Poltava State Medical University
Department of propaedeutics of orthopedic stomatology

Basic manufacturing technologies of fixed and removable dental prostheses

Lecturer: Yulia Leonidivna Korobeynikova

Plan

1. Types of fixed and removable prostheses.
2. Classification of fixed and removable prostheses.
3. Positive and negative properties of immovables prostheses
4. Technological stages of manufacturing fixed prostheses.
5. Positive and negative properties of removable prostheses.
6. Technological stages of manufacturing removable prostheses.
7. Basic and auxiliary materials for production fixed and removable prostheses.

• Permanent prosthetics" implies that all
elements are installed in the patient's oral cavity on
long term and do not require regular removal of them for
care
• Types of dentures
• Dentures are removable and non-removable.
• Fixed dentures are fixed by the doctor on the teeth
long term They are metal (steel, gold, platinum, etc.), combined
(for example, metal and plastic on the face of crowns and
teeth), plastic, ceramic and metal-ceramic.
It can be single crowns and artificial teeth or
bridge-like prostheses that are attached to the teeth with the help
of
crowns All of them differ primarily in aesthetics
properties and price.

Fixed dentures restore chewing function better than removable ones, because they have a greater anatomical and physiological correspondence with a smaller one
occupied volume. This causes a better compliance of chewing gum surfaces of the jaws, a better support function, which is primarily necessary for
own teeth

• Fixed dentures are fixed on the teeth for a long time. This is - single crowns or bridge-like prostheses (multiple crowns), which the doctor
fixes on the teeth, which must be turned to a certain shape.

There is an opinion that
with fixed dentures, the teeth must be depulped,
that is, to remove the nerves from them, but modern technologies do not allow it
depulp the teeth For the period of time while the crown will be made
or a bridge prosthesis, temporary crowns are fixed on the teeth.

- Metal ceramics
- The most common orthopedic construction is metal ceramics.

The frame of the metal-ceramic prosthesis is made of chrome-cobalt alloy Outside, metal ceramics are covered with a strong and highly aesthetic coating
ceramics A more expensive alloy with content can be used as a frame gold and platinum - the so-called "ceramics on gold", which, however, is not
differs in properties from chrome-cobalt.

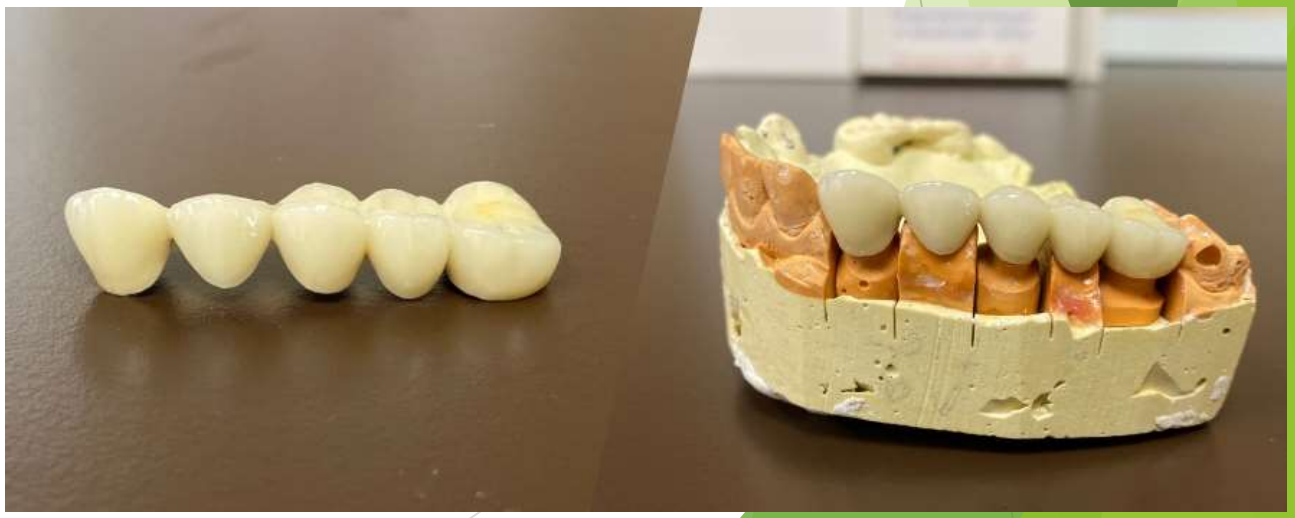
Ordinary metal-free ceramics along with metal ceramics are active the technology of manufacturing metal-free ceramics is used (category
VIP class). Metal-free ceramics are characterized by maximum aesthetics
preservation of high functional properties necessary for implementation of chewing and other loads. The main difference metal-free ceramics have a "living shine", as it is practically not on the outside
differ from living teeth. This happens as a result of the fact that this kind of fixed
prostheses are made on high-tech and expensive equipment.
In some cases, metal-free ceramic crowns are recommended install on tabs made of the same material.

