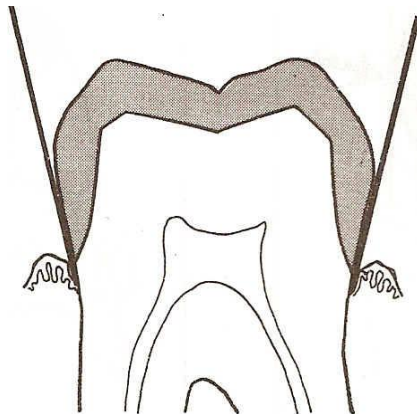
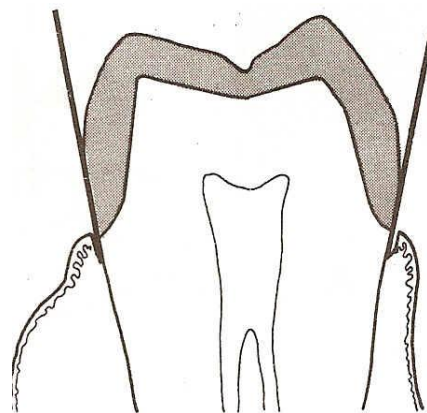


Emergence Profile

The part of the axial contour of tooth, restoration and dental implant that extends from the base of the gingival sulcus and passes the free margin of the gingiva has been described as the *emergence profile* (Stein and Kuwata). It also relates to the adjacent tissues.

