

RETENTION RELAPSE AND THE OCCURANCE OF MALOCCLUSION

By

Manish Valiathan and Mark G. Hans

From

Riolo, M. and Avery, J. Eds., **Essentials for Orthodontic Practice**,
EFOP Press of EFOP, LLC. Ann Arbor and Grand Haven,
Michigan, U.S.A., 2003.

CHAPTER 21
PAGES 594-616

periodontal ligament fibers and gingival fibers

- unorganized gingival and PDL fibers lead to an increased susceptibility to tooth movement
- restoration and reorganization of arrangement of the PDL fibers and calcification of the lamina dura takes 3 to 4 months
- collagenous fibers reorganize structurally in 4 to 6 months
- supracrestal elastic fibers of the gingiva take up to 1 year to structurally adapt to the new position of the teeth
- rotational relapse might be caused by the elastic fibers of the gingival tissue
- fiberotomy
- Life time retention

RETENTION

Retention is the final phase of active orthodontic treatment where teeth are maintained in a healthy, functional, and esthetic position.

The method of retention to be employed is best selected at the outset of treatment and incorporated in the treatment plan for each individual case.

late mandibular growth

Remodeling of the craniofacial skeletal and soft tissue structures continuous into adult life, leading to changes in dental alignment

General Factors affecting stability

Among the many suggested factors mentioned that influence stability, three deserve further elaboration:

- (i) **the involvement of the periodontal ligament fibers and gingival fibers**
- (ii) **late mandibular growth and,**
- (iii) **physiologic imbalance of local extrinsic forces acting on the corrected dentition.**

physiologic imbalance of local extrinsic forces

- occlusion
- tongue musculature
- cheek musculature
- gingival fibers
- fibers of the PDL

the "rebound effect"

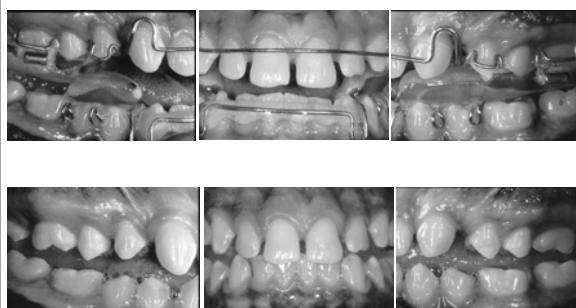
Retention of Anterioposterior Corrections

- Retention of Class II Corrections
- Retention of Class III Corrections

Retention of Vertical Corrections

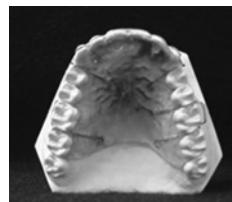
- Retention after Deep Bite Corrections
- Retention after Anterior Open Bite Corrections

Class II Corrections



PHASE I TREATMENT WITH TWIN BLOCK APPLIANCE
(FUNCTIONAL APPLIANCE)

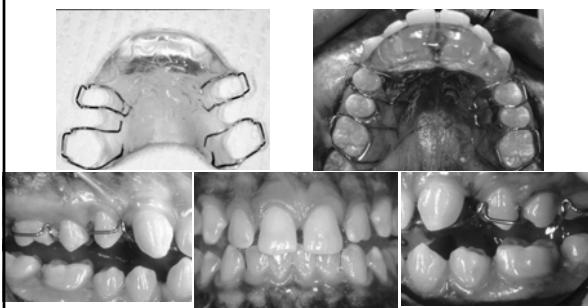
Retention after Deep Bite Corrections



UPPER HAWLEY TYPE RETAINER WITH ANTERIOR BITE PLANE

PASSIVE ANTERIOR BITE PLANE

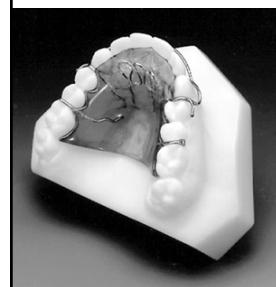
Retention of Class II Corrections



RETENTION AFTER PHASE I TREATMENT
WITH TWIN BLOCK APPLIANCE (FUNCTIONAL)

