



THE ORTHODONTIC MATERIALS INSIDER



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A quarterly dedicated to **orthodontic professionals**, and to the renewal of their habits and tools by **ORTHO-CYCLE CO., A COMPANY WHICH RECONDITIONS, BUYS AND SELLS ORTHODONTIC APPLIANCES.**



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‘THE CONGRESS LAUGHS, SINGS AND DANCES...’



Today's metalo-orthodontics....edgewise?

When reporting home the progress made at the Congress of Vienna, the assembly destined to redraw Europe's borders after Napoleon's defeat and exile to the island of Elba, a diplomat used the title's wording. Since then, the *same* sentence has been used ironically to underline unforeseen and uncharacteristic events. Sidetracked in its business by the festivities held by Emperor Francis of Austria, the congress was taken by surprise by Napoleon's successful return. Supported by the French army sent to capture him, Napoleon could afford to ridicule the illustrious gathering.

The above was brought to memory by the coincidence that about the same time that AAO celebrated its 100 anniversary in Chicago in excellent spirits, the influential *Time* magazine foresaw the demise of orthodontics as a profession. The following information may have escaped you: all that we did was to put it together. Please do not shoot the bearer of these news: we are in, together....

TOBE...

Here are few quotes we found in the American Journal of Orthodontics and Dentofacial Orthopedics at its 100 years jubilee:

“...I believe our specialty will continue to grow, improve and serve well our patients”¹.

“Because of technology, orthodontics will continue to progress... Orthodontists generally experience a high level of self-esteem and self-worth... The relative affluence enjoyed by orthodontists, together with their rich reservoir of acquired experience, can be applied to new endeavors or fuel the expansion of existing ones.”²

“The scope of the orthodontist/dentofacial orthopedist will continue to increase... The future therefore will be rewarding for the dedicated, service-oriented, scholar/orthodontist”³

“Our selection of residents for specialty education culls the brightest students in dentistry. Demand is awesome... We have broadened and strengthened our treatment horizons as we embellish the art and science of orthodontics and dentofacial orthopedics... For the new millennium, we want that 25% of board certified members to double or treble.... We have a rich past and a bold future”⁴.

...ORNOTTOBE

Time magazine, May 2000: “No more metal mouth, thanks to 3-D simulation programs that will crank out a series of disposable, clear-plastic ‘aligners’ to shift your teeth into position. Already in clinical trials, this technology is geared for adults... (Conclusion: orthodontist's jobs will disappear).”⁵.

Align wrote the following related letter to the Electronic Study Club for Orthodontics, ESCO (orthod-l@usc.edu): “*Time* magazine's May 22 issue ran a story predicting the 10 upcoming hottest jobs and the 10 jobs headed for extinction. They mention orthodontists in the latter category, and base their claim on the advances in the industry made by the Invisalign System (created by Align Technology). The letter written to *Time* magazine follows:

“Your tongue-in-cheek article ‘What will be the 10 hottest jobs and what jobs will disappear’ (May 22) was



Perhaps the largest island in the meeting....

interesting to read, but flawed in prophesying the demise of orthodontists. I'm the President and Co-Founder of Align Technology, makers of the Invisalign System. You mentioned our aligners in your article. It's simply untrue that computer advances will render orthodontists obsolete. While Invisalign's ability to straighten teeth (through a series of removable, clear plastic aligners) is made possible by advanced 3-D imaging technology, the system relies on the diagnostic expertise and treatment skills of orthodontists to work. Adults currently make up approximately 20% of all orthodontic cases, though an estimated 2/3 to 3/4 of the adult population could benefit from orthodontic treatment. Adults wanted an alternative to



...with almost nothing to show!

metal brackets. Now, with Invisalign on the market, we expect many more adults will get their teeth straightened. More adults in treatment could actually mean we need more, not fewer, orthodontists. Already more than one-third of US orthodontists has been certified to use Invisalign. Invisalign

is now available commercially across the US and Canada. For more information, readers can visit the website at www.invisalign.com. Sincerely, Kelsey Wirth, President, Align Technology, Inc, Sunnyvale, California."

