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It has been a busy Fall season for the Genesee District Dental Society. Of major note is our receipt of the Golden Apple Award from the American Dental Association for our diaper drive “Babies Health: From the Bottoms Up.” The award was for a component dental society with total membership less than 1,000 dentists. Genesee District Dental Society is the first Michigan component to receive this prestigious recognition from the ADA program, now in its 26th year, and one of only 17 entries to be selected nationwide. Congratulations and thanks to all the offices that participated in the diaper drive, and to Dr. Jori Lewis and Dr. Lori Thomas for coordinating the program. We will be doing another diaper drive in April, 2015. Our MDA matching funds will again be used to help fund the program.

The revision of the GDDS Bylaws is complete, and you will receive an electronic copy of the revised bylaws. If you can print in color, the changes, additions and deletions will be in different colors for your review. We will be discussing the proposed changes and voting on approval of the revised bylaws at our next GDDS Dinner Meeting on January 13, 2015. If after reading the proposed changes you have questions or concerns you may contact Dr. Jay Werschky, Dr. Scott Mortimer or Dr. Zelton Johnson.

Our GDDS Dinner Meetings continue to have interesting and informative speakers. You are invited to bring your spouse as your guest to the January Dinner Meeting which will feature Anne Curzan PhD (Linguistics) from the University of Michigan, speaking on “How Social Media, Twitter, etc. is Influencing the Evolution of the English Language.”

The GDDS Board of Directors and I wish you and your families a Very Happy and Blessed Holiday Season, and look forward to seeing you in the New Year.

As Bill mentioned on his President’s notes, this award is given to recognize the excellence of the program “Babies Health: From the Bottoms Up” accomplished in our society this year. Given the impact achieved in our population, our Board is planning to continue and expand the project with no impact to our dues or our finances next year.

Many thanks to Dr. Jori Lewis and Dr. Lori Thomas for being instrumental for the development and conduction of the program and Dr. Jay Werschky for diligently “pulling out of his hat” funds for such a milestone. This has nothing to do with magic but is rather the result of hard work and professionalism. We are fortunate to have these leaders in our society. Other societies have noticed the impact and have inquired information to emulate the program in their communities too.
FROM THE DESK

MDA trustee report

Submitted by James K. Cantwil D.D.S.

It has been a busy and productive year at your Michigan Dental Association. I have enjoyed serving as your Trustee, and my term will be expiring in April of 2015 at the MDA Annual Session. I have learned so much about the inner workings of the MDA and how it represents its members. I can assure you that the way you practice today would be much less enjoyable if it were not for your MDA representation. I would strongly encourage my member colleagues from Genesee to consider putting their name in for future Trustee positions that become available. With the new governance changes, Genesee will no longer have its own Trustee, but there will be a Trustee at large, which will essentially represent all dentists. The nominating committee is in the process of reviewing nominations, and they will submit names to the 2015 House of Delegates meeting. I know that we have at least one nominee from Genesee County. The House of Delegates will have a very important role in the selection of the candidates and candidates can also be nominated from the floor of the House.

I want to inform you of some key things happening at the MDA:

1) The MDA PAC needs your help on an ongoing basis to meet with legislators, when requested, and to participate with the CAP WHIZ letter submission program when requested to do so. When an issue comes up, the number of contacts to the legislators becomes critical to supporting our position. CAP WHIZ is easy and fast to do, so please don’t ignore the request when you see it in your email box. Please convey your interest in meeting with legislators to Jay Werschky or Bill Beck.

2) The Board has been focusing on the large group practices and how we can insure that we are providing a member benefit that it important to these employed dentists. We have interviewed representatives from MCDC (Michigan Community Dental Centers), a large non-profit Medicaid clinic with several locations throughout the state, Great expressions Dental Centers, and Aspen Dental. ASPEN dental does not own the practices with the ASPEN name. They are basically a DSO management company that manages the business and marketing for the owner dentists. Some owners own as many as 15 offices, and their employed dentists earn a starting rate of about $140,000 to $175,000 per year. Many employed dentists strive to become owner dentists with the ASPEN name. We have found that these dentists want to be included, welcomed and engaged. Large group practice is a train that has a lot of momentum and, even if you do not favor that practice style, we must stay engaged with the dentists to solve common issues.

3) We are also looking at diversity, since membership percentages are lower among this group. The board has interviewed dentists that report feeling alienated or ignored within their local dental societies just because of their cultural differences. Though I think Genesee has done a good job with the “one for all – all for one” concept, we need to be sure we continue to be a welcoming dental society.

4) The board was updated on the two dental schools by their Deans and the most notable thing is that the University of Detroit has dropped out of the pilot study to investigate the feasibility of a mid level provider. The ADA and MDA have not been in support of a mid level provider, but there is increasing pressure legislatively to create this entity in order to care for the under served Medicaid population. Minnesota already has two levels of midlevel providers and the Board listened to testimony from an ADA Trustee from that state on how it is going. It is not an issue on which we can fall asleep at the wheel! Dental therapists have their own liability policy, but are also piggy backed on the liability of the supervising dentists. This is an important consideration for hiring lesser trained therapists that can perform irreversible procedures.

