

# INTRODUCTION TO ORTHODONTICS

Dr. Ayshan KOLEMEN

# ORTHODONTICS

Orthos = correct, straight


Odont= tooth



## DEFINITION

Orthodontic is that branch of dentistry concerned with facial growth, with development of the dentition and occlusion, and with the diagnosis and treatment of malocclusion.

Thus, the study of orthodontics includes the growth, development and function of the total oro-facial complex, whilst orthodontic techniques are concerned with the technique of the treatment of malocclusion.

**ORTHODONTICS**  **OCCLUSION & FACE**

## WHY ORTHODONTICS ?

- Malocclusion



# CLASSIFICATION OF OCCLUSION

- Class 1
- Class 2 div 1
- Class 2 div 2
- Class 3

## CLASS I MALOCCLUSION



## CLASS II MALOCCLUSION



div I



div II

## CLASS III MALOCCLUSION





## HOW NEEDS ORTHODONTIC TREATMENT

- Poor facial appearance
- Risk of caries
- Predisposition to periodontal health
- Psychological disturbances
- To close diastema
- Oral habits
- Correction of speech defects
- Risk of trauma: Class II malocclusion
- Cleft lip and palate
- TMJ

## STEPS FOR ORTHODONTIC DIAGNOSIS AND TREATMENT PLAN

Data needed to Orthodontic diagnostic be into three main grouped :

1. Information received from patients
2. The information obtained from clinical examination
3. Examination of diagnostic recordings (dental models, radiographs, photographs)



# STEPS FOR ORTHODONTIC DIAGNOSIS AND TREATMENT PLAN

ISHIK UNIVERSITY FACULTY OF DENTISTRY/DEPARTMENT OF ORTHODONTICS

CLINICAL EXAMINATION FORM

Date:...../...../201...

Doctor Name:.....

Patient Name, Surname:.....

The main questions:

**1) The based complain of the patient:**

- a. Anterior crowding:.....
- b. Crowding:.....
- c. Overjet:.....
- d. Overbite:.....
- e. Aesthetic:.....
- f. TMJ problems:.....

**2) Evaluation of the functional matrix:**

- a. Nasopharyngeal airway:
  - Tonsils (available, been taken, hypertrophic)
  - Adenoids (available, been taken, hypertrophic)
  - Outcome of the nose (Edema/Bleeding)
  - Breathing (Nose/ Mouth).....
  - If you have respiratory problems:
    - ENT consultation (Yes/No).....
    - Advanced diagnostic (Yes/No).....
- b. Habits:
  - Tongue thrust (Yes/No).....
  - Tongue thrust (Anterior/ Lateral).....
  - Finger sucking (Yes/No).....
  - Lip sucking (Yes/No).....
  - Oral breather (Yes/No).....
  - Mental muscle tension (Yes/No).....
  - Peri-oral lip tension (Yes/No).....
  - Other habits.....
  - Does the habit creates a problem? (Yes/No), If yes:
    - Myotherapy (Yes/No).....
    - Other diagnostic evaluation (Yes/No).....
- c. Muscle structure
  - Perioral function (Firm/ Normal/Relax).....
  - Perioral compatible (Firm/ Normal/Relax).....
  - Sublabial furrow (Yes/No).....
  - Sublabial furrow (High/ Medium/Low).....
  - Masticatory muscles (Strong/Normal/weak).....
  - Buccal muscles (Strong/Normal/weak).....

