



Esthetics
inside
ESTHETICS

**Smile Analysis and Esthetic Design:
"In the Zone"**

Edward A. McLaren, DDS, MDC, and Phung Tran Cox, DDS

Increasingly, patients seeking new ways to improve their smile are turning to digital technology for solutions. These articles have been written and reviewed by our editors as a means of providing you with the latest in esthetic dentistry. This may not be the only way to get the most out of your smile, but it is one of the most effective. The authors of these articles are experts in their field and have written these articles to help you understand the latest in esthetic dentistry. The authors of these articles are experts in their field and have written these articles to help you understand the latest in esthetic dentistry. The authors of these articles are experts in their field and have written these articles to help you understand the latest in esthetic dentistry.

Smile analysis is a critical component of esthetic dentistry. It involves a thorough examination of the patient's smile, including the teeth, lips, and facial features. This analysis is used to identify any issues that may be affecting the patient's smile and to develop a treatment plan that addresses these issues. The authors of these articles are experts in their field and have written these articles to help you understand the latest in esthetic dentistry. The authors of these articles are experts in their field and have written these articles to help you understand the latest in esthetic dentistry.



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**FACIAL
ESTHETICS**

**DENTO-FACIAL
ESTHETICS**

**DENTAL
ESTHETICS**



Question: How should we classify esthetics and order our smile analysis?

ESTHETICS

- **MACRO-ESTHETICS**
THE ESTHETICS OF THE INTER-RELATIONSHIPS BETWEEN THE FACE, LIPS, GINGIVA, AND TEETH
"THE PERCEPTION THAT THESE RELATIONSHIPS ARE PLEASING"

IN DENTISTRY

- **MICRO-ESTHETICS**
THE ESTHETICS OF AN INDIVIDUAL TOOTH
"THE PERCEPTION THAT THE COLOR AND FORM OF AN INDIVIDUAL TOOTH IS PLEASING"

1. FACIAL ESTHETICS-total facial form and balance

2. ORAL-FACIAL ESTHETICS- maxillo-mandibular relationships to the face, and the dental midline to the face: **dento**: of or pertaining to the teeth. **Oral**: of or pertaining to the mouth: **mouth**: 1. The upper opening of the digestive tract, beginning with the lips and containing the teeth, gums, and tongue.

3. ORAL (or labio/dento/gingival) ESTHETICS the relationships of the lips to the arches, gingiva and teeth

4. DENTO-GINGIVAL ESTHETICS- the relationship of the gingiva to the teeth collectively and individually

5. DENTAL ESTHETICS- macro and micro dental esthetics-both inter and intra- tooth

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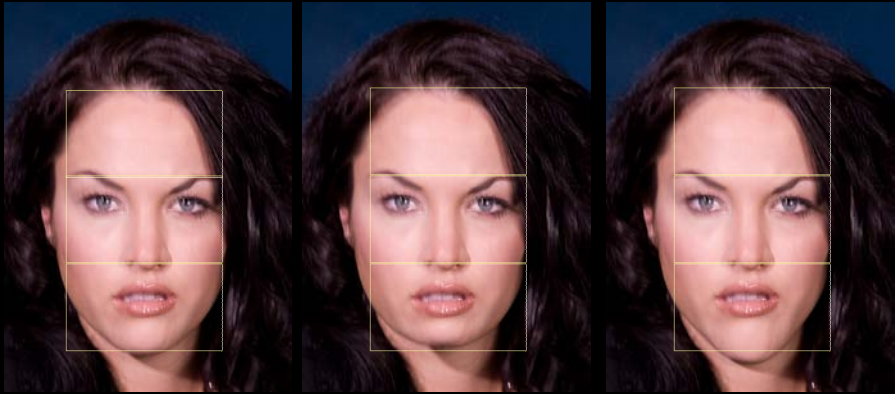
4. DENTO-GINGIVAL ESTHETICS- the relationship of the gingiva to the teeth collectively and individually

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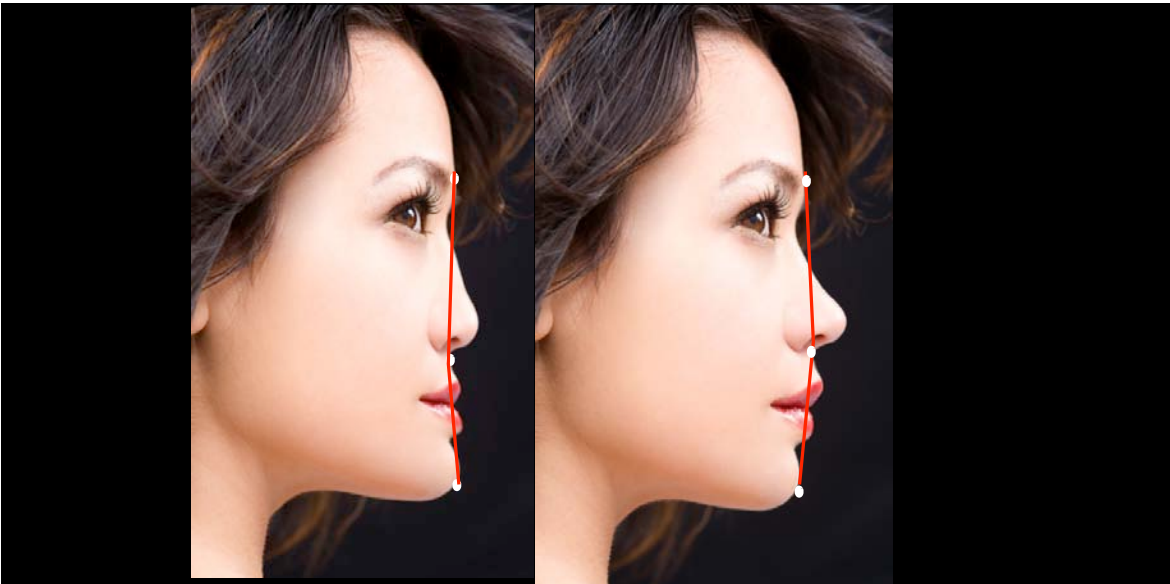
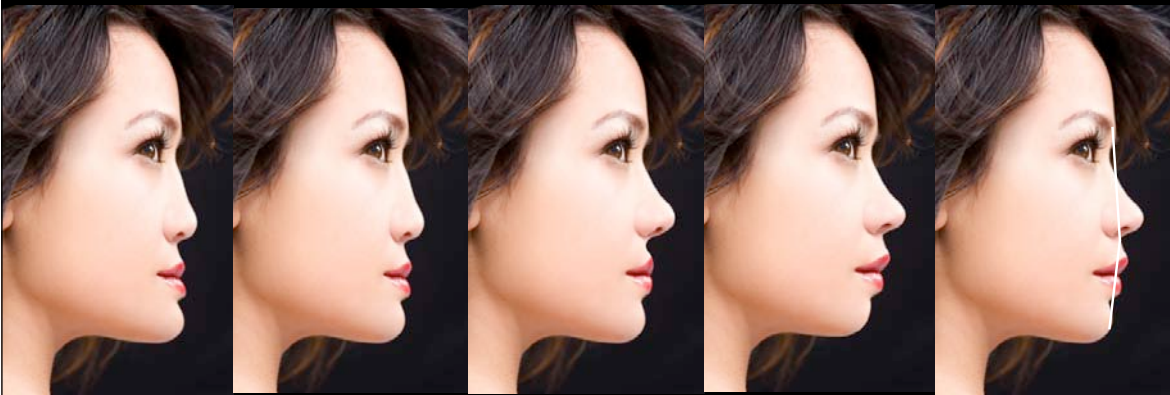


1. FACIAL ESTHETICS





facial thirds



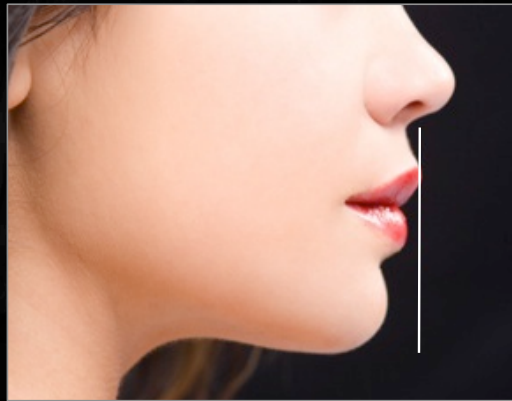
2. ORAL-FACIAL ESTHETICS



2. ORAL-FACIAL ESTHETICS



3 to 4 mm posterior to upper lip when smiling



2 to 3 mm posterior to upper lip when when lips together

3. ORAL (or labio/dento/gingival) ESTHETICS



3. ORAL (or labio/dento/gingival) ESTHETICS



Start Treatment Planning From Maxillary Central Incisal Edge

1. WHERE IN THE FACE TO PLACE THE MAXILLARY INCISAL EDGES ?

2. WHAT IS THE PROPER TOOTH DISPLAY STATICALLY AND DYNAMICALLY?

3. WHAT IS THE PROPER INTER AND INTRA TOOTH RELATIONSHIPS ?

4. CAN I DO IT WITH RESTORATIVE DENTISTRY ALONE?



WHAT ARE THE THINGS WE LOOK FOR IN OUR ESTHETIC EVALUATION THAT WE WOULD ALL GENERALLY AGREE ARE PLEASING ?

