Restorative dentistry III.
Anterior I.

Aesthetics is a science about beauty.
Iti is connected with sensual perception.
Rules are changing during the time a there are differences in various regions. .

???

???

Aantique philosophers tried to define the beauty

Beautiful is everything that is useful *(Xenofon)*

„Penta en arithmo“

(Pythagoras)

1/1,618 = 0,618

Golden cut

(Harmonious relation between the unit and its part)

Perception of the object

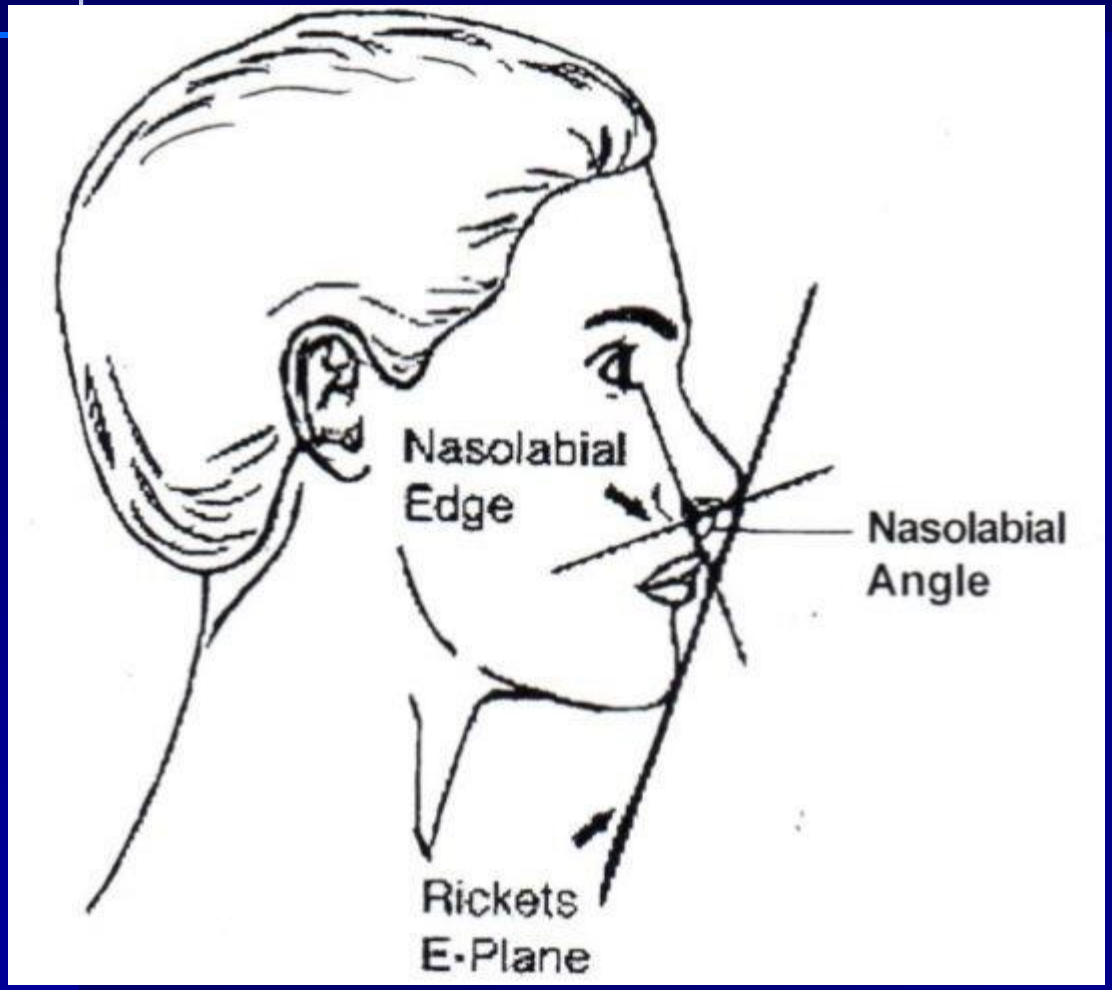
- Composition
- Single items
- Harmony
- Symetry
- Dominance
- Lines

Dentofacial harmony

- Imaginary lines – stuctures must have harmonious relation to them
- Teeth are in harmony with the face, they can attract our attention and distract it form other structures

Horizontal
a vertical lines
axis

Profile:



Balance of lip, nose and chip.

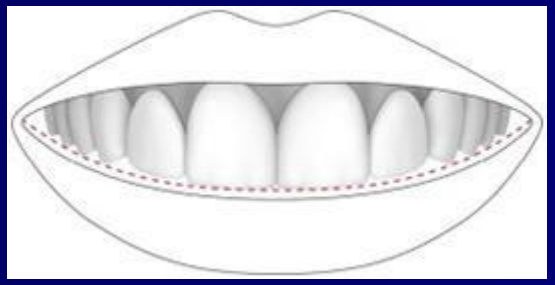
Nasolabial angle:
90° – 95 °men
100° - 106° women

Rickets line:
4 mm before upper
2 mm before lower lip

Line of smile

- Connects incisal edges of upper frontal teeth and touches mesiobuccal cusps of upper molars. Lower border is lower lip. Line of lower lip is parallel to line of smile.
- Upper central incisors should be in touch with the wett part of upper lip.

Line of smile



Bilateral negative space

Normal Enlarged

Ideal smile line

Gummy smile

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Dental harmony

Inclination of long axis

Slight mesial inclination of long axis

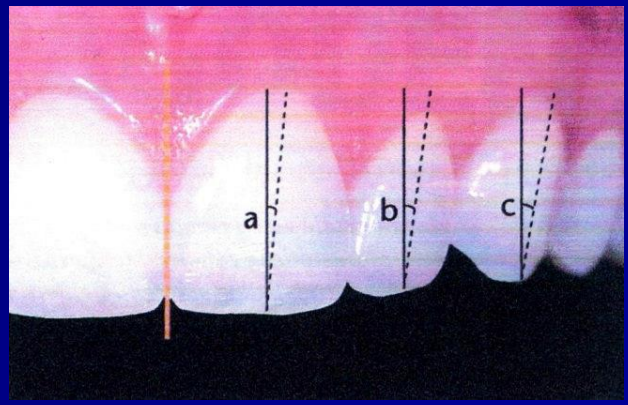
Slight inclination vestibulary

Position of contact points:

They become smaller and move apically

(50:40:30)

Their elongation can optically widen teeth

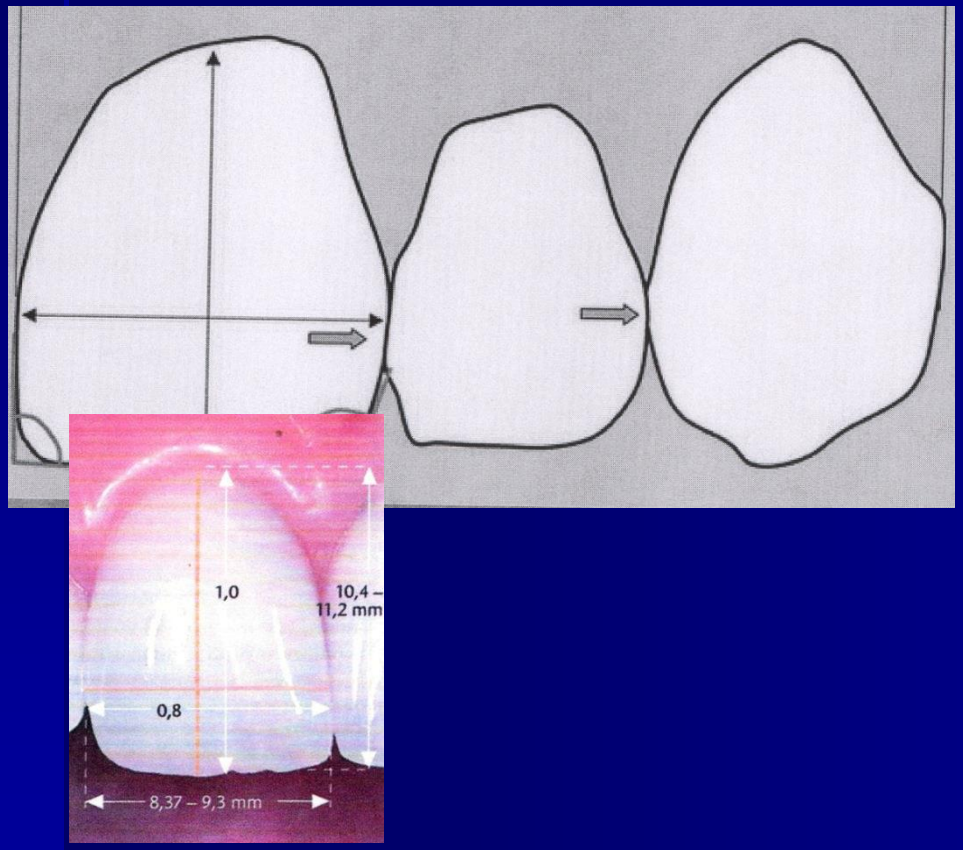


Dental harmony

Interincisal spaces become smaller in distal direction

They become smaller in younger individuals

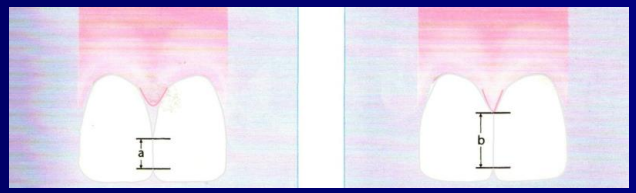
Relation between width and height

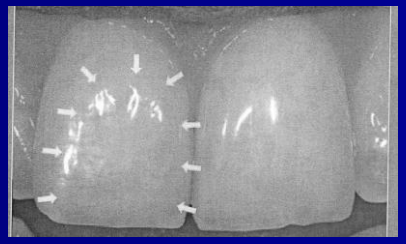


Width of upper central incisor is 70 – 80% its height

Optical size of the tooth

- Optical height optical width





Position and length of the contact area

Position of proximal walls

Golden cut

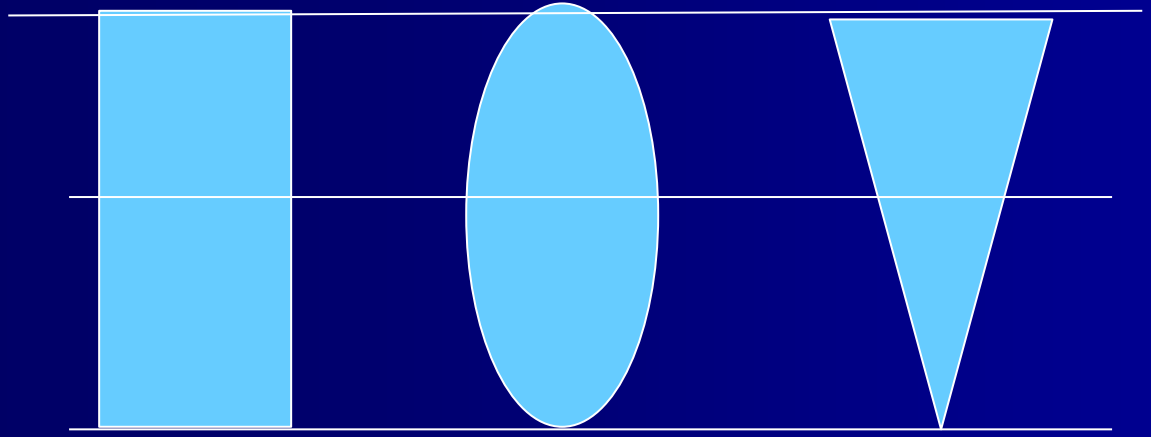
$$\frac{\text{length}}{\text{width+length}} = 0{,}618$$

Dental harmony

Roubalíková L. Méně obvyklý případ řešení obráceného skusu. Prakt zub Lék;48: 117-120.