5) As you may have heard, new Delta Premier Dentists will be reimbursed within one to two dollars of the PPO rate. That means if you hire a new dentist in your office, they will only be able to be paid at this rate. You are grand fathered into the Premier rate, at least for now! Another caveat is that new dentists buying existing practices are disregarding the gross collections figures when determining the purchase price because they will not receive the same reimbursement rate from Delta. Yes, that means your practice has just taken another hit!

6) The new MDA advertising campaign was unveiled and will begin in January and is themed on the phrase “What would your mouth say about you?” Unlike past campaigns, this one will use Facebook, Google Ads, and contests to increase the number of view contacts. I think you will be very pleased with this new PR program.
7) The MDA services will be adding a new student loan consolidation program which is likely to save recent graduates thousands of dollars, while returning revenue to the MDA. There will also be a new endorsement program called “App River” which provides email encryption for up to two emails at a annual cost of about $140 per year. This will address the HIPPA compliance issue of emailing patient information.

8) Lastly, we had the opportunity to talk to one of the directors of the Michigan Department of Community Health. He was very receptive to our ideas and I believe it will turn out to be a new positive relationship within the department. During our conversation I brought up two issues regarding Medicaid and access to care. First, I criticized how the department of Health and Human Services, which works closely with the Department of Community of Health, allows the purchase of harmful foods and beverages with the Bridge Card. I explain that if our patients are able to purchase soda, and high sugar foods that are not of nutritional valuable, then it counteracts what we are trying to do to restore and maintain health. Essentially, it is a careless use of taxpayer dollars. I also shared with him the many reports of Bridge Card abuse and explained that with scanning technology we should be able to restrict use of these cards to nutritionally necessary foods. The elimination of waste would make more dollars available for increased Medicaid reimbursement level which would help to increase the number of providers. In addition, I proposed that Medicaid recipient should be allowed to pay, out of pocket, the difference between what Medicaid pays and what their dentist of choice is willing to accept as payment for their service. I explained that many Medicaid recipients have discretionary income or assistance from family members that would allow them to share in the cost of their treatment, if they did not want to see a “Medicaid only” provider that is not the dental provider that they have come to trust.

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Genesee District Dental Society Receives American Dental Association

Golden Apple Award

“Babies Health: From the Bottom Up” Program Supports Under served Children

OKEMOS, Mich. – Early last month, the American Dental Association (ADA) made the announcement of the 2014 Golden Apple recipients. The awards are in recognition of dental society volunteers and staff for outstanding activities and excellence in leadership. The Genesee District Dental Society was the recipient for excellence in dental health promotion to the public for their “Babies Health: From the Bottom Up” program.

There were two facts that sparked the creation of the program. First, Genesee County is home to many families in need; paying for disposable diapers is a big financial drain, and there is no financial assistance available for them. Second, it’s important to set the stage for good lifelong oral health with a dental visit by age one. In partnering with the Diaper Bank of Genesee County, the Genesee District Dental Society was able to donate over 13,600 packages of diapers including an informational flyer for parents about the importance of children’s dental health, as well as a toothbrush.

Jay Werschky, Executive Director for the Society, explained "With the help of our local member dentists who held diaper drives in their offices to collect donations, we were able to provide support for these unmet necessities to those in our communities. Not only were we able to raise the level of social awareness of two health concerns for children, we were able to distribute over 375,000 diapers and 13,650 toothbrushes."

The Genesee District Dental Society’s “Babies Health: From the Bottom Up” program received its well-deserved ADA recognition by achieving the objectives of promoting dental health education while collecting and providing funds and diapers for families in need. While it was the first diaper/dental health drive the results were so positive that the Genesee District Dental Society is looking to continue to offer this event in conjunction with Children’s Dental Health month this February, 2015. To learn more about what the Genesee District Dental Society is doing to promote oral health visit their website at http://www.smilegenesee.com/index.html.
**NEWS FROM THE MDA**

**Take Action NOW to Make Sure Your Health Insurance Doesn’t Lapse;**
**MDA Health Plan Offers Solutions for You and Your Staff**

NOW is the time to act to make sure your health insurance from MDA Insurance doesn’t lapse January 1!  
That’s because the MDA’s current, quarterly billed Blue 4 Ever Life individual health insurance program will cease at the end of this year, as a result of changes brought on by the Affordable Care Act. Thousands of MDA members and their staff who subscribe to Blue 4 Ever Life health insurance will lose their coverage under this plan effective Jan. 1, 2015. If you’re one of these members, you’ll need to select a new plan in order to maintain health coverage. To serve you and your staff, MDA Insurance has developed the MDA Health Plan, a self-insured multiple employer welfare arrangement, or MEWA. This is a new group plan, replacing the current individual plan. MDA members who are employers can join the MDA Health Plan and offer it to their staffs.  

