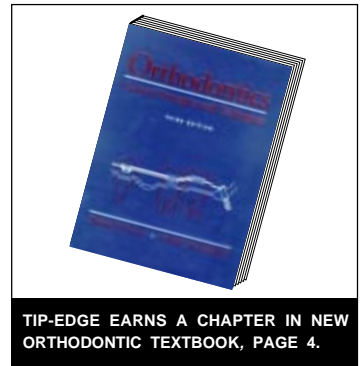


TP'S NEW SST LIGATURES PROVIDE A NEW LEVEL OF PERFORMANCE, PAGE 5.



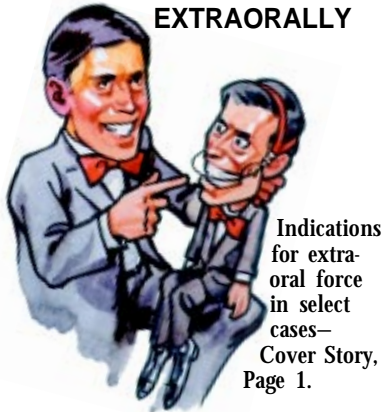
Published Quarterly In The USA



TIP-EDGE EARNS A CHAPTER IN NEW ORTHODONTIC TEXTBOOK, PAGE 4.

WINTER 2000-2001

EDGELINES
PARKHOUSE MOVES
EXTRAORALLY



Indications for extraoral force in select cases—Cover Story, Page 1.

SUPER SLICK™ TIES



Technologic breakthrough reduces archwire-ligature friction, Page 5.

TIP-EDGE GRAPHIC



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COVER STORY

Headgear and Tip-Edge—Do They Mix?

By: Dr. Richard Parkhouse, Consultant Orthodontist, Glan Clwyd Hospital, WALES

Tip-Edge succeeds in combining the ease of tooth movement of the earlier Begg appliance with the precision finishing of the "straight wire" appliance. Because of this, it successfully exploits the use of Class II elastics in the treatment of the majority of Class II cases. Indeed it is common everyday experience, among Tip-Edge clinicians, to be able to treat large overjets and deep overbites without the need for anchorage reinforcement. This is in contrast to conventional edge-wise derived systems, in which each bracketed tooth is effectively an "anchorage unit," requiring to be driven to its finishing position by bodily movement. It is hardly surprising, therefore, that straight wire orthodontists so regularly need to boost posterior anchorage, frequently with headgear, to achieve a result comparable to what Tip-Edge can achieve using only Class II elastics.

The main reason for preferring elastic traction to headgear is convenience to the patient. It requires a highly motivated patient to persevere with headgear wear, compared with intermaxillary elastics, while noncompliance with elastics can frequently be overcome with the use of Outrigger® traction hooks. There is no doubt that the Tip-Edge bracket lends itself ideally to Class II elastics, since it allows the use of very light forces, thereby avoid-

ing some of the pitfalls of Class II traction, such as elongation of maxillary incisors and clockwise rotation of the occlusal plane. Also, teeth seem willing to intrude more readily, if allowed to



Dr. R.C. Parkhouse

tip slightly in the process, which greatly helps overbite reduction. Sadly, many orthodontists, previously familiar with the Begg technique, have attempted to employ the same Class II mechanics with straight wire brackets, but with disappointing results, due to increased anchorage resistance—both vertically and horizontally.

Advantages of Headgear

Nevertheless, in a small number of cases headgear may have certain advantages over intermaxillary elastics, assuming that the patient has the necessary cooperation. Correctly worn, it provides a powerful supply of anchorage from an extraoral source, without requiring reciprocal anchorage from elsewhere in the mouth. Further-

more, undesirable vertical forces can be avoided, such as may be generated by anchorage bends in conjunction with Class II elastics, since the vector of force can be adjusted to produce intrusion. Lastly, there is some possibility of orthopaedic change and growth guidance to the maxilla.

As it happens, Tip-Edge is very responsive to headgear. While I continue to treat the vast majority of my cases with Class II elastics, headgear occasionally proves extremely useful. It is far more effective, and in smaller quantities, than with straight wire. Whereas many straight wire and edge-wise operators ask their patients for as many as fourteen hours of wear per day, Tip-Edge cases will be found to require only eight; in other words, sleeping hours only.

