Poltava State Medical University
Department of Orthodontics

Macro-aesthetics of the face. The role of the cephalometric examination in diagnostics and prognosis of the orthodontic treatment.

Ukraine NOW ua

2024

Plan of lecture:

1. Clinical examination of orthodontic patients.
2. Macro-aesthetics of the face.
3. Micro-aesthetics of the face.
4. Mini-aesthetics of the face.
5. The role of cephalometric examination in diagnostics and prognosis of the orthodontic treatment.

Macro aesthetics

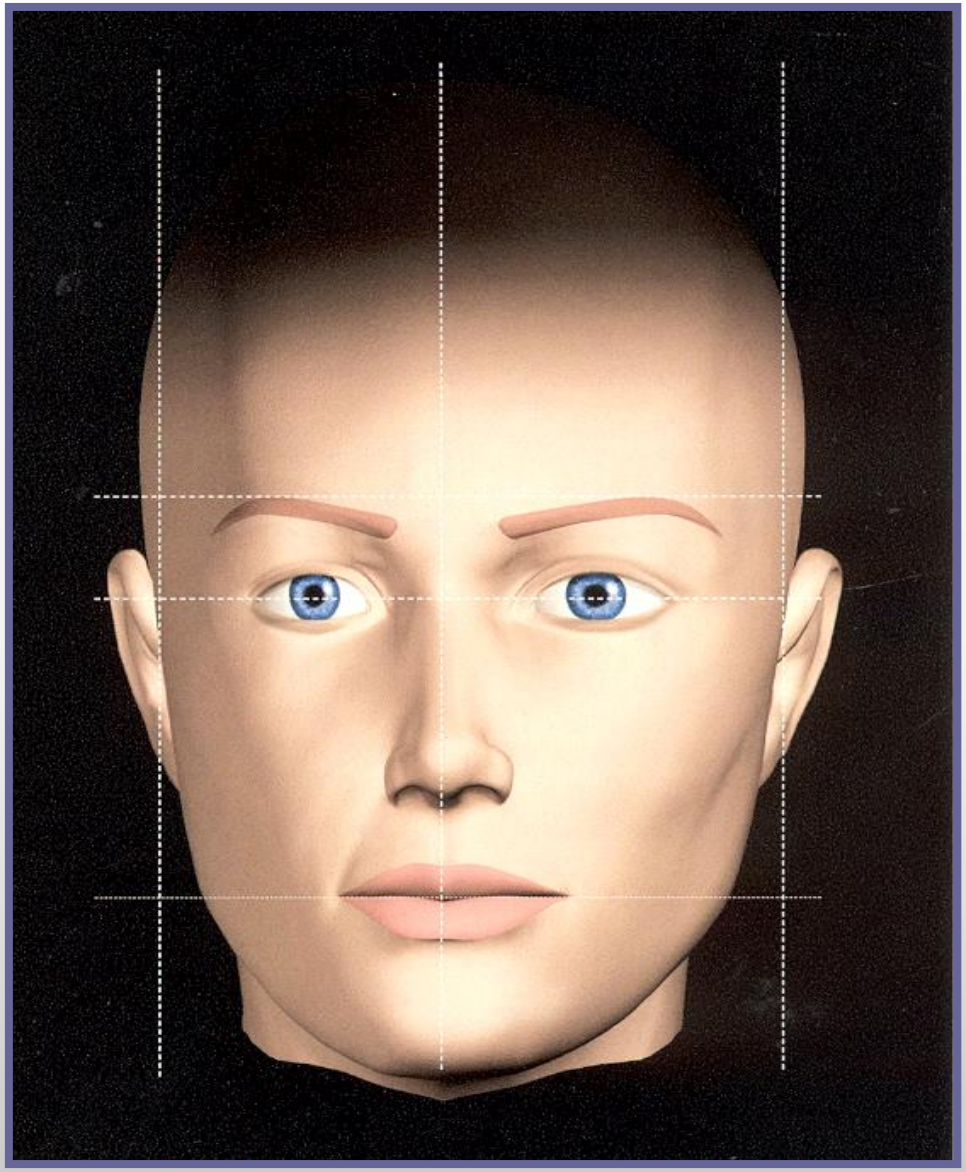
Evaluation of Facial Esthetics from distance in 1,5m

Evaluation of Facial Esthetics

FRONTAL VIEW

- Dental vs. skeletal midlines
- Symmetry
- Compare vertical thirds
- Width of eyes, nose, mouth

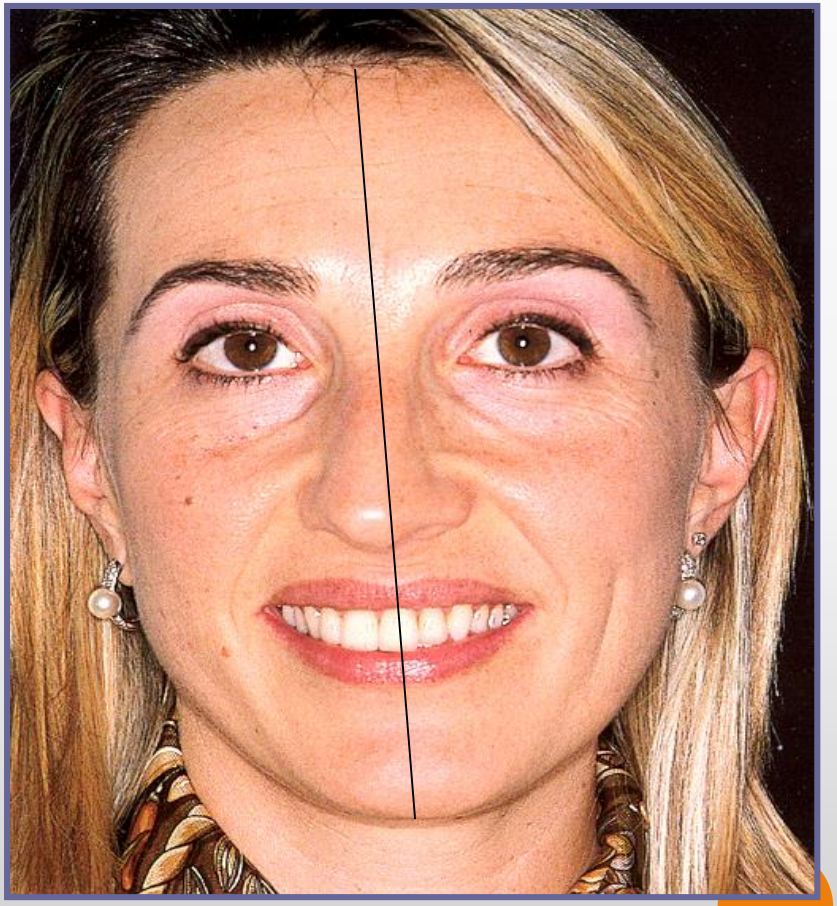
Facial Midline



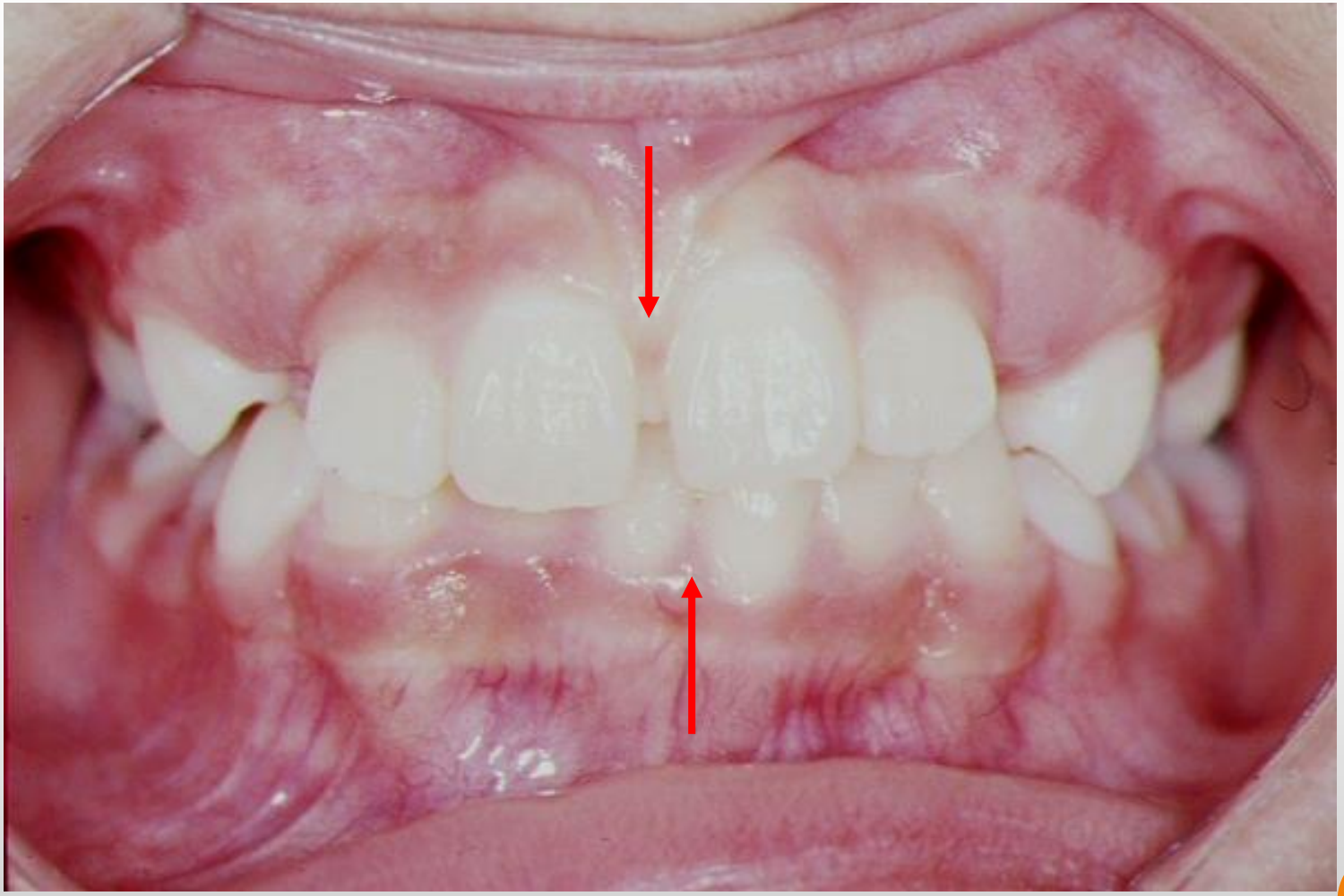
A line drawn from glabella to the tip of the nose, passing through the philtrum of the upper lip, and the midline of the chin