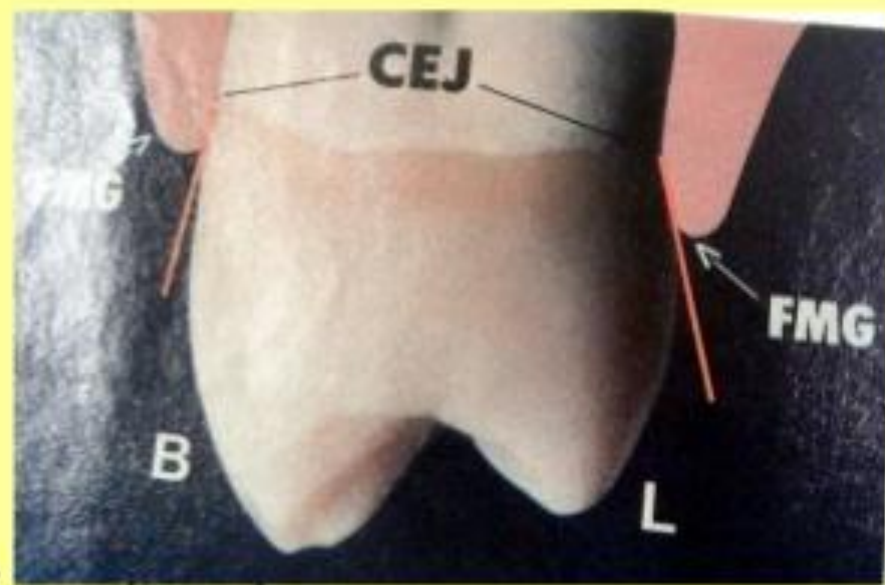


A



B

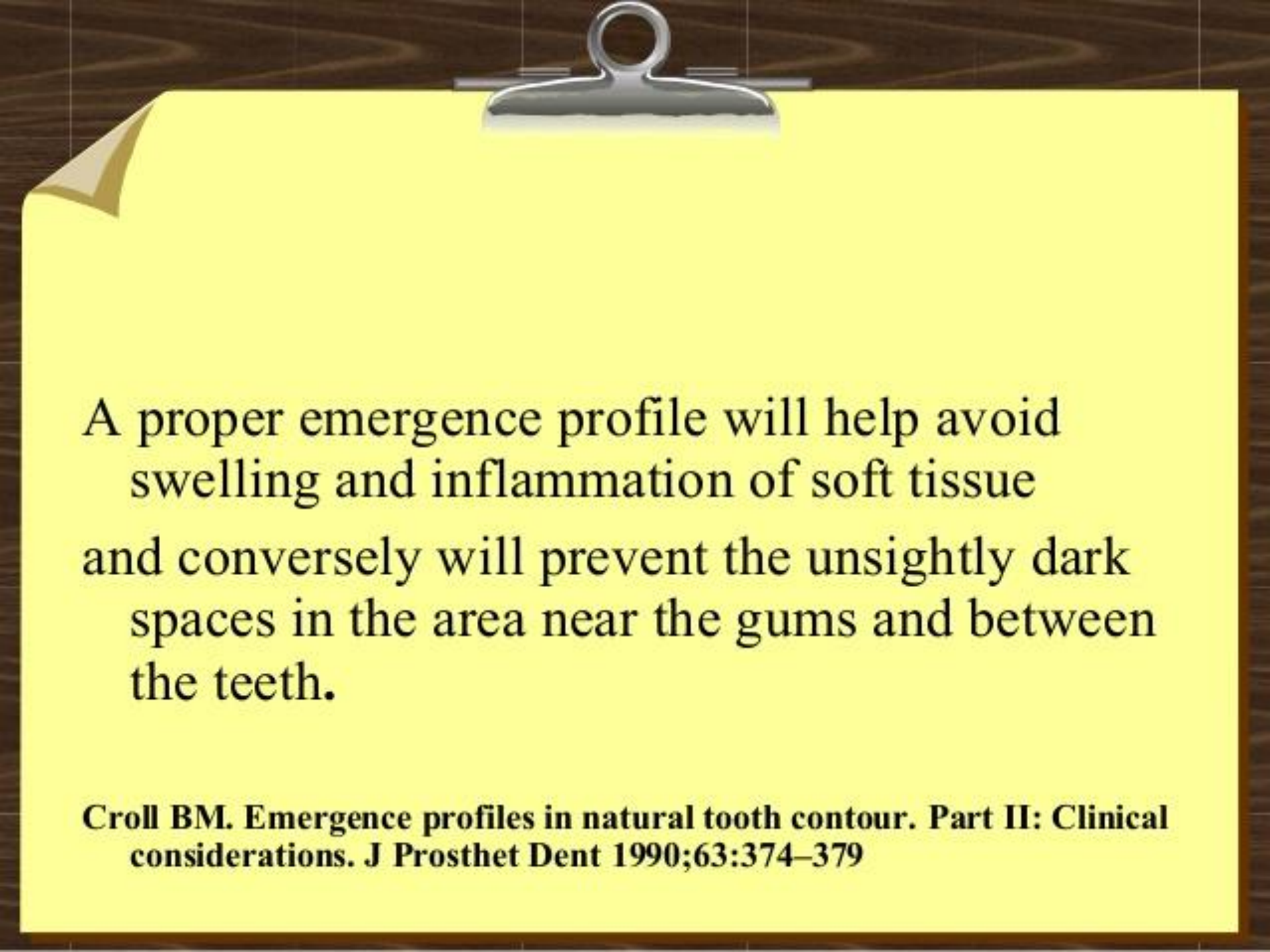
In 1989, Croll B M it was explained as the portion of axial tooth contour extending from the base of the gingival sulcus past the free gingival margin into the oral environment.



Croll BM.

r. Part I: Photographic

observations. J Prosthet Dent 1989;62:4-10.



A proper emergence profile will help avoid swelling and inflammation of soft tissue and conversely will prevent the unsightly dark spaces in the area near the gums and between the teeth.

Croll BM. Emergence profiles in natural tooth contour. Part II: Clinical considerations. J Prosthet Dent 1990;63:374–379



Emergence profiles are the most crucial link between tooth form and gingival health.

