

# A REVIEW ON IMPRESSION TRAYS

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# OUTLINE

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- FEATURES
- TYPES OF IMPRESSION TRAYS
- INDICATIONS(USES)
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# INTRODUCTION

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- Impression tray is a receptacle into which suitable impression material is placed to make a negative likeness.
- Their shapes conform to the jaw to be represented (mandible or maxilla)
- They are usually fabricated from different materials like shellac, metals, acrylic etc.

# FEATURES

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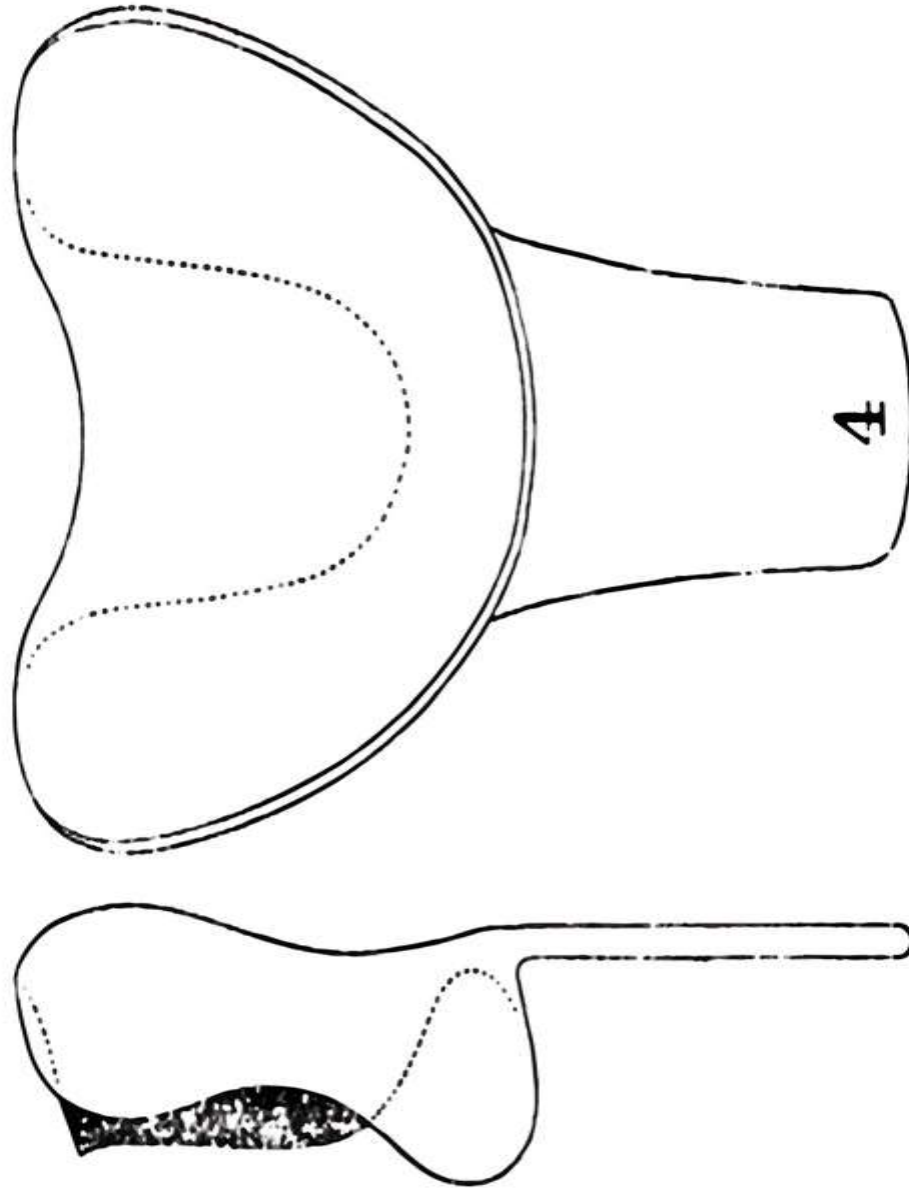
- **HANDLE:** for grasp during placement and removal of tray
- **BODY;** holds the impression material
- **PERFORATIONS:** it allows for;
  - ✓ better retention of the material
  - ✓ prevention of excess pressure
  - ✓ allow excess materials to flow out
  - ✓ for uniform distribution of the impression material.