Asymmetry

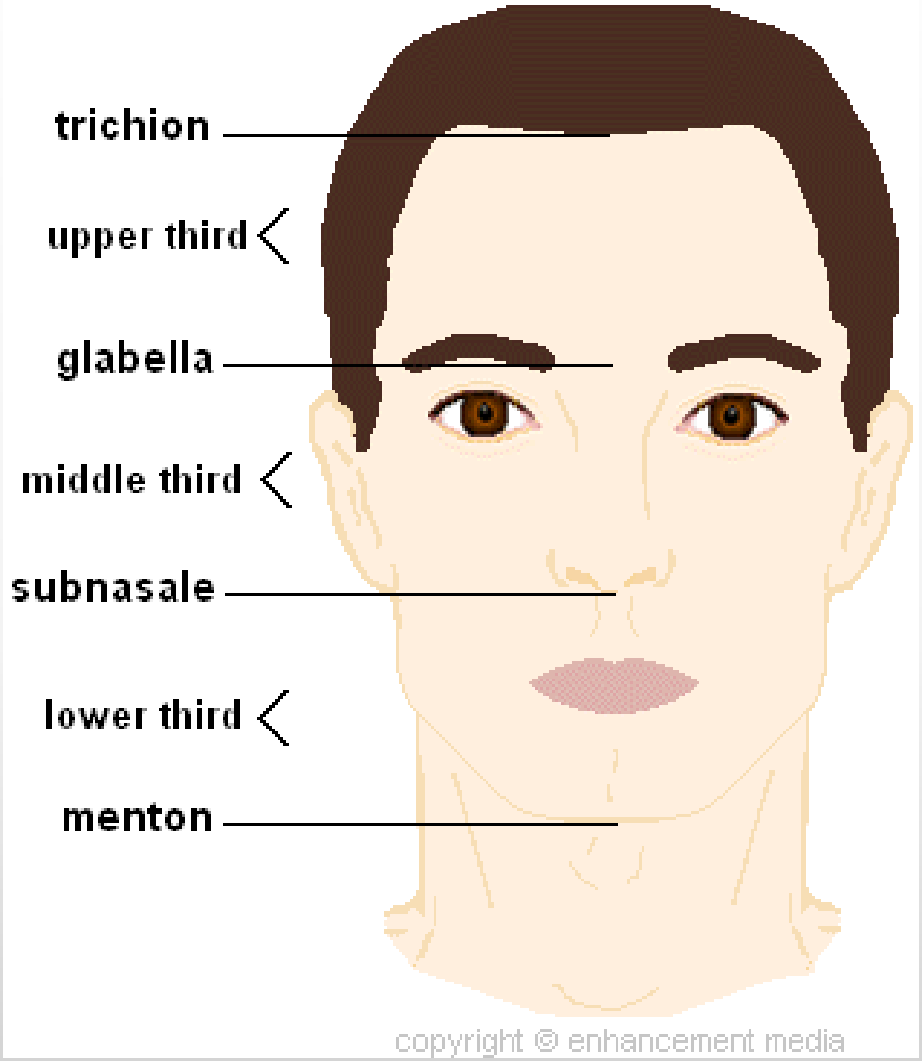
A reduction of proportion between the left and right sides of the face.

