



Fixed Orthodontic appliance

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Fixed orthodontic appliance

From its name, fixed orthodontic appliances include orthodontic devices, which have attachments that are fixed on to the tooth surface, and forces are exerted via these attachments using archwires and/ or other auxiliaries. The appliances cannot and should not be adjusted or removed by the patient.

ADVANTAGES OF FIXED ORTHODONTIC APPLIANCES

1. Precise tooth control is possible.
2. Multiple tooth movements are possible.
3. Patient cooperation is reduced in comparison to removable appliance wear

DISADVANTAGES OF FIXED ORTHODONTIC APPLIANCES

1. Oral hygiene requirement
2. Esthetics
3. Special training for operator
4. Increased cost of treatment Fixed
5. Increased chair side time
7. Treatment monitoring is more difficult

INDICATIONS OF FIXED APPLIANCES

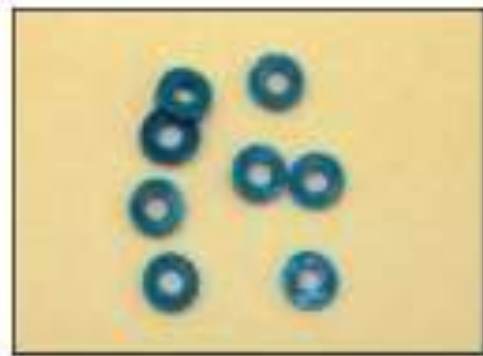
Fixed orthodontic appliances are indicated whenever multiple tooth movement is required, e.g. intrusion, derotation, controlled space closure at extraction sites, bodily movement, extrusion or torque control.

CONTRAINDICATIONS TO FIXED ORTHODONTIC APPLIANCES

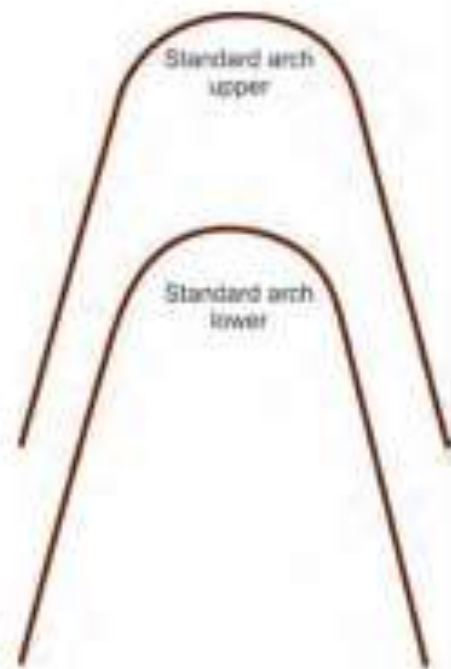
1. Poorly motivated patient
2. Poor dental health
3. Malocclusions beyond the scope of fixed orthodontic appliances
4. Appropriate training of operator

