

# Maintaining existing anterior guidance

Hugh Devlin explains the advantages of designing the anterior guidance by using a custom anterior guidance table

**T**he anterior teeth are important in guiding the mandible in lateral and protrusive movements. When constructing multiple maxillary anterior crowns, it is important to ensure that the mandibular movements are planned in the new restorations. If insufficient care is taken then the posterior teeth can come into contact, interfering tooth contacts are introduced and cuspal fracture and/or tooth wear may result.

Where plaque-induced inflammation is present, then occlusal overload will

aggravate the tissue breakdown around teeth and implants.

In addition, it is important to consider lateral and protrusive movements when undertaking replacement crowns and bridges.

If a posterior restoration fractures, the natural tendency of the clinician is to conclude that a more retentive restoration is needed.

This may be a misdiagnosis, as that failed restoration may be the result of an interfering contact and placing further restorations may only result in further failure and an unhappy patient.

Fortunately, most of our patients can adapt to minor changes in their bite, but if one adds in other factors, such as bruxism and pre-existing myofascial pain, the result can be symptoms of a painful temporomandibular joint.

## AVOIDING INTERFERENCES

Lateral forces on posterior teeth are considered to be damaging and should be avoided when planning the new occlusion.

If a single maxillary incisor tooth is to be crowned, then the adjacent teeth are able to provide a clear guide to the



**PROF. HUGH DEVLIN**  
PHD MSC BSC BDS  
Hugh is Professor of restorative dentistry at University of Manchester, adjunct Professor at University of Malaya and honorary Professor at the University of Jordan. He is the academic lead for the MSc in Advanced Restorative Dentistry at the University of Manchester, appointed by the university and is responsible for the administration and academic quality of the course. Further information can be found at [bit.ly/3ESJ9bl](https://bit.ly/3ESJ9bl).



**FIGURE 1:** Custom anterior guidance table on a Denar articulator (courtesy of Dr Soni)



**FIGURE 2:** Tak Hydroplastic beads. When placed into hot water, the beads soften from a hard bead to a soft putty consistency which can be used for numerous indications

correct shape of the new palatal surface that avoids any occlusal interferences.

The situation where all the upper anterior teeth are to receive crowns is much more difficult to manage, as there are no adjacent teeth to provide anterior guidance.

The anterior guidance provided by the front teeth is essential to ensure that, during protrusion, the posterior teeth are not in contact. Where the anterior teeth have a deep overbite and shallow overjet, the resulting anterior guidance will be steep and the chances of introducing posterior interferences will be less.

### ADJUSTABLE ARTICULATOR USE

All postgraduate students studying for the University of Manchester's MSc in Advanced Restorative Dentistry are encouraged to buy an adjustable articulator and facebow. Using this equipment, they can plan their cases before they start to undertake any crowns, bridges and dental implants.

One method of ensuring that the existing anterior guidance is maintained is to mount the study models on the articulator.

When the models are moved laterally over each other, the anterior guidance post traces a path in the resin that records the anterior guidance, and allows its future reproduction.

The traditional material to use for this is a laboratory acrylic, for example a special tray acrylic. This can produce a very nice result, as Figure 1 from MSc graduate Dr Mukesh Soni demonstrates.

An alternate method, which we have recently started to teach on the MSc course, is to use Tak Hydroplastic beads (Prestige Dental) (Figure 2).

The master models of the tooth preparations can be articulated and the new restorations waxed-up, conforming to the existing anterior guidance.

Whatever material is used, using a custom anterior guidance table (which is a template of the dynamic occlusion) is a quick, simple and inexpensive way of conforming to an occlusal prescription.

### ARTICULATOR ADVICE

Implicit in this technique is the confident use of an articulator. The following advice is offered to those looking at the features of the different types of articulator.


#### Essential features

- Semi-adjustable with:
  - An adjustable condylar guidance angle
  - Compatible facebow/earbow
- Effective 'centric latch' to allow only a hinge movement of the upper and lower members, or locks for each hinge as below
- Well-engineered with spare part and servicing back-up
- Capable of supporting a customised anterior guidance table
- Can take a Broadrick flag or simplified occlusal plane analyser
- If second-hand, professionally serviced and not damaged beyond repair.

#### Preferable features

- Linked to an easy-to-use earbow
- With transfer jig
- Adjustable progressive side shift and/or immediate side shift
- Each hinge can be locked separately
- Robustly built
- Wide enough at the back to facilitate intraoral occlusal analysis
- Is stable when placed upside down (ie, resting on its upper member)
- Arcon design (ie, with the condylar elements on the lower member)
- Upper and lower members that can be separated from each other.

#### Nice to have features

- Can be placed on the bench at an angle of 45°
- Magnetic mounting plates
- Capable of calibration against similar articulators, or built within sufficient tolerances as to make unnecessary. 

#### CONTACT

 [www.manchester.ac.uk](http://www.manchester.ac.uk)

#### FURTHER INFORMATION

Prestige Dental is the exclusive UK supplier of the Denar articulator range and also sells the Tak Hydroplastic beads. Visit [www.prestige-dental.co.uk](http://www.prestige-dental.co.uk).