

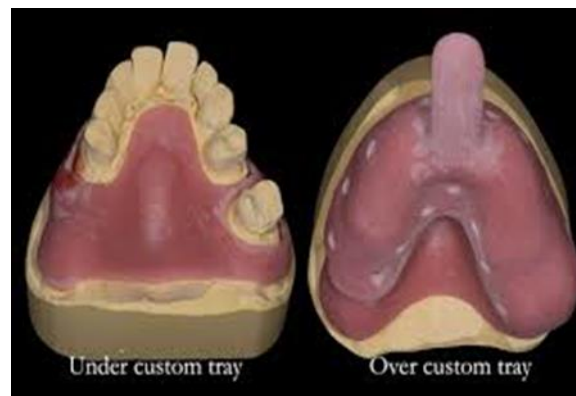
***Impression tray:*** This is a dental device used to carry any type of impression material to the mouth.

**Type of impression tray:**

***1-Stock tray:*** it is made of metal or plastic and used for more than one patient usually to take a primary impression; it is either perforated or non-perforated.



***2-Special tray:*** (or individual tray): it is made of acrylic and used for only one patient to take a final impression, it is either perforated or non-perforated according to the impression material used.



***Primary impression:*** it is a negative replacement of the dental arch from which the study cast is fabrication, it is taken by use of a stock tray.

***Final impression:*** it is a negative replacement of the dental arch from which the master cast is fabrication, it is taken by use of a special tray.

***Study cast:*** -it is a reproduction of a dental arch made by pouring plaster into the primary impression.

***Master cast:*** - it is a reproduction of a dental arch made by pouring stone in the final impression and on which the partial denture is made.

**Purpose of study cast:**

- 1-It studied for diagnosis of the cast.
- 2- It studied for planning the treatment.
- 3- On which we do a special tray.

**Fabrication of custom final impression tray (special tray):**

- 1- Outline tray extension 2-3 mm short of where you think the final denture will end. (This line should cross the palate beyond or distal to where the final will end.)
- 2-Mark the outline of the palatal and ridge crest stops (maxillary only)
- 3-Block out undercuts and position wax spacers (one sheet thickness of base plate wax).
- 4-Apply tinfoil substitute to cast and wax, mix acrylic resin tray material and adapt it to the cast.
- 5-Construct handles (either metal or resin).
- 6-Contour borders, remove sharp areas and disinfect trays.
- 7-The handle must be placed so that it will not interfere with any movements of the patient's lips during the impression procedures.
- 8-Mandibular custom trays are formed similarly.

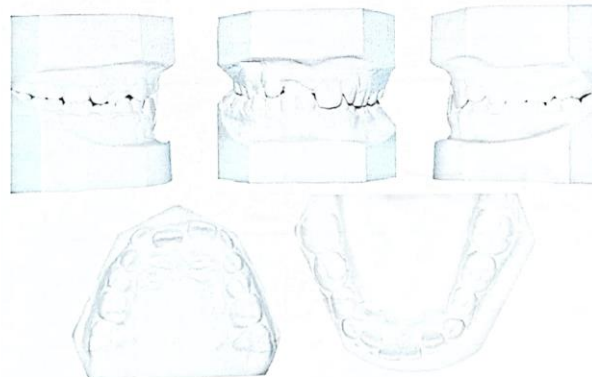
### **Trimming of the cast:**

A set of finishing steps for a study cast in which the bases, posterior borders, sides, heels, and anterior surface are smoothed and shaped to ensure a finished product that is attractive, well-proportioned, and useful as a diagnostic tool. the treatment is best accomplished using a mechanical model trimmer.