THE RULE OF 42.2



RULE OF 42.2



1. MAXIMUM OF **4MM**
OF MAXILLARY
CENTRAL DISPLAY
WHEN LIPS AT REST
(MIN 2MM)

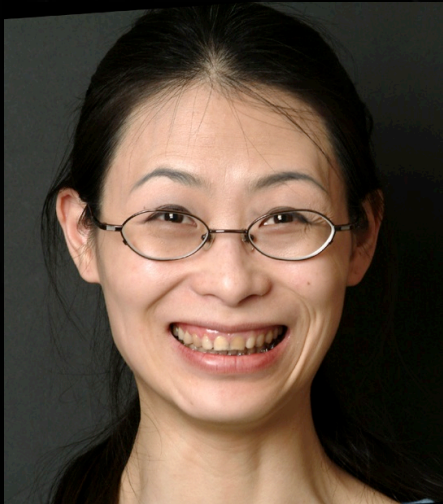
2. MAXIMUM OF **2MM**
OF GINGIVAL
DISPLAY DURING
NORMAL SMILE

2- 2 mm or less from
lower lip during smiling



THE RULE OF 42.2



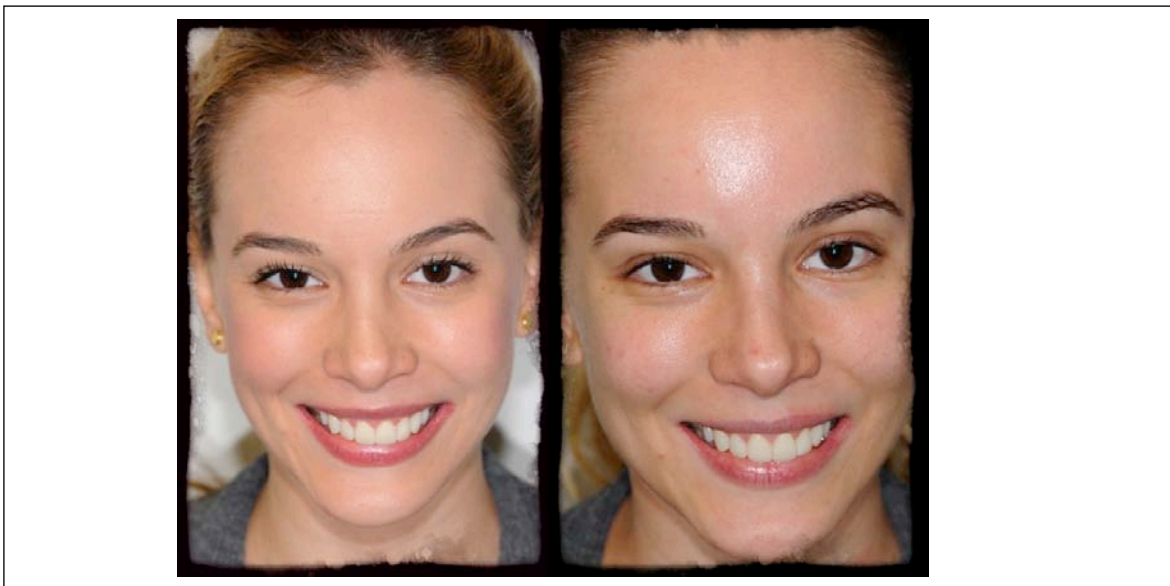


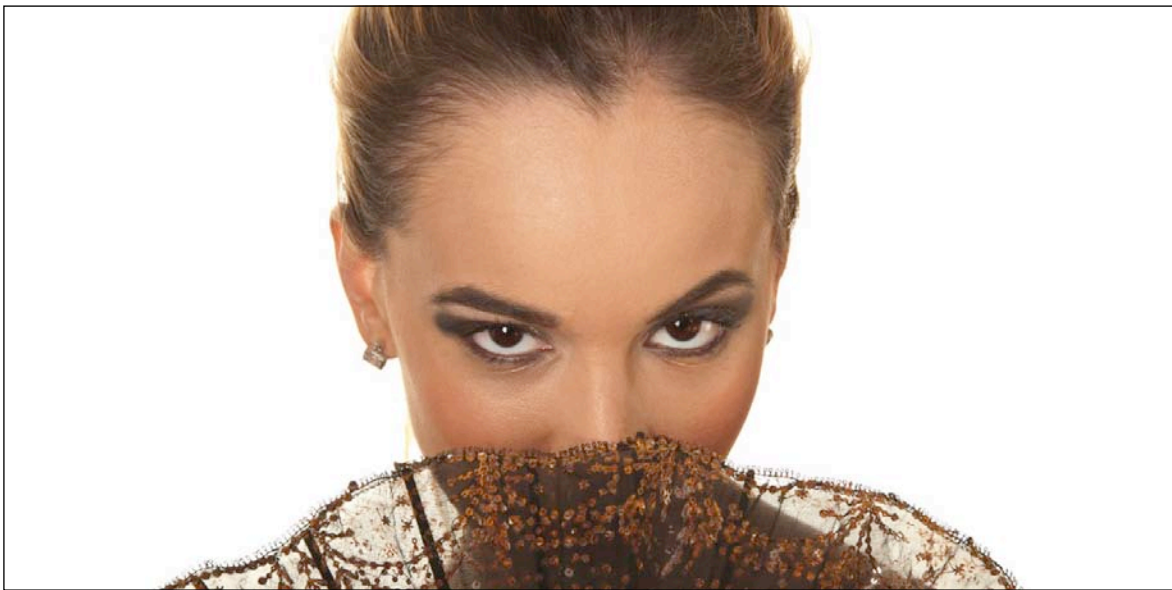






lip framing (movement) during a smile sometimes is consciously or subconsciously altered to hide a perceived unesthetic smile

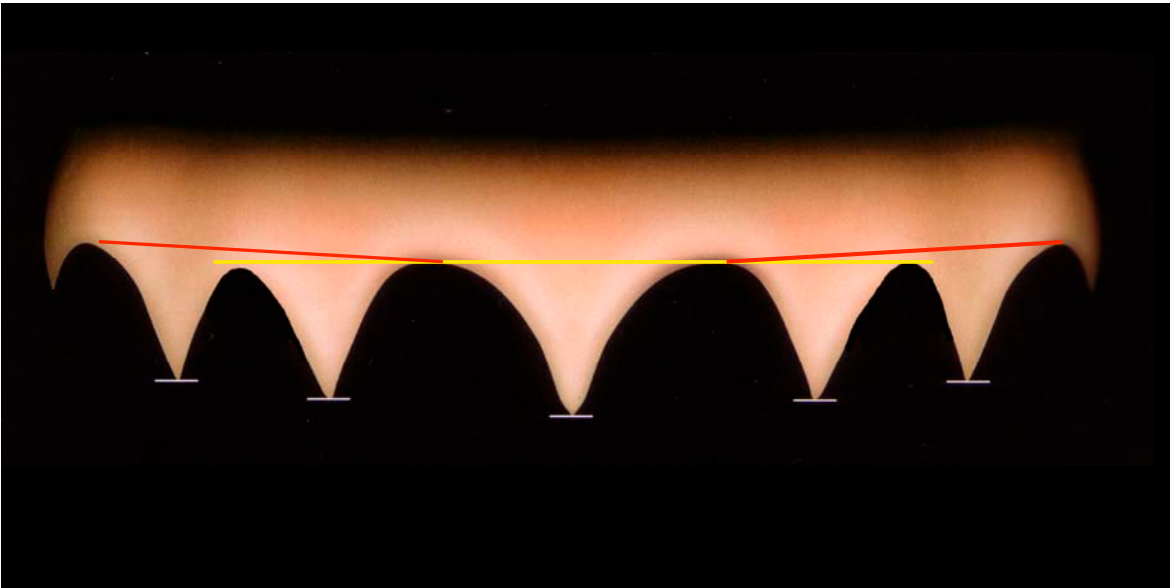
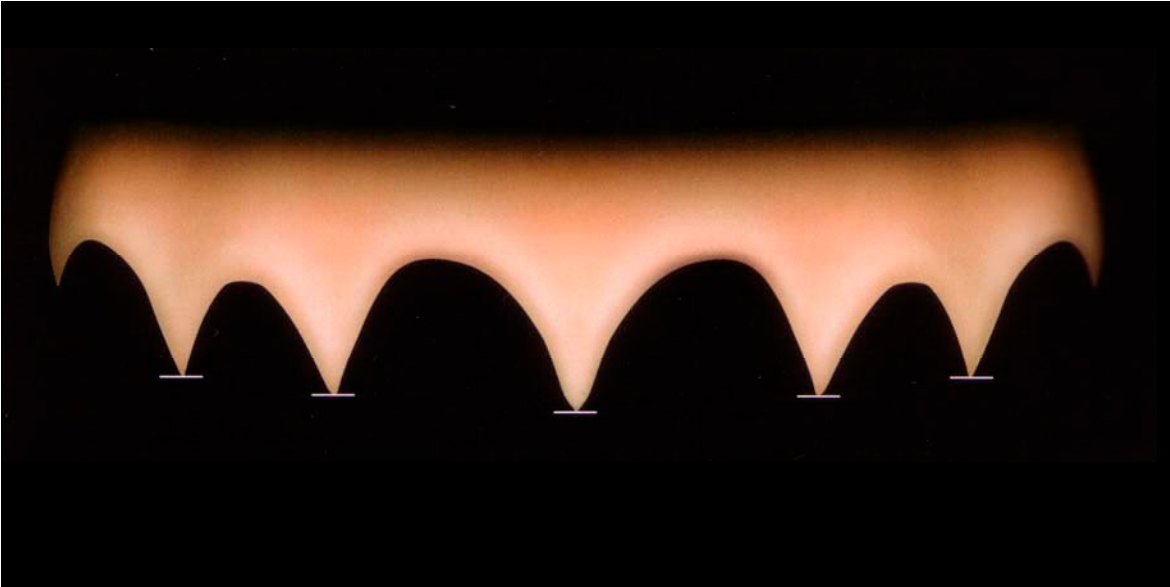
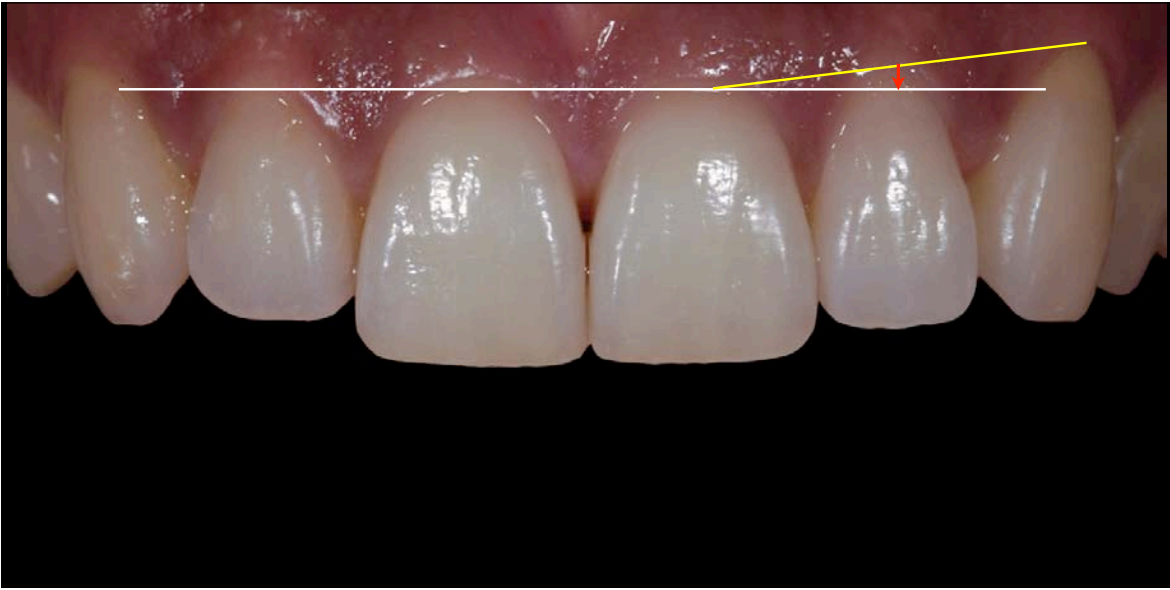


