

VISIT TP IN THE "WINDY CITY" FOR THE NATIONAL AAO MEETING, APRIL 29 THROUGH MAY 3, 2000.

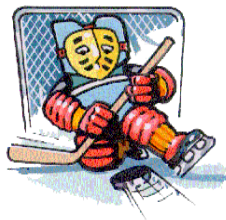


SPRING 2000

EDGE LINES

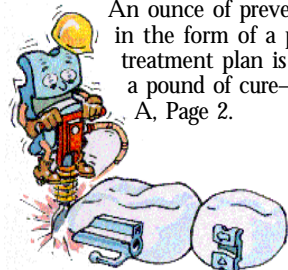
MORE GOALS IN STAGE TWO

Stage two goals have been redefined and expanded to seven, Cover Story.



IMPACTED MANDIBULAR SECOND MOLARS?

An ounce of prevention in the form of a proper treatment plan is worth a pound of cure—Q & A, Page 2.

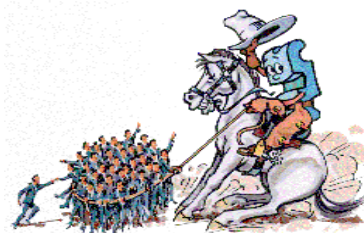


OUTRIGGER WINS COMPLIANT RACE

Outrigger fastest selling product ever introduced, Page 3.



TIP-EDGE GRAPHIC



Tippy ropes them in once again—this time in Sedona, Arizona, May 4-6, 2000.



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DR. N. ARSHAD PRESENTS FIRST LECTURE ON TIP-EDGE IN PAKISTAN NOVEMBER 1999, PAGE 4.

COVER STORY

Updated Stage Two Mechanics and Objectives

By Christopher K. Kesling, D.D.S., M.S.

Goals of the second stage of the Differential Straight-Arch® Technique have been expanded to seven. Today stage two goals include correction of posterior crossbites, final correction of Class II or III molar relationships, leveling of anchor molars, and perhaps most importantly the correction of midline discrepancies.

Revised Stage Two Mechanics

Pre-stage two: Stage two is preceded in most instances with a single pre-stage two adjustment. At this appointment the .016" archwires used during stage one are modified by replacing the anchor bends with mild bite opening sweeps in both maxillary and mandibular archwires. The premolars are bracketed and engaged to the archwires which are inserted into the rectangular molar tubes. No horizontal space closing elastics or elastomeric modules are used during pre-stage two to avoid adverse distobuccal molar rotations, Figure 1.

Stage two: At the stage two adjustment the premolars are ligated to the .022" stage two archwires which are engaged in the rectangular tubes. This approach does not significantly affect retraction and helps to level and align the molars. This arrangement eliminates the possibility of

overclosure of posterior spaces and consequent displacement of the premolars.

In extreme bimaxillary protrusions where maximum retraction is desired, conventional stage two mechanics are usually employed with the archwires engaged in the round tubes and no bracketing of the premolars until after spaces have been closed. This minimizes any possible frictional

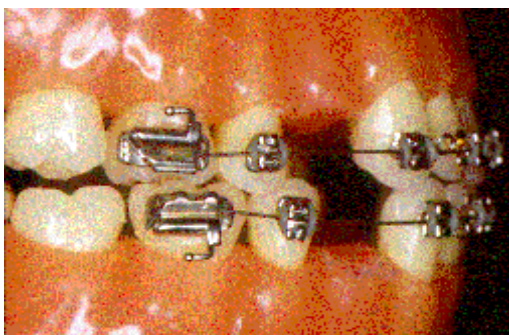


Figure 1. Pre-stage two adjustment. Bite opening bends are removed from .016" archwires and replaced with bite opening sweeps. Archwires are then engaged in the rectangular molar tubes for the first time. Premolars are also bracketed and ligated to archwires at this visit. No horizontal space closing forces are used until the next appointment when .022" archwires are placed.

resistance that might interfere with retraction (see case report this issue).

Revised Treatment Goals for Stage Two

Posterior space closure: This remains the most important goal of stage two and is accomplished through the use of either fixed elastomeric modules or removable elastics in conjunction with properly modified .022" archwires.

