

Prosthodontics

Impression trays

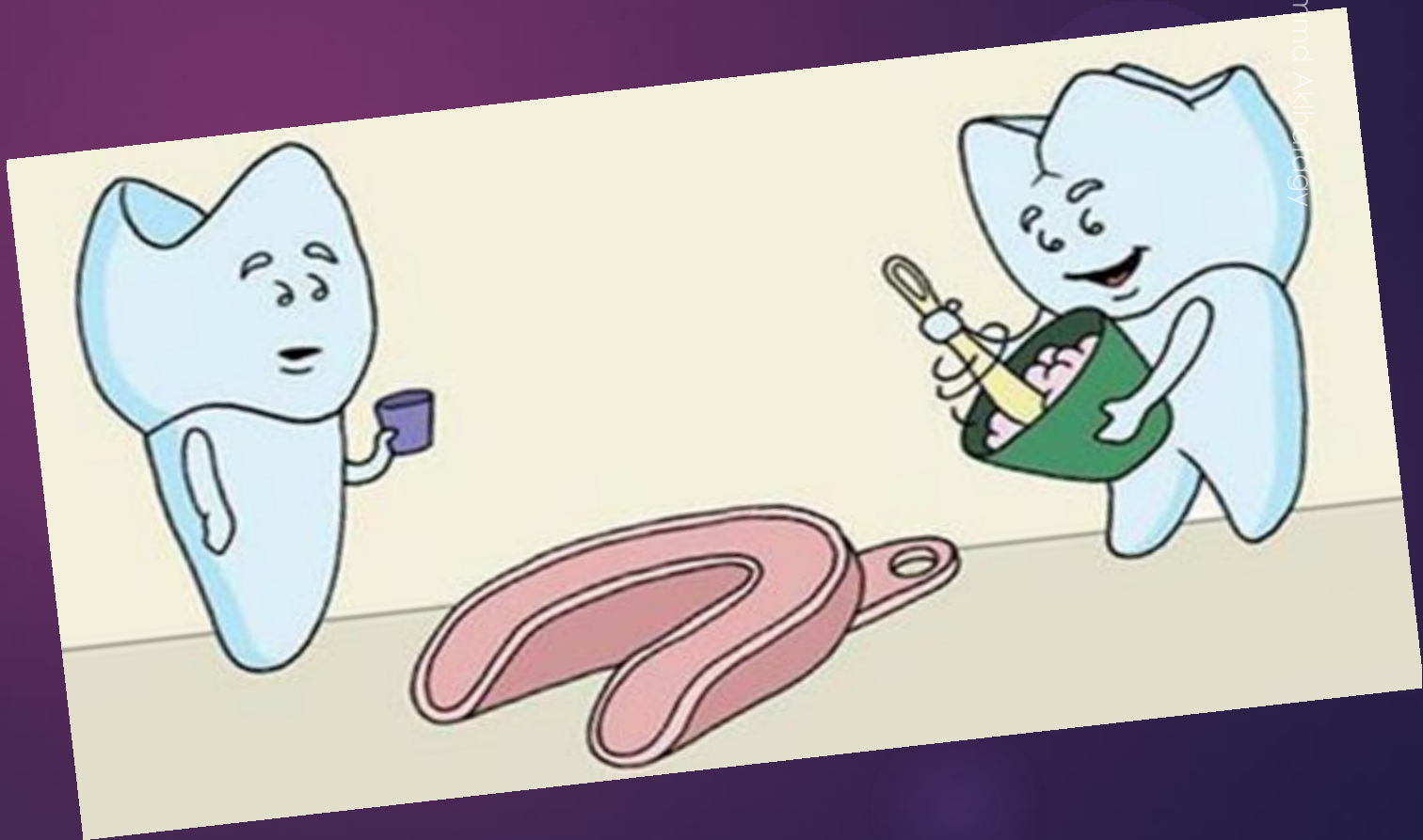
Prof. Dr. Mohammed Alkhatagy

This lec....