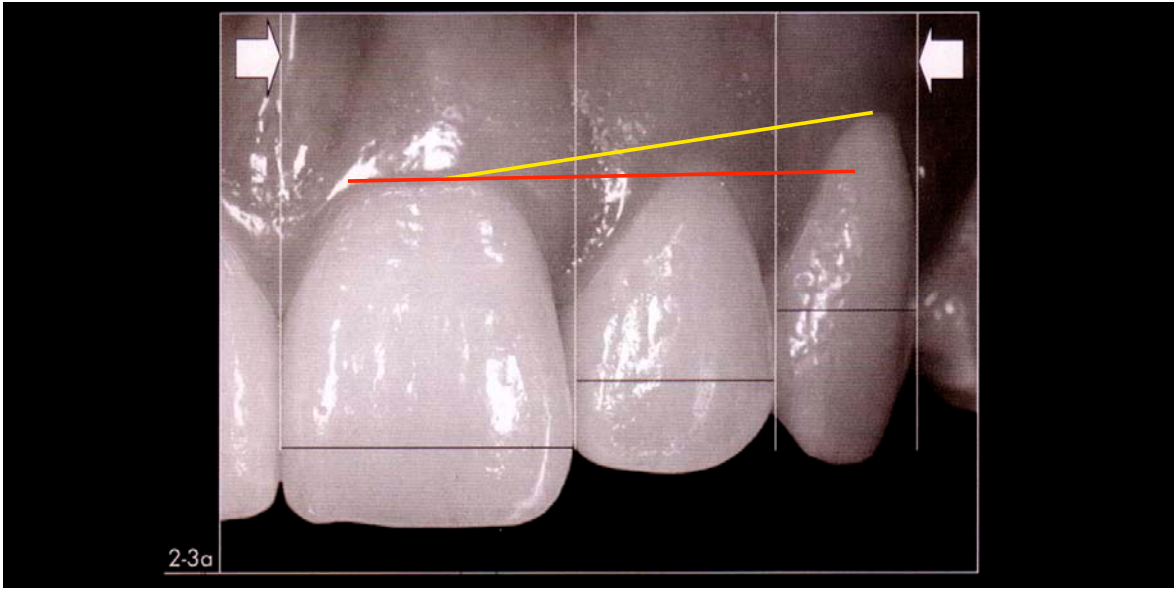


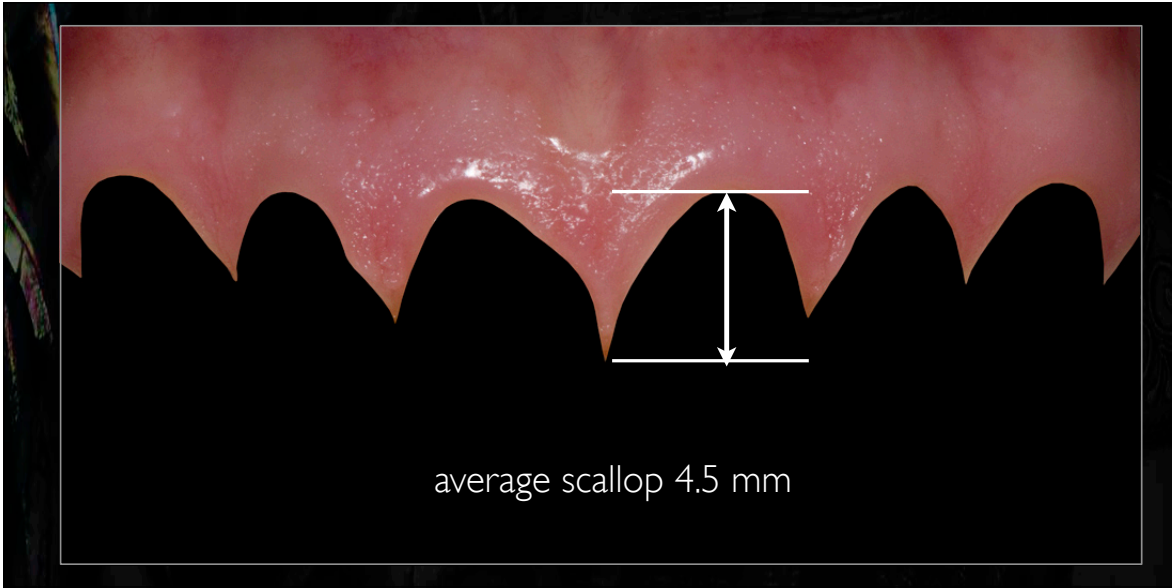


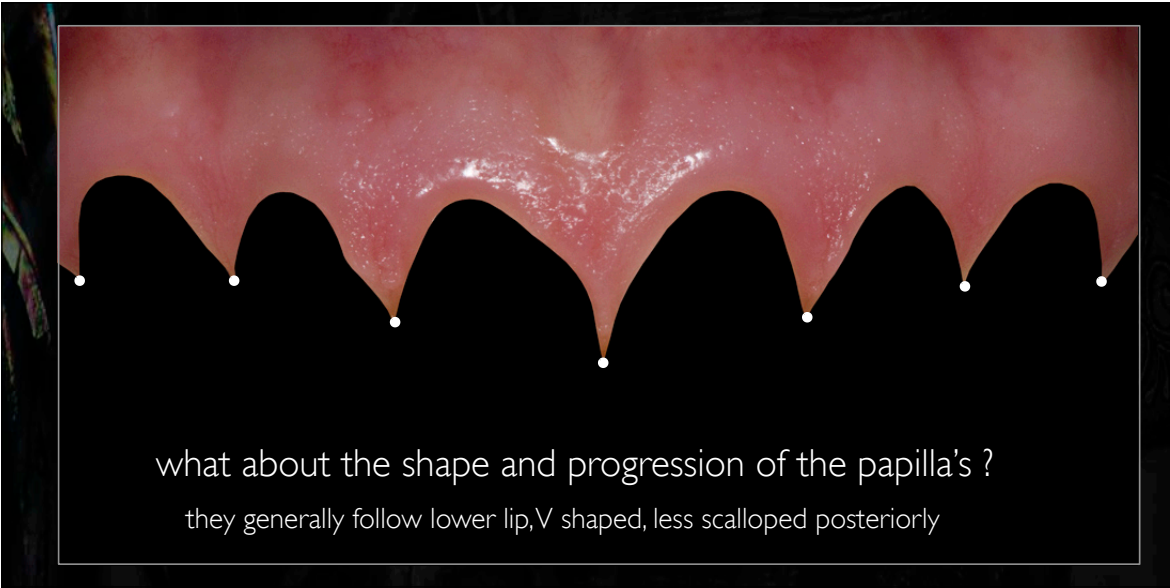
4. DENTO-GINGIVAL ESTHETICS







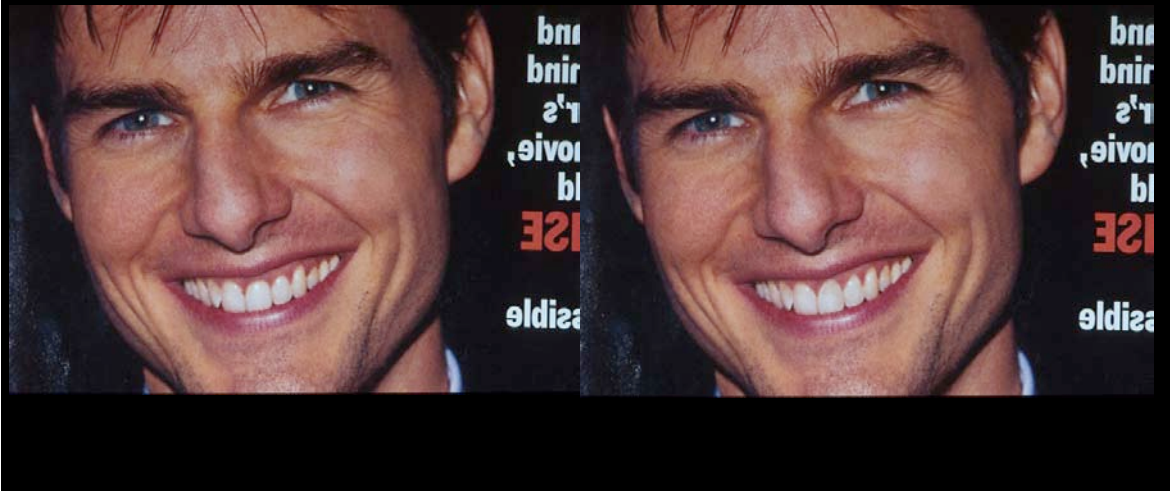




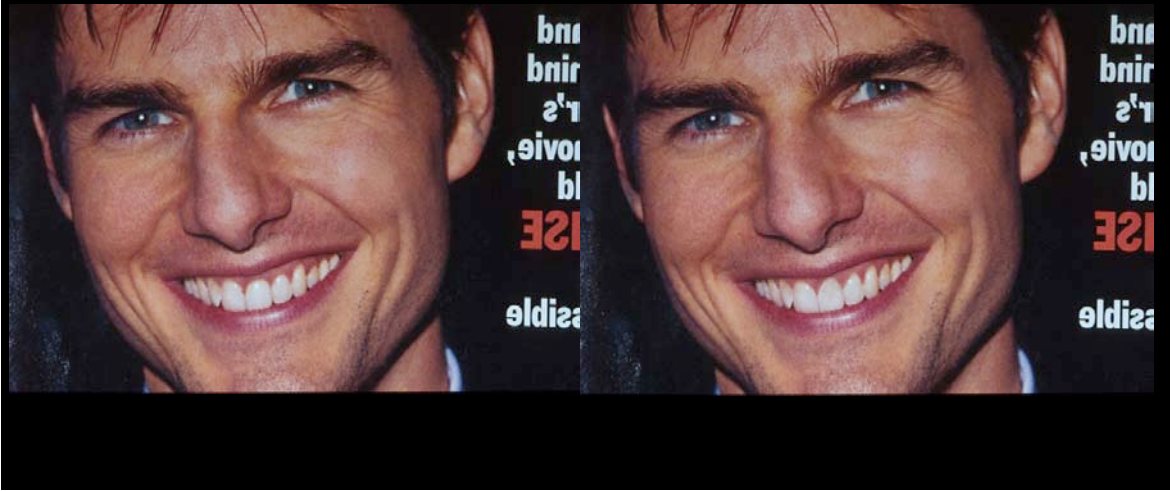
what about the shape and progression of the papilla's ?

they generally follow lower lip, V shaped, less scalloped posteriorly

2. ORAL-FACIAL ESTHETICS-



2. ORAL-FACIAL ESTHETICS-



1. You only move midline to establish esthetic inter and intra-tooth proportions
2. you can only move midline restoratively up to the root of the adjacent tooth- beyond that - it is a orthodontic problem
3. the midline within 4 mm of the midline of the face/ lips is esthetically pleasing
4. midline should be vertical when the head is in the postural rest position

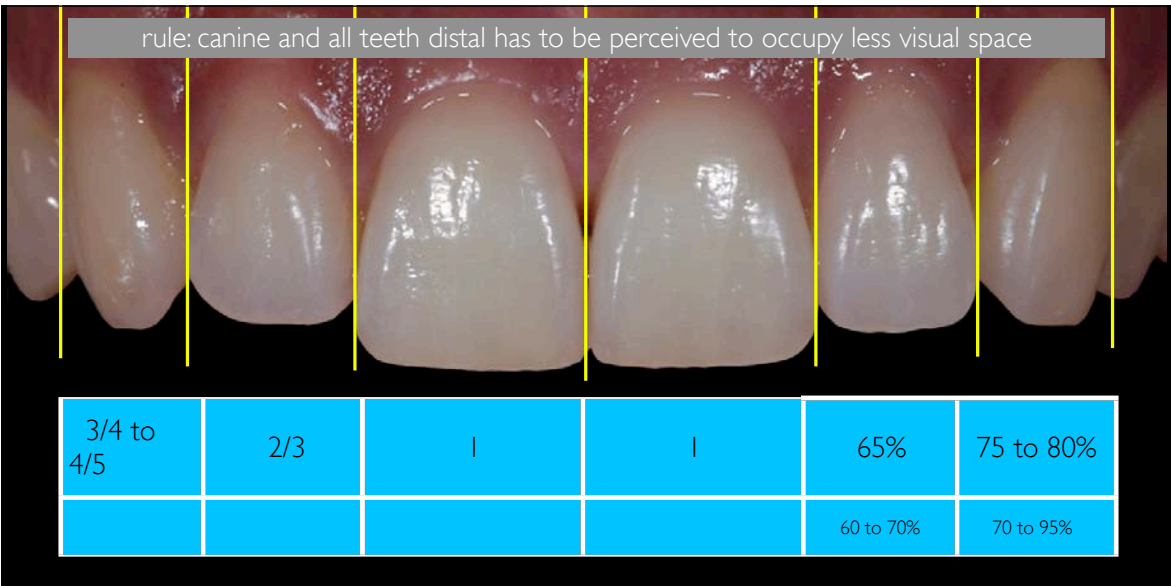
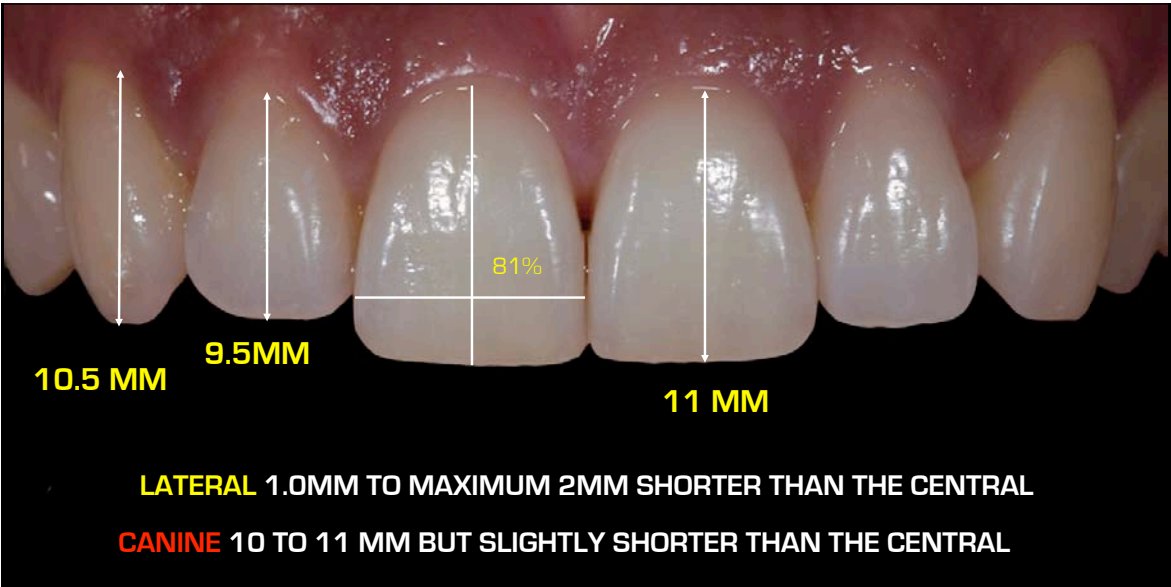
5. DENTAL ESTHETICS macro and micro



