THREE DOCTORS FROM RUSSIA VISIT THE CENTER—AUGUST '99. SEATED L-R: DRS. D. BALDRIDGE, I. YELISTRATOV, T. ROCKE, V. POTOCKY. STANDING: DRS. C. KESLING AND V. LI.

TIP-EDGE® TODAY

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DR. JORGE CATARCIONE POINTS TO DISPLAY: "TIP-EDGE TECHNIQUE = TREATMENT TIME REDUCTION," PREPARED BY THE BRAZILIAN TIP-EDGE SOCIETY FOR THE INTERNATIONAL CONGRESS IN RIO, PAGE 3.

FALL 1999

EDGELINES

SUPERIOR ANCHORAGE

Maximum anchorage control increases extraction options, Cover Story.

A LONG HAUL FOR CLASS II ELASTICS

Tip-Edge brackets permit Class II elastics to correct 13 mm overjet in a nonextraction case, Page 3.

SURPRISE FROM MEXICO

Mexican Tip-Edge Institute surprises P.C. Kesling with his portrait, Page 4.

TIP-EDGE GRAPHIC

SIDE-WINDER SPRINGS PROVIDE PATIENT COMFORT AND ORTHODONTIC RELAXATION

Side-Winder springs in conjunction with Tip-Edge brackets can upright and/or torque teeth 10 to 15 degrees in 6 months without further adjustment.

Similar uprighting or torquing through second and third order bends in the archwires with conventional edgewise brackets can require 3 or more appointments.

Source: Dr. G.A. Ramos, The Relative Effectiveness and Efficiency of Treatment in Class II, Division 1, Four Premolar Extraction Cases Amongst: Standard Edgewise, Straight Wire and Tip-Edge. 1998 Unpublished Thesis.

COVER STORY

Superior Anchorage Provides More Choices in Treatment Planning

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

As the pendulum swings back and forth between extraction and nonextraction treatment regimens, most orthodontists have managed to avoid jumping exclusively on either bandwagon. Many realize that while nonextraction treatment is the preferred treatment plan whenever possible, there are certain situations where the extraction of teeth is required to provide the most stable treatment result and a well balanced facial profile.

In the 1940s-1960s, when the extraction of teeth was indicated, the treatment plan was invariably the extraction of four first premolars. Today, however, due to improved diagnostic procedures and tools, the orthodontist has more choices when the extraction of teeth is indicated—choices that produce significantly better results and occlusions than can often be obtained with the extraction of the four first premolars.

The superior anchorage control offered by the Tip-Edge appliance increases the extraction options even more. Anchorage concerns do not govern treatment mechanics as when treating with conventional edgewise and straight-wire techniques.

Treatment results using the Tip-Edge appliance have improved by shifting to second rather than first premolars when the extraction of premolars is clearly indicated. Not only is the quality of the treatment results improved, but the treatment times have been significantly shortened and mechanics have been streamlined with this shift in treatment planning strategies.

Advantages and Indications for Extraction of Second, Rather Than First, Premolars

There are several indications for considering the extraction of second rather than first premolars. Among them are:

Small maxillary second premolars. In almost 60 percent of occlusions, the maxillary second premolars are significantly smaller, both mesiodistally and occlusogingivally, as compared to the maxillary first premolars, Figure 1.

If the larger first premolars are extracted while the smaller seconds are retained, one of several complications will result at the end of treatment.

Often the retained second premolar is too small mesiodistally to completely fill the space present between fully interdigitated canine and first molar. Consequently, spaces are left distal to the maxillary canines that are not only highly visible but virtually impossible to close and keep closed.

Another consequence is the inability to maintain the molars in a Class I relationship. Often the maxillary first molars are left in an end-on Class II relationship*.

The smile produced when larger maxillary first premolars

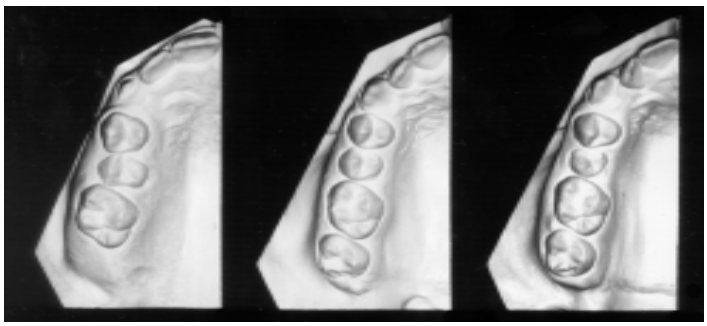


Figure 1. Maxillary second premolars tend to be smaller than the firsts in 60% of malocclusions. Mandibular second premolars are often larger than the firsts.

