
Functional stability

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9.1 When can a denture be said to be stable?

When functional forces are applied to the denture in the mouth and the denture remains unmoved by tilting or displacement it can be said to be stable, i.e.: positionally stable under masticatory forces.

9.2 What happens with an unstable denture?

An incorrectly designed denture will be unstable when:

- The denture teeth are incorrectly positioned. Due care has not been taken in regard to THE EXTENT OF THE DENTURE BASE the extent of its borders and design of its periphery.

The functional requirements of providing sufficient clearance for lip and muscle tendons are deficient.

Such shortcomings lead to “lifting” and displacement of the denture from the alveola ridge during speech or other functions. They will also cause the development of pressure spots on the mucosa.

9.3 Vectors of force – what are they?

The multidirectional forces which act on functioning denture and teeth are referred to as vectors of force.

A vector of force represents the characteristics of a force. In Fig. 1, forces are indicated by arrows which also indicates a range of forces which may be in action during masticatory function. In order to overcome such problems it is necessary to understand what occurs when a denture tooth is ground in the pursuit of elimat-

ing such a problem and what consequences may follow.

9.4 The interplay of forces

In order not to be helpless in overcoming these forces the following should be kept in mind.

All vectors of force acting on a denture should cancel each other out, i.e.: the sum of all vectors of force acting on a denture should be zero.

As far as possible all vectors of force must meet the alveola ridge at right angles.

In this way the various forces acting on the mandibular denture help to centre the denture squarely on the alveola ridge.

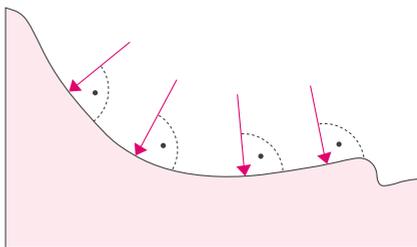


Fig. 1: Vectors of force meet the alveolar ridge at right angles.

It is for this reason that the second molar is sometimes omitted from a setup as it would otherwise have to be positioned on the steep slope of the mandibular ramus. This would be contrary to the vectors of force principles described and not in harmony with the alveola ridge. If set, the second molar would cause functional displacement of the denture.

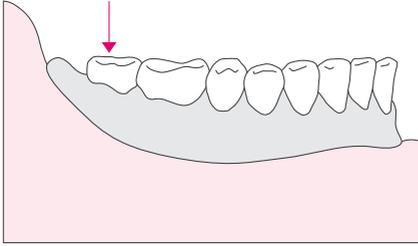


Fig. 2: Incorrect positioning of the second molar.

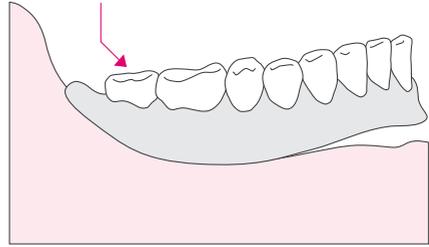


Fig. 3: Proglissement caused by the force acting on the denture.

In this way the denture is prevented from being pushed down and forward on a sloping plane.

If the setup ends at the distal of the first molar, the remaining gap is built up in denture base acrylic towards the retromolar pad. It is definitely out of occlusion and slopes away lingually and buccally towards the periphery of the denture. This configuration prevents food accumulation.