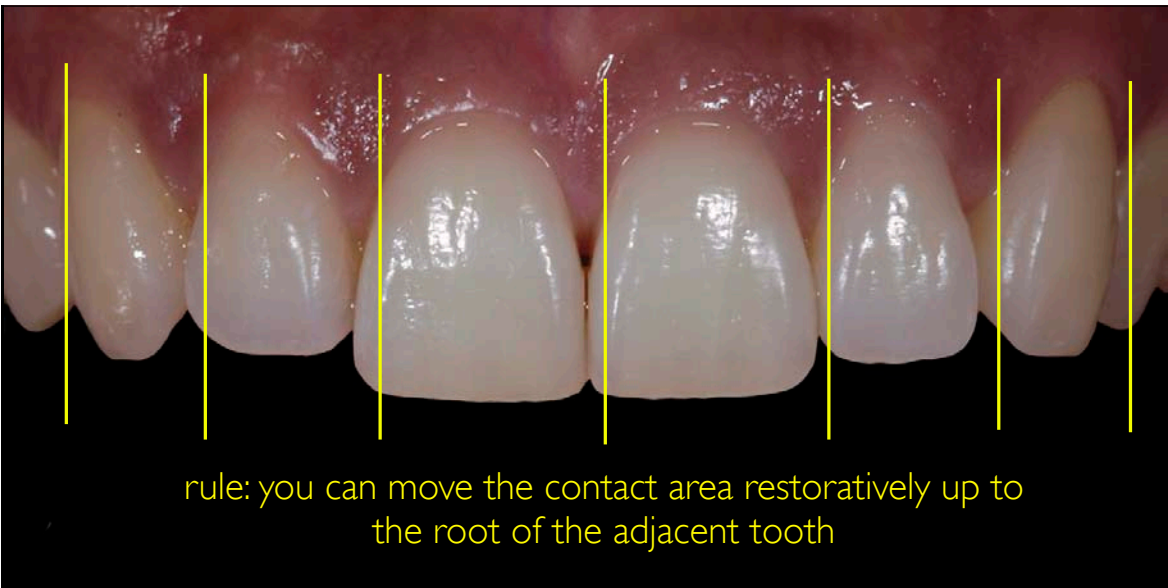
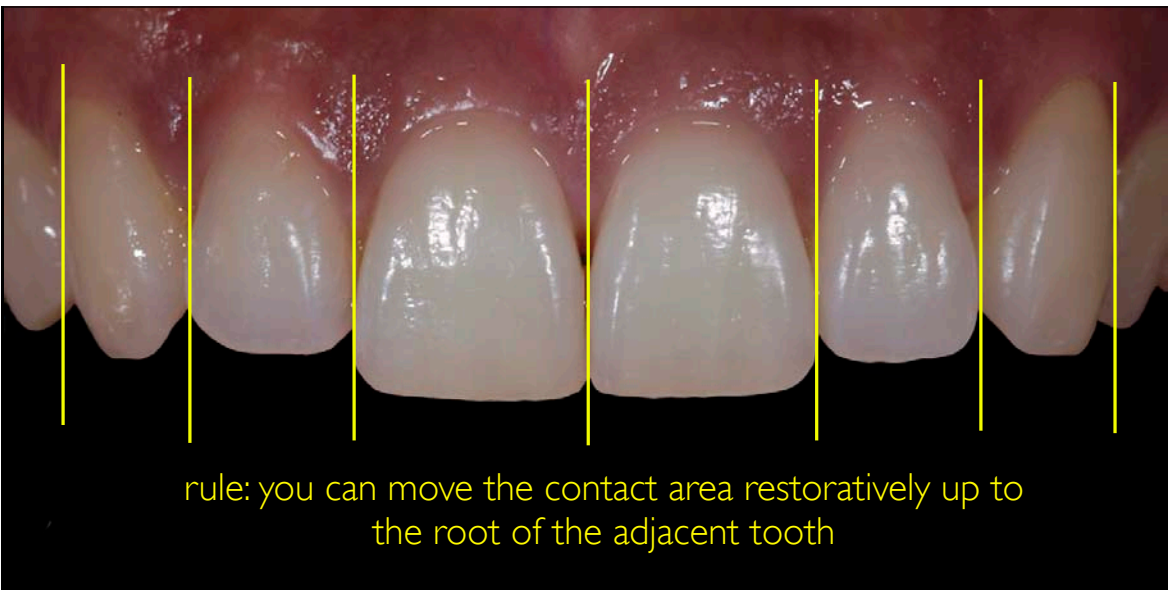
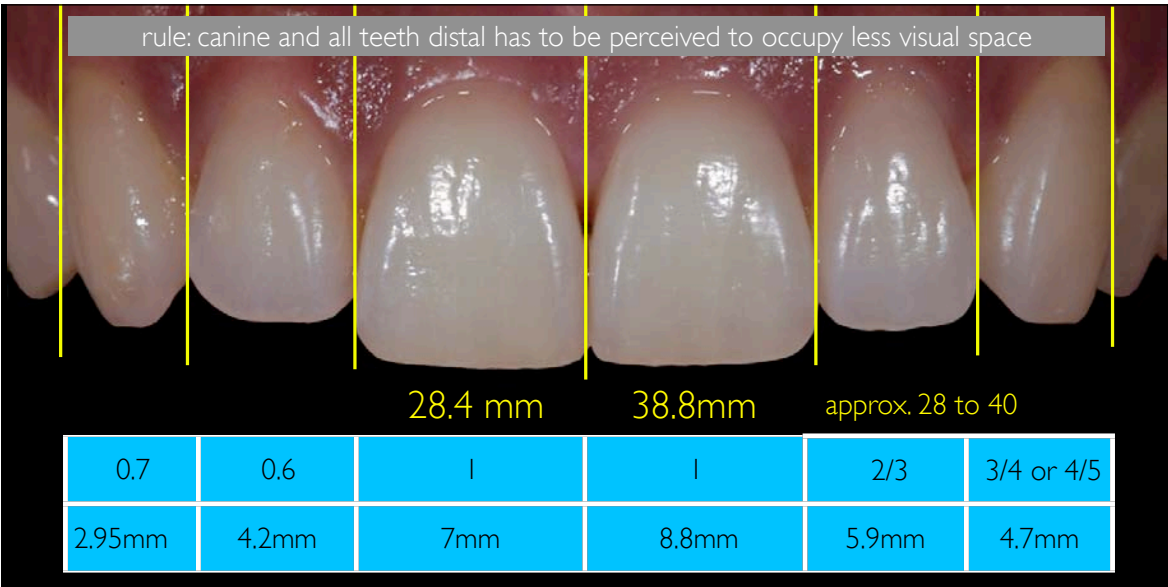
TOOTH PROPORTIONS (INTRA AND INTER-TOOTH RELATIONSHIPS)







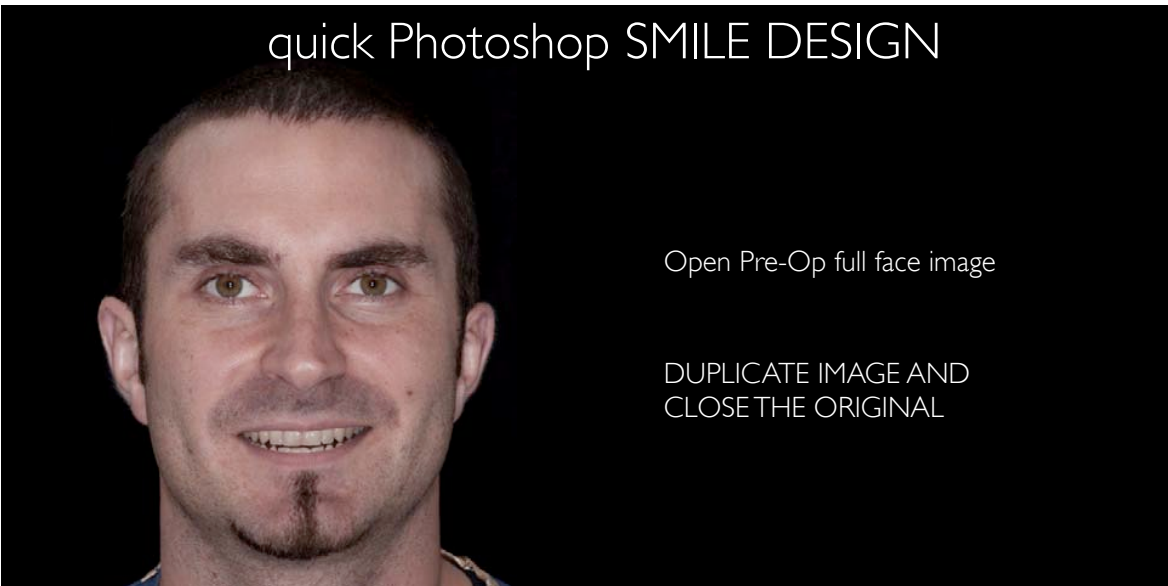
rule: canine and all teeth distal has to be perceived to occupy less visual space







