RETENTION AND RELAPSE

DEFINITION

- *"Maintaining newly moved teeth long enough to aid in stabilizing their correction"* – MOYERS
- *"loss of any correction achieved by any orthodontic treatment"* - RELAPSE

CAUSES OF RELAPSE

- Periodontal ligament traction
- Relapse due to growth related changes
- Bone adaptation
- Muscular factors
- Failure to eliminate the original cause
- Role of third molars
- Role of occlusion

SCHOOLS OF RETENTION

- The occlusion base – KINGSLEY
- The apical base – ALEX LUNDSTROM, McCAULEY & NANCE
- The mandibular incisor school – GRIEVES & TWEED
- The musculature school - ROJERS

THEORIES OF RETENTION

- *Teeth that have been moved tend to return to their former position.*
- *Elimination of the cause of malocclusion will prevent relapse.*
- *Malocclusion should be over corrected as a safety factor.*
- *Proper occlusion is a potent factor in holding teeth in their corrected positions.*
- *Bone and adjacent tissues must be allowed time to reorganize around newly positioned teeth.*

- *If the lower incisors are placed upright over basal bone they are more likely to remain in good alignment.*
- *Corrections carried out during periods of growth are less likely to relapse*
- *The farther the teeth have been moved the lesser is the risk of relapse*
- *Arch form, particularly in the mandibular arch cannot be permanently altered by appliance therapy*
- *Many treated malocclusions require permanent retaining devices* - MOYERS

RAYLEIGH'S 6 KEYS OF RETENTION

- Incisal edges of the lower incisors should be placed on the A-P line or 1mm in front of it.
- Lower incisors apices should be spread distally to the crowns
- Apex of lower cuspid should be positioned distal of the crown

- All four lower incisors apices must be in the same labiolingual plane
- Lower cuspid root apex must be positioned slightly buccal to the crown apex
- The lower incisors should be slenderized as needed.

TYPES OF RETENTION - *REIDEL*

- NATURAL RETENTION
- LIMITED RETENTION
- PROLONGED RETENTION

NATURAL OR NO RETENTION

- Anterior cross bite
- Serial extraction procedures
- Blocked out or highly placed canines in Class I extraction cases
- Posterior cross bite in patients having steep cusps.
- Corrections achieved by retardation of maxillary growth once the patient has completed growth

LIMITED OR SHORT TERM RETENTION

- Class I non extraction with dental arches showing proclination and spacing
- Deep bites
- Class I, Class II div 1 and 2 cases treated by extraction.
- Early corrections of rotated teeth to their normal position before root completion
- Cases involving ectopic eruption or supernumery teeth
- Class II div 2 cases for muscle adaptation

PROLONGED OR PERMANENT RETENTION

- Midline diastema
- Severe rotations
- Arch expansion
- Class II div 2 with deep bite cases
- Patients exhibiting abnormal musculature or tongue habits
- Expanded arches in cleft patients

RETAINERS

- Passive Orthodontic appliances
- Maintaining and stabilizing the position of teeth long enough to permit reorganization of the supporting structures after the active phase of orthodontic therapy.

GRABER'S CRITERIA

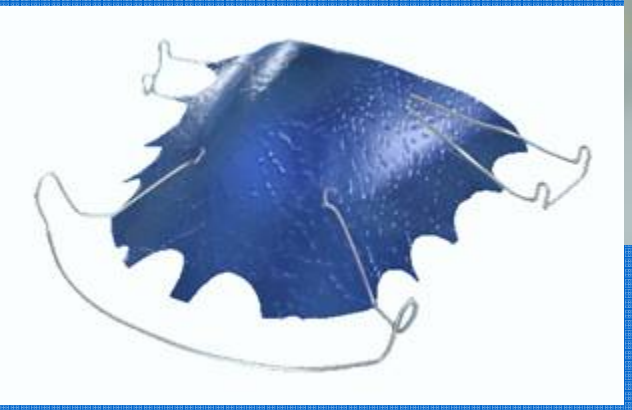
- Should retain all teeth that have been moved into desired positions
- Should permit normal functional forces to act freely on the dentition
- Should be self-cleansing
- Should permit oral hygiene maintenance
- Strong enough to bear the rigors of day-to-day usage

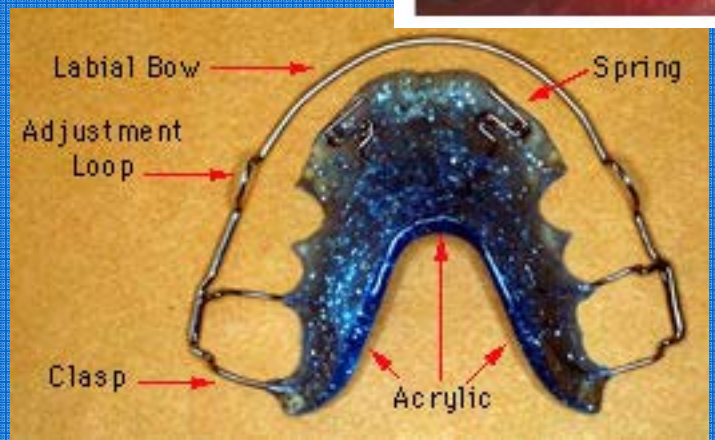
CLASSIFICATION

- REMOVABLE RETAINERS
- FIXED RETAINERS

REMOVABLE RETAINERS

- Hawley's appliance
  - With long labial bow
  - With contoured labial bow
  - Continuous labial bow soldered to clasps
  - With elastic replacing labial bow
- Begg's retainer
  - Single arrowhead partial wraparound retainer
- Clip-on retainer/spring aligner
- Wrap around retainer
- Kesling tooth positioner
- Invisible retainers




Labial Bow
Spring
Adjustment
Loop
Clasp
Acrylic

FIXED RETAINERS

- Fixed appliance
- Band and Spur retainer
- Banded canine to canine retainer
- Bonded lingual retainers

INDICATIONS

- Maintenance of lower incisor position during late mandibular growth.
- Closure of diastema
- Maintaining bridge pontic space
- Compromised periodontal conditions with the potential for post-orthodontic teeth migration
- Prevention of rotational relapse
- Prevention of relapse after correction of palatally placed canines
- Prevention of opening up of closed extraction space, adult patients

ADVANTAGES

- Reduced need for patient co-operation
- When conventional retainers do not provide same degree of stability
- More esthetic
- No tissue irritation
- Reduced recall visits
- Used as permanent retainers
- Better tolerated

DISADVANTAGES

- More cumbersome to insert
- Increased chair side time
- More expensive
- Banded variety interfere with oral hygiene maintenance
- More prone to breakage

CLASSIFICATION

- Intra – coronal
- Extra - coronal

INTRA CORONAL

- Fixed appliance
- Band and spur retainer

EXTRA CORONAL

- Direct contact splinting
- Canine to canine bonded/banded
- Flexible spiral wire retainer
- Mesh pad retainer

Bonded Vs Banded

- Invisible from the labial side
- Reduced caries risk
- Reduced need for patient co-operation
- Interval between debonding and retainer placement is eliminated