

OCCLUSION

Occlusal theory
Temporomandibular disorders
Occlusal disease
Osteoarthritis of TMJ
Disease of lateral pterygoid muscle (provisional name)
Disease of retrodiscal tissue (provisional name)
Centric relation
Determining of centric relation
Malocclusion
Occlusal analysis
Occlusal equilibrations
Examinations and diagnosis for occlusal equilibration

Method of occlusal equilibration
Case of occlusal equilibration
Occlusal plane
Vertical dimension
Smile design
Anterior guidance
Long centric
Bruxism
Noise of TMJ
Occlusal splint
Ideal occlusion



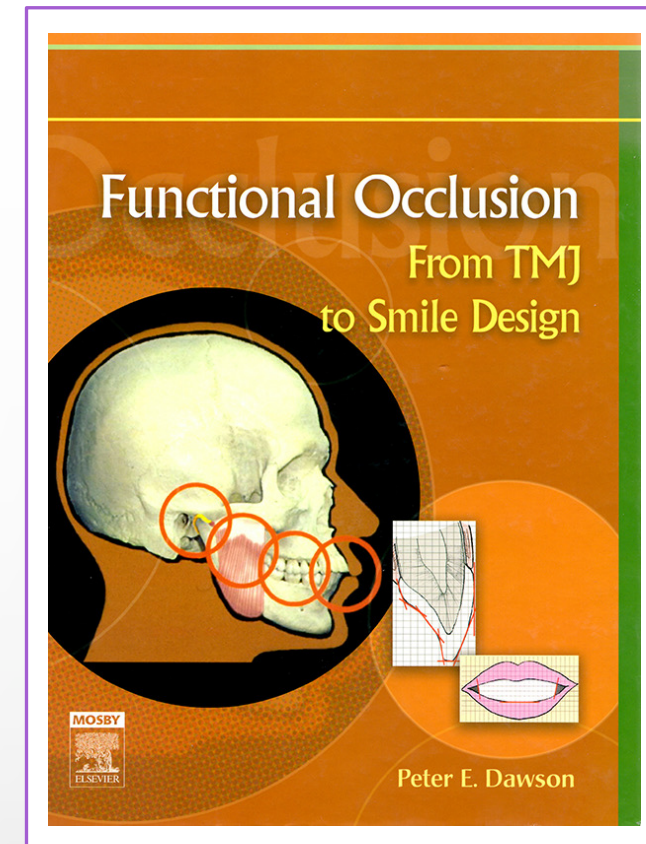
(OCCLUSION)

Smile design

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References



(SMILE DESIGN)



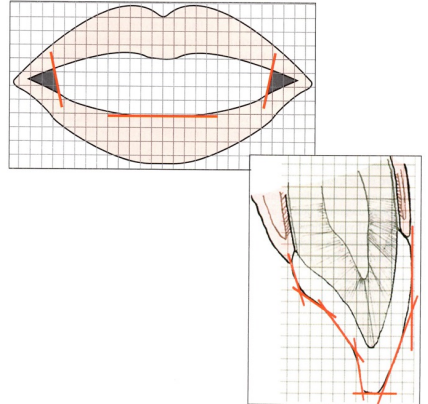
1. Functional Smile Design

Dawson describes smile design as Chapter 16, "Functional Smile Design," in Functional Occlusion. The chapter begins with the statement, "The better function, the better will be the smile design". In other words, functionality and esthetics are closely related, and the position and form of the anterior teeth based on functionality is the basis for esthetically superior anterior tooth design.

In this article, we will discuss smile design based on functionality. Furthermore, we will show how to determine the final crown morphology in harmony with the patient's appearance.

Chapter 16

Functional Smile Design



PRINCIPLE
The better the function, the better will be the smile design.

(from Functional Occlusion)

(SMILE DESIGN)



2. Natural Esthetics

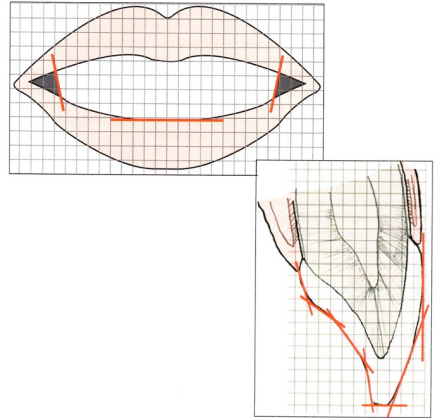
Dawson advocates “natural esthetics” in esthetic dentistry, i.e., beauty based on a natural view of the patient’s individuality.

