Occlusal schemes and how to achieve them

Setup is determined by the posterior tooth selection
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Even the most beautiful-looking denture teeth are useless if the patient cannot smile, speak or chew effectively. Denture teeth have an important task to fulfil in partial and combined denture prosthetics as well as in complete dentures.

Now available through Ivoclar Vivadent, a full range of denture tooth occlusal morphology to satisfy every anatomic, occlusal and functional requirement of the different indications. The following is an overview of the different teeth available and how to set them up.

The majority of dental technicians are only educated and trained to set up a class one bite relationship occlusion (normal bite). However with the increasing demand for functional dentures the dental technician is required to be knowledgeable how to set up different tooth morphologies.

Fig 1 The different needs of removable denture patients call for a variety of posterior teeth with different anatomic morphologies including the corresponding set-up technique.

Teeth are like Lego® bricks

The BPS® (Biofunctional Prosthetic System) principle requires that the anterior teeth of the maxillary be set up first in accordance with specific guidelines – independent of the selected posterior teeth. Subsequently, the lower cuspids are positioned. They determine whether or not the one tooth-to-two-tooth or one tooth-to-one tooth relationship should be used. The set-up template which can be fixed to the Stratos 200 articulator allow a predictable way of posterior set up and necessary compensating curves are build into it.

Depending on the type of posterior teeth used, the correct contacts to the set-up template have to be established. Once the lower posterior teeth have been correctly positioned, it is suggested to start the upper set up to place the first molar to ensure correct intercuspation (Fig 2). Similarly to Lego blocks, teeth fit together in a specific way. If teeth are ground to avoid a proximal gap for example, the...
exact relationship is disturbed. Consequently, the function is impaired and the balancing contacts, which are automatically given if a set-up template is used, are lost.

**Unity of form and function**

SR Postaris DCL® is a fully anatomic posterior tooth. It is particularly suitable for partial, hybrid and combination dentures including implant-supported restorations. It is also very useful for complete dentures and can be used in different set up philosophies. An exact centric must be obtained from the patient if SR Postaris DCL teeth are used. Ultimately, however, the teeth demonstrate superior chewing efficiency because of their occlusal anatomy. The teeth are typically set up according to one tooth-to-two-tooth relationship from the buccal view (Fig 3). The lingual view shows one tooth-to-one tooth relationship (Fig 4).

The semi-anatomic SR Orthotyp® has become a popular and widely used denture tooth for complete dentures. It is often incorrectly labelled as a “22-degree tooth” despite the fact that its developer, Dr. Strack from the University of Tübingen, created 2 other special moulds for the 3 different jaw relationships (class I, II & III). (Fig 5 a to c).

The morphology of the SR Orthotyp is identical to that of the SR Orthotyp PE®, SR Orthosit PE® and SR Orthotyp DCL® teeth. For aesthetically demanding cases, the tooth is available in a four-layer mould with “pearl effect” (PE). The moulds are also available in porcelain material. Used in conjunction with the set-up template, this tooth achieves bilateral balanced group.
guidance in normal bite, deep overbite and crossbite (Fig 6). Figures 7 and 8 show the one tooth-to-two-tooth relationship typically used to set up semi-anatomical teeth.

**Lingual contact occlusion and zero-degree teeth (flat plane)**

In the fabrication of complete dentures, the lingualized set-up principle offers the advantage of optimally stabilizing the denture on the denture-supporting area provided the mandibular teeth are set up correctly. The prominent maxillary palatinal (lingual) cusps and the uncomplicated mandibular central fossa of the new SR Ortholingual DCL® posterior tooth allow the teeth to be set up according to a simplified lingualized occlusal scheme (Fig 9 and 10). This occlusal morphology allows a relatively free occlusal set up. However, a one tooth-to-one tooth relationship is recommended to establish the necessary balancing contacts without having to make any significant occlusal adjustments.

**The new SR Orthoplane DCL® posterior teeth offer occlusal freedom.**

As lateral excursion forces are reduced, these teeth are particularly suitable for older patients with flat ridge contours. Unlike other zero degree teeth the buccal anatomy of the SR Orthoplane DCL is aesthetically pleasing to the patient. (Fig 11).

**Summary**

Ivoclar Vivadent denture teeth cover the requirements of the entire spectrum of removable denture prosthetics. The range encompasses fully anatomic, semi-anatomic, lingual contact occlusion and flat-plane teeth and their use within the three different jaw relationships. Under the name of Blueline®, the four lines of posterior teeth are now also available in the quality DCL (Double Cross Linked) resin and in all A-D shades and two Bleach shades. Detailed literature and a comprehensive range of courses enable dental technicians in collaboration with clinicians to achieve consistent high-quality results.

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