“MDA Insurance has a lot of work to do to enroll MDA members and their employees in the MDA Health Plan for coverage on Jan. 1, 2015, or get them other coverage,” says Craig Start, president of MDA Insurance.  

“Your help is essential to ensure that you have coverage in place for 2015.  

“In most cases, the MDA Health Plan will provide substantial savings when compared to insured group health plans,” Start says. “You’ll save up to 7 percent on Affordable Care Act taxes alone, as the MDA Health Plan is exempt from certain of those taxes. But whether your office transitions to the MDA Health Plan or looks to the individual or small-group insurance markets for coverage, planning ahead and taking action now for your transition to a different health plan for 2015 is vital,” he added.  

Start offered these tips:  

- **Note the deadlines.** The last day to join the MDA Health Plan and get your office enrolled is Dec. 1 for an effective date of Jan. 1, 2015. This is also the deadline to move to any other insured small-group plan for a Jan. 1, 2015 effective date. But — don’t wait!  

- **Familiarize yourself with the plan.** You can learn more about the MDA Health Plan by reading the October 2014 MDA Journal cover story and the special Health Care Reform Survival Guide booklet enclosed with that issue. You can also access the article and the booklet online at www.smilemichigan.com/pro.  

  - **Ask for a quote.** Ask MDA Insurance for an MDA Health Plan quote by submitting the census and Business Rules and Participation documents if you have not already done so. The forms and complete information are available on the MDA Health Plan page at www.mdaprograms.com.  

  - **Act now to avoid loss of coverage.** Do not wait until November to begin the process. Call now -- don’t risk losing coverage.  

  - **Individual plans available, too.** If you decide to seek coverage in the *individual* market, you must be enrolled by Dec. 15, 2014, for a Jan. 1, 2015 effective date. Rates for 2015 will not be available until Nov. 15. Rates in the individual market will typically be higher than for the MDA Health Plan, and out-of-pocket costs will also be higher. Remember, MDA Insurance can help you with individual health insurance, so there is no need to look elsewhere. Just call MDA Insurance at 877-906-9924 for assistance.  

According to Start, about 5,000 people will need to be moved to a different health plan for coverage effective Jan. 1, 2015. To meet that demand, MDA Insurance has added extra staff to assist in processing quotes requests, applications and enrollments. MDA Insurance has also hired two experienced insurance experts to assist our three account executives in handling appointments, providing quotes, conducting enrollment meetings and providing service for the next several months.  

MDA Insurance has also restricted the use of staff vacation days for the remainder of the calendar year to provide sufficient staffing to meet the anticipated workflow demands.  

Start added, “Little time remains to accomplish a lot of very important work. Don’t get left behind! Be proactive, read the information available, and contact MDA Insurance for help. Call the MDA Insurance health insurance department at 877-906-9924 to explore your options.”

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**Good Morning America Segment on Microbeads in Toothpaste**

ABC’s Good Morning America (GMA) contacted the ADA for a segment that aired today on microbeads (polyethylene) in toothpaste. All of the varieties of Crest ProHealth® toothpaste which have earned the ADA Seal of Acceptance contain microbeads.  

The ADA provided a press statement to the GMA producer indicating, “According to the American Dental Association, clinically relevant dental health studies do not indicate that the ADA Seal should be removed from toothpastes that contain polyethylene microbeads. Products with the ADA Seal have been independently evaluated for safety and effectiveness by the ADA Council on Scientific Affairs.”  

Local news stations, including ABC 7 Chicago, have previously reported on microbeads from health and environmental angles. Proctor & Gamble (P&G), the manufacturer of Crest ProHealth®, includes information for the public on their website and has indicated they plan to remove microbeads from toothpaste.  

According to P&G, "While the ingredient in question is completely safe, approved for use in foods by the FDA and part of an enjoyable brushing experience for millions of consumers with no issues, we understand there is a growing preference for us to remove this ingredient. So we will. Crest will continue to provide consumers with effective and enjoyable products which are designed to their preferences.”

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Reprinted from MDA Journal

Reprinted from American Dental Association
The following suggested talking points may help you discuss the issue with your patients should they ask you about microbeads in toothpaste:

- Microbeads have been in the news lately. You may have heard about it in connection with toothpaste.
- Microbeads are most often used as scrubbing beads in exfoliating skin care products.
- The FDA has approved microbeads as a food additive, and small quantities, which appear as colored specks, are in some of Crest's toothpastes, including Crest Pro Health, which has the American Dental Association Seal of Acceptance.
- According to the ADA, clinically relevant dental health studies do not indicate that the ADA Seal should be removed from toothpastes that contain microbeads.
- Products with the ADA Seal have been independently evaluated for safety and effectiveness by the ADA Council on Scientific Affairs.
- While there is no clinical evidence that microbeads in toothpaste are harmful to your dental health, Crest is voluntarily withdrawing the ingredient from toothpaste in response to growing consumer preference.
- As your dentist, my goal is to help you achieve optimal dental oral health. Whenever you have questions about any dental care product, feel free to talk with me.
- Brushing two minutes twice a day with fluoride toothpaste and flossing daily are important ways to take care of your dental health.