Most patients want anterior teeth that constitute an esthetic smile with a natural look. This is bringing about an esthetic revolution in dentistry.

Natural esthetics is based on established criteria and is never a manual, trial-and-error means of treatment. In other words, Dawson shows that there are clear anatomical criteria for tooth form, position, and inclination, and that it is important to understand these criteria.

Chapter 16

Functional Smile Design



PRINCIPLE
The better the function, the better will be the smile design.

(from Functional Occlusion)

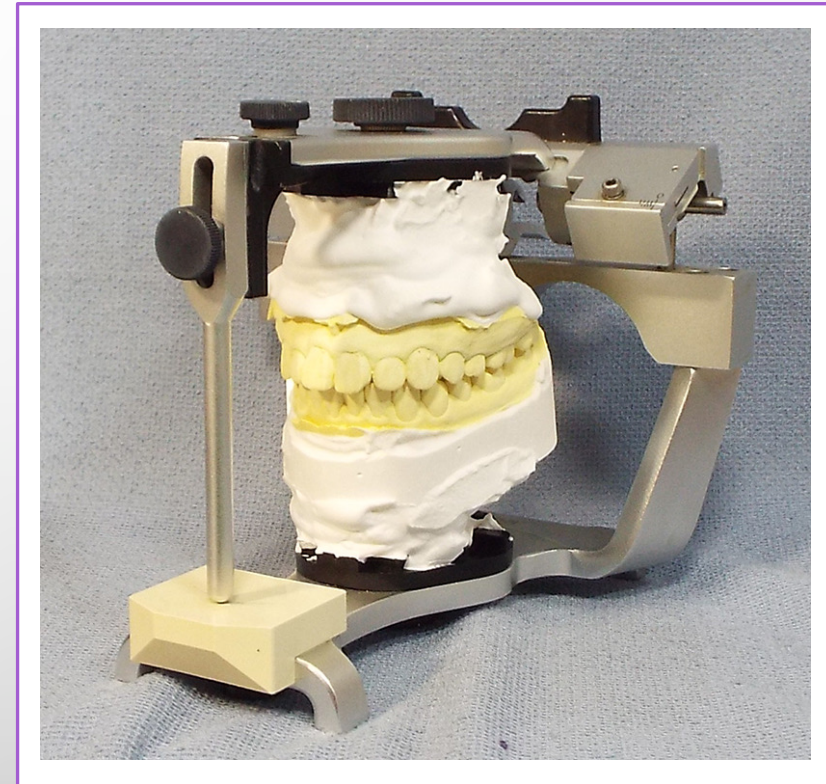
(SMILE DESIGN)



3. Smile Design and Study Casts

In order to achieve an esthetic smile design in harmony with masticatory function, the appropriate form, position and tilt of the anterior teeth must be determined.

If malocclusion or occlusal interference exists in a patient, it is not possible to give the anterior teeth the proper form, position, and tilt. Therefore, in order to achieve the patient's smile design, occlusal analysis must be performed on a study cast mounted in the centric relation on a semi-adjustable articulator to eliminate occlusal interference.



(SMILE DESIGN)



4. Where to Start for Anterior Restorations?

Before establishing an esthetic smile design, the following items should be analyzed to identify any abnormal findings.

- (a) Confirmation of centric relation
- (b) Occlusal contact of anterior teeth in centric relation
- (c) Immediate molar release

Each of these will be explained.



