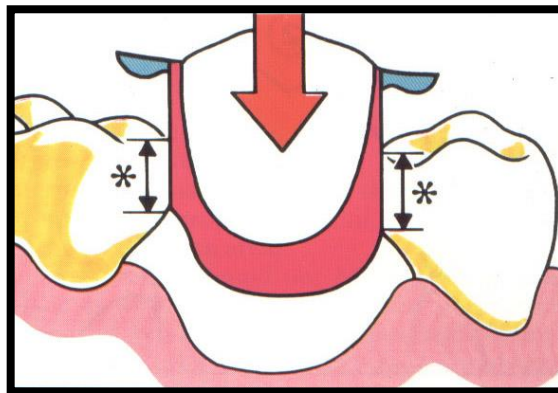


# **Tooth Preparation for RPD Treatment**

**Preparation for RPD is carried  
out for:**

- 1- Establishing guiding planes.
- 2- Modifying unfavourable survey lines.
- 3- Providing rest seats.
- 4- Creating retentive areas.
- 5- Might involve some occlusal adjustment.

- Must be planned on articulated casts after being surveyed.
- Shaping of enamel surfaces for any of the reasons listed is usually undertaken with rotary diamond instruments of appropriate size and shape. The resulting roughened enamel surface must always be smoothed and polished. Special burs, stones and abrasive- impregnated rubber wheels and points are available for this purpose. Subsequent application of a topical fluoride varnish, to reduce the chance of carious attack of the modified enamel surfaces, should be carried out routinely.

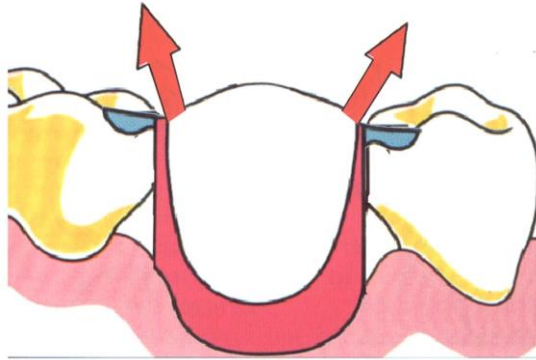


## Guiding Planes

Two or more parallel axial surfaces on abutment teeth which limit the path of insertion of a partial denture. May occur naturally but most commonly need to be prepared.

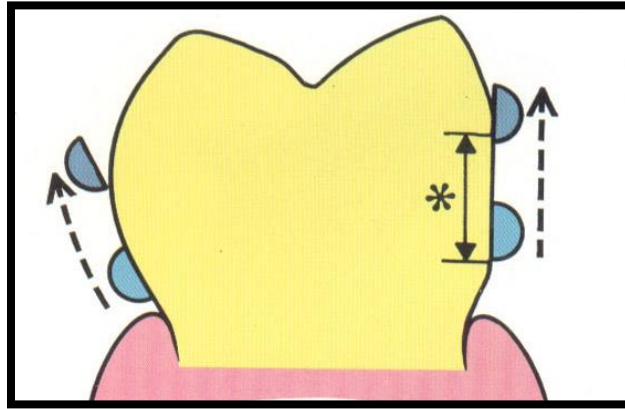
# Functions of guide surface

- 1- Increased stability
- 2- Reciprocation
- 3- Appearance
- 4- Prevention of clasp deformation



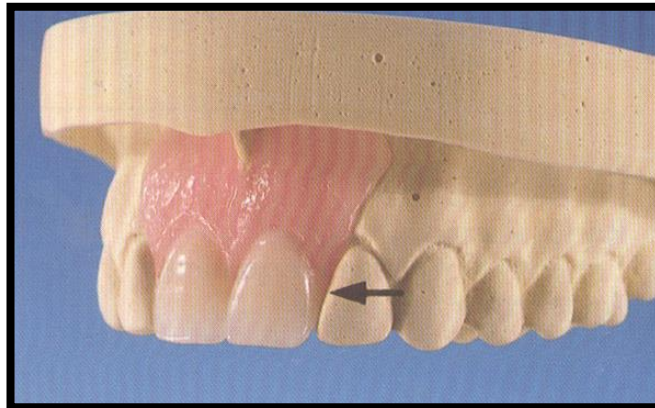
## **1- Increased stability**

Achieved by the guide surface resisting displacement of the denture in directions other than along the planned path of displacement.



## 2- Reciprocation:

A guide surface allows a reciprocating component to maintain continuous contact with a tooth as the denture is displaced occlusally.



