

Orthodontics



What is Orthodontics

- The treatment of irregularities in the teeth and jaws, including the use of braces.



Orthodontic Treatment Aims

- Improving the function of the teeth
- To improve the aesthetic appearance
- Moving teeth that may be at risk from trauma
- Moving teeth to eliminate stagnation areas
- Aligning teeth to aid oral hygiene
- Placing teeth and jaws in the correct position for surgery



Orthodontic Examination

- Buccal and incisal classification of malocclusion
- Over-jet measurements
- Overbite measurements
- Presence in each arch – is crowding mild, severe etc
- Patient habits
- Presence of any tooth rotation
- Presence of cross-bites
- Presence of any retained deciduous teeth
- Presence of centerline shifts
- Presence of supernumerary teeth



Index of Orthodontic Treatment

- This is used to assess the need and eligibility of children under 18 for NHS orthodontic treatment
- Grade 1 – is almost perfect
- Grade 2 – minor irregularities
- Grade 3 – greater irregularities but no oral health risk
- Grade 4 – more severe irregularities with risk to health
- Grade 5 – Severe dental health problems



Malocclusion

- Malocclusion is the abnormal occlusion characterized by an incorrect relationship between the arches or by abnormal tooth position
- Patients are categorized using 'Angles Classification'
- The ideal relationship is that the anterior buccal groove of the lower first molar should occlude with the anterior buccal cusp of the upper first molar



Ortho Terms

- Overjet- how far forward the upper incisors are from the lower incisors
- Overbite- how far the upper incisors overlap the lower incisors
- Proclined – positioned in front of
- Retroclined – positioned behind
- Cingulum bulge – or ridge found on the palatal or lingual aspects of the incisors and canine teeth, near to the gingival margins



Class I bite

- The lower incisor edge occludes with the middle third of the palatal aspect of the upper incisors
- Overjet and overbite are normal but there may be crowding, impaction and displacement of the teeth



Class I bite



Class II Division 1

- The lower incisor edges lie posterior to the cingulum of the upper incisors
- Upper incisors are proclined
- There is an increase overjet and overbite is frequently increased



Class II Division 1



Class II division 2

- Occurs in approximately 10% of the population
- Increased overbite
- Upper central incisors may be retroclined and upper lateral incisors may be reclined
- Lower anterior teeth are retroclined
- In severe cases lower incisors may occlude palatal mucosa



Class II division 2



Class III

- Found in approximately 3% of the population
- Upper incisors are positioned behind the lower incisors
- They may have a underbite (reversed overjet)



Class III



Open Bite

- Anterior opening between upper and lower teeth



Overbite

- Vertical over lapping of the upper teeth over the lower



Overjet

- Horizontal projection of the upper teeth beyond the lower



Crossbite

- When the top teeth bite behind the lower teeth. It can occur with front teeth or back teeth



Ortho Treatment Available

- Extracting the teeth to relieve crowding but fitting any orthodontic appliance
- Removable appliance
- Fixed appliance
- Functional appliance
- Surgery



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Removable Appliances

- Used for the following:
- Tipping the teeth
- Mild tooth rotation
- Reducing some overbites
- Maintaining spaces between the teeth
- Holding teeth in position after fixed appliance (retainer)



Removable Appliances

- Cannot move the roots of the teeth through bone and therefore usually only used for simple malocclusions, or in conjunction with fixed appliances. The patient attends for an ortho appointment every 4-6 weeks to have the appliance checked and adjusted.

