

THE ORTHODONTIC EXAMINATION

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II. CLINICAL EXAMINATION

The purpose of the clinical examination: to determine the patient's facial, occlusal and functional properties, and need to define what's going the diagnostic recordings



- ▣ In the clinical examination
 1. Health of the intra-oral hard and soft tissue
 2. Dentofacial proportions and aesthetics
 3. Occlusion
 4. Examination of the breathing, swallowing, talking, chewing and TMJ functions.

1. Health of the intra-oral hard and soft tissue: Evaluation of dental caries and periodontal problems



2. Dentofacial proportions and aesthetics

The relative conceptions of the aesthetic evaluations. therefore, incompatible or problematic aesthetic is important for orthodontic treatment in correction of asymmetrical facial contours.

- ▣ Done in two ways:
 - a. Frontal analysis
 - b. Profile analysis

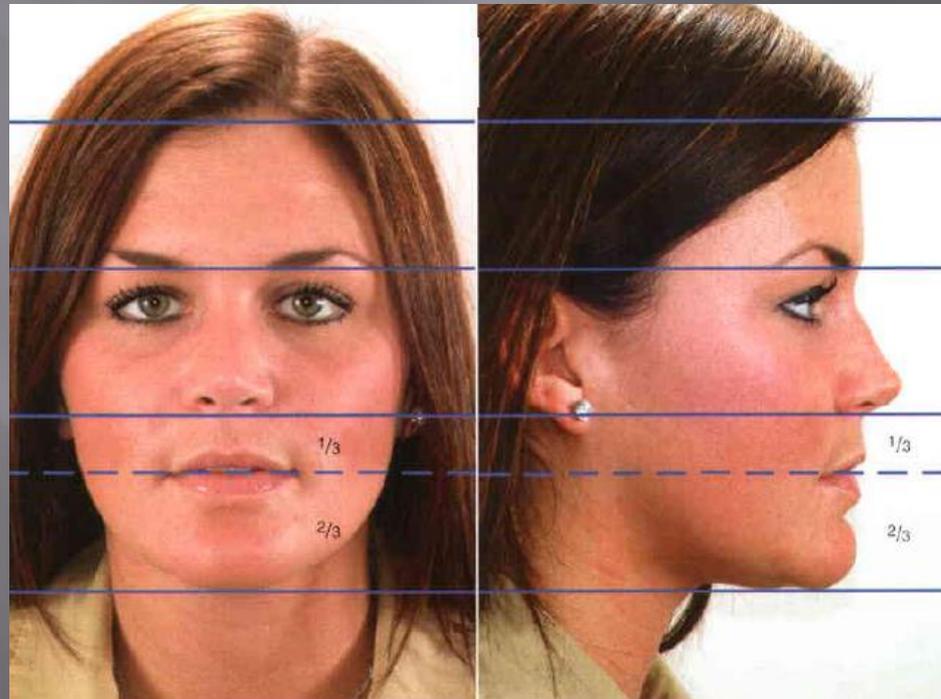
Dentofacial proportions and aesthetics

- a. In the frontal examination, bilateral symmetry of the face and the midline will be examined.

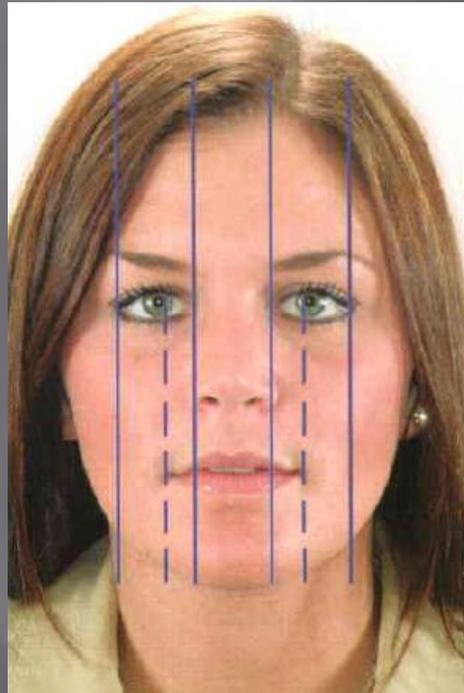


Examination of the facial rates:

- A review of rates in vertical face upper, middle and lower parts must be equal to each other. the part between Height of the lower face and upper lip base lip embrasuru form $1 / 3$ percent, while embrasur and jaw distance form the $2 / 3$.

