

AOA Appliances, etc.

AOA ALLESEE ORTHODONTIC APPLIANCES
IN PARTNERSHIP WITH YOUR PRACTICE
VOLUME 1, NUMBER 1, 1997

Welcome to Appliances, etc.

We are very proud to introduce to the profession our new newsletter, *Appliances, etc.* Each issue, to be published semi-annually, will share both doctor and laboratory insights on appliance designs, modifications, clinical applications, practice pearls and other information of related interest. As a supplement to our nationwide attendance at component meetings, presentations at study clubs and visits to individual practices, *Appliances, etc.* is designed as a unique communications resource, committed to maintaining and enhancing the dialogue between orthodontic laboratory and clinician.

Our premiere issue features Dr. James Eckhart of Manhattan Beach, California, discussing his innovative MARA appliance. This new alternative to the traditional Herbst, developed in conjunction with Dr. Douglas Toll of Frankfurt, Germany, has been utilized successfully in Dr. Eckhart's office for several years now. AOA is the exclusive lab source for this innovative new appliance.

Also featured in this first issue is a summary of a comprehensive research project conducted by Dr. Timothy Bussick of Fort Wayne, Indiana, on the clinical performance of the Pendulum/Pendex appliance. This was the subject of Dr. Bussick's master's thesis at the University of Michigan and the results are truly impressive.

I'm very excited about our new newsletter and would welcome your participation in future issues. If you have design modifications, pearls you use in your office with your appliances, or any other ideas which you would like to share with the profession, please drop me a note or call me toll-free at 800-262-5221.



I'm looking forward to hearing from you,

David Allesee
General Manager, AOA
Laboratory

The MARA Appliance



by James Eckhart, D.D.S.
Manhattan Beach, CA



HISTORY – Economic conditions have caused more parents to leave the home to earn the second income that is required to live in today's society. The results have become quite obvious to the orthodontic profession: the absence of a parent at home after school and the relaxation of parenting rigor has affected patient compliance with headgear. Headgear is a generally less successful option than it was 20 years ago. Similarly, removable appliances such as Frankels, bionators and twin blocks have fallen out of favor due to the non-compliance issue. Out of necessity, Class II correction has migrated from removable appliances to methods of fixed non-compliance therapy including Herbst®; Pendulum and Jasper Jumpers.

Although capable of splendid Class II correction, fixed appliance therapies do present potential side effects which will vary with the particular appliance: frequent breakage and difficult repairs, lower incisor proclination or mandibular rotation,

continued on following page

patient complaints from cheek or tongue discomfort, and complex appliances that are difficult to master.

Having utilized removable functional appliance therapy in the '70s and '80s, I knew it could work, but I began searching for a way to avoid lost and broken appliances, which were expensive for parents and ineffective for my practice. I began utilizing Herbst and Jasper Jumpers in the late 1980s, and had many successful treatments, but patient complaints were common because of lip/cheek irritation. After personally observing that most Class II's involve more of a small mandible than protrusive upper teeth, and confirming it through the literature, I never pursued molar distalization appliances.

DEVELOPMENT – By 1991, I was attracted to an appliance created by Douglas Toll, of Germany, which he called the MARA (mandibular anterior repositioning appliance). It consisted of cams on the molars which guided the patient to bite into Class I, but the cams were low bulk and easily tolerated by the patient. Working with Dr. Toll, I began experimenting with ways to improve the appliance's reliability and to provide greater flexibility in adjustment. By 1995, with help from Ormco and AOA, a new design was provided to a group of doctors for additional clinical trials. The clinical trials were a success and feedback from my table clinic at the last two AAO meetings was extremely positive. AOA has now taken on the project and have the exclusive ability to fabricate the appliance from models you send to the laboratory.

DESCRIPTION – The first molars are covered with stainless steel crowns due to the strength advantage they maintain over molar bands to resist tearing. The teeth do not require any reduction and a selection of 5 crown sizes suffice for any case.

The lower molar crown design has a double tube on it, one an .045 and

the other an .022 x .028 for normal treatment mechanics. The lower crown also has an .059 arm projecting perpendicular to its buccal surface which engages the cam arm of the upper molar. The lower crown may have a lingual arch soldered to it for stabilization during the orthopedic part of treatment if no braces are utilized.