- ▶ What is the meaning of impression?
- ▶ What is the meaning of impression trays?
 - ▶ What are the types of impression trays?
 - ▶ What are the requirements of impression trays?
- ▶ What are the types of impression materials?
- ▶ What is the proper impression technique for completely edentulous arches?

Impression: it is the negative registration of oral structures obtained in one of the plastic or semi plastic impression materials, which is used to produce a positive replica of the structure to be used in production of a dental restoration.

Prof. Dr. M. Sharmila Akhila
10/21/2022





For successful complete denture treatment, an accurately recorded

- Primary impression,
- Border molding
and
- Final impression.



Primary impression



Impression tray: a device which is used to carry, confine and control impression material for making an impression.

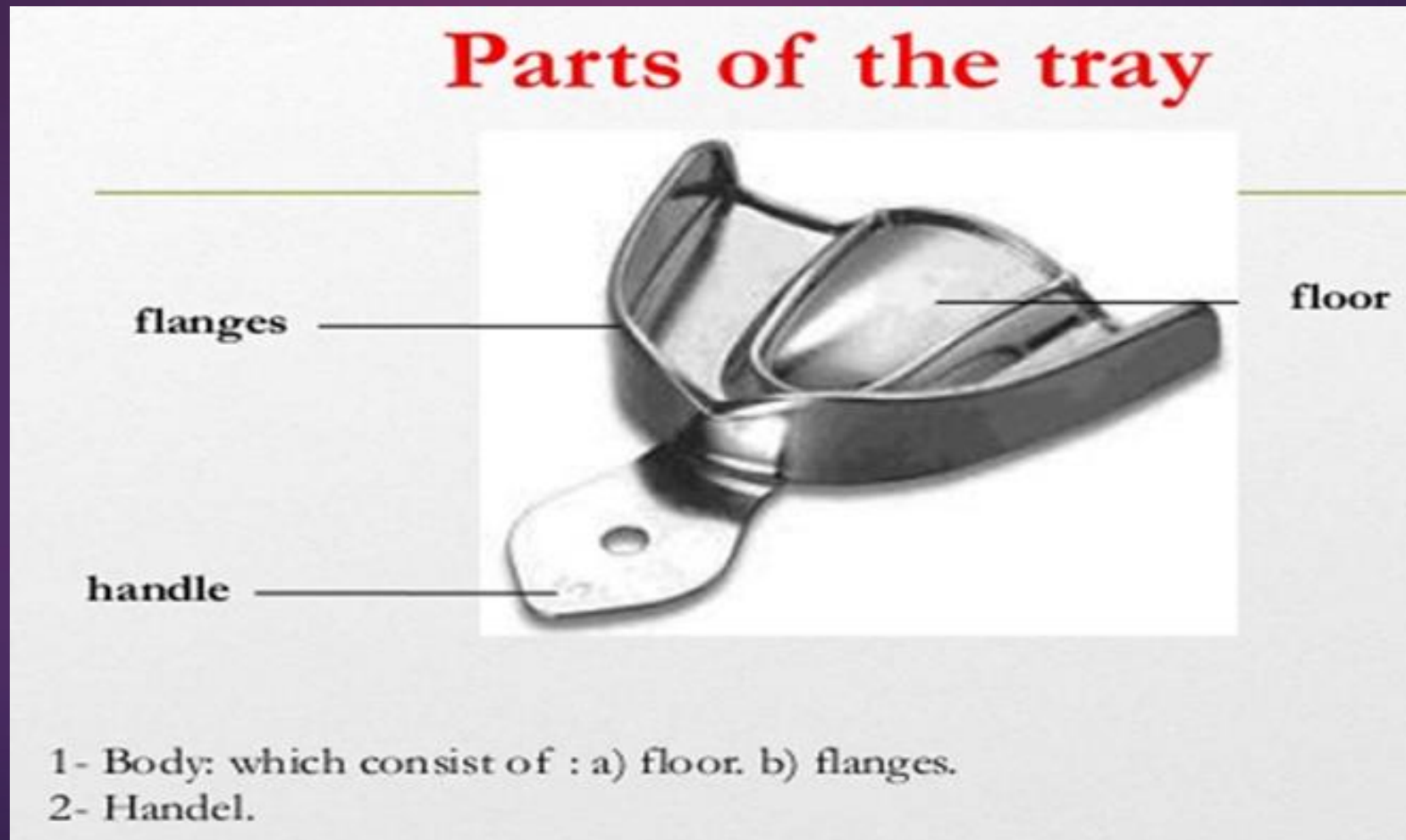
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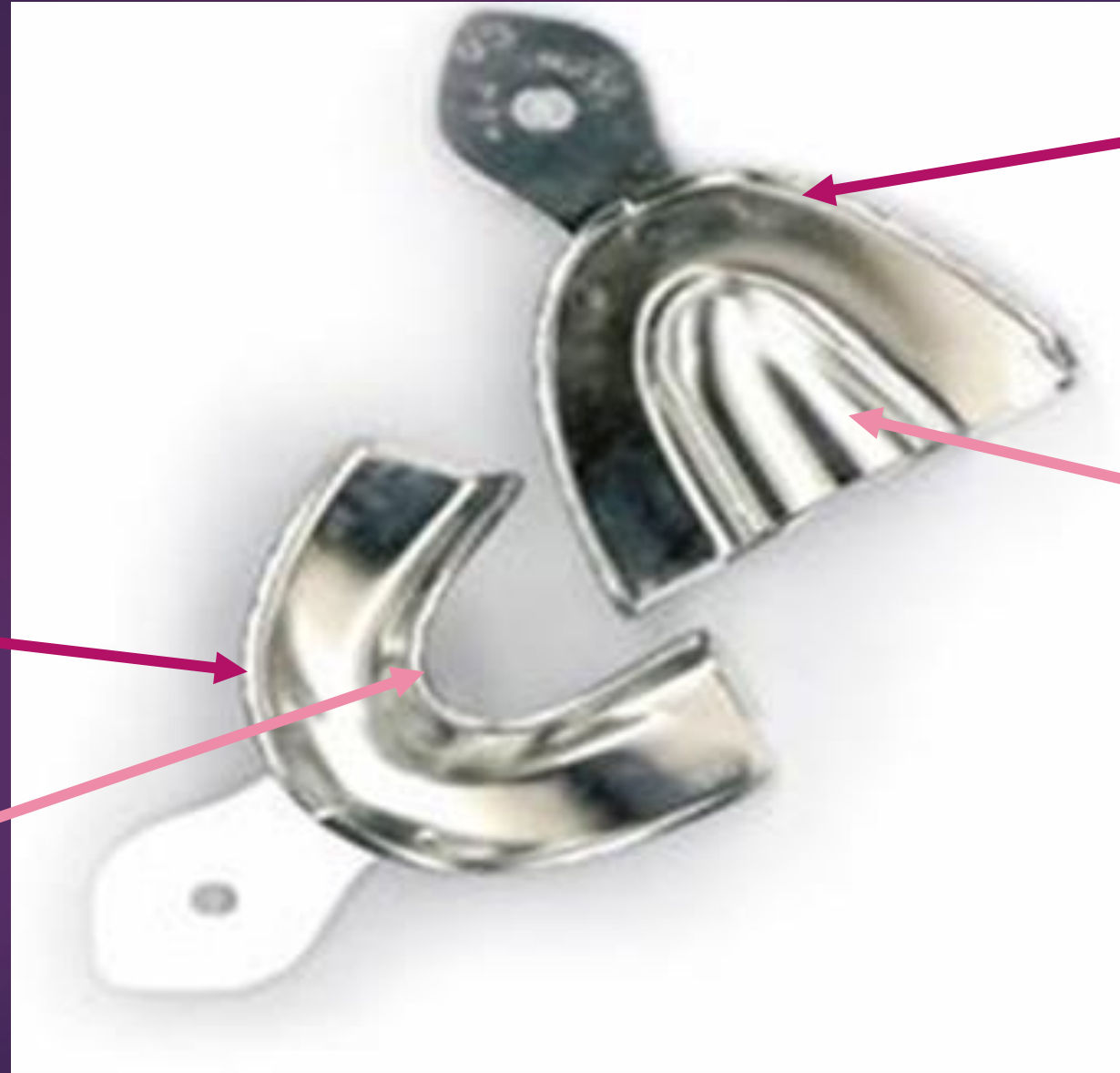
- To support the impression material in planned contact with oral tissues.
- To support the impression material when removed from the mouth so that a cast can be poured.



