

## Types of Impression Trays and its Effect on Impression Materials Choosing

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### 1. Abstract

A dental impression is a negative print of teeth and soft tissues in the mouth which can produce a positive copy model. It can be made by putting a suitable material in a stock or custom dental impression tray which is designed to fit as possible over the dental arches. Figure 1 shows a dental impression made using alginate impression material [1].



**Figure 1:** A dental impression made using alginate impression material.

An impression material made of liquid or semi-solid nature is first mixed and placed in the mouth, then made to become an elastic solid usually in few minutes depending on the material used and leaving an imprint of patient's dentition and the surrounding structures of oral cavity. An impression tray is a device like a bowl which holds and supports the impression material until the casting completed.

The main types of impression trays are the stock trays and the special trays [1,2].

Stock trays of various sizes and shapes that can be

made of plastic or a metal are used to take primary impressions.

The shape of stock trays can be rounded in a way to fit the mouths of edentate patients.

Squared stock trays can be used in patients with some remaining teeth.

Stock trays can be full arch, covering all the teeth in either the upper or lower jaw in one impression, or a partial coverage tray.

Stock trays can also be designed to fit over about three teeth. The impression stock tray used should have similar size and shape to the patient's own arch dimensions [3,4].

The main types of stock trays according to the size and shape include [3,4]:

1. Full tray
2. Quadrant tray
3. Sectional tray
4. Upper arch (Palatine part vault) tray
5. Lower arch (without palatine part vault) tray

A special tray is a custom impression tray designed for an individual person by a dental technician for making the final impression.

It is usually made from acrylic, such as polymethyl methacrylate or shellac [3,4].

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Table 1 summarizes how to choose impression materials according to the types of impression trays.

**Table 1:** Choosing impression materials according to the types of impression trays.

	<b>Primary impression</b>	<b>Secondary impression</b>
<b>Purpose</b>	To record the dimensions of the edentulous arch	To record the fine details of the edentulous arch.
<b>Tray used</b>	Stock tray	Special tray.
<b>Uses</b>	1-Pouring primary cast.	1-Pouring master cast.
	2-Construction of special.	2-Construction of occlusion blocks.
		3-Completion.
<b>Material used</b>	1- Impression compound.	1- Impression plaster material.
	2- Alginate	2- Zinc oxide /eugenole impression material.
		3- Rubber base impression material.

Table 2 summarizes the types of impression material to be used with stock tray.

**Table 2:** The types of impression material to be used with stock tray.

<b>Uses</b>	Impression material without adhesive properties	Impression material with good adhesive properties
	Perforated trays	Non- perforated trays
<b>Examples</b>	1- Alginate	1- Impression compound.
	2- Rubber base impression material.	2- Zinc oxide / Eugenol impression.

Table 3 summarizes the types of materials used for special trays.

**Table 3:** Summarizes the types of materials used for special trays.

Shellac base plate	Chemical cure Acrylic resin
Supplied in sheets	Supplied in powder and liquid
Thermoplastic material	Thermo-stable material
Less rigidity	More rigidity
Strengthened by wires	Sufficient strength
Easily constructed and adjusted	Easily constructed and adjusted
Does not accept border tracing	Accepts border tracing

## References

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