

Dentures

Denture. An artificial replacement (prosthesis) for missing natural teeth and their supporting structures.

A **complete denture** (full denture) replaces all the natural teeth and supporting structures in either the mandible or maxilla. It may be retained by a combination of muscular action and adhesion to the mucosal surface or by implants.

Stages of complete (full) denture construction

The dental technician must be supplied with:

Impressions of both arches

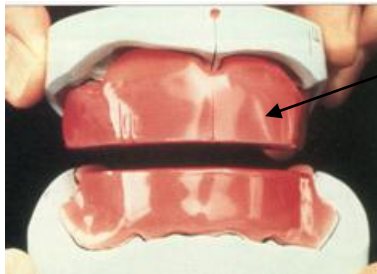
A record of how the teeth or arches relate to each other (how the teeth meet in the mouth)

The colour shape and size of the teeth required to replace the missing teeth in the mouth

Instructions of what the dentist requires (a laboratory work ticket)

Full denture construction:

Initial and final impressions are provided to the technician who will prepare working models (casts) and create wax record blocks on these models.



The wax record blocks are used to record:

The way the upper and lower teeth should meet

Where the midline is (centre of a patient's face)

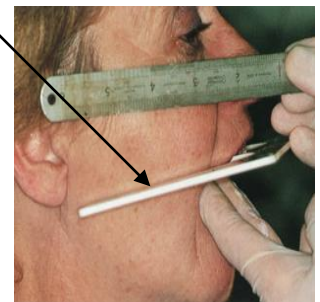
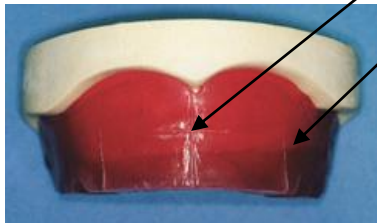
Where the lower edge of the patient's incisor teeth should be

Where the occlusal surface (biting surface) of the posterior (back) teeth should be (using foxes bite plane)

Where the highest level of a patient's smile is marked on the block

Where the upper canines should be (this is usually a vertical line from the outer edge of the patient's nose)

A Willis Bite Gauge is used to make sure the patient's mouth is not too open or too closed.



The wax record blocks are sealed together by the dentist with the markings showing how the final dentures will meet together. The markings will also guide the technician on how wide the teeth should be, how long they should be and their colour (shade). Teeth for dentures are supplied in different moulds – that is they may be long and narrow, square or rounded teeth. The dentist will normally decide what is the best mould to suit the patient's facial shape.

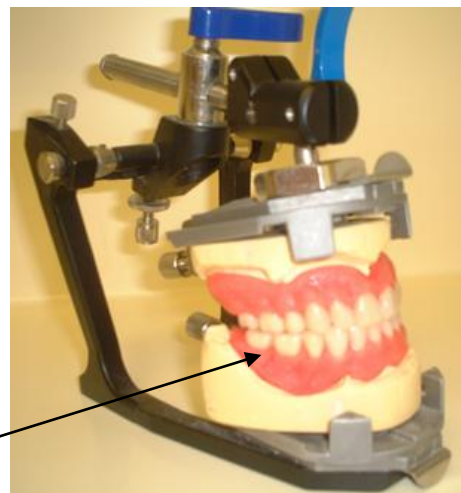
The technician will mount the models on an **articulator** (a device that artificially attempts to reproduce the movement of the jaws)



The articulator may be a simple hinge that opens and closes or an anatomical articulator that can make the same movements as the jaw.



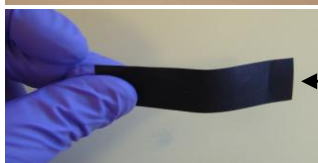
The technician will then place the selected teeth on the wax blocks in the position the dentist has indicated to make trial dentures.



The **Trial Dentures** look exactly like the finished dentures but are made of soft wax. The dentures are tried in the patient's mouth and the dentist checks to see that the teeth meet evenly front to back and side to side. A check is made that the patient can speak clearly without the teeth hitting and there is not too much space between the upper and lower teeth. A hand mirror is given to the patient so they can check they are happy with the appearance of the teeth.



As some adjustments may be required, a sheet of wax, a burner to soften the wax and a wax knife are required.



Articulating paper is also required to check the occlusion (the way the teeth meet). This carbon paper will leave a mark on the teeth where there is contact. A straight handpiece and Acrylic bur should also be available

Fitting of new dentures.