Retention after Anterior Open Bite Corrections

TONQUE CRIB



POSTERIOR BITE BLOCK



Retention of Arch Form and Arch Alignment

Effects of Extraction and Non extraction Treatment on Arch Stability

- intermolar width
- Intercanine width
- interpremolar width
- dental arch length
- dental arch form
- mandibular incisors

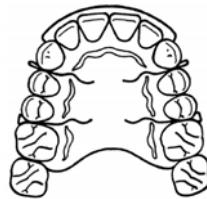
Appliances designs and Retention

Palatal Expansion and Stability

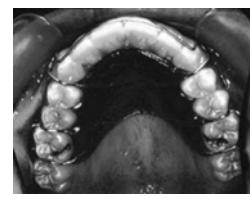
Minimum time of Retention

3 to 6 months

HAWLEY TYPE REMOVABLE RETAINERS



WITH ARROW CLASPS



WITH ADAMS CLASPS

Third Molars and Relapse

?

Extraction of third molars for the purpose of preventing lower incisor relapse is not justified

LOWER HAWLEY TYPE RETAINERS

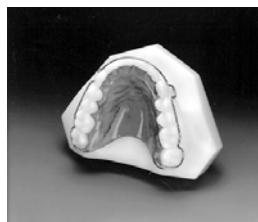


WITH BALL CLASPS



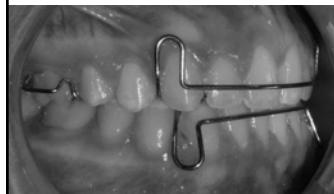
WITH MOLAR RESTS
AND CANINE ATTACHMENTS

WRAP-AROUND RETAINER

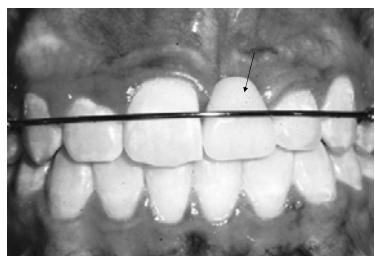


AVOIDS OCCLUSAL INTERFERENCE

HAWLEY TYPE RETAINERS WITH FINGER SPRINGS FOR LATERAL INCISORS



RETAINER WITH PONTIC



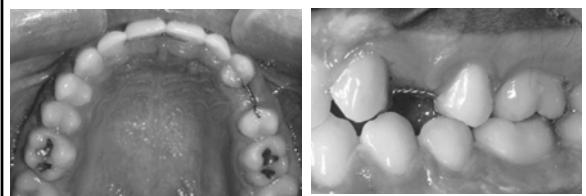
HAWLEY TYPE RETAINERS WITH FINGER SPRINGS FOR LATERAL INCISORS



BONDED RETAINERS



BONDED RETAINER-SPACE MAINTAINER



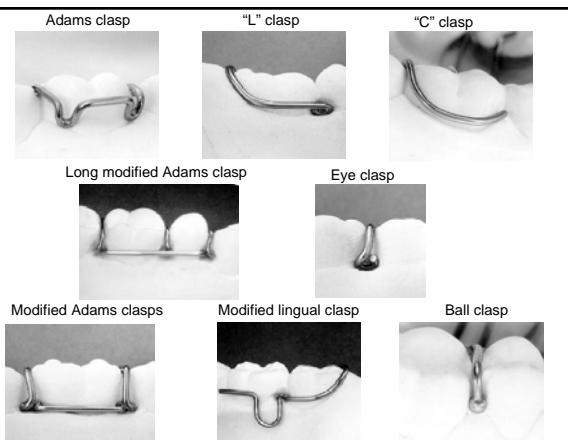
MODIFIED HAWLEY TYPE RETAINER
FOLLOWING
EXTRACTION OF FIRST PREMOLARS



MODIFIED HAWLEY TYPE RETAINER
FOLLOWING
EXTRACTION OF FIRST PREMOLARS



TRU-TAIN RETAINER



POSITIONER



SPRING ALIGNER