THE INVISALIGN SYSTEM

(From printed ads and www.invisalign.com)

"The aligner can create a force couple required for translation by surrounding the entire crown, so the specified force is applied over a greater surface area (6-8 mm). This application holds promise to minimize root absorption and unwanted root tipping. The Invisalign System allows for excellent control of anchorage... can allow movement of individual teeth against the entire arch, not just against adjacent teeth. You move only the teeth you want to move and hold the position of the teeth you want held stable. Unwanted movements are minimized... More than 2000 cases are in progress. Clinical trials at leading dental schools.... In the months to come, Align Technology, Inc. will launch a national advertising campaign to make these potential patients aware of this new treatment option... The Invisalign System can be applied to a broad range of cases including mild to moderate crowding, space closure, narrow arches and relapses. "

Case selection criteria

"While it is very possible that aligners may be able to treat a broad spectrum of malocclusions, Align Technology currently limits the cases to those for which the technology has proven successful. The application goes beyond minor cases. Although you may currently use appliances that are similar in appearance for minor movement, the Invisalign System™ has a much broader application. Studies to date indicate that the Invisalign System™ is demonstrating effectiveness in correcting mild to moderate crowding and space closure cases. The Company anticipates that the data from its ongoing clinical studies will support efficacy of the Invisalign System in an increasing percentage of cases."

How it works

"The wireless teeth straightening takes place in several steps. First, the clinician is taking complete diagnostic records of the patient (digital photographs, x-rays and an impression of the patient's teeth. To preserve the highest level of detail and ensure optimal appliance adaptation, he should take PVS impressions of the patient's arches and submit them along with a wax bite to Align Technology. For most accurate PVS impressions, an ESPE machine and a metal tray are required. Then he completes an Invisalign System™ diagnosis treatment planning form, specifying the desired movements as well as the final occlusion and sends them for review and approval by Align Technology orthodontists. At Align, advanced imaging technology is used to transform patient's models into a sequence of 3-D digital images that simulate the desired course of tooth movement. A computerized movie depicting the patient's

tooth movement from beginning to final position is then sent to the clinician via the Internet: it can be viewed using Align Technology's proprietary ClinCheck™ software. This movie-like program allows a review in three dimensions of both the projected movement and the final setup, a virtual tour inside of the patient's mouth. The patient can also see his or her teeth as they are now, at the stages in between and as they will be at the end of the treatment. ClinCheck™ can be edited by the clinician that has the opportunity to request modifications in the treatment movement staging and final outcome by writing and editing these to the website. Once the final software is approved, Align uses CAD/CAM technology to translate the data into a series of clear (polycarbonate) aligners with the specified movements sequentially built into the shape of each one. The patient wears the aligners at least 20 hours a day, i.e. except during eating, brushing and flossing. The patient changes to the next aligner and disposes of the old one approximately once every two weeks. This section helps identify those patients who will benefit from the Invisalign System™. The criteria for evaluation continue to evolve as advances in technology are achieved."

Appropriate cases

"Patients that present with the following problems and require the treatment planning steps listed below are appropriate cases for use with the Invisalign System™.

Presenting Problems:

- Mild Spacing (1-3mm)
- Moderate Spacing (4-6mm)
- Mild Crowding (1-4mm)
- Moderate Crowding (5-8mm)
- Narrow Arches (dental) (4-6mm)
- Relapse Cases (if fit into the above criterion)

Treatment Plan Includes:

- Space Closure
- Reproximation
- Dental Expansion
- Flaring
- Distalization
- Lower Incisor Extraction (if there are sound indications for this treatment, e.g. good canine position, tooth size discrepancy, periodontal health, and the setup shows this to be a good alternative)
- Using fixed appliances (on the same arch) pre or post treatment with the Invisalign System (e.g. correct severe rotations of premolars prior to treatment with Invisalign)."