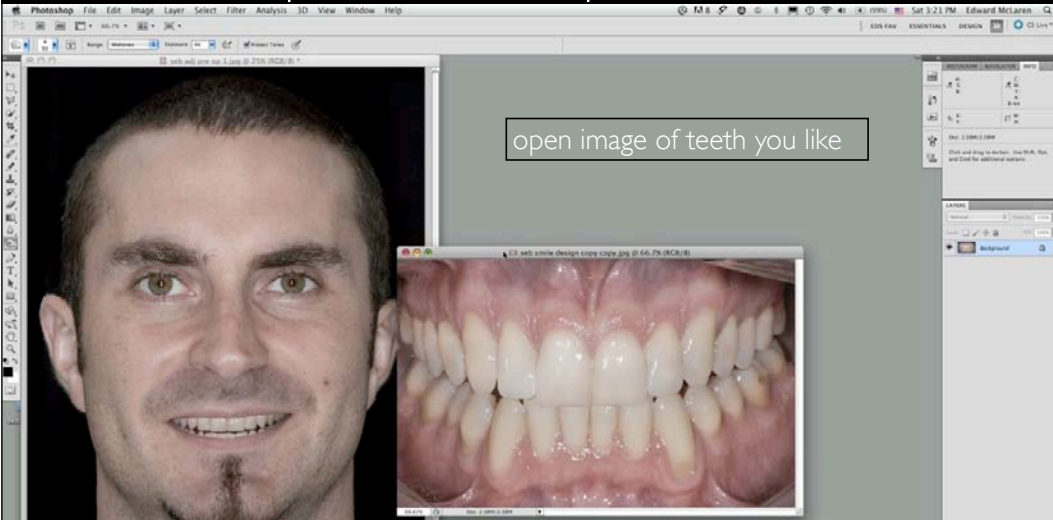
quick Photoshop SMILE DESIGN



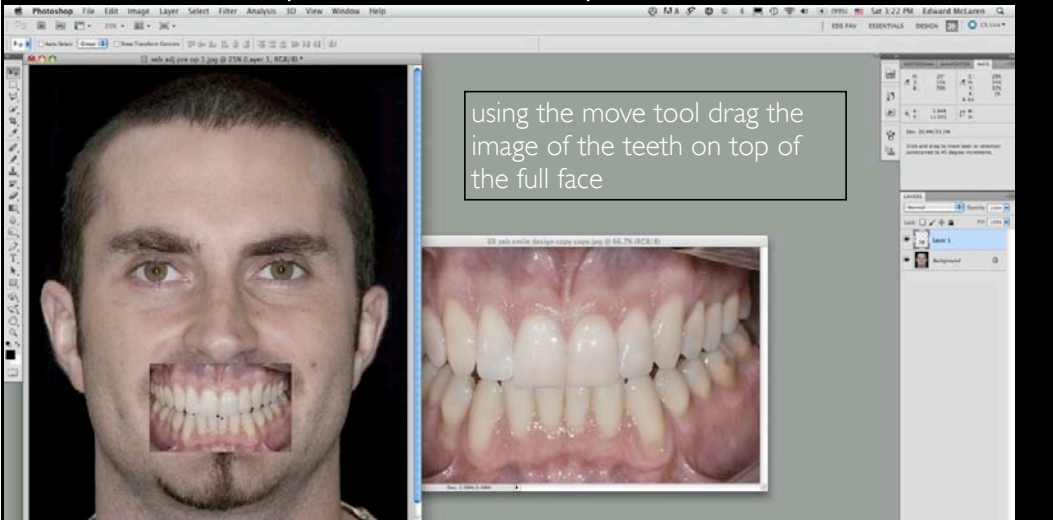
Open Pre-Op full face image

DUPLICATE IMAGE AND
CLOSE THE ORIGINAL

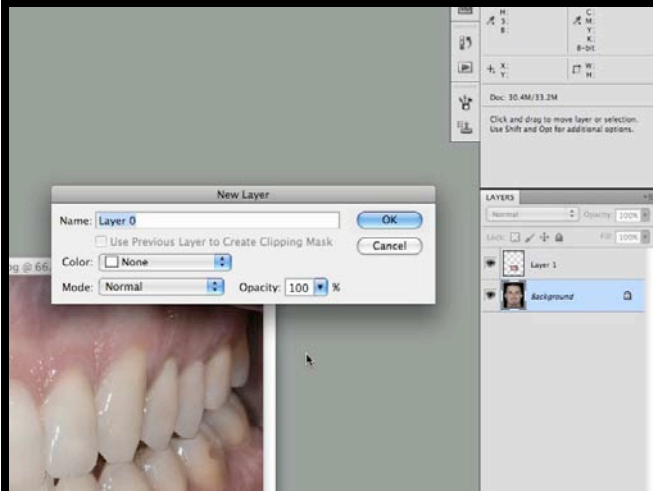
quick Photoshop SMILE DESIGN



quick Photoshop SMILE DESIGN

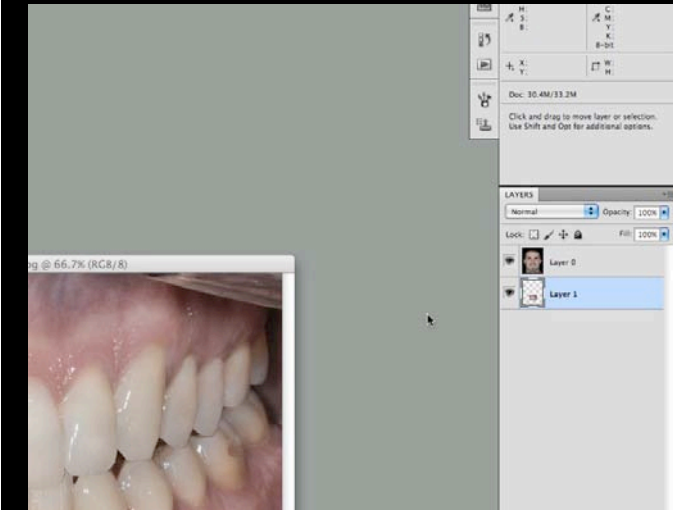


quick Photoshop SMILE DESIGN

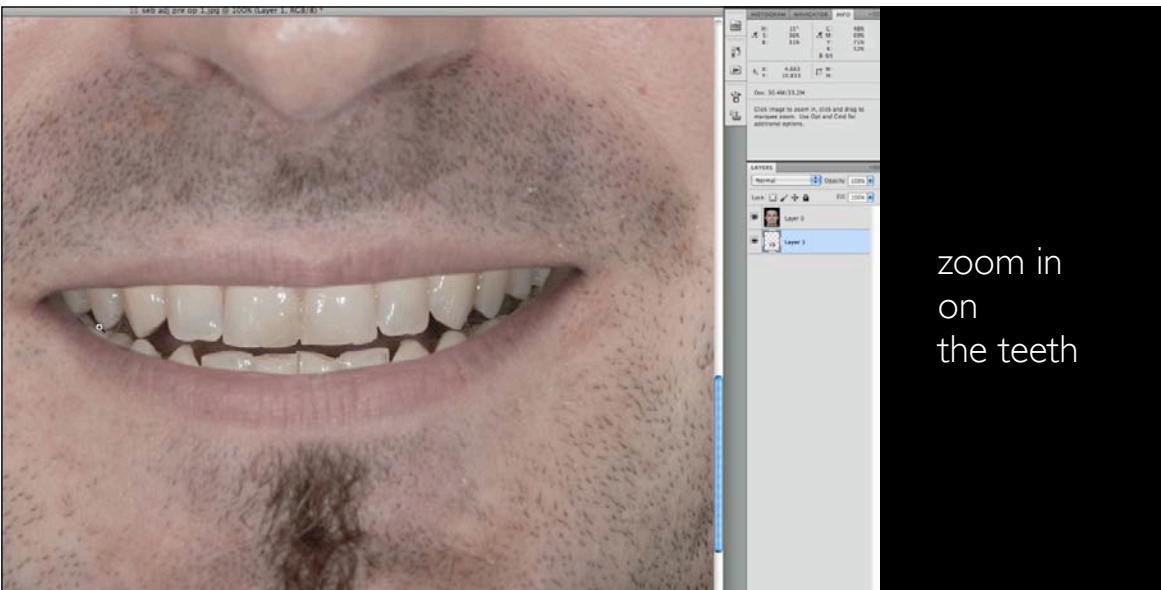


Double click on the background layer to unlock it and click OK

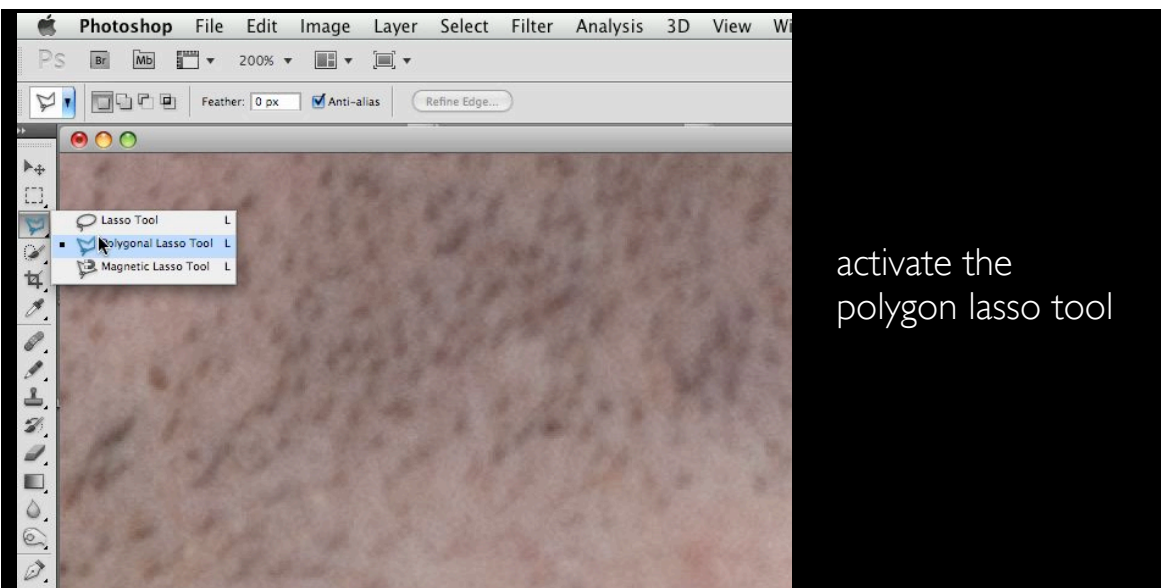
quick Photoshop SMILE DESIGN



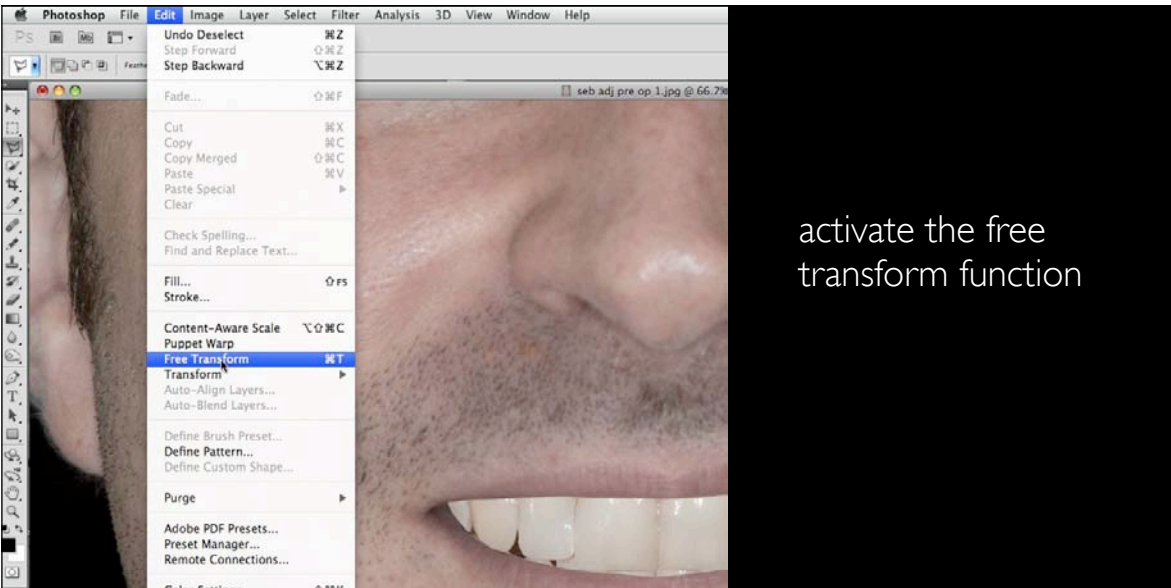
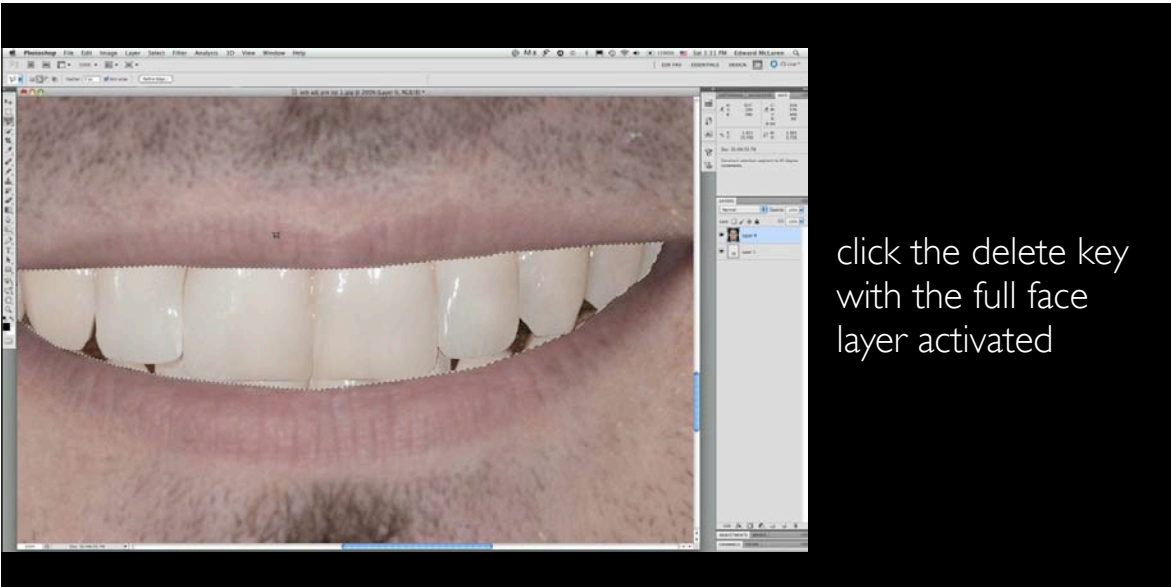
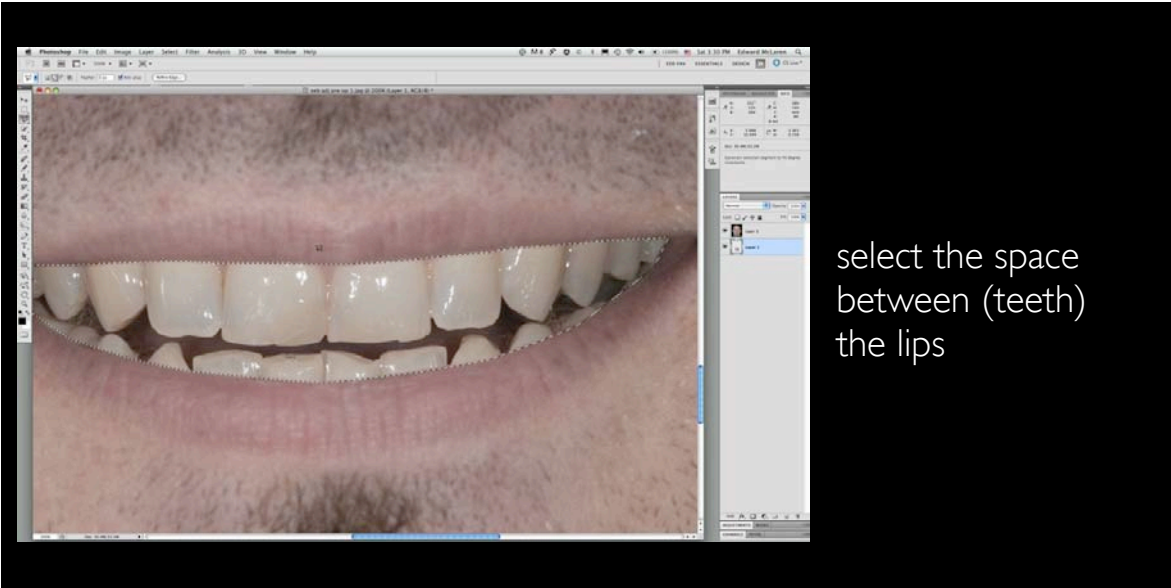
drag the layer of the teeth underneath the layer of the face image



zoom in on the teeth



activate the polygon lasso tool





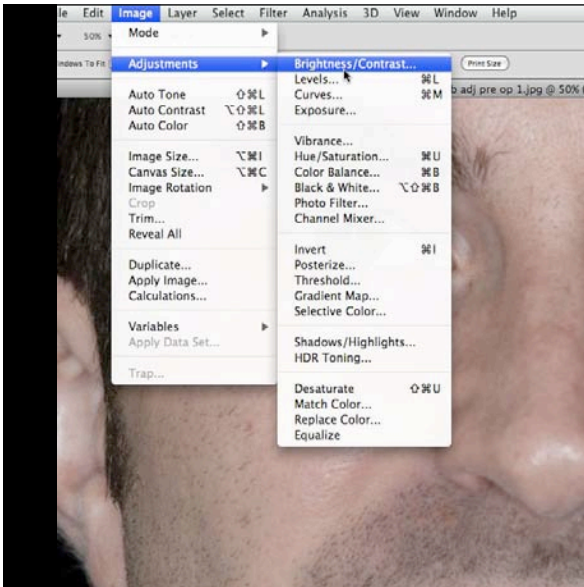
grab one corner-
hold down the shift
and option (alt pc)
key and scale up or
down the teeth to
fit the face