**3) Orthodontic dental evaluation**

- a. Dentition evaluation:
    - Right molar relationship Class:(1) (2) (3)
    - Left molar relationship Class:(1) (2) (3)
    - Right canine relationship Class:(1) (2) (3)
    - Left canine relationship Class:(1) (2) (3)
    - Overjet (mm).....
    - Overbite (mm).....
    - Open bite (mm).....
  - b. Functional evaluation
    - Transverse/Sagittal/ Both.....
    - "V" shape maxilla (Yes/No).....
    - Upper incisors locks the lower incisors (Yes/No).....
    - Upper incisors in buccal or lingual version (Buccal/ Lingual).....
    - Cross Bite (Yes/No).....
    - Cross Bite (Right/ Left/ Bilateral/ Anterior)
    - Mandible functional dislocation (No/ Right/ Left).....
  - c. Facial aesthetic dentition evaluation
    - Face midline- maxillar dentition midline (Compatible/ Right/ Left).....
    - Face midline- mandibular dentition midline (Compatible/ Right/ Left).....
    - Maxillar midline – mandibular midline (Compatible/ Right/ Left).....
    - Lip line (Rest position mm).....
    - Smile line (mm).....
    - Appearing gingiva (Rest position mm)....
    - Appearing gingiva (Wide Smile mm).....
- 4) Facial asymmetry (Yes/No).....**
- Facial asymmetry (Right/Left).....

**5) TMJ Evaluation:**

TMJ problems.....

**6) Minor problems:**

- Decalcification (Yes/No)

E D C B A	A B C D E
7 6 5 4 3 2 1	1 2 3 4 5 6 7
7 6 5 4 3 2 1	1 2 3 4 5 6 7
E D C B A	A B C D E

- Periodontal evaluation

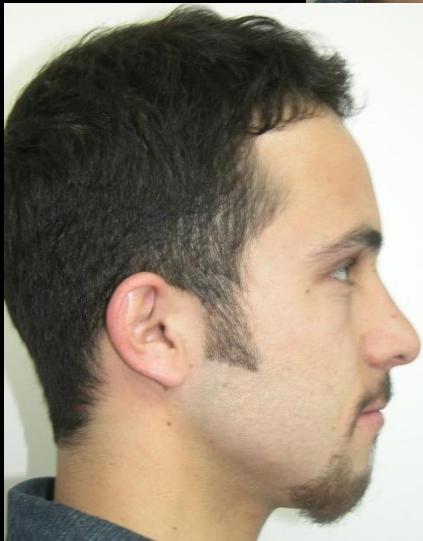
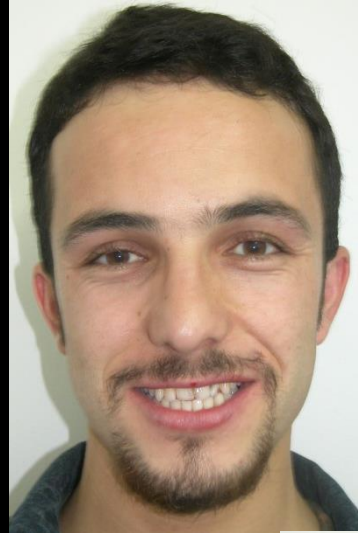
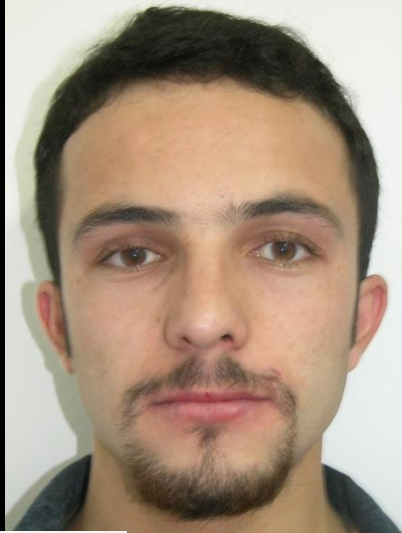
E D C B A	A B C D E
7 6 5 4 3 2 1	1 2 3 4 5 6 7
7 6 5 4 3 2 1	1 2 3 4 5 6 7
E D C B A	A B C D E

- Caries evaluation (Yes/No)

E D C B A	A B C D E
7 6 5 4 3 2 1	1 2 3 4 5 6 7
7 6 5 4 3 2 1	1 2 3 4 5 6 7
E D C B A	A B C D E

- Hygiene evaluation (Perfect/Medium/Bad):.....