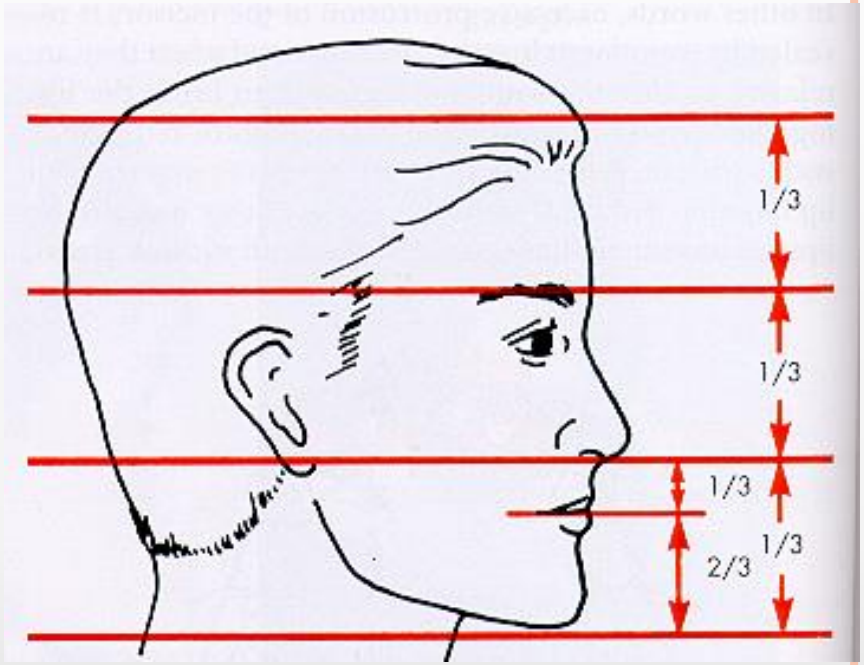


Dental Midlines

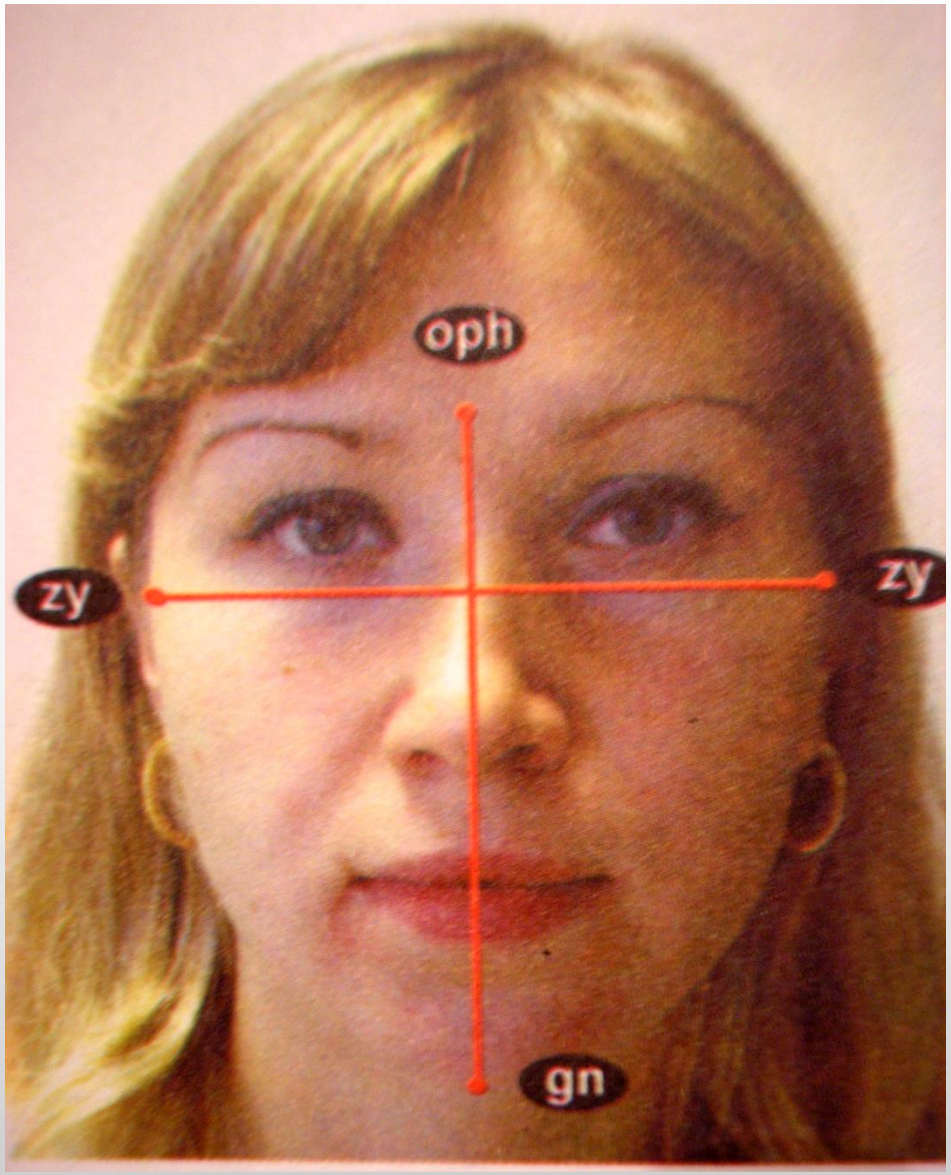


FACIAL PROPORTION





Frontal Proportions



Index Facial Morfological

$$\frac{\text{Face height (n-gn)} \times 100}{\text{Face width (zy-zy)}}$$

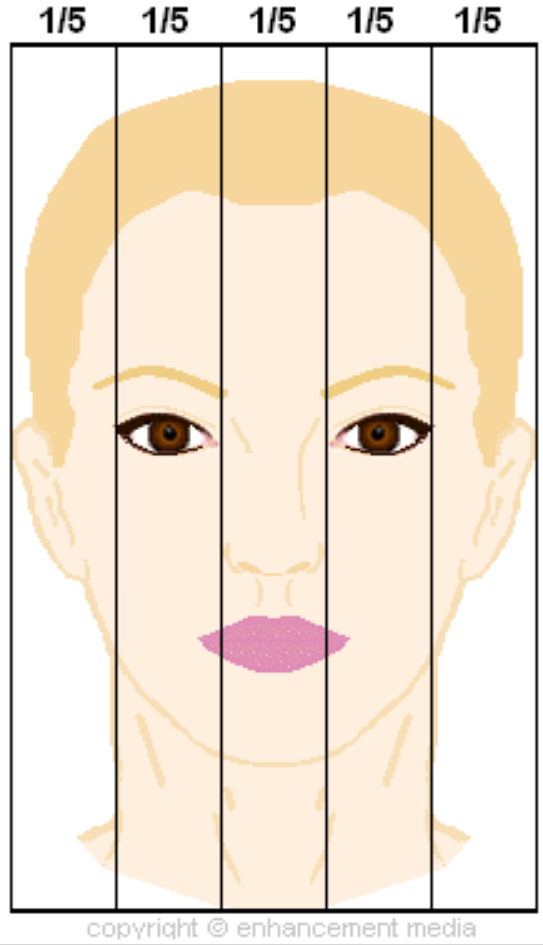
Narrow face – 104 and more

Middle face – 97-103

Wide face – less then 96

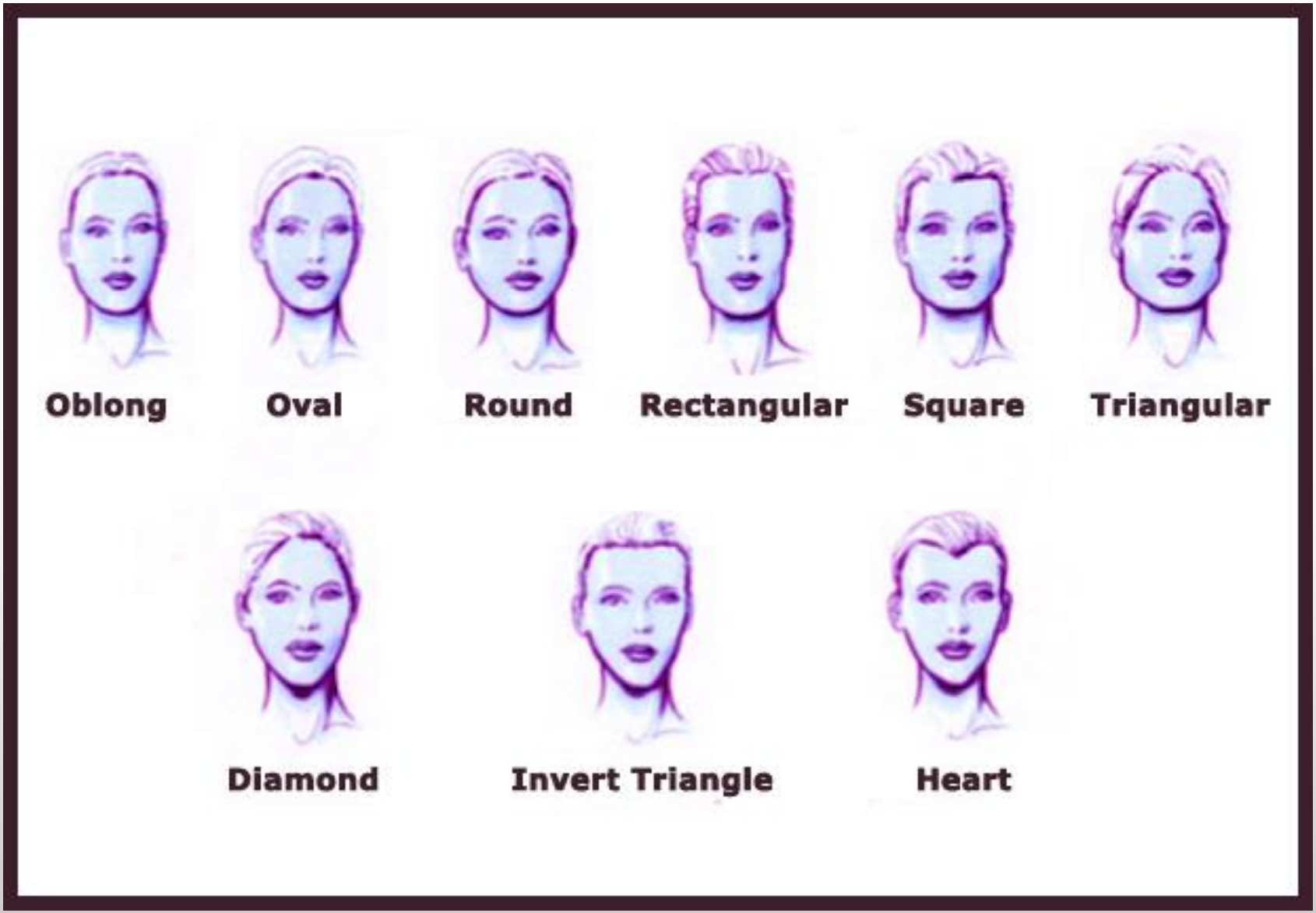
WIDTHS

("FIVE EYES" RULE):



The ideal face can be divided into five equal vertical segments as shown
a) from the outer part of the ear to the outer eyelids,
b) the width between the inside corners of the eyes,
c) the width of the nasal base between the nostrils.

FACE FORMS


Oblong
Oval
Round
Rectangular
Square
Triangular
Diamond
Invert Triangle
Heart

Evaluation of Facial Esthetics

PROFILE VIEW

- Evaluate position of maxilla and mandible in the anterior - posterior plane- profile types

- Evaluate lip posture / prominence

Profile Facial View

profile types:

Straight

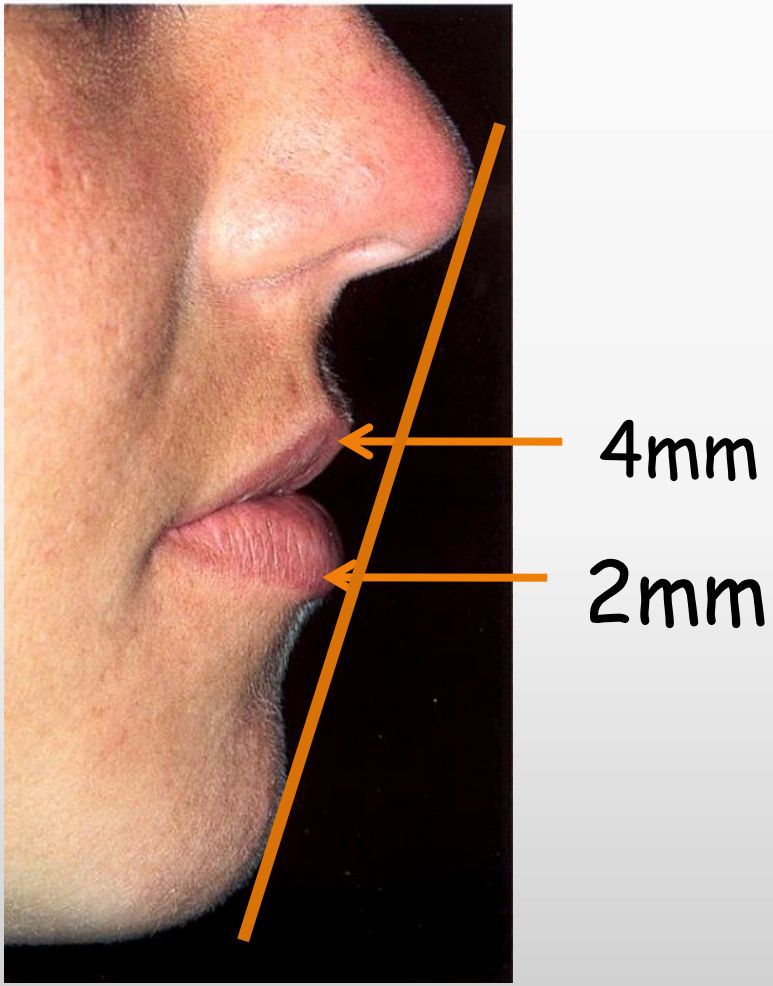
Concave

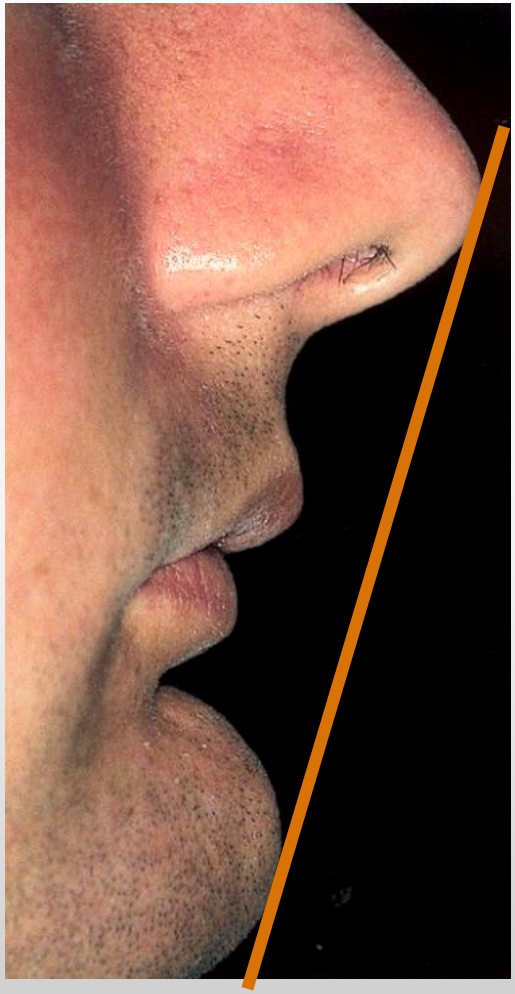
Convex

gl-sn-pg 165°-175° - normal occlusion.
gl-sn- pg < 165° - distal occlusion,
gl-sn-pg > 175° - mesial occlusion.