Inappropriate cases

"The following cases currently fall outside of Invisalign case selection criteria. While these cases may become appropriate in the future, they are currently not being accepted.

- Extractions other than a single lower incisor

- Cases requiring elastics to be placed during treatment
- Non-extraction, severe crowding (>8mm)
- Cases requiring autorotation of the mandible for vertical/A-P correction
- Correction of moderate-severe rotations (>20°) of premolars and/or canines (e.g. very round teeth)
- Severe deep bites to be opened to ideal
- Mixed-dentition cases
- Cases with erupting permanent teeth (e.g. second molars)
- Pre-orthognathic surgery cases
- Short clinical crowns (30% worn, abraded, etc.)
- Uprighting of severely tipped teeth (Tipped greater than 45°)
- A-P corrections greater than 2mm
- Single-arch cases where opposing arch is being treated concurrently with fixed appliances
- Cases that require extrusion of multiple teeth at the same time.

The following cases fall outside of Invisalign case selection criteria and are not expected to ever become appropriate.

- Cases with multiple missing teeth (Patients that wear distal extension partial dentures)
- Untreated periodontal disease
- Existing decay/poor restorations
- Skeletal expansion
- Resolution of moderate-severe CR-CO discrepancy
- Severe open bites to be closed to ideal
- Significant TMJ symptoms/pathology
- Unidirectional movement of an entire dental arch (e.g., the case requires surgery)
- Closure of posterior open bite.



The attendance was, to put it mildly, not proportional with the surface of the island rented

THE INVISALIGN SYSTEM IN THE WORDS OF ITS USERS

J. Clin. Orthod: “Recent developments in technology have now made it possible, with the Invisalign System, to take a single impression of a patient’s dentition, and use that to:

1. Create a final setup
2. Project stages of tooth movement from the initial state to the final state
3. Create a series of clear, custom-made appliances, called “aligners” that move the teeth according to the projected stages of movement... Because the technology is still developing, the corporate policy has been to allow only qualified orthodontist to participate in the use of the appliances... Because a high degree of compliance is needed for this system to be effective, the Invisalign System is currently recommended only for adults.... Aligners offer several advantages over conventional fixed appliances: First, they are clear, and therefore more esthetically acceptable... are generally more comfortable to wear... and they are removable, allowing better oral hygiene...”⁶.

Dr. BR, letter to EOSC: “Before you bristle more about this oncoming phase in our long and illustrious history, and before you let the paranoia set in, let me speak to the voice of reason. Remember, this technique is only a tool for our trade. Our trade is healthy occlusion and esthetics, not braces. Our expertise is in diagnosis and treatment planning far more than in placing appliances. As such, I believe that Invisalign, and whatever variations that may follow, will not only open new markets for us directly, but will significantly broaden the demand for our more “traditional” services. Also, since the advent of Bionators, straight wire appliances and nickel titanium wire have not made orthodontics so easy that any GP can do it, neither will Invisalign spell our demise even if GP or home kits are offered. While there may be lots that this appliance can do, there will be much it can’t do. Dx and Tx Planning will be just as tricky, with as many shades of gray, as there are with any appliance. For instance, this appliance, so far anyway, is strictly INTRAARCH mechanics. I will not be surprised if we see anchorage effects create beautiful but mismatched arches since real anchorage vectors are not predicted in the Clincheck™ diagnostic process. Just like with fixed appliances, I think you should feel comfortable educating and encouraging your GP’s to get involved (when the time comes), for after the first few cases that don’t turn out, you’ll still have a great source of referral. So far, I have four cases in progress with the fourth being my own self (just three days into a 20 step treatment), and two more in the lab. So far, I have felt totally in control of the treatment planning process and the appliances have been impeccably fabricated. I have also had to reject some cases from consideration - a choice only an orthodontist could make. So, if any of you are feeling too defensive to get involved, I suggest you let your guard down. There is great potential here for something that you would be foolish not to have in your bag of tricks. Absolutely no financial interest”.