If you have additional questions, please contact the ADA Member Service Center at 312-440-2500 or msc@ada.org

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To See More Information on Microbeads See the Article and TV Report at the Link Below.

Plastic Microbeads from Your Toothpaste can Lodge in Gums, May End Up as Pollutants in Colo. Rivers


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LETTERS TO THE EDITOR from MDA JOURNAL

I recently read a syndicated column by Drs. Oz and Roizen and was very upset by their response to a reader’s question regarding periodontal disease. The question was, “I’ve been diagnosed with periodontal disease. I want to reverse it ASAP, because I hear it leads to more problems than just tooth decay. What’s my next step?”

Their answer to this question was to summarize the results of a recent publication in the Journal of Dental Research by Naqvi, et al. (J Dent Res 2014 June 26, 93 (8):767-773 – epub ahead of print). Drs. Oz and Roizen recommended patients start by taking 2,000 mg of DHA and 81 to 162 mg of aspirin daily for three months. Nowhere does it mention seeing a dentist. This would be the equivalent of telling a patient with atherosclerosis and coronary artery disease to take DHA and aspirin without seeing his physician!

I believe the study they summarized is a very well done study. The oversimplification of periodontal disease and therapy for treating it by Drs. Oz and Roizen is the problem. A decrease in the pocket depth of 029 mm +/- 0.13, one of the results reported by the study, does not mean patients returned to health after this therapy. Since periodontal pockets cannot be measured in tenth of millimeter increments, that translates to the fact that 3 out of 10 pockets improved by 1 mm. In a group of patients whose pockets were 5 mm or greater, 1 mm of improvement does not equate to health, only that the severity of the disease was reduced by 1 mm 30 percent of the time.

My goal in writing this letter is to arm dental professionals with appropriate knowledge so they are able to answer patients when questioned. A proper response would have been to first see your dentist or a periodontist. Traditional therapies are excellent at controlling this disease in the vast majority of people. Adding to those therapies the daily supplementation of 2,000 mg of DHA and 81 to 162 mg of aspirin may help improve the results even further.

I am worried that patients that patients who have read this column will be drastically misled and not get the help they actually need. Early intervention missed and not get the help they actually need. Early intervention allows dental professionals to have the biggest impact and help patients get back to periodontal health.

Jason G. Souyis, DDS
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Dr. Paul McEwen, a retired dentist from Linden, Michigan, was honored by the Mott Children’s Health Center pediatric dentistry staff at a luncheon on December 4, 2014, for five years of volunteer professional service. Dr. McEwen retired from his private practice in 2010 and volunteered to provide general dentistry services in the Mott Children’s Health Center pediatric program on a part-time basis. During the ensuing five years, Dr. McEwen donated an average of 105 hours a year providing badly needed dental care to many at-risk children in the Genesee County area. The professional staff, the administration, and the Board of Directors of Mott expressed their great appreciation for Dr. McEwen’s generous contribution of his time and skill toward the betterment of children’s oral health.

Drs. Suheil Boutros and Steve Sulfaro were inducted into Fellowship in the American College of Dentistry.

Drs. Suheil Boutros and Matthew Lindemann were inducted to The International College of Dentists.

We got The American Dental Association’s (ADA) Golden Apple Award!

Many thanks to Dr. Jori Lewis and Dr. Lori Thomas for being instrumental for the development and conduction of the Genesee District Dental Society’s “Babies Health: From the Bottom Up” program.

The GDDS received its well-deserved ADA recognition by achieving the objectives of promoting dental health education while collecting and providing funds and diapers for families in need.
A Simple & Functional Conservative Treatment
Occlusal Risk Diagnosis of a Constricted Chewing Pattern

Amanda N, Seay, DDS, AAACD

ABSTRACT
A determining occlusal risk is an essential step in managing treatment with predictability and success. The three parameters of occlusion as defined by Dr. John Kois after the position of the joint, the way the teeth fit together in the posterior, and the pathway or guidance of the teeth in the front. Identifying a patient’s clinical issues is just one aspect of treatment. It is important to ask patients certain key questions to help determine the diagnosis. The case discussed here focuses on the occlusal risk diagnosis of a constricted chewing pattern and a simple, conservative treatment option.

Key Words: constricted chewing pattern, risk assessment, occlusal parameters, functional diagnosis, minimally invasive

Introduction
Some patients present with what appears to be ideal occlusion, yet they have discomfort, or even pain. How a system appears and how it actually functions can be completely different. As clinicians, we are faced with how to alter a system that looks correct in order to make it function correctly. We also have the challenge of treating these patients with minimally invasive dentistry to achieve the desired results. A constricted chewing pattern is one in which some or all of the front teeth are positioned in the envelope of function. Patients with this problem adapt either by wearing down their front teeth (which presents clinically as thinning of/chipping to the incisors), or by using their muscles to position the jaw more distally to avoid tooth contact, which presents as sore muscles or joint pain.