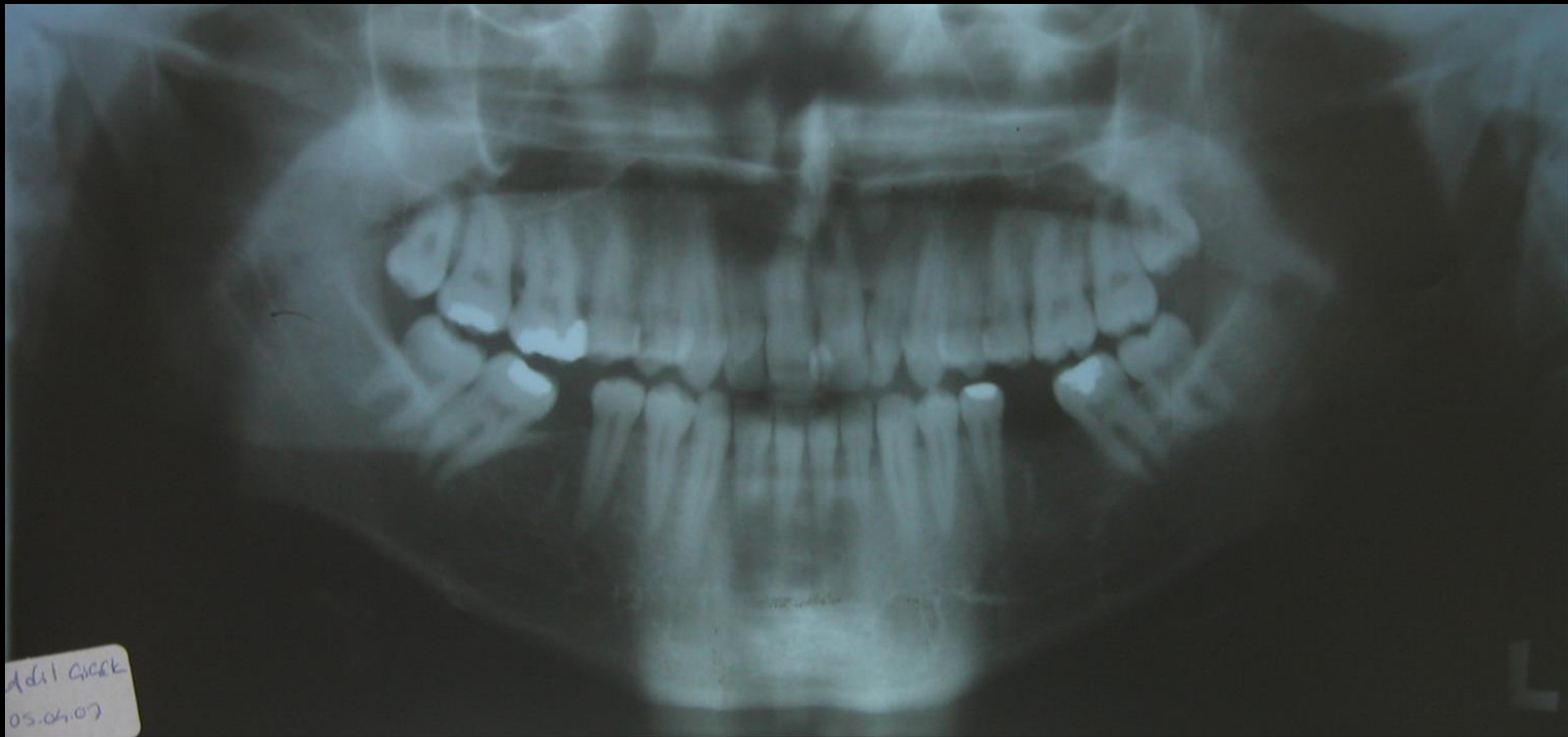
## EXTRAORAL PHOTOGRAPHS



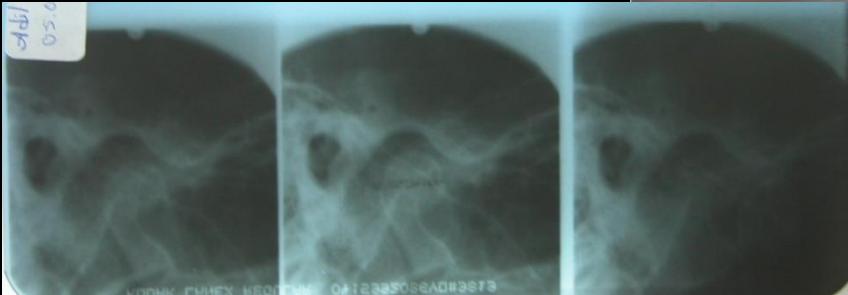
# INTRAORAL PHOTOGRAPHS



# PANORAMIC RADIOGRAPHY

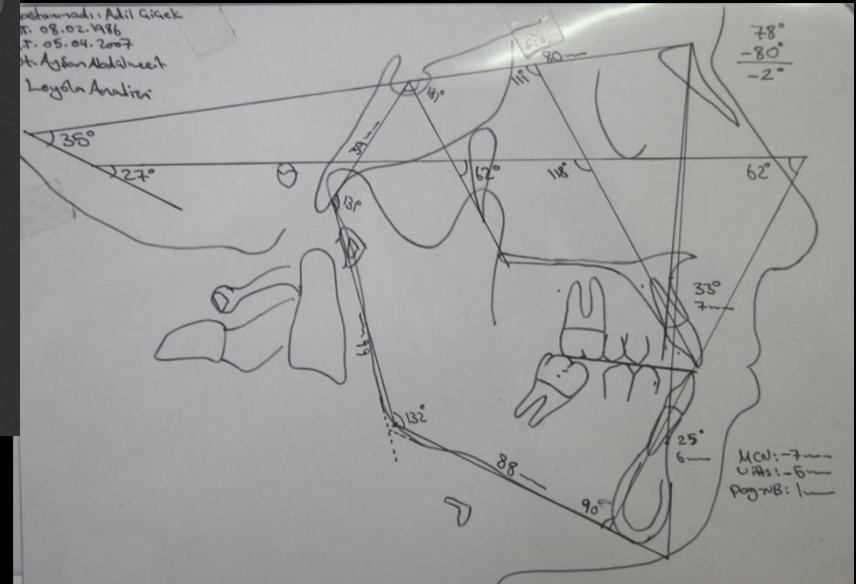


# ANTERIOPOSTERIOR AND TMJ X-RAY





# LATERAL SEPHALOMETRIC X-RAY



## TYPES OF ORTHODONTIC TREATMENT

- PREVENTIVE ORTHODONTICS
- INTERCEPTIVE ORTHODONTICS
- CORRECTIVE ORTHODONTICS
- SURGICAL ORTHODONTICS

## PREVENTIVE ORTHODONTICS

- No active orthodontic treatment
- Restoration for deciduous teeth
- Oral hygiene



## PREVENTIVE ORTHODONTICS

- Fissure sealants
- Fluoride application (recommended every 6 months)



