

# To the Editor

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## Partial denture design

For the past sixteen years I have been practicing dentistry in Williston Park, New York. I have seen many case scenarios that have required a removable partial denture (RPD) as the most viable and/or only alternative to saving the remaining dentition. For the first few years in my practice I was unsure about proper treatment planning these mouths with any consistency of design principles.

Fourteen years ago, I discovered a complete system of partial denture design that made total sense to me because it is based on physics and balance of force principles of engineering. This system is the Equipoise Class II lever design system and it allows me to successfully treatment plan all case scenarios with a system of design based on intra-arch Class II lever mechanics. The Equipoise system of design simplifies all possible tooth configurations into four basic design types and utilizes a clasping system that is never frictionally retained. Evenly distributed forces allow all movements to be directed along the long axis of the tooth with passive retention.

In "A stress releasing intra-coronal attachment for extension base removable partial dentures," (July/August 1998, pp. 398-402) Drs. Zinner, Pines, Markovits, and Neurohr III, are incorrect in stating that only Class II lever systems are R.P.I. and the Thompson Dowel rest system. R.P.I. is a true Class II lever system that retains the prosthesis with buccal and lingual retention and reciprocation. An unesthetic I-bar is the only means of retention. The Thompson Dowel System is not a fully reciprocated system of design, therefore it does not meet all the criteria of a Class II lever design. The Equipoise complete partial denture system uses full reciprocation between the stabilizing device and retentive device. Full reciprocation can only be achieved when there is 180 degrees or greater positioning of the stabilizing device and the retention device. The Equipoise precision C & L system is designed so that only two parts; the counterpoise C-rest (for stability) and the retention device (L-spring) are necessary when doing either a toothborne and/or free-end saddle design. There is no need for any special tooth preparation and the abutment crowns are never over-built or over-contoured, eliminating a crown-root ratio concern or periodontal problems. Direct retention, not indirect retention is necessary to

achieve this level of function. On free-end saddle designs, I can use as little as a single abutment crown because the C & L attachments will only direct forces along the long axis of the abutment tooth. The denture base and the retentive device move in the same direction during function. There is no lever action. When I incorporate retro-molar pad or tuberosity for support, there are no resorptive forces on the ridges.

The Equipoise complete partial denture system allows me to do any type of design, conventionally, semi-precision, or precision. Whether I am replacing one tooth or doing full mouth rehabilitation, I have a time tested, clinically proven scientifically based system of design. Equipoise has proven to be a great addition to my practice. I highly recommend it to all dentists.

Neal Seltzer, DMD  
Williston Park, NY

*Response from Drs. Zinner, Pines, Markovits, and Neurohr III*—We all are agreed that the Equipoise is a Class II lever system. However, there is a need to prepare the abutment tooth. A 1.0 mm groove completely through the interproximal area of the clasped tooth immediately anterior or posterior to the denture base area is necessary. The groove (1.0 mm in width) is not any easy procedure to execute for many practitioners. It must go completely through the contact area both bucco-lingually and occluso-gingivally. If the dentist is not very careful the 1.0 mm stretches to a 2.0 mm width and becomes an area for possible carious breakdown as well as exposing a metal occluso-gingival bar labially and/or buccally. The Equipoise removable partial denture clasp system is a modification of the R.P.I. design more similar to the R.P.A. with the difference of the retentive clasp being on the near proximal zone utilizing a back action clasp. The C & L version of this system utilizes a mortise locking mesial attachment with a built-in tolerance of .001 to .0015 of an inch. This will allow for limited rotation. But this tolerance may not be sufficient to prevent torquing of the abutment teeth around the three axes of rotation after changes occur to the edentulous ridge areas (settling of the denture bases).<sup>1,4</sup> The fact that Dr. Seltzer incorporates the retro-molar pad or tuberosity areas for support to minimize denture movement and

resorptive forces on the ridges is basic removable partial denture design.

The research performed on the indication for splinting abutments for attachment retained removable partial denture, both intra-coronal and extra-coronal, was published by Kratochvil, Thompson, and Caputo in the *Journal of Prosthodontic Dentistry* in 1981. It was found that with the retainer systems tested when a distal force was placed on the abutments unfavorable horizontal forces were created in the underlying bone. Reciprocation in the Thompson dowel rest attachment system is obtained by the depth of the well at the most gingival portion (1.5 mm in the mandible and 2.0 mm for the maxilla). Reciprocation in attachment cases differs from that of clasp retained prostheses.<sup>5-14</sup>

Dr. Seltzer should be congratulated, however, that he uses a system he not only feels comfortable with, apparently executes well, and also has results satisfying both his patients and himself.

## References

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6. Harris J. *Prosthet Dent*;1955.
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11. McLeod J. *Prosthet Dent*;1977,1978.
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## Patient-doctor confidentiality

In reference to your article, "Dental Ethics: ethics and insurance consultants" ("Dental Ethics" July/August 1998, pp. 336-341), the following situation actually occurred in my practice.

A husband and wife were patients in my practice. The husband was diagnosed with HIV and his wife

was not made aware of this. He was deteriorating and his answer to her was he had cancer. After his passing she was diagnosed with HIV.