# BRIEF HISTORY

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- In 1820, the French dentist C.F. Delabarre introduced what is believed to be the first impression tray.
- According to him, "softened wax is to be placed in a small track, or semi-elliptical cast of white metal or silver, on the front side of which a haft or handle is mounted. The walls of this instrument provide resistance and keep the pressure of the cheeks away from the wax. After the cast has been pressed on firmly, it is carefully pulled off in the direction of the teeth and immersed in cold water. Then the excess is removed with a spring blade, and it is replaced briefly once more."





# BRIEF HISTORY CONT'D

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- In the early 20th century, stock impression trays were fabricated of various materials and available in various sizes. They were made of block or alloyed tin, cased and pressed aluminum, German silver and porcelain.
- Porcelain was the cleanest material, but it couldn't be modified, and it broke easily.
- Tin was popular because it could be bent and cut easily.
- Besides the above-mentioned stock trays, some dentists advocated using custom trays.



# BRIEF HISTORY

## CONT'D

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- In recent times, evolution of a variety in dental impression materials have been accompanied closely by advancement in the impression trays used for taking the impression.
- This has helped to make the dentist's work easier over time

# TYPES OF IMPRESSION TRAYS

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- The two basic types of trays are:
  - ◉ Stock trays
  - ◉ Custom trays
- With either type, the tray used for the mandibular impression differs from the maxillary tray because it allows free tongue movement.

# TYPES OF IMPRESSION TRAYS

- STOCK TRAY
- CUSTOM/SPECIAL TRAY

# STOCK TRAY

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- Stock trays are so called because they are commercially fabricated in stock by companies in different sizes and shapes
- Stock trays are therefore used in taking the initial/first impression which is the diagnostic and primary impressions. However, the stock tray can be manipulated using impression compound and some other impression materials so as to use it take secondary impression.

# Stock tray cont'd

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- Depending on the type of impression needed and the procedure indicated, stock trays are further classified as;
- Edentulous
- Non edentulous
- Perforated
- Non perforated.

# Metallic stock tray

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# Stock tray cont'd

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- Stock tray is usually made of metal or plastic
- Metals such as stainless steel, aluminum are used to make the metallic stock trays
- The metallic stock trays are:
  - rigid
  - reusable
  - cost effective

# Stock tray cont'd

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- The plastic ones unlike the metallic stock trays are disposable. They are disposed after use per patient



# CUSTOM TRAY

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- Custom tray/special/individual tray is used to make secondary impression which is eventually used to make the working/master cast.
- It can be fabricated using shellac or acrylic resin

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- Proper impression is made when the impression material adhere firmly to the impression tray this is achieved by the presence of perforations on the impression tray .
  - Therefore impression trays are fabricated in such a way that its use will ensure accurate impression making

# Uses

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- Primary impression tray (stock tray ) is used for taking primary impression from which a primary cast is made
- A custom tray is fabricated from a primary cast and it is used for taking secondary impression from which a master cast is made
- A master cast is used in fabricating a complete denture .

# SECTIONAL CUSTOM TRAY

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- Fabricated customized sectional impression tray (secondary impression tray) are used to overcome the problem of restricted mouth opening.
- secondary impression tray which is fabricated according to the patients dentition ensures accurate impression making



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- Using the conventional impression trays for patients with microstomia is quite challenging.
  - fabricated custom sectional impression trays are used for these type of patients



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- Special trays are made from either acrylic (light or cold cured) or shellac (a thermoplastic material). They are constructed on the primary cast which helps with adaptation of the impression material and reduces the amount required. The resulting master cast is well detailed and allows accurate construction of the denture.

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- A "closed" special tray (i.e. no space between the cast and special tray) is required for:
    - Zinc oxide eugenol
    - Impression wax

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- A "spaced" special tray is needed for:
  - Alginate (space of 2mm)
  - Elastomeric impression materials (space of 3mm)
  - impression plasters (space of 1.5mm)

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- Impressions made by individual trays manufactured using CAD/RP has a uniform thickness, with an acceptable level of accuracy compared to those made through conventional processes

# INDICATIONS

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- Using the conventional impression trays for patients with microstomia is quite challenging.
- fabricated custom sectional impression trays are used for these type of patients



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- retention which is one of the major factor to be considered during impression taking can be achieved by means of an accurate border molding followed by an accurate final impression.

# CONCLUSION

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- Having a good tray for impression is very fundamental to achieving a good impression of the mouth and associated structures.

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## THE FUTURE

- Light cured composite trays are the future as they are rigid, command set and are easy to manufacture at the chairside.

# *A light cured upper special tray*

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# REFERENCE

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