Shape of crown principally corresponds to shape of the face

- Shape of the face:
  angular, oval a triangular
- Corresponding shapes of teeth



Front

Zygomatic line

Mandibular line

Harmony of the teeth and gingiva

Notice the gingival border in relation to the upper lip


Pre op


Final reconstruction


Post op


10 years later

Gummy smile

Rember !

- Check always red and white aesthetics!

Level of the gingival border

Remember!

- Interdosciplinary cooperation:
- Periodontology
- Orthodontics
- Prosthetics

Always take in account

- Patient´s requierement
- Possibilities and limits of direct and indirect restorations
- Periodontal considerations
- Orthodontic considerations
- Prosthetic considerations

Harmony

Harmony of Tooth structures

Basic terms -optic


We can recognise depht of the colour because
of dispersion of ligth inside the air and water

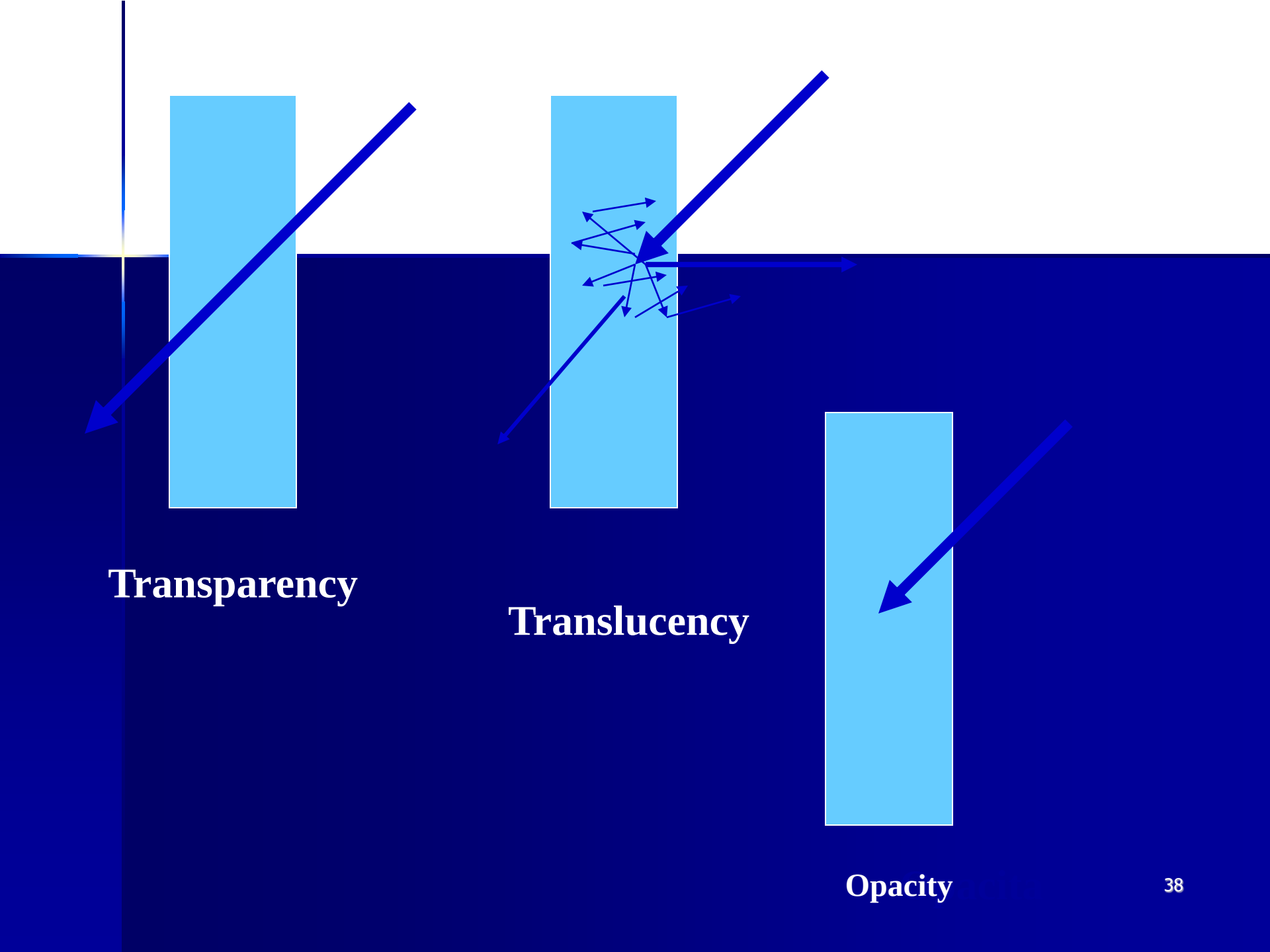
Light

- Elektromagnetic undulation

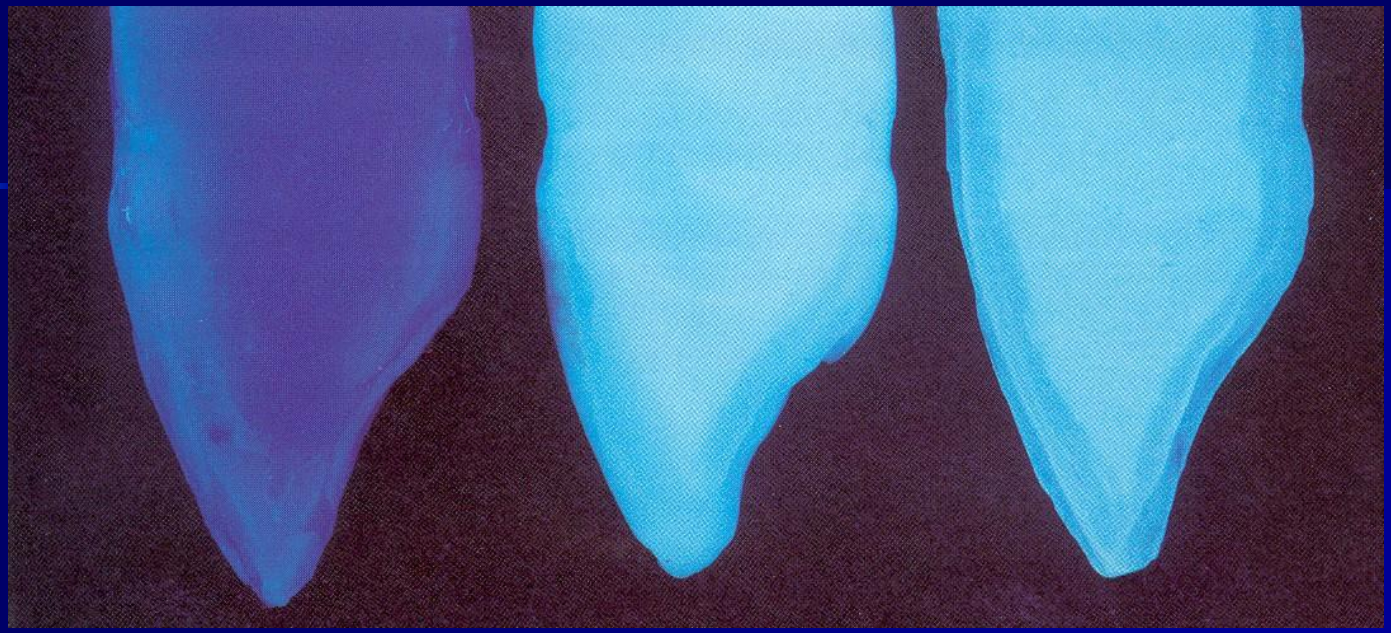
-Wave length
-Amplitude
-Quantum

Beam
- reflection
- deflection

Various velocity of the light in various environment
Relation of these velocities in two various environments is index of refraction