Anterior tooth wear may be stable (i.e., adaptation is complete), or the adaptation may still be occurring. By asking patients some of the following questions, the clinician can confirm an occlusal diagnosis of constricted chewing pattern and whether the system is actively breaking down:

• Do your jaw muscles get tired after speaking for long periods of time?
• Do you have difficulty chewing gum, carrots, nuts, bagels, baguettes, protein bars, or other hard, dry foods?

A “Yes” response tells the clinician that the process is still active, but a “No” requires further investigation to determine whether the patient has learned to avoid certain foods (e.g., no longer chewing gum because it hurts their jaw muscles; or no longer eating meat— not because of dietary requirements or beliefs, but because chewing meat is simply too difficult or uncomfortable) as a form of adaptation.3

Treating a constricted chewing pattern means allowing enough freedom in the anterior for the envelope of function. The chewing envelope can be evaluated by sitting the patient up and having him or her chew on a piece of gum with 200u articulating paper. All streaks to the linguals of the maxillary centrals/laterals and facials of the lower mandibular centrals/incisors are areas of interference in the envelope of function. If the constriction is very small it can sometimes be handled by adjusting the inclines of the anterior teeth, but often it requires significant alteration to allow the room to function. Creating that room between the anterior teeth involves either:

• moving the maxillary anterior teeth more facially
• moving the mandibular teeth more lingually
• opening the vertical dimension of occlusion.

Factors such as length of treatment time, cost, and invasiveness all play a role in determining the treatment.4,5

How a system appears and how it actually functions can be completely different.

Case Presentation
A 40-year-old female presented with chief complaints of temporomandibular (TMJ) pain and difficulty with eating certain foods. She had learned to eat very slowly and carefully and had modified her diet accordingly for many years. The patient had received orthodontic treatment as a teenager that included extractions of the maxillary first premolars with space closure.

Clinical examination revealed slight wear on the linguals of the maxillary anterior and facials of the mandibular anterior teeth. There was lack of wear on the posteriors, which suggested the patient’s inability to chew on her back teeth, and most of the friction was occurring on the anterior teeth. This observation, combined with her muscle symptoms suggested a constricted chewing pattern. The overall treatment goal was to decrease the risk of further attrition and change the functional relationship of the anterior teeth with minimal biomechanical risks. The following steps outline how a constricted chewing pattern was corrected with a simple and conservative treatment.
The patient’s medical history was non-contributory. Her dental history revealed no restorations and her periodontium was healthy. Her maxillary first premolars had been extracted when she was a teenager; this had created an arch discrepancy. Her immediate concern was the TMJ pain she experienced daily.

The patient had a Class I canine and Class II molar relationship as a result of previous premolar extractions. Due to over-retraction of the maxillary anteriors during the space closure, the patient had limited space in the anterior to freely function without interfering restriction. She had learned to avoid the friction in the anterior by posturing her jaw back, but this created muscle fatigue and pain. This observation, in conjunction with the retroclined position of the upper centrals and the attrition as evidenced by contact pattern of the anterior teeth, suggested a constricted chewing pattern.

Creating room in the anterior was accomplished with orthodontics. The goal was to position the teeth to accommodate minimally invasive restorations of ideal height-to-width ratios, change the functional relationship of the anterior teeth, and decrease the risk of further attrition. It was decided to move the maxillary anterior teeth more facially to gain that room. An alternative choice of treatment without orthodontics would necessitate opening the vertical dimension with restorations. This would involve less treatment time but the amount and cost of dentistry would be significantly greater.6
Orthodontic treatment was completed after 14 months. Spacing was not ideal but the functional relationship of the anterior teeth had been altered to achieve a functional envelope free of constriction and the patient was comfortable and eager to move forward with treatment. The centrals, laterals, and canines were all narrow in width, with the laterals having the most significant height-to-width discrepancy. The position of the teeth could now accommodate restorations of more ideal tooth contours.7,9

Shade selection was done to evaluate both dentin and enamel replacement. Most of the composite would replace enamel but some dentin shades had to be used to prevent show-through of the negative space.10-12

Final direct composite bonding to interproximals of teeth ##6-11 was accomplished. With limited orthodontics and no preparation direct composite bonding, the final outcome was esthetic and natural-looking while resolving a debilitating issue that the patient thought could never be cured.
Summary
Making an occlusal diagnosis and understanding how to utilize specific parameters allows for a predictable treatment protocol. In constricted chewing patterns the position of the joint may be the problem at hand, but treating the case requires knowledge of how the teeth fit together in the posterior of the mouth and the pathway for guiding the system from the outside in. This can be done only after first determining the patient’s dento-facial esthetics. Understanding these principles allows the treatment options to be easily presented to the patient based upon what their specific desires may be.

References

In constricted chewing patterns the position of the joint may be the problem at hand, but treating the case requires knowledge of how the teeth fit together in the posterior segment of the mouth and the pathway for guiding the system from the outside in.