THE DOUBTFUL THOMASES

Dr. DC, letter to EOSC: “The company’s latest news release, reinforces my hunch that this will become the method of choice for GPs/” orthodontists” and dovetails exactly with the wave of ‘cosmetic’ dentistry. Notice that it begins with references to orthodontists and subtly the references change to dentists. We may be the scientific communities first distributed beta testers testing for our future competition”.

Dr. NZ, letter to EOSC: “I have spoken to several orthodontists who have used this system, and I find that the appliance is no more than a glorified Essix retainer. Likewise, it is very costly, and demands full cooperation from the patient. Furthermore, just like any removable appliance, it only produces a tipping movement of the teeth, rather than a bodily movement. So if you want to save a lot of money for yourself as the orthodontist, and save the patient a lot of cash, a modified Essix retainer can easily produce equal results with minimal lab work. I can prove that. So anyone who thinks that this new company isn’t a total marketing gimmick and isn’t going after orthodontist’s pockets is totally mistaken. By the way, no financial interest in Raintree-Essix here”.

Dr. RK, letter to EOSC: “It appears that everyone agrees that Invisalign will allow the general dentist to utilize its services. Does anyone think that Invisalign will set up Invisalign Centers around the country (similar to Smile Centers or Bleaching Centers)? What are the chances of eliminating our plaster models and substituting them with 3-D models from Ortho Cad? The cost is \$35 and the effect on the parent is high techish. Will the ABO accept? The images are watermark to show no tampering. It appears that high tech is rapidly changing orthodontics. Does anyone have any opinions on how Acuscape is going to effect our diagnosis in orthodontics? It is certainly an exciting technology.”

THE OPINION OF OTHER MANUFACTURERS OF SIMILAR APPLIANCES

We have discussed the Invisalign System with these manufacturers’ most knowledgeable representatives. While one used sentences, the other provided us with a Table.

Representative I.

Advantages:

- Can correct rotations and crowding a little bit at a time;
- Needs two appliances (upper and lower) every two weeks;
- Will do a good job of rotating, but does require cooperation and patience since it is time consuming;
- The procedure can be quite effective in perfecting rotations and spacing in a single arch

Problems:

- It cannot correct overjet on molar relations and can be used only on Class I cases;
- It cannot correct overbites unless very minor (about 2mm severity)
- It cannot effectively intercusate teeth;
- It often needs a positioner at the end;

It cannot be used while any teeth are erupting;
 It cannot be used while jaw growth is taking place;
 Any major dental work being done while treatment will necessitate new impressions and new appliances;
 It cannot be used in conjunction with other appliances used at the same time such as headgears, bumpers, etc.
 It requires separate retainers at the end of treatment.
 It cannot be used during mixed dentition;
 It cannot be used if fixed appliances are used on the opposite arch;
 It cannot be used with midline discrepancies over 2 mm.
 If several teeth are treated at the same time, it cannot be used;
 It cannot coordinate the upper and lower arches;
 It can in some cases effect the speech;
 Its greatest disadvantage is its high cost for the lab work needed due to

- the number of appliances and the small number of cases
- the high number of problems it cannot treat and the slow progress for very minor problems.

Without being able to correct discrepancies between the arches (such as intercuspatation and coordinating molar relations and overjet), the technique is quite limited. The Ortho-T™ is a simple technique that can solve almost all of the above problems.

