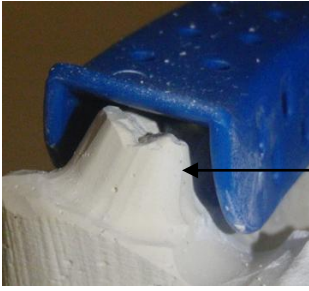
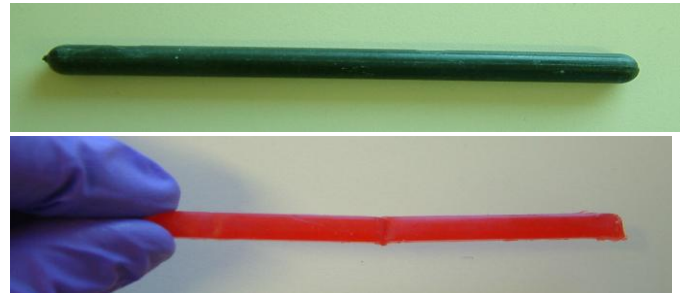


## Impressions

The first step is the selection of the correct impression tray to hold the impression material. The two main types are for those patients who have teeth (**Dentate**) and those who do not have teeth (**Edentulous**). For the dentate patients we use a box shaped tray that will fit over the existing teeth to give an even amount of impression material. For the edentulous patient we use a curved tray to fit over the bony ridge.



Impression trays may be plastic disposable trays with handles or metal trays, different manufacturers have slightly different shapes. Once a suitable tray has been selected it is tried in the patient's mouth to check the fit. The edges of the tray can be made more accurate by heating greenstick composition and melting some onto the edge of the tray. The tray should be dipped in a bowl of water before trying it in the patient's mouth to ensure the greenstick does not burn the patient. Red carding wax can also be used.



After initial impressions have been taken working models are made of plaster or stone and special or individual trays are to accurately fit the patient's mouth.

Depending on the impression material that is to be used for the final or master impression the technician will make the tray fit the model exactly or with a space of 2-3mm. The aim of the final impression is to get an even thickness of impression material throughout the mouth to ensure a stable and accurate impression.

### Impression Materials:

An impression material has to record all the detail of the mouth so a cast or model can be made of the mouth. The model may only be required to allow a detailed examination of the teeth and their relationship to each other or they may be required for a stage in making an appliance or denture to fit the mouth.

Impression materials:

Must be elastic to flow round teeth and when set be able to stretch back off the teeth and still keep the shape.

Must be very accurate and record very fine detail

Must not be so thick that they compress or distort soft tissue in the mouth

Once removed from the mouth they must not change shape

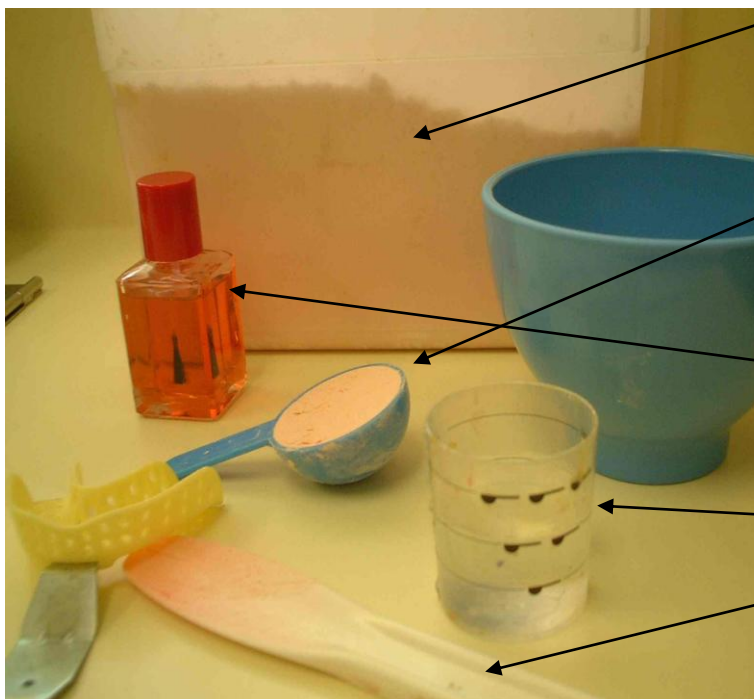
No one material is the best, but for different uses different materials are more suitable.