Correction of posterior crossbites: The correction of posterior crossbites is best attempted during stage two when the premolars are engaged to the archwires and heavier archwires are in use. Constriction or expansion of the .022" archwires employed in stage two rather than .016" archwires used in stage one is more effective in correcting posterior crossbites with less need for crossbite elastics.

Correction of Class II or III molar relationship: Any remaining sagittal molar discrepancy is corrected automatically by closing extraction spaces while maintaining an edge-to-edge incisal relationship. In some situations bracing mechanics may be required to accomplish this—particularly in the mandibular arch.

Correction of midline discrepancies: In the past, the correction of midline discrepancies was delayed until stage three of the Differential Straight-Arch Technique. This can result in undue distal tipping of one or two canines which prolongs stage three.

Midline adjustment can also be difficult during stage three of treatment, since all spaces are closed with little potential for significant mesiodistal repositioning. Correcting any significant mid-

Please see COVER STORY next page

COVER STORY**Updated Stage Two . . .** *Continued from page 1*

line discrepancy is a challenge during this stage, often requiring both uprighting springs and either Class II or III elastics. Anterior diagonal elastics may also be required to produce a final midline correction toward the end of treatment.

The correction of midline discrepancies is much easier when posterior spaces are present. During stage two, midlines can be adjusted quickly and easily through the selective use of Side-Winder springs to brake further distal tipping of canines, Figure 2.

At the beginning of stage two, the midlines should be examined

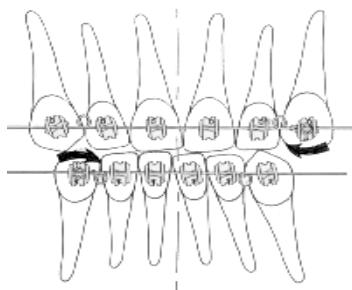


Figure 2. Selective use of braking mechanics (black arrows) during stage two to correct midline discrepancy.

carefully. If a discrepancy exists, braking can be used on one side of the arch during space closure to shift the midline toward the opposite side. This effect is enhanced by employing braking mechanics in the opposing arch on the opposite side to shift the midline in that arch toward the opposite direction, Figures 3A&B.



Figure 3A. Start of stage two. Side-Winders placed on maxillary left canine and first premolar along with mandibular right canine and first premolar to induce braking mechanics that facilitate midline correction during space closure.



Figure 3B. After midline correction, braking mechanics can be employed in all quadrants to minimize anterior retraction during final space closure.

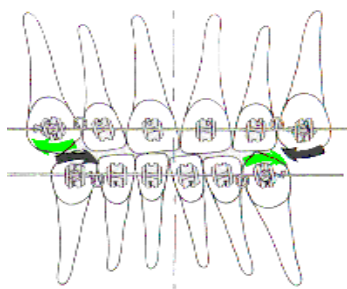


Figure 4. Combined use of braking (black arrows) and power tipping (green arrows) mechanics for correction of more severe midline discrepancies.

If a severe midline discrepancy exists, braking can be used along with power tipping on the side toward which the midline needs to be shifted, Figure 4. These mechanics provide a powerful and efficient means of correcting midline discrepancies that cannot be enjoyed with conventional edgewise archwire slots. ❏

Q's and A's

Q. I have noticed that mandibular anterior crowding tends to reappear when placing Side-Winder springs. This occurs with .020" archwires in both nonextraction and extraction cases. What is the possible cause and how can it be prevented?

Manila, PHILIPPINES

A. If there is not a normal contact point relationship between the distal of the lateral incisor and the mesial of the canine, the forces from the Side-Winder spring can cause the crown of the canine to move labially or lingually past the lateral incisor.

Assuming the brackets are at the proper levels (not too far gingivally), such contact point discrepancy could be caused by either tooth being rotated or an excessive/unnecessary lateral inset in the archwire. When using Tip-Edge archwires with vertically directed circles, there is no need for lateral insets as the circles serve this purpose.