Comparison object	Representative II.	
	Hilliard Thermoplier and Essix Plastic	Invisalign System
Cost	A sheet of Essix plastic costs less than 65 cents	Hundreds of dollars
Can be made in office?	Yes	No
Can be delivered fast ?	No	Turn-around 30 days
Esthetic presentation?	Yes	Yes
Types of tooth movement	All possible, made by clinician	All possible, dictated by computer
Chairside adjustment of tightness	Yes	Not allowed
Chairside modification of force vectors	Yes	No
Involvement of a single appliance	Yes	No
Elastic hooks, expansion screw, bite plane addition ?	Yes	No
Chairside adjustment for relapse	Yes	No

NOBODY CAN, HOWEVER, ARGUE WITH SUCCESS

The Invisalign System was launched in June 1999. Since then, according to Align, over 30% of the US orthodontists have been certified to use the system, and over 2500 patients are straightening their teeth with the wireless way. There are already 1000 registered users of Invisalign.com. As a group, these doctors consume up to \$2 billion worth of supplies: Align intends to sell orthodontists via Invisalign.com everything they need. Align intends to make Invisalign.com the portal of choice for tens of thousands of dentists, offering them new versions of ClinCheck™ to help them visualize treatment solutions for cosmetic services (Invisalign ad).

Since E. H. Angle, who ridiculed J. N. Farrar for the size and clumsiness of some of his contraptions, orthodontists have tried to simplify and render the attachments they use less conspicuous. Metallic appliances, even those made of precious alloys, were always considered a necessary evil. Hopes that chemical, biochemical or physical stimuli other than forces may lead to less cumbersome tooth movements have acted like a mirage for many researchers, who have not yet been able to come up with a widely applicable treatment, despite their efforts. At least not till now. The fact that Align claims that in less than a year over 30% of the US orthodontists have become certified, is no minor feat, knowing their conservative views. In this writer's view, the orthodontist now has two options, well depicted by P.T. De Chardin: "*As the evolutionary tidal wave is rushing through time, we have two choices: resist the tide, attempt to slow it down, and even escape individually, like a small pool on the side of the river going around in circles. Or, swim to the front of the wave and actively contribute to the direction in which the evolution is going*". Once the gate has been open, it is very unlikely that Align or others will stand, for long, the temptation to enlarge their business by rendering services to general practitioners, technicians or even to lay persons. Various providers may easily respond to the need for impressions, which are not difficult to produce.

The Invisalign System is built upon on the Essix System. We obtained its manual at the recent meeting of the French Society of Dentofacial Orthopedics (May 13-15, 2000, Deauville). (GAC, SOFSA, **Appareils Essix mise a jour**, 279, rue Girardeau-37000 Tours, France: laurent.gross@libertysurf.fr). In the Essix System, the adjustments of the "retainer" designed to move the teeth are made manually, leaving the adjustments in the hands of the operator, who uses for this purpose a blade of a lab knife and a "divoter" (a thermoforming tool). In contrast, in the Invisalign System the theoretical adjustments are considerably more accurate, as these are made with the help of the CAD/CAM software, known to respond to differences measured in microns. The progresses in plastics manufacture and processing as well as these in digital technology are far from slowing the pace. Convince yourself by trying to break a useless compact disk: the strength of the plastic (a polycarbonate related to Bis GMA and having a fracture toughness of 2.2MPa.m^{1/2}) and the precision of the engraving are about the same...

AN UNLIKELY SCENARIO?

It may not take too many years till the brackets, bands, various wires and attachments used today will be nothing but a file in history. The number of people who will benefit from inconspicuous treatments, such as Align's, will be by far greater than the relatively few privileged of today. Gone will be the days of metal- or ceramo--orthodontics, with their allergies, broken enamel, environment contamination, etc. With the help of 3-D simulation, the physiological inter-arch relationships and the centric relations could be better recorded and taken in account, preventing thus the TMJ problems after the treatment.

There will be less "patients", as these will swallow the ranks of the self-healers. Clinics at the country's borders and mail order depots may spread, as happens today in other healing disciplines. The cases considered today as "inappropriate" for treatment will shrink, as new ideas will emerge. This may prove to be far from what some authors envision today, i.e. that "the future of orthodontics would be exactly where it ought to be, i.e. in the hands of the orthodontists"⁷.

