

Short-Term, Intensive Use of the Tooth Positioner in Case Finishing

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When a patient's occlusion is nearly ideal and further changes in wires or brackets could create new problems, or when a patient's interest and cooperation have run out, we find a tooth positioner beneficial in finishing treatment.¹⁻⁴

There would probably be little argument that the tooth positioner is one of the most effective retention devices ever invented. Long-term compliance with this device is problematic, however, because patients consider it bulky and unattractive, and it interferes with function. The positioner does have the advantages of producing small amounts of detailed tooth movement (perhaps .25-.5mm) and conditioning the gingival tissues. This article will demonstrate how those benefits can be harnessed while compliance issues are avoided.

Fabrication and Delivery

Impressions and a wax bite registration are taken with the fixed appliances in place, but with the archwires and any auxiliaries removed. The casts are sent to a laboratory for fabrication of a custom tooth positioner according to the orthodontist's prescription. The laboratory will sculpt away the brackets from the casts, create a wax setup, and produce the positioner.

Any desired artistic positioning bends are added to the archwires after the impressions are made. The patient is informed that the braces will be removed at the next appointment, but that he or she will also receive a special device to help complete the treatment to a high standard of excellence. The patient is then scheduled to return in two to three weeks so that the final positioning bends can take effect.

After removal of the fixed appliances, residual adhesive is polished away with multi-fluted finishing burs, Duraflor* fluoride varnish is applied to the polished surfaces,⁵ and the tooth positioner is delivered. The patient is informed

that the positioner will be used to refine the smile, condition the gingival tissues, and improve the fit of the teeth. The positioner is to be worn 24 hours a day, except while eating and brushing, but only for one week.³

An instruction sheet is provided to the patient to reinforce compliance (Fig. 1). Patients should be encouraged to share these instructions with their teachers or employers to emphasize the need for their cooperation, especially since speech will be compromised. During the week of full-time wear, the patient is asked to "exercise" or chew into the positioner throughout the day—in other words, to clench into the device, hold for 10-20 seconds, and then release.

At the end of the week, the patient returns to have new impressions made for the fabrication of traditional retainers. While these retainers are being made, the patient is asked to wear the positioner at night and to exercise with it one or two hours a day to maintain the results.

Compliance with this arrangement has been exceptionally good. Patients are pleased to have their braces removed, but they also can readily observe the inflamed gingival tissue. Most important, the patients see "the light at the end of the tunnel" because they understand that the positioner commitment is short-term. They also realize that if results are not achieved with the positioner, additional treatment with braces may be required. Since the dentition is typically mobile immediately after the removal of fixed appliances, the teeth move readily during the week of full-time positioner wear. Consequently, in most cases the occlusion, smile, and gingival tissues improve dramatically within one to two weeks.

After the retainers are delivered, the patient is instructed to keep the positioner as a "backup retainer" in the event that the traditional retainers are misplaced or broken. In addition, the patient

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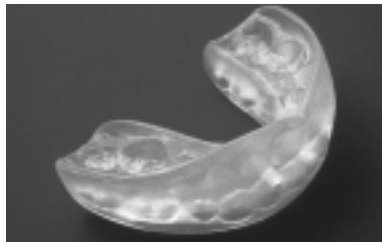
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FINISHING ORTHODONTIC TREATMENT WITH THE TOOTH POSITIONER

In order to achieve the best fit of the teeth, best esthetic appearance of the smile, and an improvement in the gum tissue health, we have chosen to use an additional and special finishing step in orthodontic treatment. A custom-fabricated device, called a Tooth Positioner, has been produced in a laboratory just for you. The Tooth Positioner can finalize or refine your current orthodontic results if it is worn as directed.

The Tooth Positioner is to be worn 24 hours/day (but only for one week) in order for it to be successful. During the time it is worn we ask that it be "chewed." In other words, repeatedly clench your teeth straight into this mouthguard-type appliance and bite together with some force for about 20 seconds and then release. This "force" will enable the teeth to move into the ideal mold created for your teeth. This "exercising" will straighten them even better than we have accomplished with braces, otherwise, you may need additional time with braces.

If the teeth are improved after the week of full-time wear, traditional retainers will be fabricated to replace the Tooth Positioner. The Positioner should still be kept safe to use as a "back-up" in case a traditional retainer is lost or broken. In addition, the Positioner may function as an excellent sports mouthguard.

As this device will be worn during school or work hours, there will certainly be some constraints in your ability to speak. Please provide a copy of this information to your teacher or employer and ask for their consideration and understanding during the one week period it is necessary for you to wear this device full-time. The Tooth Positioner is an expensive investment to finalize your orthodontics, but the superior results of this extra step are most worthwhile and beneficial. Thanks for your cooperation and extra effort in completing your care! The small sacrifice is worth the smile!

**WARNING! The week of full-time wear of the positioner is critical.
You will fail to achieve a fine result if you do not wear as directed.**

Fig. 1 Instruction sheet explaining importance and benefits of finishing with custom tooth positioner.

is encouraged to use the tooth positioner for sports, as it makes an excellent athletic mouth-guard. If small dental changes are noted during retention, the positioner may be used to correct them during a short period of full-time wear. Of course, we always remind our patients that retention is a lifetime commitment to periodic wear of retention devices.

Case Report

An 11-year-old female presented with a Class II, division 1 malocclusion with a maxillary transverse deficiency, moderate overbite, mild overjet, impeded eruption of the maxillary canines, crowding, and midline deviation (Fig. 2A). Class II combination treatment⁶ was initiated with preadjusted appliances and a maxillary Distal Jet** molar distalization appliance (Fig. 2B).

After six months of treatment, the Distal Jet was converted to a modified Nance holding arch. Jasper Jumpers** were placed at that time to help maintain the molar positions during subsequent retraction of the maxillary anterior teeth. Space closure was completed in another two months, and the Nance button and Jasper Jumpers were removed.

Fifteen months later, impressions were taken for a custom tooth positioner (Fig. 2C). Finishing bends were added to the archwires, and intermaxillary elastics were placed. After another three weeks, all fixed appliances were

removed and the positioner was delivered (Fig. 2D). Considerable improvement was seen after nine days of full-time wear (Fig. 2E). Impressions were taken for Hawley retainers, and the patient continued to wear the positioner for three to four hours a day and at night for another two weeks, when the Hawley retainers were delivered.

Conclusion

A tooth positioner is not appropriate for finishing every patient, but in selected cases it can enhance and accelerate the detailing of orthodontic treatment. We have found the investment in positioners as a part of our armamentarium to be an exceptional benefit for many patients and, thus, for our practices.

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Fig. 2 A. 11-year-old female with Class II, division 1 malocclusion. B. Distal Jet used with preadjusted appliances for maxillary molar distalization. C. Patient in finishing stages after 23 months of treatment. D. Fixed appliances removed and positioner delivered three weeks later. E. After nine days of full-time positioner wear, note change in maxillary archform without palatal expansion appliance.