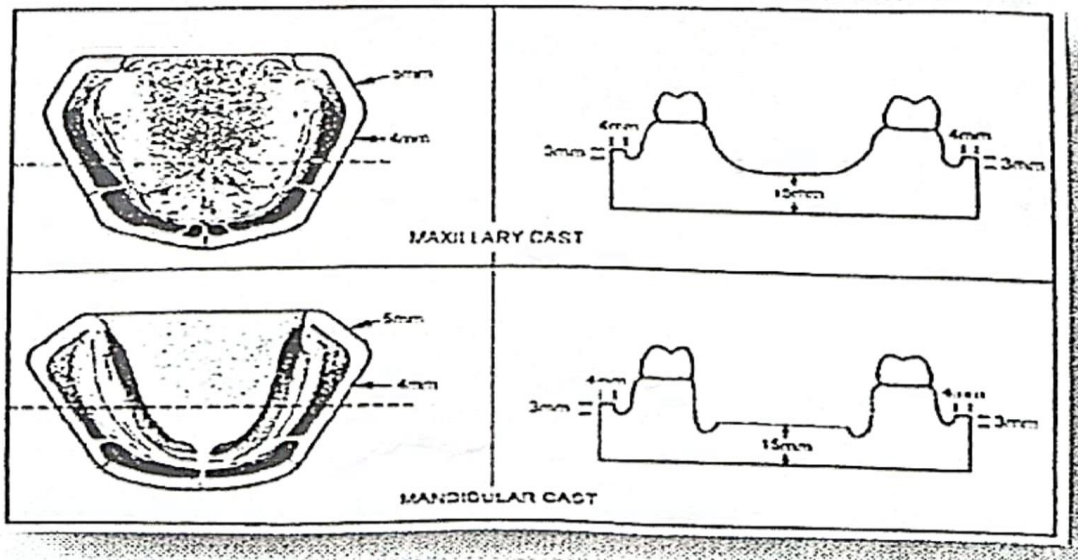
### **Preliminary steps:**

Before trimming the cast, you must soak it in a saturated dehydrate solution (SDS) Never trim a dry cast because the slushy debris coming off the trimming wheels will fall on the dry surface and become permanently attached to the cast surface. Mark the cast with trimming lines. These lines will help you determine the base thickness; align the base plane to the occlusal plane of the teeth; and trim the outer boundary alongside the posterior teeth, the anterior teeth, and the posterior border of the cast.



### Trimming procedures: -

- 1- the desired cast dimensions of a trimmed Cast. Start trimming the cast by grinding the cast bottom Parallel to the occlusal plane of the teeth.
- 2- The cast should be about 15 mm thick at its thinnest place (usually the palatal vault of the upper and the tongue space region of the lower).
- 3- Make sure the cast includes all the denture support areas and all of the features that define denture borders.
- 4- Keep the cast free of nodules or voids. When trimming a maxillary cast, make it as much like the general shape.
- 5- Trim a mandibular cast to correspond with the shape. It fully represents the sulcus area in the cast, but not more than 3 mm deep.
- 6- The sulcus is routinely protected by a peripheral land area or ledge extending 4 mm outward.
- 7- Make sure the cast extends 5 mm beyond the hamular notch area of the maxillary arch and 5 mm beyond the retromolar pads of the mandibular notch.



**The ideal requirements for successful removable partial denture are**

1. Be easily inserted and removed by the patient.
2. Resist dislodging forces.
3. It should be aesthetically pleasing.
4. Avoid the creation of undesirable food traps.
5. Minimize plaque retention.

This objective is achieved by a careful evaluation of a patient's study casts. The instrument used to aid the examination of the study casts is called a **dental surveyor** and the procedure is known as **surveying**

**Indication for Removable Partial denture:**

1. Distal extension (free end extension).
2. After recent extraction
3. Long bounded edentulous span
4. Excessive loss of residual ridge
5. Young patients; under the age of 18 years old are a contraindication for a fixed partial denture.
6. Sound abutment teeth
7. Economic consideration; fixed partial denture is costly and Removable Partial denture is not expensive to the patient

**Advantage of Removable Partial denture over fixed partial denture:**

1. It can be constructed for any case while fixed partial dentures are confined to a short span.
2. A removable Partial denture is less expensive than a fixed partial denture.
3. More easily cleaned.
4. More easily repaired and can have addition made to it.
5. Not normally involve losses of natural teeth substance while in fixed partial denture we need preparation of sound natural teeth.
6. Removable Partial denture can be used in the case with excessive loss of residual ridge.
7. Removable Partial denture can be used for restoring and closing cleft palate.

**Thank you**