The dentist will try in each denture to ensure it is comfortable it is stable and it is retentive (it will stay in place). If there is any uneven pressure or the patient has some discomfort –pressure indicating paste is applied to the fitting surface of the denture and placed into the mouth with pressure. The denture is removed and the dentist can see from the paste where there is uneven contact with the mucosal. Once the dentures are comfortable the dentist checks the occlusion and may require the articulating paper or occlusal indicating wax to check the contacts of the teeth. A straight handpiece and acrylic and polishing burs will be required for any adjustments to the denture. The patient is given a hand mirror to check that they are happy with the appearance.

Instructions are then given to the patient on the care of their new dentures. These should also be written on paper so the patient can take them away and read them.

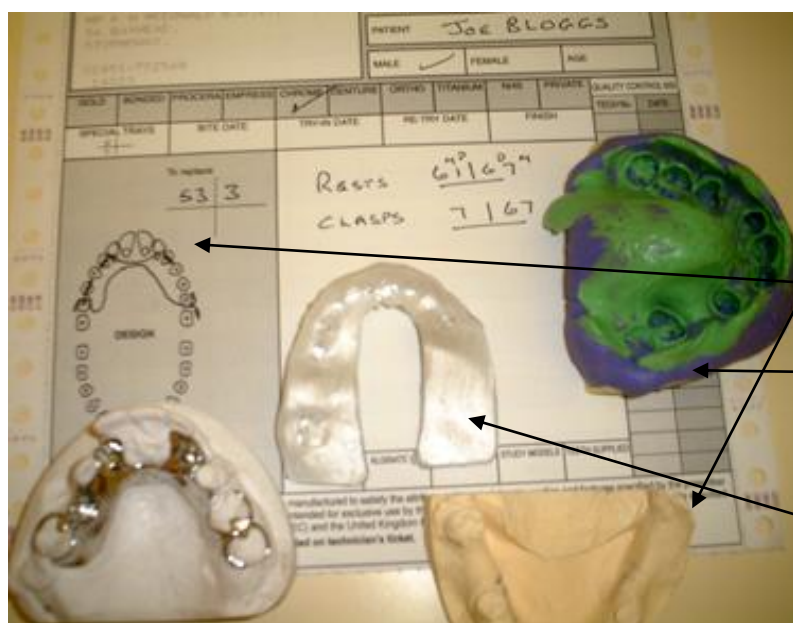
- Dentures should be cleaned in running water after every meal
- A small denture brush or toothbrush should be used daily to scrub the denture clean
- When cleaning a denture do it above a basin full of water to prevent dropping on hard surface
- Dentures should be left out at night and kept in glass of water to prevent the acrylic drying out.
- Eat soft foods initially until the mouth is used to the dentures
- Arrange an appointment with the clinic if the dentures are causing sores in the mouth.

A **partial denture** replaces one or more but not all natural teeth and their supporting structures. It may be supported entirely on the soft tissues (**tissue-borne**) or entirely on the teeth (**tooth-borne**) or a combination of both. A denture may be made of resin only, usually **acrylic** (polymethylmethacrylate), or resin and metal where the metal is usually **cobalt-chromium** alloy: the teeth are made of resin or porcelain.

Acrylic partial dentures are quick and easy to make, they are cheap, they are easily adjusted, extra teeth can be added at a later date, extra acrylic can be added to improve the fit they can be made for 1 to 15 teeth. They do cause food traps around the remaining teeth and they can cause damage to the gingivae around the remaining teeth.

A cobalt chromium denture is a precision denture that does not damage the remaining teeth and gingivae, is retained by metal clasps and so less movement, does not need to cover the palate and allows patients to have more taste and feel of their food, any bars or plates across the roof of the mouth or behind the lower front teeth can be very much thinner than an acrylic denture. They are much more expensive, take more time to make, require an extra surgery visit to check the fit of the metal denture, there must be enough sound remaining teeth to provide the support and retention for the denture.

A **skeleton denture** is mainly tooth-borne and has small size metal connectors leaving the mucous membrane and gingival margins largely exposed.



For chrome metal dentures an extra surgery stage is required to check the fit of the metal work of the denture.

In this example a study model was made to help design the metalwork of the denture and this is drawn on the laboratory work ticket. The final impression was taken with a rubber based putty and fine wash material to give great accuracy.

An occlusal registration indicates how the teeth meet together

An **immediate denture**, which may be complete or partial, is constructed to replace teeth immediately after their extraction. Immediate dentures may be designed so that the replacement teeth are adapted to fit over the sockets of the extracted teeth on the alveolar ridge (open face) or with a buccal or labial extension of the acrylic resin base adjacent to the extracted teeth (flanged).

A **denture addition** With an acrylic denture if a tooth has to be extracted an additional tooth can be added to the denture. An alginate impression is taken with the denture in place and the technician will pour a model of the teeth and denture and add an extra tooth on to the existing denture. This can be done within a few hours.



Tooth recently extracted

Acrylic partial denture in alginate impression