There are the following types of permanent orthopedics prostheses:

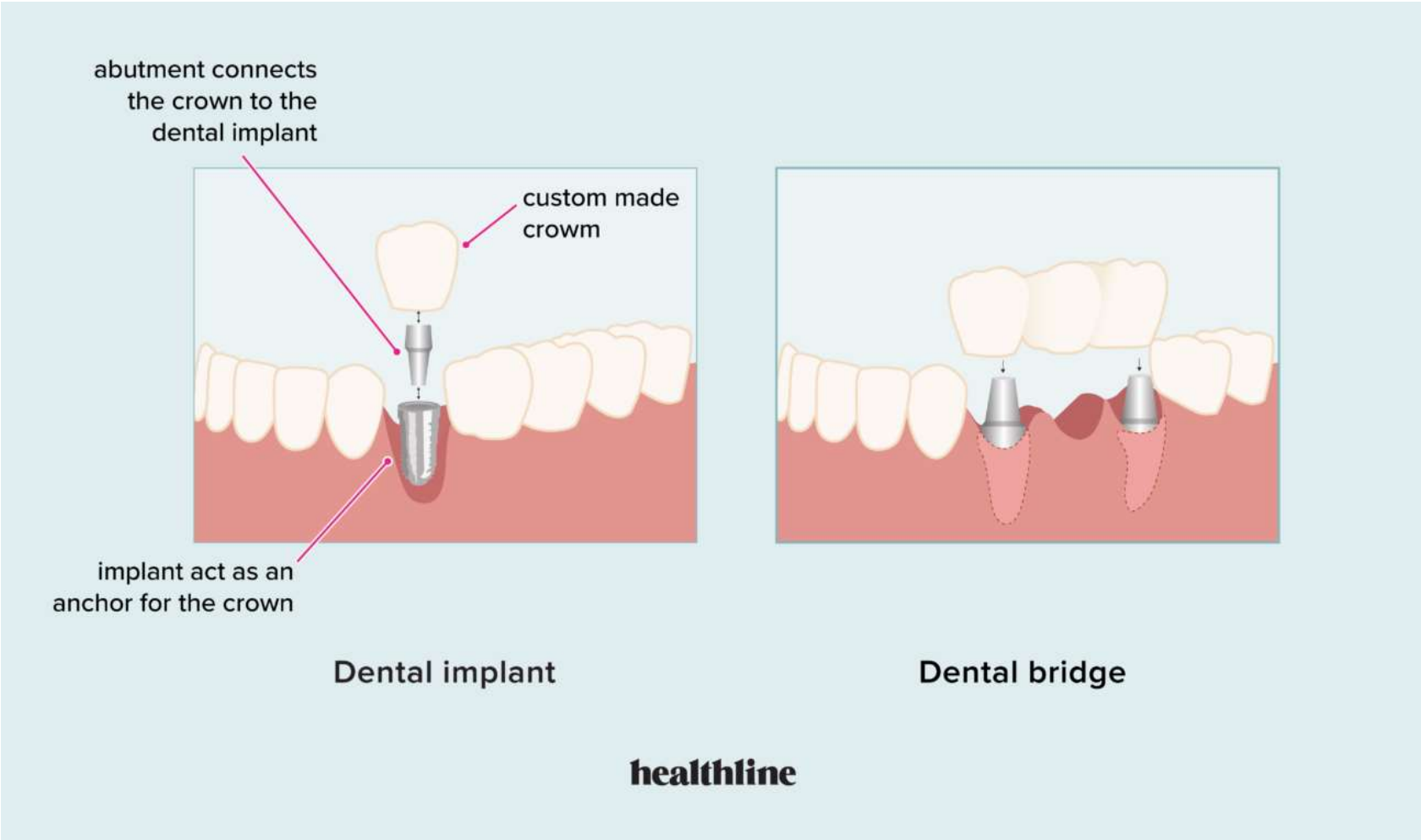
• 1. Bridge-like prostheses consisting of crowns, which are fixed on the preserved adjacent teeth, and of the intermediate part, which closes the defect in place missing tooth When chewing the load evenly distributed throughout the structure. Prostheses of this type have several varieties: solid metal (the simplest and most affordable), with stamped metal crowns with combined body, metal-ceramic and metal-plastic, plastic, adhesive (fixed to adjacent teeth special glue)