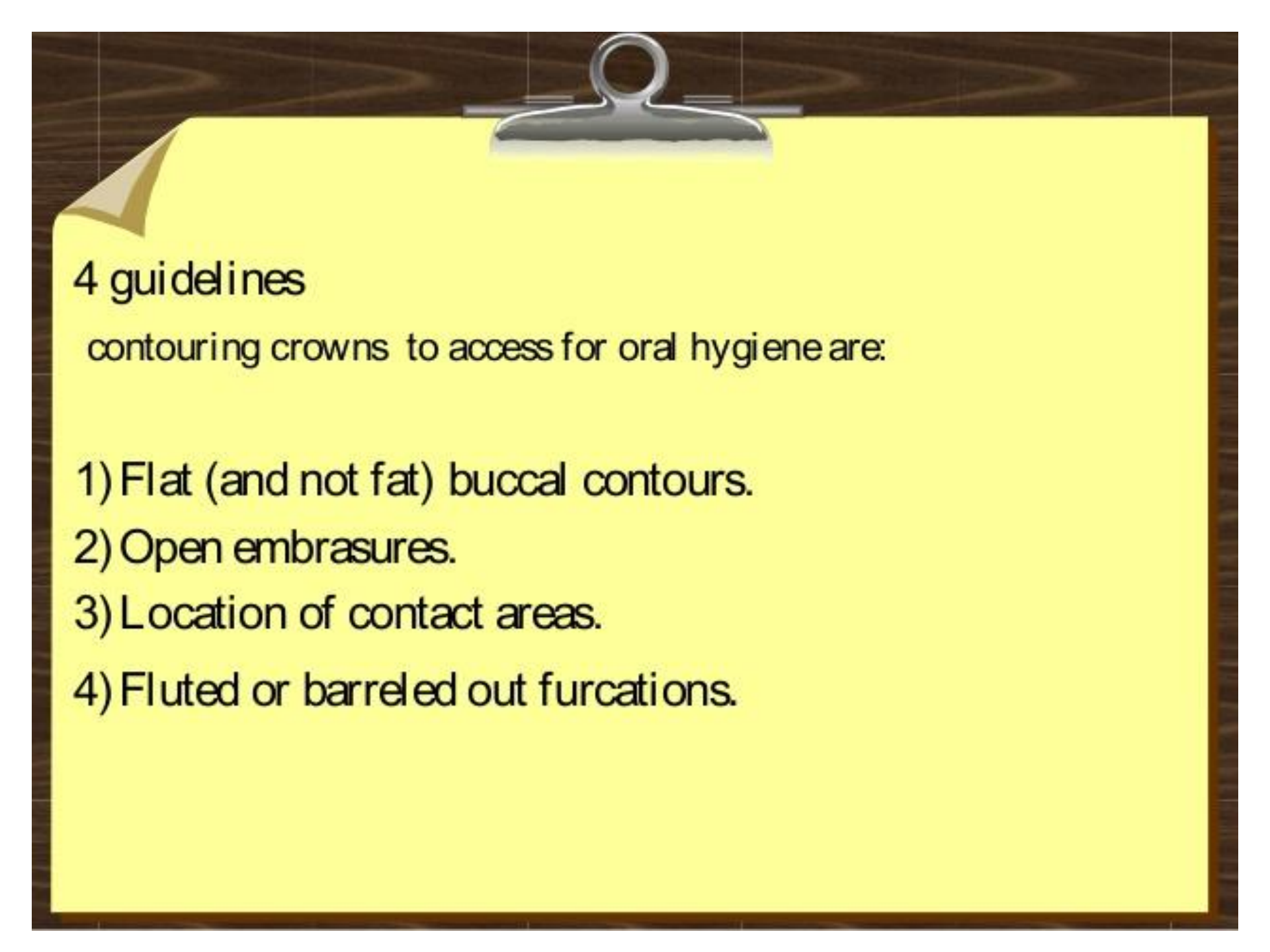
The microorganisms that cause periodontitis and gingival inflammation can colonize on these surface areas.

Careful attention to developing the proper emergence profile in the definitive restoration will reduce not only plaque retentive areas but also iatrogenic inflammation

Restorative margin placement and periodontal health. J Prosthet Dent 1991;66: 733–736.

“The emergence angle made by the emergence profile and the long axis of the tooth is +15 degrees.



