

Steps in Creating a Beautiful Smile



by
Ken M. Hamlett, D.D.S.
Dallas, TX
www.drhamlett.com

Larry W. Rosenthal, D.D.S.
New York, NY
www.rosenthalonline.com

INTRODUCTION

The single most important factor in creating a beautiful smile is the ability to visualize the final result before you begin. Laboratory communication, including photographs and models of the approved temporaries, is key to success. A thorough lab prescription detailing shade, texture, central length, incisal translucency, and any other pertinent information helps to facilitate a predictable result. To develop properly proportioned teeth, it is essential to properly address many characteristics, such as contours, shade, size and length of centrals, phonetics, and occlusion. This leads to a key artistic technique—the art of recontouring—with both temporaries and, if necessary, the final restorations.

Laboratory communication, including photographs and models of the approved temporaries, is key to success.

KEY CHARACTERISTICS

OCLUSION

Occlusion should be developed both in the temporization stage and in the final restorations, and should be balanced in both vertical and anterior excursive movements. A vertical opening of 2 to 3 mm can be achieved with little or no problem if the joint is stable and pain-free. If the occlusion is locked in excursive movements, muscle activity (e.g., lateral pterygoids) may be stimulated and produce spasms and perhaps pain.¹ Each practitioner must work out the occlusion based upon his or her own personal occlusal philosophy. The occlusion must be balanced for suc-

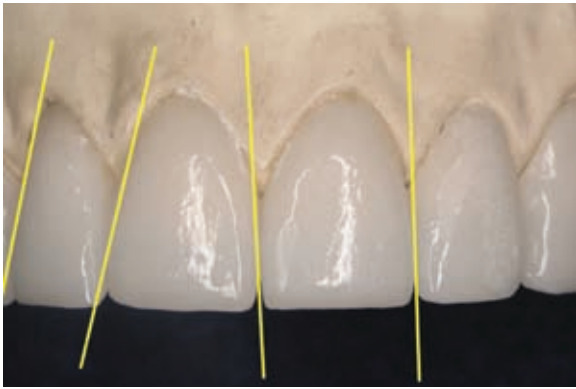


Figure 1: Before contouring, the teeth are flat, square, and unattractive.

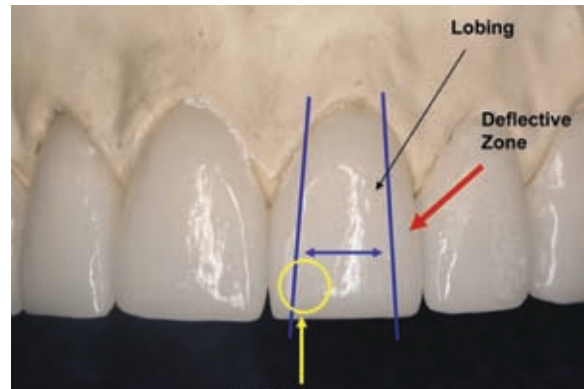


Figure 2: The incisal contours are not mirror images, which adds to the vitality.

cess. One way to check the final restorations in all movements is with a computerized occlusal analysis system (e.g., T-ScanII [Tekscan; South Boston, MA]).

PHONETICS

Phonetics should be checked in the temporaries for incisal edge position and length. This can also be checked in a trial mock-up on the patient's original teeth using flowable composite; as well as in the mouth with an evaluation of the "F" sound, in which the maxillary incisal edges touch the border of the lower lip; and the "E" sound, in which the maxillary incisal edges should be approximately one-half the distance between the lips. These positions are helpful in determining incisal edge length. The correct position of the lingual incline of the upper teeth and labial of the lower teeth can be determined by the "S" sound.

SHADING

Shading is extremely important in creating natural-looking restorations. We divide the tooth shade into thirds: Cervical color, body

color, and incisal color (e.g., A1, OM3, B1). Today, patients desire whiter teeth. However, the trend with practitioners is toward a more natural smile. The eyes and the teeth are major components of the face. Therefore, we ask the patient to bring photographs of smiles they like; usually, they all have a brighter and wider smile in common. The color should be polychromatic (with the value being the most important aspect), with the highest value in the body or center of the tooth. Developing a definitive surface texture with lobing and incisal translucency approximating the age, gender, and personality of the patient all are important in achieving success.²

The contours of the teeth may be the most important feature for a beautiful esthetic result.