Transparency
Translucency
Opacity

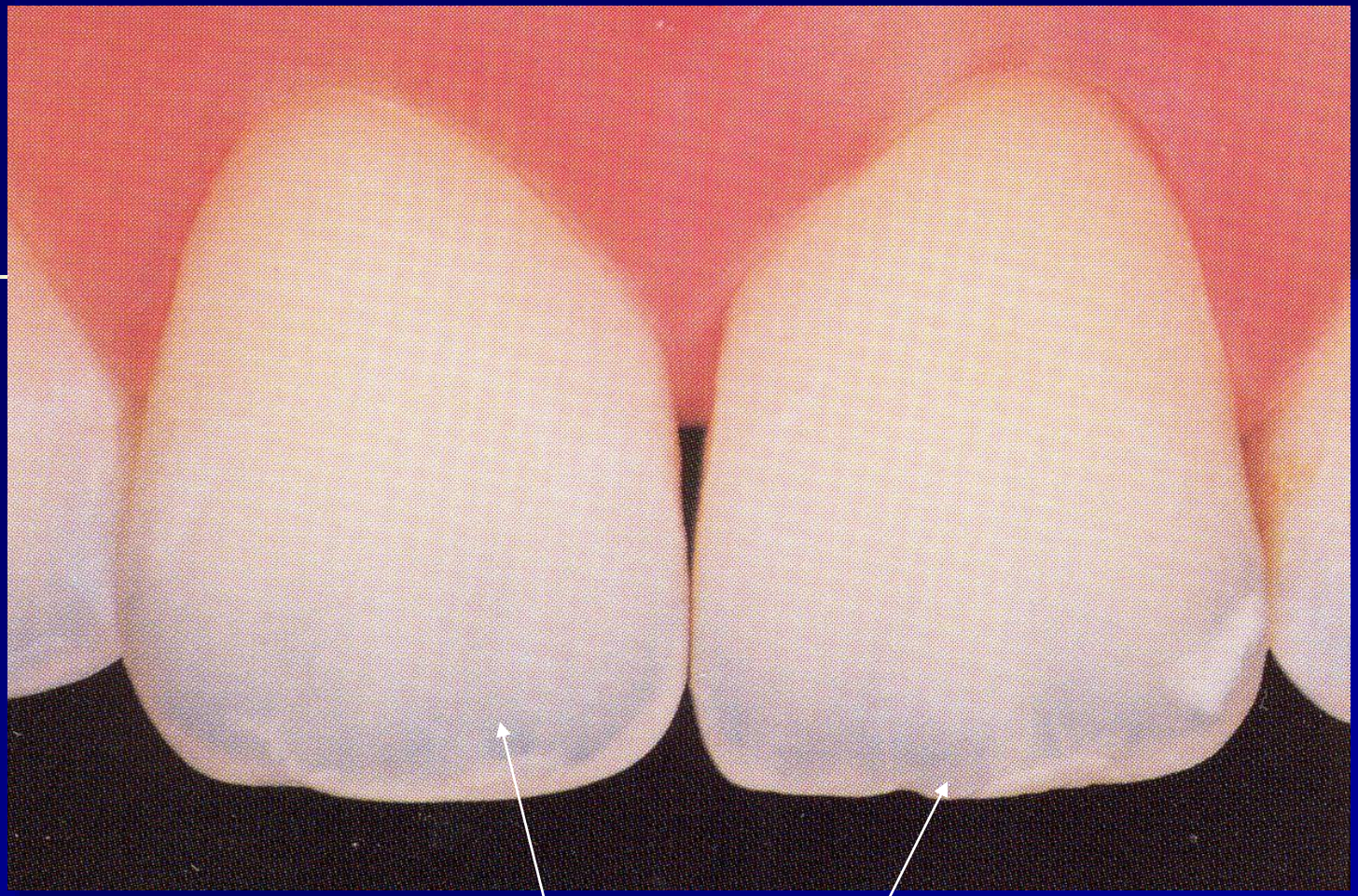
Enamel is translucent



Fluorescence

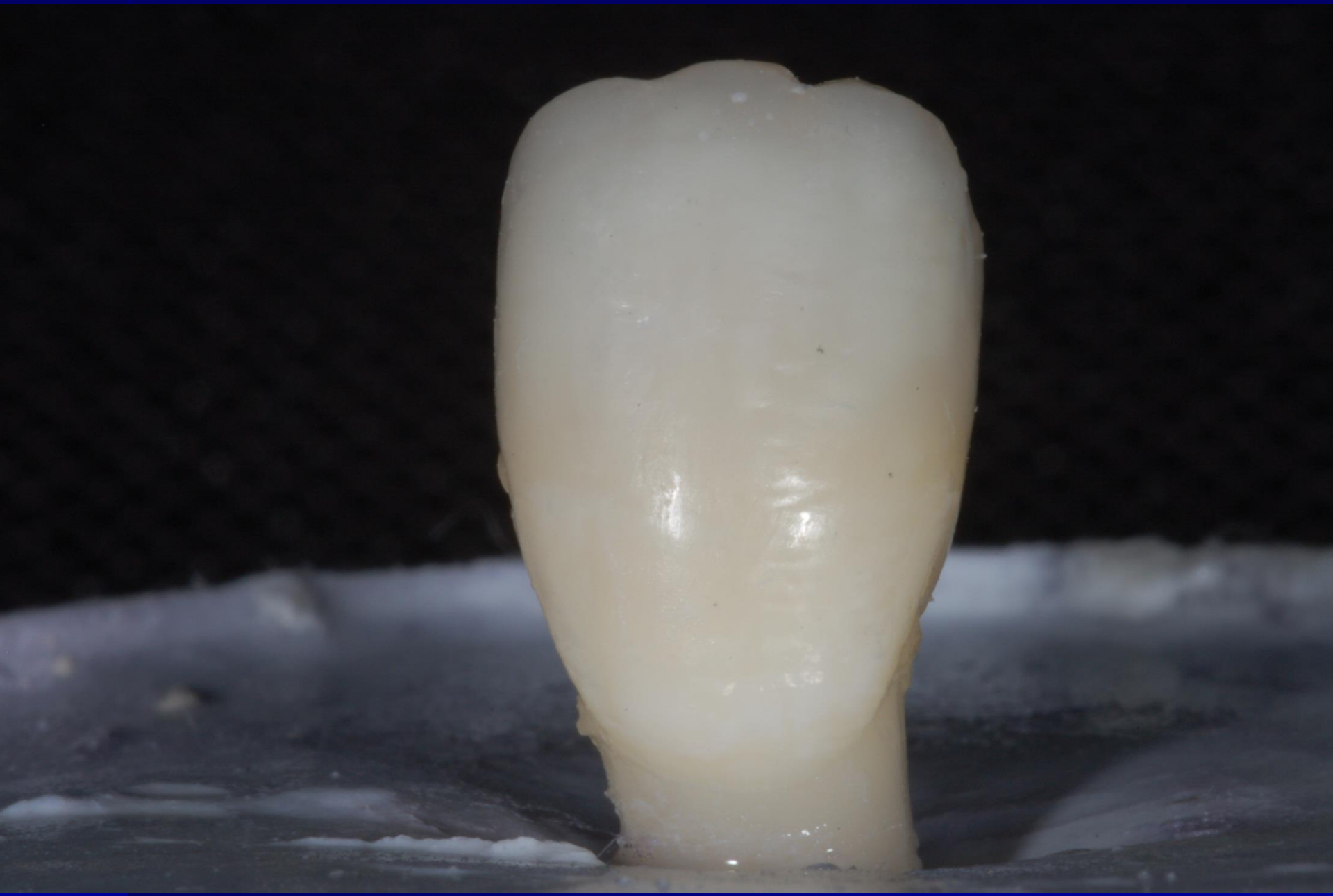
The light is absosbed and irradiated back in very short time 10^{-12} s.

Special, „live“ appearance od dentin

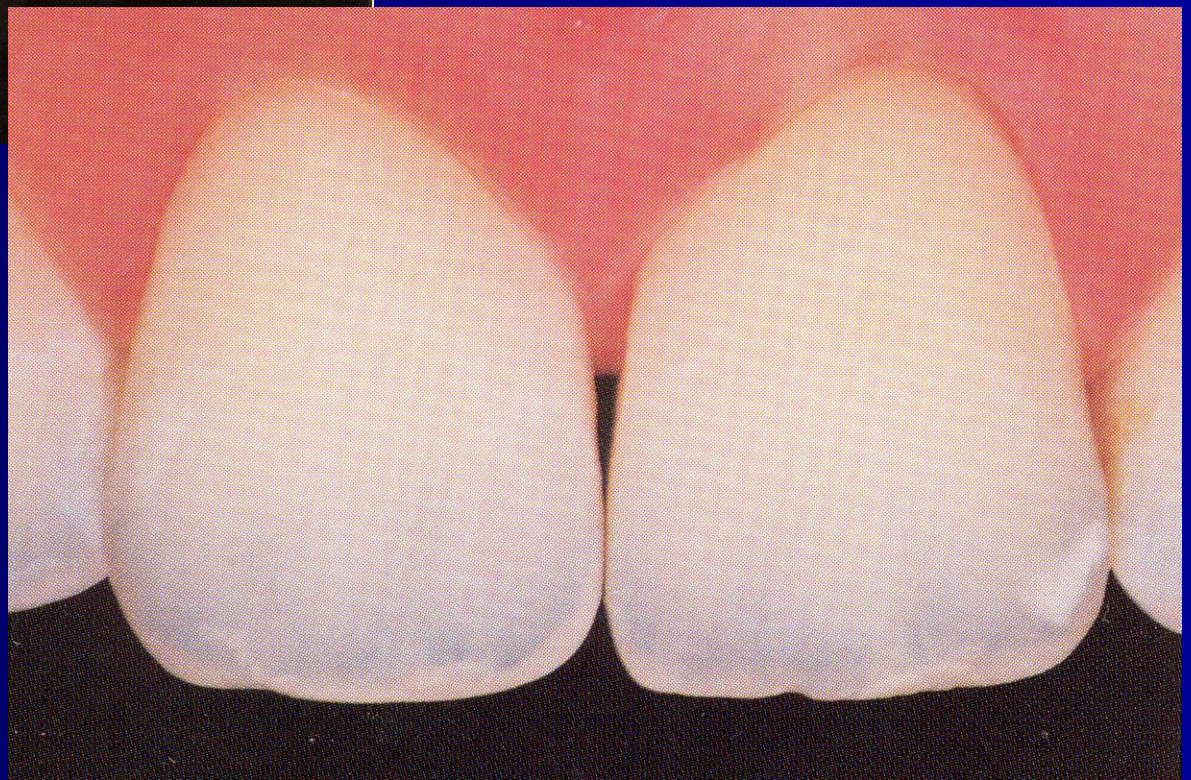


Opalescence
Special effect on incisal edge
Result of translucency of enamel

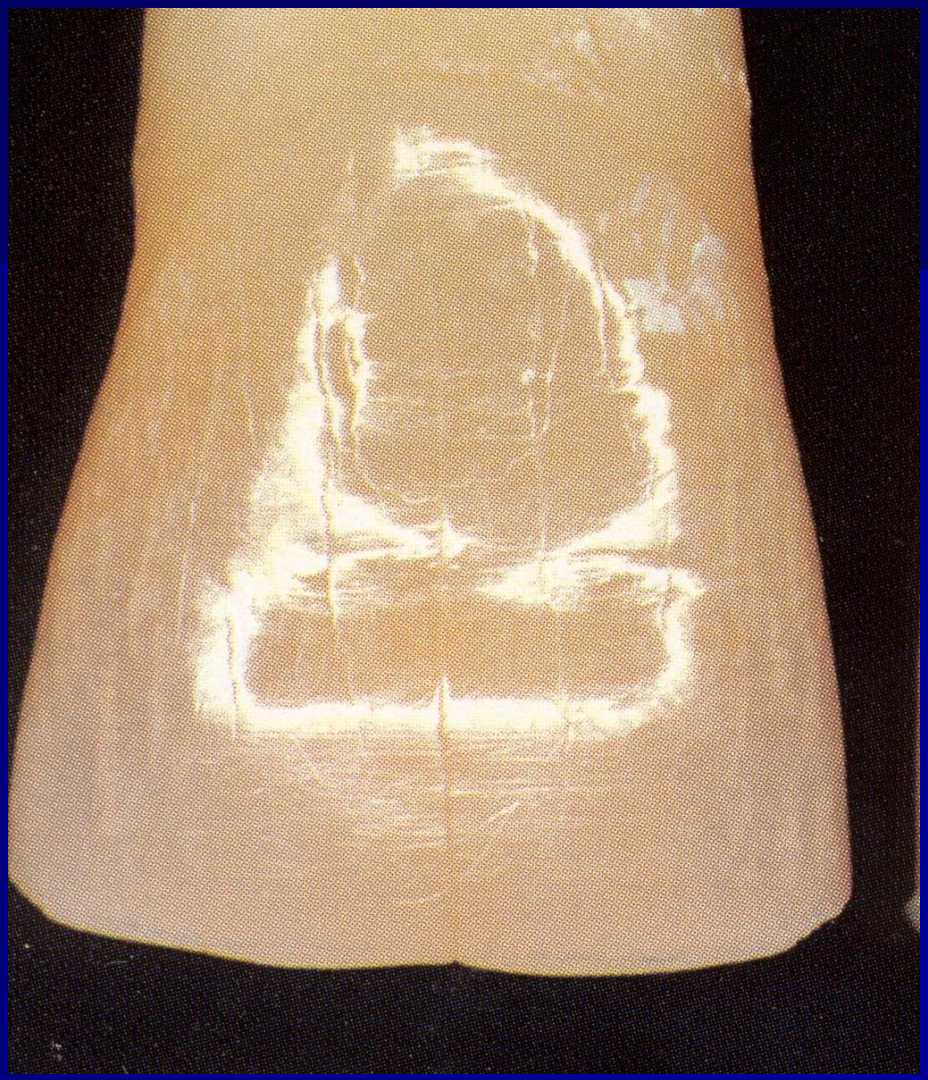
Mamelons
Opalescence
Halo efekt



young



Midle age



Old age

Color classification systems in dentistry

- Albert Henry Munsell:

