FUNDAMENTAL SKILLS SERIES:
FUNDAMENTAL SKILLS OF OCCLUSAL ADJUSTMENT

The DATA Appliance – Part III:
RedAddibration Clinical Protocol
"A Controlled Smooth Landing"
(EDITED)

INTRODUCTION

This document describes utilization of the DATA appliance for treating Functional Occlusion problems, and developing a "Stable Biomechanical Platform" ("DATA" is a proprietary registered trademark owned by Dr. Karl E Hegyi for dental appliances used for diagnosing and treating biomechanical issues of the Masticatory System). It details use of the DATA Appliance for integrating reductive and additive reshaping (RedAddibration) for definitive occlusal therapy. While it focuses on the methodology of Redaddibration, a brief review of important psychosocial and structural considerations regarding patient selection is also important.

One is to never begin definitive occlusal therapy of any kind on anyone who does not meet the following psychosocial criteria:

- Completely understanding of the treatment to be done (and what it will and will not accomplish),
- Totally comfortable with the treatment to be done, and
- Committed to following through with treatment until it is completed.

The large majority of patients who are dissatisfied with the results of definitive occlusal treatment feel this way not because of improperly prescribed treatment, but because of treatment that is either not understood or not completed.

For structural considerations, "The Integrated Classification System" guides appropriate patient selection. A complete understanding of this classification system is required before attempting *any* definitive occlusal therapy. Three important structural considerations however, are to never begin definitive occlusal therapy of any kind on anyone who does not meet the following criteria:

- A Stable or Manageably Adapted TM-Joint status is confirmed
- PSCP/CR verified on accurate facebow mounted casts
- A diagnostic RedAddibration has been performed on these mounted casts

There are other protocols for reductive and additive reshaping, and other methods of managing Occlusal Disorders. Each participant in this course is encouraged to study and understand these concepts and protocols, and consider the merits and limitations of each. The methods of occlusal equilibration taught at the Dawson Academy are helpful, because they supplement procedures contained in this course. The following however, are key advantages of the protocol described in this document.

First, in addition to being an integral part of treatment, the DATA Appliance is a valuable tool for diagnosis. A diagnosis should always be made *prior* to treatment. By assisting in patient TM-Joint Stability, Functional Occlusion, and Parafunctional Activity evaluation, the DATA Appliance guides appropriate treatment. The use of reductive or additive reshaping in RedAddibration treatment is dependent upon patient Functional Occlusion Type, and this must begin with a verified Physiologically Seated Condylar Position (PSCP/CR). The DATA appliance is an excellent means of both determining and verifying this position. In addition, key information regarding patient TM-Joint *Mechanical Stability* gained from the DATA Appliance determines if any form of occlusal adjustment treatment is even appropriate. Information regarding Parafunctional Activity indicates

whether or not a Night Guard will be required after RedAddibration. Finally, the ability to establish cause and affect relationships between the Functional Occlusion and suspected symptoms, such as head and neck pain, is a valuable benefit.

In the treatment phase of definitive Occlusal Therapy, the DATA Appliance offers five key advantages. First, it allows stabilization of many factors contributing to current Functional Occlusion relationships prior to treatment. In addition to deprogramming the masticatory muscles, the DATA appliance might also allow changes in, or stabilization of the tooth/alveolar bone interface, soft tissues of the TM-Joints, and cranial bone sutures.

> While it is currently not possible to prove which, if any, of these changes occur in any given patient, published research, and the observation that when this protocol is followed, Occlusal Stability is usually realized after only one or two adjustment visits – as opposed to many visits - support that they do.

Second, the DATA Appliance allows the smooth integration of both reductive and conservative additive reshaping. This makes RedAddibration a less invasive and more versatile treatment than reductive or additive reshaping alone.

Third, the integration of reductive and additive reshaping with the DATA Appliance allows precise control of the final Vertical Dimension of Occlusion. The importance of this factor is in its impact on the invasiveness of treatment, on other restorative and esthetic procedures, and on the final *Available* Envelope of Function and cannot be overemphasized.

The fourth advantage is the precision afforded by this protocol. The use of eight-micron shim in conjunction with the DATA Appliance provides the accuracy necessary for predictable success.

The final key advantage is the ease, efficiency, and versatility this protocol affords. It is highly intuitive, and practical for use by General/Restorative Dentists, Prosthodontists, Orthodontists, Periodontists, and even Oral Surgeons. The ease of treatment is going to be largely a matter of experience, however with utilization of these methods, RedAddibration should become one of the most enjoyable and rewarding procedures you do in your office.

IT IS THE DATA APPLIANCE THAT MAKES THIS PROTOCOL
AND THIS COURSE POSSIBE.