Dr. Seay has a private practice in Mount Pleasant, South Carolina.

Disclosure: The author did not report any disclosures relevant to the content of this article.
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Occlusion and Occlusal Considerations in Implantology

Shantanu Jambhekar1, Mohit Kheur2, Mukund Kothavade3, Ramandeep Dugal4

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Postgraduate Student1
Professor & PG Guide2
Professor & Head3
Professor4

ABSTRACT
The introduction of osseointegrated implants has completely altered the prosthetic treatment of partially and fully edentulous patients. Besides other aspects that form a part of Implantology as a science, planning and delivering the optimal occlusion is an integral part of implant supported restorations.

Due to lack of the periodontal ligament, osseointegrated implants, unlike natural teeth, react biomechanically in a different fashion to occlusal force. Dental implants are more prone to occlusal overloading, which is often regarded as one of the potential causes for peri-implant bone loss and failure of the implant/implant prosthesis. The special conditions unique to implants necessitate developing an occlusion that places minimum stress on the implant, the implant- restoration interface and the restoration per se. The types and basic principles of implant occlusion have largely been derived from occlusal principles in tooth restoration. These occlusal concepts (i.e. balanced, group-function, and mutually protected occlusion) have been successfully adopted with modifications for implant-supported prostheses.

This paper discusses the role of occlusion as related to implantology and provides clinical guidelines for choice of occlusal schemes for implant retained restorations.

Key words: IMPLANTS, OCCLUSION

Terminologies:

Anterior Guidance:
Anterior guidance refers to the dynamic relationship of the lower anterior teeth against the lingual contours of the maxillary anterior teeth in centric, long centric and in their protrusive, lateroprotrusive, and lateral excursions. Along with centric relation and vertical dimension, anterior guidance must be regarded as the most important factor in reconstructing the stomatognathic system.

Ideal Occlusion:
Ideal occlusion is an occlusion compatible with the stomatognathic system providing efficient mastication and good esthetics without creating physiologic abnormalities.

Dawson (1974) also described five concepts important concepts important for an ideal occlusion:

1. Stable stops on all the teeth when the condyles are in the most superior posterior position (Centric Relation).
2. An anterior guidance that is in harmony with the border movements of the envelope of function.
3. Disclusion of all the posterior teeth in protrusive movements.
4. Disclusion of all the posterior teeth on balancing side.
5. Non interference of all posterior teeth on the working side with either the lateral anterior guidance or the border movements of the condyles.

The literal definition of occlusion is ‘the act of closure or state of being closed or shut off’: Unfortunately in dentistry the term connotes a static morphologic tooth contact relationship. However the term should have in its definition the concept of a multi factorial relationship between the teeth and the other components of masticatory system.
There is no one occlusal pattern for all individuals but an appropriate pattern can be found based on the above criteria. There are three accepted and recognized ideal occlusal schemes that describe the manner in which the teeth should and should not contact in various functional and excursive positions of the mandible. These include balanced occlusion, mutually protected occlusion and group function occlusion.

**Bilateral balanced occlusion:**

This is useful in construction of complete dentures, in which contact on the non working side is important to prevent tipping of the denture. It was also later utilized in complete occlusal rehabilitation with an objective of sharing the stress on more number of teeth. However it was soon discovered that it was difficult to achieve and it resulted in excessive frictional wear of the teeth.

A balanced occlusion in natural dentition with normal periodontium is difficult to find. When seen, it is usually the result of advanced attrition.

**Group Function Occlusion:**

Destructive forces associated with nonworking side contacts were first observed by Schuyler who concluded that they were traumatic to the natural dentition, causing neuromuscular disturbances, temporomandibular joint dysfunction, accelerated or increased periodontal breakdown and excessive wear. Further work by other investigators resulted in balanced occlusion being replaced with unilateral balanced occlusion, otherwise known as “group function”.

The group function on working side distributes the occlusal load. Absence of contacts on non working side prevents those teeth from being subjected to the destructive, obliquely directed forces found on the non working side. Beyron has shown that it prevents excessive wear of the centric holding cusps thus helps in maintenance of occlusion.

**Mutually protected Occlusion**

Mutually protected occlusion is also called as canine protected occlusion or organic occlusion. In this occlusal scheme, maximum intercuspation coincides with the optimal condylar position of the mandible (centric relation). The posterior teeth are in contact with forces being directed along their long axis. During lateral or protrusive excursions, the six anterior maxillary teeth, together with the six anterior mandibular teeth guide the mandible so that no posterior occlusal contacts occur. The desired effect of this is the absence of frictional wear.

We can thus see how this occlusion is mutually protective—the posterior teeth protect the anterior teeth at centric relation, while incisors protect the canine and posteriors in protrusion while canines protect the incisors and posterior teeth during lateral excursive movements.