Atlas of the Munsell Color system

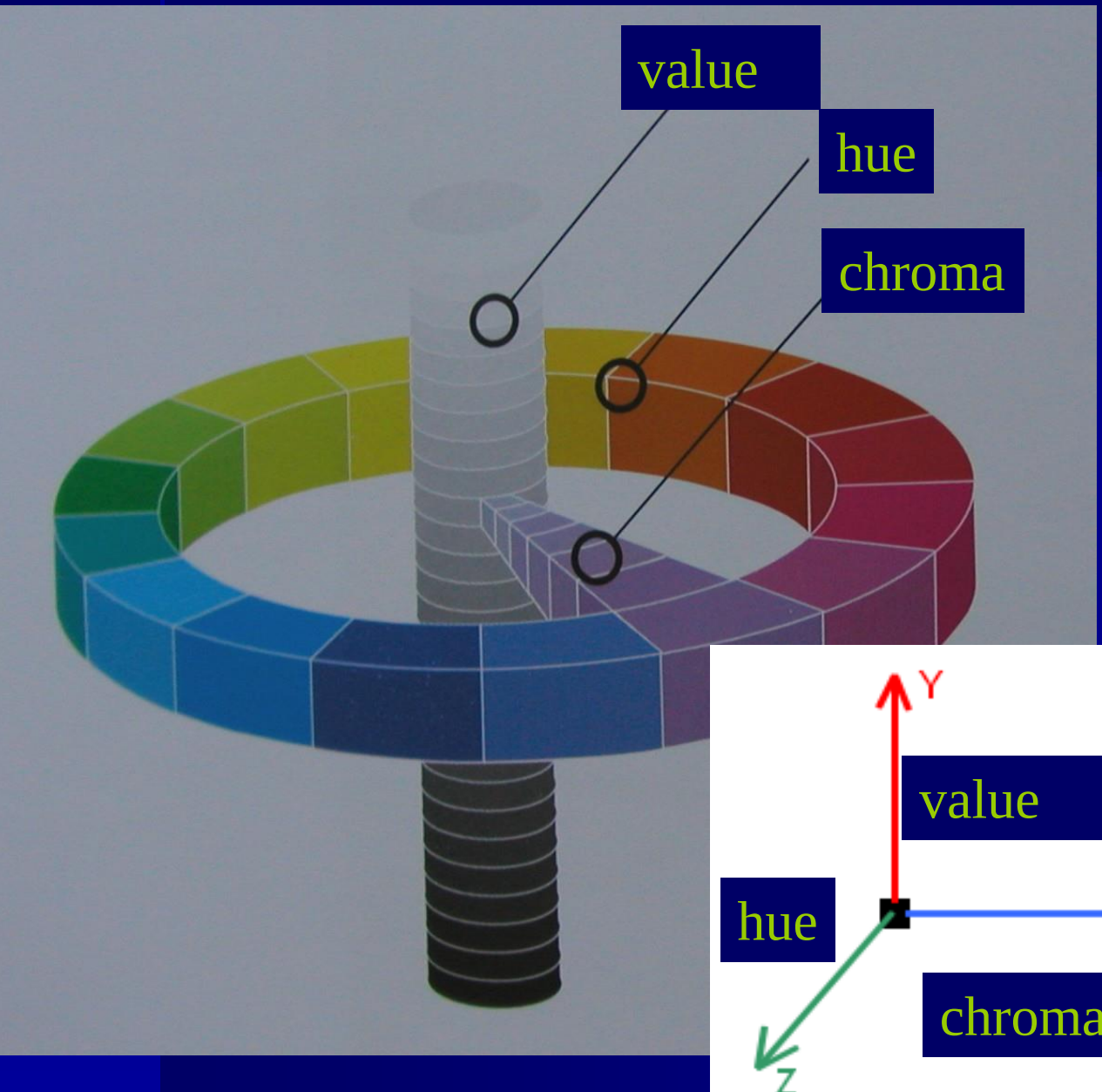
Three aspects of colors:

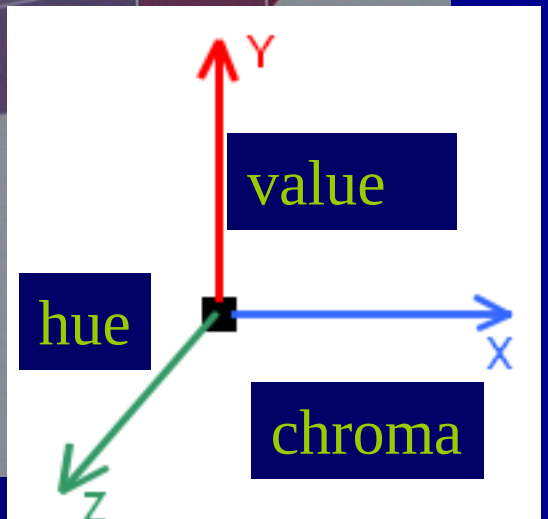
Chroma

Value

Hue

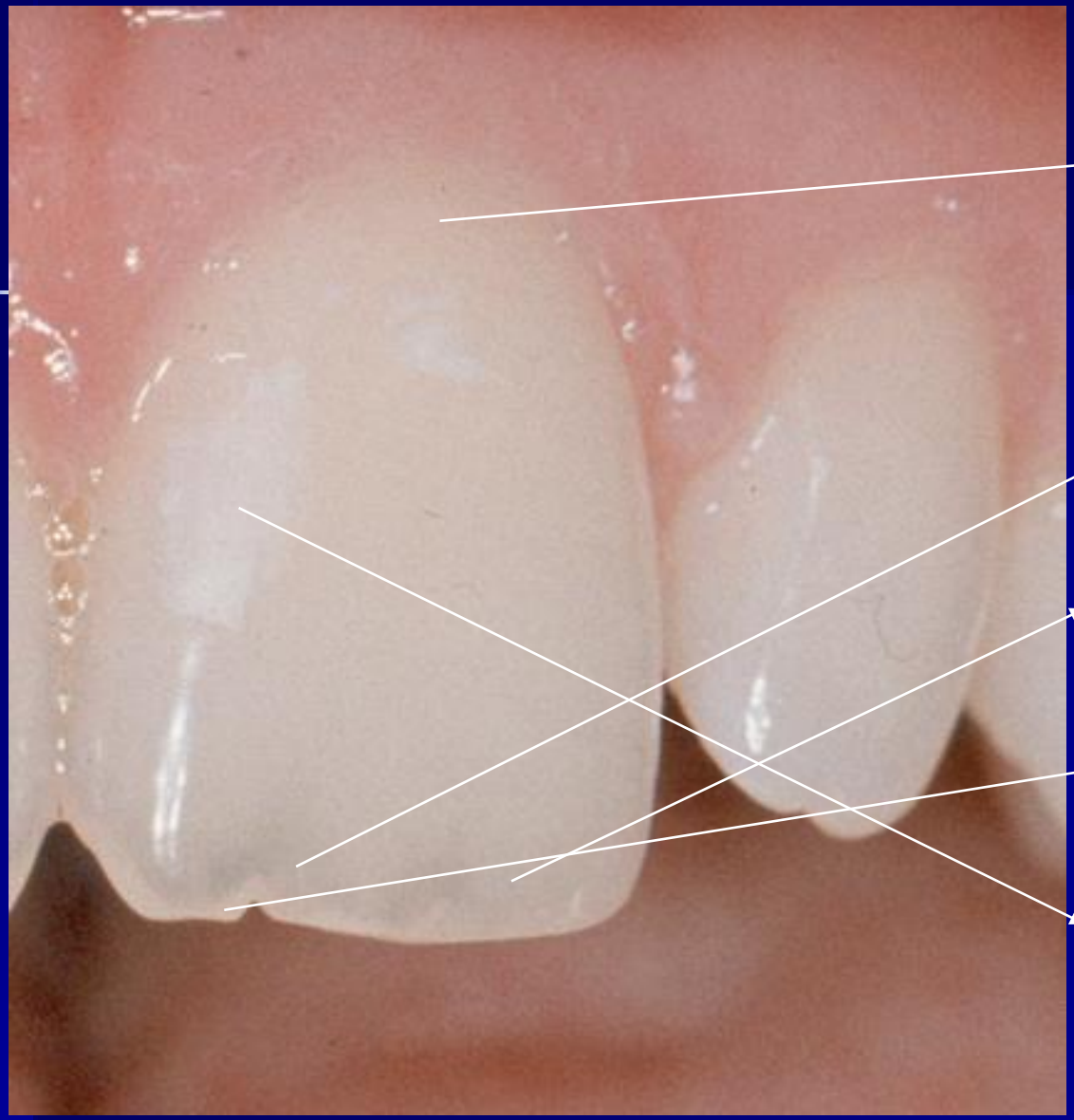
3 Variables of colour





Hue– colour. Result of wavelength
Chroma – result of amplitude
Value - cleanliness

Optical reading of the crown



colour

Desaturation

Opalescency

Tvar mamelons

Halo efekt

Spots, special chracterizations

Hue – color category to which the dentinal body tends

Chroma – color saturation of the dentinal body

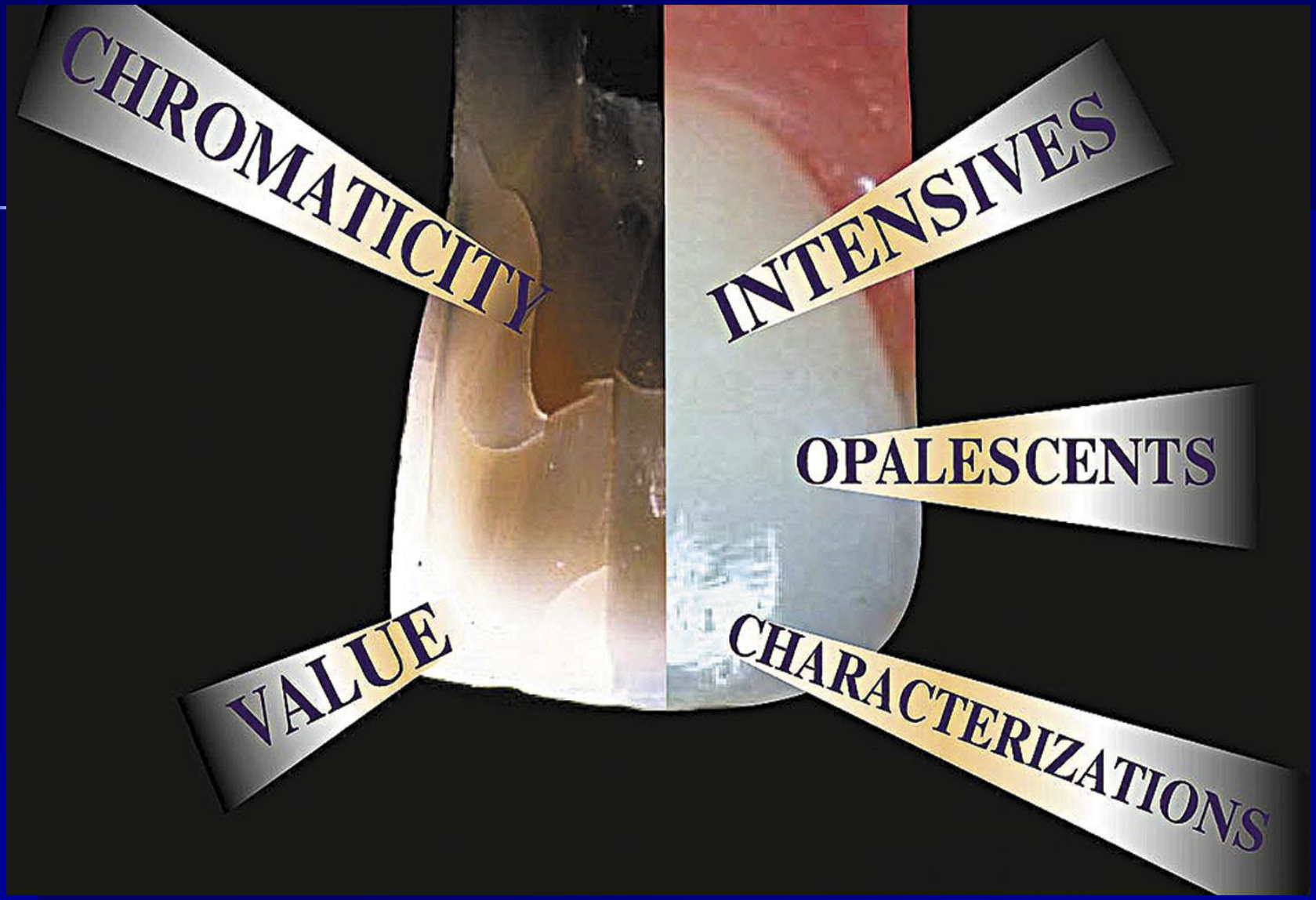
Value –
opacity,transparency and degree of whitness of the enamel

Intensives - spots that are frequently found in natural enamel.

White, blurred stains of different types – points, clouds, bands, flakes..

Opalescentes – blue or gray transparent effects found in the incisal third and/or interproximal enamel (dentin-free zone)

Characterizations – existing colour characterization present in teeth, such as white or amber bends, enamel cracks, colored mamelons and stains


CHROMATICITY
INTENSIVES
OPALESCENTS
VALUE
CHARACTERIZATIONS

Dental shade quides

- Remember:

shade guides are made of materials that are not the same as the composite resins and ceramics.

They are useful only as a basic reference.