The upper molar crown design has a double tube on it, one an .045 and the other an .022 x .028 for normal treatment mechanics. In addition, the upper crown has a large square tube (.062) into which slides the cam arm which is .060 square. The buccal position of the upper cam arm is controlled by torquing it with a simple tool. The anterior-posterior position of the upper cam arm is controlled by shims. The cam arm, once adjusted, is ligated into place.

The MARA is adjusted so that when the patient closes their mouth, the appliance guides the jaws into a Class I relationship. The appliance design allows for use in conjunction with braces but normally I do not for simplicity and hygiene reasons. Treatment time with the MARA is typically a year but the determining factor is when the tomograms show the TMJ has remodeled.

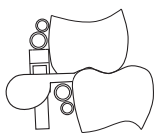
BENEFITS – I have found numerous benefits over other fixed appliance techniques. The absence of patient complaints can be attributed to the modest bulk in the molar areas and that the upper and lower projections tend to shield each other. There is no impact on speech and compliance is eliminated as an issue. The appliance mechanics are easy to master and, best of all, the cost is very modest. I have developed a video demonstrating the placement and adjustment of the appliance. A video can be provided with each initial order.

I am convinced that once you try the MARA appliance, you will realize the positive results I have seen in my office – efficient and profitable Class II treatment.

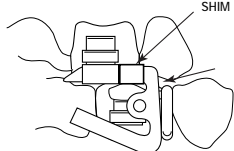
Orthopedic & Orthodontic Correction Of Class II For Adults & Children

HOW IT WORKS:

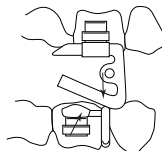
Frontal View



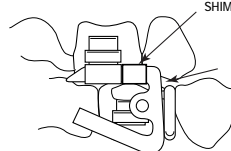
Buccal View



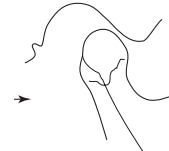
Attempted Occlusion In Class II



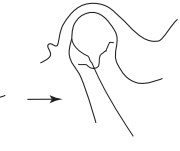
Successful Occlusion In Class I



Condyle Position Initial

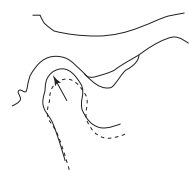


12-18 Months Later



CHANGES IT PRODUCES:

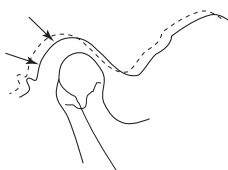
Condylar Growth



Condylar Reshaping



Fossa Remodeling



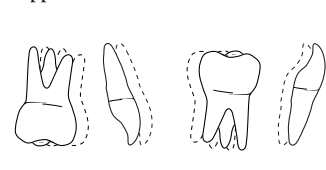
Temporal Bone Rotation

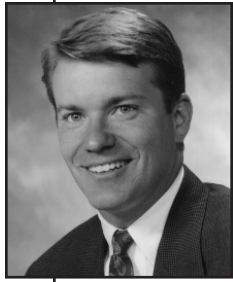


Maxillary Growth Inhibition



Dentoalveolar Movement Upper Lower





The Pendulum Appliance

UNIVERSITY STUDY CONFIRMS CLINICAL EFFICACY

by Timothy Jay Bussick, D.D.S., M.S.

The etiology, components, and orthodontic management of Class II malocclusion have been the subject of various and frequently differing philosophies among practitioners. Due to these differing philosophies, various treatment methods and techniques have been developed. Many of these treatment methods have the disadvantage of requiring good patient cooperation for effective and efficient correction of this malocclusion.

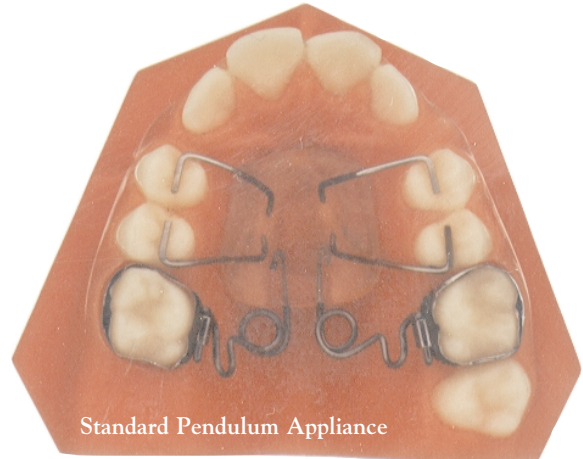
In the following paragraphs is a summary of my thesis on the Pendulum appliance, an innovative mechanotherapy, developed by Dr. Hilgers (1991). The purpose of the study was to evaluate objectively the treatment effects of rapid maxillary molar distalization resulting from the light continuous forces generated by the Pendulum's Titanium Molybdenum alloy (TMA[®]) springs. The appliance was designed to be used in the initial correction of Class II molars that, upon correction to a Class I molar relation, is followed by fixed appliance therapy.