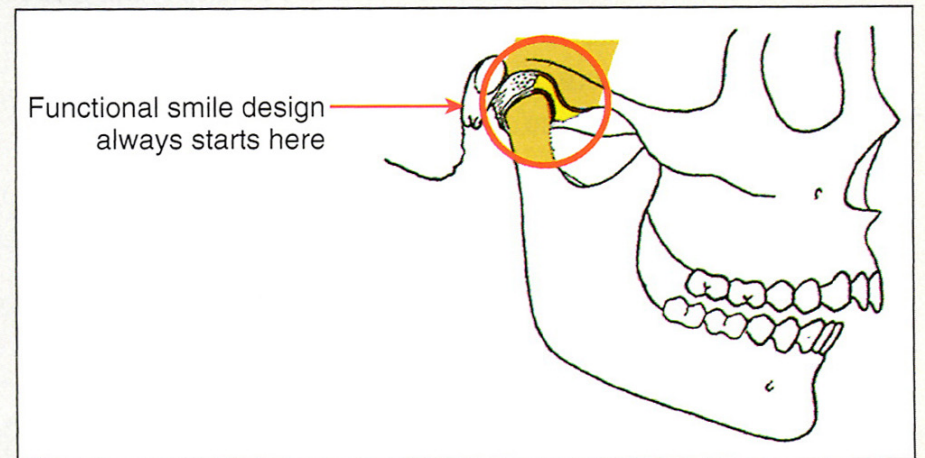
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4. Where to Start for Anterior Restorations?



(a) Confirmation of centric relation

As shown in the upper right illustration, before beginning an anterior restoration, the TMJ should be examined to determine if it is possible to position the TMJ in a healthy and ideal centric relation. In particular, a loading test should be performed to demonstrate that a centric relation has been achieved. If any signs of TMJ abnormality are found, anterior restorations cannot be designed.



(from Functional Occlusion)

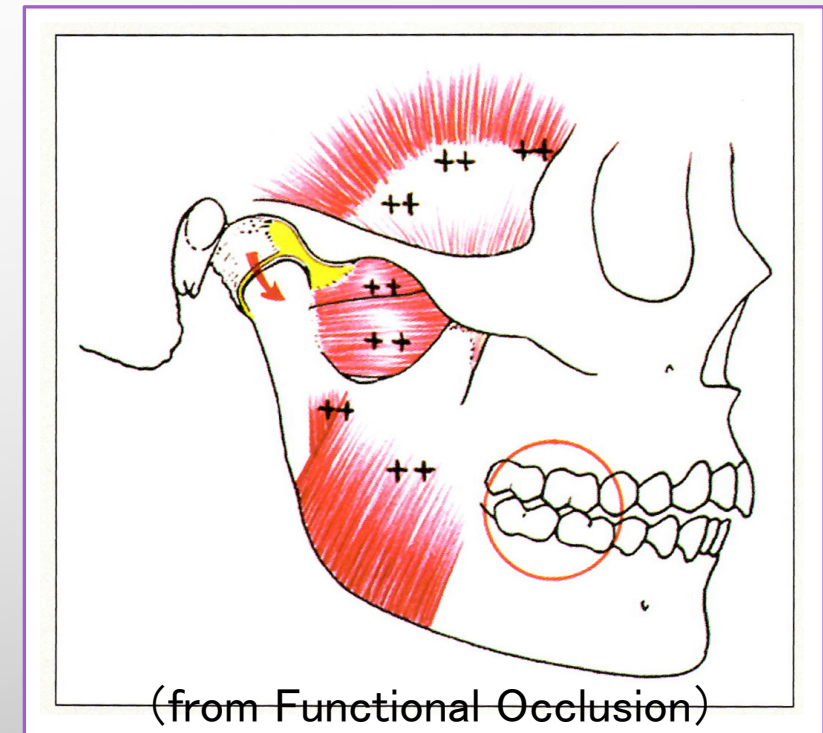
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4. Where to Start for Anterior Restorations?

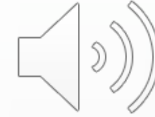
(b) Occlusal contact of anterior teeth in centric relation

The occlusal relationship of the anterior teeth in the centric relation should be evaluated. The goal is to achieve anterior contact without interference or premature contact of the molars in the centric relation. As shown in the right illustration, if anterior contact cannot be achieved in the centric relation due to occlusal interference of the molars, the anterior restoration cannot be designed.