Pressed by demand and competition, more and more clinicians will quit the boat of metal-ceramo-orthodontics, embarking on the easier to perform plasto-orthodontics: at least in the beginning, there will be enough patients willing to pay more to get a by far more acceptable appearance. Indeed, according to Dr. B. Raphael (Clifton, NJ), the cost of an Invisalign treatment for an average adult case is 50% higher than the one using brackets. Dr. D. Carter (Portland, OR) estimates the first at \$6000 and at \$4750 for the second, both fees tending rapidly to parity at the orthodontist's expense.

At the same time, the number of improperly treated orthodontic cases, which will necessarily result from the widespread improper treatments, will have to involve not only **real**, but also skilled and **properly trained** orthodontists.

In contrast with the views expressed in the *Time* magazine, we believe that the orthodontist's job will not disappear. It will, however, change into one of diagnostician and supervisor, intervening directly only in the cases where the widespread, almost 'do-it-yourself' treatments will fail. We also do not believe that, facing temptation, manufacturers of such sought-after improved mouse traps will restrain sales only to professionals, and will target only adults... As the involved technique is unpatentable, being a series of applications of known procedures, manufacturers of tooth-moving retainers may mushroom like those making brackets (five two decades ago, these are over forty today), each having his own strategy to get a share of the market.

While the potential progress of the idea and the related technology is obvious, it may take, however, a few more years when things will still go the old, golden (or steel)-age way. For a

France reconsiders its "Single use only" stance

Years after Quebec's Council for the Evaluation of Medical Technologies has ruled that "*the reuse of medical devices, if subjected to strict policies and procedures, does not present unacceptable risks*", France has caught on. June 30, 1998, the prestigious journal "Le Figaro" has published in its column "Vie Scientifique" an article entitled "*Is it possible to reuse 'Single use only' materials?*". Described was the case of

while, "the truly bewildering array of appliances and 'philosophies' will continue to compete actively for attention and market share"⁸, and at major meetings, "too many speakers (will continue to) sell and promote their specialized brackets and wires, with little or no valid proof or scientific data"⁹.

At Ortho-Cycle, we can only concur to such daring statements, and offer as proof the next pages which show over 40 various prescriptions currently used in the manufacture of the preadjusted brackets, prescriptions which keep piling up. For an outsider, their variety cannot but make him wonder if all of these are made having the same goal in mind...

CONCLUSIONS

The data presented above as well as the trend we see will not only render most of the current procedures obsolete, but will lead to transformations of the profession similar with the many others which have occurred in almost all the fields where the digital age has put its imprint.

Along with the many orthodontists who will have to perform a face-change, we at Ortho-Cycle Co., after recycling brackets and bands for a quarter of a century, feel that the new era is approaching fast. Our hope is, however, that the related transformations will lead to a better, healthier and better looking mankind...

As anybody could easily understand, we have absolutely no financial interest (actually, we have a reversed one) in what we only hope may not happen too fast. Dedicated to orthodontists "to renew their habits and tools", as our newsletter's title proclaims since 1987, we had to chose between our own interest and that of properly informing our readers: the choice is under your eyes.

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several physicians who have been formerly indicted for reusing cardiac probes (compare with our innocuous orthodontic attachments!) and who have been later acquitted. The tribunal decision was based upon the observation that there was no law or regulation asking medical professionals to respect any "Single use only" labeling of medical devices if its source is just the decision of the manufacturer.

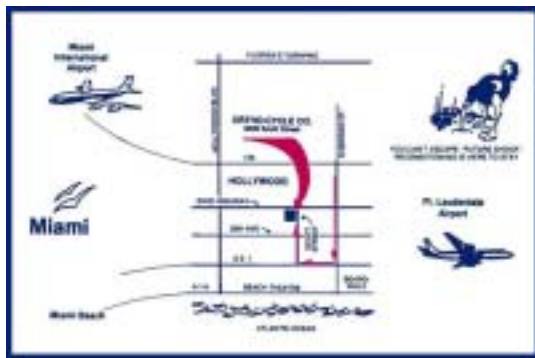
Current prescriptions (Centrals to IInd bicuspids)