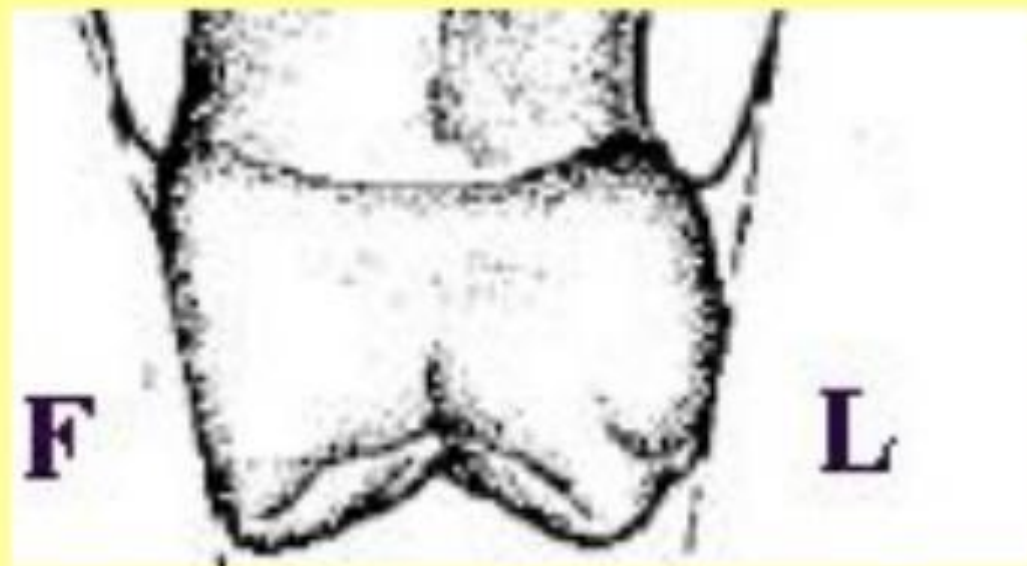


4 guidelines

contouring crowns to access for oral hygiene are:

- 1) Flat (and not fat) buccal contours.
- 2) Open embrasures.
- 3) Location of contact areas.
- 4) Fluted or barreled out furcations.

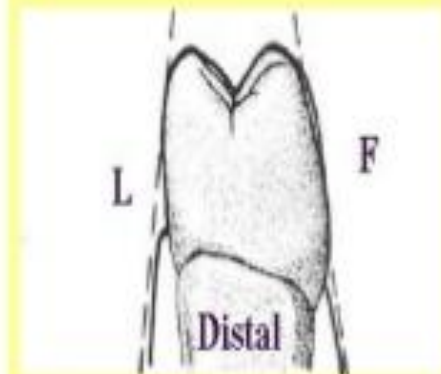
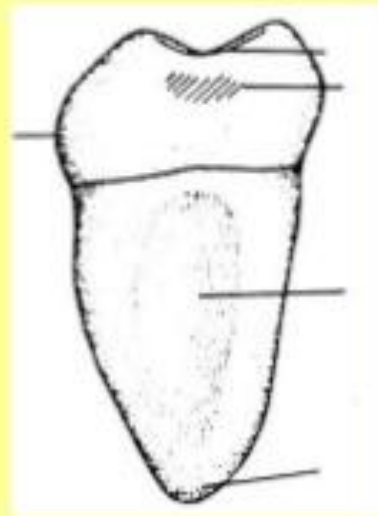
- 2) Facial contours- all facial contour crests are in the gingival third, and should not bulge more than one-half mm beyond CEJ.



- 3) Lingual contours- greatest convexity at gingival 1/3 except mandibular molars and sometimes mandibular second premolar, where greatest convexity is found in the middle 1/3 of crown.