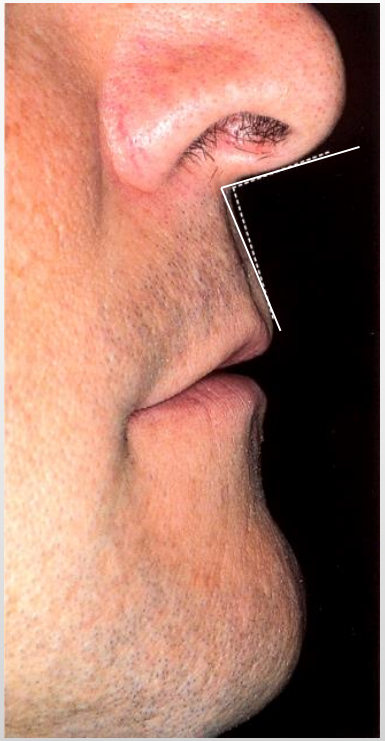
LINE E - RICKETTS

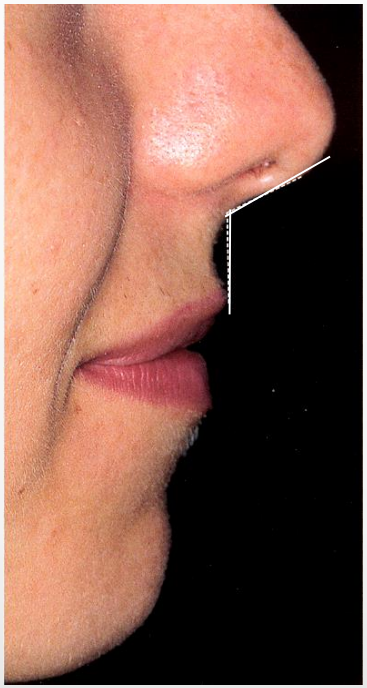
LIPS POSITION





Nasolabial Angle





Norma

90-95^0 male

100-105^0 female

EXAMPLE

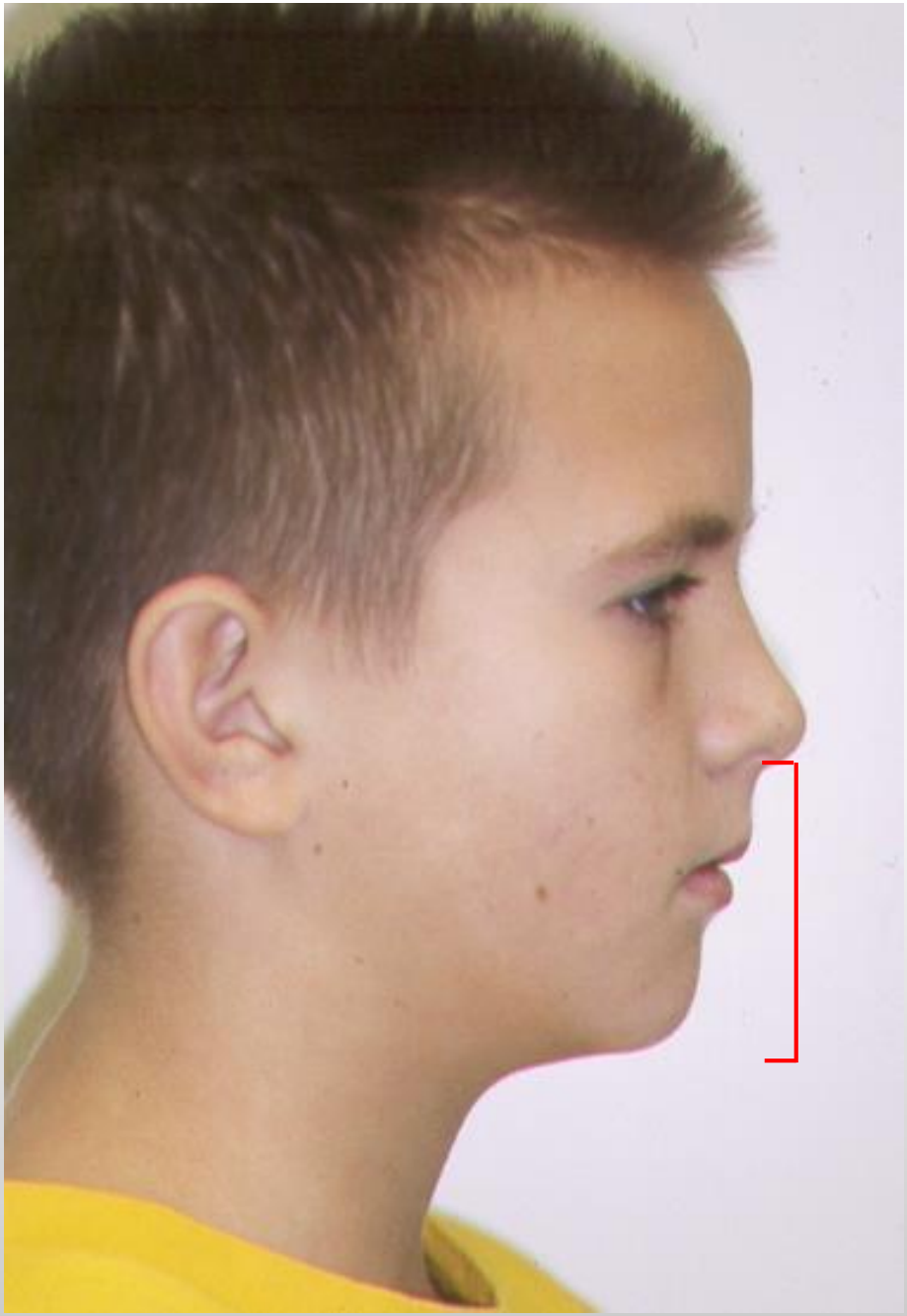
Profile: Convex

Maxilla(AP): Protrusive

Mandible(AP): Retrusive

Lip competency: Yes

Nasolabial Angle: Obtuse



Lower Face Height: Increased

BRACHYCEPHALIC

- BRACHYFACIAL is an individual characterized by a broad square face with a strong chin, flat lip posture, low mandibular plane angle and a straight profile.

BRACHYCEPHALIC

- Treatment without extraction + functional appliances

before

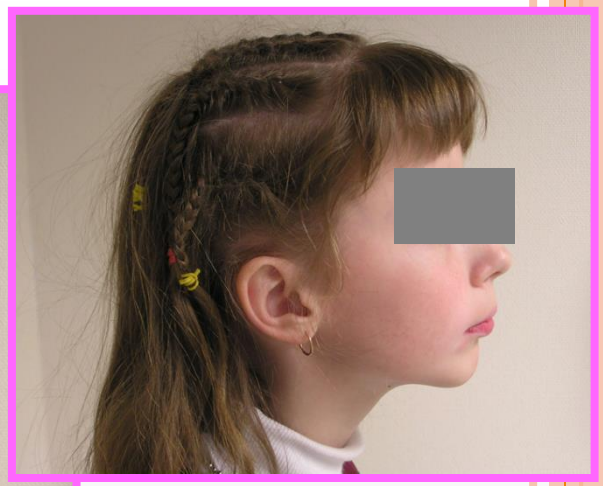
after

DOLICOCEPHALIC

DOLICOFACIAL is an individual that has a long, narrow face with a high mandibular plane angle, convex profile, poor chin development and an anterior-posterior face height imbalance.

DOLICOCEPHALIC

- Treatment with extraction



before

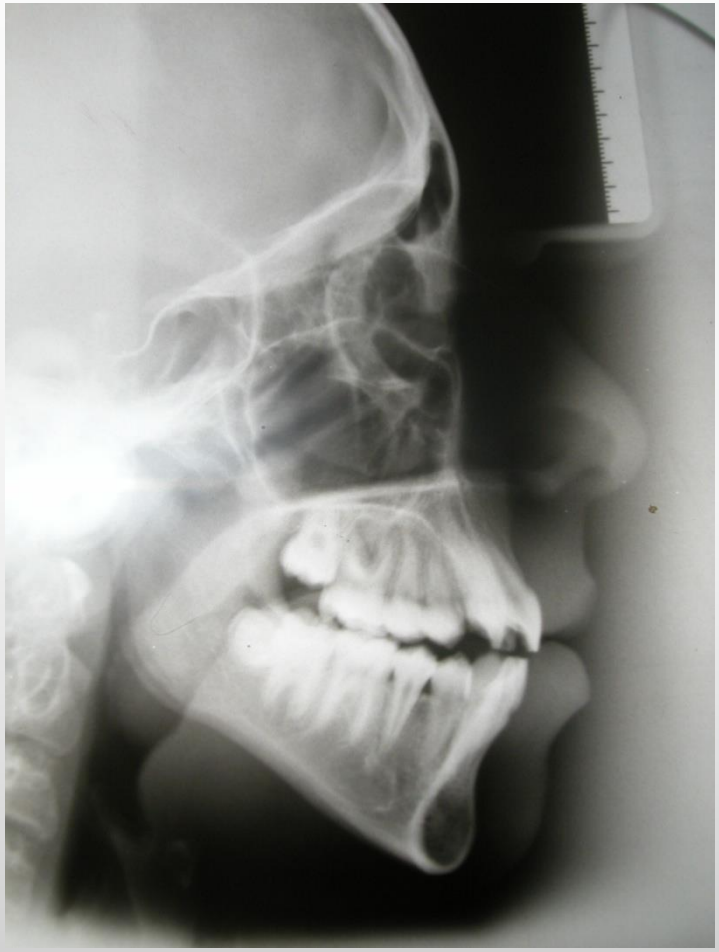
after

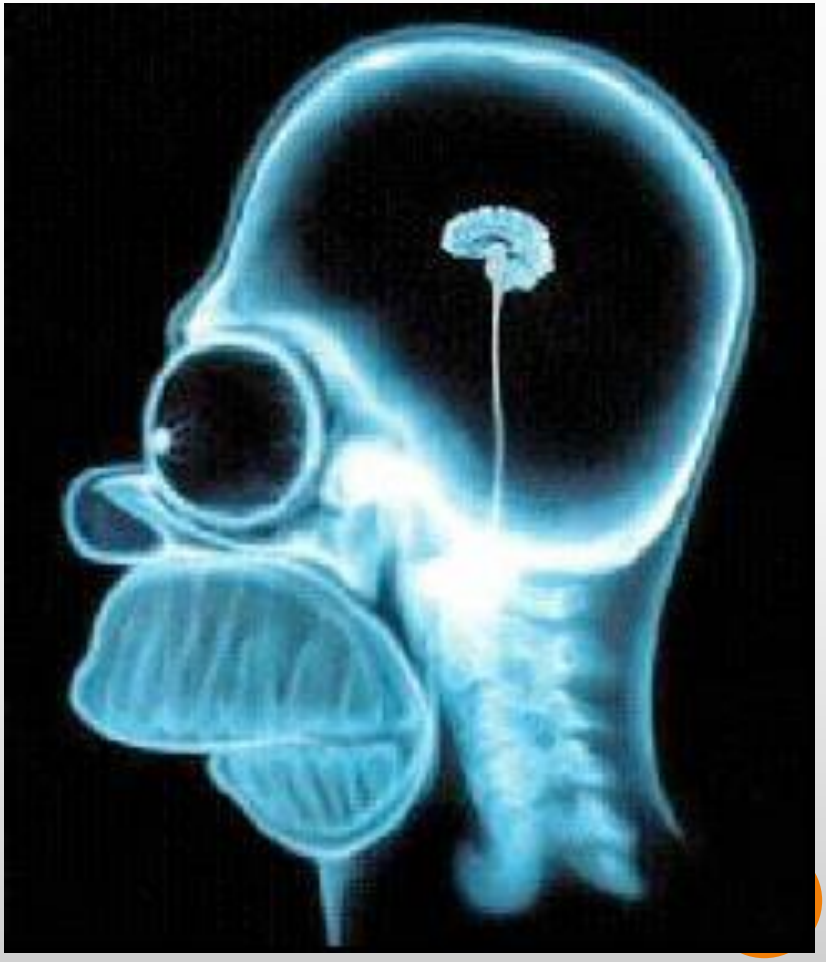
MESOCEPHALIC

- MESOFACIAL is an individual who has well balanced facialfeature

IDEAL PROPORTION (BY COMPUTER)

Cephalometrics





Definition

Cephalo: head
Metric: measurments

- **Cephalometry:** is the analysis and the interpretation of standardized radiographs of the facial bones.

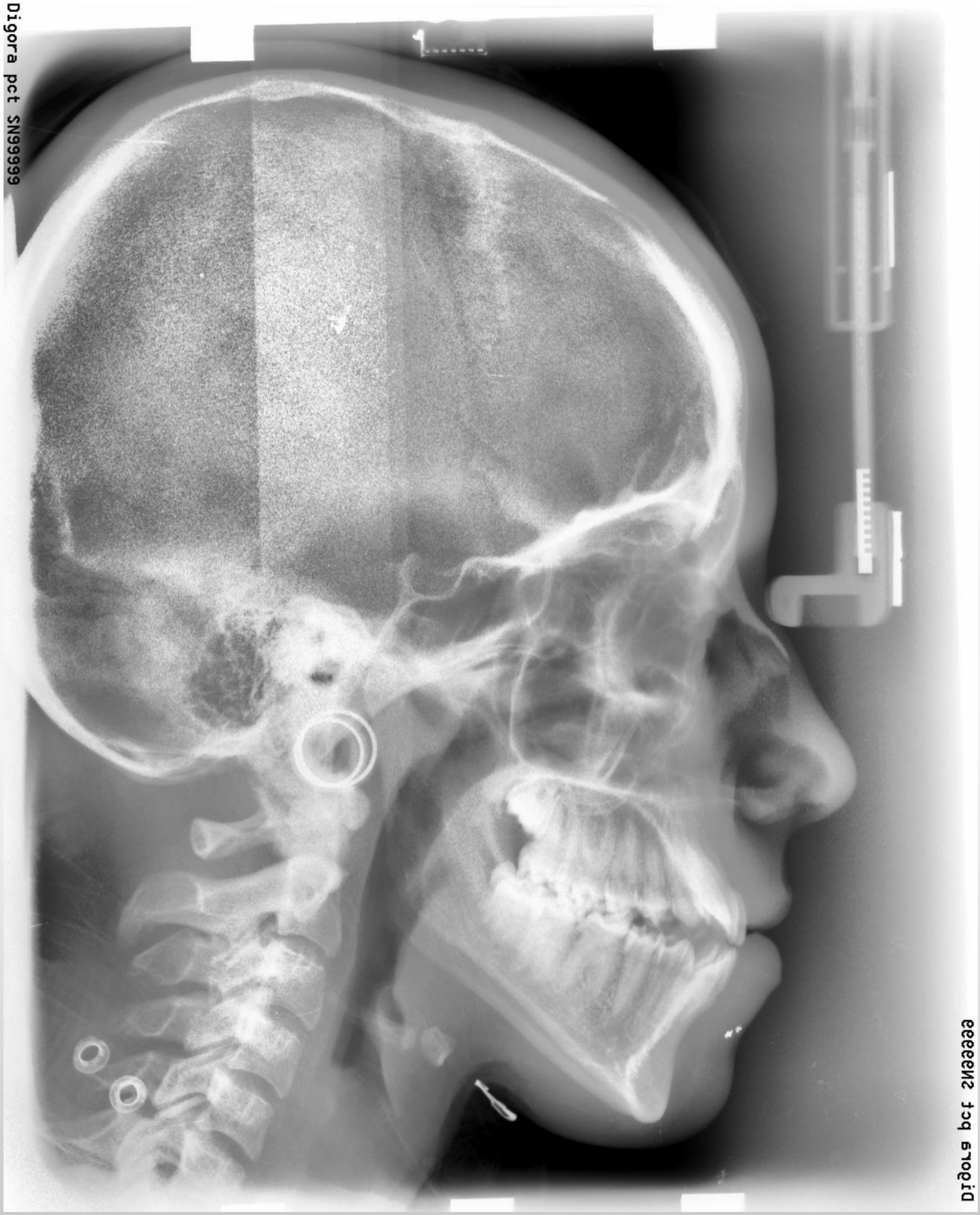
- It is a **standardized** and **reproducible** form of skull radiography used extensively in orthodontics to asses the relationships of the teeth to the jaws, and the jaws to the rest of the facial skeleton.