It was my understanding at the time that I could not disclose the husband's condition to the wife due to my legal responsibility of patient-doctor confidentiality. However, I've been morally wrestling with this issue. Where does one draw the line in upholding patient confidentiality and protection of innocent parties?

Gary T. Umeda, DDS  
Honolulu, HI

*Response from Drs. Chiodo and Tolle*—Dr. Umeda has raised an important issue that has both ethical and legal implications. We did not address this possibility in our article on insurance consultants because we intended to focus on the discovery of substandard treatment. However, we have addressed the issue of advising unknowing, at-risk third parties, of a patient's HIV-seropositive status elsewhere.<sup>1,2</sup> We believe that providers have a strong ethical obligation to intervene when they are aware that an unknowing third party is being placed at great risk. Having this information will enable that third party to eliminate the risk, access serological testing and assessment, and begin timely treatment if necessary. However, it is important to emphasize that laws impacting this issue vary from state to state. While the ethical obligation to notify an at-risk third party is substantial, there may not be legal protections afforded to the doctor who acts in this ethical manner. The best advice for providers faced with such a situation is to contact their State Health Department (HIV or infectious disease division, if available) and seek guidance. This resource will be well-acquainted with the options available and the likely outcomes of any particular course of action.

## References

1. Chiodo GT, Tolle SW. Doctor-patient confidentiality and the potentially HIV-positive patient. *JADA* 1989;119:652-654.
2. Chiodo GT, Tolle SW. When AIDS and ethics meet: Dentistry's obligation to treat all patients. *Dent Teamwork* 1993;6:20-26.

## Response to Drs. Zinner, Pines, Markovitz and Nuerohr III

In the article "A stress releasing intra-coronal attachment for extension base removable partial dentures"<sup>1</sup>, Drs. Zinner, Pines, Markovitz and Nuerohr III misstated when they claimed RPI and the Thompson Dowel attachment were the only class II lever partial denture designs. In their response to Dr. Neal Seltzer's rebuttal, *Partial Denture Design, AGD Journal, Jan/Feb 1999*, they corrected themselves by claiming Equipoise® was a class II lever system. Dentistry generally recognizes that tooth preparation is a necessary component for proper tooth function in RPD design. Simple rest seats and guide planes are easy tooth preparations to produce. If as Drs. Zinner, Pines, Markovitz and Nuerohr III state that an interproximal slice of approximately 1 mm. (½ mm off the adjacent tooth, ½ mm off the abutment tooth) is a difficult preparation, how can a dentist be expected to prepare an inlay, onlay, laminate or crown preparation?

The Equipoise® design system, created before RPI, is not a modification of any other design. Equipoise® is the only complete RPD system in dentistry. Equipoise® has designed crowns that enable the clinician to choose from conventional Equipoise® semi-precision (milled Equipoise®) and the Precision C&L attachment to run the full gamut of RPD Design.

Drs. Zinner, Pines, Markovitz and Nuerohr III question whether the C-rest allows proper tolerance to prevent lateral torque on the abutment teeth. The C-rest attachment, using physics and engineering balance of force principles, has been clinically shown to present the least amount of lateral torque on abutment teeth<sup>2</sup>. The Equipoise® C&L Precision crown has been shown to be the only single abutment attachment crown that can be used in free end saddle design so as not to damage the tooth and or the surrounding tissue. The research performed by Dr. Kratochvil, Thompson and Caputo in the *Journal of Prosthodontic Dentistry* in 1981 indicates that splinted abutments are necessary in RPD attachment design. We do agree that the retainer systems tested here created unfavorable horizontal forces in the underlying bone, (note that the Equipoise® C&L attachment was not included in these tests). The reason this occurs with other type attachments is because they are based on designs which produce a counter productive force on either the abutment tooth and or the supporting tissue. To lessen these deleterious forces, it is necessary to do more extensive and expensive dentistry to achieve results that are inferior to the versatile C&L attachment!

The most important fact about any attachment is that if it is not fully reciprocated, then the applied forces can never be equal and opposite. Reciprocation as defined in *The Random House Unabridged Dictionary* defines reciprocation as bearing in a direction 180° to a given direction; back. The Thompson Dowel Rest attachment, as well as most other attachments is not placed equal and opposite in both the vertical and horizontal plane. The masticatory stroke will always apply a lateral torque force on the abutment teeth using any attachment not fully reciprocated. The above authors state that "Reciprocation in attachment cases differs from that of class retained prosthesis. How can this be true if reciprocation by definition is 180°, equal and opposite?"

Learn and apply what thousands of dentists already know, whether you are replacing one tooth, or only one tooth remains... Equipoise® has the solution. Only the Equipoise® complete partial denture system runs the full gamut of removable partial denture design. Equipoise® helps solve the most maligned and misunderstood area of dentistry, the removable partial denture. Equipoise® is a great practice builder. Most of all, Equipoise® is what is best for your patient.

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<sup>1</sup> Drs. Zinner, Pines, Markovitz, Neurohr III, *A stress releasing intra-coronal attachment for extension base removable partial dentures*, ACADEMY OF GENERAL DENTISTRY, July/August 1998, pp. 398-402

<sup>2</sup> Shohet, H., D.D.S., *Relative Magnitude of Stress of Abutment Teeth with Different Retainers*, JOURNAL OF PROSTHETIC DENTISTRY, 21:267-282, 1969