Please see COVER STORY next page

COVER STORY

Superior Anchorage . . .

Continued from page 1

are extracted while small second premolars are retained, can also be compromised. A much wider, broader smile is established with retention of the larger maxillary first premolars.

Extraction of mandibular premolars is clearly indicated, but maxillary arch is in good shape with little crowding and good facial profile. Severe mandibular anterior crowding that clearly necessitates the extraction of premolars to be corrected, but the maxillary arch is in relatively good shape with little, if any, crowding and minimal overjet present. In these situations, the preferred treatment plan is the extraction of the maxillary second and mandibular first premolars. This allows for the correction of the mandibular crowding without excessive retraction of the maxillary incisors that would lead to prolonged torquing during stage three. The fact that mandibular first premolars are often oblong with narrow interproximal contacts, as compared to the mandibular second premolars which are more square in shape with broad interproximal contacts, is an additional factor that makes this the treatment plan of choice for this situation.

Preserving nasolabial angle. If the extraction of teeth is indicated, but an obtuse nasolabial angle is already a concern, the extraction of maxillary second rather than first premolars will minimize retraction and any potential adverse increase in the nasolabial angle, Figure 2.

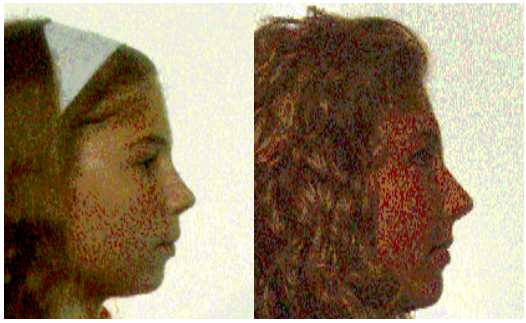


Figure 2. Patient with obtuse nasolabial angle can be treated with the extraction of second premolars with little or no change in the angle. (Patient was treated with extraction of maxillary second and mandibular first premolars.)

Facial profile. The most important consideration in diagnosis and treatment planning is the patient's facial profile. If all diagnostic criteria clearly indicate that the extraction of teeth is required to correct the patient's malocclusion, yet the patient's profile is flat—to the point where any adverse retraction would be a concern, the extraction of four second, rather than first, premolars would be indicated. This treatment plan offers the added bonus in that the treatment time is generally about six months shorter than that seen with the extraction of maxillary and mandibular first premolars.

Ultimately the extraction of four first premolars is perhaps the most seldom used treatment plan when the extraction of premolars is indicated prior to treatment using the Tip-Edge appliance. In general there are three situations where this treatment plan is still indicated:

- Severe maxillary and mandibular crowding.
- Severe bimaxillary protrusion.
- Significant skeletal Class II discrepancy (Wits of +8 mm or more) with limited or no growth potential.

After fifteen years of Differential Straight-Arch® treatment using the Tip-Edge appliance, the use of available treatment plan options has evolved to the following (order in frequency of use):

- Nonextraction.
- Extraction of four second premolars.
- Extraction of maxillary second and mandibular first premolars.
- Extraction of four first premolars.
- Extraction of maxillary first molars—non-growing Class II's.
- Extraction of mandibular first molars—Class III's.

While there will never be a single "right" or "wrong" way to treat each orthodontic patient, the shift from the extraction of first to second premolars over the last ten years has consistently produced better treatment results with improved facial profiles and significantly shorter treatment times.

REFERENCE:

*Kesling PC. Improving the final occlusion through selective premolar extractions. J Clin Orthod 1994;28:84-92.

Q's and A's

Q. *I have just placed appliances on a Class II, four second premolar extraction case. The mandibular left lateral incisor is blocked out lingually and tied to the archwire with an elastomeric tie. Should I place elastic traction from the mandibular molars to the canines to aid anterior unraveling? If yes, should I bracket the mandibular first premolars?*

Los Angeles, CALIFORNIA

A. Do not overload the mandibular anchor molars with more mesial forces from horizontal elastic traction (in addition to the Class II elastics)—unless you wish to purposely lose anchorage. It would be preferable to use a mandibular archwire with vertical loops for one visit to gain the necessary intercanine distance. Leave the first premolars unbracketed to aid in rapid bite opening.