Another cause of anterior crowding, in any stage, is the use of elastomeric cuspid ties when the cuspid hooks are 2 to 3 millimeters mesial to the canine brackets. The excessive contractive forces can overpower the rotational control from elastomeric ties on the central and lateral incisors. Cuspid ties (of any kind) are not to be used during uprighting and torquing procedures in stage three. ❏

Q. I have noticed a high frequency of impacted mandibular second molars on my patients. What could be causing this?

New York, NEW YORK

A. If you are following the Differential Straight-Arch Technique including treatment plans that do not include distalizing molars, you should not have this problem. Even if the second molars are not erupted at the start of treatment, they should not become impacted as a result of differential tooth movement. However, poor patient cooperation (intermaxillary elastic wear) can prolong stage one resulting in the first molars tipping excessively distally. This could impact unerupted second molars. The prevention is better elastic wear. The solution could be the use of an Outrigger at the first sign of poor elastic wear.

If mandibular second molars continue to be impacted and/or displaced lingually, reconsider your treatment plans. You must remember that mesial migration is an inherited tendency in all dentitions. This tendency increases with tooth size and if the first molars cannot migrate mesially as intended, the second and/or third molars may become impacted. ❏

Outrigger® FAQs

Since its introduction at the 1999 AAO meeting in San Diego, the Outrigger has become one of the fastest selling new products ever introduced by TP Orthodontics. After six months of use by orthodontists throughout the world, several questions have arisen regarding the successful clinical use of the Outrigger appliance:

Part-time elastic wear: The Outrigger is designed for use with patients who wear their elastics 24 hours a day. There is no reason elastics cannot be worn 24 hours a day (including during meals) when an overjet and/or overbite is present.

Abusive patients: If the patient has repeatedly destroyed his or her appliances, the Outrigger will suffer the same fate and is not indicated.

Widening of arch width: Prolonged use of the Outrigger with archwires of less than .020" diameter for 4 or more months may cause expansion of the maxillary molars. To prevent this, the archwires can be constricted or heavier archwires (.020" in diameter or larger with passive arch form—no constriction) employed.

Use of the Outrigger with Class III elastics: At first it was thought that the use of the Outrigger with Class III elastics might present a problem; i.e., the maxillary incisors occluding with the Outrigger hooks in the mandibular arch. This has not proven to be the case, with many orthodontists reporting successful use of the Outrigger with their Class III patients. In the near future TP

will be introducing shorter sizes of the Outrigger to simplify use of the appliance in the mandibular arch.

Position of identification tags: The colored identification tag on the Outrigger can be located to either the patient's right or left depending on individual doctors' preferences. The tags serve as a means of identifying the size (length) of the auxiliaries. However, recent research has found that the life of the Outrigger is extended if the coils close when the hooks are pulled down. Closing of the coils will occur if the ID tag is placed on the patient's right side.

If breakage occurs: The average life span of the Outrigger is 2 to 4 months. This varies widely depending on the habits of each patient. Since the cost of the Outrigger is minimal and replacement can be easily delegated to staff, any breakage and subsequent replacement is a small price to pay to ensure 24-hour elastic compliance.

Generally, it is recommended that the Outrigger be replaced every 2 to 3 months even if breakage does not occur.

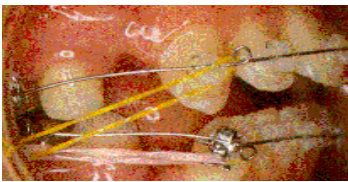
Improved durability: The durability of the Outrigger appliance has been significantly increased through a recent design change that minimizes adverse flexing, and a new heat treating process. Extensive laboratory and clinical testing has found that these improvements have extended the Outrigger's lifespan by 300% as compared to the original version.



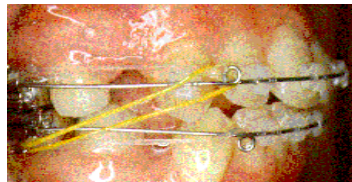
226-100 Outrigger Kit contains 30 appliances: 6 each of sizes 34, 36 and 38; 3 of all other sizes; plus 10 millimeter rulers.

