College of Dentistry
Baghdad University
Department of Orthodontics

دورة تدريبية بعنوان:

RETENTION APPLIANCES

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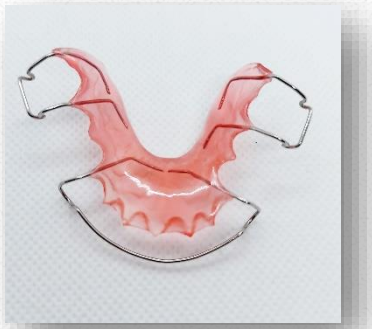
RETENTION APPLIANCES IN ORTHODONTICS

1- REMOVABLE HAWLEY RETAINER



2- REMOVABLE VACUUM FORMED RETAINER

3- FIXED RETAINER

Bonded Retainer
Fixed Retainer
Lingual Retainer
Permanent Retainer

RETENTION APPLIANCES IN ORTHODONTICS

FIXED RETAINER:

- *Bonded Retainer*
- *Fixed Retainer*
- *Lingual Retainer*
- *Permanent Retainer*

- *1965 Newman presented direct bonding of orthodontic attachment*
- *1973 Kneirim introduced the use of fixed retainer for orthodontic retention for the first time*
- *Bonded retainers were described 50 years after Hawley and 20 years before (VFR)*

RETENTION APPLIANCES IN ORTHODONTICS

FIXED RETAINER:

Requirements
Rigid to resist unwanted tooth movement and maintain the teeth in their position
Flexible to allow normal physiological tooth movement
Does not cause un-intended effect or tooth movement
Allow settling
Allow maintaining good oral hygiene for the teeth and supporting tissues
Does not cause occlusal interferences with opposing teeth
Easy to fabricate and use
Does not need high cost materials or equipments

RETENTION APPLIANCES IN ORTHODONTICS

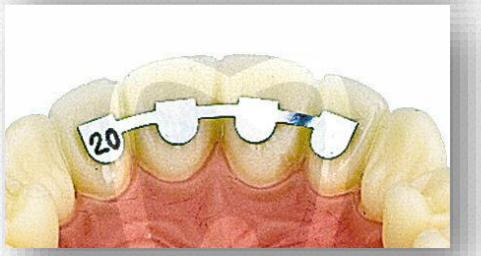
FIXED RETAINER:

ADVANTAGES	DISADVANTAGES
Aesthetics (not visible)	Technique sensitive
Not depend on patient cooperation	Difficult to bond to artificial substrate
Acceptable	Unwanted tooth movement (if become active)
Allow settling	Bond failure and/or breakage
	Difficulty in maintaining optimal oral hygiene
	Occlusal interferences

RETENTION APPLIANCES IN ORTHODONTICS

FIXED RETAINER:

Many types, designs, different materials



RETENTION APPLIANCES IN ORTHODONTICS

FIXED RETAINER:

Many types, designs, different materials

Ortho FlexTech

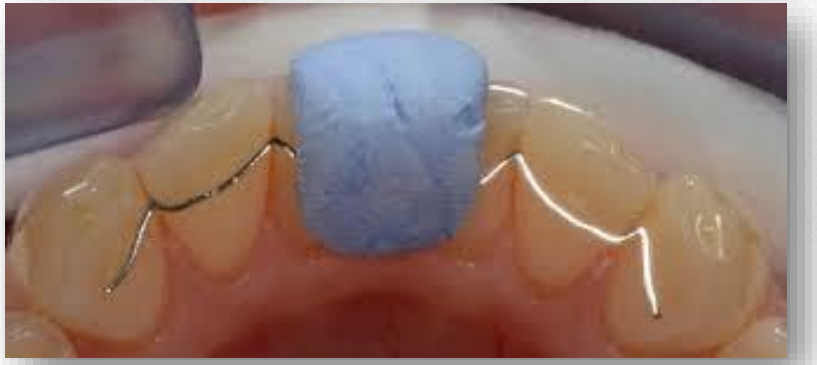
S.S.

gold

Memotain *(Nitinol CAD/CAM Retainer)*

Fig: CAD/CAM set up for Memotain

no significant difference in terms of dental anterior stability and retainer survival. Both retainers appeared equally effective in maintaining periodontal health



RETENTION APPLIANCES IN ORTHODONTICS

FIXED RETAINER:

Most commonly used

1- Retainers bonded canines only

Thick wire, round or spherical (usually 0.025” to 0.032”)

- **severe rotations and crowding in the lower incisors**
- **lower inter-canine width is changed**
- **treated with lower incisor proclination**
- **mild crowding that are treated without extractions**
- **deep overbite**

RETENTION APPLIANCES IN ORTHODONTICS

FIXED RETAINER:

Most commonly used

2- Retainers bonded to incisors and canines

Thin, multistrand or plain wire (from 0.0175 to 0.0215 round or rectangular multistrand S. S. wire)