Bridge

Fixed denture



• Prosthetics on implants - in the bone tissue of the jaw a titanium root is implanted, on which the crown is fixed plastics or metal ceramics


abutment connects the crown to the dental implant
custom made crowm
implant act as an anchor for the crown
Dental implant
Dental bridge
healthline

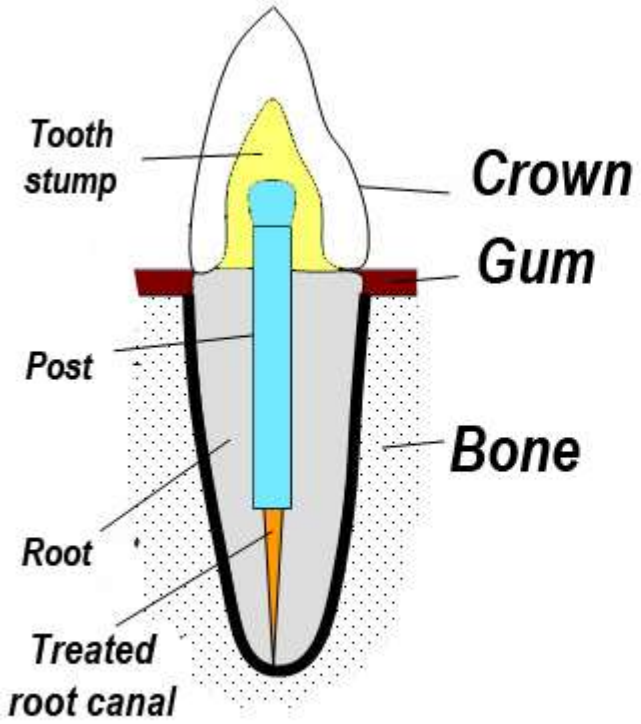
Single crowns - an option when the outer part of the tooth is destroyed, but the root retained a structure suitable for orthodontic attachment structures.

Veneers are ceramic plates attached to the front surface tooth

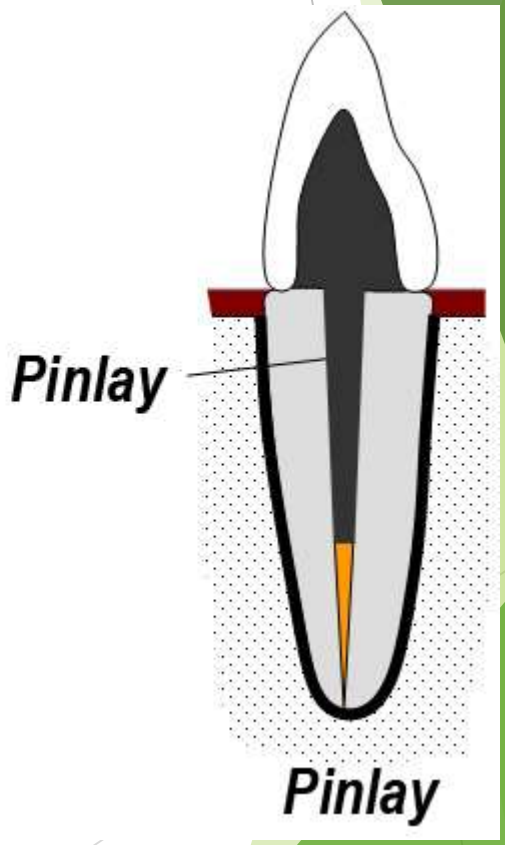
Tabs
This technology is called -
microprosthesis using tabs. When making a tab with
high-strength metal-free ceramics, it will not differ externally from
surrounding tissues of the tooth Ceramics have similar physical properties
with the tissues of living teeth, so it is chosen by even the most demanding people
Patients

