

**IMPORTANT FACTS REGARDING THE USE OF THE
PREFORMED ERUPTION GUIDANCE APPLIANCE**

1. The Eruption Guidance Appliance (EGA) should be used in adult mal-occlusions with no more than 1 to 2 mm. of maxillary or mandibular crowding.
2. The EGA can be used to correct up to 4 mm. of anterior upper or lower crowding in the mixed dentition (where the larger deciduous canines or molars can be stripped up to 2 mm. per side for additional room) .
3. More excessive crowding than 4 mm. in the mixed dentition usually requires distalization of posterior teeth with bumpers or headgear, sagittals, etc.
4. The EGA can be used effectively in major functional problems consisting of up to 10 mm. of vertical overbite and 15 mm. of horizontal overjet.
5. The EGA can be used to improve an end-to-end antero-posterior molar relation of 2 to 3 mm. severity or in Class II molar relations.
6. The EGA is not recommended for uncooperative or resistant patients.
7. The EGA is not recommended if the patient has a history of severe temporomandibular joint problems.
8. The EGA is an effective corrector of minor TMJ problems where an overbite and overjet is present and where the disc can be recaptured within a Class I mandibular position.
9. The EGA is not recommended for cases with undeveloped root apices in the incisal segments.
10. The EGA is not recommended in cases with congenitally missing, extra or adversely impacted permanent teeth.
11. The EGA is not recommended in cases with more than 3 mm. of incisal spacing of the upper or lower incisors, unless they are closed first with a Hawley retainer.
12. Greater spaces (beyond 3 mm.) can be corrected when due to an excessive overjet. When the overjet is corrected with the EGA, these greater spaces will usually close.

13. The EGA is not recommended for full Class III molar relations where the upper molar is one full tooth distal to its antagonist.
14. The EGA is not recommended in cases with severely tapered or square shaped arch forms.
15. The optimum time to begin the use of EGA is anytime prior to the eruption of the permanent canines and first premolars.
16. The timing is important due to the infantile periodontal fiber status of the embryonic fiber layer. These fibers do not resist tooth movement and a new occlusal level is established before the infantile fibers are converted to adult collagenous bundles "fixing" the tooth's position when the tooth movement prior to the establishment of the adult fiber bundles probably resists relapsing tendencies more effectively than that experienced following standard orthodontic treatment performed after these adult fibers are established when the eruption potential is diminished.
17. The EGA corrects vertical overbite at the rate of 0.6 mm. per month, however, deep overbites generally correct at the rate of 0.8 mm. per month.
18. The EGA corrects horizontal overjet slightly more rapidly at 0.7 mm. per month, however, severe overjets generally correct at the rate of 0.8 mm. per month.
19. The EGA appliance cannot perform lingual root torque, therefore, overjets in excess of 5 mm. with upright maxillary incisors usually will tip lingually and therefore should be corrected only with an understanding of the possibility of correcting the torque with some limited fixed appliances. This is particularly pronounced when spaces are also present.
20. Severe horizontal overjets up to 15 mm. can be corrected with the EGA provided the maxillary incisors are labially tipped and will result in an upright position when fully corrected, otherwise bands will probably be needed for torque.
21. Severe overbite cases correct with the use of EGA by an opening of the mandibular plane with some depression of the anterior teeth and maximal eruption of the posterior teeth.
22. If these above cases are treated while the posterior teeth are erupting it is optimal. If the treatment is accomplished after the posterior teeth are fully erupted, the created posterior open bite will take considerably longer to close with the eruption of the posterior teeth and will usually relapse more readily regardless of the retention technique.

