Principles of Removable Appliances

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Indications
- Growth modification during mixed dentition stage (functional appliances)
- **Limited tooth movement** (tipping)
  - Correction of individual tooth malposition
  - Arch expansion
- Retention after comprehensive orthodontic treatment (braces)

Advantages of Removable Appliances
- Removable for socially sensitive occasions
- Uncompromised oral hygiene
- Short chair time

Disadvantages of Removable Appliances
- Heavily dependent upon patient **compliance**
- Affect speech
- Unable to perform complex tooth movements

Appliance Design
- Considerations
  - What movement is desired
  - Acceptability of the appliance to the patient
  - Cost
  - KISS rule

Laboratory Projects
1) Anterior Bite Plane Appliance
2) Removable appliance to correct an anterior crossbite
Anterior Bite Plane Appliance

• Indications
  – Deep overbite

• Components
  – Hawley type labial bow
  – Clasps on maxillary first molars
    • Adams clasp
    • Reverse circumferential clasp (C-clasp)
  – Palatal coverage and anterior bite plane
    • Triad

• Adams clasp
  – .028 stainless steel round wire
  – Most useful clasp
  – Provides excellent retention
  – Engages in the mesiobuccal and distobuccal undercuts of individual posterior teeth

• Circumferential clasp
  – .030 stainless steel round wire
  – More of a supporting role than a retentive role
  – Keeps clear of occlusal contact

Removable appliance to correct an anterior crossbite

• Indications
  – Retract flared incisors
  – Provide anterior stabilization
  – Control position of incisor teeth
Removable appliance to correct an anterior crossbite

- Components
  - 4 ball clasps
    - Mesial and distal to the primary second molars
    - Lingual finger spring
    - Posterior bite planes
    - Palatal plate

Removable appliance to correct an anterior crossbite

- Ball Clasp
  - Extends over the embrasure between adjacent teeth and uses undercuts on the buccal surface

Removable appliance to correct an anterior crossbite

- Finger spring
  - .020 stainless steel wire

- Posterior bite plane
  - To raise the bite so that the maxillary incisor that is in crossbite can move labially without occlusal interferences and trauma

Clinical Adjustments

- Patients should be seen every 4 to 6 weeks for adjustments
- Tighten clasps (for better retention)
- Activate springs
  - Activate to produce approx. 1 mm of movement
- Remove/clear material from the baseplate (when a tooth is being moved lingually, not labially)