Indications

There are three possible reasons for considering headgear in treatment planning:

- To reinforce posterior anchorage.
- To gain space by moving maxillary posterior teeth distally.
- Growth guidance, particularly in the control of "long face syndrome."

Reinforcement of Posterior Anchorage

This will seldom be needed with a light anchorage appliance, except in very severe dis-

Please see COVER STORY next page

COVER STORY

Headgear and Tip-Edge . . . *Continued from page 1*

crepancies which might otherwise require additional extractions. If space has been lost prematurely by noncompliance or mismanagement of anchorage, it may be useful to combine headgear with Class II elastics.

A more specific indication may be where anchorage is not available from the mandibular arch. Whereas Class II elastics will inevitably exert a mesial component upon the mandibular arch, extraoral anchorage has no reciprocal effects. It is therefore sometimes possible to avoid mandibular arch extractions in borderline cases, in which intermaxillary elastics would risk making the mandibular arch too procumbent unless extracting teeth.

Gaining Space

Moving maxillary posterior teeth distally is a well established mode of treatment with conventional appliances. There is no reason why this cannot be used with Tip-Edge

too. An example is a mildly crowded maxillary arch or a small increase in overjet over a well aligned mandibular arch. Distal movement of maxillary first molars will avoid premolar extractions (perhaps allowing maxillary second molar extractions instead) so that a Class I occlusion can be obtained. There will be no residual extraction spaces to close. With Tip-Edge, alignment and distal movement of the entire maxillary arch can proceed concurrently—there is no need to complete molar distalization first. However, this mode of treatment is less suited to the mature patient, when distal movement of molars becomes increasingly hard work!

In severe cases, both the above functions may be required, first moving molars distally to gain additional space, prior to continuing the headgear as necessary to stabilize these teeth as posterior anchorage units. A striking example is shown in the Case Report below.

This patient presented with 17 mm of overjet with gross maxillary anterior crowding, the maxillary lateral incisors being bodily displaced directly behind the centrals. She had a full unit Class II occlusion over a crowded mandibular arch. In addition, she had a severe Class II skeletal discrepancy with a significantly high maxillary-mandibular planes angle of 39 degrees. This type of growth pattern seldom suits functional appliances and the patient refused surgery.

Such a severe combination of overjet and anterior crowding would require the extraction of four maxillary and two mandibular teeth if treated with Class II elastics, besides which the prolonged use of elastics in a high angle case may cause extrusion of mandibular molars, opening up the mandibular angle even further. However, only maxillary first and mandibular second premolars were extracted. Combination headgear, with a strong high pull component, was used to distalize the maxillary

first molars during stage one, concurrent with aligning the maxillary laterals. The patient proved an enthusiastic headgear wearer, enabling stage one to be completed in 7 months.

Headgear was discontinued during the brief stage two, but was resumed for a short time at the start of stage three to boost posterior anchorage during initial incisor torque. Due to the degree of root correction required, stage three lasted 1 year. No anchor bends were used and Class II elastics were only used sparingly during the final stages for interarch adjustment. The high angle growth pattern continued to open the mandibular angle to a small extent, even though extrusive treatment mechanics were avoided throughout. I know of no other fixed appliance capable of tackling such an extreme malocclusion, particularly within a treatment time of 22 months. Headgear was worn for 11 months only.

Continued on page 3 . . .

CASE REPORT

*by Doctor Richard C. Parkhouse
Clwyd, Wales*

An extreme overjet of 17 mm combined with gross maxillary anterior crowding over a crowded mandibular arch and a full unit Class II occlusion. There was a marked Class II skeletal pattern with an ANB angle of 6.5 degrees and a high maxillary-mandibular angle of 39 degrees. The mandibular incisors were 3 mm behind the A-Po line. The patient declined orthognathic surgery.



Combination headgear is distalizing maxillary first molars, while size 6 E-Links® retract maxillary canines along a .016" Special Plus archwire. Lower levelling and alignment with .014" Reflex nickel titanium archwire.



.020" archwires. Size 5 E-Links to close small spaces. Side-Winder springs placed on severely tipped maxillary laterals to facilitate rectangular wire insertion.