THE CEPHALOSTAT

- Head position: the patient's head is oriented in the same position relative to the x-ray beam every time a film is taken, with the use of a cephalostat.
- Ear rods: in the ear canals (external auditory meatus).
- Frankfort plane: horizontal.
- Teeth: in central occlusion.
- Lips: in their habitual position.

What Info Can You Get From A Ceph?

- Assess facial and dentoskeletal relationships.
- To study growth and growth patterns
  - Anterior-posterior jaw dysplasia
  - Vertical jaw dysplasia
- Evaluation of post treatment changes.
- Research purposes and long term follow-up studies.
- Maxillary incisor position and inclination
- Mandibular incisor position and inclination
- Balance of soft tissue and facial contours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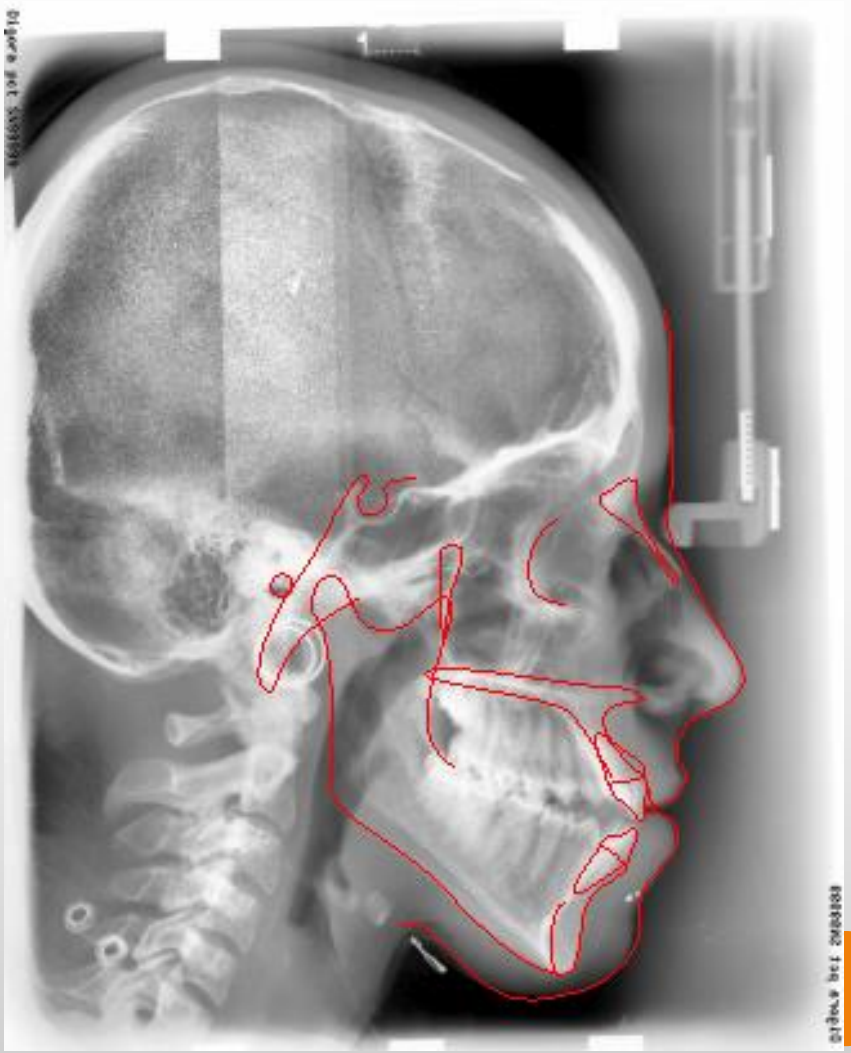
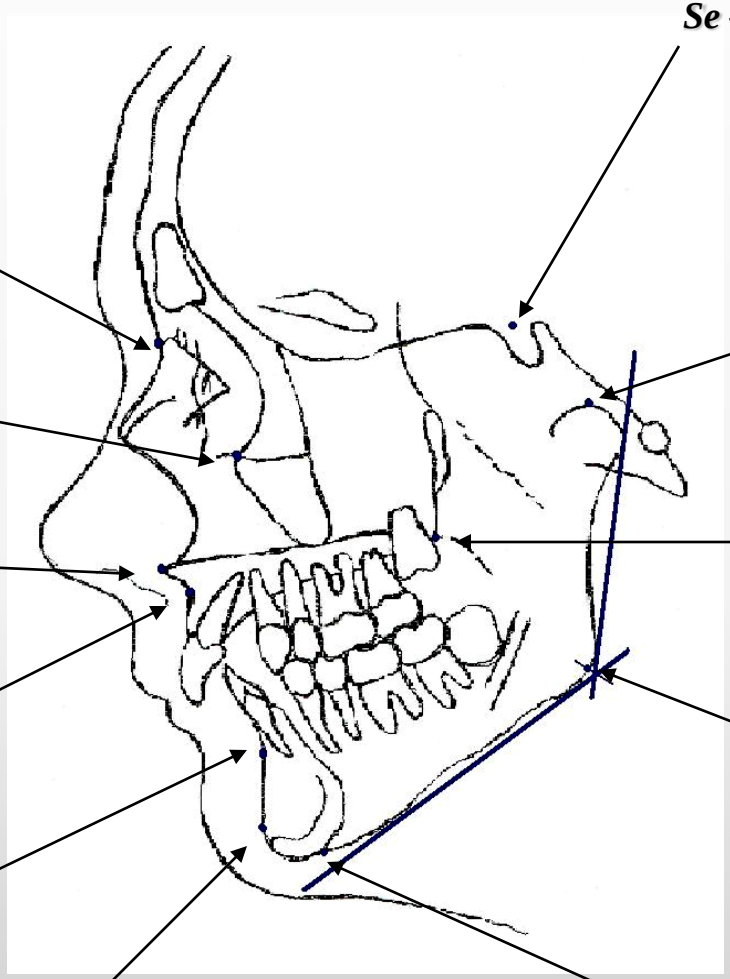
Cephalometric Tracing

- The cranial base.
- The facial skeleton.
- Soft tissues.



