Patients have traditionally sought treatment when concerned with the way their teeth look, function or feel. Over the past few decades, esthetics increasingly motivates patients to seek treatment. Practitioners must learn to satisfy their patients’ increasing esthetic demands at the same time they assimilate an increasing amount of information regarding diagnostics, materials and techniques. With the right approach, highly esthetic outcomes can be achieved at the same time treatment outcomes are engineered for long term success.

Course Objectives
1. Learn how to effectively incorporate esthetics into a comprehensive diagnosis.
2. Understand smile analysis and its importance in guiding treatment decisions.
3. Learn the esthetic and morphologic factors that influence ideal gingival architecture.
4. Learn predictable techniques for altering gingival architecture and optimizing results.
5. Gain an understanding for the standard of excellence as set forth by Accreditation in the American Academy of Cosmetic Dentistry.

DIAGNOSTIC PARAMETERS

Periodontal (Gum and bone)

Biomechanical (Tooth structure)
Functional (Bite and chewing)

Dentofacial (Smile characteristics)

RISK ASSESSMENT
Risk vs Prognosis

LOWERING RISK
Periodontal
Biomechanical
Functional
Dentofacial

ESTABLISHING A DIAGNOSIS

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ESTHETIC DETERMINANTS

Establish:
1. Maxillary incisal edge position
2. Maxillary occlusal plane
3. Mandibular incisal edge position
4. Mandibular occlusal plane
5. Acceptable intra arch tooth position
6. Appropriate gingival symmetry and scallop

DENTOFACIAL OBJECTIVES

Maxillary tooth display at rest
- Males 1-2mm / Females 3-4mm
- Decreases with age
- Is affected by tooth size and position and lip length and mobility

REFERENCE
The Kinetics of Anterior Tooth Display
Vig RG, Brundo GC. Journal Prosthet Dent 1978;39:502-4

Maxillary tooth smile display
- Average maxillary central incisor 10-10.5mm
- Average upper lip length 20-22mm
- Average upper lip mobility between 7-8mm

REFERENCE
Facial Analysis: A Comprehensive Approach to Treatment Planning in Aesthetic Dentistry
Rifkin RG. Pract Periodont Aesthet Dent 2000; 12(9):865-87

**Lip height**
- High __________________________________________________________
- Medium _________________________________________________________
- Low ____________________________________________________________

**Gingival harmony matters _______ of the time.**

**Establish:**

1. Maxillary incisal edge position
   - At rest
   - Full smile
   - Tooth length average central incisor 10.5mm
   - “EEE” position

2. Maxillary occlusal plane

3. Mandibular incisal edge position
   - Males 1-2mm
   - Females .5mm
   - Increase display with age
   - In a normal smile 82% show upper third, 45% show upper two thirds, 12% show all

**REFERENCE**
Margin Placement of Esthetic Veneer Crowns, Part 1: Anterior tooth visibility

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4. Mandibular occlusal plane

5. Acceptable intra arch tooth position
   - Important to examine papillae height

6. Appropriate gingival symmetry and scallop
   - Free gingival margin parallels maxillary lip
   - Cuspid – Central – Central – Cuspid on the same plane
   - Laterals on same plane or 1mm coronal to that
   - Papillae exhibit radiating symmetry
   - Papilla most coronal between the central incisors

Options for Altering Gingival Heights and Contours
- Restoratively
- Orthodontically
- Surgically
- Combination
Altering Gingival Levels Surgically

- Additive
  - Pedicle, connective tissue and AlloDerm® grafts
  - Coronal positioned flaps

- Subtractive techniques
  - Predictable
  - Minimal investment in equipment and instrumentation
  - High level of patient satisfaction

Biologic Width

~1mm connective tissue attachment
~1mm junctional epithelium

Sounding to the Osseous Crest

1. Place local anesthetic
2. Place periodontal probe intrasulcularly keeping pressure against root surface
3. Push firmly until meeting the resistance of the osseous crest

Altering Gingival Levels: The restorative Connection Part I:

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What does sounding reveal?
1. Sounding to bone reveals the relationship of the gingiva to the osseous crest.

2. Allows predictable placement of restorative margins.

3. Determines the surgical approach to altering tissue levels.

Normal Crest
- Average degree of gingival scallop (3-4mm)
- 3mm facially to osseous crest
- 4mm interproximally to osseous crest
- Predictable, stable tissue levels

Low Crest
- High degree of gingival scallop
- Greater than 3mm to osseous crest on facial
- Greater than 4mm to osseous crest interproximally
- Use caution when manipulating tissue, unstable tissue heights
- Low crest is an advantage when it is on the facial and it is desirable to remove tissue
- In these instances, a gingivectomy is all that is required with an intrasulcular incision to the osseous crest to release fibers
**High Crest**

- Low degree of gingival scallop
- Less than 3mm to osseous crest on facial
- Less than 3mm to osseous crest interproximally
- Predictable, stable tissue levels
- Allow for greater time of healing following surgery, sound to bone when restoring

Normal crest exist facially 85%
High crest exists facially 2%
Low crest exists facially 13%

**Key Determinants**

- ___ mm on the facial
- ___ mm interproximally

**Presence or Absence of Papillae**
Studied 288 sites in 30 patients
The Effect of the Distance From the Contact Point to the Crest of Bone on the Presence or Absence of the Interproximal Dental Papilla

REFERENCE

Interproximally mean distance 4.33mm between gingival margin and bone level 3 years after treatment.

REFERENCE
Regeneration of the Interdental Soft Tissues Following Denudation Procedures

Tissue Alteration
• Soft tissue
  – Blade
  – Electrosurgery
  – Laser
• Osseous tissue
  – Hand instruments
  – Rotary instruments
  – Laser

Post Operative Instructions
• Avoid biting into things with front teeth
• Semi-soft diet if sutures were placed
• NSAIDs for discomfort
• Sutures removed one week post op
• Clean teeth with gauze for a few days and work into gentle brushing

RESOURCES:

KOIS CENTER
Advancing Dentistry Through Science
www.koiscenter.com

Kois Center Case of the Month
www.dentalaegis.com/cced/

THE AMERICAN ACADEMY OF COSMETIC DENTISTRY
www.aacd.com