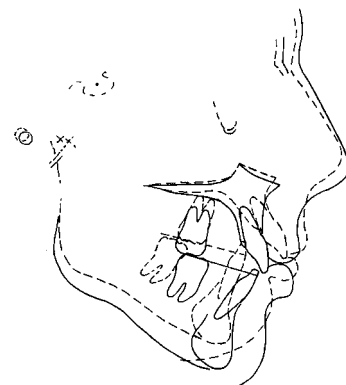
Rectangular stainless archwires (.0215" x .028") with gentle bite sweeps, pretorqued to produce a zero torque setting to maxillary and mandibular anteriors.



C.J. Female, 14 Years
Extraction U44, L55
Archwires Used 9 (4U, 5L)
Adjustments 11
Treatment Time 22 Months
Retention Maxillary Bonded
Palatal Retainer
Mandibular Hawley

Cephalometric Changes:

	Start-Dotted	Finish-Solid
SKELETAL		
SNA	78.5°	76.0°
SNB	72.0°	71.5°
ANB	6.5°	4.0°
SN/MxP	3.5°	7.0°
MxP/MnP	39.0°	32.5°
LA FH/TAFH	58.0%	59.5%
TEETH		
Overjet	17.0 mm	3.5 mm
Overbite	2.5 mm	0.0 mm
UI/MxP	114.5°	108.5°
LI/MnP	79.0°	99.0°
LI-APo	-3.0 mm	2.5 mm



COVER STORY

Headgear and Tip-Edge . . . Continued from page 2

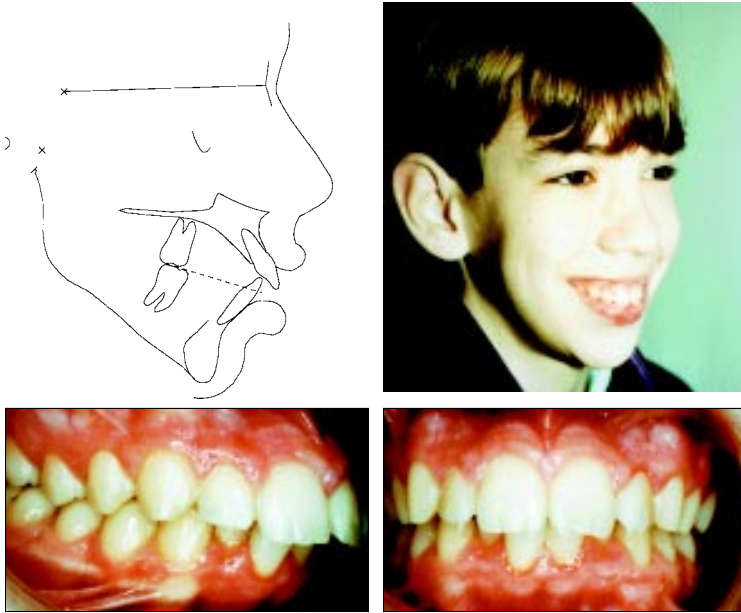


Figure 1. Cephalometric tracing, smile and intraoral photos of 13-year, 5-month male prior to treatment.

Growth Guidance

This may be a term that flatters the orthodontist. However, we are responsible for ensuring that we do not worsen an unfavourable growth pattern. High angle cases are those most likely to deteriorate, and may respond adversely if mandibular molars are allowed to extrude as

a result of Class II elastics and anchor bends.

Despite a high mandibular angle, the initial overbite of this 13-year, 5-month patient was increased and complete, Figure 1. The mandibular incisors were 7 mm in front of A-Po and the overjet was 7 mm. For this reason, combination headgear, com-

prising a distal and a strong intrusive vector of force to the maxillary first molars, was chosen as the anchorage source throughout treatment. Four first premolars were extracted.

Stage one in a headgear case will use horizontal maxillary E-Links to reduce the overjet, Figure 2. The tip-back bends mesial to the maxillary molar tubes are not for anchorage (since this is provided by the headgear) but to produce intrusion of the maxillary incisors as the overjet reduces, thereby correcting the "gummy smile." Meanwhile overbite reduction is achieved by conventional "straight wire" methods of levelling and aligning, aided by gentle bite opening "sweeps" in the archwire. Without Class II elastics, it may be necessary to include mandibular second molars earlier in treatment, in order

to prevent the first molars from tipping distally. The retractive stage two in this case was conventional.

