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

1. Incisal edges of the lower incisors should be placed on the A-P line or 1mm in front of it.
2. Lower incisors apices should be spread distally to the crowns.
3. 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
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