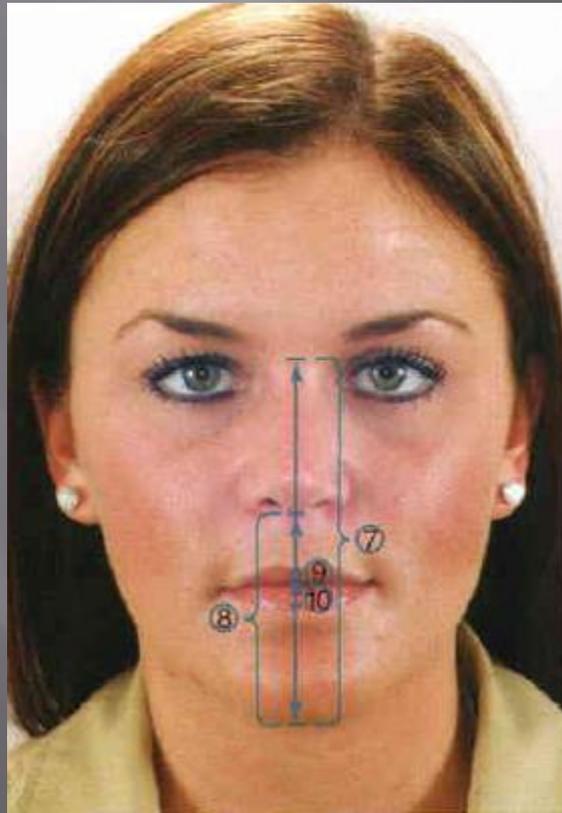


- ▣ Most people are in the normal facial asymmetry. those who need treatment, those with abnormal facial contours



- ▣ Face types will be evaluated when viewed from the front:
- ✓ The term brachifacial used to describe the type of wide, angular face
- ✓ Dolichofacial used to describe the type of long, narrow face
- ✓ Mesiofacial used to describe the type of balanced facial

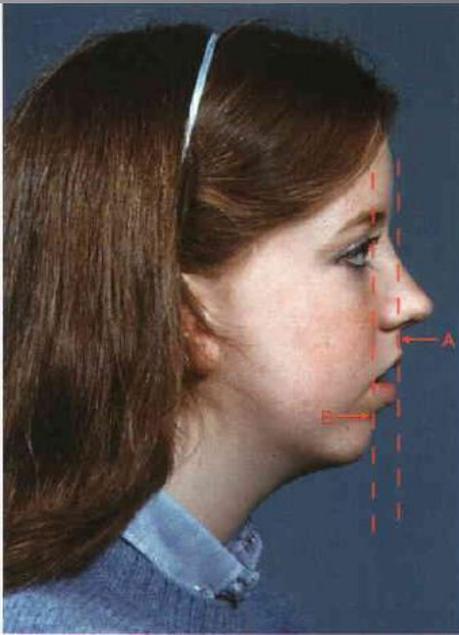
- Establishing the midline: the dental midline (upper and lower midline) should be in compliance with the face midline.



▣ Examination of the lips:

1. Morphological

- A short-dimensional
- Hypertonic / hypotonic
- Closing failure due to the mouth breather
- May be adapted to malocclusion