CONTOURS

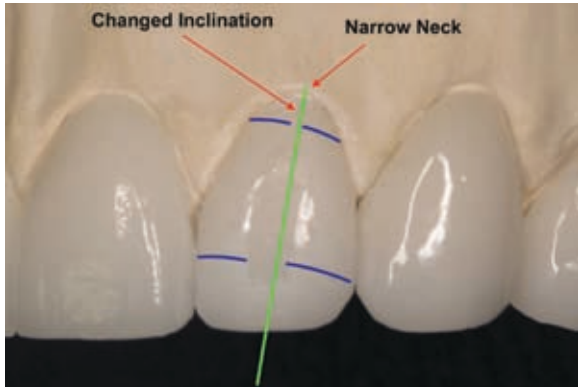
The contours of the teeth may be the most important feature for a beautiful esthetic result. It is extremely important to develop an eye

and feel for the final outcome. The use of Golden Proportion is helpful in determining the size of the anterior teeth, with the length-to-width ratio of the maxillary central incisor being 75 to 80%. The length of the central is usually between 10.5 and 11 mm. There can be only a .2 to .3 variance between central sizes.^{3,4}

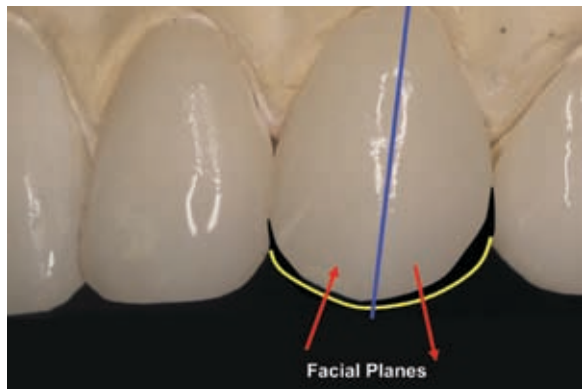
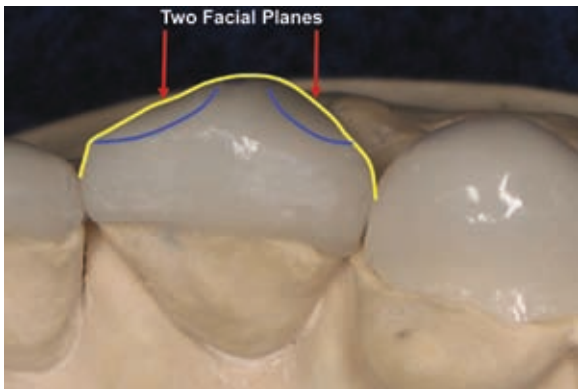
Before contouring, the teeth shown in Figure 1 were unattractive, flat, and square. You and/or the lab should be able to develop a reflective and deflective surface, with lobing to create shadowing and light reflection for a natural-looking central tooth restoration. Also, proximal line angles are developed; this is an important concept in tooth design. The mesial portion of the central should be straighter with a squarer incisal edge, whereas the distal portion is slightly round with a more round incisal edge. The incisal contours are *not* mirror images, which adds to the vitality (Fig 2).

SIZE AND LENGTH

In developing the lateral incisor, proximal line angles again play an important role in creating a femi-



Figures 3 & 4: The axial inclination should be more mesial and the gingival height should be .5 to 1 mm below a line drawn from the central to the cuspid.



Figures 5 & 6: The anterior part of the smile ends after the mesial plane, with a slight mesial axial inclination.

nine look, with narrow necks and rounded incisal edges, and centrals more dominant and longer. A masculine look, on the other hand, is created by widening the necks, flattening the incisal edges, and making centrals less dominant and almost the same length. The axial inclination should be more mesial and the gingival height should be .5 to 1 mm below a line drawn from the central to the cuspid (Figs 3 & 4).

The development of the cuspid is sometimes the hardest, but most important aspect of the smile—it is the cornerstone of the mouth. There should be two facial planes. The anterior part of the smile ends after the