use up/ down or
left / right arrows
to make slight
movements to
image. You can also
use the move tool

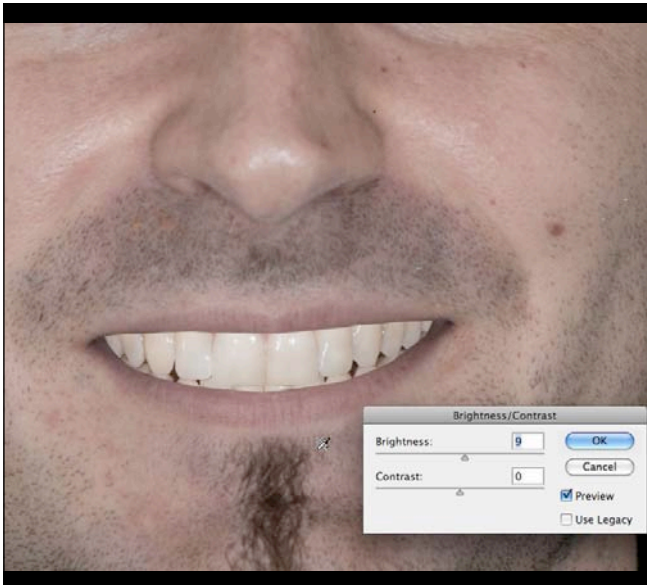


if a rotation is
necessary place the
cursor next to
corner until the
curved double
arrow appears:
move mouse left or
right to rotate

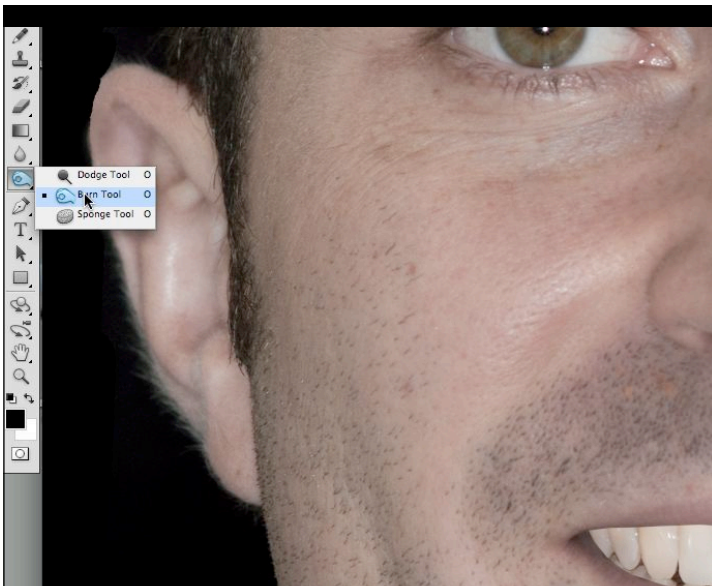


To make adjustments to the teeth layer go to image> Adjustments and choose adjustment

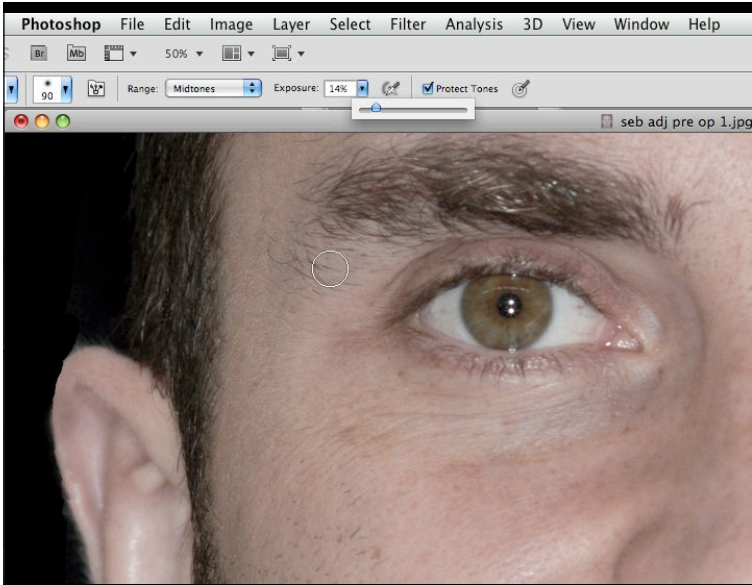
it is common to adjust the brightness:



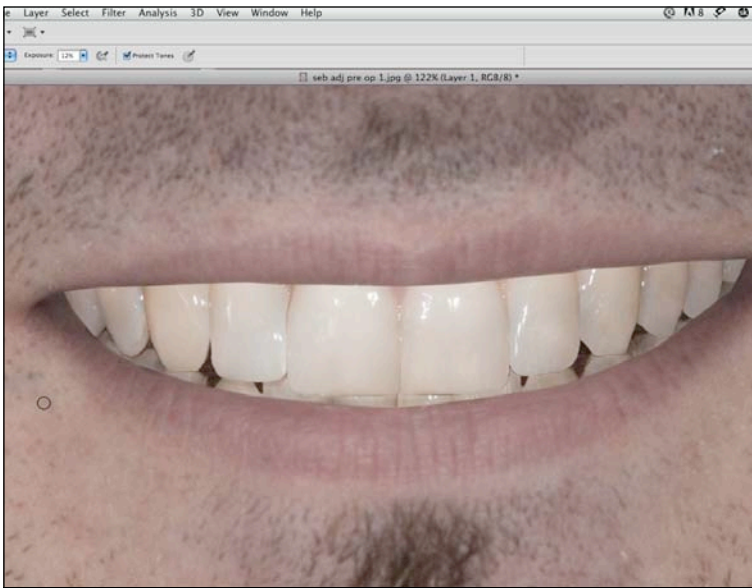
adjust brightness as necessary by using the sliding adjustment



to selectively shadow the teeth layer more posteriorly as you would normally see in a full face image activate the burn tool and set to mid-tones and 8-15 % opacity



to selectively shadow the teeth layer more posteriorly as you would normally see in a full face image activate the burn tool and set to mid-tones and 8-15 % opacity

