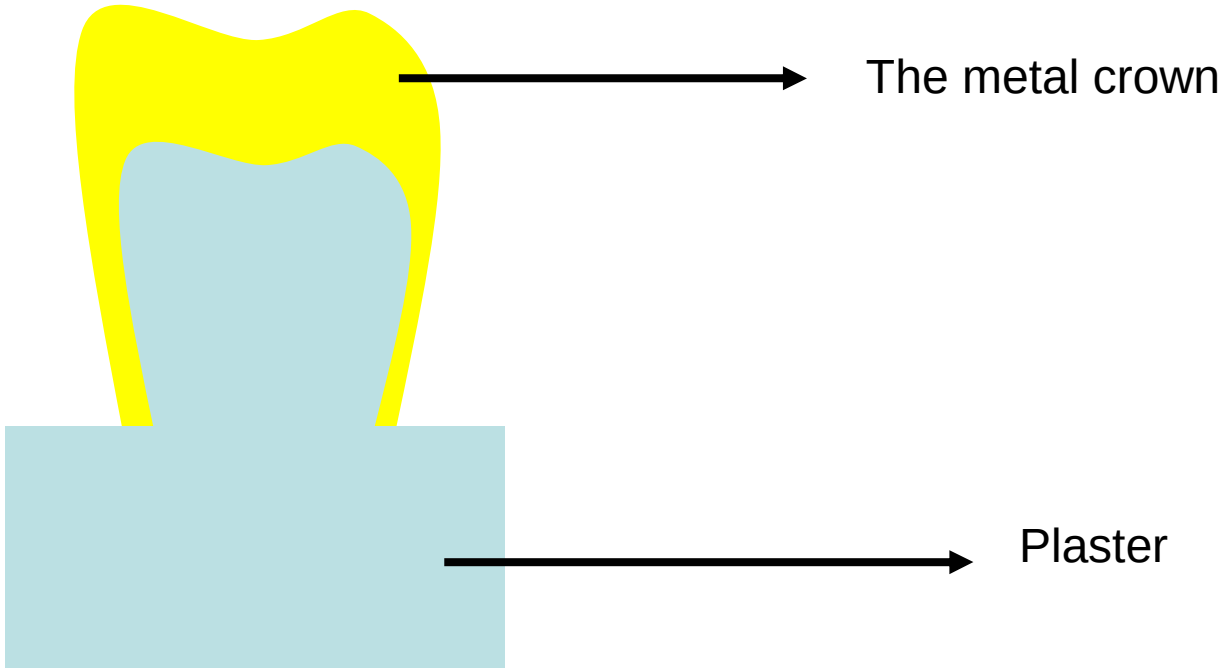
This is a model


The wax pattern
The model


The investing material
The wax pattern
This


The melted alloy
The investing material
The form


The melted alloy
The investing material
The crown


The metal crown
Plaster

Manufacturing of dentures

The method described above = indirect Method (impression, model, pattern, denture)

Manufacturing of dentures

Direct method

(Without impression, the pattern is formed directly in mouth, the fabrication takes place in a dental lab)

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, relationhip 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 impoprtant teeth –canines, premolars

Classification of defects of dentition acc.to 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 of dentition acc.to Voldřich

II. Class

Reduced dental arch, thenlast tooth is the second molar.

With gaps

Without gaps

Bilateral

Unilateral

Classification of defects of dentition acc.to Voldřich

III. Class

Individual teeth or small groups of teeth

Classification of defects of dentition acc.to Voldřich

IV. Class

Edentulous dental arch

Classification of dentures

Class I.

Dentures with dental transfer of masticatory Forces

Class II.

Dentures with combined transfer of masticatory forces

Classification of dentures

Class III.
Dentures with gingival (mucosal) transfer of masticatory forces, sometimes the transfer can be combined.

Class IV. – gingival (mucosal) transfer of masticatory forces.

Classification of the pilots (abutment teeth)

I. Class pilots

Canines

Molars (1st, 2nd)

Sometimes 3rd molars with excellent biological factor

Classification of pilots (abutment teeth)

II. nd class pilots

Incisors - maxillary incisors, premolars

All pilots of class I.with worse biological factor

Classification of pilots (abutment teeth)

Pilots III. class

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

Biological factor

Comprehension of properties which influences the quality of teeth.

Biological factor

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

Way of the transfer of masticatory forces

- Tooth (fixed dentures, removable dentures class I.)
- Tooth and oral mucosa (removable dentures class II, or some cases removable dentures class III.)
- Oral mucosa (most class III. removable dentures, complete denture)

Control questions

What are the goals of the prosthetic treatment?

What is a biological factors?

What class acc. to Voldřich is a dentition with gaps?

Control questions

What class acc. to Voldřich is a reduced dental arch?

What defects are the class III?

Which way of the transfer of masticatory forces is in comlpete dentures?

Control questions

Describe pilots I., II. III. Class

What is the biological factor?

Describe the principle of indirect fabrication of denture (and direct fabrication).

Control questions

What is the method of lost wax?

What should be taken in account during the planning of the prosthetic treatment?