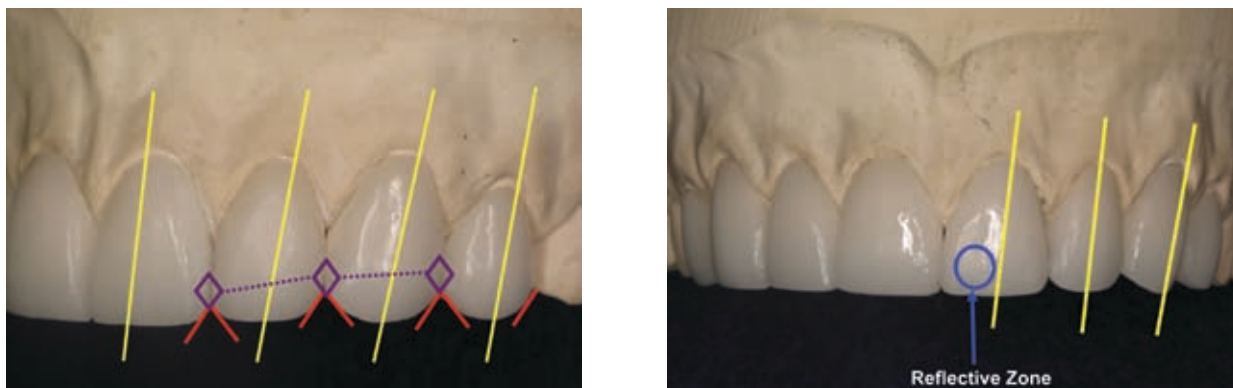
mesial plane, with a slight mesial axial inclination (Figs 5 & 6).⁵

One of the most important aspects of tooth design is that the incisal one-third needs to be rolled in so that portion of the restoration is not bulky.

In creating the “model look,” which is desired by many people, the buccal corridor is widened. The bicuspids are utilized in widening the smile and taking away the negative space, which is so often present in a person’s smile. By widening the bicuspids area you can also help support a person’s smile and de-

crease attention to a gummy smile. They must have incisal edge embrasures for definition (Fig 7).

In the temporaries and final restorations you must remember to address the axial inclination, gingival zenith, gingival height, contact areas and incisal embrasures, and gradation from anterior to posterior. Ideally, the incisal edges of the teeth should follow the lower lip’s smile line curve. The facial anatomy should be developed in three planes: Gingival one-third, body, and incisal one-third. One of the *most important* aspects of tooth design is that the incisal one-third needs to be rolled in so that portion of the restoration



Figures 7 & 8: The preparations should mimic the final results.

is not bulky (this can lead to the patient complaint that the tooth is prominent or too long). With a short upper lip, roll the incisal edges in so the lips can close around the teeth.⁶ The preparations should mimic the final results (Figs 7 & 8).

SUMMARY

Today's esthetically oriented society has embraced the esthetic revolution in dentistry. Our profession is well prepared for today's increasing

esthetic needs. By using the concepts presented here, you should be able to achieve a successful outcome for your esthetic cases.

References

1. Dawson PE. *Evaluation, Diagnosis and Treatment of Occlusal Problems* (2nd ed.). St. Louis, MO: CV Mosby; 1989.
2. Lee RL. Esthetics and its relationship to function. In Rufenacht CR (ed.), *Fundamentals of Esthetics* (chapter 4). Hanover Park, IL: Quintessence Pub.; 1990.
3. Rufenacht CR. *Principles of Esthetic Integration* (pp. 63-168). Hanover Park, IL: Quintessence Pub.; 2000.
4. Mavroskoufis F, Ritchie GM. Variation in size and form between left and right maxillary central incisor teeth. *J Prosthet Dent* 43(3):254-257, 1980.
5. Gurel G. *The Science and Art of Porcelain Laminate Veneers* (pp. 61-86). Hanover Park, IL: Quintessence Pub.; 2003.
6. Rosenthal L. The art of tooth preparation and recontouring. *Dent Today* 16(4):1-4, 1997. *AP*



THE GUIDELINES to assist potential authors in writing and submitting articles to *The Journal of Cosmetic Dentistry* can be requested by calling Tracy Skenandore at 800.543.9220 or by e-mail to tracys@aacd.com.

Original manuscripts submitted to *The Journal of Cosmetic Dentistry* are accepted subject to the understanding that they are submitted exclusively to the *Journal* and will not be reprinted without written consent from both the managing editor and author.

The Journal of Cosmetic Dentistry is primarily a journal designed for the practicing cosmetic dentist and laboratory technician. Clinical, practice development, and clinical research articles are accepted. Material should be prepared with short sentences, simplicity of wording, and good visual material. Editorial alterations will usually be made only to correct grammar, clarify any obscurities, or make the text consistent with the *Journal's* style. All manuscripts are peer-reviewed by the AACD Editorial Review Board through a blind editorial process. Neither reviewers nor authors are informed of each other's identities.