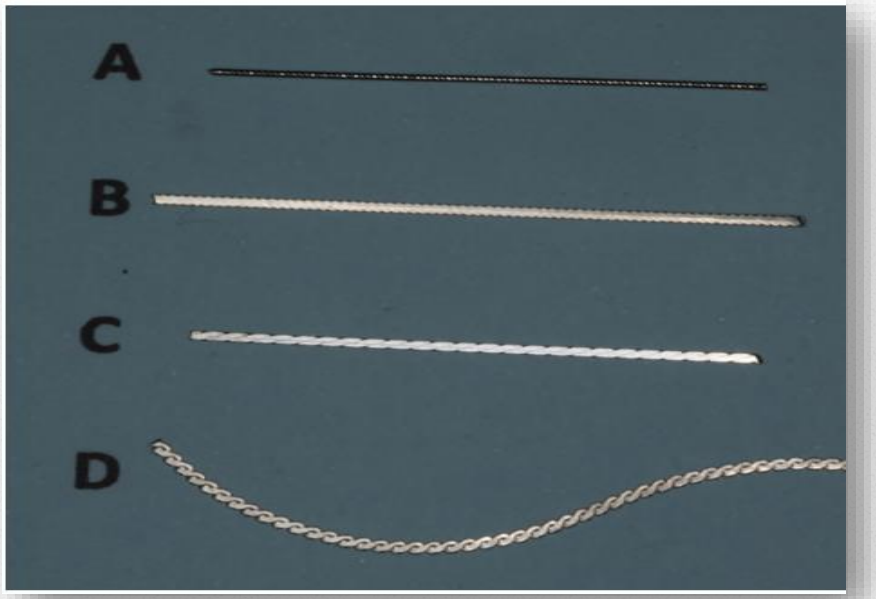
- **median diastema**
- **generalized spacing**
- **adult patient**
- **tooth loss (hold pontic space)**
- **mandibular incisor extraction**
- **severely rotated teeth**
- **palatally impacted canine**

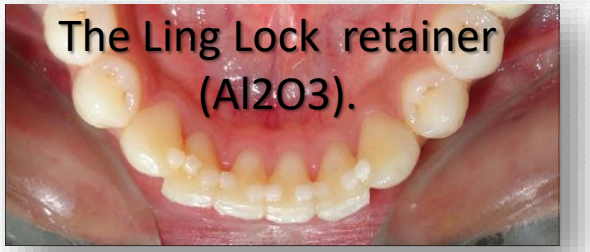
RETENTION APPLIANCES IN ORTHODONTICS

FIXED RETAINER:

Material types of bonded retainers

- *Stainless steel*
- *gold*
- *Peek*
- *nitinol*
- *Ceramic*
- *Fiber reinforced composite*





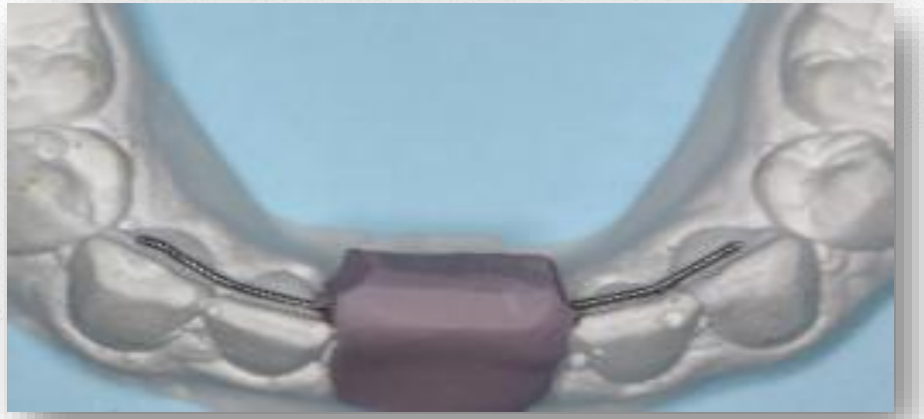
RETENTION APPLIANCES IN ORTHODONTICS

FIXED RETAINER:

Bonding techniques

1- Direct technique: directly inside patient mouth

2- Indirect technique: fabricated on a cast and then transferred to patient mouth



RETENTION APPLIANCES IN ORTHODONTICS

FIXED RETAINER:

Bonding protocol

<u>Patient:</u>

- Scaling and polishing
- Isolation
- Sandblast BR site
- Etching
- Prime and bond

RETENTION APPLIANCES IN ORTHODONTICS

FIXED RETAINER:

Bonding protocol

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RETENTION APPLIANCES IN ORTHODONTICS

FIXED RETAINER:

Bonding protocol

BR:

- **Cut the required length**
- **Apply metal primer**
- **Fix in exact place**
- **Apply adhesive and cure**
- **Finish and ploish**

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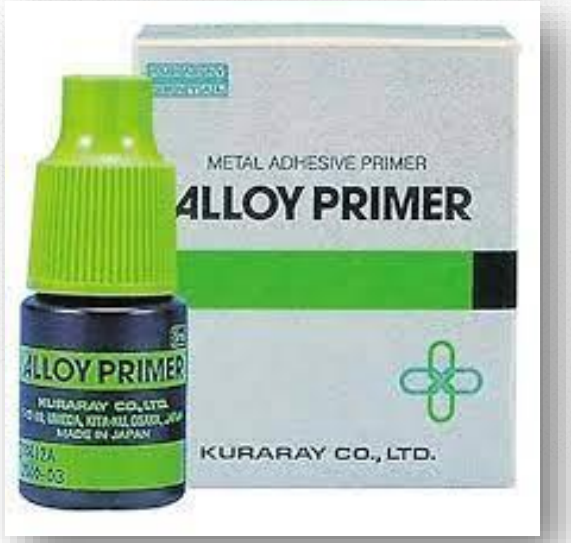

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THANK YOU FOR LISTENING