Q. *I have a case that started out with a deep anterior bite and some crowding. He is now near the end of stage one but has developed a tongue thrust habit and an anterior openbite. He and his parents say he is wearing the elastics and I've coached him on how to position his tongue when swallowing but things aren't getting better.*

Jerome, ARIZONA

A. Bracket the premolars and place flat archwires. That is, no anchor or rocking chair bends. Have the patient wear "reverse" check elastics (7/16" light)—from the mandibular molar hooks to the maxillary circles then down to the mandibular circles. This will provide both Class II and anterior bite closing forces.

Q. *I have a Class II, four premolar extraction patient whose teeth are a "textbook" example of the end of stage two. Class I, edge-to-edge, spaces closed with all the mesial, distal and lingual crown tipping one would expect. The problem is, she is moving and her treatment will be continued by an orthodontist unfamiliar with Tip-Edge brackets or differential tooth movement. What shall I do?*

Saint Louis, MISSOURI

A. It's unfortunate there is no one qualified to carry on—especially since there is really little left to do. Hopefully you will be able to place her completely in stage three before she leaves and advise the other orthodontist to do as little as possible. You should instruct him *in writing* not to change her brackets to ones having conventional edgewise slots. If this were done, the slots will flex the new archwires (probably nickel titanium!) causing an anterior deep bite and return of the Class II relationship. This would unnecessarily prolong treatment and could compromise an otherwise excellent result.

Brazilian Tip-Edge Society

Dr. Jorge Elias Catarcione, President of the Tip-Edge Society of Brazil, reports that they have already given two courses in Brazil in 1999. Another extensive eighteen month course, including theory, typodont and clinical work began in August. Participants have come from South America, Chile, Paraguay, Uruguay and Argentina.

The Society had two table clinics at the recent International Congress in Rio de Janeiro. Drs. Jorge and Anna Catarcione explained the technique to over one thousand orthodontists who paid them a visit.

Working with a new translator, Mrs. Erica Groeger Lapa, the Society is now distributing a Portuguese translation of TIP-EDGE TODAY.

First of two Tip-Edge courses recently given in Brazil by the Tip-Edge Society. President and instructor, Dr. Jorge Catarcione standing at left.

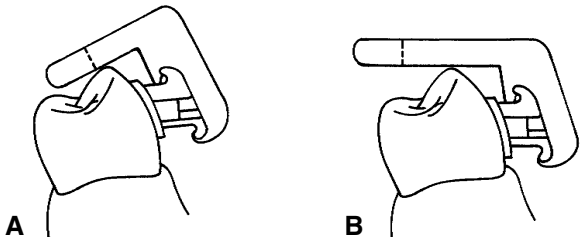
NOTE: Cássia Coelho, TP's Brazilian office branch manager, is now translating TIP-EDGE TODAY into Portuguese for the Internet. Articles can be seen in full color with all photos. The website address for TIP-EDGE TODAY is www.tip-edge.com and click on the language desired.

Product Update— Redesigned Premolar Jigs

The direct bonding jigs for mandibular premolar Tip-Edge brackets have been redesigned to permit easier bracket placement. The original jigs with the occlusal rest arms at 90 degrees to the bracket face tended to cause the brackets to be positioned too far occlusally, when the base was parallel with the tooth surface, Figure A.

The new jigs have the occlusal arms at the same angle (-20 degrees) as the torque in the brackets bases, Figure B. The result is the base of the bracket can lie flat against the buccal surface of the tooth when at the desired level, 3.5, 4.0 or 4.5 mm.

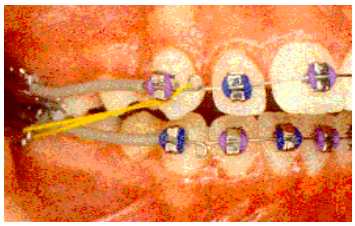
Those who have become accustomed to the original jigs should be aware that with the new jigs, it will be easier to achieve the desired heights. Others may find the brackets are bonded lower than before. If this causes a problem, merely specify a shorter jig, i.e. a 3.5 mm instead of 4.0 mm, etc.



A) The original, 90-degree arm jigs, often resulted in the brackets being positioned too far occlusally. This in turn could cause the premolars to be depressed relative to the molars and/or canines. The directional bend in the occlusal arm also was close to the cusp tip. **B)** New jigs with occlusal arm angle opened 20 degrees, provide more accurate positioning. Longer arm moves mesiodistal bend (dotted line) well beyond the cusp.

