



TECHNICAL GUIDE

Mandibular Williams Expansion Appliance



Description:

This phenomenally successful Mandibular Expansion Appliance was introduced by Dr. Jeff Williams in 1994. The Mandibular Williams Expansion Appliance is used for Mixed Dentition treatment with crowded lower incisors, and many consider it to be the most important new orthodontic appliance over the past 15 years!

The Mandibular Williams Expansion Appliance is primarily designed for children who are passing through the age of Mid-Mixed Dentition, whose Mandibular arch is constricted, with crowding evident in the newly erupted Mandibular incisors. This Mandibular appliance utilizes two long stainless tubes soldered to each of the lower primary second molar bands with extensions back to contact the lingual of the 6-year molars. An expansion screw is secured to the molar bands by wire extensions extending to transverse the anterior portion of the mandible.

An arc of .016 NiTi arch wire inserts into the forward ends of the stainless tubes and, as the expansion screw is activated the NiTi wire is moved forward to automatically uncrowd the incisors. The .016 NiTi arch wire is glued, with a small bit of composite, to the most lingually positioned incisor.

This wire may be replaced monthly with a slightly longer length of .016 NiTi to maintain positive pressure against the lingual of the incisors. In cases where the Mandibular 6 year molars are fully erupted, they may be banded instead of the primary second molars.



Indications for use of Williams Expansion Appliance:

- Mandibular arch needing transverse correction.
- Mandibular anterior crowding.

Alternate Appliances:

Mandibular Schwarz Expander.
Mandibular Sim Expander.
Mandibular Bowbeer Expander.
Mandibular Jackson Expander.

Clinical Procedures:

1. One-week prior to taking impressions, separate the Mandibular molars. (Separators need not always be placed before impressions, but makes it easier for the laboratory to fabricate the appliance.)
2. Complete mandibular alginate impressions.
3. Pour model with lab stone. Complete the laboratory prescription form, send it and the model to **ORTHODONTIC TECHNOLOGIES.**
4. One week prior to delivery the patient must be seen for placement of separators mesial and distal of the Mandibular molar.
5. The appliance is delivered and adjusted for best fit.
6. Adjusting the compact RPE screw activates the appliance.
7. Instructions are given to patient on wear, care, and adjustment procedures.

Adjustment suggestions:

The Mandibular Williams Expander is adjusted by turning the screw **one turn every Wednesday and Sunday**. The expansion is continued until the proper transverse cuspid position is achieved. At times, it may be necessary to replace the .016NiTi wire with a stronger wire. Simply remove the original wire from the appliance, measure the new wire, replace the shorter wire with the longer. Then finish by gluing the new wire to the lingual surface of the most lingually displaced tooth. If needed, the appliance can be left in place until the Mandibular Fixed-Removable Lingual Arch (FRLA) is fitted to the mandibular 6-year molars for retention.

Length of treatment time, and results expected:

Treatment time varies depending upon the amount of expansion necessary. Each turn of the screw is equivalent to $\frac{1}{4}$ mm of expansion.

Hard tissue and soft tissue responses:

When the appliance is first adjusted to begin mandibular expansion, there may be tenderness in the child's cuspid area. This quickly passes, and the remainder of the treatment usually does not cause discomfort.

Stabilization of the teeth and bone following removal of the Williams Expander:

As mentioned above, a Fixed-Removable Lingual Arch appliance could be fitted immediately on removal of the Expander. This should stabilize the teeth and bone for a period of up to 12 months.

Precautions:

A parent or guardian should supervise the child's appliance adjustments.