Parts of the impression tray:

Impression tray consists of two main parts:





Upper tray

vault

Lower tray

Lingual flange or
tongue space

Types of impression trays:

1- Stock tray.

For primary impression.



2- Special tray or individual tray or custom tray

For final impression.



Types of stock trays:

a- Dentulous tray: which have square cross section for patient with teeth.



b- Edentulous tray: have rounded cross section for patients without teeth.



According to impression material, stock tray can be classified into two types:

1- Perforated stock tray:

a- Perforated stock tray without rim lock



b- Perforated stock tray with rim lock (rim lock stock tray).

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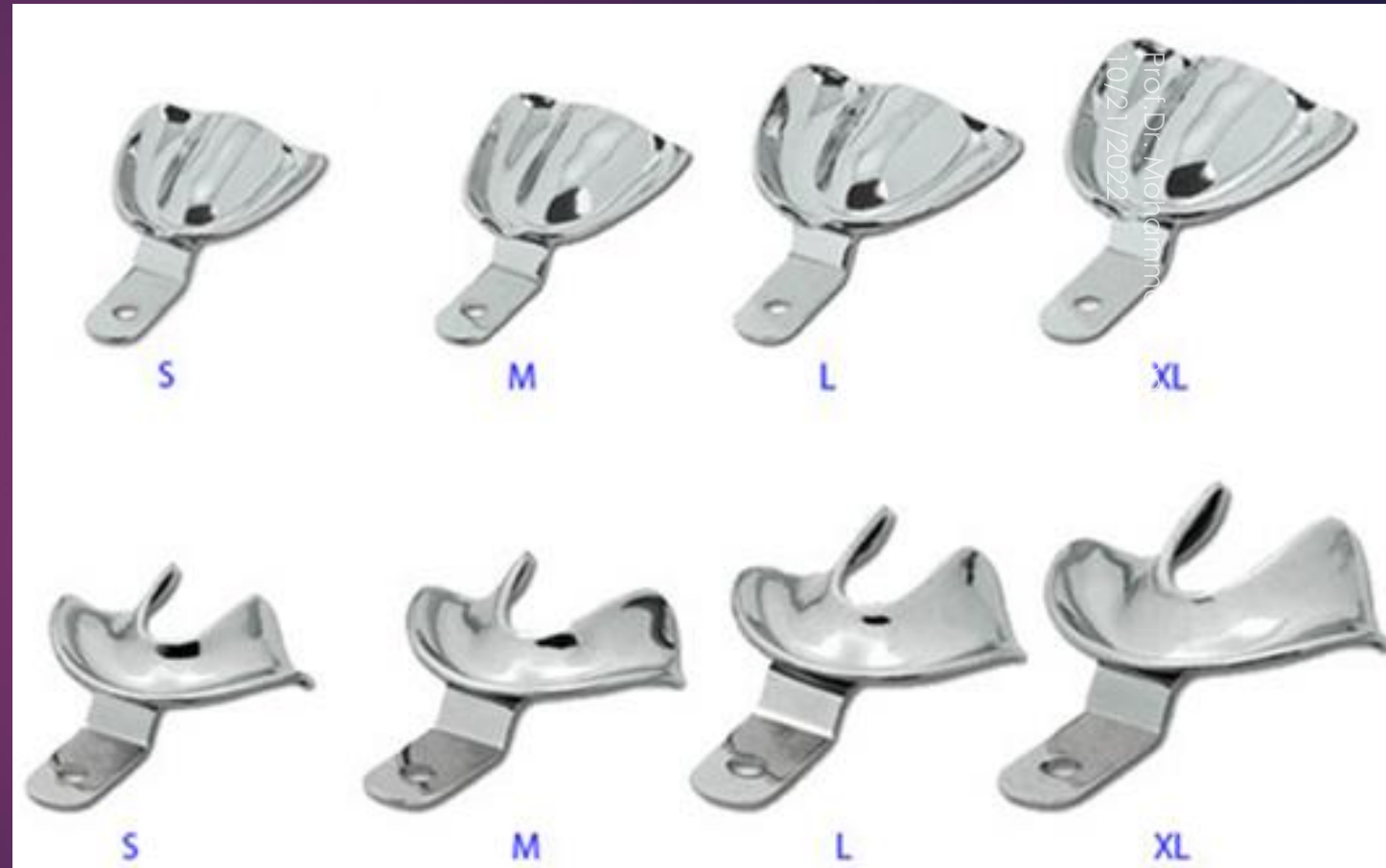
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Both types used with alginate impression material.