Vita shade quide

- Is the most commonly used in dentistry
- Four categories according to their incidence:

Orange –red: A

Orange – yellow: B

Brown – gray: C

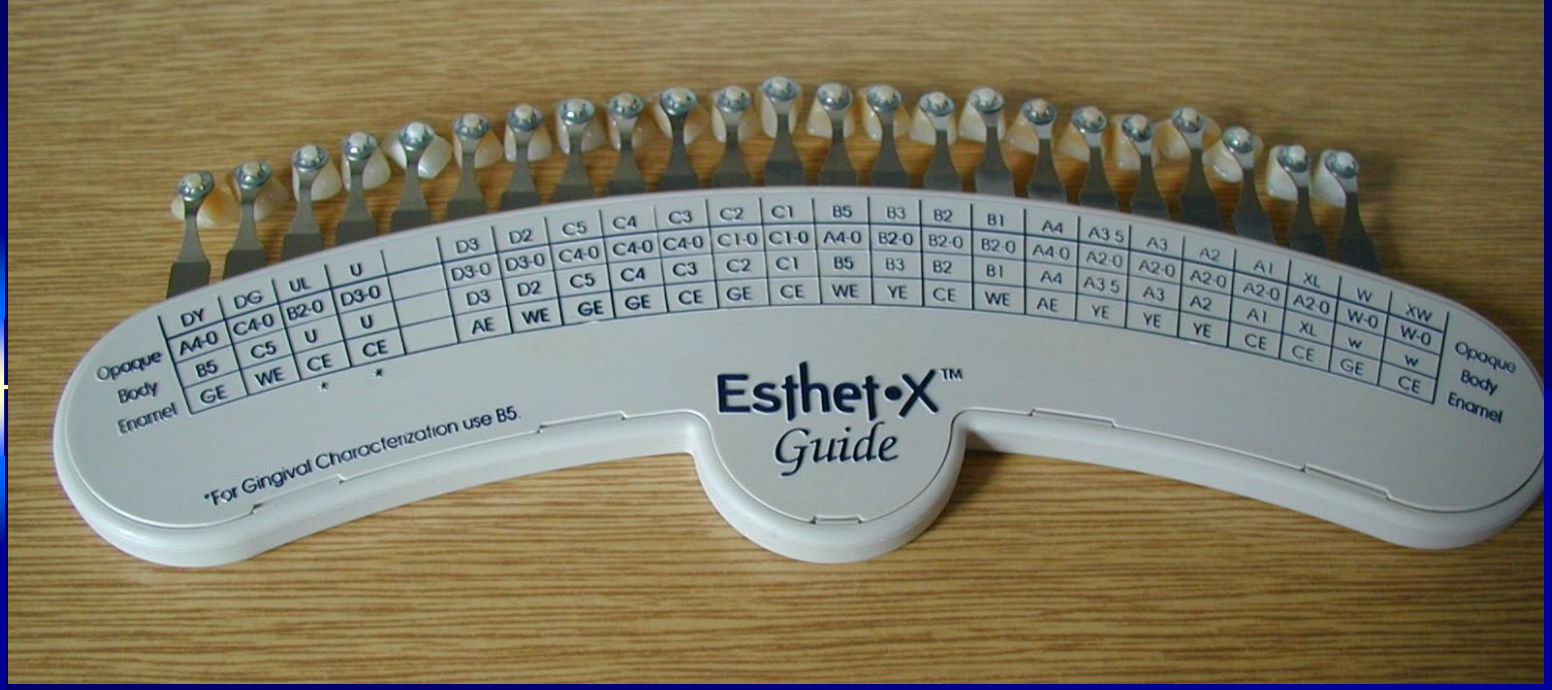
Brown: D

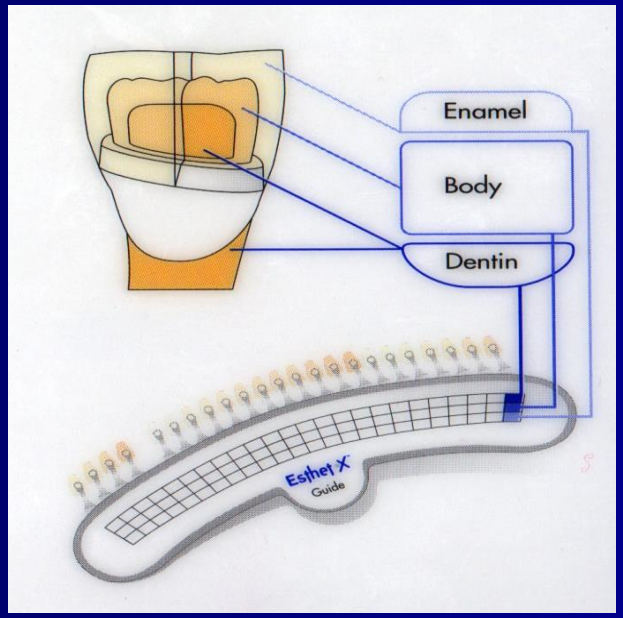
Chromatic scala of composite materials

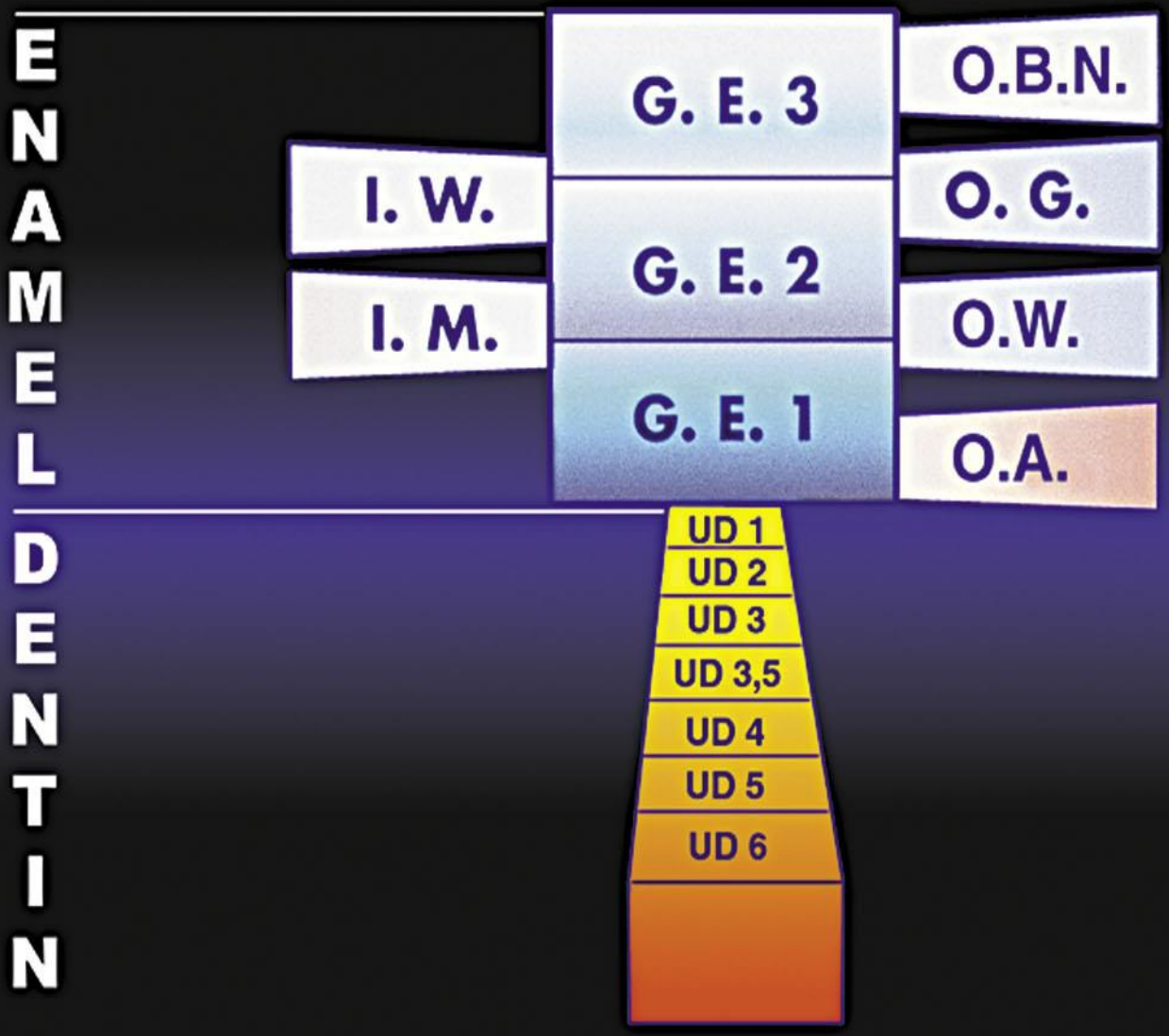
Dentin shades

Enamel shades

Special effects


Opaque
Body
Enamel
DY DG UL U
A4-0 C4-0 B2-0 D3-0
B5 C5 U U
GE WE CE CE
* *
D3 D2 C5 C4 C3 C2 C1 B5 B3 B2 B1 A4 A3 5 A3 A2 A1 XL W XW
D3-0 D3-0 C4-0 C4-0 C4-0 C1-0 C1-0 A4-0 B2-0 B2-0 B2-0 A4 0 A2-0 A2-0 A2-0 A2-0 A2-0 W-0 W-0
D3 D2 C5 C4 C3 C2 C1 B5 B3 B2 B1 A4 A3 5 A3 A2 A1 XL w w
AE WE GE GE CE GE CE WE YE CE WE AE YE YE YE CE CE GE CE
Opaque
Body
Enamel
*For Gingival Characterization use B5.
Esthet•X™
Guide


Enamel
Body
Dentin
Esthet X
Guide


ENAMEL
DENTIN
G. E. 3
G. E. 2
G. E. 1
I. W.
I. M.
O.B.N.
O. G.
O.W.
O.A.
UD 1
UD 2
UD 3
UD 3,5
UD 4
UD 5
UD 6

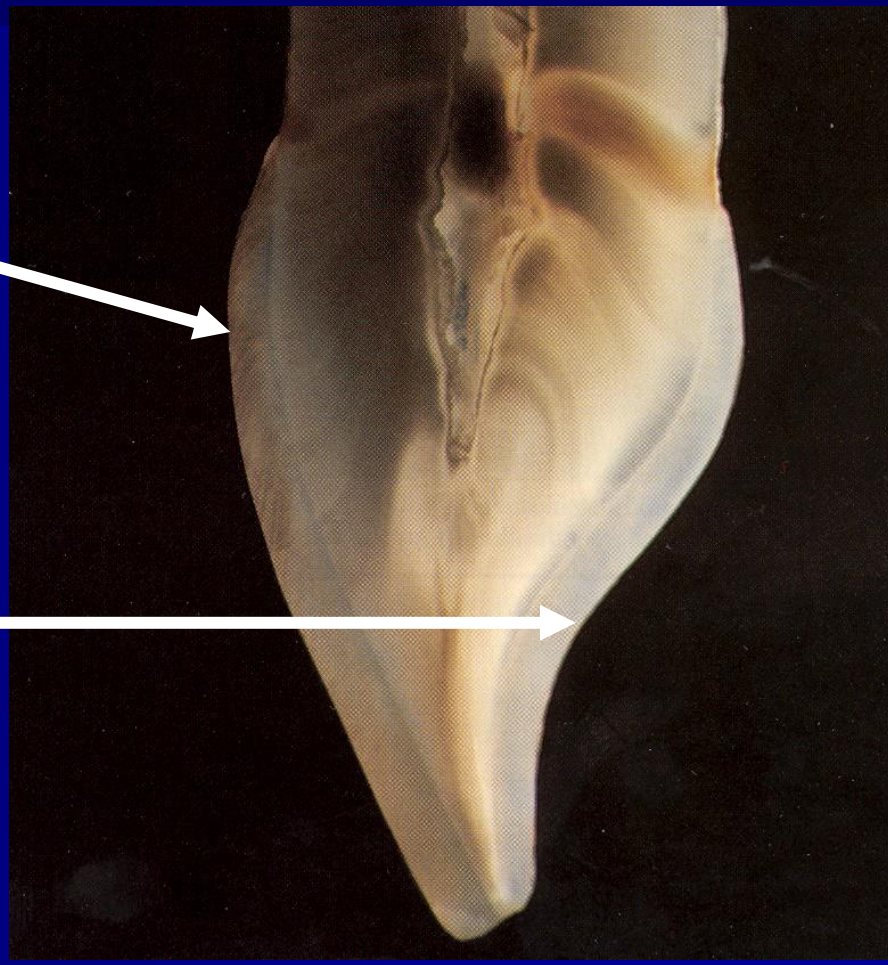
Natural tooth

- Dentin

Color of teeth
Is derived
from the dentin

- Enamel

Increases the brightness
(value) and acts
as a selective light filter



Reproduction the tooth

- Inner layer (In): dentin shade.