## PREVENTIVE ORTHODONTICS

- Space maintainer



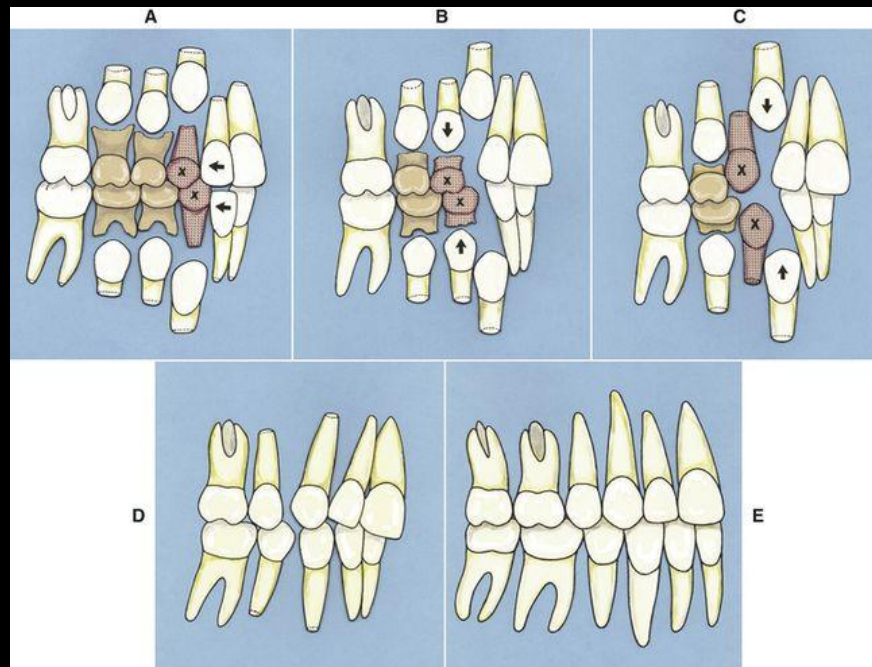
## PREVENTIVE ORTHODONTICS

- Management of ankylosed tooth
- Extraction of supernumerary teeth



## INTERCEPTIVE ORTHODONTICS

- Any procedure that eliminates or reduces the severity of malocclusion in the developing dentition.
- Procedures undertaken in this type:
  1. Serial extractions



## INTERCEPTIVE ORTHODONTICS

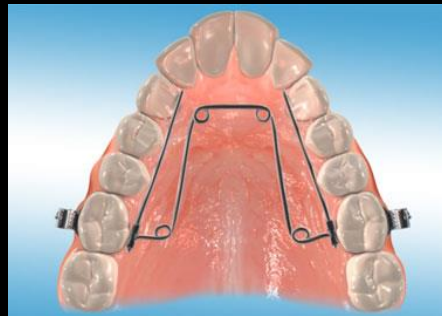
1. Correction of developing crossbite
2. Control of abnormal habits
3. Space regaining
4. Removable of soft tissue and bony barrier to enable eruption of teeth



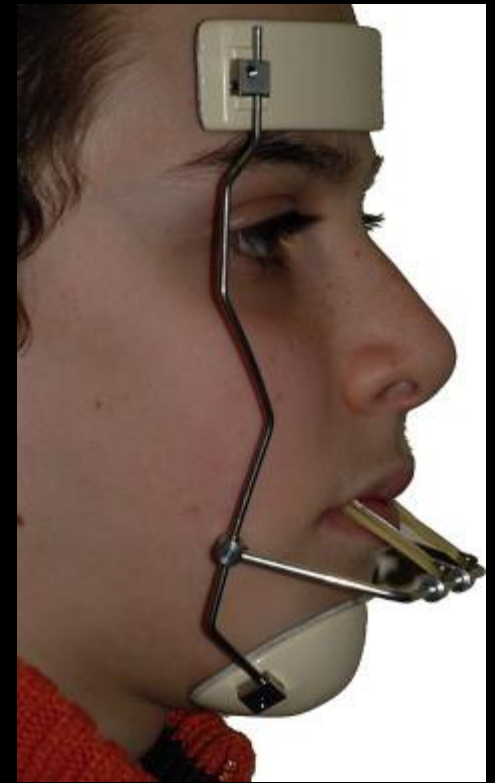


## CORRECTIVE ORTHODONTICS

- Late mixed and early premanent dentition
- Recognizes the existence of malocclusion and the need for employing certain technical procedures to reduce or eliminate the problem.