Pin constructions.
Cases of complete absence of a tooth crown are not uncommon
as a result of injury or carious destruction, breakage during removal
bridge prosthesis. Using these roots
adjacent intact teeth may not be included in the design
A pin tooth is a permanent prosthesis that completely replaces it
the crown of a natural tooth

Pin constructions

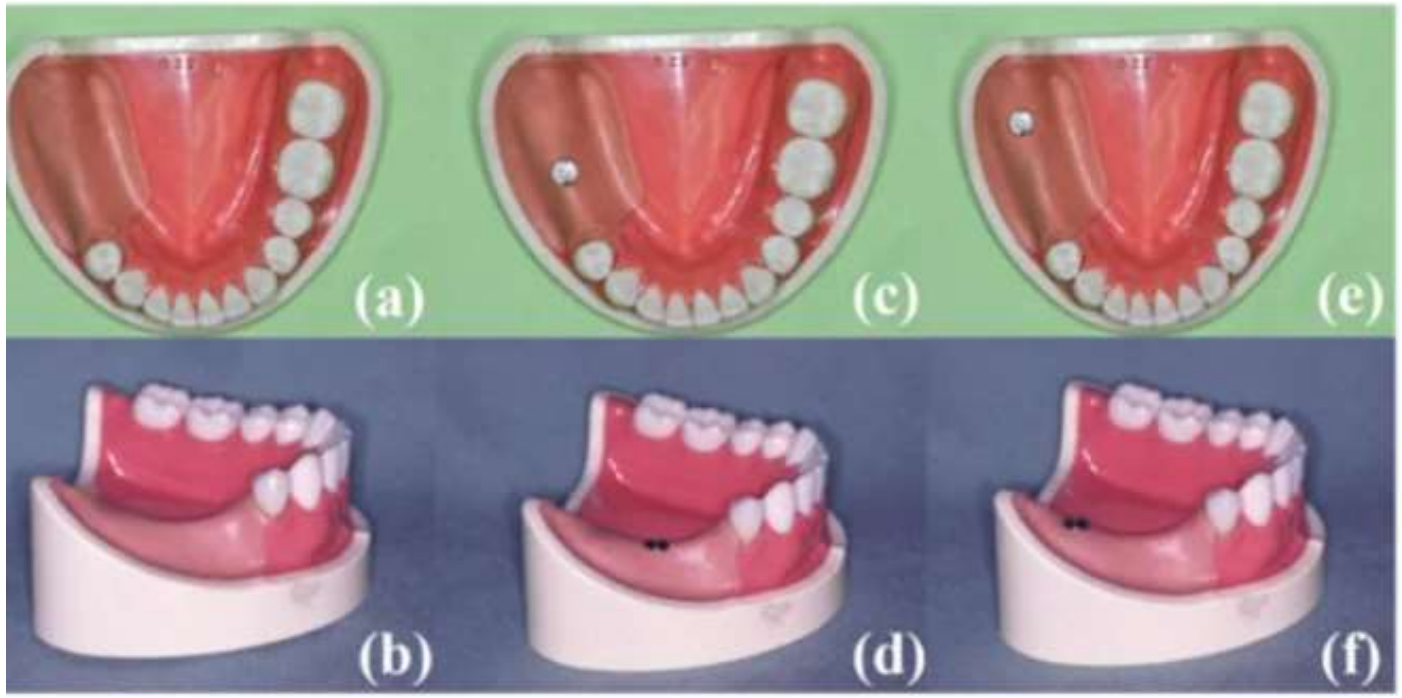


Construction of a tooth stump



• Removable prostheses can be divided into several groups and subgroups:
Complete removable plastic lamellar prostheses;

• Partial removable prostheses: plastic lamellar prostheses,
plastic lamellar immediate prostheses, buckled
prostheses, removable sectors or segments of dental rows;



Conditionally removable prostheses.