ACTIVE COMPONENTS OF FIXED ORTHODONTIC APPLIANCE

a. Separators



B. Arch wire



C . Elastic



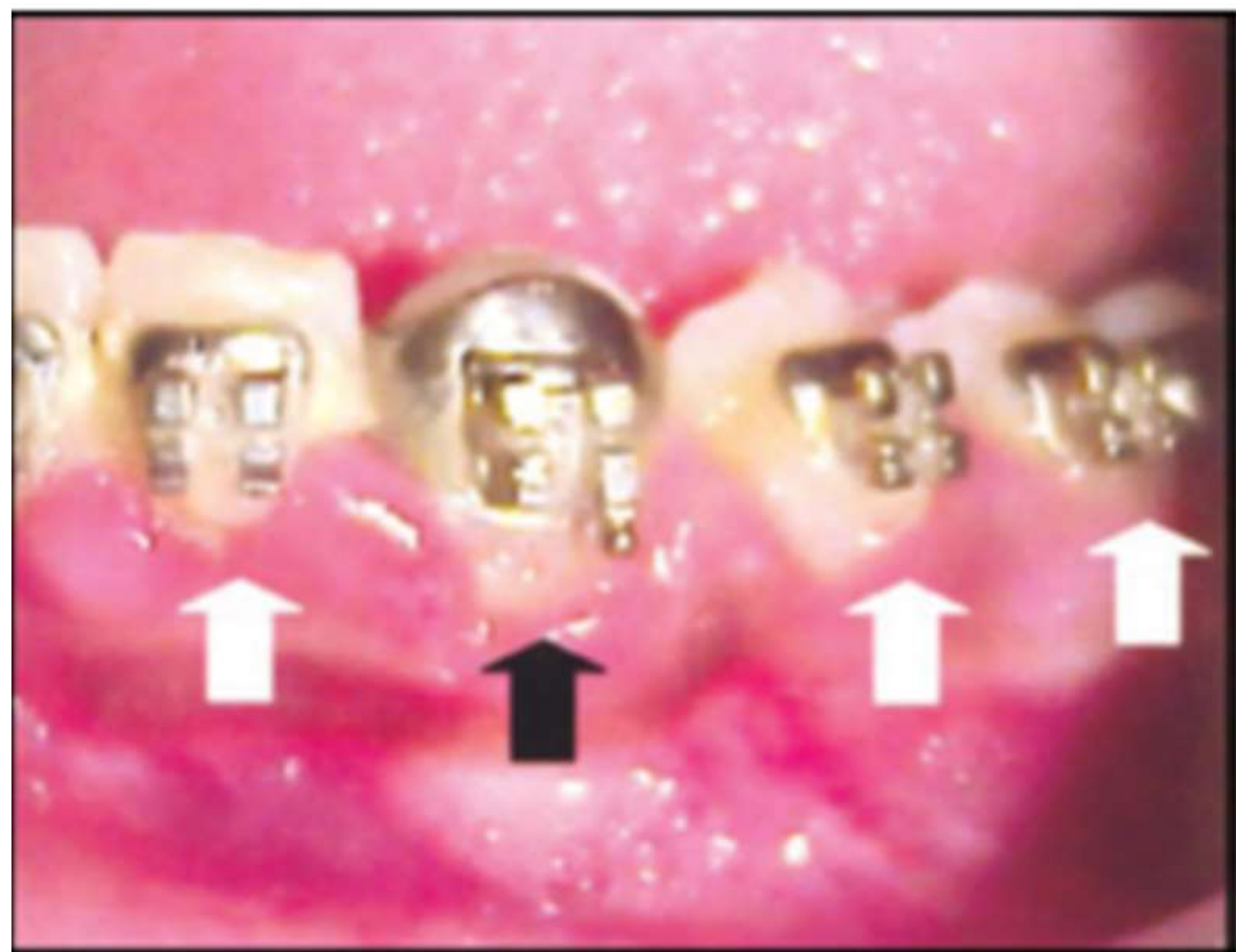
D . Spring