## CORRECTIVE ORTHODONTICS

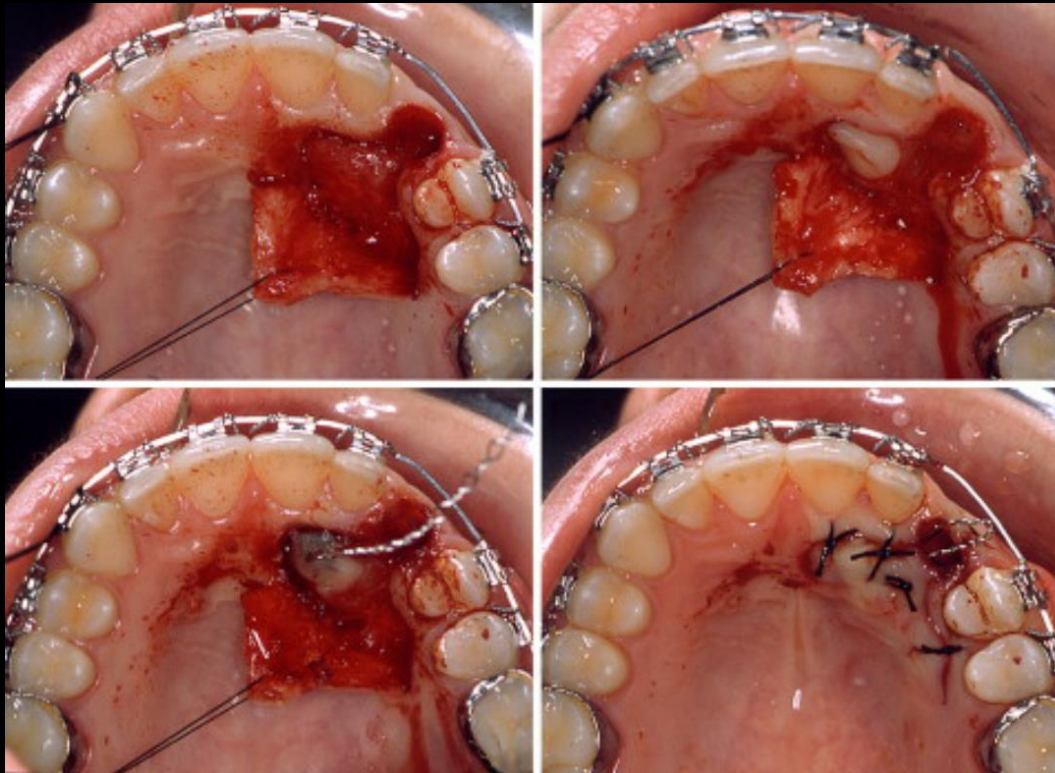


## CORRECTIVE ORTHODONTICS



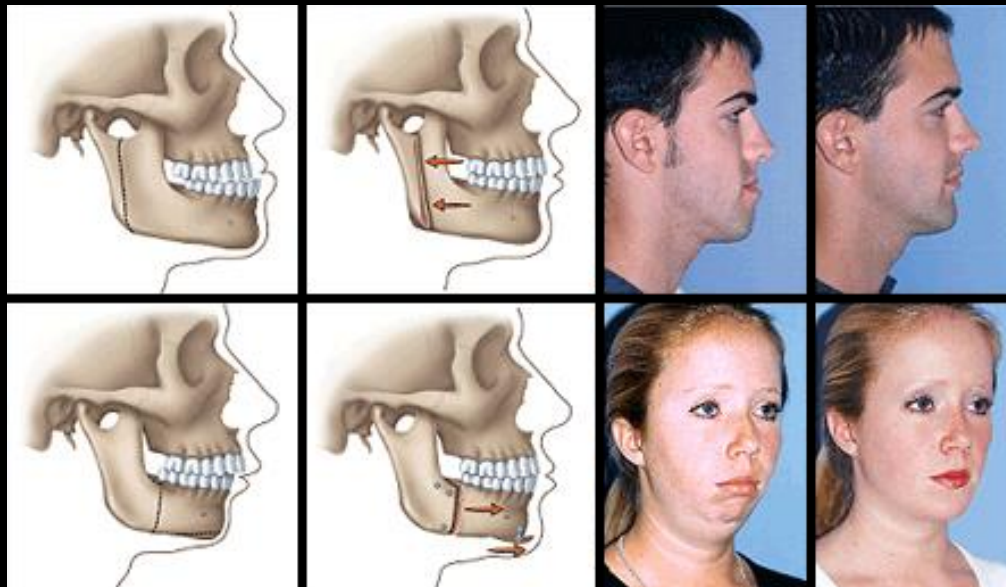
## SURGICAL ORTHODONTICS

- ❑ Extraction and serial extraction
- ❑ Surgical exposure of impacted teeth



## SURGICAL ORTHODONTICS

- ❑ Frenectomy
- ❑ Corticotomy
- ❑ Gingivoplasty
- ❑ Surgical correction of cleft lip and palate
- ❑ **Orthognathic surgeries**