It is not necessary to over correct the labial segments lingually prior to stage three, since the anchorage required for all tip and torque is provided by the headgear. The total treatment time was 21 months. There was a marked visual improvement in the gummy smile, Figure 3. Mandibular growth was unexpectedly good, and the vector of growth has been safeguarded throughout. No Class II elastics were worn at any time. Slight intrusion of the posterior maxilla may be attributed to the intrusive headgear, which appears in turn to have allowed some counter-clockwise rotation of the mandible. The headgear was only worn at night.

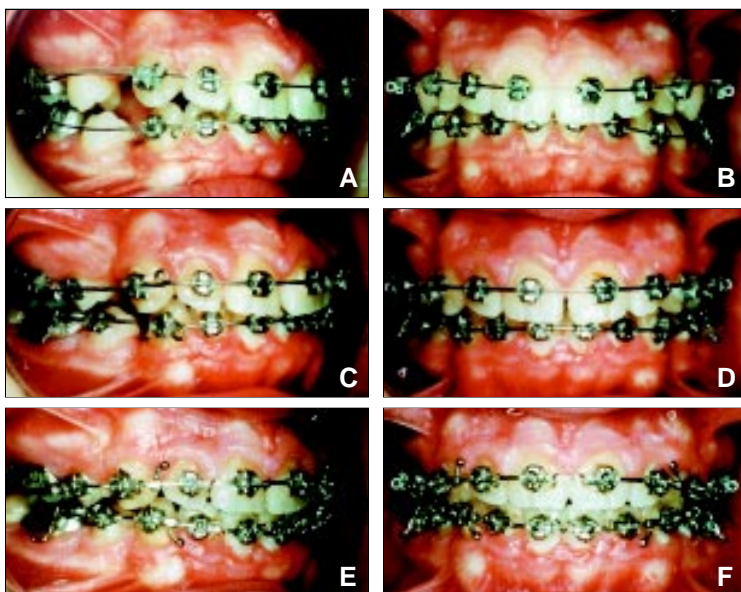
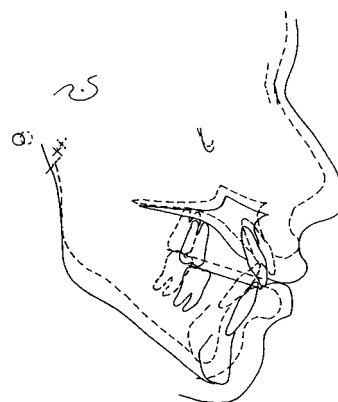


Figure 2 A-F. A-B) E-Links retracting the maxillary six anterior teeth. Bends in .016" archwires mesial to molars are for bite opening only. C-D) E-Links closing remaining extraction sites. Archwires of .020" ensure stability while headgear provides anchorage. E-F) Beginning of stage three with .0215" x .028" archwires. Power for all necessary tip and torque correction is provided by Side-Winder springs.



		Cephalometric Changes:	
		Start-Dotted	Finish-Solid
SKELETAL			
SNA	85.5°	81.0°	
SNB	78.0°	79.5°	
ANB	7.0°	1.5°	
SN/MxP	2.5°	5.5°	
MxP/MnP	38.5°	32.0°	
LAFH/TAFH	57.5%	56.5%	
		Start-Dotted	Finish-Solid
TEETH			
Overjet	7.0 mm	3.0 mm	
Overbite	2.5 mm	0.5 mm	
UI/MxP	120.5°	113.5°	
LI/MnP	95.5°	85.5°	
LI-APo	+7.0 mm	+5.5 mm	



Figure 3. Superimposed, before (dotted) and finish (solid) cephalometric tracing, smile, intraoral photos and chart of cephalometric changes. Combination headgear was used as source of anchorage.

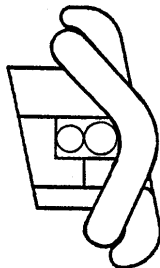
Preventing Outrigger® “Lock Up” with Tip-Edge Brackets

In some situations it can be difficult to properly adjust Outriggers so that they flip back into horizontal (uncomfortable) positions when elastics are not engaged. Instead the hooks will remain locked in their incisal positions when pulled down. This occurs due to the unique shape of the Tip-Edge archwire slot which allows more freedom of movement for both the archwire and Outrigger within the slot. While this freedom of movement facilitates bite opening and retraction, it can prevent the proper movement of the Outrigger hooks despite repeated adjustments of the Outrigger curvature.