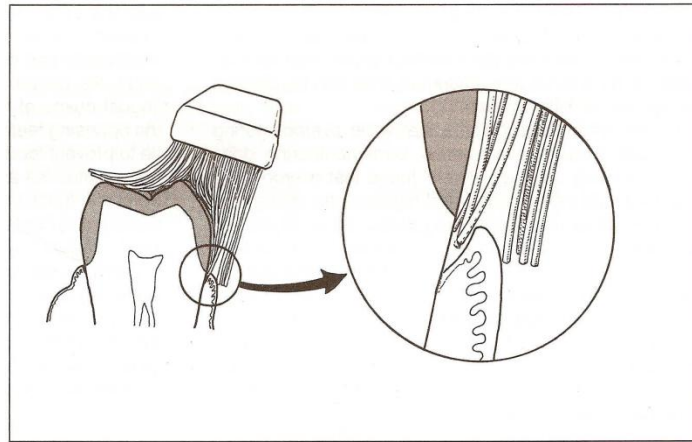
Molar

Pre-molar



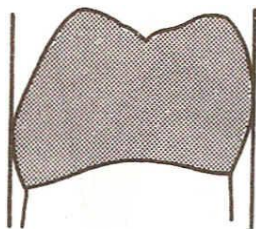
Therefore:

- . Production of a straight profile should be a treatment objective in restoring a tooth, because it facilitates access for oral hygiene measures.



A straight emergence pro-file allows toothbrush bristles to reach into the gingival sulcus.

The straight profile is easily evaluated with a periodontal probe. The most common error relating to axial contour is the creation of a bulge or excessive convexity.



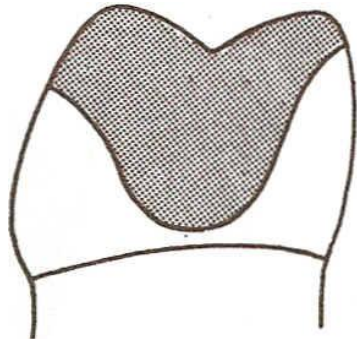
Axial contours of full veneer crowns on mandibular molars: A, correct; B, overcontoured

- Parkinson reported that metal-ceramic crowns had a mean faciolingual width of 0.71 mm greater than that of unrestored contralateral teeth serving as controls. Full gold crowns were 0.36 mm wider. Facial and lingual contours of teeth have been described in some detail. Through the years, undue importance probably has been attributed to a "protective" role of the axial contour in the cervical region. As a result, both dentists and dental technicians frequently create a bulge where there should be none, as well as place it apically in the cervical region. Overcontoured restorations with large convexities promote the accumulation of food debris and plaque, and gingival inflammation is encouraged rather than prevented.

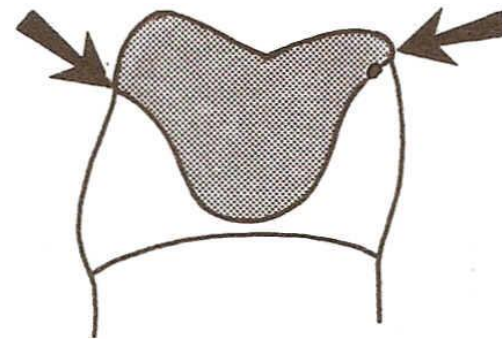
- There does not seem to be any justification for a "protective bulge." The small amount of facial bulge that exists in primary and adolescent human teeth and the dentitions of other species lies subgingivally without any apparent trauma to the gingiva from lack of "protection." Peg lateral incisors also lack cervical bulges, but they exhibit no deleterious gingival effects. In addition, many clinicians have observed the phenomenon of prepared teeth that have gone without provisional restorations for a considerable amount of time with no gingival overgrowth or inflammation.

- Experimental data indicate that while overcontouring produces gingival inflammation, undercontouring does not. In a study on dogs, Perel found that overcontouring produced inflammatory and hyperplastic changes in 4 weeks, while undercontouring produced no significant changes. This was subsequently verified in human subjects by Sackett and Guildenhuys who found that the gingiva around nearly two-thirds of overcontoured restorations showed degradation, inflammation, and alteration of morphology 6 to 7 weeks after restoration placement. Because of its destructive potential, over-contouring should be avoided. It is better to undercontour than to overcontour.

- If the restoration is an onlay or a partial veneer crown, the areas in which it meets the axial surface of the tooth should be blended into smooth, continuous contours.



A



B

Restoration contours should blend smoothly with the contours of surrounding tooth structure: A, correct; B, incorrect.

Bulges, depressions, and other discrepancies should be eliminated in the wax pattern before proceeding to investing and casting.