

SMILE DESIGNING –A PERIODONTAL ESTHETIC DENTISTRY-A REVIEW

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ABSTRACT

A well structured and systematic way is always needed to diagnose, assess and also solve esthetics related problems predictably. It is of utmost important that the terminal result is not dependent only on the appearance alone. This article reviews certain classifications that guide the art of smile designing in dentistry and will provide a basic knowledge to the reader regarding it.

Key words:

Smile, Smile Designing, periodontal aesthetics, aesthetics, Cosmetic Dentistry

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INTRODUCTION

Expression has many dimensions....but a smile is what makes the difference!!!

According to Hulse, "smile is the most effective means by which people convey their emotions"(Husley CM; 1970).The main objective of an aesthetic dental treatment is obtaining a beautiful and attractive smile. Intrinsic characteristics are the integral parts of individual and it can sometimes be altered and sometimes not(Camara CA; 2010).A beautiful and attractive smile is provided with an ideal smile line. The smile line is the relation between the incisal edge curvature of the maxillary anterior teeth(11,12,13,21,22,23) and the curvature of the upper edge of the lower lip. What is ideal in a smile is that these curvatures should be parallel to each other (Maulik C; 2007). In this article, various classifications and types of smile patterns are discussed.

Classifications

According to Tjan et al

Smile is Classified as

1. high
2. average and
3. low

Highsmile: Complete display of cervico-incisal length of the maxillary incisors (11,12,13,21,22,23) along with continuous band of gingiva.

Average smile: 75 to 100% of maxillary incisors are displayed with the incisal curvature of lower lip and may be slightly or totally touching the lower lip (Rajtilak G; 2012).

Low smile: less than 75% of display.

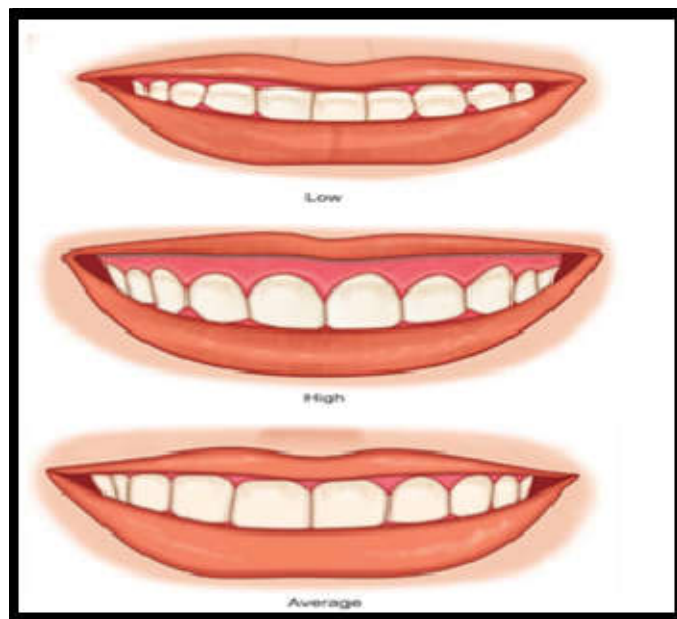


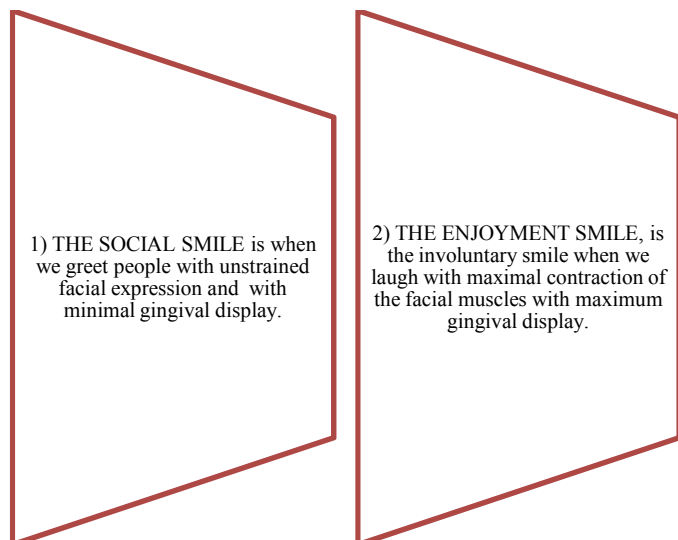
Figure1

Classification of Smile Types

There are Two Basic Types of Smiles: the social smile and the enjoyment smile. Each type involves a different anatomic

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presentation of the elements of the display zone. (Ackerman JL ; 1998)