23. For every 2.5 mm. of overbite correction, the mandibular plane angle opens an average of one degree.
24. It is important to retain the case until posterior and anterior facial growth has fully compensated the mandibular plane angle opening or until the end of the pubertal growth spurt particularly in poor morphological prognosis cases.
25. If the vertical overbite correction is accomplished with the EGA during posterior eruption before they reach occlusal contact with opposing arch, the retention of the newly established occlusion is more successful than when the correction is made after full posterior eruption has already taken place.
26. If the mandibular plane angle or lower face height (ANS-Me) exceeds 2 S.D. (39°) and is accompanied with a deep overbite, the EGA should not be used.
27. There can be vertical overbite relapse if the correction is not retained but will be less than with conventional orthodontic treatment done at a later maturity stage when the EGA is used during or before the eruption of the permanent posterior teeth.
28. Vertical overbite correction with the EGA can cut active fixed appliance treatment time of a severe overbite case by 15 to 22 months when the EGA is used as an adjunct to orthodontic treatment.
29. In these above cases the EGA can be used effectively to correct the overbite prior to banding while the posterior teeth erupt and then at a later time fixed appliances can be placed to finish the case with the incisor torque, over-rotations, or molar adjustments taking perhaps only 4 to 6 months instead of the standard 22 to 28 months (required to correct severe overbites). In these cases the margin of the EGA can be trimmed back to accommodate fixed appliances and worn at the same time to further correct and hold the overbite and overjet correction.
30. The EGA can correct about 70% of the overbite problem in an 8-month period with further correction to perfection taking place during the next few months of the retention period, using the same EGA appliance.
31. Horizontal overjet is usually corrected more easily with the EGA than overbite obtaining about an 80% correction during the same 8 month period, again with the remaining correction taking place during the next few months of the retention period.
32. Minor overjet (4 mm. or less) can be corrected with only nighttime wear of the EGA while overbite requires exercise during the day. It is recommended, however, that daytime exercise be used for the correction of both problems.

33. There is an 18% pre-treatment incidence of patients with TMJ symptoms (from a sample of 67 children) while after a mean length of 2 years of EGA use there was a 4.5% incidence.
34. Eighty-three percent of the children having TMJ symptoms (sample size = 67) initially were free of those symptoms at the end of 2 years of EGA wear. Most of those cases had deep overbites initially (mean 5.9 mm.) and minimal overbites after 2 years of treatment (2.2 mm.), while the 2 cases that did not have the symptoms corrected both had anterior open bites. All 83% of those corrected were free of symptoms 5 years later.
35. It could be postulated that in that the mandible might have been brought forward out of the posterior displacement together with the elimination of the overbite, the TMJ symptoms have been eliminated.
36. Since standard fixed orthodontic treatment only improves about 50% of those symptoms in patients undergoing treatment, while the EGA eliminates 83%, it might be advisable to correct TMJ symptoms in this manner (EGA) at an earlier age when morphology can be easily altered.
37. The pre-treatment incidence of TMJ symptoms on all of the 102 consecutively-treated cases using the EGA was 16.7% while for those starting regular fixed appliance orthodontics the pre-treatment incidence is about 41%.
38. There is no evidence of root resorption being caused by the use of the EGA using periapical and frontal cephalometric radiographs.
39. The EGA can successfully correct premolar crossbites quite easily particularly if the teeth are not fully erupted. When the teeth are fully erupted, it takes standard daytime wear of 2 to 4 hours for approximately 2 to 4 months.
40. Incisal crossbites can also be corrected with the EGA but with difficulty unless it is worn full time for 2 days to one week.
41. Horizontal overjet in the growing child is corrected (especially if there is interproximal contact between all maxillary teeth) by restricting or stopping forward and downward growth of the anterior maxilla as well as moving the dentition distally or at least preventing its anterior migration.
42. Horizontal overjet treatment in the adult is accomplished by lingually tipping the upper incisors and labially tipping the lower incisors. More relapse can be expected in these adult cases as a result. For this reason, adult cases with more than 4 mm. of overjet are not recommended to be treated with the EGA.
43. Little or no opening of the bite or eruption of the posterior teeth occurs in cases

with minimal pre-treatment overbite.