Bone points



Se – sela turcika

N – nasion

Co - condilon

Or – orbitale

ANS – spina nasale anterior

PNS – spina nasale posterior

A – subspinal point by Downs

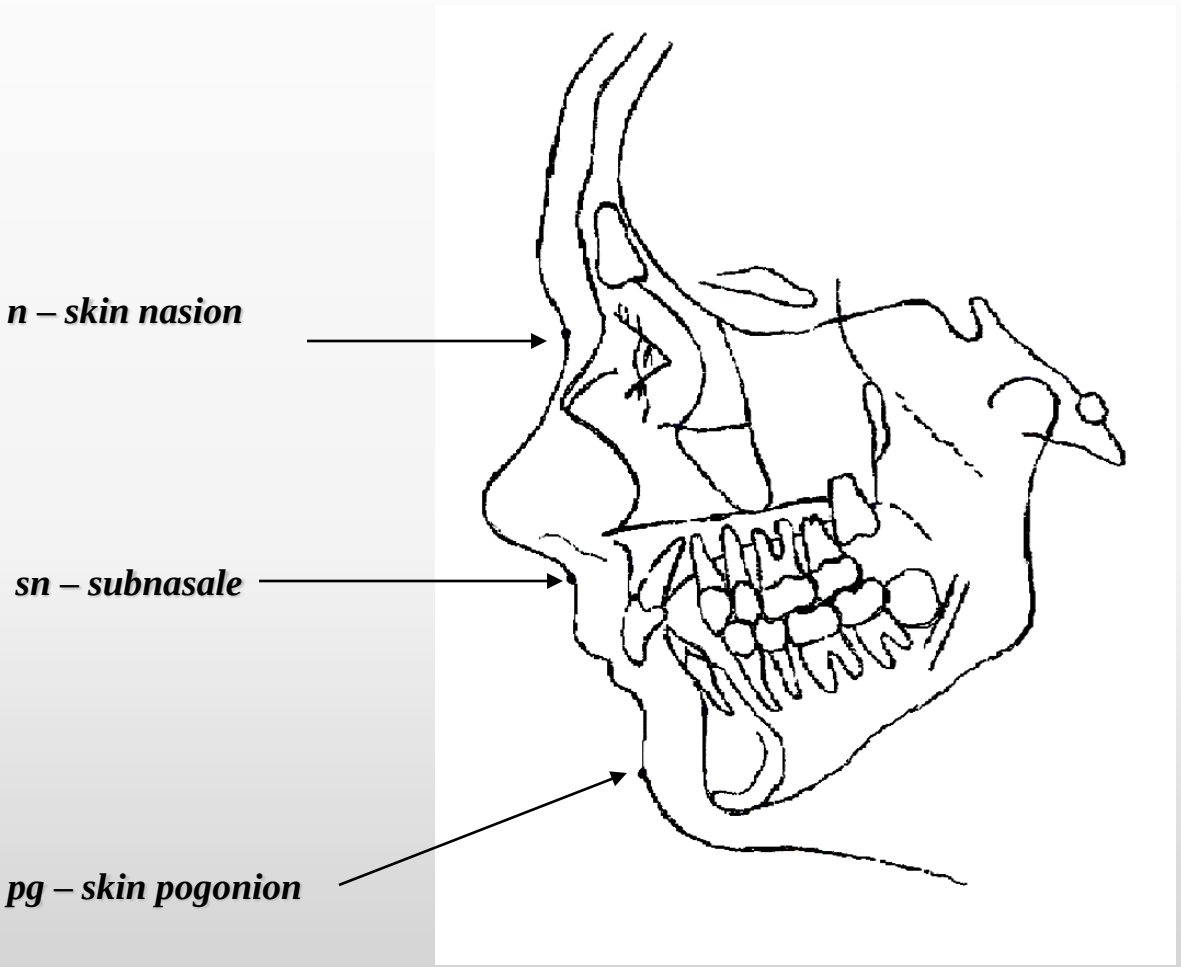
Go - gonion

B – supramentnal point by Downs

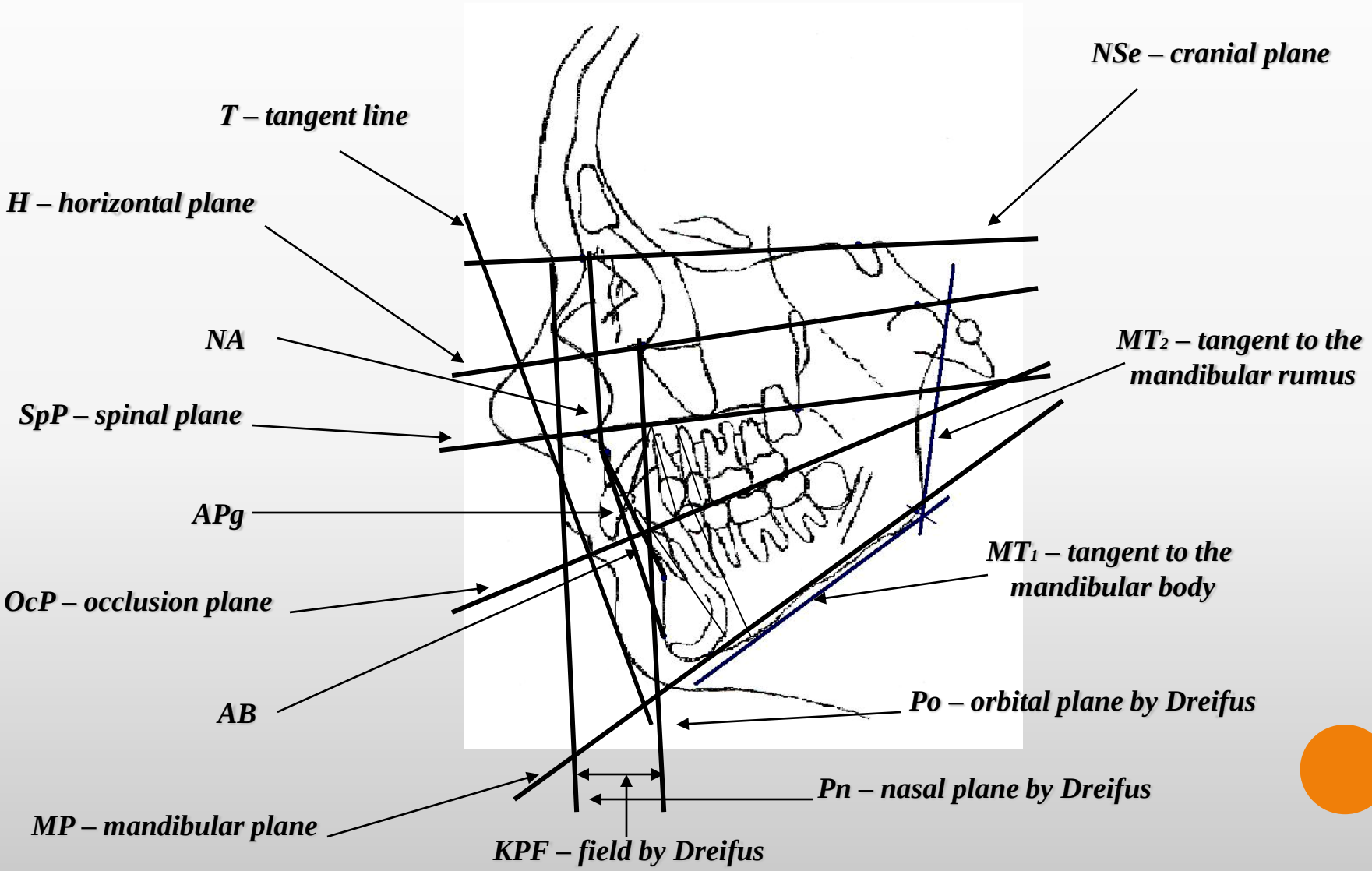
Gn – gnation

Pg – pogonion

Skin points

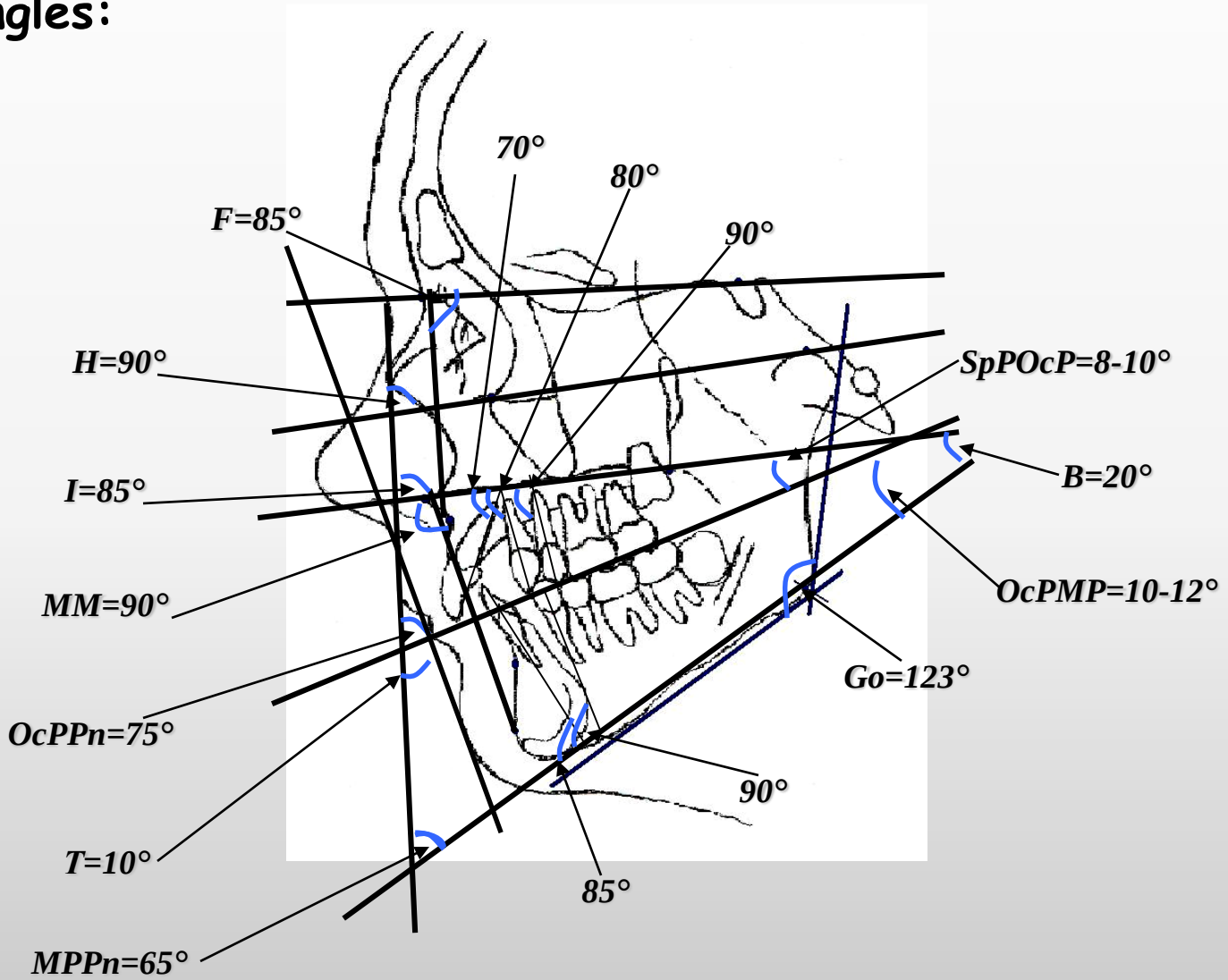


Lines and panes



Transcription by Shwarz

Angles:



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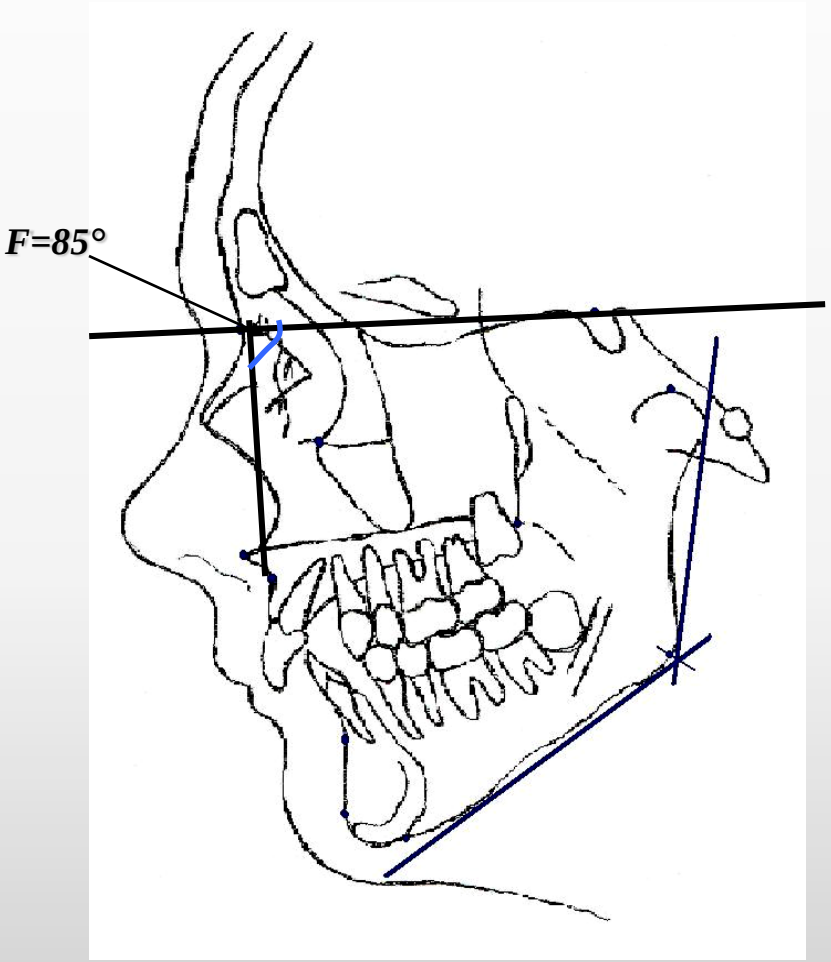