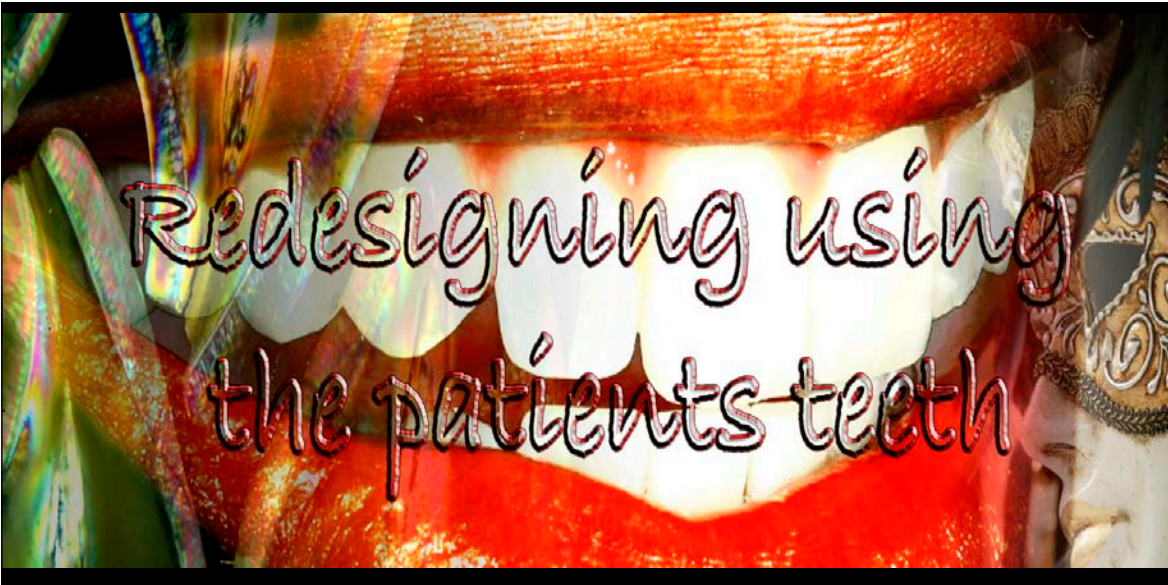


click on the more posterior teeth to selectively darken



selective darkened posteriors





Photoshop SMILE DESIGN

open cheek
retracted image that
has been sized and
rotated properly

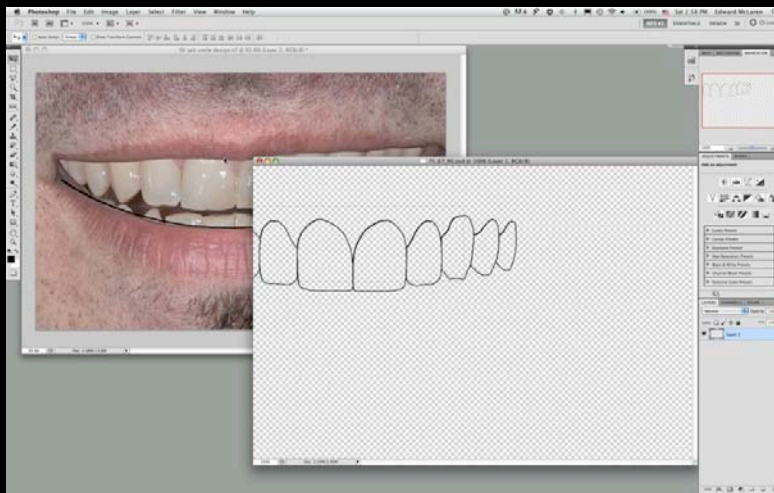
then duplicate
background layer by
clicking Command J

Photoshop SMILE DESIGN

Step 4: applying
appropriate tooth grid's

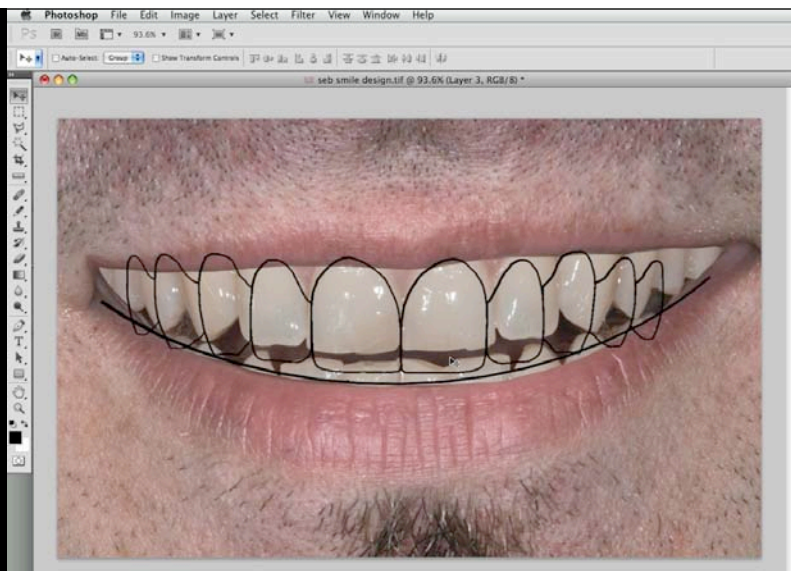
Photoshop SMILE DESIGN

use the move tool and drag chosen grid on top of smile design image



Photoshop SMILE DESIGN

center grid over teeth



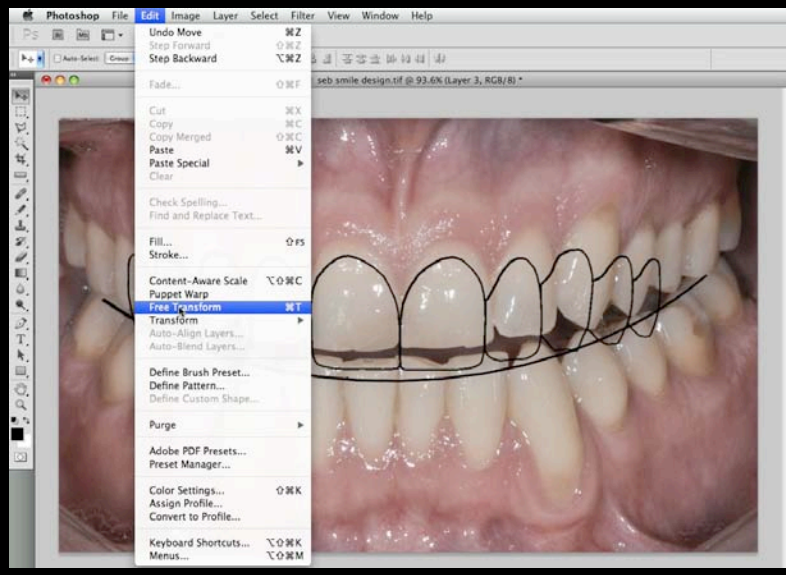
Photoshop SMILE DESIGN

make invisible the lips layer by clicking on the eye in the layers palette



Photoshop SMILE DESIGN

activate the free transform function:
edit> free transform



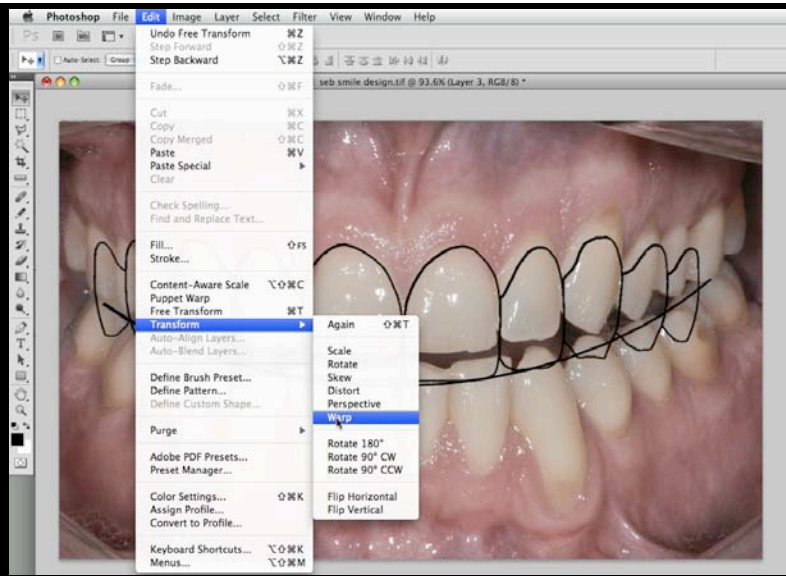
Photoshop SMILE DESIGN

hold shift and option
(alt) key - grab a
corner and expand or
contract to change
proportionately



Photoshop SMILE DESIGN

use the warp tool to
customize grip:
edit>transform>
warp



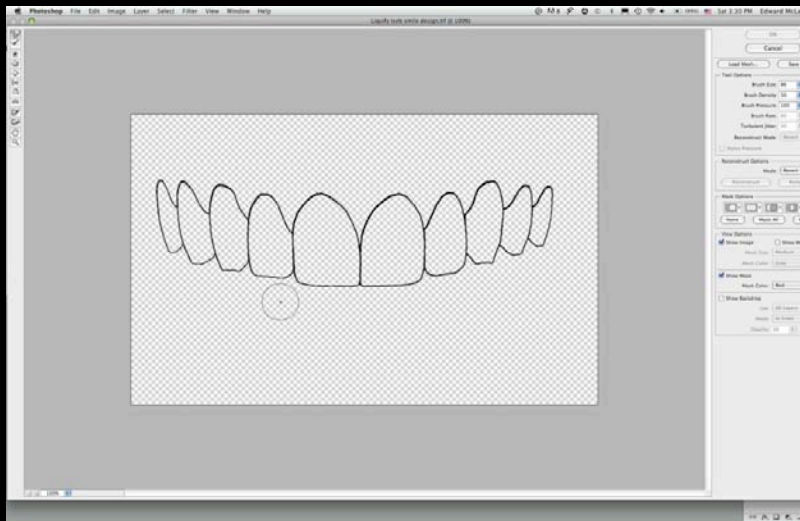
Photoshop SMILE DESIGN

grab corners or lines
and move to warp an
individual area



Photoshop SMILE DESIGN

free transform to
make minor
adjustments to form



Photoshop SMILE DESIGN

altered tooth grid

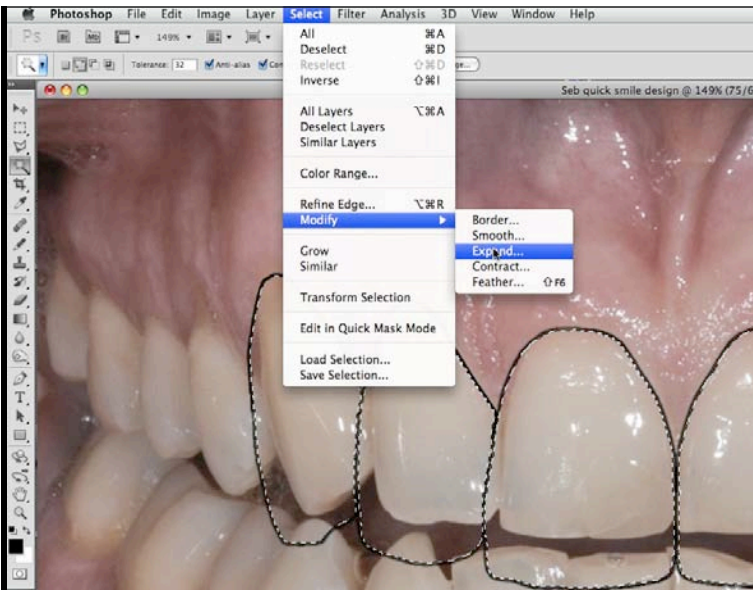


Photoshop SMILE DESIGN



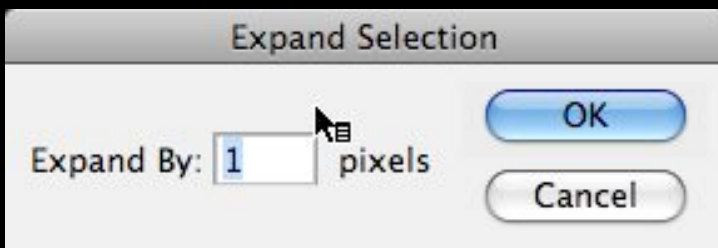
activate magic wand selection tool and with grid layer highlighted click in any tooth