The Pendulum appliance is a relatively new appliance used to correct Class II malocclusions. This study examined the treatment effects of rapid maxillary first molar distalization with the Pendulum appliance from a patient sample treated by eleven practitioners in the United States. Pre-treatment (T₁) and post-treatment (T₂) cephalograms were analyzed for one-hundred-and-one (fifty-six females and forty-five males) patients. The average pre-treatment age was twelve years one month. The average time between T₁ and T₂ radiographs was 7.1 months.

The purpose of this study was to evaluate the skeletal and dental changes associated with rapid molar distalization and the Pendulum appliance. The specific aims were to: 1) examine the short term skeletal and dental effects of the Pendulum appliance; 2) determine the magnitude and direction of maxillary first molar, first premolar, and incisor changes during Class II molar corrections utilizing the Pendulum appliance; 3) determine the anchorage loss and mesial movement of the maxillary first premolars and incisors; 4) determine the effects of maxillary molar distalization on patients' lower anterior facial height; 5) determine the effect of the erupted maxillary second molars on distalization of the first molars; and, 6) determine the effects of permanent versus deciduous dentition anchorage on distalization of maxillary molars.

The following treatment effects were noted:

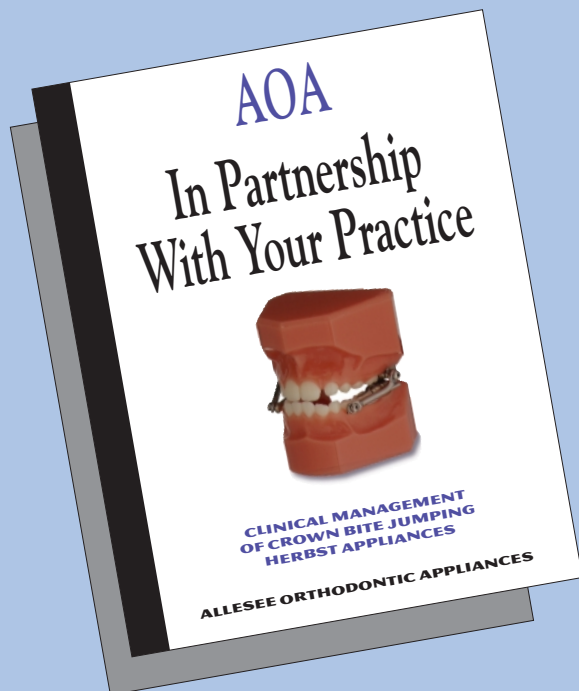
1. The Pendulum appliance primarily affects the maxillary dentition; however, there are secondary, more subtle effects on the soft tissue and skeletal components.
2. All maxillary molars were distally driven into an overcorrected Class I relationship. There was reciprocal anchorage loss in the premolars and incisors in the mesial direction.



3. The maxillary molar distalization contributed to seventy-eight percent of the total treatment effects, while twenty-two percent accounted for reciprocal anchorage loss of the maxillary first premolars. The maxillary central incisors proclined slightly during treatment.
4. Facial height increased slightly during treatment. The occlusal plane tipped upward and the mandibular plane opened slightly. There were no significant increases in lower anterior facial height between patients of high, medium or low Frankfort mandibular plane angles.
5. The effect of erupted maxillary second molars was significant. Increases in lower anterior facial height, Frankfort mandibular plane angle, and a decrease in overbite were noted in patients with erupted second molars. The maxillary first molars were extruded as well.
6. The effects of permanent dentition versus deciduous dentition anchorage was significant. Increases in maxillary first molar extrusion and lower anterior facial height and a decrease in overbite were noted in patients with permanent dentition anchorage.