This problem is easily remedied using one of two approaches. If the overbite is not too deep, the caps can be removed from the Deep Grooves of the maxillary incisor brackets. The Outrigger is then engaged behind the base archwire in the Deep Grooves. This prevents the Outrigger from twisting out from under the base archwire and locking into the incisal position. It has been found that this manner of engagement also decreases breakage of the Outrigger since it reduces wear between the Outrigger and main archwire.

However, if a deep overbite is present, the Outrigger should be engaged behind the tie wings as recommended for use with rectangular archwires. This facilitates bite opening as it preserves the one point contact between the archwire and Tip-Edge slot that is required for rapid bite opening.

With conventional twin edgewise brackets it is also sometimes helpful to use loose steel ligature ties to ligate both the main archwire and Outrigger in the lateral incisor archwire slots. This minimizes binding that sometimes occurs with tight elastomeric ties.



The Outrigger can be placed in the Deep Grooves of central and lateral incisors in selected cases to enhance action of the intermaxillary hooks.

A New Chapter is Written on Tip-Edge

Tip-Edge brackets and the Differential Straight-Arch® Technique are the subject of a chapter in the new orthodontic textbook, *Orthodontics: Current Principles and Techniques*. Entitled “Tip-Edge: The Appli-ance of the 21st Century,” the chapter was written by Drs. Peter C. Kesling, R. Thomas Rocke and Christopher K. Kesling.

This third edition containing 21 chapters was published in 2000 and edited by Doctors T. M. Graber and Robert L. Vanarsdall. This text will prove helpful to orthodontic graduate students and practitioners in the years to come.

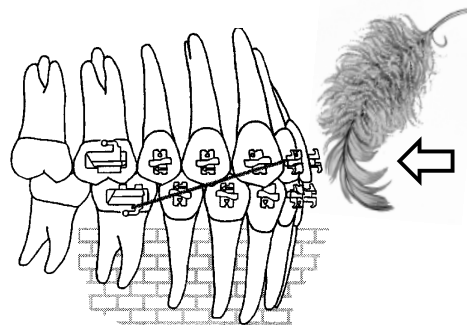
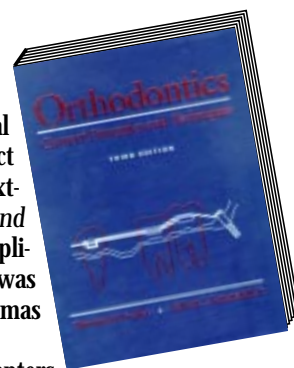


Illustration from Chapter 15 demonstrates that with Tip-Edge brackets, the “feather” light (2 oz.) Class II elastics can retract the maxillary teeth while simultaneously turning every mandibular tooth into an individual, anchorage unit.

To order latest textbook phone Mosby, Inc. (Order Fulfillment Department) 1-800-545-2522, between 8 AM and 7 PM central time. ☎

Q's and A's

Q. I am ready to finish the case except for one tooth. The mandibular left second premolar shifted lingually and I have been trying for three months to get it to move in line. I've used a wire ligature, Zing String® and it won't budge. Any suggestions?

Simsbury, CONNECTICUT

A. Make sure there is enough room to accommodate the tooth. If not, use a coil spring to open the space. The tooth should move to the archwire if tied with elastic thread and there is room. See the patient more often and tie the tooth twice in case one comes off or isn't tight enough. Don't bend the end of the archwire around the back of the tube. Remember the tooth needs space to move back in line.

Q. I am about to go to the flat wire on one of my patients but I remember reading in the TIP-EDGE GUIDE that “working knowledge of rectangular wire is essential.” I have never used a full-size rectangular archwire in pretorqued brackets. Do I know enough to place the flat wire?

Warsaw, POLAND

A. Place the flat wire just as we did in class. Make sure you have positive bracket engagement with the .022" wire (with molar offsets) before proceeding. Anneal the ends of the .0215" x .028"

wires and use the rubber wheel for easy insertion and cinching. If it was a deep bite case, place sweep bends in the wire distal to the canines. Place uprighting springs to activate the torque and also upright the teeth—usually canine to canine in nonextraction and all teeth in the arch in extraction. You do not use the Deep Groove with the flat wire—that is reserved for the nickel titanium Torque Bar. Remember, if used in the mandibular, the flat wire goes in without any sweep bends. Rectangular wire is the quintessence of finishing!