REDUCTIVE RESHAPING PHASE

I. Gross Reduction of CR/PSCP Interferences

> All adjustments in this phase should be on posterior tooth incline surfaces

During the process of DATA stop and posterior interference reduction, periodically have the patient "close and hold" on accufilm with equal intensity light pressure on right and left sides. If the accufilm pulls through on both sides without resistance, reduce the anterior stop, closing the Vertical Dimension of Occlusion, until posterior teeth again come into contact. Differential resistance to the accufilm indicates whether the right or left side is interfering and in need of adjustment. Do not ask the patient which side is contacting first, or even if they are contacting their back teeth – let resistance to accufilm removal while the patient is closed give you this information, as it is much more reliable and efficient.

II.   Refinement of CR/PSCP Interferences

A decision of when to stop gross reduction, and therefore also when to stop closing the Vertical Dimension of Occlusion, must be made. If Additive Reshaping is required, the point when Reductive Reshaping ends and Additive Reshaping begins is referred to as the "Transition Point". Determination of this point is the most critical decision in the RedAddibration process and is driven by concerns for the invasiveness of the procedure, the resultant *Available* Envelope of Function, and patient restorative and esthetic goals and objectives. Refinement of PSCP/CR closing stops at this point is also critical, and constitutes the most sensitive part of the reductive process

> *This is a key advantage of using the DATA appliance during reduction, as it allows a precise control of the*
> *final treatment Vertical Dimension of Occlusion.*
> *DETERMINATION OF FINAL TREATMENT VERTICAL DIMENSION OF OCCLUSION IS THE*
> *SINGLE MOST IMPORTANT DECISION IN REDADDIBRATION!*

III.   Additive Reshaping and Elimination of Posterior Excursive Interferences

After posterior reductive reshaping has been refined, any additive reshaping of *posterior* teeth should be done. *After posterior stop reductive reshaping has been refined and posterior additive reshaping completed (i.e. the posterior segments are completed), the DATA appliance should be removed.* Appropriate anterior additive reshaping should now be completed.

> Additive Reshaping to the posterior teeth is done with the DATA still in, while Additive Reshaping to the anterior teeth is done with the DATA removed – and after posterior stop reductive reshaping and posterior Additive Reshaping is completed.

After additive reshaping is complete, two types of adjustments are made. First is elimination of posterior tooth working, balancing and protrusive interferences. The second adjustment at this time is refinement of PSCP/CR stops. Refine all PSCP/CR stops to very small stops located as ideally as possible on cusp tips, fossae, and marginal ridges.

IV.   Final Adjustment of PSCP/CR Stops

When **Step III** above is completed, eliminate any remaining PSCP/CR prematurities the patient is aware of. This should only be necessary in a small percentage of patients and should be extremely minimal if **Steps I - III** above were performed properly. When the patient feels the bite is "perfect", having *no awareness of one side or tooth more than any other - with either light tapping or firm clenching* - evaluate their muscles and TM-Joints. Both the Masticatory Muscles and TM-Joints should be completely comfortable in all jaw movements.

V.   Final Refinement of Occlusion and Harmonizing Anterior Guidance to the Envelope of Function
This procedure is done approximately two weeks after **Steps I – IV** above are completed, allowing time for several changes to occur from the adjustments made. These changes include tightening of mobile teeth and return to a *physiologic Required* Envelope of Function (from a previously *expanded Required* Envelope of Function caused by posterior tooth interferences).
First, eliminate PSCP/CR interferences on any teeth by repeating **Step IV** above. If there is more than one or two slight and obvious corrections to be made it is helpful to reinsert the DATA Appliance and repeat **Step II** above.

If:
1) **Steps I - IV** above were performed properly, *and*
2) **DATA Appliance** seating and appointment management protocols were followed, and
3) The TM-Joints are Stable or Manageably Adapted,
there should be little need for additional adjustments. However, you can expect more remaining interferences if the patient had significant tooth mobility or if there is TM-Joint mechanical instability.

Now, confirm Anterior Guidance/Envelope of Function harmony.

At this time, RedAddibration is complete. Conclude by debriefing the patient. This includes a review of pre-treatment goals and confirmation that we did (or did not) achieve these goals. Additionally, our expectations for the future of the patient's problems should be reviewed and any anticipated follow-up treatment or maintenance should be dialogued. The patient should always be dismissed with an understanding that they are to contact you *immediately* if they become aware of *any* changes in their Occlusion any time in the future – no matter what the reason for the change.

A "Stable Biomechanical Platform" has been created. For many patients, this will be the end of active treatment. For others however, the newly developed functional relationships will serve as a platform upon which predictable restorative or esthetic design and treatment may be created.

Note:
This document is an edited version of an original document. The original document is part of a course manual and designed to be supplemented with lecture and clinical experience from that course. It is not possible to provide you with the knowledge or experience needed to properly use the DATA Appliance for an occlusal adjustment with this or any other document alone. It is strongly recommended that you first attain appropriate training prior to doing any occlusal therapy. This is to assure both safe and effective utilization.

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