Stages of a Smile

There are four stages in a smile cycle



- Of course, different individual has different smile patterns which are singular.
- natural smile and expanded smile cannot be much differentiated.
- In such type of cases, treatment plan can most of the time be restricted to the maxillary or mandibular anterior teeth.
- Smiles also has a very evident variation in display between these two stages, so it might be beneficial to put forward a treatment plan to esthetically improve the smile (Janzen EK; 1977)

Classification of the “smile line” upper lip-interdental and marginal gingival (Jensen J; 1999) as in table :3

Table 3

Class	Type: description	Evaluation:
Score 0	low smile line	Interdental gingiva less than 25% visible. Gingival margin is not visible, teeth masked.
Score 1	average/ ideal smile line	Interdental gingiva: 25- 75% visible. Gingival margin visible on individual teeth.
Score 2	high smile line	Interdental gingiva > 75% visible. Gingival margin < 3mm visible (overall). Interdental gingiva: completely visible.
Score 3	very high smile line	Gingival margin > 3mm wide maxillary band of gingiva visible beyond the mucogingival line (MGL) “gummy smile”.

Treatment Aspect

The aim and objective of periodontal therapy is to construct and preserve the dentition and periodontium in health, comfort and function with optimal esthetics throughout the lifetime of the patient. “esthetics” has recently become an integral portion of the overall goal. Most patients will not accept periodontal treatment without the perception of an acceptable esthetic outcome. The addition of “optimal esthetics” to the goal of periodontal therapy parallels a paradigm shift in all of dentistry.

The search for beauty can be traced to the earliest civilizations. Dental art has long been part of the quest to enhance the esthetics of the teeth & mouth.

Four terms are used to describe this area of Periodontics: Mucogingival surgery, Mucogingival therapy, Periodontal Plastic Surgery & Reconstructive surgery.

Discrepancies in the Dento-Gingival & Dento-Facial Complex

Soft tissue discrepancies	hard tissue discrepancies
Gummy smile (Perio-ortho-restorative interrelationship)	Ridge collapse in the anterior esthetic zone
Short clinical crowns (Perio-prostho-restorative interrelationship)	Periodontal defects in anterior esthetic zone
Gingival Hyperpigmentation	Mucosal problems around implants in the esthetic zone
Aberrant frenulum	
Gingival enlargement	
Narrow zone of attached gingiva & Shallow vestibule	
Gingival recession	
Black triangles	
Ectopic tooth eruption	

The management of the above mentioned discrepancies falls into the category of Perio-esthetics:

General Esthetic Principles and Related Guidelines

Fundamental objective criteria which can be considered while taking natural maxillary anterior dentition into consideration are as follows.

Objective Aesthetic criterias are as follows: (Magne&Belser, 2002)

Gingival health should be give utmost importance, followed by Interdental space closure and Zenith of the gingival contour, along with Balancing gingival marginal levels & also Level of the interdental contact. Relative tooth dimensions & features of tooth form should also be given equal consideration while taking care of aesthetics. Surface texture and colour of the tooth also plays an important role in aesthetics. Incisal edge configuration, Lower lip line and Smile symmetry should be taken into consideration while designing an aesthetic smile.

Subjective criteria are as follows (esthetic integration)

Subjective criteria which plays an utmost importance while designing a smile are tooth forms and positioning of the tooth and its arrangement followed by Relative crown length.

Patient expectations related regarding maxillary anterior edentulous segments

Pateints expects to have a Long- lasting esthetic and functional result which will have high degree of predictability and a procedure with Minimal invasiveness along with Maximum

subjective comfort which would give them Minimum risk for complications associated with surgery and faster healing phase which would be cost effective.

The Therapeutic modalities for tooth replacement in the esthetic zone

While replacing a tooth in esthetic region Conventional fixed partial dentures which would comprise of cantilever units, Resin- bonded (“adhesive”) bridges., Conventional removable partial dentures, Tooth- supported overdentures , Orthodontic therapy for the closure of edentulous space and Implant-supported prostheses along with fixed, retrievable or removable suprastructures should be considered.

Criteria favoring implant- borne restorations

wound healing should be normal and Intact neighboring teeth should be present, Unfavorable (“compromised”) potential abutment teeth, Extended edentulous segments, Missing strategic abutment teeth, Presence of diastemas.

CONCLUSION

The excellent outcome is always achieved by a systematic approach , which can be done by appropriate diagnosis, by proper communication and also accurate treatment planning and finally by implementing it into the practice. Smile design is a relatively new discipline in this era of periodontal cosmetic dentistry, and it involves several areas of evaluation and treatment planning, which simply means that cosmetic dentistry is a multidisciplinary branch, wherein all treatments like orthodontics, periodontics, and surgical procedure have to be performed whenever necessary.

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