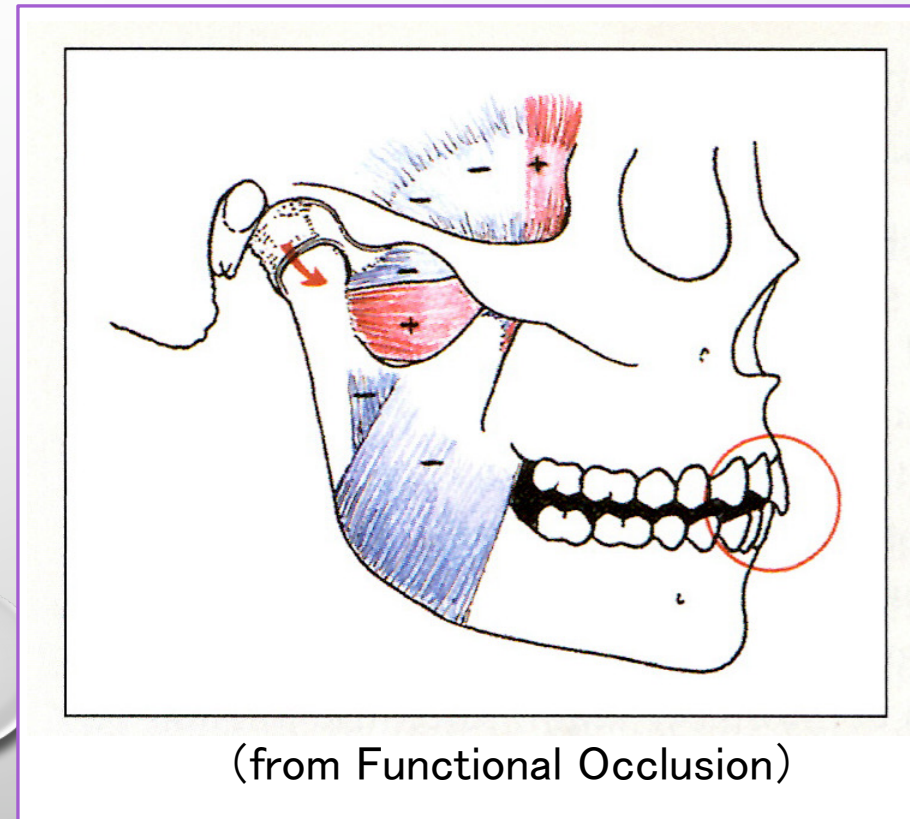
(SMILE DESIGN)

4. Where to Start for Anterior Restorations?



(c) Immediate molar release

The most important function of anterior bite induction is immediate molar release as the mandible moves from the centric relation. This immediate molar release prevents excessive wear of the molars and reduces the forces on the anterior teeth. To achieve this immediate molar release, occlusal contact must be established on the anterior teeth without molar occlusal interference.



(SMILE DESIGN)



5. Procedure of Morphological Modification

(a) Morphological modification of the study cast

As shown in the right photo, occlusal analysis of the molars can be performed using a study cast fitted in the centric relation. Articulating paper is used to mark the interfering areas that prevent anterior tooth contact in the centric relation. The articulator should be centrally locked at this stage.



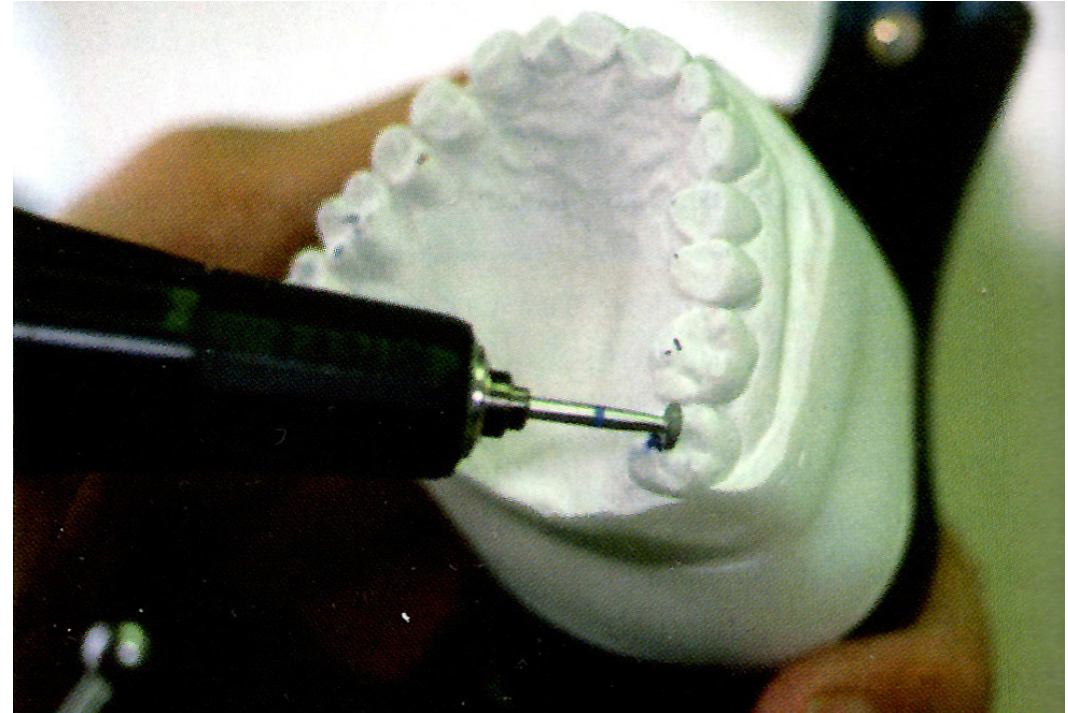
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(SMILE DESIGN)