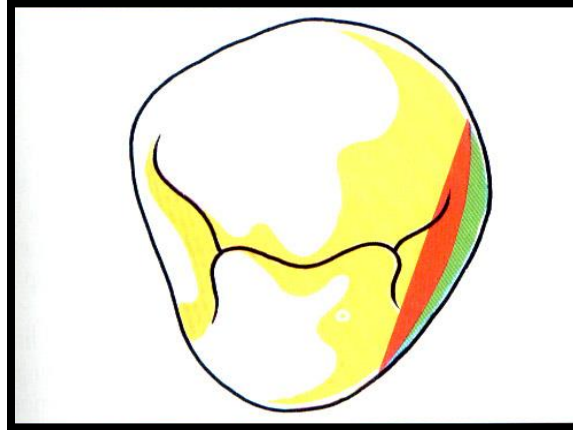
## 4- Appearance:

A guide surface on an anterior abutment permits an intimate contact between saddle and tooth which allows giving a more natural appearance. Most of the times, these guiding planes do need to be prepared

# Preparing Guide Surfaces

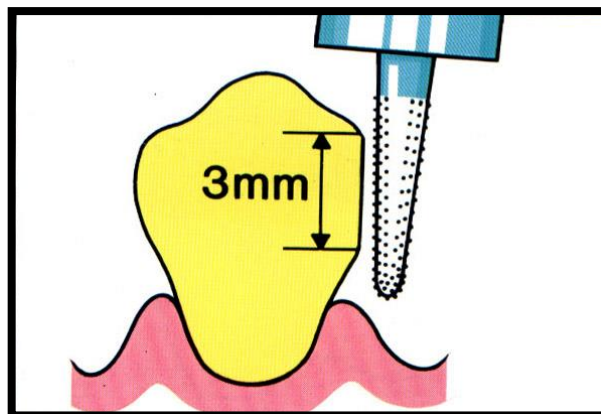
- Guide surfaces are usually prepared, somewhat imprecisely, by eye. The position in which the handpiece must be held to prepare the required guide surfaces, so that they are all parallel to each other and to the path of insertion, should be established on the study cast. As a check on the accuracy of the prepared guide surface, an alginate impression may be taken to produce a second study cast. This cast is placed on a surveyor and the parallelism of the guide surfaces checked using the analysing rod. If correction is found to be needed, further intra-oral adjustment can be undertaken.

- A more precise approach to the preparation of guide surfaces can be achieved by the use of jigs constructed on a prepared study cast and then transferred to the mouth, either to control the positioning of the handpiece or to check on the location and amount of enamel reduction.
- A guide surface should be produced by removing a minimal and fairly uniform thickness of enamel, usually not more than 0.5 mm from around the appropriate part of the circumference of the tooth.

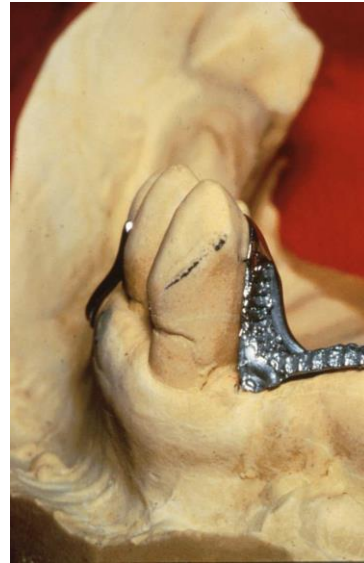
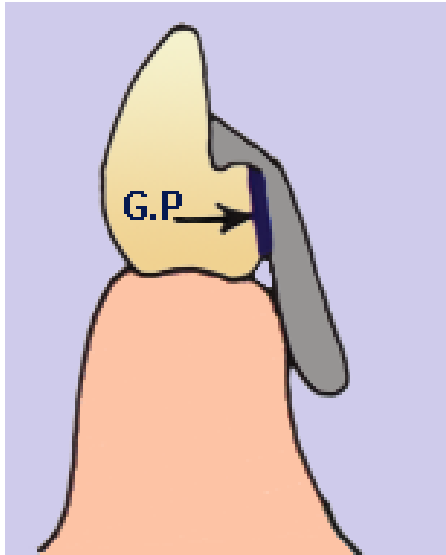


The surfaces should not be prepared as a flat plane, as would tend to occur if an abrasive disc were used (red area). This is unnecessarily destructive and may even lead to penetration into dentine, thus making a restoration obligatory.

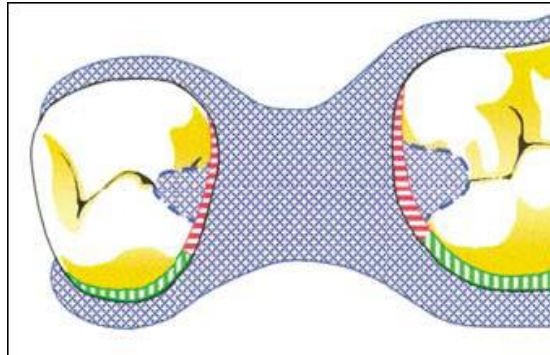
A guide surface should extend vertically for about 3 mm and should be kept as far from the gingival margin as possible.



## Guiding planes prepared on the lingual surface of abutment teeth



Reduction of a lingual bulge to eliminate obstruction areas and provide reciprocation.