Q. I have a patient going into stage three. The patient is a skeletal Class III and I need to torque the mandibular incisors and move their crowns lingually to help mask the interarch discrepancy. Should I use a Torque Bar or a rectangular archwire?

Indianapolis, INDIANA

A. It sounds as though you need to tip not torque. In the absence of space in the mandibular arch, lingual crown torque on the incisors would tend to torque the roots labially. This is seldom required and usually contraindicated. Assuming your arch forms are coordinated and the patient has been cooperative with intermaxillary elastics for 12 to 18 months, you may need to reconsider your treatment plan. Extraction instead of nonextraction—in one or both arches? What teeth? Perhaps one mandibular incisor? To avoid inadvertent torque, the use of .022" archwires would be indicated for the final stage of treatment in skeletal Class III malocclusions. ☎

Round Up In Sedona Lectures By Dr. R. C. Parkhouse Available on Video



As the main speaker at TP Orthodontics' "Round Up in Sedona" in May, Dr. Parkhouse delivered two remarkable lectures. Now you can enjoy his experiences and delightful delivery via video tape in the convenience of your office or home.

His first lecture (90 minutes) is entitled, "Tip-Edge—What Does It Mean To Efficiency As Compared To 'Straight Wire'?" In his informative yet entertaining way Dr. Parkhouse covers the topic completely. This includes his racing of a straight wire case against a similar malocclusion treated with differential tooth movement. The reasons for the outcome are explained in detail.

The dynamics of the Tip-Edge archwire slot are explained such that even a "straight wire" orthodontist can comprehend. Case reports are sprinkled throughout to emphasize efficiency and demonstrate the quality of results. Controlling of the vertical dimension and opening deep anterior bites are thoroughly covered including the importance of flaring maxillary central incisors in Class II Division 2 cases *before* intrusion.

This first lecture is concluded with considerations for the occasional Tip-Edge cases that can be aided by extraoral force. Indications are given along with demonstrative case reports.

The second lecture, "Tip-Edge—New Horizons for Straight Wire" is 60 minutes in length. Dr. Parkhouse points out one of the flaws in E. H. Angle's original edgewise appliance. It requires the archwire to do two contradictory things—deliver tooth moving forces while providing stability. With Tip-Edge the rectangular archwire has but one task—to provide stability.

Rectangular stage three, which Dr. Parkhouse refers to as "entirely new technology orthodontics," is covered in detail. This includes choice of either plain or pretorqued archwires, step by step wire modification and assembly on typodonts.

The advantages of Tip-Edge torque over conventional edgewise (there are eight) are listed and the last, according to Parkhouse, is "absolutely golden." Case reports are included to demonstrate treatment with Tip-Edge brackets and the Differential Straight-Arch Technique. One patient, the mother reported, had four rows of teeth. As it turned out, she was correct. The last two case reports are of severe malocclusions, which reveal the versatility of the Tip-Edge bracket in treating "the impossible."

Dr. Parkhouse winds up his lecture with some insightful and uplifting off-the-cuff thoughts on the need for the pursuit of truth in orthodontics. He points out that in order to do this one must be able to shed all that is unnecessary. Tip-Edge, he feels, has done this and is light years ahead of all other fixed appliances.

These two lectures provide a review and update to those currently using Tip-Edge and will grab the interest of the uninitiated. One thing for sure—no orthodontist will fall asleep! Enjoy them yourself and/or share them with a colleague who may be Tip-Edge illiterate.

