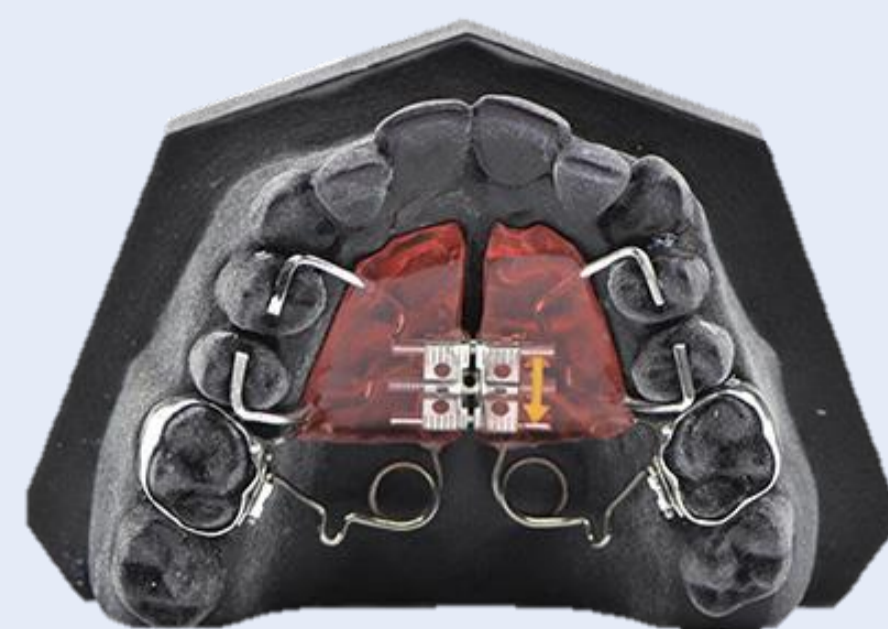


Different Types of Orthodontic Expanders

Alireza Jalalvand , Sajad Sadeghiyan

Fixed maxillary and mandibular expanders include a broad range of appliance designs. The designs are used to correct cross-bites, narrow arches and crowding. The fixed expanders utilize some mechanism of force (expansion screws, self-activating spring or wire activation) for development of the arch. These fixed designs require minimal patient compliance and provide the doctor with total control during active orthodontic treatment. Auxiliary attachments such as brackets and habit breakers can be requested for most of the expander appliances.



Fast

Hyrax



- Thick wires that are connected to the premolar and molar at the palatal level
- That it stimulates the mucous tissue of the palate It doesn't,
- Easy to clean.
- It can open the suture 11 mm. Finally, it opens 13 mm. Each time the screw is activated it causes 0.2 mm of lateral expansion.

pendulum

- Treatment of class 2 occlusion.
- Also used to treat overbite.
- Remove crowded teeth and arrange them
- Make the upper jaw wider.



pendex



- Class 2 occlusion is used for the treatment of Cross-Baid.arranges the teeth. used for small mouth space and crowded teeth.
- Used to create space for growing teeth and to widen the upper jaw.

Bonded RPE

- Mixed dentition
- Retention is easy
- Increases vertical control
- Class 2 treatments
- Increase the height of the lower part of the face
- The block bite effect facilitates the correction of the anterior crossbite



Hass



- Create more parallel expansion
- Less return
- More increase in the size of the nasal cavity
- More compatibility of the base with the palate
- More movement of the palate instead of the teeth.

IPC

- Used for orthopedic expansion
- Aligning the front teeth
- They give force to the lingual side of the anterior teeth The wire that passes through the distal laterals causes the closing of the diastema, which is usually in The duration of the treatment is rapid expansion



Issacson



- Without palatal cover
- Uses a screw called Minne, which is directly connected to the bands on the first premolars and molars.
- This screw is a highly calibrated spiral spring that is pressurized by turning the spiral nut. It can cause the jaw to open again unless it is disabled

Slow

Active plate

- an acrylic plate with a screw in the middle
- acrylic plate as a base for screws and spring
- the expansion screws are active parts
- Most of the screws are about 1 in each complete revolution
- mm opens, which causes 25 mm of movement
- mostly used when only a few millimeters of space are needed (1.5) to 2 mm each the side)



Y plate

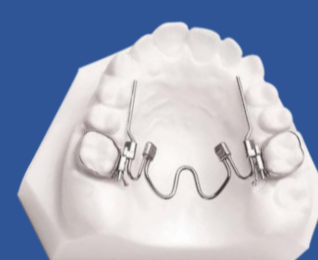


- 2 jack screws are in the front and back halves of the acrylic plate.
- The jack screws are activated and deactivated alternately to prevent the front teeth from coming out and the appliance falling out.
- used in patients who have protruding first premolars and places where bodily movements of teeth are frequent no need

There are many available types of maxillary expansion appliances and different expansion rates in rapid maxillary expansion (RME) or slow maxillary expansion (SME). Using jackscrew expanders, RME can be usually defined as two turns per day, while SME uses one turn after every second day or greater interval. The palatal expander seems to influence periodontal health: both rapid and slow expansion treatments present potential irritation effect (increase of plaque and bleeding) on the periodontium, suggested by the significant increase of PI and PBI from t0 to t1 in both the two groups..

Fixed expanders are permanently cemented in place by your orthodontist and can only be removed by them. This makes them the most stable option, but also the most expensive and intrusive. Removable expanders are held in place with a wire or clip and can be taken out by the patient for cleaning. They are less expensive than fixed expanders but can be less effective as well. Hyrax expanders are similar to removable expanders but use screws to hold them in place. They offer a good compromise between price and effectiveness.

NiTi



- Pre programmed thermally activated appliance.
- Several different sizes to allow for a wide range of expansion
- The individual appliances are anchored in place via horizontal sheaths attached to molar bands.
- Exceptional appliance when mild to moderate expansion is required.
- It is possibly the finest appliances at acquiring distal rotation of 1st permanent molars.

Used for patients who have short dental arch or posterior teeth with abnormal lingual tendency. The screw located in the middle causes expansion, it only causes the posterior teeth to become more lateral. This is possible by expanding the upper jaw sharply, which keeps the dentoalveolar position stable during the retention period.

schwarz



Coffin



- In cases of one or two-sided crossbite, cases where the jaw needs lateral expansion, cases where the jaw needs front-to-back expansion
- And if it is used during mixed dentition and has a good grip, it can have some skeletal changes

Jet spring

- Achieve slow arch expansion with controlled continuous NITI spring force. No patient compliance required. Substitute for screw or pre-set wire expanders. Provides reliable results with minimal tipping & no patient compliance.



Quad helix



- This appliance allows for the development of the maxillary arch by utilizing active helical springs. The springs can be activated to provide overall arch form improvement or to address either anterior or posterior expansion needs. The design of the appliance also allows for improvement of molar rotation.

W arch



- treat the cleft palate
- made of 36 mil steel wire and Mueller braces
- It is welded .In order to avoid irritation of the ingival (palatal) soft tissue,
- It can be easily adjusted so that the anterior extension is more than the temperament
- it expands by 2 mm per month to be corrected

One of the most widely used orthodontic treatments is the use of expanders to create space in the jaw. Depending on the time available for jaw expansion, there are two treatments, RME and SME. Each of the expander models has its advantages and disadvantages. The difference in the amount of force applied, the amount of pain, side effects, the duration of the retention period and the amount of jaw expansion are different in them. In general, it is not possible to say which one is superior to the other because each is used in its own cases.