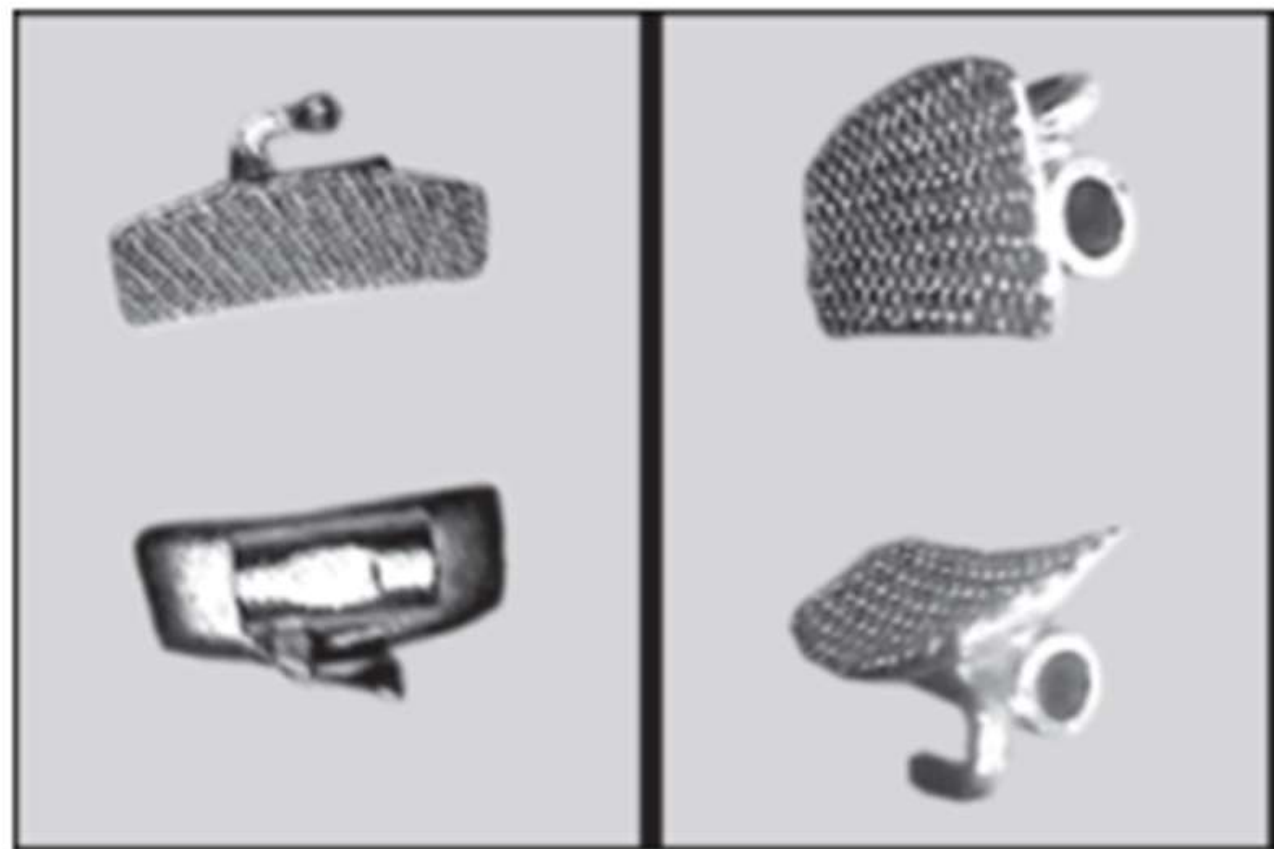
Band



Brackets

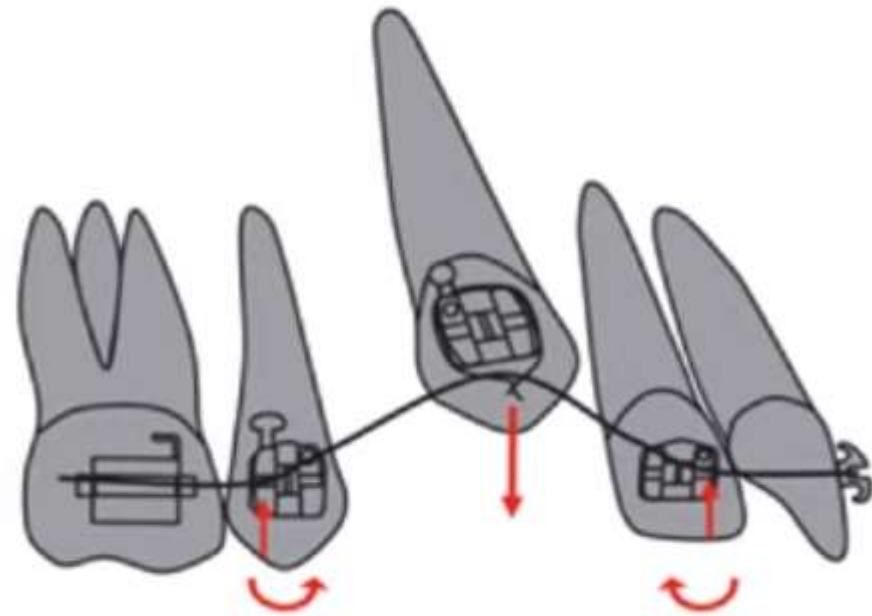
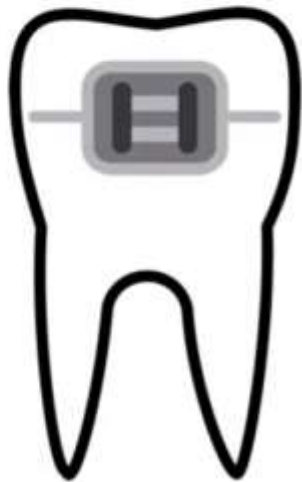


