



TECHNICAL GUIDE

Nitanium Palatal Expander Originated by Dr. Arndt



Description:

This is a fairly new appliance design in the Fixed-Removable family of appliances. It is an all metal appliance whose active wires are composed of thermally activated .036 Nickel Titanium. The appliance is designed to be inserted into horizontal tubes that are placed on the lingual of the first molar bands. Because of its unique 'W' shaped body wire the initial expansion force causes the molars to rotate first then, when the arms come into contact with the lingual of the posterior teeth, continues to expand the arch laterally. It is a self-activating appliance requiring very little chairside time once inserted.

Indications:

- Mesially rotated molars combined with a narrow upper arch.
- To gain up to 6 mm of lateral expansion.
- For patients with compliance and/or hygiene issues.

Contraindications:

- Nickel sensitivity.

Alternate Appliances:

- Pendex appliance.
- Quadhelix appliance (3D).

The Advantages of this Appliance are:

1. It is fixed and self-activating so patient/parent compliance is not an issue.
2. It is very streamlined, has very little bulk.
3. Soft tissue tolerance is very good.
4. Patient tolerance is excellent.
5. It is effective on both mixed and permanent dentition cases.

Clinical Procedures:

1. One week prior to taking impressions place separators for the 6-year molars. Separators need not always be placed before impressions and this step can be eliminated if the bands are going to be sized at the laboratory.
2. One week later size bands for the 6-year molars, or, indicate on the lab slip if you want us to do it for you. Remove the bands and place them in a bag or envelope to be stapled to the lab slip later.
3. Complete a maxillary impression.
4. Pour impression with lab stone. Do not pour bands up in impression.
5. Staple the bag/envelope with the bands in it to the lab slip. Send the case to the laboratory with a completed *Orthodontic Technologies* prescription form. If applicable, indicate the type of buccal attachment desired. We will provide the lingual attachments (horizontal Mia tubes).

Delivery Suggestions:

1. Separate the bands from the appliance.
<IMPORTANT: The Nitanium Palatal Expander should be chilled in the freezer before insertion to allow maximum wire flexibility. When the appliance is chilled it may be bent to facilitate placement. While mixing the band cement keep on ice or in ice water.>
2. Trial fit then cement the bands onto the 6-year molars.
3. Insert the Nitanium spring on one side of the arch first. Use a cold pack to convert the wire into a passive, easily distorted state. After the wire becomes passive, insert the other side of the appliance into the opposite lingual sheath. The doubled ends of the Nitanium spring are then locked into their respective lingual sheaths by ligating with a special tie loop.

Adjustment Suggestions:

Adjustments are not usually needed for this maxillary expansion device. It is one of the most trouble-free expansion appliances available. Automatic expansion of up to six millimeters can be built into the appliance. If more than 6 mm of expansion is needed, then a second appliance should be fabricated.

Length of treatment time and results expected:

As soon as the mouth temperature warms and reaches 94.5° F, the spring activation of the wire begins, and continues until the expansion of the arch is completed, usually within 3 to 6 months. Expansion gains of up to 6 mm can be expected. Following the completion of the expansion, the tie loops are cut, and the Nitanium spring is removed.

Hard and Soft Tissue responses to wear of the Nitanium Expander:

Usually there are no hard tissue responses that are negative in wearing this appliance. However, there can be instances of soft tissue injury by the patient getting hard foods caught between the activated wire of the appliance and the hard palate tissues. Careful attention to rinsing and brushing after meals will resolve these problems.

If there is some discomfort for the patient at the beginning of the expansion, cold packs, ice cubes, or ice water may be used to return the wire to a passive state and provide some relief. A mild pain reliever such as acetaminophen may also be used.

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

Immediately after the Nitanium Palatal Expander is removed a Fixed-Removable Lingual Arch (FRLA) should be fitted into the lingual sheaths of the bands on the maxillary 6-year molars to act as a stabilization and retention device for 6 to 12 months. At any time during this period Fixed Straightwire orthodontic treatment may be initiated.