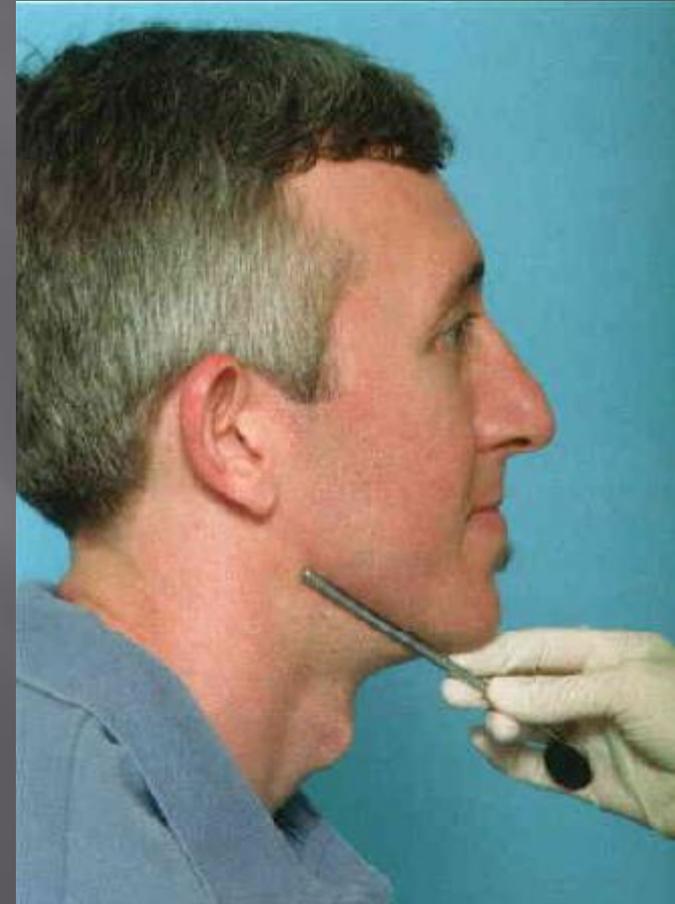


2. Functional Examination of the lips in various event of swallowing

Dentofacial proportions and aesthetics

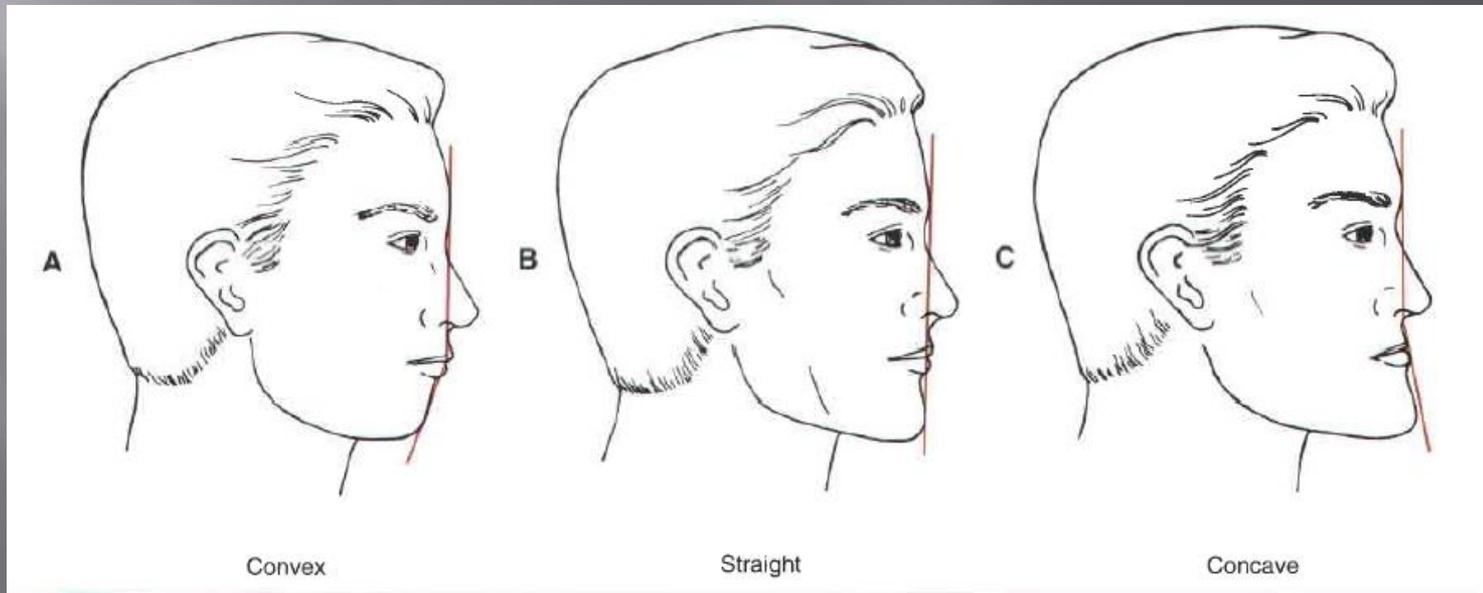
b. Evaluation of profile:

1. In the anteroposterior direction, look to the harmony of the jaws
2. Evaluation of lip prominence
3. Evaluation of the vertical facial proportions and the mandibular plane angle



1. In the anteroposterior direction, look to the harmony of the jaws
 - The patient sitting either upright or standing, but not reclining in a dental chair, and looking at the horizon or a distant object.
 - Lip convexities: with the head in upright position, note the relationship between two lines, one dropped from the bridge of the nose to the base of the upper lip, and second one extending from that point downward to the chin.

