Early Treatment

Columbia University
School of Dental and Oral Surgery

Dr. Shany Park
2006

Early Treatment

- Preventive Orthodontic treatment
- Interceptive orthodontic treatment
- Phase I treatment
Normal Occlusion: Deciduous dentition

♦ Age: 2 ½ to 5 ½ years old

Normal occlusion: Deciduous dentition

♦ OB: Moderate to Shallow
♦ OJ: 3mm
♦ Molar occlusion: Flush terminal plane
♦ Buccal OJ: Positive all around
Normal occlusion: Deciduous dentition

- Spacing:
  - Generalized spacing
  - Primate Spacing

Normal Occlusion: Early Mixed dentition

- OB: Shallow
- OJ: Shallow
- Molar Occlusion:
  - Mesial step or Flush terminal will shift to Cl I molar occlusion
Normal Occlusion: Early Mixed dentition

- No Primate spaces
- Diastema (ugly duckling stage)
- Mild crowding is accepted

Lee way space:
- Maxilla: 1.5 mm each side
- Mandible: 2.5 mm each side
Normal Occlusion:
Early Mixed dentition

Abnormal Occlusion
Abnormal Occlusion

Abnormal Occlusion
Abnormal Occlusion
Early Treatment: Benefits

♦ Guide growth
♦ Reduce chance of extraction or surgery
♦ Reduce phase II treatment time
♦ Esthetics

When do we treat early?

♦ Functional problems
♦ Higher chance for Trauma
♦ Space Management
♦ Esthetics
**Functional Problems**

- Crossbites
  - Functional shift
    - Anterior
    - Lateral
  - Constriction of maxilla
    - Narrow maxilla
    - Narrow smile

- Class III
  - Overgrowth of mandible
  - Deficient growth of maxilla

- Openbite
  - Tongue thrusting habit
  - Thumb sucking habit
  - Prolonged use of Pacifier
  - Foreign object biting habit
Functional Problems

- Mouth breather
  - Adenoid face
  - Long face syndrome
    - Tongue rests on mandible instead of touching the palate
      - Maxillary constriction
      - Posterior crossbite
    - Clockwise rotation of mandible
      - Anterior Openbite
    - Dry mouth
      - Increased caries rate
      - Increased Gingival inflammation

Increased susceptibility to Trauma

- Severe Class II
  - Increased OJ
  - Trauma to maxillary central incisors
Space Management

- Severe Crowding: Serial Extraction
  - Guided Eruption
  - Extraction of deciduous teeth
  - Extraction of permanent teeth

Space Management

- Space Conservation: Space loss
  - Interproximal caries
  - Early loss of deciduous teeth
  - Early extractions of deciduous teeth
Esthetics

- Improve smile
- Self-esteem issues
- Some diastema is normal stage of dental maturation

Posterior Crossbite:
Lateral functional shift
Posterior Crossbite treatment: Palatal Expander

- Quad Helix appliance
- Porter Arch appliance
Rapid Palatal Expander (RPE)

Elimination of midline shift
Posterior crossbite

Treatment: RPE and 2x4

4/17/02

9/6/02
Anterior & Posterior crossbite

Treatment: RPE & 2x4
Anterior Crossbite: Anterior functional shift

CR CO

Treatment: RPE & Reverse pull Headgear
Anterior Crossbite Treatment:

Removable Finger Spring Appliance with posterior bite plate
Class III

Treatment: Bonded RPE with Reverse Pull Headgear
2 mo. progress
Treatment: Bonded RPE with Reverse Pull Headgear  
2 mo. progress

Openbite: Thumb sucking habit
Openbite: Treatment

Tongue Guard  Tongue rake  Blue grass

Removable Tongue Crib
Openbite: Thumb sucking habit
Blue grass appliance

- 2/16/02
- 5/19/02

Treatment:
Blue Grass 3 mo. progress
Increased risk for trauma
Treatment:  
*Headgear &/or Bite plate*

---

**Space Management**

♦ Serial Extraction
Serial Extraction
Serial Extraction

- Initial stage:
  - 4 incisors erupting per arch with lack of space

- Extraction of deciduous canines:
  - Allow permanent incisors to align

Serial Extraction

- Extraction of first deciduous molars:
  - Allow first premolars to erupt ahead of canines

- Extraction of first premolars
  - Allow canines to erupt
  - Extract second deciduous molars to allow eruption of second premolars
**Serial Extraction**

- 13 year old girl without serial extraction
- 13 year old girl with serial extraction

**Space conservation**

- Interproximal caries
  - Restoration
- Early loss of deciduous teeth
  - Space maintainer
  - Space regainer
- Extractions
  - Space maintainer
  - Space regainer
- Missing teeth
Removable space maintainer

Removable Space maintainer
Pedo partial
Fixed unilateral appliance

- Distal shoe
- Band & Loop
- Crown & Loop

Fixed Bilateral appliance

- Nance appliance
- Transpalatal Arch (TPA)
Lower Lingual Holding Arch

Esthetics: Self-esteem
Summary

♦ Early Orthodontic treatment:
  – Guide growth to more favorable direction
  – Reduce the chance of extraction or surgery
  – Reduce phase II treatment time length
  – Esthetics