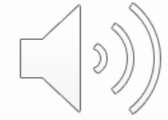
5. Procedure of Morphological Modification (b) Morphological correction of the study cast

As shown in the right photo, if the best option is to modify the morphology by occlusal equilibration, the occlusal height diameter is lowered by adjusting the occlusion of the molars so that the anterior teeth are in contact in the centric relation.



(from Functional Occlusion)

(SMILE DESIGN)



5. Procedure of Morphological Modification

(c) Diagnostic wax-up of mandibular anterior teeth

As shown in the right photo, the diagnostic wax-up of the mandibular anterior teeth clarifies what type of restoration is needed to obtain centrally positioned anterior contact.



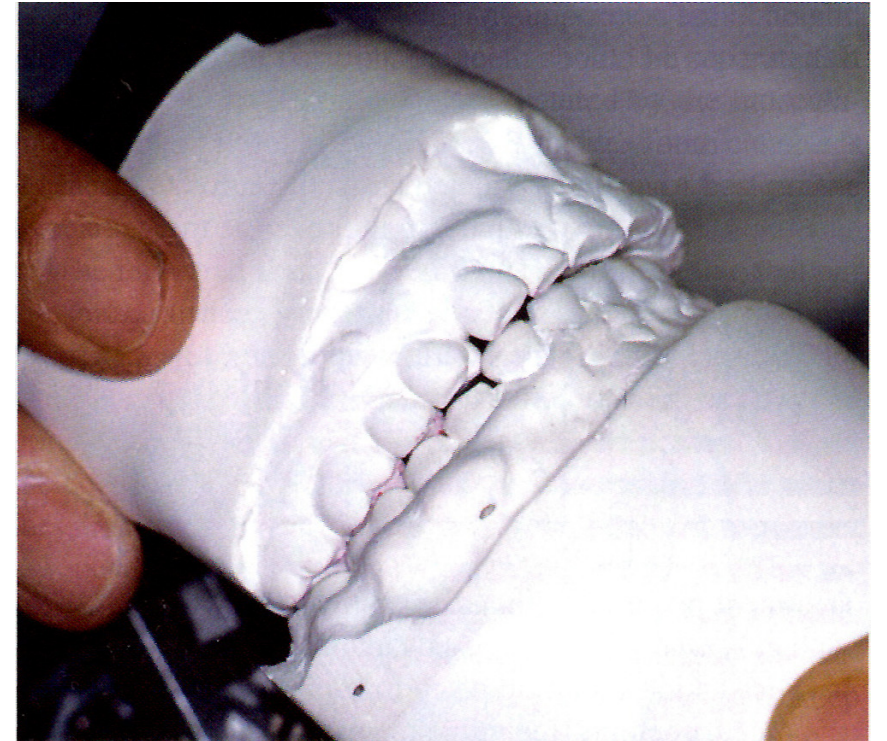
(from Functional Occlusion)

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5. Procedure of Morphological Modification (d) Proper occlusal contact



As shown in the right photo, proper occlusal contact can be determined by adjusting the molar occlusion of the study cast and waxing up the mandibular anterior teeth.



