It is imperative that the restorative team be able to correctly analyze smile deficiencies and plan the required modifications...to achieve an ideal smile.

Individualizing a Smile Makeover
Current Strategies for Predictable Results

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Abstract
The goals of esthetically oriented treatment in the smile zone are to achieve harmony and dynamic symmetry of well-proportioned teeth correctly positioned in the arch, craft a balanced scalloping of the gingival line, and create/maintain a functional and physiologic occlusion. Each restorative treatment in this zone should begin with a functional wax-up, based on accumulated esthetic criteria, to guide the treatment team to the optimal result. This article describes a nonorthodontic/nonsurgical restorative approach with digital esthetic planning and meticulous, minimally invasive restorative treatment that enhanced a smile in a predictable and controllable manner.

Key Words: smile makeover, minimally invasive dentistry, Visagism, monolithic veneers, mock-up, controllable workflow

Learning Objectives
After reading this article, the participant should be able to:

1. Evaluate a nonorthodontic/nonsurgical restorative approach that conservatively delivers a beautiful and functional result.

2. Utilize a restorative mock-up to guide workflow, correcting minor tooth misalignment and shape irregularities.

3. Understand the advantages to be gained by using the Visagism concept and relevant software programs.
Treatment Objectives
The objectives of the treatment—to achieve a natural, pleasing smile by designing a balanced gingival outline and a proper shape and proportions for the anterior teeth—were set collaboratively with the patient. The main aesthetic challenge of such a case is to choose suitable shapes for the anterior teeth that will integrate with the patient’s facial esthetics as well as with his or her individual personality.10

Visagism
Nonverbal communication—harmony of the smile with the facial esthetics—is the primary area of study in Visagism.11 Due to their prominent position, the maxillary central incisors are the most important elements to be studied. The initial consultation involves an analysis of the face and completion of a questionnaire to determine the patient’s dominant temperaments so the treatment team can formulate a treatment plan assisted by the Visagism concept.12

The four basic temperaments can be classified as:

– choleric/strong
– sanguine/dynamic
– melancholic/sensitive
– phlegmatic/calm (Fig 4).13

An in-depth clinical analysis and a patient interview are crucial in determining which specific tooth forms most accurately reflect the patient’s personality.

Based on the patient questionnaire and interview, Visagismile software for personalized smile design (Visagismile Inc., Sofia, Bulgaria) indicated that this patient showed more dynamic and delicate characteristics, which are expressed in triangular/oval tooth shapes (Figs 5-7). Relevant images were sent to the dental laboratory along with guidelines for the suggested design of the four anterior teeth.

The dental technician created a diagnostic add-on wax-up that included the desired modifications: even the gingival outline by correcting the gingival margin of #9, enlarge the lateral incisors, correct the proportions of the four incisors, and close the spaces between the lateral and central incisors (Fig 8). The new design was in line with the Visagism guidelines.10 Blueprinting the wax-up, the dental technician provided a transparent silicone template (visio Universal T. Bredent Medical GmbH & Co. KG, Senden, Germany) prepared under pressure. It is important that the silicone template fit precisely to obtain a well-fitting, accurate mock-up.

First Mock-Up as a Diagnostic and Motivational Tool
The first introral additive mock-up was based on the diagnostic wax-up. A self-curing composite material (Luxatemp, DMG America, Englewood, NJ) was injected into the silicone key and inserted on the unprepared teeth, which were isolated with paraffin wax to facilitate easy removal (Fig 9). This first mock-up also serves as a motivational and communication tool with the patient, showing and explaining all the changes that can be made, as well as the desired final outcome. New full-face and intraoral photographic and video images were recorded in a sequence similar to the preoperative images. The desired changes were shown, explained, and discussed with the patient by comparing the relevant before-and-after mock-up videos and images (Figs 10 & 11). The patient accepted the treatment and the following steps were planned:
1. oral hygiene appointments until excellent oral hygiene was maintained
2. replacement of the old composite restorations
3. home bleaching for a period of 3 weeks (1 hour/day 22% carbamide peroxide)
4. mock-up-guided preparation, impression, and provisional restorations
5. bonding of the ceramic restorations
6. periodical recalls.

The patient declined a traditional surgical crown lengthening of #9 as the length difference between the central incisors was not visibly pronounced at function. However, she did accept a minimal adjustment of the tooth’s free gingival margin.

Following replacement of the old composite restorations (Figs 12a & 12b), home bleaching, and the return of soft tissue health through proper hygiene, the treatment could continue with preparation of the four anterior teeth for ceramic restorations.

"The main aesthetic challenge...is to choose suitable shapes for the anterior teeth that will integrate with the patient’s facial esthetics as well as with his or her individual personality."
Figure 4: Guidelines for different forms of the maxillary anterior teeth related to the four basic characteristics of human temperament.

Figure 5: The computer software determines facial characteristics and their correlation to the patient’s temperament.

Figure 6: The recommended tooth shapes after evaluation and integration of the patient’s questionnaire and digital facial analysis. In this case, dynamic and delicate shapes were suggested in the form of triangular/oval outlines with rounded incisal edges.