The present results suggest that the Pendulum appliance is an effective appliance for distalizing maxillary molars and correcting Class II malocclusions. For maximum maxillary first molar distalization without an increase in lower anterior facial height, this appliance appears to be best used on patients with deciduous maxillary first molars for anchorage and the absence of erupted permanent maxillary second molars. Overall, the Pendulum appliance is an excellent appliance for maxillary molar distalization. The prudent clinician should be aware, however, that the most beneficial use of the Pendulum is for maxillary prognathic dental Class II patients. Therefore, this appliance may not be the appliance of choice for those Class II patients who demonstrate mandibular skeletal retrusion.

THE AOA BOOK ON HERBST



This manual is a compilation of protocols for the Herbst currently utilized by orthodontists and clinical staff who have successfully integrated the appliance into their practice. Even though the Herbst concept has been around since the turn-of-the-century, it's a hot topic again in contemporary orthodontics. The book includes:

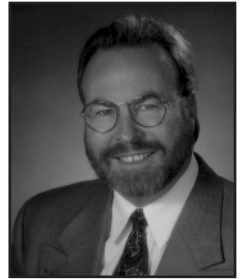
- Various designs utilized by the leading authorities
- Pre-fabrication and preparation for the Herbst
- Instructions for delivering and removing the appliance
- Treatment sequence with suggested activations

The AOA Book on the Herbst is available upon request. We will strive to keep it current with the latest appliance designs.

AOA CUSTOMER SERVICE LINE
800-262-5221

AOA on the Road

Max Hall and Paula Allen travel around the country representing AOA, attending numerous study clubs, society meetings and continuing education courses. Combined, they have over 40 years of experience in the laboratory business and are available to speak at your local meeting.



- DECEMBER**
5-9 NESO Meeting – New York
- JANUARY**
14-16 Indianapolis
16-17 Lingual Seminar – Indiana Univ.
16-17 Dr. Dischinger – Orlando
26-30 Connecticut/Rhode Island
- FEBRUARY**
5-9 Orlando
16-19 Dr. Hilgers – Phoenix
19-21 Dr. Grummons – Marina del Rey
27-28 Dr. Moyers Symposium – Univ. of Michigan
- MARCH**
6 Dr. Mayes/Ms. Allen – Denver
12-16 Vancouver
- APRIL**
12-16 North Carolina
17-18 Dr. Hilgers – Pinehurst
21-24 Dr. Hilgers in-house – Laguna Beach
24 Dr. Mayes (CBJ) – Atlanta
24 Tufts University, Boston
- MAY**
16-20 AAO Meeting – Dallas

TAKE 25% OFF

your first MARA appliance
and receive a video of
Dr. Eckhart demonstrating
how the appliance is utilized.

- Complete the information in the space provided.
- Enclose this coupon in the shipping box along with the case and send to AOA Laboratories, Attention: Patti Dodge.
- Shipping boxes and prescription forms can be obtained by calling Patti Dodge at AOA at 800-262-5221.

Name _____
Address _____

Phone _____

SLEEP APNEA/SNORING APPLIANCE

The Herbst Alternative

The profession has enjoyed the usage of Herbst Appliances, both fixed and removable, for many years in correcting Class II relationships. Design variations, including the acrylic splint concept popularized by Dr. Raymond Howe and Dr. James McNamara and the development of stainless steel crowns currently utilized by Dr. Terry Dischinger, Dr. Joe Mayes and Dr. Bob Smith, have convinced the profession that the Herbst is a proven commodity.

Interestingly, the removable acrylic design has now been utilized successfully for the Sleep Apnea/Snoring patient. The acrylic is designed in either cold-cure or vacuum-formed materials allowing for complete coverage over both arches to improve comfort and retention. Dr. Gene Kasperek in Rock Hill, North Carolina, has successfully utilized this appliance design for many years for his Sleep Apnea/Snoring patients. Further, Dr. Ernie Rider, Charlotte, North Carolina, has also been successful with the acrylic removable Herbst Appliance – please review his article, “Sleep Apnea Herbst” from the 1988 JCO.



AOA Can Build It For You

What to send to AOA: Quality stone, upper and lower models and a construction bite which accurately indicates not only the horizontal positioning of the mandible to the upper jaw, but also the required vertical of at least 2mm between the incisors. Important: the wax construction bite is the most critical element of the records to be forwarded to AOA. You may wish to request that our custom functional wax bite be forwarded in advance.

AOA CUSTOMER SERVICE LINE – 800-262-5221



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