

The Advantages of the Ortho-Tain™ Positioner

The Ortho-Tain™ positioner is made in 3 types. The first is the non-extraction (“N” series) appliance with a full complement of teeth including the second permanent molars. This positioner is designed in graduated sizes that vary by 1.5mm in the widths of the upper anterior teeth from the distal of one adult canine to the other. In other words, the smallest size (1N) will accommodate maxillary teeth from 39.5mm in total widths up to the largest size (7N) of 60.0mm or about 97% of all human variation. There are also two other styles; one that accommodates 4 premolar extractions (“X” series) consisting of 11 graduated sizes and one that accommodates upper premolar extractions (“U” series) consisting of 9 sizes.

The primary advantages of the Ortho-Tain™ positioner are*:

- (a) Their meticulous design where all of the different sizes can be depended on to provide consistent results. All the various sizes and styles have exactly the same relation of 0.5mm from an end-to-end relation vertically and horizontally and an identical super Class I occlusion.
- (b) All sizes and styles have a patented overbite inhibitor, which prevents no more than 0.58mm of overbite relapse after 2 ½ months of wear. Other positioners allow 2.19mm after the same period or almost 4 times more.
- (c) The overjet is improved 0.77mm with the Ortho-Tain™ positioner, while other positioners on the market are less than half as effective (0.94mm increase).
- (d) The Ortho-Tain™ positioner, with its design prevents overbite relapse, while at the same time advancing the mandible, which not only prevents temporomandibular joint problems, but can also correct 83% of existing TMJ problems in patients. Other positioners designed to allow all teeth to contact at once is very difficult or impossible to achieve even in custom made appliances, let alone the prefabricated versions. In fact, other prefabricated copies are made where 75% of the sizes have more plastic material between the arches vertically in the back than in the front. This allows more overbite to relapse in relation to overjet, which has a tremendous risk of causing temporomandibular joint problems.
- (e) The plastic material present between the upper and lower posterior teeth is exactly the same on both sides in all of the Ortho-Tain™ positioners. Other products have more than ½mm of plastic on one side when compared to the other 33% of the time.
- (f) Ortho-Tain™ positioners have the same jaw relation in every appliance (super Class I). Other products have as many as 77% of the canines and molars towards a Class II relation in excess of 1mm. In fact, 50% of the sizes are towards a Class II by more than 2mm.
- (g) All Ortho-Tain™ positioners have been carefully created to have exact tooth coordination proportions according to Bolton standards. Other products have upper and lower posterior teeth that are too small (by 2mm or more) in 89% of the sizes, while 56% had unacceptable anterior and total tooth discrepancies of greater than 1 SD.
- (h) Ortho-Tain™ positioners have 40% fewer sizes, which means that a 40% smaller inventory of appliances have to be stocked with no loss of efficiency of appliance function. Research has shown that there is no statistical loss of function when fewer sizes are used.

A typical case using the Ortho-Tain™ preformed extraction (“X” series) positioner is shown in Fig. 1. In (a) the initial malocclusion at 9 years, 10 months of age is shown with an excessive overbite with severe crowding, treated with 4 premolar extractions (b). This shows the

case the day the appliances were removed. The preformed Ortho-Tain™ positioner, size 4X, was inserted (c) and the patient was instructed to use the appliance at least 2 hours actively each day (biting force) and also while sleeping at night. The settled occlusion is shown after 2 months of wear (d). The patient wore the appliance only at night passively after 9 months of retention. The patient was retained for a total of 3 years, and is shown after being out of retention for 24 years (e). The lateral views are shown initially (f), at the end of active treatment (g), after 2 months of Ortho-Tain™ positioner use (h), and after 24 years out of retention (i).

Another case, Fig. 2, is shown initially (a), at appliance removal (b), and again after 2 months use of an “N” series (non-extraction) Ortho-Tain™ preformed positioner for 2 months (c). After 6 years out of retention, the patient is shown (d). The lateral view of this patient is shown initially (e), at appliance removal (f), after 2 months of Ortho-Tain™ positioner use (g), and after 6 years out of retention (h).

The greatest advantage of the Ortho-Tain™ positioner technique is its consistency of results in properly retaining overbite, overjet, and an ideal intercuspation of the dentition in an ideal Class I occlusion.

*The above comparative analyses consisted of data drawn from two samples of competitive products, together with the referenced material below. Various sizes were randomly selected and consisted of 47% of all sizes available.

Reference:

1. Bolton, W.A., The clinical application of a tooth size analysis, *Am. J. Orthod.* 48:504-529, 1962.
2. Moorrees, C.F.A., The dentition of the growing child, Harvard University Press, Cambridge, Mass., 1959.
3. Bergersen, E.O., The preformed orthodontic positioner and eruption guidance appliance, Northwestern University Graduate Dental School, Chicago, Ill., 1981.
4. Bergersen, E.O., Preventive and interceptive orthodontics in the mixed dentition with the myofunctional eruption guidance appliance: correction of crowding, spacing, rotations, crossbite, and TMJ, *J. Pedod.* 12:386-414, 1988.