Buccal tube



Orthodontics fixed appliance materials

- **Wire** does all the work
- **Bracket** is just a tooth handle



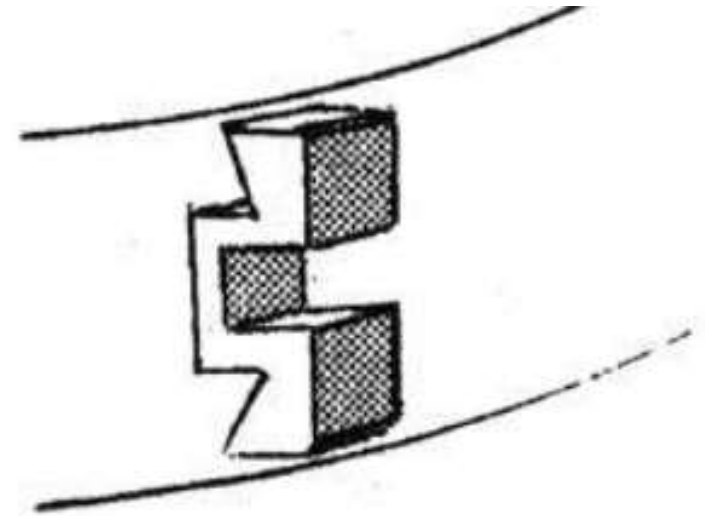
History of fixed orthodontic appliance

Edgewise Band



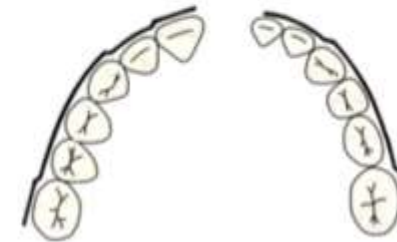
Edgewise brackets

The same bracket for all the teeth
So the dentist need to do many wire bending to reach to the required position

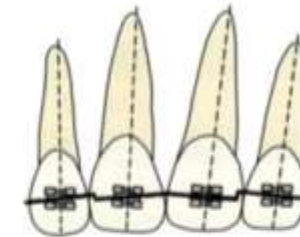


Edgewise Brackets

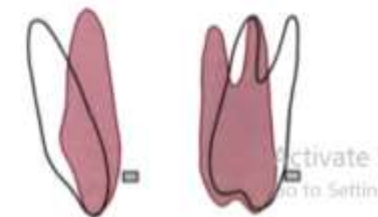
- Edgewise= slot is open horizontally
- **First-order bend**= buccolingual position



- **Second-order bend**= mesiodistal angulation



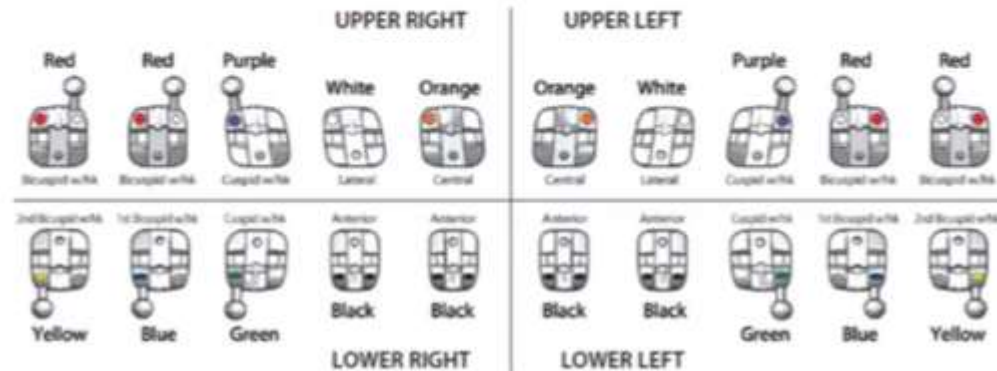
- **Third-order bend**= buccolingual inclination



- The arch wire should be rectangular to do all the third order dimension because the round wire can't provide torque
- First order from occlusal view
- Second order from labial view
- Third order from side view (proximal)

Preadjusted Edgewise Brackets

- Preadjusted= each bracket has its own “prescription” for each tooth
- Bracket must be positioned in **center of facial surface of clinical crown**



- ❑ Pre-adjusted refer to each brackets has it won prescription
- ❑ Each bracket prescription , base , thickness , tip and torque built in side it for each particular teeth
- ❑ This was the invention of straight each wire

The Straight-Wire Appliance was originally developed by Larry Andrews in 1976 and is a fully preadjusted edgewise appliance based on Andrews' six keys to occlusion (Andrews 1972).

Some terminology in SWA

1. **Bracket base**: the most lingual portion of the bracket stem
2. **Slot Base**: the lingual wall of the slot.
3. **Slot point** the centerline of the slot. It is equidistant from the gingival and occlusal slot walls and is centered mesiodistally.
4. **Slot axis**: the line connect slot and base point
5. **Bracket Stem**: the portion of a bracket between the bracket base and the slot base.
6. **Base Point**: it is a point on the bracket base at the extension of the slot axis.