Tooth Prescription	U-1	U-2	U-3	U-4	U-5	L-1	L-2	L-3	L-4	L-5	Source										
	T A	T A	T A	T A	T A	T A	T A	T A	T A	T A											
Alexander	14	5	7	8	-3	10	-7	0	-7	0	-5	2	-5	2	-7	6	-11	0	-17	0	Ormco
Alexander Sign	15	5	9	9	-3	10	-6	0	-8	4	-5	2	-5	6	-7	6	-7	0	-9	0	Ormco
Alpern	14	5	7	8	-3	10	-7	0	-7	0	-5	0	-5	2	-7	6	-11	0	-17	0	Ormco
Andrews	7	5	3	9	-7	11	-7	2	-7	2	-6	2	-6	2	-11	5	-17	2	-22	2	Ormco
Bennet Laughlin	17	5	10	9	-7	11	-7	2	-7	2	-6	2	-6	2	-11	5	-17	2	-22	2	"A"-Co.
Bios	22	5	14	9	7	10	-6	0	-8	4	-5	2	-5	4	7	6	-7	3	-17	3	Ormco
Burstone	7	5	3	8	-7	10	-7	2	-7	2	-1	2	-1	2	-11	6	-17	2	-22	3	Unitek
Burstone	7	5	3	8	-7	10	-7	0	-7	0	-1	0	-1	0	-11	6	-17	2	-22	3	Ormco
Cetlin	12	5	8	9	-2	7	-7	0	-7	0	-1	2	-1	2	-5	7	-11	0	-17	0	GAC
Creekmore	7	5	3	9	-7	11	-7	2	-7	2	-1	2	-1	2	-11	5	-17	2	-22	2	Unitek
Damon	12	5	8	9	0	6	-7	2	-7	2	-1	2	-1	2	0	5	-17	2	-22	2	Ormco
Genecov/Lang	12	5	8	7	3	6	-7	0	-7	0	-5	0	-5	0	-7	6	-11	0	-17	0	Am. Orth.
Gerety	12	5	8	9	-2	9	-7	2	-7	2	-1	2	-1	2	-11	5	-22	2	-22	-2	"A"-Co.
Goumare	12	5	8	9	0	11	-7	0	-7	-2	0	0	0	0	0	5	7	0	-22	-5	Unitek
Hasund	15	5	10	9	-2	9	-10	2	-15	2	0	5	0	5	0	9	-10	2	-15	2	Dentaurum
Hice	14	3	7	8	3	7	-7	0	-7	0	0	0	0	0	-7	5	-11	0	-14	0	Ormco
Hilgers	22	5	14	8	7	10	-7	0	-7	0	-1	0	-1	0	7	5	-11	0	-17	0	Ormco
High Torque	22	5	14	8	0	10	-7	0	-7	0	-1	0	-1	0	-7	6	-11	0	-17	0	Ormco
Hocevar	10	0	5	0	0	0	-5	0	-5	0	0	0	0	0	-10	0	-15	0	-20	0	Am. Orth.
Level Arch	14	5	7	8	0	10	-7	0	-7	0	-1	0	-1	0	-7	6	-11	0	-17	0	Ormco
Level Anchor.	14	5	8	9	0	5	-7	0	-7	0	-1	0	-1	0	0	5	-11	-4	-11	-4	Unitek
Minnesota Int.	7	2	3	7	-7	4	-7	0	-7	0	3	2	3	2	-5	6	-10	0	-15	0	Unitek
McLaughlin/ Bennett/Trevisi	17	4	10	8	-7	8	-7	0	-7	0	-6	0	-6	0	-6	-3	-12	0	-17	0	Ortho Org.
Multi-Tech.	12	5	8	9	0	10	-7	0	-7	0	0	0	0	0	0	7	-17	0	-25	0	Am. Orth.
Nanda	17	4	11	9	-7	10	-7	0	-7	0	0	0	0	0	-11	5	-17	0	-22	0	Ortho Org.
New Torqued Appliance	7	3	3	7	-7	4	-7	0	-7	0	0	2	0	2	7	4	-15	3	-15	3	Unitek
Orthos	15	5	9	9	-3	10	-6	0	-8	4	-5	2	-5	4	-6	6	-7	3	-9	3	Ormco
Orthos AP	11	4	9	6	0	8	-2	4	-3	6	3	0	3	0	-2	2	-8	3	-8	6	Ormco
Planche	12	5	7	8	-7	10	-7	0	-7	0	-6	0	-6	0	-7	6	-11	0	-17	-3	Unitek
Ricketts Biopr.	22	0	14	8	7	5	0	0	0	0	0	0	0	0	7	5	0	0	-14	0	RMO
Root	14	5	8	9	0	5	-7	0	-7	0	-1	0	-1	0	0	5	-11	-4	-11	-4	Ormco
Roth	12	5	8	9	0	13	-7	2	-7	2	-1	2	-1	2	-11	7	-17	-1	-22	-1	"A"-Co.