44. In cases with no pre-treatment overbite, even cases with excessive (beyond 2 S.D.) lower face height (ANS-Me) or mandibular plane angle can be treated with the EGA.
45. Gingival tissue recession occurs in only 1.6% of gingival areas with a mean recession of 0.3 mm. of the areas suspected of being affected.
46. A shortening of the clinical crowns of the maxillary anterior teeth occurs in about 30% of cases (mean change of 0.7 mm.) probably due to depression of these teeth.
47. No change in gingival tissue (or improvement) occurs in 98.4% of tooth areas following 6 months of EGA wear.
48. Cooperation of 3 to 4 hours per day can be obtained in 60% of the children while 2 to 4 hours per day is obtained in 70%.
49. 61% of initial overbite is corrected in 5 months.
50. 70.5% of initial overbite is corrected in 8 months.
51. 26.1% of cases are finished to within 0.5 mm. overbite perfection.
52. 52.2% of cases are finished to within 1.0 mm. of overbite perfection.
53. 68.1% of cases are finished to within 1.5 mm. of overbite perfection.
54. 81.2% of cases are finished to within 2.0 mm. of overbite perfection.
55. The average mean maximum overbite correction is 84% using 1 mm. as perfection in 69% of 102 consecutively treated cases.
56. 68.8% of initial overbite remained corrected after 23½ months.
57. Two open-bite cases closed vertically an average of 2.6 mm.
58. Open-bite after 9 years of age is not recommended to be treated with the EGA.
59. Open-bite can be corrected under 9 years of age provided thumb sucking and any anterior tongue thrust is non-existent or corrected at the same time.
60. If initial overbite is over sample mean of 5.2 mm., the correction rate is 0.37 mm./mo. \pm 0.27 mm.

62. 60.5% of initial overjet is corrected in 5 months.
63. 80% of initial overjet is corrected in 9 months.
64. 85.5% of initial overjet remained corrected after 23½ months.
65. 55.9% of cases finished to within 0.5 mm. overjet perfection.
66. 70.1% of cases finished to within 1.0 mm. overjet perfection.
67. 85.3% of cases finished to within 1.5 mm. overjet perfection.
68. 89.7% of cases finished to within 2.0 mm. overjet perfection.
69. The average mean maximum overjet correction is 94% using 1 mm. as perfection in 69% of 102 consecutively treated cases.
70. If initial overjet exceeds sample mean of 5.3 mm., the correction rate is 0.79 mm./mo \pm 0.37 mm.
71. If initial overjet is less than sample mean of 5.3 mm., the correction rate is 0.66 mm./mo \pm 0.54 mm.
72. Any severity of overjet or overbite can be corrected with the EGA appliance as long as adequate facial growth remains.
73. Overbite correction in the female is extremely critical since vertical facial growth (ANS-Me) is so limited as the pubertal spurt begins. At 11 years 4 months of age (at the start of the pubertal spurt) only 4 mm. of vertical growth remains in the female. Considering the dependency of retention success on facial growth, 4 mm. of overbite should be corrected in the female by 11 years 4 months of age; 6 mm. by 8 years 9 months; 7 mm. by 7 years 4 months; and 8 mm. by 6 years 1 month.
74. Overbite in the male is not as critical since at the start of the pubertal spurt 6.5 mm. of vertical anterior alveolar growth (ANS-Me) remains; 8 mm. by 10 years 9 months; 9 mm. by 9 years 9 months; and 10 mm. by 8 years 9 months.
75. No more than 4 mm. of overbite and overjet should be corrected in the adult since there is a strong tendency for increased labial mandibular incisal tipping in cases of greater severity.
76. In incisal crowding greater than 4 mm. in the mixed dentition, the addition of

a bumper or headgear can effectively provide an additional 3 mm. in the lower or/and upper arch.

77. The mandibular bumper can effectively speed the overbite correction when used with an EGA appliance.
78. The overbite can be accelerated when the second permanent molars are erupting by cutting one-half inch from the posterior portion of the EGA.

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