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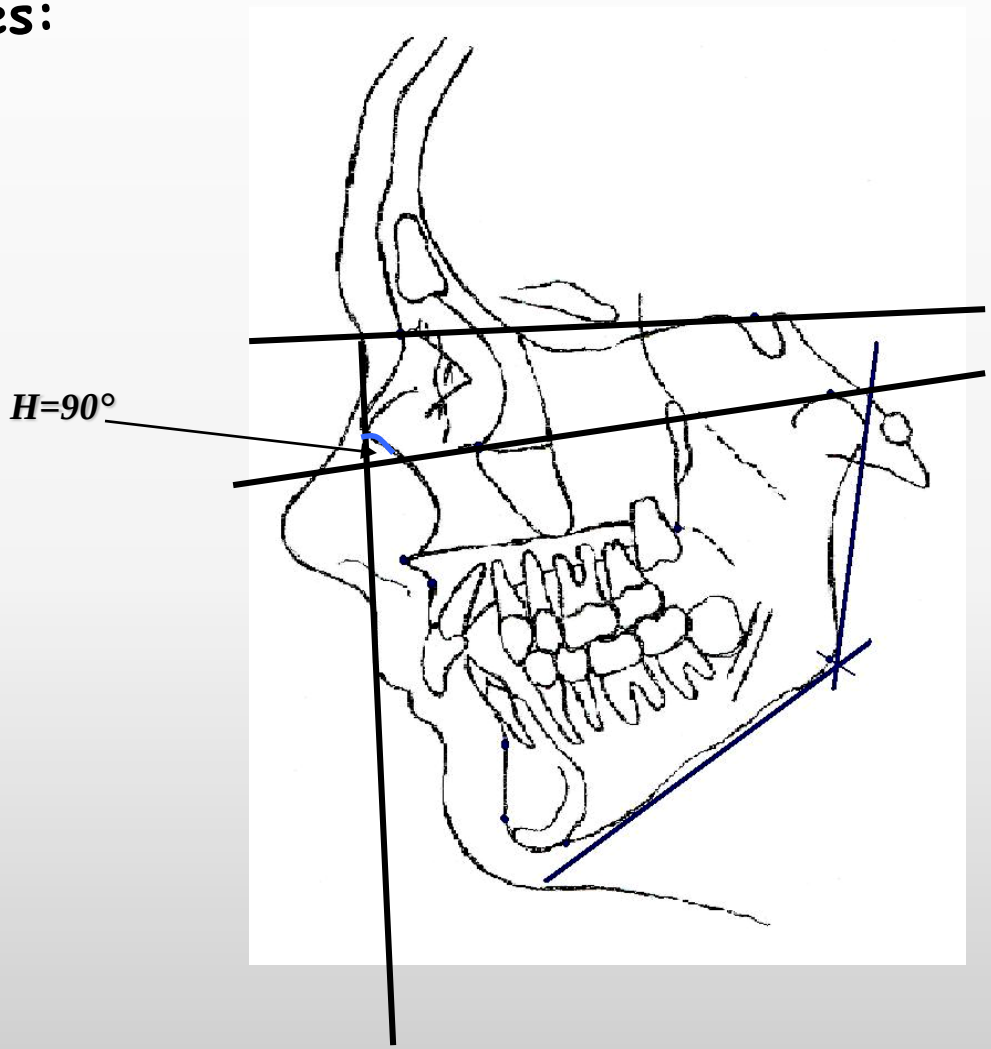

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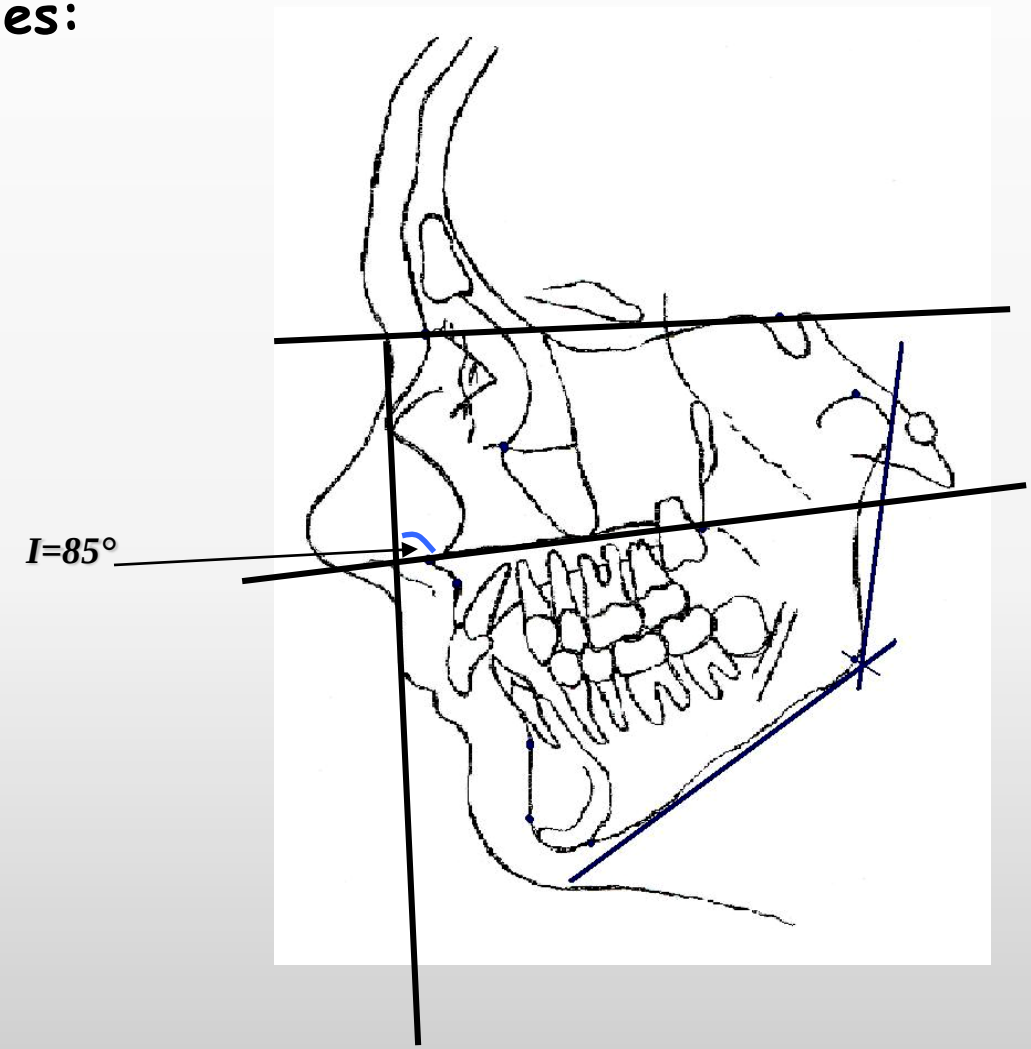

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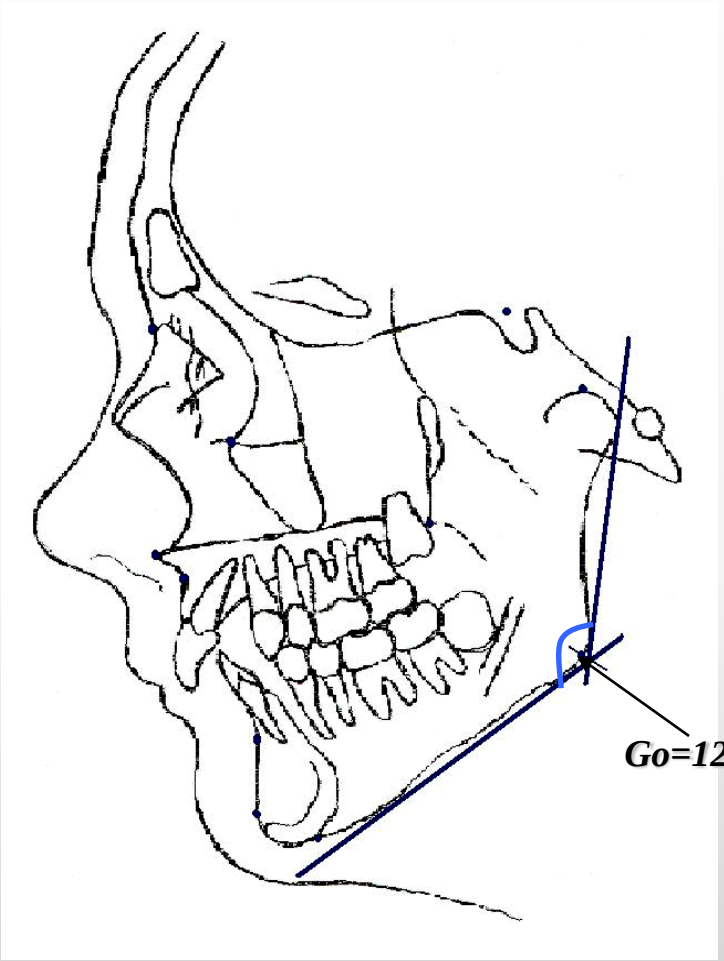

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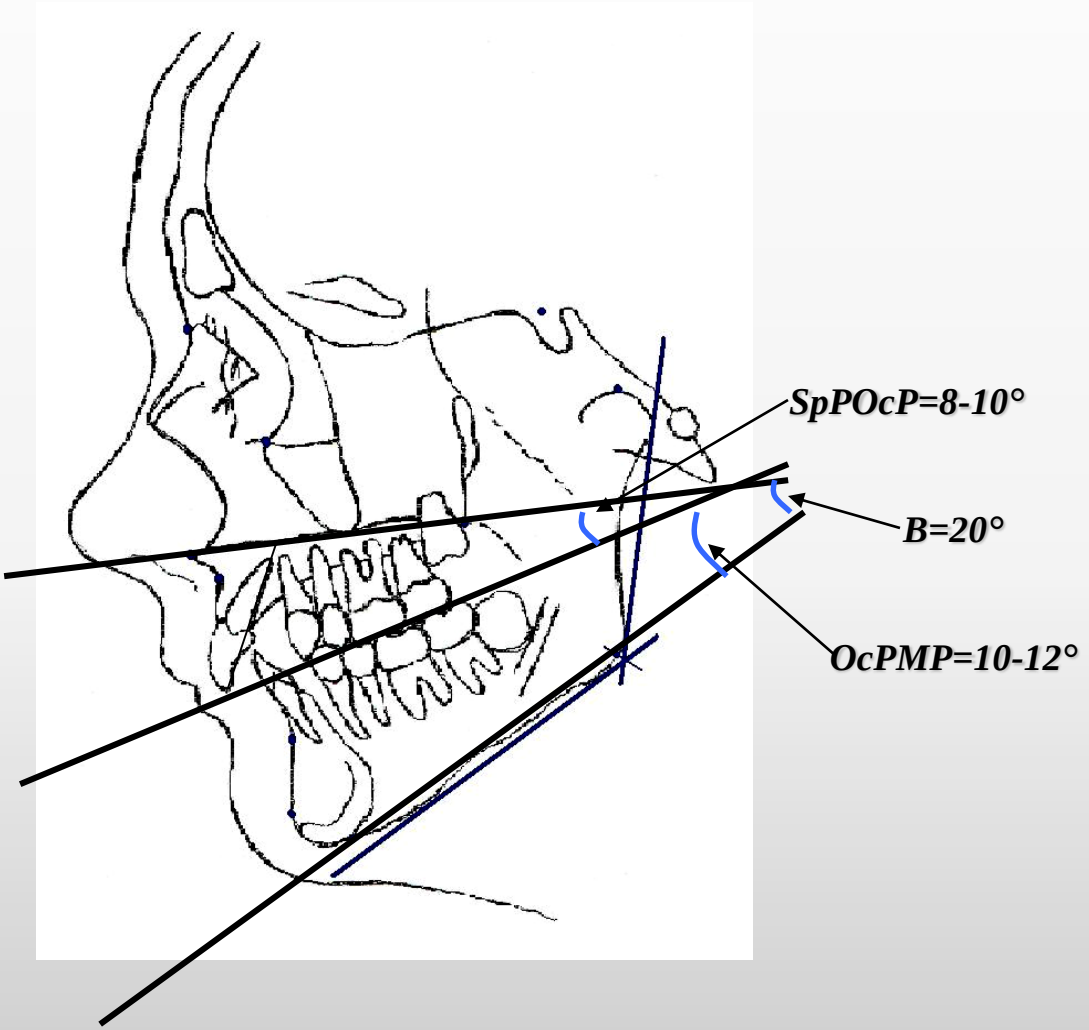

