

The Reverse-Pull Face Mask

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The reverse-pull face mask or headgear has two basic functions. When used orthopedically it will move the maxilla forward as it relates to the anterior cranial base. This type of correction is useful in treating the Class III patient or the skeletal Division two patient. The second function of the reverse-pull headgear is orthodontic. It can be used to bring maxillary posterior forward in what is known as “burning anchorage”.

The orthopedic use of reversepull headgear is by far the most common, so we shall begin by examining this treatment first. The position of the maxilla as it relates to the anterior cranial base can only be diagnosed via a cephalometric analysis. I prefer using the Bimler analysis and the Sassouni Plus analysis for this critical diagnosis. When using the Bimler analysis the position of the maxilla is diagnosed by evaluating factor one the “N” — “A” line. When the maxilla is behind the anterior cranial base this angle becomes negative and a yellow wedge is formed between the green A-Vertical and the red factor one line. (See fig. #1) When using the Sassouni Plus analysis the position of the maxilla is diagnosed by comparing the anterior nasal spine to the anterior facial arch. (See fig. #2)

The reverse-pull headgear should be used in any Class III patient that still has the possibility of being treated without mandibular orthognathic surgery. The objection in this situation is to treat the maxilla forward to it's maximum genetic potential.

When treating the skeletal Class I or Class II patient the clinician should still evaluate the position and size of the maxilla as it relates to the anterior cranial base. For example, it is not uncommon to find the skeletal Class II patient with a retrusive maxilla. This presents the paradox of treating the maxilla forward which initially increases the Class II skeletal overjet before the mandible can be correctly advanced with a functional orthopedic appliance. If the factor one in the Bimler analysis is minus four or greater, then the reverse-pull headgear should be employed to advance the maxilla. A second consideration is the angle of the upper lip in the female patient as it relates to the nose. When the nose appears large and the factor one is negative, using the reverse-pull headgear can greatly improve the esthetics of the patient's profile.

There are some basic rules that one should follow when using a reverse-pull headgear for orthopedic therapy.

- (1) The elastic forces should begin with 5/16” 8 oz. for the first four weeks of treatment, then be advanced to 16 oz. per side.
- (2) An orthopedic appliance (usually a three way schwarz) must always be worn to support the heavy elastic traction and to prevent the loss of anchorage on the maxillary arch. (See fig. #3)
- (3) The elastics should attach at the first bicuspid, or deciduous first molar area and should be adjusted to pull as parallel to the occlusal plane as possible and not irritate the lips.
- (4) Minimum wearing time is ten hours per day. However, the patient should be encouraged to wear the reverse-pull headgear as much as possible.
- (5) When treating a Class III patient occlusal coverage of acrylic should be used on the maxillary orthopedic appliance. (See fig. #3)

A second use for the reversepull headgear is to “burn anchorage” on the maxillary arch. The elastic forces should range between 4 1/2 oz. and 8 oz. Again the elastics should be



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Fig. #1



Fig. #2



Fig. #3



Fig. #4



attached to the face mask to pull as parallel to the occlusal plane as possible. Usually the elastics are attached to the maxillary second permanent molar with all four dental units being moved forward enmasse. However, the elastics can be attached to the maxillary second bicuspid first and then transferred to the maxillary molars to “burn anchorage” in segments. Minimum arch wire size for using the reverse-pull headgear to “burn anchorage” is .018 steel.

The reverse-pull headgear is constructed in two basic designs. The pedo version for use in the primary and mixed dentition, (See fig. #4), and the standard version for use in the permanent dentition. (See fig. #5) The 8 oz. elastics should be crossed in the pedo version to obtain the full eight ounces of force.

The reverse-pull headgear can provide a new dimension in your orthopedic and orthodontic therapy. Dr. Truitt will be conducting a three day seminar in Chicago, Illinois, November 4th, 5th & 6th, 1994 on using the Bimler and Sassouni Plus cephalometric analyses. Understanding these analyses will provide the doctor with great insight into the use of reverse-pull headgear therapy. For further information contact Frank Fox or Bobby Middle at 1-800-521-2351.