• Plate prostheses are made entirely of plastic. Due to this, the prosthesis fairly light, relatively easy to make, relatively cheap, and also easily transformed if necessary. But his service life is limited, he occupies quite a lot of space in the oral cavity and rests completely on the gums. Truth, in cases of temporary dental prosthetics, such a prosthesis is simply irreplaceable.

• They are prescribed for the restoration of lost fragments of the dentition

The prostheses are given constructions rest with their base on the gingival surface and are held in the mouth with the help of clips (metal hooks) for the outermost supporting teeth to the defect.

Clammers of such prostheses are usually made of spring wire from stainless steel or precious metal. They cover the supporting tooth, reliably holding the prosthesis in the oral cavity while eating and talking. Holding clasp of the prosthesis, located near the very base of the tooth and usually covered by the lip,
therefore, they are practically invisible to others.

• Partial plastic prostheses can be made without holding clasps. IN in this case, visually inconspicuous structures - attachmen - are used for their fastening.

They may not be used in all cases, and only if certain conditions are met conditions

Locks (attachmen) are special fastening structures that consist of two main elements working together. One of elements of the lock is inside the artificial tooth or the base of the prosthesis.

The second element of the lock fastening is made with a crown or can be fixed on the preserved roots of teeth capable to keep a removable prosthesis for a long time.

• The option of attaching a removable prosthesis to attachments has a number of indisputable advantages advantages, both from the point of view of aesthetics and from the point of view of operational reliability.

Fastening locks (attachmen), used in the manufacture of removable prostheses, are produced in various technical variants.

Wire stapler (hook for retention) As a rule, such a prosthesis is often made of the most inexpensive -
acrylic sets (sets) of teeth in the occluder - primitive and
obsolete device.
After 2-3 months, there is an erosion of the chewing humps, then the body of the artificial tooth is worn away, which increases the load on the teeth, which
remained
Discomfort, pain in
mandibular joint, headaches.
• In modern clinics, artificial teeth in plate removable prostheses are not made of plastic, but of ceramics or composite. Instead an articulator is used for the occluder - a complex imitating device movements of the temporomandibular joint.

• Arch prostheses, as well as partial plastic prostheses, can to be attached to the teeth with staples and lock fasteners (attachmen).
But unlike plastic prostheses, in which they are used attachmen are somewhat limited by modification, in Arch prostheses can
apply locks simply with a fantastic technical solution that provides real versatility, comfort and
aesthetics in the possibilities of restoration of any areas of teeth.

Arch prosthesis on staples
This design is considered traditional - it is fixed
with the help of special clasp hooks, tight
cover the abutment tooth. Hooks are made specially for
each tooth and hold well on it, but at the same time
due to their elasticity, but do not cause damage to the enamel.
It is necessary to install braced prostheses on staplers
the presence of several stable supporting teeth in the mouth. Basic
the disadvantage of the structures on the staplers is the visibility of the fixings
elements (hooks) when talking or smiling.

Arch prosthesis on locks

• Fixation of the locking clasp prosthesis is very strong, and most of the chewing pressure is transferred to the supporting teeth, on which previously wearing special crowns. Such a construction differs in that it allows you to get rid of hooks and hide the fixing elements inside the crown and make the construction invisible to others.

• This type combines high strength and the ability to meet the highest aesthetic requirements. When installing locking arch prostheses ceramics based on zirconium oxide guarantees beautiful appearance of your new teeth

Production of a clasp prosthesis on locks
requires very high calculation accuracy and
modeling of all its elements, therefore
the cost of such structures is much higher,
a bugle knife on staples.
For this reason
this type of prostheses has not yet become widespread
dissemination.

Thank you for your attention