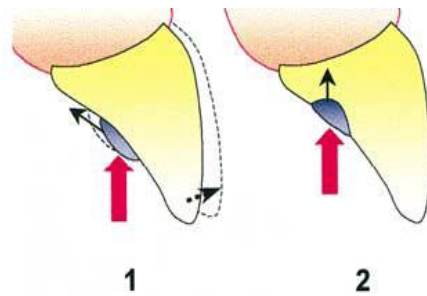
The required location of a guide surface will be dependent on its function. The red guide surfaces on the proximal surfaces of the abutment teeth facing the edentulous space will be needed to control the path of insertion of the saddle. The green guide surfaces on the tooth surfaces diametrically opposite the retentive portion of the clasp will be needed for the latter's reciprocation.

## Rest Seats

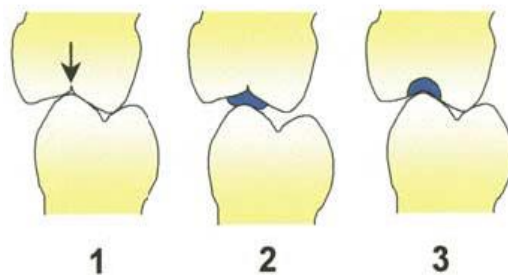
**Seats for rests are prepared in order to:**

- 1- produce a favourable tooth surface for support
- 2- prevent interference with the occlusion
- 3- reduce the prominence of a rest

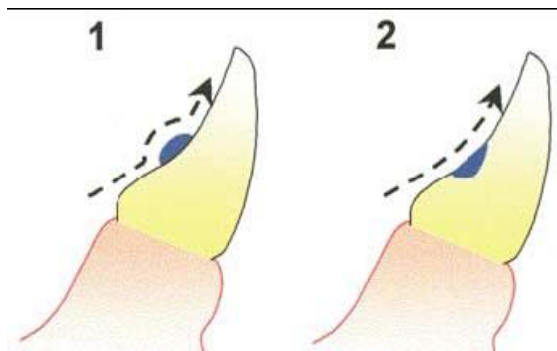




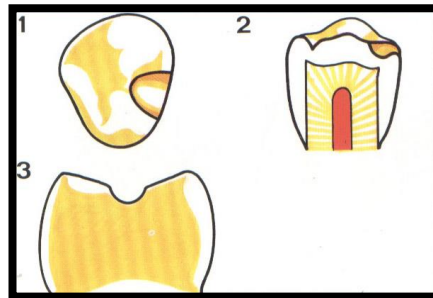
A rest placed on an inclined surface will tend to slide down the tooth under the influence of occlusal loads (1). The resulting horizontal force may cause a limited labial migration of the tooth with further loss of support for the denture. The provision of a rest seat (2) will result in a vertical loading of the tooth, more efficient support and absence of tooth movement.



An occlusal rest placed at the arrow in (1) would create a premature occlusal contact (2), unless a rest seat was prepared to make room for it (3). Space for the rest should not usually be created by grinding the mandibular buccal cusp as this is a supporting cusp contributing to the stability of the intercuspal position.



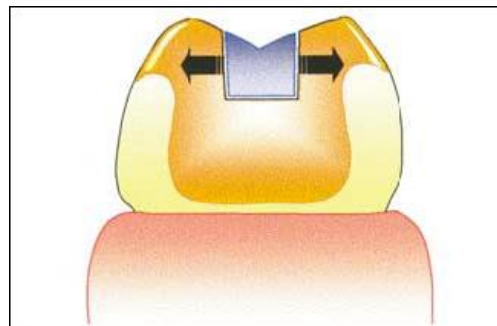
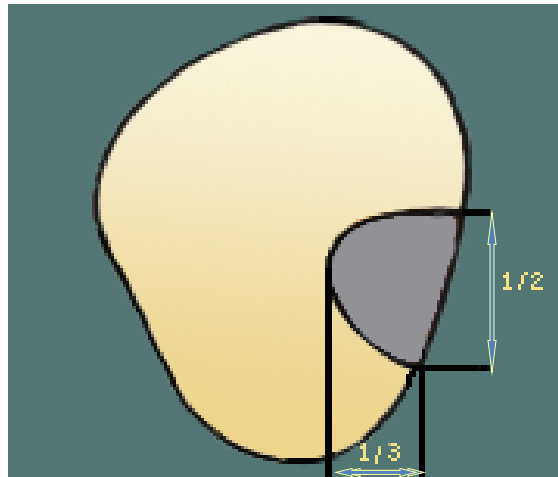
A rest placed on an unprepared tooth surface (1) will stand proud of that surface and may tend to collect food particles and possibly create difficulties in tolerating the denture. The preparation of a rest seat (2) will allow the rest to be shaped so that it blends into the contour of the tooth, is less apparent to the patient and also harmonises with the occlusal relationship.



### **Occlusal Rest Seat Preparation:**

This involves reduction in the height of the marginal ridge by about 1-1.5 mm to ensure an adequate bulk for mechanical strength of the rest. Seats should be saucer-shaped to allow an amount of horizontal movement of the rest to dissipate some of the energy developed by occlusal forces.

## Occlusal Rest (Occlusal View)



The use of a box-shaped rest seat may result in the rest applying damaging horizontal loads on the abutment tooth. These rest seats should be restricted to tooth-supported dentures where the periodontal health of the abutment teeth is good.