Imparts chromaticity. Opacity, ůight svattering, fluorescence, yellowish tooth appearance.

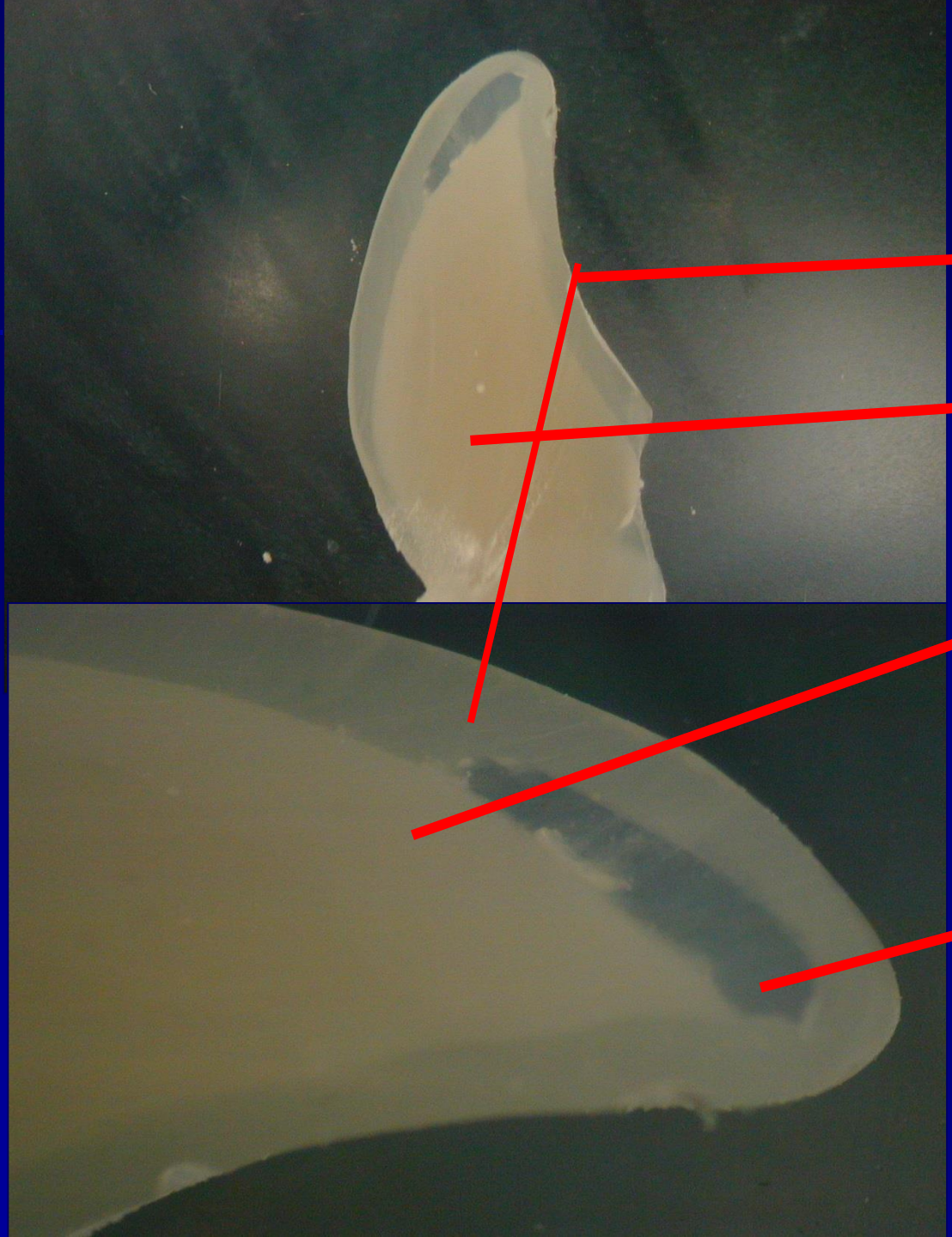
- External layer (Out): enamel shade

which is responsible for regulating the tooth´s value, luminosity and transparency. It modifies the final colour of the tooth.

Reproduction the tooth

Intermediate layer (Mid):

Is used to reproduce special features that occur spontenously in netura enamel and are located in the midddle of the stratification (opalescentes, intensives, characterizations).

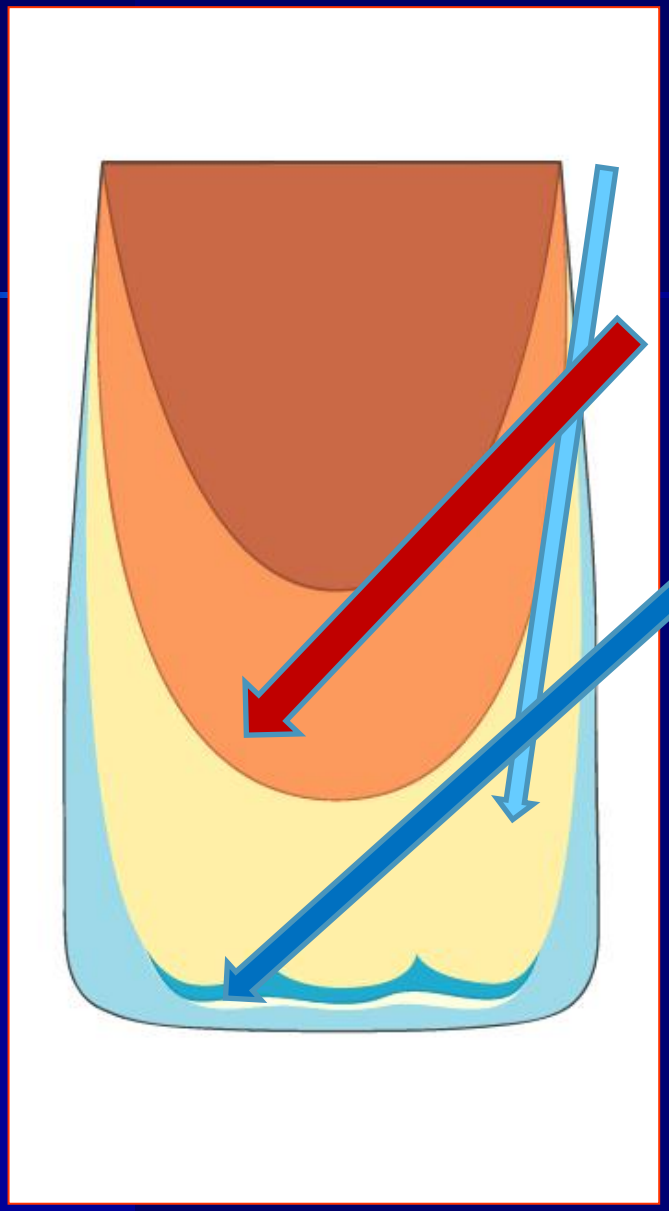


Enamel shade

Dentin shade

Desaturation
(loosing of the hue -
saturation)