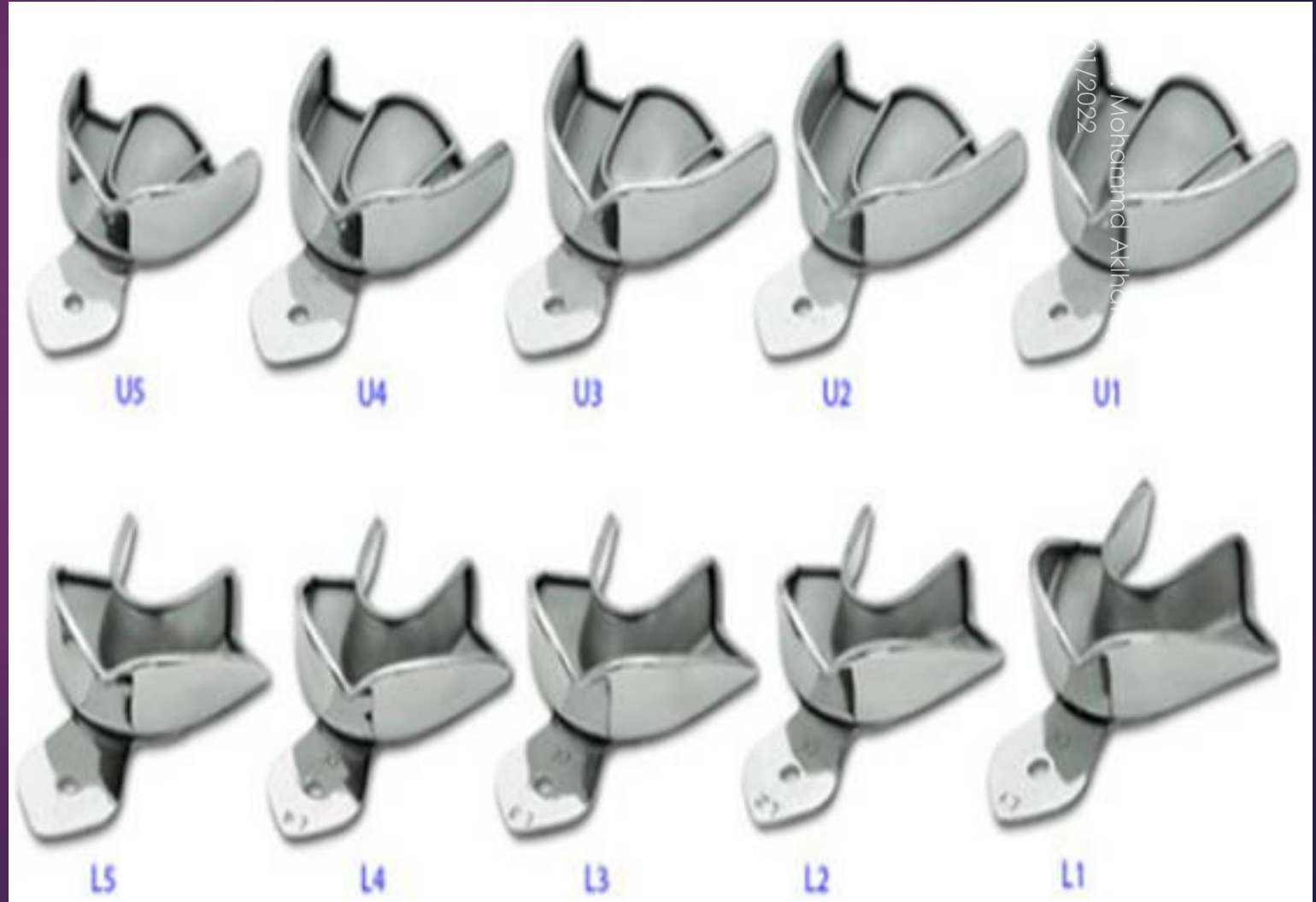
2- Non-perforated stock tray.