Ordering Information:

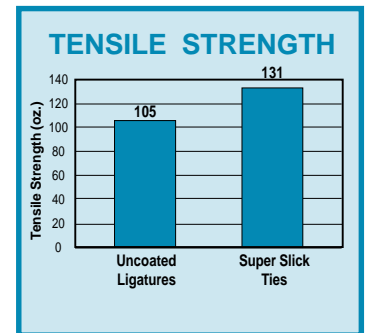
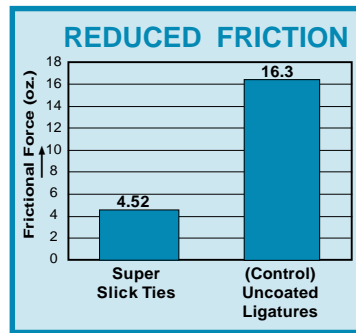
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Super Slick™ Ties—Finally A Virtually Frictionless Ligature

Reducing friction is a major goal of orthodontists. Bracket design, archwire materials and new metals continue to be introduced to help remedy friction.

Today a major breakthrough in reducing friction between the archwire and ligature has been made possible with Metafasix technology. Elastomeric ligatures are coated with a polymeric coating, creating a highly lubricious surface which becomes extraordinarily slippery when wet or moistened in the oral environment. This slippery surface virtually eliminates the drag force created between the archwire and ligature.

The Super Slick Ties have improved performance as seen in the graphs below. Not only is friction reduced, but their additional strength holds the archwire in place and allows for a virtually frictionless slide.



Metafasix technology has made TP's Super Slick Ties virtually frictionless, stronger and patient friendly for comfort.

Of course, reducing friction between elastomeric ligatures and archwires is not as critical in the Differential Straight-Arch Technique as it is with conventional "straight wire" mechanics. This is because with Tip-Edge brackets it is not necessary to initially retract canines individually along the archwire. Because all the teeth will tip freely under light forces, they can be retracted together *with the archwire*. Therefore, the brackets, archwires and elastomeric ligatures are traveling at the same rate. The only sliding friction occurs within the molar tubes where there are no ligatures.

However, these new, low friction ties should speed the closure of anterior spaces when it is necessary for the brackets to travel along the archwire. Also in a first premolar extraction cases, the Super Slick Ties on the second premolar brackets should speed space closure.

To order visit www.tportho.com or phone 1-800-348-8856.

Corrections

The Editorial Staff of TIP-EDGE TODAY would like to take this opportunity to apologize for errors, which occurred in the following issues:

Fall 2000: The cover story was authored by Dr. Mark J. Mele of Glenside, Pennsylvania—not Dr. Michael Mele.

Summer 2000: We incorrectly identified Dr. Michael Blau as Dr. Mike Matson in the Orthodontic Round-Up photograph on page 4.

Again, our sincere apologies and the TIP-EDGE TODAY staff will work harder to correctly identify individuals in all future issues.

Tip-Edge in the Philippines

Dr. Richard Parkhouse (center with loud necktie) of Wales instructed over 40 participants at a course held August 11-12, 2000 at the Shangrila Plaza Hotel in Mandaluyong City. Those in attendance not only enjoyed Dr. Parkhouse's quick wit, but the results obtained with his treatment finesse.



Tip-Edge Presentation to Postgraduate Orthodontic Students

Dr. Chris Kesling presented a one-day Tip-Edge lecture course to approximately 20 postgraduate orthodontic students from Columbia University, Montefiore Medical Center and State University of New York at Stony Brook. The presentation took place on Saturday, November 4th at the Ramada Inn in Armonk, New York. These schools and over 60 others worldwide are teaching Tip-Edge in their curriculum.

Orthodontic Center Hosts 60

Dr. Christopher Kesling gave a three-day Tip-Edge lecture and typodont course which was sponsored by TP Orthodontics and held at the Orthodontic Center November 15th-17th. A large group of orthodontists attended from Brazil. Cassia Coelho of TP Brazil and Dr. Jorge Cartarcone were instrumental in organizing their visit to the Center.

Dr. Rowney Furfuro of Leiria, Portugal brought approximately 10 orthodontists from Portugal. The course was presented in both English and Portuguese. Typodont exercises were held to familiarize all with Outriggers, Torque Bars and rectangular stage three.

Many of those in attendance brought records of their cases for review. The results shown were excellent demonstrating both diagnostic and clinical skills. The first year graduate students from Saint Louis University and Montefiore Medical Center also attended along with orthodontists from the U.S., Japan, Canada and Switzerland. 🇺🇸



November 2000 Tip-Edge Course—Front row, L to R; Drs. Fernando de Abreu Pereira of Brazil, Chris Kesling, Peter Kesling, Tom Rocke and Rudie Meyer of Switzerland.

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