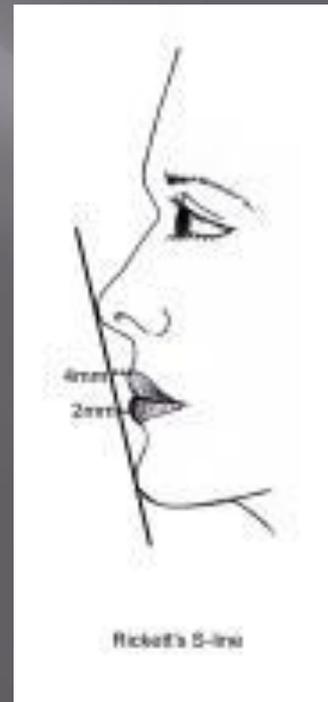
- These line segments should be form a nearly straight line. An angle between them indicates either profile convexity (upper jaw prominent relative to chin) or profile concavity (upper jaw behind chin).
- A convex profile therefore indicates a skeletal Class II jaw relationship, whereas a concave profile indicates a skeletal Class III jaw relationship.



2. Evaluation of lip prominence

- Detecting excessive incisor protrusion (which is relatively common) or retrusion (which is rare) is important because of the effect on space within the dental arches.
- If the incisors protrude, they align themselves on the arc of a large circle as they place forward, whereas if the incisors are upright or retrusive, less space is available.

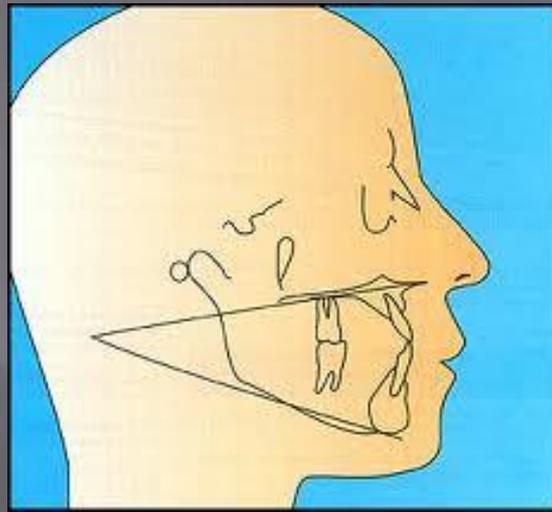
- In evaluating lip protrusion, must account the relationship between the nose and chin.
- The larger the nose, the more prominent the chin must be to balance it, and the greater the amount of lip prominence that will be estetically acceptable.



- Lip prominence is strongly influenced by racial and ethnic characteristics. Whites of northern European background often have relatively thin lips, with minimal lip and incisor prominence.
- White of southern European and middle eastern origin normally have more lip and incisor prominence than northern cousins.
- Greater degrees of lip and incisor prominence normally occur in individuals of asians and african decent, so a lip and tooth position normal for asians or blacks would be excessively protrusive for most whites.

3. Evaluation of the vertical facial proportions and the mandibular plane angle

- Vertical proportions can be observed during the full face examination but sometimes can be seen more clearly in profile.
- In the clinical examination, the inclination of the mandibular plane should be noted in true horizontal plane



- The mandibular plane is visualized readily by placing a finger or mirror handle along the lower border.
- This is important because a steep mandibular plane angle usually indicates long anterior facial vertical dimensions and a skeletal open bite tendency, while a flate mandibular plane angle often correlates with short anterior facial height and deep bite malocclusion.

3. the evaluation of occlusion

- ▣ Dentition (deciduous, mixed, permanent)
- ▣ Relationship of molar and canine
- ▣ The amount of overbite and overjet
- ▣ Evaluation of midline
- ▣ Anomalies of tooth shape, number, size and location.

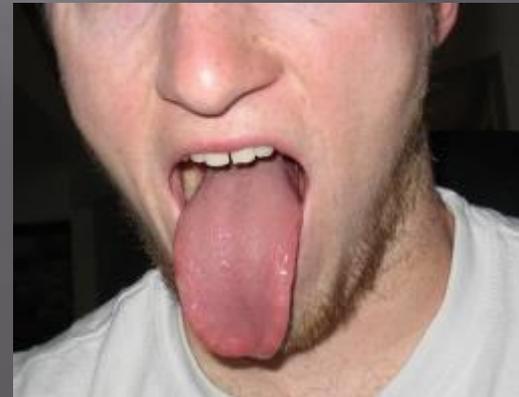
- ▣ Molar and canine relationship:
 - Class III, Class I, Class II
- ▣ The amount of overjet and overbite, should be 2mm in normal occlusion.
- ▣ Abnormal occlusion:
 - Openbite
 - Deepbite
 - Overjet
 - Underjet
 - Cross bite

- ▣ The assessment of the midline:
 - facial midlines, upper and lower dental midline should be on the same line.