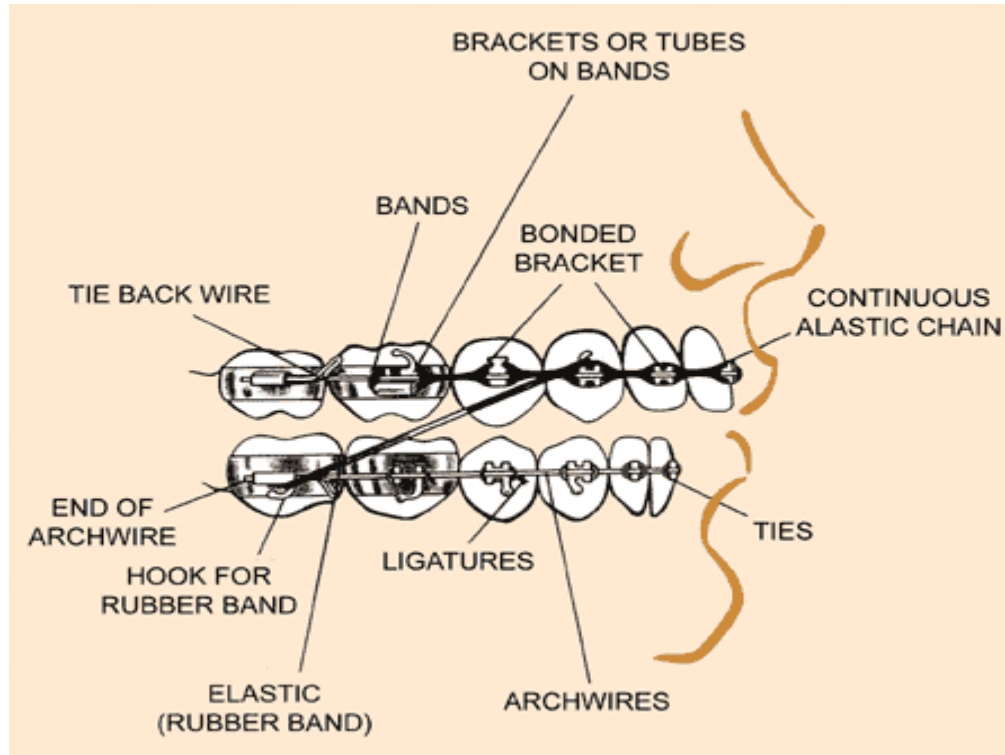


Equipment needed for monitoring and adjusting of removable appliances are:



Fixed Appliance

- Move the root through bone



Brackets of Fixed Appliance

- Bonded directly to the patients teeth using acid etch or glass ionomer. Brackets include a slot for each wire to sit in.



Bands of Fixed Appliance

- Normally cemented to the molar teeth using glass ionomer cements.
- Molar bands have buccal tubes for placement of the arch wire



Arch Wires

- The part of your braces which actually moves the teeth. The arch wire is attached to the brackets by small ligature wires. Arch wires are changed throughout the treatment



Ligature Wires

- Used to hold the arch wire in place
- Changes each time the archwire is changed



O Rings or Elastic Modules

- Used to hold the archwire in place on the bracket
- Changed each time the archwire is changed



A. Ligature

The archwire is held to each bracket with a ligature, which can be either a tiny elastic or a twisted wire.

B. Archwire

The archwire is tied to all of the brackets and creates force to move teeth into proper alignment.

C. Brackets

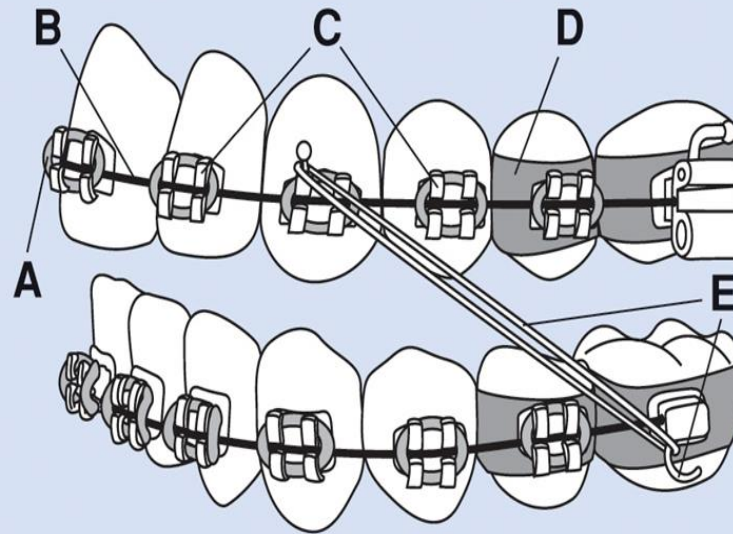
Brackets are connected to the bands, or directly bonded on the teeth, and hold the archwire in place.

D. Metal Band

The band is the cemented ring of metal which wraps around the tooth.