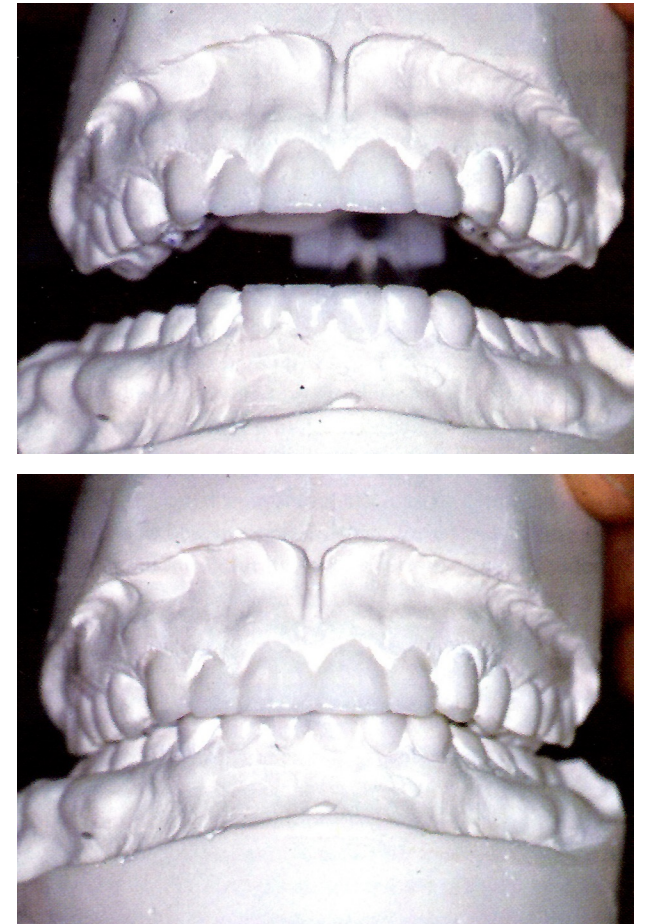
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(SMILE DESIGN)



5. Procedure of Morphological Modification (e) Diagnostic wax-up

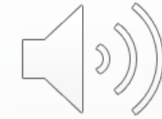
The photo on the right shows the completed diagnostic wax-up. The diagnostic wax-up is not the final form of the anterior teeth. This diagnostic wax-up is used as a standard for fabricating provisional restorations. The position and form of the incisor incisors, labial augmentation, and antral guidance are determined intraorally by adjusting the provisional restorations that have been placed.



(from Functional Occlusion)

(SMILE DESIGN)

5. Procedure of Morphological Modification (f) Impression of diagnostic wax-up



The diagnostic wax-up allows the approximate position and morphology of the anterior teeth to be determined. As shown in the right photo, a diagnostic wax-up impression is made using silicone impression material. The impression is then used to fabricate a provisional restoration.



(from Functional Occlusion)

(SMILE DESIGN)

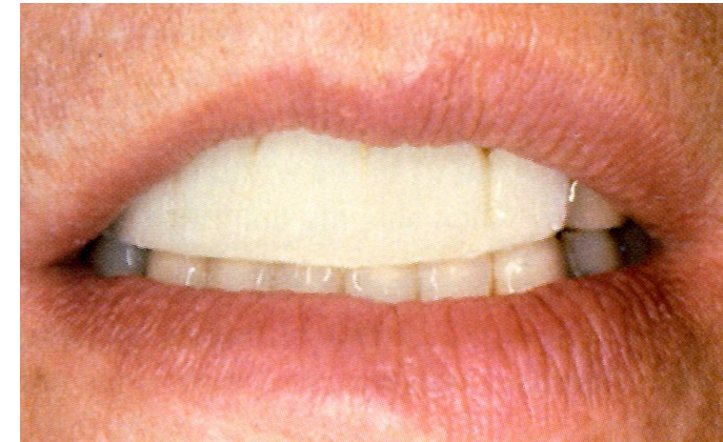


5. Procedure of Morphological Modification (g) Placement of provisional restoration

When fitting a provisional restoration, tell the patient the following.

Take a good look at how you feel about these false teeth. Let me know if they are not comfortable, if they interfere with your pronunciation, or if you don't like the way they look. We can correct any areas you don't like."

The patient is fitted with a provisional restoration, and the final crown shape is determined by analyzing its harmony with the lips, pronunciation function, comfort, and impact on smile appearance.



(from Functional Occlusion)

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Smile design



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If you have any questions or doubts, please leave them in the public comment section below.

The next topic will be ” Anterior guidance ”.