- ▣ Anomalies of tooth shape, number, size and location.
- lateral wedge, missing teeth, supernumary teeth, meziodens, macrodontia, microdontia, impacted canine, transposition ect.

▣ Tongue

- The size
- The position is evaluated at the time of functions
- Posture



- ▣ Big tongue can push the incisors labially and causes the openbite.
- ▣ In the posture of tongue at rest position is located in the singulum or cervical of the upper incisors
- ▣ thumb sucking can change the position of the tongue
- ▣ If during the functions (speech, swallowing, chewing) tongue enters between the teeth (infantile swallowing persists), openbite will occur as a result of tongue thrust.
- ▣ can be seen the front-and lateral tongue thrust

4. Examination of respiratory

Covered patient's mouth and Said to breath through the nose, under the nostrils

- a. Holding the mirror or cotton, occurring a condensation in mirror or cotton movement
- b. Are examined the change of width of the nostrils

5. Examination of swallowing

- In the normal swallow, the mandible raises as the teeth are brought together during the swallow, and the lips touch lightly, showing scarcely any contractions.
- During the normal swallow, the temporal muscle can be felt to contract, the mandible is elevated and the teeth are held together.
- During teeth-apart swallow, no contraction of the temporal muscle will be noticed.

- ▣ Samples from various states in swallowing:
 1. Separate dental swallowing in skeletal class II
 2. Abnormal swallowing due to hypertrophic tonsils and adenoids
 3. Normal swallowing

6. Examination of the TMJ:

palpation of TMJ POSITION Is part of a routine dental examination. should be evaluated the TMJ pain, sound and mouth restrictions. During mandibular jaw opening and closing, is very important to notice the lateral and anterior direction shifts (deviation, deflection).

- ❖ should not be pain and deviations

TMJ function analysis is done in 3 ways

1. Measurement of maximum mouth opening
2. Control the overlapped of the centric relationship with the occlusion centric.
3. The determination of the closing path of the mandible.



III- DIAGNOSTIC RECORDS

1. Records required for the evaluation of facial ratios
2. Records required for the evaluation of teeth and oral structure
3. Records required for the evaluation of occlusion

1. Records required for the evaluation of facial ratios

- ✓ Facial photographs
- ✓ Posteroanterior films
- ✓ Cephalometric films

- ▣ Extraoral photographs:
 - From front when lips closed
 - From lateral when lips closed
 - When patient smiling
 - From front when lips at rest

In asymmetric profiles, may have right and left photographs separately. If there is significant asymmetry must need posteroanterior cephalometric film



2. Records required for the evaluation of teeth and oral structure
 - Intraoral photographs
 - Panoramic
 - Periapical
 - occlusal
 - TMJ radiographs

▣ Intraoral photographs

Every patient with complicated and need orthodontic treatment is critical to determine the initial position of hard and soft tissues



- ▣ By Intraoral photographs
 - ❖ oral hygiene
 - ❖ Status of the gingival tissues
 - ❖ Arch symmetries
 - ❖ Status of the restorations
 - ❖ determines the color changes of devital teeth
 - ❖ Evaluation the decalsificate and broken teeth

- ▣ In Intraoral photographs
 - Front; shifts the midline, vertical overbite, axial inclination of teeth
 - Lateral; relationship of molar and canine, interdigitation, the amount of the overjet and overbite.
- ▣ When the mouth open, mandibular and maxillary archs are individual taken photographs. is important to make comparisons between the starting and ending intra-oral photographs.

▣ Panoramic radiographs:

- Provide a whole dentition and surrounding structures to be seen. By this x-Ray: missing, impacted teeth, third molars, during permanent teeth eruption, root resorption of the deciduous teeth, abnormal resorption, inclination and shape of the root, present pathologies, alveolar crest levels, caries and restorations, mandibular condyles and the maxillary sinuses are examined.





- ▣ Full mouth periapical radiographs:
 - Status of periodontal, lamina dura, alveolar bone, trabecular structure, examined the root resorption
- ▣ Occlusal radiographs
 - used in patients with rapid maxillary expansion
 - used in determining the position of the impacted canine.

3. Evaluation of occlusion

- Are made on the plaster models (orthodontic models)
- The record dental casts are one of the most important sources of information for the dentist doing orthodontic treatment.
- A good set of dental casts should show the alignment of the teeth and the alveolar processes as far as the impression material can displace the soft tissues.



- ▣ Summarized as follows the minimally diagnostic records necessary for orthodontic treatment:
 - Dental models
 - Panoramic radiographs
 - Data related to facial form
 - Lateral cephalographs
 - Hand-wrist radiographs

THANK YOU