ORTHO-CYCLE CO.

2026 Scott Street
 Hollywood, FL 33020-2417 U.S.A.
 1-800-82-CYCLE; (954) 920-9074
 Telefax: (954) 921-4174
 E-Mail: Matasa@aol.com
 Please visit our Web Site at
<http://www.orthocycle.com>

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Current prescriptions (Centrals to IInd bicuspid), contd.

Tooth Prescription	U-1		U-2		U-3		U-4		U-5		L-1		L-2		L-3		L-4		L-5		Source
	T	A	T	A	T	A	T	A	T	A	T	A	T	A	T	A	T	A	T	A	
Roth	12	5	8	9	-2	13	-7	0	-7	0	-1	2	-1	2	-11	7	-17	0	-22	-1	Ormco
Roth	12	5	8	9	-2	9	-7	0	-7	0	0	0	0	0	-11	5	-17	0	-17	0	GAC
Roth Str. Arch	12	5	8	9	-2	11	-7	0	-7	0	0	0	0	0	-11	5	-17	0	-22	0	OrthoOrg.
Tracey	14	5	8	9	-2	10	-7	0	-7	0	0	0	0	0	-7	7	-11	0	-17	0	Am Orth.
Samson (Mini twin)	22	5	14	9	7	11	-7	0	-7	0	0	0	0	0	7	5	-17	0	-22	0	Unitek
Samson (Victory)	22	0	7	8	7	5	-7	0	-7	0	0	0	0	0	7	5	-17	0	-22	0	Unitek
Shoulder	12	5	8	9	0	7	-7	0	-7	0	-1	0	-1	0	-11	7	-17	0	-22	0	GAC
Sondhi (Victory)	22	5	14	8	3	10	-7	0	-7	0	-1	0	-1	0	-7	6	-11	0	-17	0	Unitek
Synergy, Trim.	22	3	14	10	5	8	-6	0	-6	0	0	0	0	0	3	3	-15	0	-15	0	RMO
System 80	22	5	14	9	7	5	-7	0	-7	0	-5	0	-5	0	-11	5	-17	0	-22	0	Ormco
Viazis	20	5	10	10	5	10	-5	0	-5	0	-5	0	-5	0	-5	5	-15	0	-20	0	GAC

Old Kashmiri philosophy rediscovered at Expo 2000

At the Hannover World Fair, a theme of which was recycling, the UK pavilion exhibited the following appeal:

"A changing world. At the dawn of the 21st century, attitudes are beginning to change. Today, we see ourselves not as owners, but as tenants of the world. We measure technological advancement not only by its efforts in today's quality of life,

but also by its possible effect on future generations".

As our readers may remember from our June 1999 issue, the Kashmiri have put it, ages ago, by far more simpler: *"We have not inherited the world from our forefathers. We have borrowed it from our children"*.