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a- Non-perforated stock tray without rim lock used with impression compound.



b- Non-perforated stock tray with rim lock used with alginate impression material.



Requirements of stock impression trays:

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- 1- Tray must be rigid. *Flexible trays cause distortion of the impression.*
- 2- Dimensional stability. *Tray should maintain its shape throughout the impression making.*
- 3- It should be smooth *to avoid injury to oral tissues.*
- 4- It should provide uniform space for impression material.
- 5- It should not distort the vestibular areas.

Factors effect in selection of stock tray:

1- The type of impression material used in the primary impression procedure. Ex, with **impression compound**, non-perforated tray are used because it will be stick on the tray.

And if **alginate material** used, perforated stock tray should be used.



Factors effect in selection of stock tray:

2- Size of the arch.



3- Form of the arch.

Arch form:

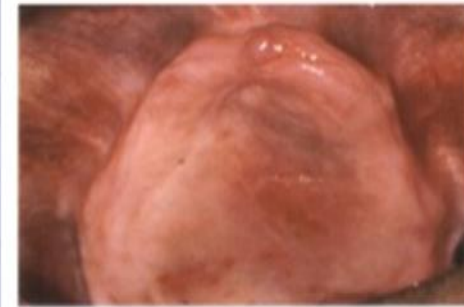
Generally, they are classified into:

1. Square
2. Tapering
3. Ovoid.

Square arch is the **best** form to prevent rotational movements.