**Occlusal considerations for Implantology**

Introduction of osseointegrated implants in early 1980’s altered the way in which partially and fully edentulous patients are treated prosthetically. Dentures are more stable with attachments on implants and implants can act along with natural dentition as abutments or can stand alone to support fixed prostheses.
Because of the special conditions unique to implants it is important to develop an occlusion that places minimum stress on both the bone implant interface and prosthesis. The types and basic principles of implant occlusion have largely been derived from occlusal principles in tooth restoration. These occlusal concepts (i.e. balanced, group function, and mutually protected occlusion) have been successfully adopted with modifications for implant-supported prostheses. Furthermore, implant-protected occlusion has been proposed strictly for implant prostheses. This concept is designed to reduce occlusal force on implant prostheses and thus to protect implants.

Besides the principles of Dawson described earlier, other modifications from the conventional occlusal concepts that have been proposed in literature includes

- providing load sharing occlusal contacts,
- occlusal morphology guiding occlusal force to the apical direction with narrow occlusal table with flat area at the centre, decreased cuspal inclination and wider grooves and fossae,
- correction of load direction (axial loading)
- increasing of implant surface areas,
- and elimination or reduction of occlusal contacts in implants with unfavorable biomechanics.

The differences between the natural teeth and the implants can be summarized as follows:

<table>
<thead>
<tr>
<th></th>
<th>Natural Tooth</th>
<th>Implant</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Connection</strong></td>
<td>Periodontal ligament (PDL)</td>
<td>Osseo integration, functional ankylosis</td>
</tr>
<tr>
<td><strong>Proprioception</strong></td>
<td>Periodontal mechanoreceptors</td>
<td>Osseoperception</td>
</tr>
<tr>
<td><strong>Tactile sensitivity</strong></td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Axial mobility</strong></td>
<td>25–100 mm</td>
<td>3–5 mm</td>
</tr>
</tbody>
</table>
| **Movement phases**   | Two phases Primary: non-linear and complex  
                        | Secondary: linear and elastic     | One phase Linear and elastic       |
| **Movement patterns** | Primary: immediate movement        | Gradual movement                   |
|                       | Secondary: gradual movement        |                                   |
| **Fulcrum to lateral force** | Apical third of root            | Crestal bone                      |
| **Load-bearing characteristics** | Shock absorbing function      | Stress concentration at crestal bone |
|                       | Stress distribution                |                                   |
| **Signs of overloading** | PDL thickening, mobility, wear facets, fremitus, pain | Screw loosening or fracture, abutment or prosthesis fracture, bone loss, implant fracture |
Occlusal guidelines that need to be considered (in addition to the guidelines listed on previous page) while restoring various clinical situations with implant supported prostheses are:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Edentulous classification</th>
<th>Type of prosthesis</th>
<th>Optimal Occlusal Scheme</th>
<th>Additional guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Edentulous</td>
<td>Implant supported fixed prosthesis</td>
<td>a) opposing natural dentition</td>
<td>Group function (widely accepted) Mutually protected with shallow anterior guidance (recommended)</td>
</tr>
<tr>
<td>2</td>
<td>Edentulous</td>
<td>Implant supported over denture</td>
<td>a) for normal ridges</td>
<td>Bilateral Balanced with lingualized occlusion</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>b) severely resorbed ridges</td>
<td>Monoplane occlusion</td>
</tr>
</tbody>
</table>
### Additional guidelines

- Anterior guidance in excursions and initial occlusal contact on natural dentition disclosing the posterior implant supported segment when possible.

- Reduced inclination of cusps, centrally oriented contacts with a 1-1.5mm flat area, a narrowed occlusal table (by around 30%), and elimination of cantilevers.

- Additional implants in the maxilla could provide tripodism to reduce overloading and clinical complications.

- Axial positioning and reduced distance between posterior implants (min of 3mm).

- The utilization of cross-bite occlusion with palatally placed posterior maxillary implants can reduce the buccal cantilever and improve the axial loading.

- If the number, position, and axis of implants are questionable, natural tooth connection with a rigid attachment can be considered to provide additional support to implants.

- Lone-standing self-supporting implant segment is preferable.

- Infra-occlusion on cantilevered section with Mesial cantilever being biomechanically more favorable than a distal cantilever.

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### Conclusion

The objectives of implant occlusion are to minimize overload on the bone–implant interface and implant prosthesis, to maintain implant load within the physiological limits of individualized occlusion, and finally to provide long-term stability of implants and implant prostheses. To accomplish these objectives, increased support area, improved force direction, and reduced force magnification are indispensable factors in implant occlusion. In addition, systematic, individualized treatment plans and precise surgical/prosthodontic procedures based on biomechanical principles are prerequisites for optimal implant occlusion. Implant occlusion should be re-evaluated and adjusted, if needed, in a regular basis to prevent from developing potential overloading on dental implants, thus providing implant longevity.
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Several Papers in International Journals

RESEARCH-Areas Concentrated on:
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4. Immunologic profiles in DMBA Carcinogenesis.
5. Assessment of mast cell populations in DMBA carcinogenesis in rat submandibular salivary and its control with Beta - carotene.
7. Quantitative estimation of AgNORs in oral normal, dysplastic and carcinomatous lesions.
8. A novel objective approach towards standardization of Epithelial dysplasia Index.
9. Quantitative and qualitative evaluation of AgNORs in Odontogenic cysts and tumors.