**Impression compound** is a rigid material that softens in hot water and will harden when placed in the mouth – it cannot be used when teeth are present as it is not elastic.

**Plaster of paris** is a material which sets to a very hard mass when mixed with water – it cannot be used with teeth.

These materials are only used by specialist dentists making full dentures.

**Alginate** is the most commonly used impression material. It is made by mixing an exact amount of water with an exact amount of liquid to form a light paste of calcium alginate which will set to a firm material within 1-2 minutes.



The container of alginate with a tight lid must be inverted twice too loosen the powder. A scoop is used to measure the powder and care must be taken not to compress the powder into the scoop.

For each scoop of powder a measure of water at 20-24 degrees is carefully measured.

A suitable tray should be ready and may require some adhesive to be applied even though the tray has perforations (holes) to hold the set alginate to the tray.

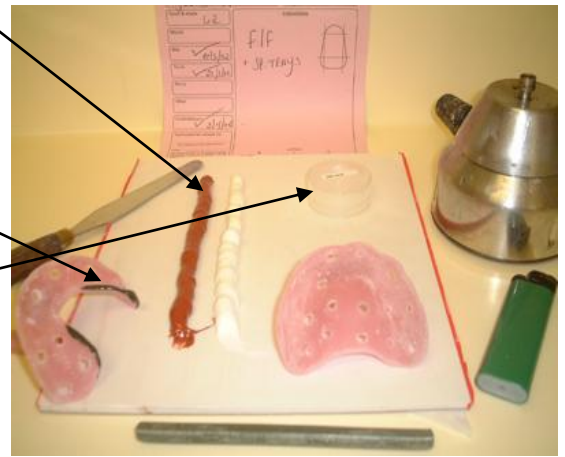
The water is added to the powder in a soft flexible bowl and mixed thoroughly with a plastic spatula to a smooth creamy mix without lumps or air bubbles, and then loaded into the tray, pressing the alginate firmly into the tray.

The setting time of the alginate depends on the temperature of the water. The higher the temperature the faster the alginate will set. The colder the water the longer it will take to set. If too much powder then a thick mix which will not flow around the teeth. If too little powder the mix is very thin and will flow into the patients throat.

Alginate once set and removed from the mouth should be rinsed in cold water to remove any saliva. It should then be disinfected by placing in a bath of Sodium Hypochlorite then washed again and wrapped with a damp gauze and sealed in a poly bag. Alginate can change shape after setting by either loosing water or absorbing (taking in) water from the atmosphere.

**Impression paste or Zinc Oxide Eugenol paste** is often used for edentulous patients for the final impression. It is not an elastic material and cannot be used when any teeth are present. Equal lengths of the paste are measured out. An individual tray for the patient is adjusted at the edges with greenstick compound. It is mixed thoroughly with a metal spatula on a large paper pad until the individual brown and white colour can no longer be seen. Vaseline is applied to the patient's lips as the impression paste is very sticky and is difficult to remove from a patient's lips.

Zinc oxide impression paste once set is stable and does not change shape with moisture.



**Elastomers** are rubber based or silicone impression materials that are very elastic and do not tear easily in thin sections. There are heavy duty (putty) that gives an impression without much detail, and a fine material is syringed round the teeth or into the putty impression and the impression is taken again to get all the fine detail of the teeth. This is usually only used for metal dentures or crown and bridge work.

These impressions after disinfecting can be sent in the post and will be stable in size for a long time.