

Fundamental Basic Principles of Dental Aesthetics

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Abstract

The main tasks of dental prostheses are to restore mastication, phonetics and aesthetics. Although the first two are judged largely on the basis of objective criteria, the aesthetic evaluation of dental restoration depends on the individual sensibilities, subjective feelings and interpretation of the observers. The difficulty with aesthetic judgment is that objective criteria are not always decisive because cultural factors play a significant role. The prosthesis that does not meet the requirement of aesthetics does not fulfil its task, because aesthetics has become part of the comprehensive definition of health. All the technicians should know the basic principles for dental aesthetic restorations.

Introduction

Any individual's face is an extremely important segment in the aesthetic composition. The upper-front teeth play a fundamental role in facial aesthetics. Technicians should know the elements and basic norms for dental aesthetic restorations.

Pilkington¹⁸ in 1936, defined dental aesthetics as 'the science of copying or harmonising our work with that of nature, making our art inconspicuous' (1,7).

Aesthetic restorative procedures can be mastered consistently only if both technician and ceramist are intimately familiar with the basic principles of natural oral aesthetics. The aesthetic principles are not only limited to tooth aesthetics but include gingival aesthetics and the final aesthetic integration into the frame of the smile and face (1,5).

Both dental and gingival aesthetics act together to provide a smile with harmony and balance. A defect in the surrounding tissues cannot be compensated by the quality of the dental restoration and vice versa.

The aesthetic outcome depends on the harmonious integration of the fundamental aesthetic criteria with the smile and, ultimately, the character of an individual. Additional criteria must be considered, such as variations in tooth form, arrangement and positioning and relative crown lengths, as well as fine-tuning of the so-called negative space.

The aesthetic evaluation of a dental restoration depends on the individual sensibilities of the observer. The difficulty with aesthetic judgment is that objective criteria are not always decisive. Much depends on the subjective feelings and interpretation of the observer, with cultural factors playing a significant role. For this reason, great differences exist among observers as to what is aesthetic and what is not (3,4,6).

Fundamental Objective Criteria

1. Gingival health: During ageing, gingival health can be maintained by optimal oral hygiene and periodontal therapy if necessary. To maintain gingival health, atraumatic clinical procedures should be used during tooth preparation and impression taking and preparation margins should be precise and provisional restorations adequately adapted. It should not be forgotten that the axial contours of the final restorations, as well as the nature of the restorative material chosen, will influence gingival health.

2. Internal closure: In the juvenile healthy gingiva, interdental spaces are closed by the scalloping of the tissues forming the papillae. Transient neglect of oral hygiene and periodontal disease can alter this gingival architecture.

3. Tooth axis: The main axis of the tooth inclines distally in the incisopal direction. This inclination seemingly increases from the central incisors to the canines. Variations in tooth axis and midline are frequent.

4. Zenith of the gingival contour: The gingival zenith (the most apical point of the gingival outline) usually lies distal to the centre of the tooth, which results in an eccentric triangular tooth neck. According to Rufenacht², the gingival zenith can also be centred along the tooth axis for maxillary lateral incisors or mandibular incisors.

5. Balance of the gingival levels: The gingival contour of lateral incisors should lie more coronal compared to that of central incisors and canines. This ideal situation represents the class one gingival height.² In the Class 2 gingival height, the gingival contour of lateral incisors lies apical to that of central incisors and canines.