CASE REPORT

This 25-year-old female exhibited a Class I bimaxillary protrusion (mandibular incisors +7mm to A-Po) with moderate lower anterior crowding. To correct the crowding and enhance retraction of the anterior teeth, four first premolars were extracted. Tip-Edge appliances were placed in both arches.



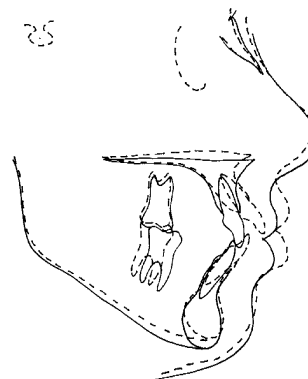
Place appliance. Maxillary and mandibular .016" archwires with reduced anchor bends placed in both arches. Horizontal elastic worn to power pin on mandibular right canine to retract and allow alignment of mandibular right lateral incisor.



Stage Two: Maxillary and mandibular .022" archwires and E-Links® in all quadrants to close extraction spaces. To maximize anterior retraction, premolars are not ligated to archwires. Friction is also reduced by engaging archwires in round molar tubes.



Stage Three: Same archwires as used during stage two with mild molar off-sets. To maximize aesthetics, dual IRTAs were used on the maxillary central incisors to torque roots to desired labial-palatal axial inclinations.



C.S. Female, 25 Years
 Extraction U44, L44
 Archwires Used 4 (2U, 2L)
 Treatment Time 21 Months
 Retention ... Upper Retainer, Lower 3X3

Cephalometric Changes:

	Start-Dotted	Finish-Solid
1 A-Po	+7.0 mm	+1.0 mm
Wits	+1.0 mm	0.0 mm
SN-MP	32.5°	35.0°
SNA	85.5°	85.0°
SNB	81.5°	80.0°
ANB	4.0°	5.0°
1-SN	120.0°	98.0°

Tip-Edge Presentation in Pakistan



Dr. Noeen Arshad of Islamabad, Pakistan receives an award during the 6th Pakistan International Dental Conference held November 25th-28th, 1999 in Karachi, for his lecture entitled, "An Introduction to Tip-Edge."

Course Conducted in Puerto Rico

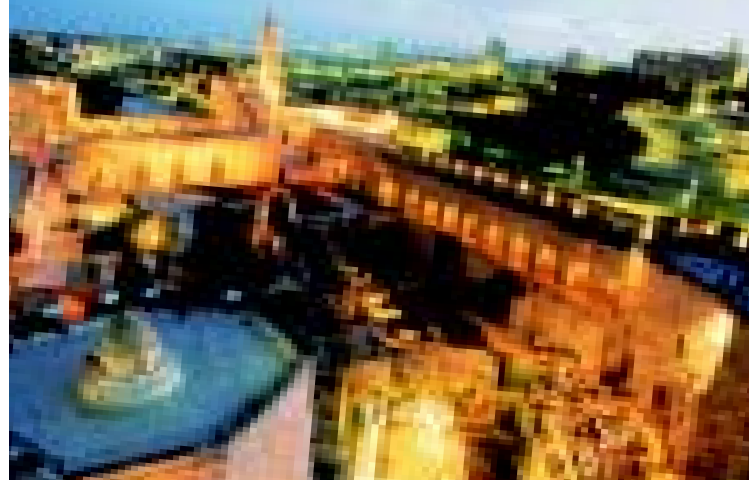


Professor Malcolm Meistrell and Dr. Joy Hudecz from Columbia University conducted a Tip-Edge course for the residents of the University of Puerto Rico, November 12 & 13, 1999.

Mark Your Calendar!

The 20th Congress of the European Begg Society of Orthodontics, in conjunction with an International Conference of Tip-Edge, Begg and Lightwire Societies will meet April 29th- May 3rd, 2001 in Jerusalem, Israel. For further details contact:

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Panoramic view of Jerusalem at night. In the foreground the Tower of David and the Citadel, parts of which date back 2000 years to the days of King Herod. The Tower of David now houses the Museum of the History of Jerusalem, a not-to-be-missed outing when you attend the EBSO 2001.

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