The material used to fabricate orthodontic brackets:

1. Metal
2. Aesthetic brackets

The types of metal brackets :

1. Stainless steel
2. Chromium cobalt
3. NiTi
4. Gold



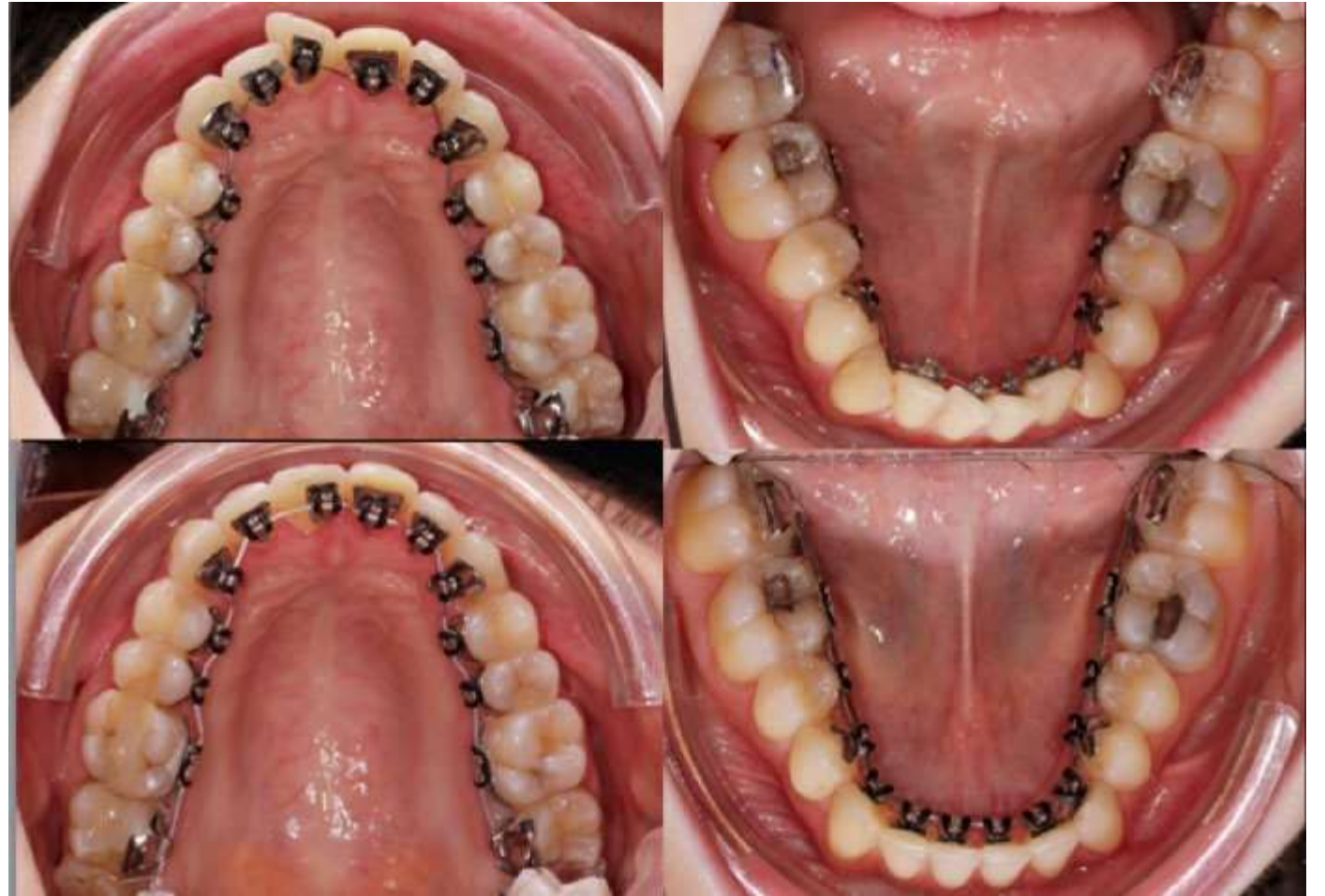


1. Aesthetic brackets :

- A. Transparent bracket : Ceramic brackets



- Lingual orthodontic bracket



Types of orthodontic arch wire :

A. According to material of fabrication

1. Nickel titanium
2. Stainless steel

B. According to cross section of the wire

1. Round
2. Rectangular



A large, irregular teal watercolor splash is centered on a background of a light-colored checkerboard pattern. The splash has a soft, painterly texture with varying shades of teal and light blue. The text "Thank You" is written in a black, cursive script across the middle of the splash.

Thank You