then with the add selection activated click in each tooth to select all teeth



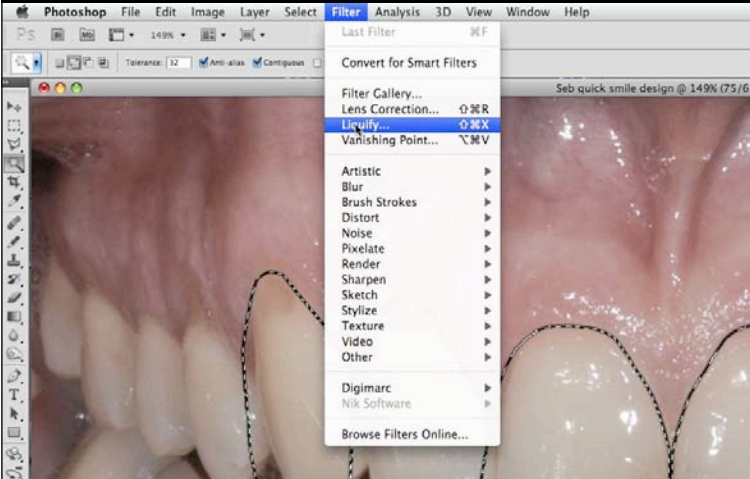
The selection needs to be slightly expanded; go to Select > Modify > expand

Photoshop SMILE DESIGN



expand 1 to 2 pixels

Photoshop SMILE DESIGN



To alter the shape of the selected teeth to Filter> Liquify



this screen will open up



activate the "WAND" and adjust the brush size as needed

click and drag the circle
to lengthen or widen
tooth



do one tooth at a time
work central to lateral to
canine



POINTER

Tool Options

- Brush Size: 14
- Brush Density: 10
- Brush Pressure: 100
- Brush Rate: 60
- Turbulence Jitter: 10
- Reconstruct Mode: **Reveal**
- Stylus Pressure

Reconstruct Options

Mode: **Reveal**

Reconstruct Restore All

Mask Options

name Mask All Invert All

View Options

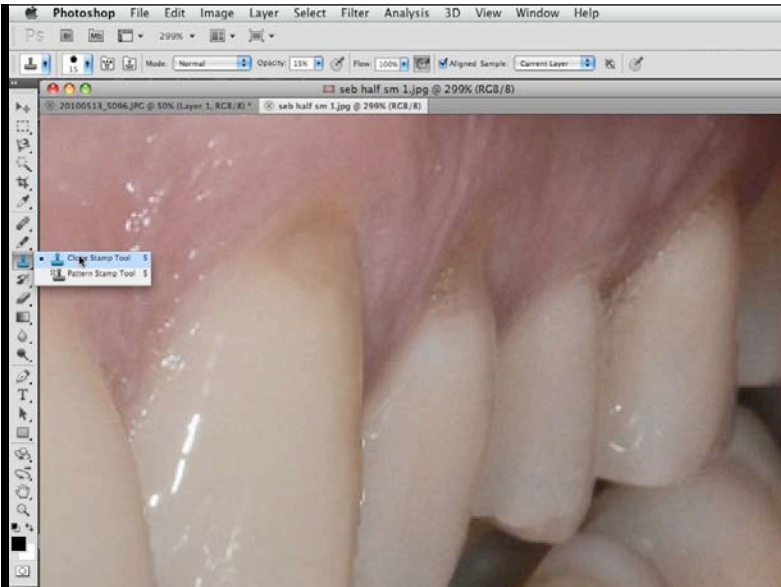
- Show Image Show Mesh
- Mask Size: Medium
- Mask Color: Edge

Show Mask

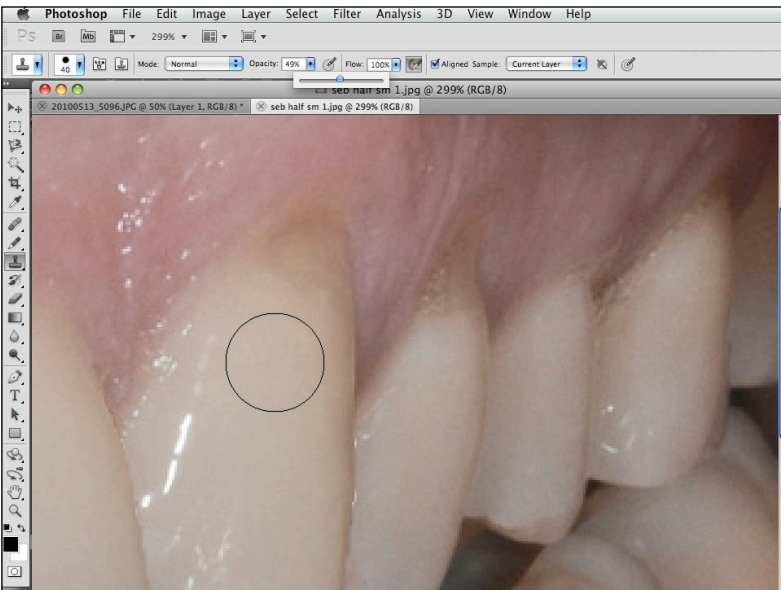
- Mask Color: **Red**

Show Backdrop

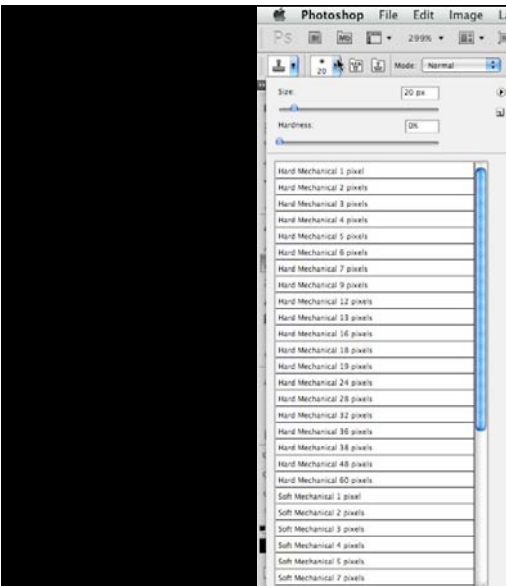
- Use: All Layers
- Mode: In Front
- Opacity: 50



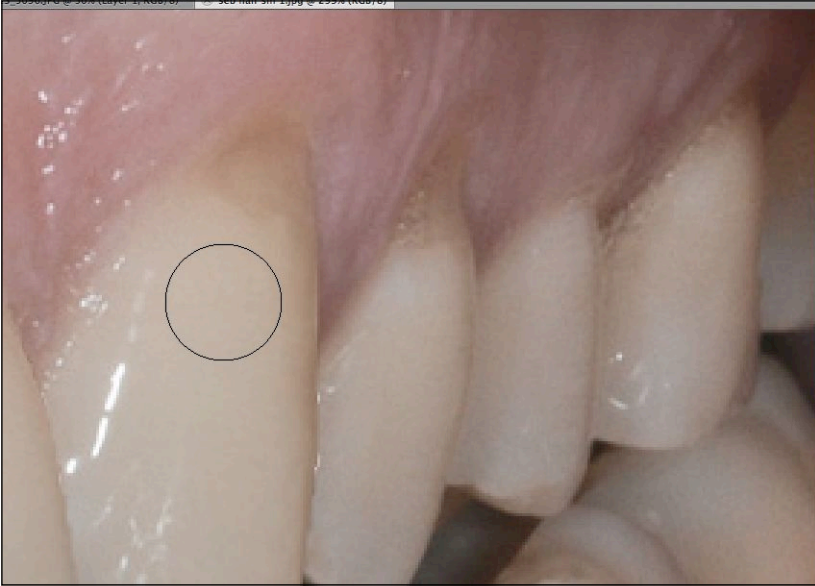
to fix small defects like cervical caries / erosion use the clone tool



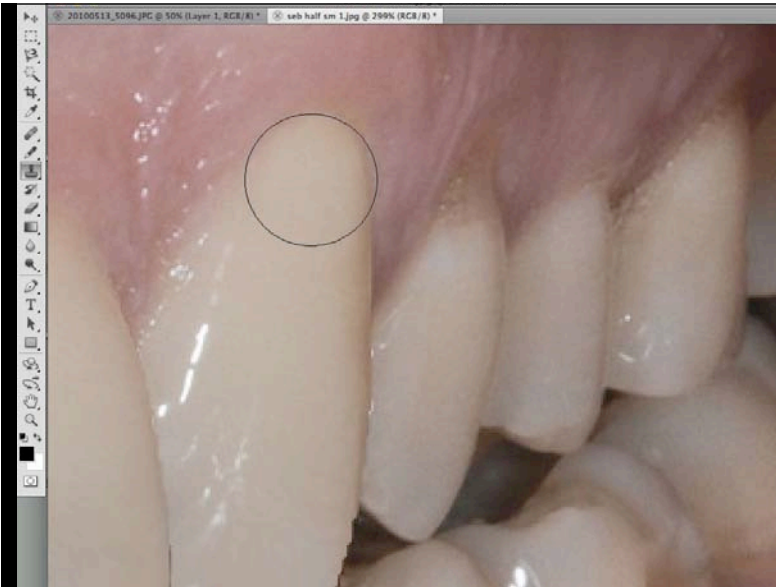
set between 20 and 50% opacity



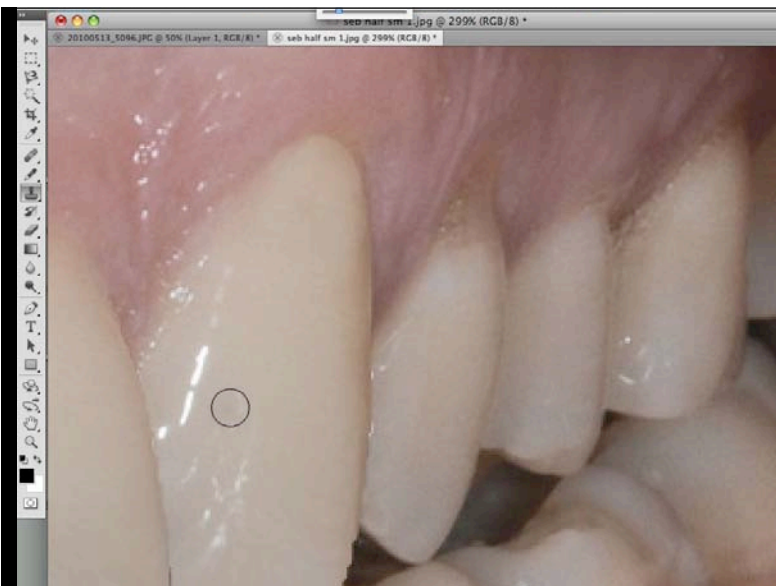
in the brush drop down menu set the brush hardness between 0 and 10%



then control (alt PC)
on an area of the
tooth you want to
pull pixels from



click and drag as
necessary to clone in
normal tooth
structure into defect



completed canine

Photoshop SMILE DESIGN

Digital Bleaching:
activate the dodge tool:
turn on mid-tones- set
about 40% exposure



Photoshop SMILE DESIGN