E. Elastic Hooks & Rubber Bands

Elastic hooks are used for the attachment of rubber bands, which help move teeth toward their final position.



Equipment needed for monitoring and adjusting of fixed appliances are:



Functional Appliances

- This appliance is used to correct class II discrepancies, by holding the mandible forwards and allowing mandibular growth and correction of malocclusion
- Appliances can be acrylic or stainless steel and is worn in both arches at the same time



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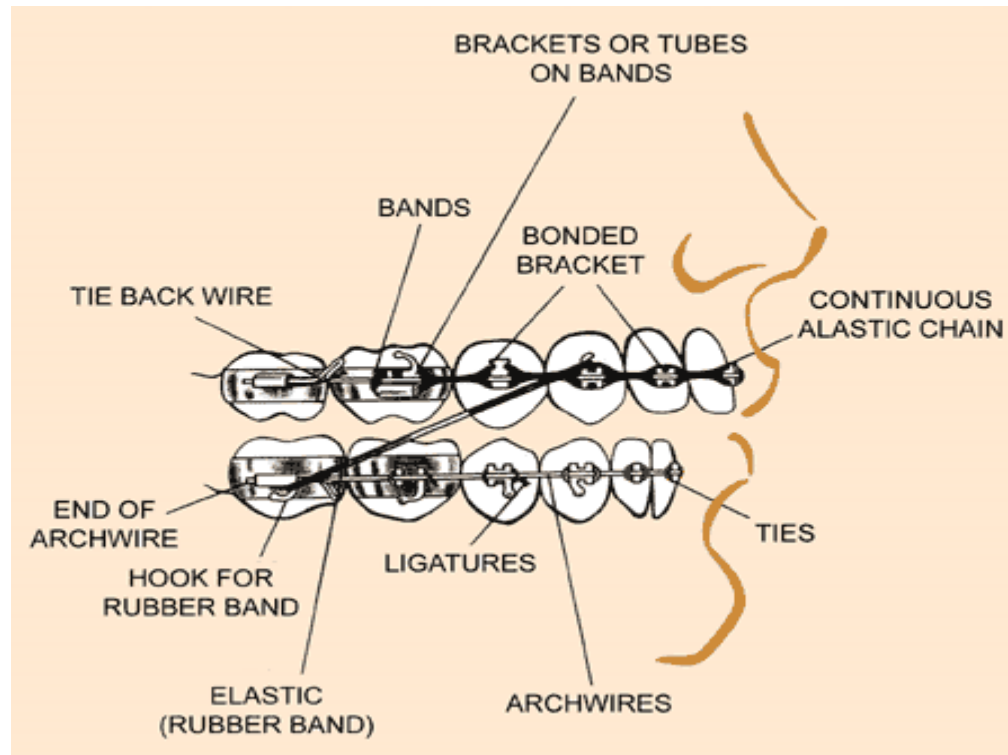


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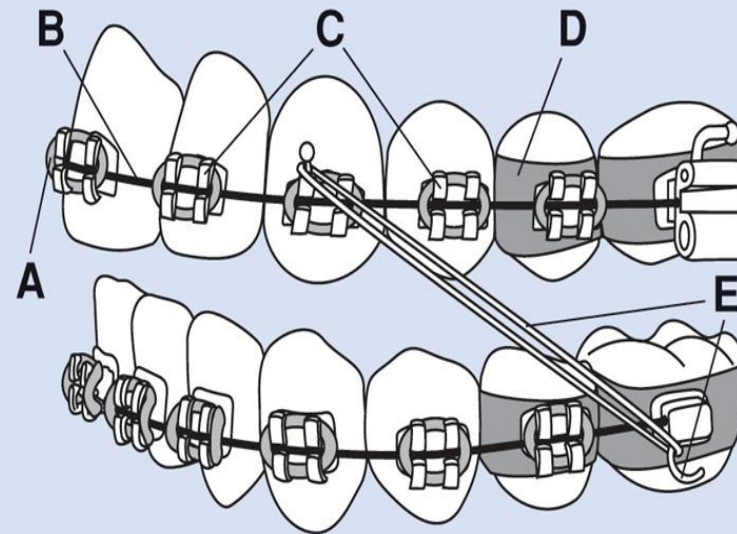
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