Opalescence



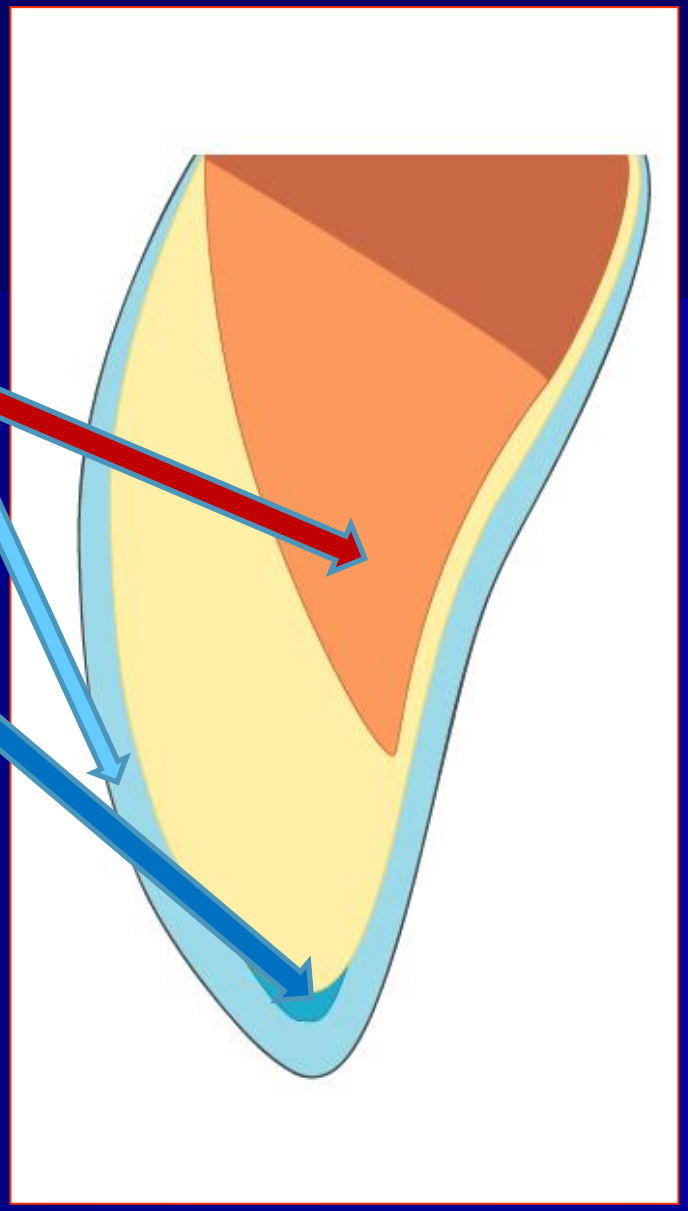
Enamel

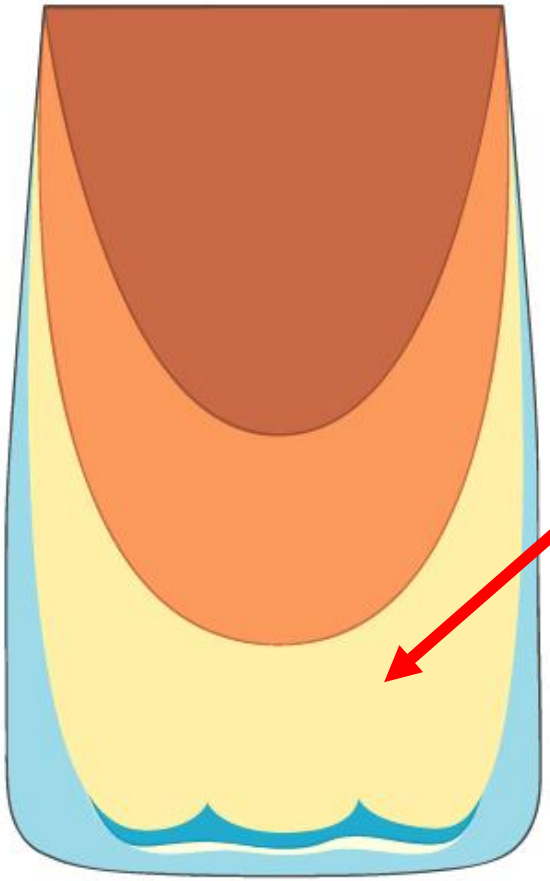
Dentin

Mamelons

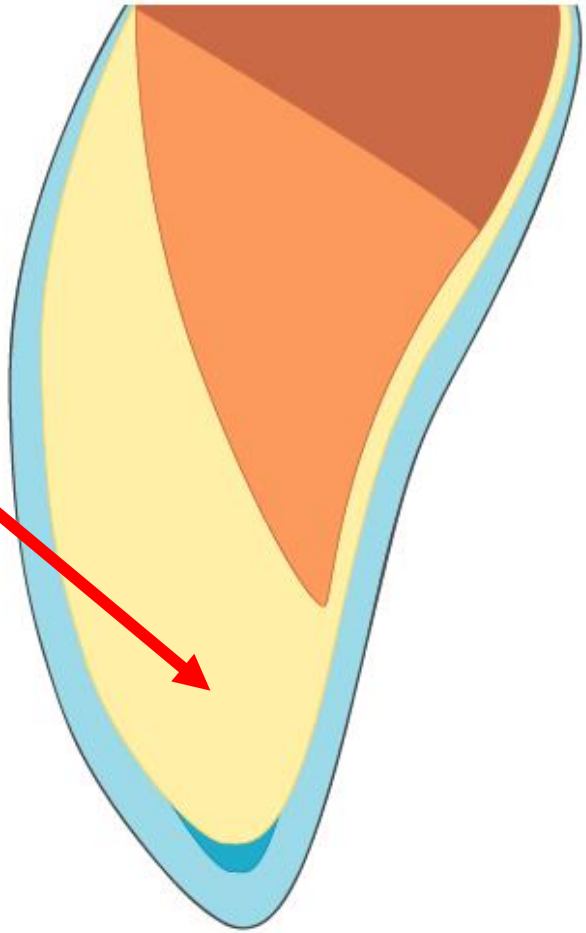
Opalescebts

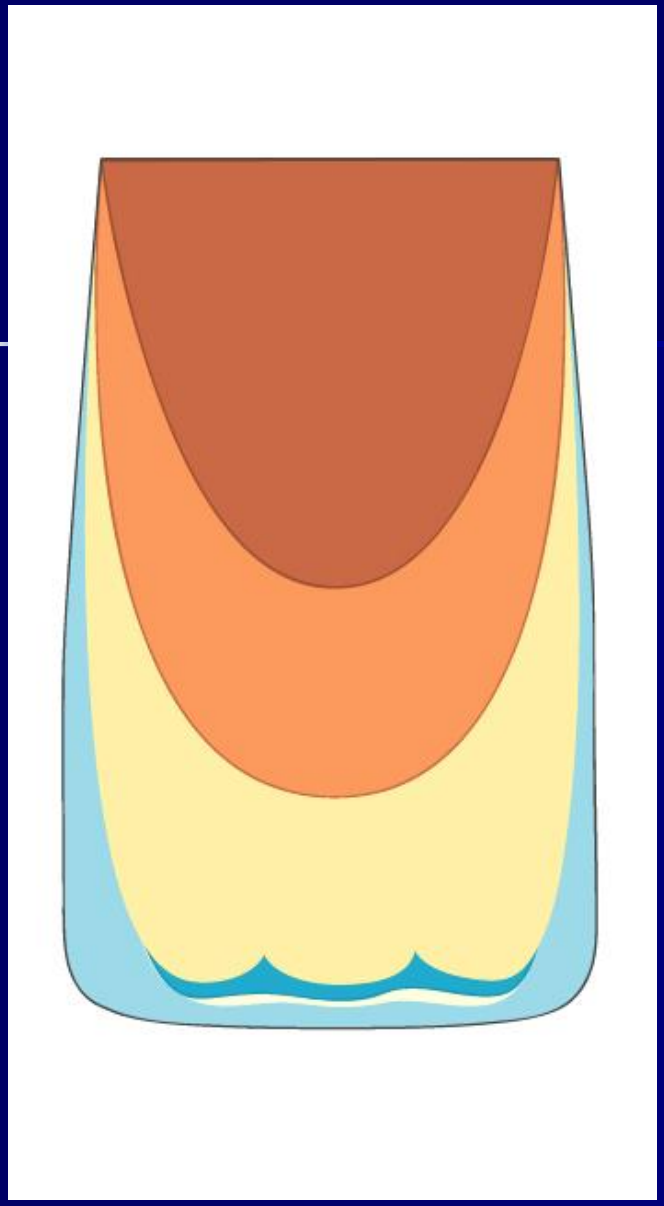
Characterizations

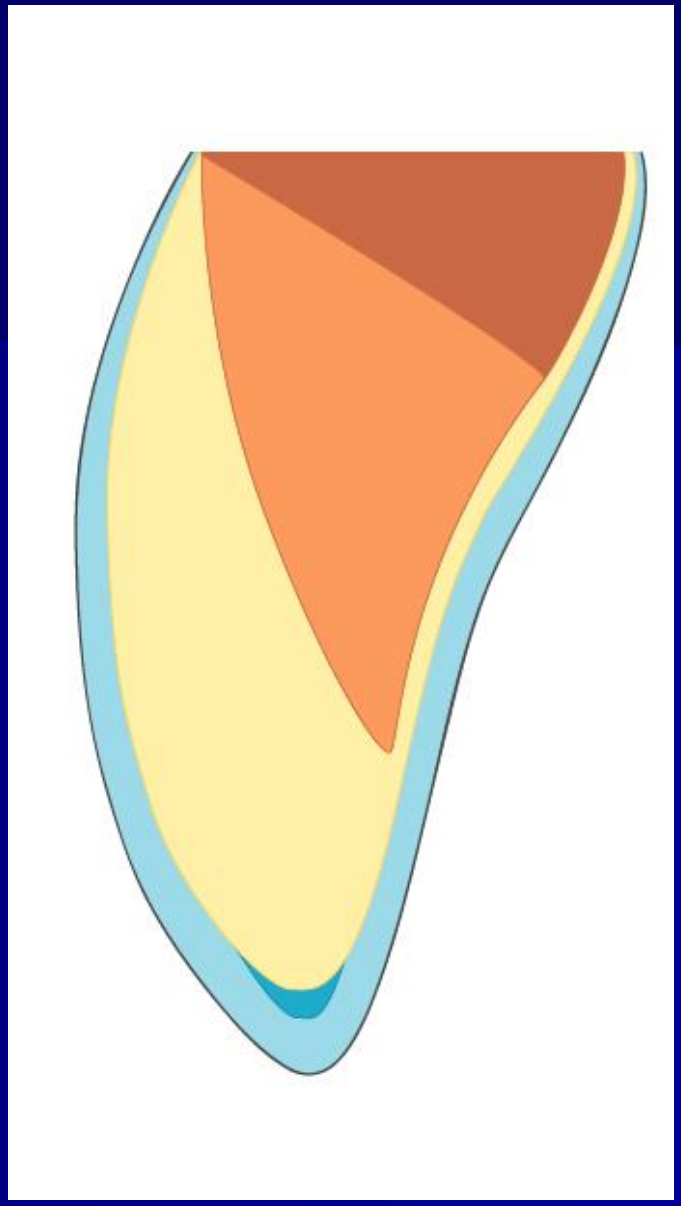




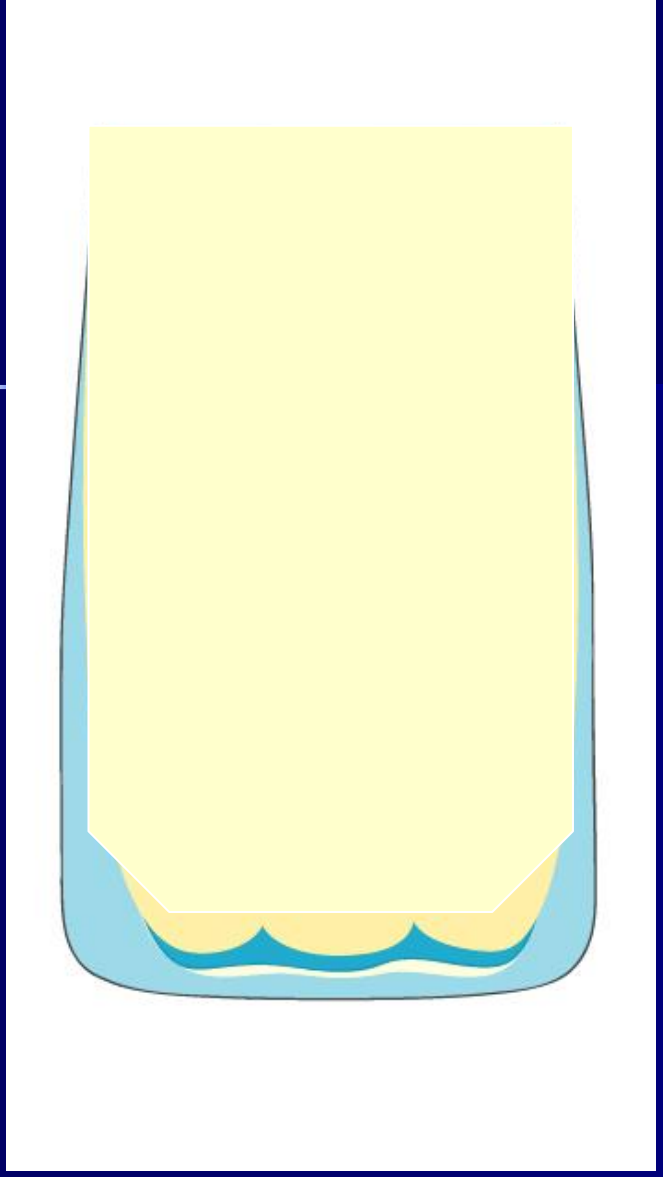
Desaturation

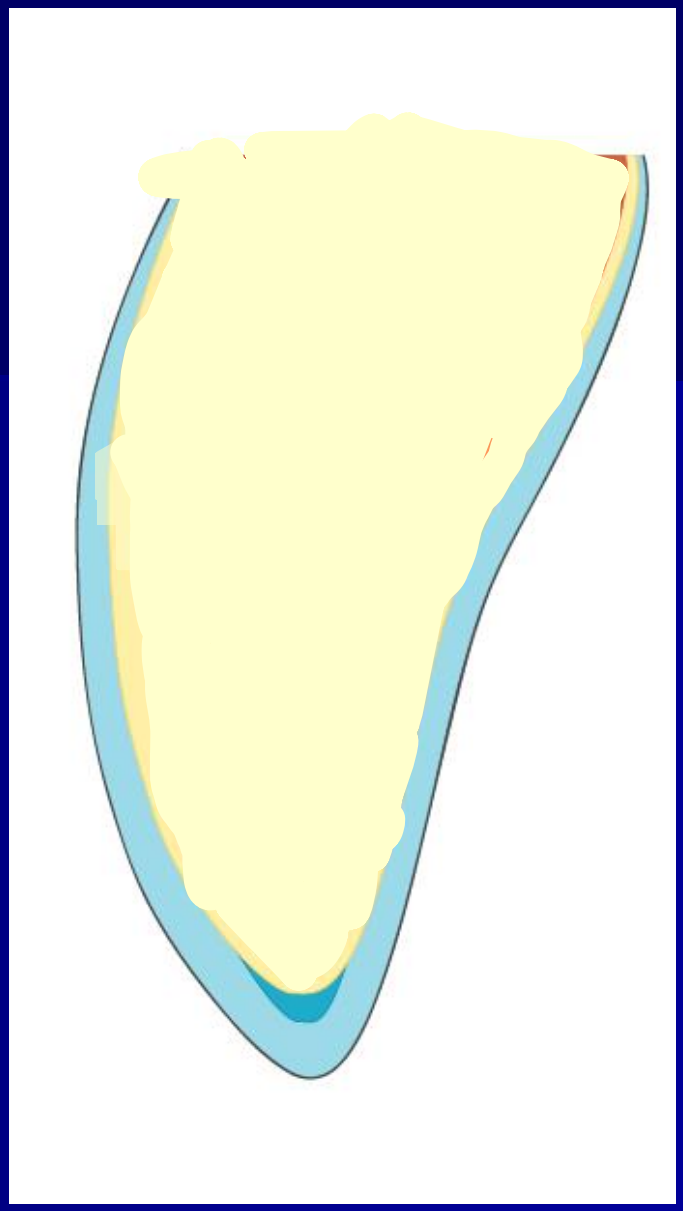




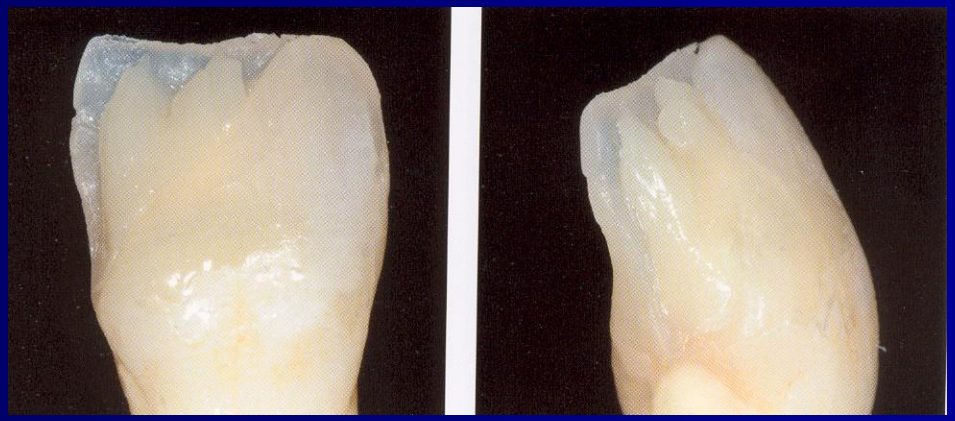


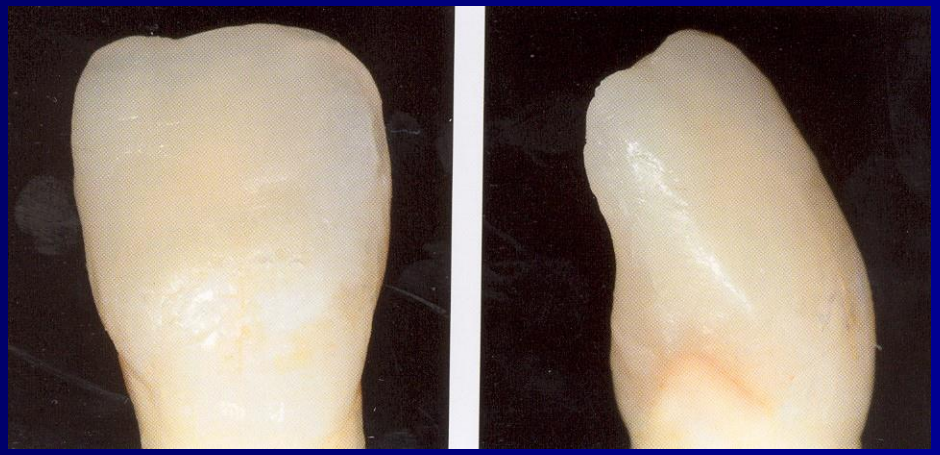
Vanini stratification





Simplified technique





Shape – tooth morphology

- Tooth morphology

1. Outline:

Global tooth shape

2. Primary anatomy:

Anatomical ceown shape given by the transition angles determinates the curvature and the fine tooth shape