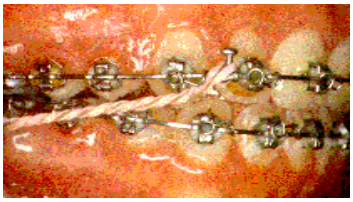
CASE REPORT

The patient, a 13-year-old female, presented with a severe Class II, Division 1 skeletal malocclusion—the Wits being +7 mm. She had a history of thumb sucking and a frontal tongue thrust that contributed to an anterior openbite and 13 mm of overjet. The mandibular second premolars were congenitally missing and her incisors were in good alignment at +0.5 mm to A-Po. Nonextraction treatment using Tip-Edge brackets retaining the deciduous molars was planned.

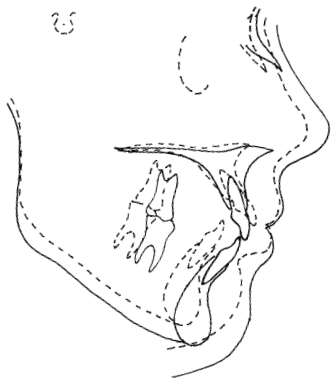


Treatment was started with stiff .016″ stainless steel archwires with mild anchorage bends. Bump-R-Sleeves® maintained arch length for the unbracketed premolars. Light, Class II elastics reduced the overjet and corrected the Class II sagittal relationship.

Beginning of stage three (normally there is no stage two in nonextraction cases). Anterior teeth are edge-to-edge with .022″ x .028″ archwires. Side-Winder springs in place for uprighting and torquing. (Note: mandibular canine needs a spring.)



Nearing the end of stage three. Side-Winder springs have uprighted and torqued the anterior teeth. Premolars normally do not require springs in nonextraction cases. Class II elastics worn as needed to maintain Class I occlusion.



L.H. ..... Female, 13 Years
Nonextraction ..... LR, LL E's retained
LR5, LL5 missing
Archwires Used 5 (2U, 3L)
Treatment Time ..... 27 Months
Retention ..... Perfector

Cephalometric Changes:

	Start-Dotted	Finish-Solid
1 A-Po	+0.5 mm	+2.5 mm
Wits	+7.0 mm	+3.0 mm
SN-MP	36.0°	35.0°
SNA	82.0°	82.5°
SNB	76.0°	77.0°
ANB	6.0°	5.5°
1-SN	119.0°	98.0°

Tip-Edge Going Strong in Spain

An orthodontist from Vitoria, Spain, Dr. Pedro Lasagabaster sent this cover of a Spanish orthodontic magazine which featured one of his Tip-Edge patients, Itziar Armetia. She is a promising 15-year-old swimmer who has competed six times in Spanish National Competitions and once in a European championship. She has been offered special training toward the goal of winning an Olympic Gold medal for Spain.

Dr. Lasagabaster practices in Vitoria with his daughter, Dr. Felicidad Lasagabaster and son-in-law, Dr. Arturo V. Hernandez. Their practice has been exclusively Tip-Edge since 1988. His younger daughter, Teresa, recently began her post graduate orthodontic studies at Saint Louis University where among other things, she will learn the Differential Straight-Arch Technique using Tip-Edge brackets.

WANTED for Future Issues

Articles, Technique Tips,
Questions & Answers, Case Reports,
Course and Lecture News

Please write to: TIP-EDGE TODAY
100 Center Plaza
La Porte, Indiana 46350

A Surprise from Mexico

During a recent visit to the Orthodontic Center, Dr. Jorge Chirinos of Mexico presented Dr. Peter Kesling with a surprise portrait. The painting had been done by an artist in Mexico City working only from a small black and white photograph.

Dr. Chirinos of the Institute for the Development of Professional Update (IDAP) operates a school which has been recognized by the Mexican government. The modern, two story facility near Mexico City has a large Tip-Edge bracket in the terrazzo floor of the lobby.

Ten students are taught Tip-Edge at the school. They bring their own patients to the clinic where they are assisted in their treatment by Dr. Chirinos and other instructors.

Dr. Peter Kesling at surprise presentation of his portrait by Dr. Jorge Chirinos of Mexico City, at right. Also present were Dr. Chirinos' daughter, Viviana at left, and his wife, Gaby.

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