A



B



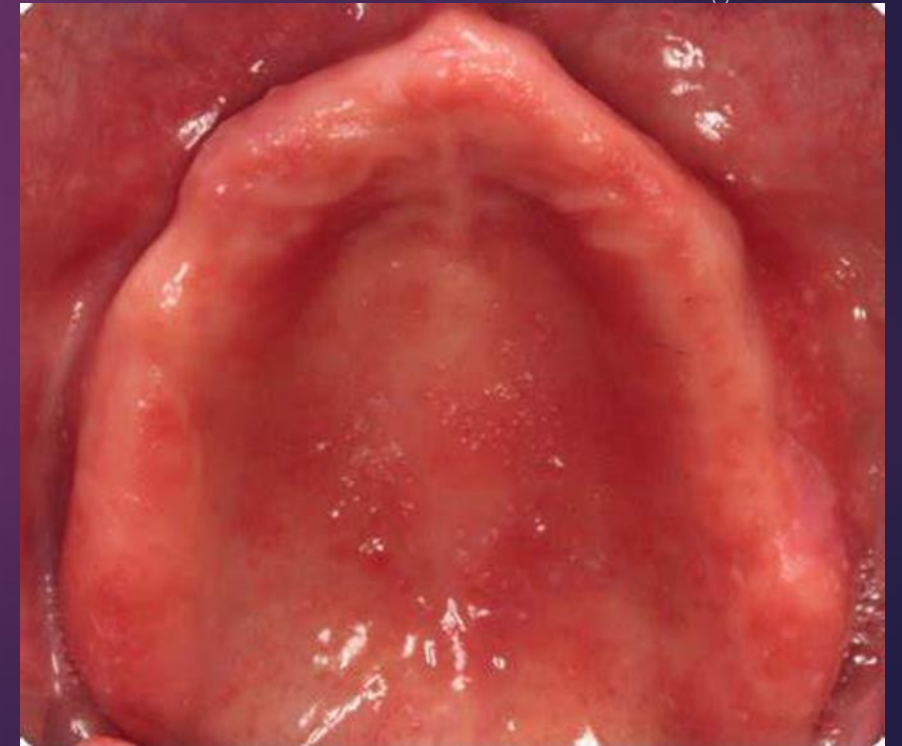
C

Fig. 4.5. The arch form is important in offsetting rotational movement of the denture base.

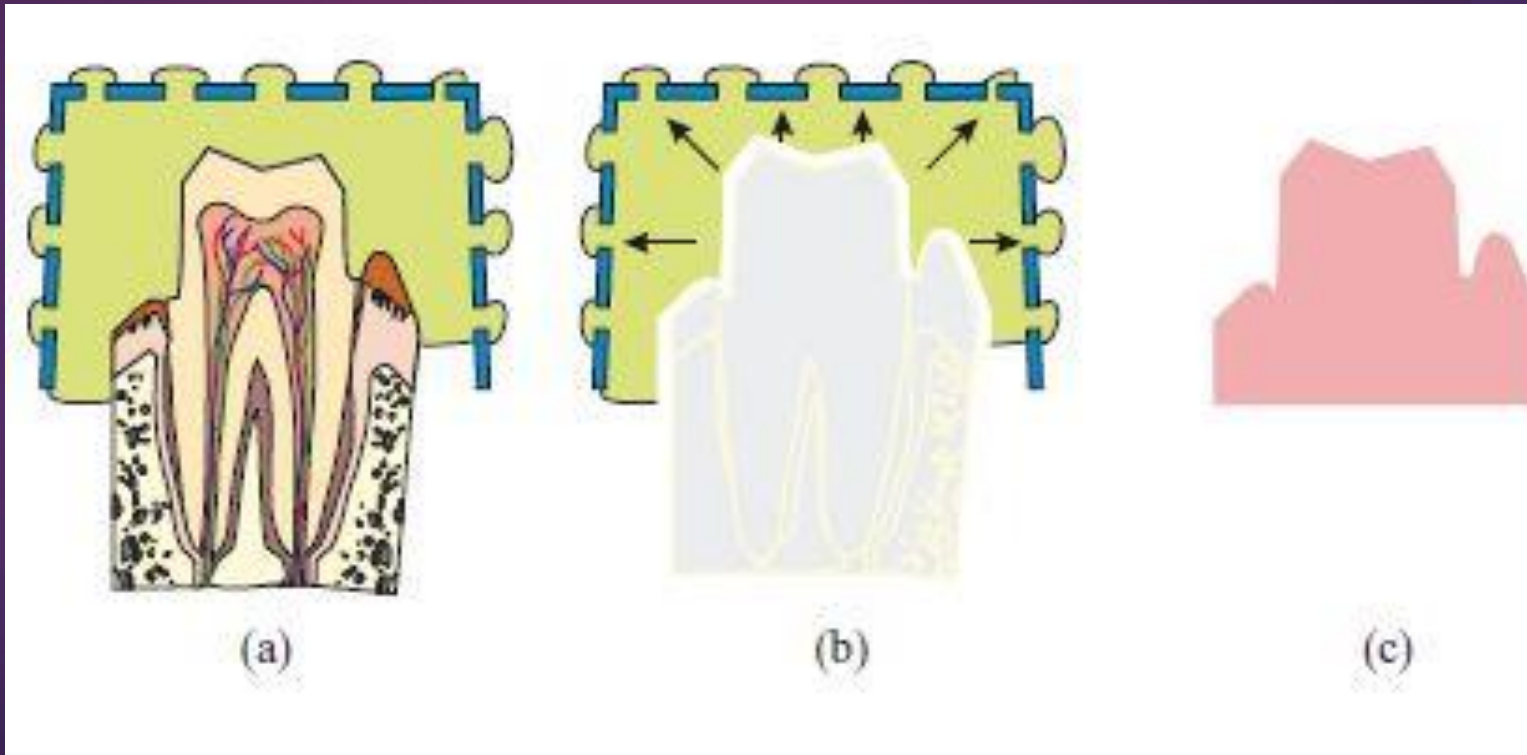
(A), Square arch form
(B), Tapering arch form
(C), Ovoid arch form