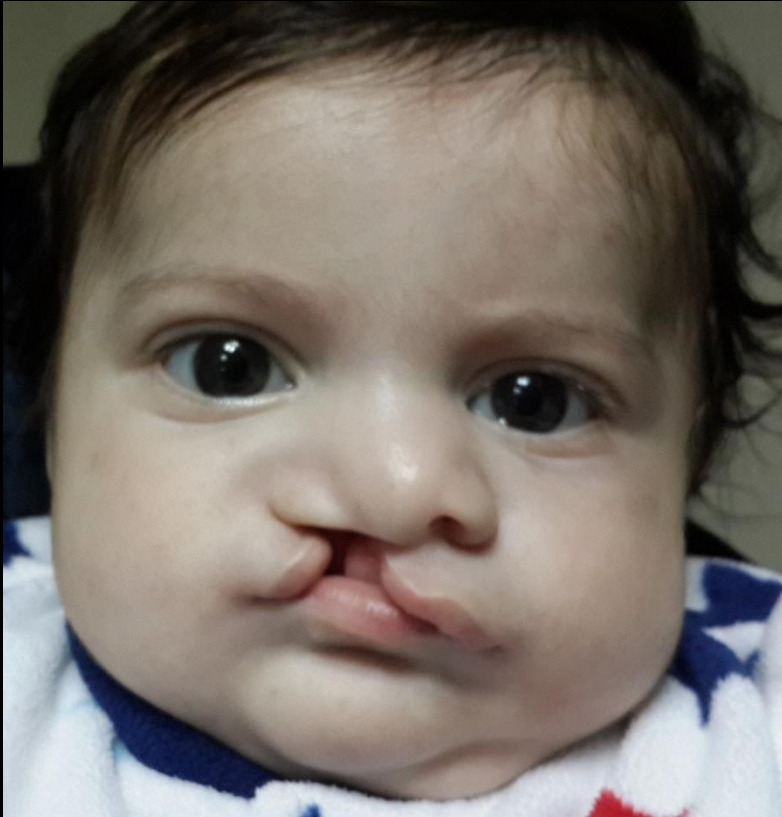


# TEMPOROMANDIBULAR JOINT

## Occlusal splint

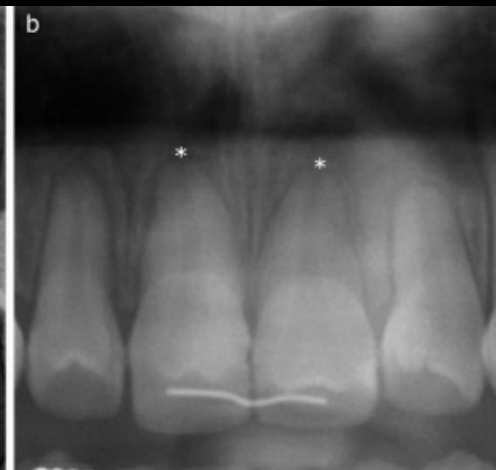


## CLEFT LIP AND PALATE



## RISKS OF ORTHODONTIC TREATMENT

- Root resorption
- Enamel decalcification
- Gingival swelling, gingivitis
- Loss of tooth vitality





## RISKS OF ORTHODONTIC TREATMENT

- Allergies, nickel
- Ulceration, appliance trauma
- Incomplete treatment
- Relapse
- Patient not satisfied with result



# HOME CARE FOR ORTHO PATIENTS





Thank you