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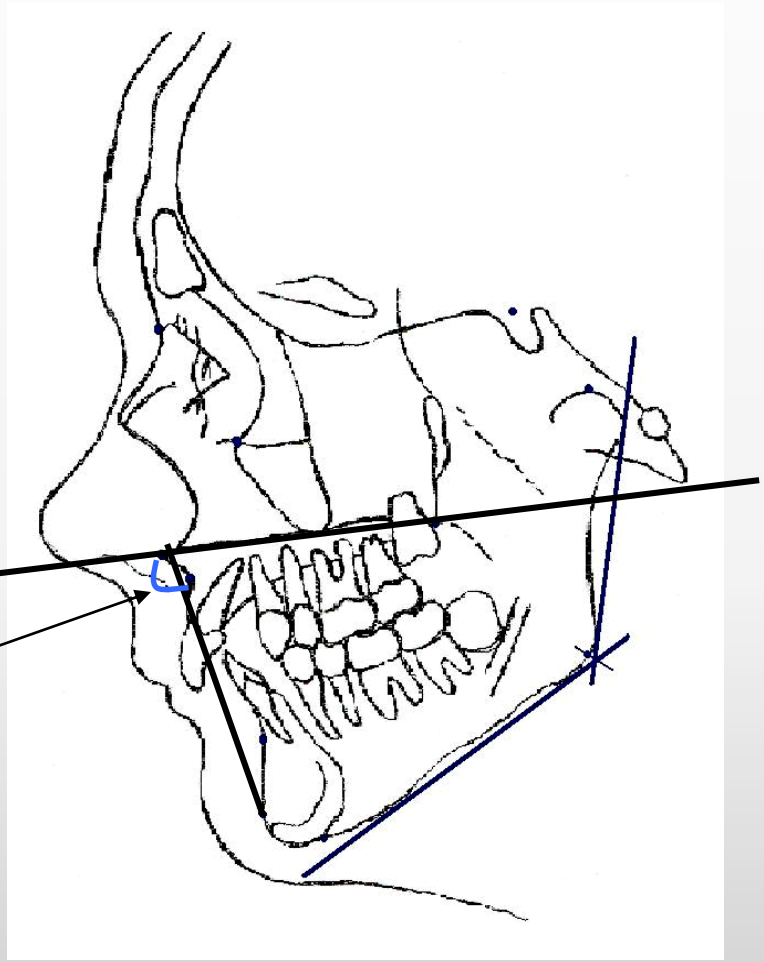

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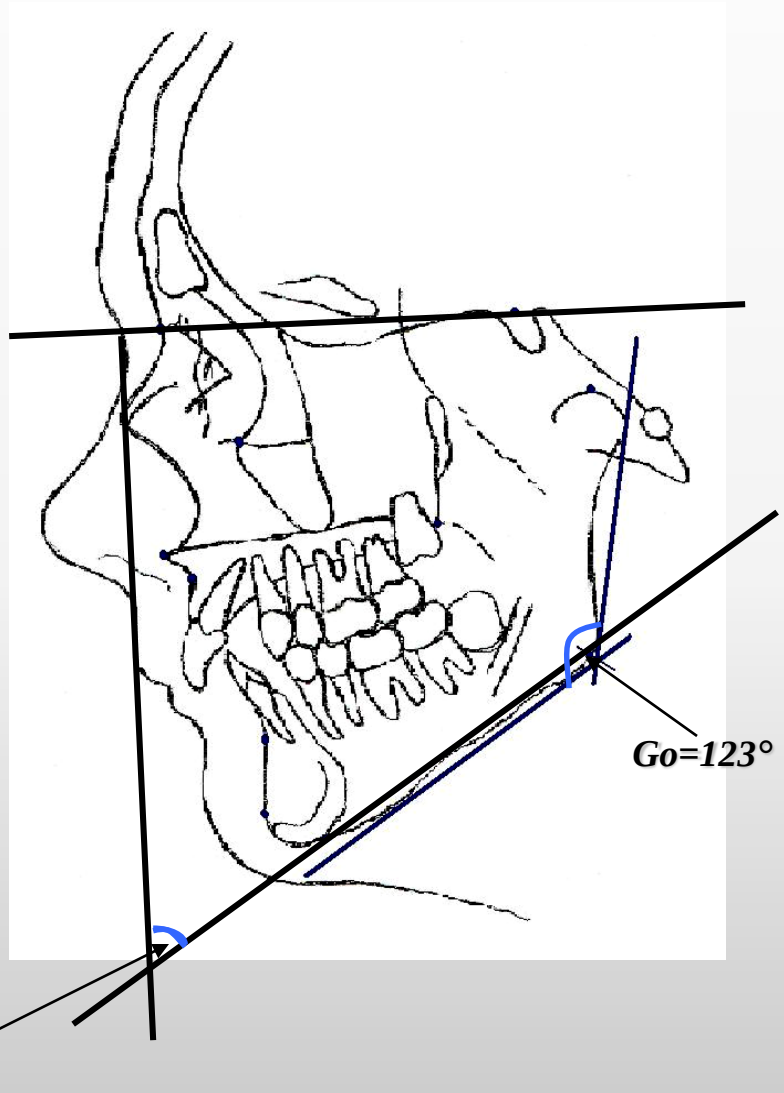

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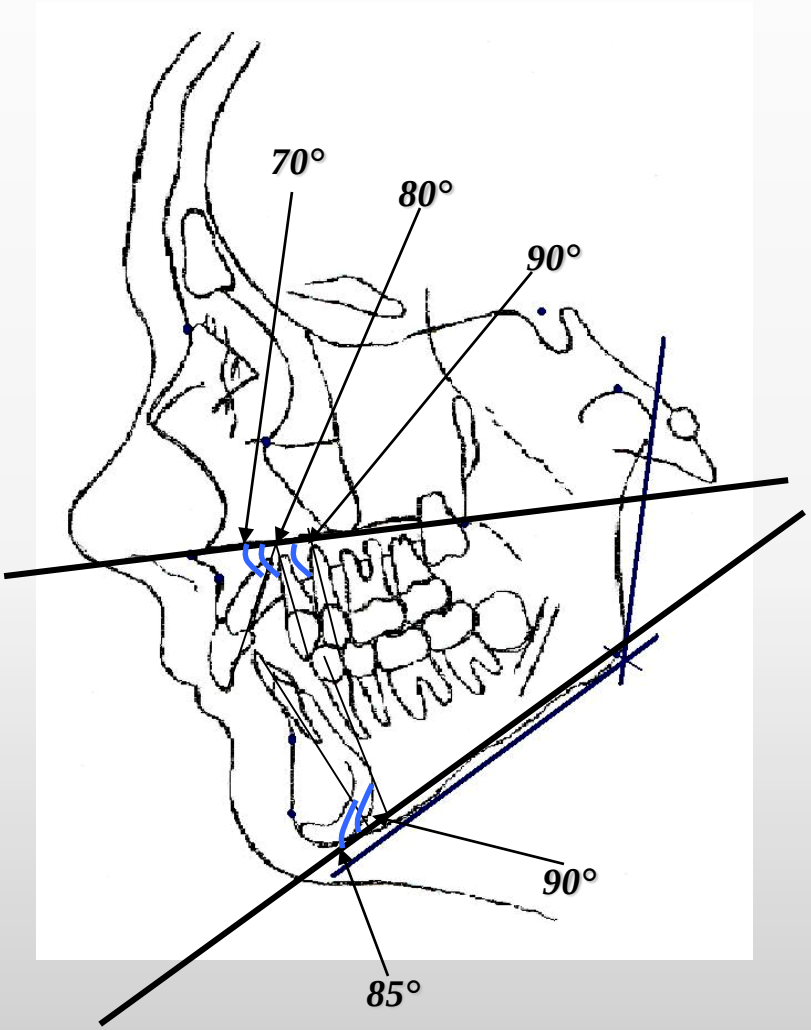

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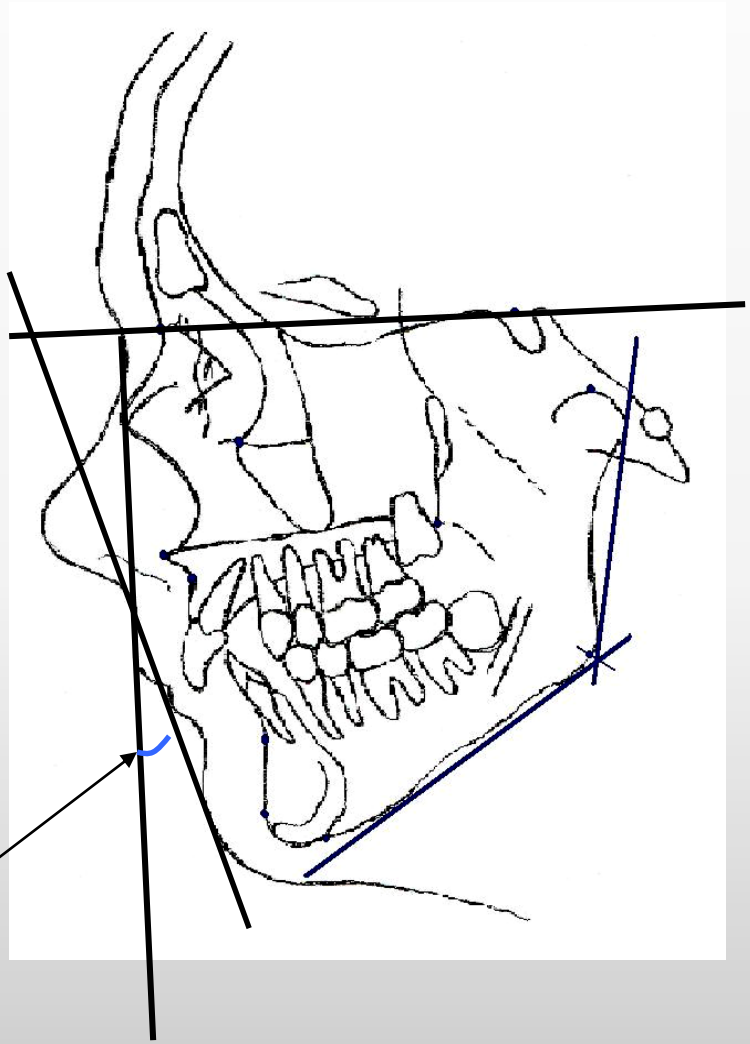

Thanks!