4- The stock tray must cover all the ***anatomical landmarks*** needed in complete denture and this is a most important point.

Such as ??????????



5- Stock tray should give a sufficient space to impression material in all direction (the stock tray should leave sufficient room or space for impression material 4-5 mm).



Thank you



Prosthodontics

PRIMARY IMPRESSION

Impression:

▶ A dental impression is a negative imprint of hard (teeth) and soft tissues in the mouth from which a positive reproduction (or cast) can be formed.



Impression:

► Complete denture impression: registration entire denture bearing, stabilizing and border seal areas of either the maxilla or the mandible present in the edentulous mouth.



Objectives of impression making:

Complete denture impression procedures must provide five objectives:

1- Esthetic.

2- Preservation of residual alveolar ridge and soft tissue

3- Support.

4- Stability.

5- Retention.



Retention = denture base + soft tissues.

Stability = denture base + bone.

Support = denture base + bone + soft tissue.



The impression for complete denture started by:
primary impression and end by: final impression.

- **Primary impression:** it is first impression taken from the patient with a stock tray and from which the study cast is produced by impression;



Purposes of doing primary impression:

a- For purpose of diagnosis.

b- For purpose of construction of special tray.



Materials used for making primary impression

- 1- Impression compound.
- 2- Alginate impression material.
- 3- Rubber base impression material (heavy body).



Procedure of primary impression:

- 1- Selection of stock tray according to type of impression material, size and form of arch.
- 2- When *impression compound* used, it is a thermoplastic impression material it need for heat to be soften, the temperature of water used for soften the material 55- 60 C°.
- 3- Uniform softening of the material then it is loaded in stock tray.
- 4- Insertion of the tray in the mouth.

Preliminary impression with impression compound.



Modelling compound.



Softened in water bath and kneaded.



Compound placed in the tray.

Primary cast (study model or diagnostic cast): a cast

formed from a primary impression for use in diagnosis or the fabrication of an impression tray.



Production of study cast:

The plaster mixed with water to be creamy consistency, then primary impression is poured to get the primary cast or study model which is the positive reproduction of the oral tissues.

When the plaster became hard, the cast is separated from the impression by the use of hot water (55- 60 C°).

When using very hot water, the impression compound will be sticky and it will be difficult to remove from the cast.

Common fault or error in the impression procedure:

- 1- Poor selection of stock tray.
- 2- Insufficient material loaded in the tray causes short flange.
- 3- Excessive material loaded in the tray this lead to thick border of the impression.
- 4- Insufficient pressure led to the same as when use insufficient material.



5- Excessive pressure led to the same as when use excess material.

6- In correct centralization of the tray.

7- In correct position of tray medio-lateraly this lead to shifting of the midline of the tray and the flange of tray appear on one side.

8- For the lower impression the tongue might be trapped under the lingual flange of stock tray and this lead to short lingual flange.



Thank you