Shape – tooth morphology

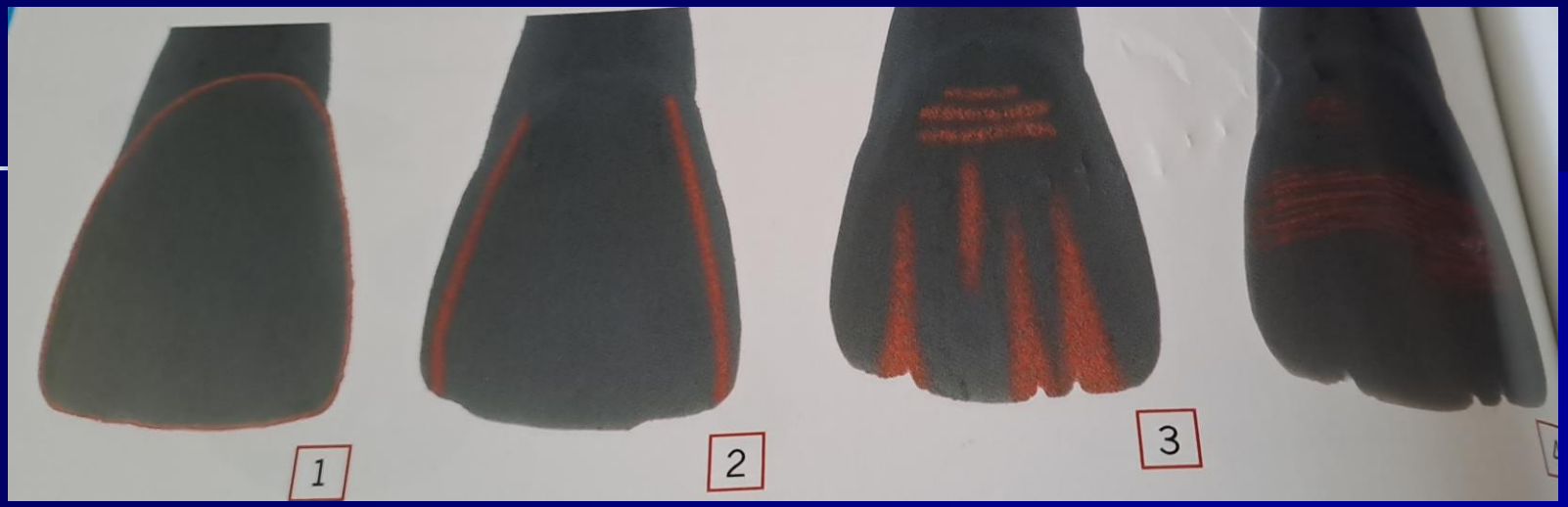
- Tooth morphology

3. Secondary anatomy

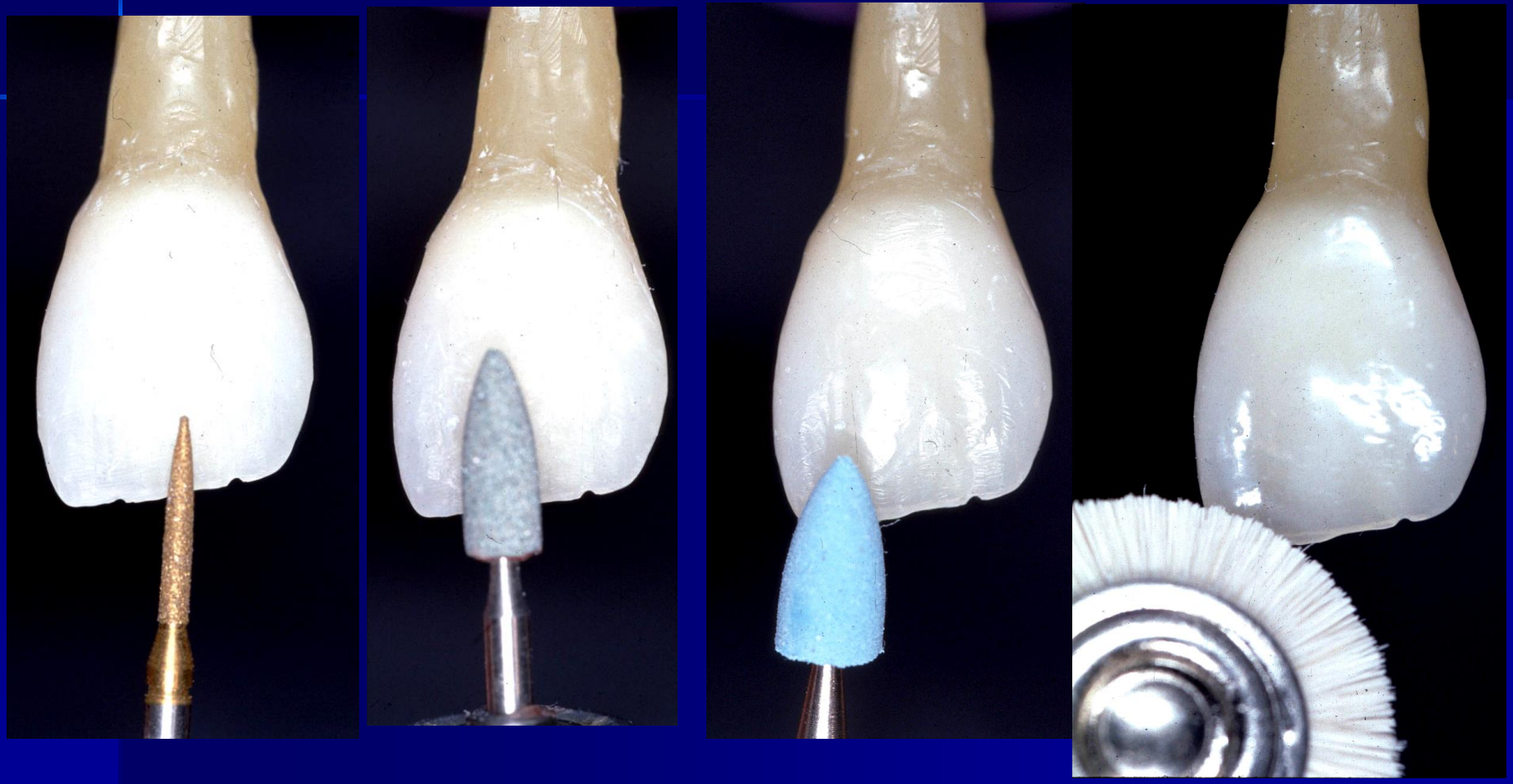
Macrosurface – consequence of tooth development. Vertical texture.

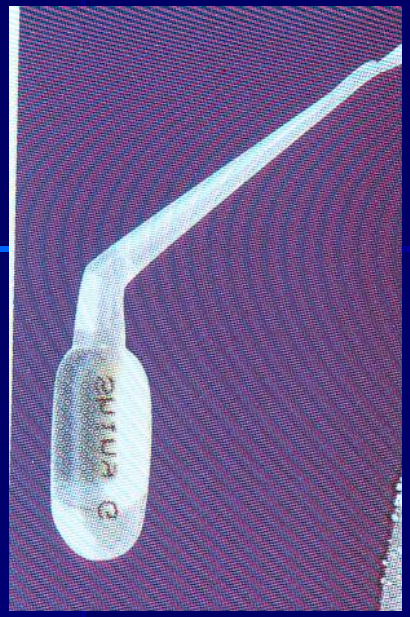
3. Tertiary anatomy

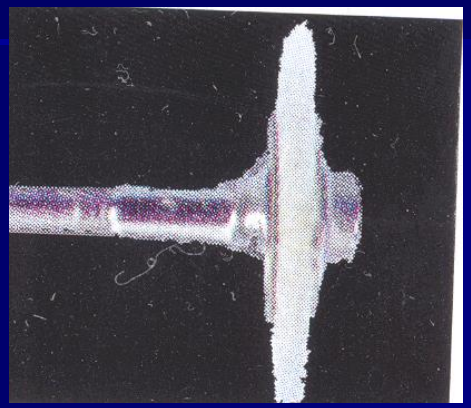
Microsurface. Developlemntal gooves become evident as small lines that cross the vestibular surface horizontally. Horizontal texture



Outline Primary anatomy Secondary anatomy Tertiary anatomy








SHINY A
3 micron 2 g
ENAMEL plus
SHINY
SHINY B
1 micron 2 g
ENAMEL plus
SHINY


PASTA SHINY C 35 g
ENAMEL plus
SHINY