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2. Vice President - IDA - A.P State - 1972 - 73
4. Academic Advisor -College of Dentistry-Riyadh -1982 - 85
5. Member Audiovisual & Stores Committee - College of Dentistry – Riyadh - 1982 - 85
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Permanent life insurance (sometimes referred to as whole life insurance) is a unique financial tool. It can provide a foundation of protection for your entire life; no matter how long you live (assuming premiums are paid to keep the policy in force). In contrast, term life, another popular type of insurance, provides coverage for a specific period of time, such as 10, 20 or 30 years. This means a term life policy might end long before your need for it does.

Keeping pace with changing needs
The ability to provide protection for your family throughout your life can be a vital benefit, especially given the fact that life expectancies are on the rise in America. Today, it is not uncommon for someone to live two or more decades into retirement. And, where expenses tended to fall as people aged, that is not necessarily the case these days. You may be retired, but that does not mean your mortgage or other expenses are retired too. Similarly, you may have a pension plan, but those benefits may pass away when you die. Permanent life insurance lasts for the rest of your life; it is there when you need it. It provides a guaranteed payout. You do not have to worry about becoming uninsurable later in life. Regardless of your health, your family and/or business are protected.

Planning flexibility today... and tomorrow
Equally important, permanent life insurance provides cash value that is guaranteed to grow each year, tax deferred, regardless of what is happening in the market. This cash value can be used in the future for any purpose you wish.

For example, you can borrow against your policy’s cash value, generally on a tax-free basis, and use that money for a down payment on a home, to help pay for your child’s college education or to supplement your income in retirement. But, keep in mind, any loans you take out will accrue interest. Loans also decrease the cash value and death benefit of the policy if you die before paying them off. However, if you decide to stop paying premiums and surrender or cancel your policy, the accumulated policy values, less any loans and interest, are yours.

A cost effective alternative
Many permanent life insurance policies are eligible for dividends, which can add to your death benefit and cash value, which grow tax deferred. These dividends, which are not guaranteed, can be used to pay all or part of your premiums, helping to reduce or even eliminate your out-of-pocket cost for coverage. They can also be used to increase your total death benefit over time without increasing your premiums.

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While cost is an important factor when considering any type of insurance, it is important to look at more than just the premium. You will want to also consider the financial strength of the insurance company, including its claims paying ability and track record of dividends. A well-trained financial representative can help. A good financial representative will help you evaluate your goals and objectives, and help identify which products offer the most appropriate solution for your unique circumstance. And, equally important, a trusted financial representative will review your insurance policies with you every year to ensure it continues to meet your changing needs.

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Permanent life insurance may be a good choice if you:
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• Can commit to paying an ongoing level premium
• Are looking to build cash value in your policy that you can use during your lifetime
• Want flexibility to meet a lifetime of changing needs

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EVENTS
Dr. Angelo DiMaggio - Neck & Back Pain & The Golden Apple Award

Dr. Angelo DiMaggio

Dr. Jay Werschky and the Golden Apple award.

Dr. Angelo DiMaggio treating Dr. Allen Mortimer.
Our Sponsor for Anterior Quest showing an amalgam separator.

Our Sponsor from Doral Metal Recycling.
Josh Lord- Employing Social Media in the Dental Practice

Dr. Diwakar Kinra and his new Associate Dr. Angela DeKock.

Drs. Shorez, Lisa Bair and Jay Berthiaume.

Drs. Mark Eastman, Jack Medemar, Jim Williams & Doug Schneck.
EVENTS

Tim Kosinski Dental Implants

Dr. Berthiaume discussing with one of our sponsors Ward Lab.

Dr. Lindemann & John Matthews from Curasan.

Sponsor tables.

Drs. Alexander Marlow & Steven Rollins.

Drs. Bill Beck, Jay Werschky & Jim Cantwil

Drs. Paul McEwen & Gerald Ryan.

Drs. Lisa Baier & Bill Norton.

Drs. Roger Sullivan & Mark Eastman.

Drs. Suheil Boutros, Pat McGarry & Deb Chinonis.

Drs. Scott & Allen Mortimer.

Drs. Trina Floyd, Mike Lindemann & John Sullivan.
MEETING SCHEDULE

Mark Your Calendar

2014-2015 GDDS
Dinner Meeting Schedule

The GDDS dinner meetings will continue to be at the Flint Golf Club on Tuesdays (unless otherwise noted)
With hospitality at 6:00 p.m. and speaker at 7:30

January 14, 2015
The impact of texting and social media on the evolution of the English language
Dr. Anne Curzon, PhD, Linguistics

February 11, 2015
Infection Control
Dr. Marie Fluents

April 14, 2015
Perspectives of a Cancer Survivor
Eva Grayzel