

The future of dentistry?

Dr Anoop Maini discusses how to raise the cosmetic bar using computerised diagnosis

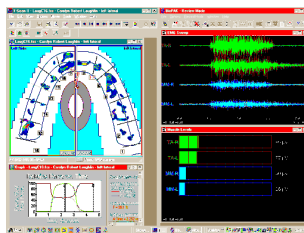
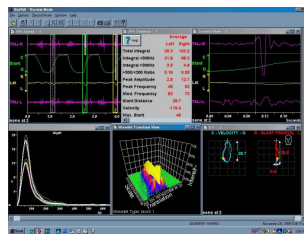
I recently attended a dental team training course that was valuable for my new staff but it left me, a 16-year veteran of the dental business, a little disappointed. The course presented a business and medical model of dentistry that reflects the philosophy that 97 percent of dentists share (aka tooth carpentry). This concept is strictly limited to the oral cavity, and ignores the majority of the stomatognathic system. It also ignores the fact that we have tremendous impact on our patients' TMJ, muscles, nerves and airway every single day.

In the limited model: dentists treat teeth and gums. We do root canals, extractions, fillings, crowns, partials, dentures, bridges, implants, cosmetics, and all of the services that are confined to the dental box or oral cavity. Only three percent of dentists have stepped out of this dental box and made the shift to become "dental physicians."

Beyond dentistry, doctors examine and diagnose their patients every day. The modern day GP uses advanced technology to examine the patient, make a diagnosis, treat and/or refer. The "three percent" dentist, uses advanced technology to examine, diagnose, and treat and/or refer. This dentist knows that teeth are only a part of treating his patient comprehensively. He is interested in how his treatment has direct implications on the overall dental physiology of the patient. This dentist is not just concerned with cavities, perio disease, intraoral pain of the patient, or cosmetics. His treatment is based on what is revealed through his diagnostic protocol that includes the TMJ, muscles, occlusion and airway. This approach is what I have heard referred to as Optimum Dental Physiology (ODP).

ODP principles

These go beyond just teeth, and include an examination of the TMJ, muscles of the head, neck, and face, the alignment and shape of the mandibular



the Acculiner to assess the plane of occlusion and any distortions present. The teeth are evaluated for the presence of unsightly aesthetics, decay, wear facets, attrition, abrasion, erosion, abfractions, fractures, failing restorations, and traumatic occlusion. All of these conditions mentioned are directly or indirectly associated with a faulty occlusionⁱⁱ. This is clinically essential to proceed with any treatment.

and maxillary orthopedic arches, and postureⁱ. An ODP "three percent" dentist realizes to provide this type of comprehensive, special care will at times involve other health care providers, such as doctors, ENT's, physical therapists, massage therapists, etc. The ultimate result of this comprehensive examination and treatment protocol will be exceptional treatment that creates optimal cosmetics, function, and stability i.e. ODP. Optimum Dental Physiology includes improvement or elimination of headaches, face pain, neck pain, ear pain, sinus problems, obstructive airway problems, sinus problems and many other issues.

The examination of occlusion must include these four areas:

- 1: The teeth and plane of occlusion.
- 2: The temporomandibular joints.
- 3: The neuromuscular system.
- 4: An orthopedic examination of the head and neck.

1. The teeth are examined traditionally, but in addition, upper and lower models are mounted on

2. To quote Dr. Peter Dawson, "All occlusal analysis starts at the temporal mandibular joints"ⁱⁱⁱⁱ In my opinion, you should never begin restorative, ortho, and/or sleep treatment without first diagnosing and correcting (if possible) a TMJ condition. In my practice this includes an extensive history, joint vibration analysis, tomography, and if necessary MRI. If you feel your practice cannot support the investment necessary in the more costly imaging systems you should be using a thorough history for your subjective findings and Joint Vibration Analysis (www.IndentSystems.com) for the objective portion of your diagnosis. Diagnosing the health of the TMJ is the responsibility of every dentist. However it is not the dentist's responsibility to treat. Just as a GP doesn't treat all heart ailments, we don't need to learn how to treat advanced degenerative joint disease or avascular necrosis of the condyle, but we sure better find it when it exists.
3. A neuromuscular exam must not be confused with the neuromuscular treatment philosophy. The neuromuscular exam combines the

subjective findings of the patient's history and muscle palpation with the objective findings of the resting and functional health of the muscles using surface electromyography (EMG), freeway space and ROM using magnetic jaw tracking. This information allow me to assess the neuromuscular components involved with chewing, swallowing and breathing. If the diagnostic tools are not available in-house, there is a network of BioPAK Centres

(www.BioPAKCentre.co.uk)

established in the UK that will collect the information for you. These everyday functions can degrade to a point, which ultimately debilitates the patient's overall physiology such as clenching, bruxism, and patients whose chewing muscles are painful and fatigued. Obstructive sleep apnoea and patients who have distorted occlusal planes have to go through "oral gymnastics" to accomplish chewing, swallowing, and breathing.

4. Even if you have to refer them out, all dental patients should have the opportunity of a thorough orthopedic analysis. The examiner will take a lateral cephalometric radiograph to assess the orthopedic conditions of the maxilla and mandible, to help diagnose and treat orthodontic patients. This is particularly relevant for patients receiving dentures or extensive rehab, TMD or sleep apnoea treatment. Comprehensive radiographs should include lateral cervical spine, frontal skull, Townes view, frontal and sagittal tomos of the condyles, sinus views and a sub mental vertex X-ray. Cone Beam Computed Tomography (www.IndentSystems.com) provides an excellent, low radiation dosage way to collect 3D data in a single scan.

I recommend the use of additional diagnostics as needed. I will use T-SCAN for initial occlusal timing and force diagnosis and to objectively guide my case finishing and equilibrations. This is extremely important after final restorations are seated. The teeth, muscles and joints all work together to create optimum dental physiology and a harmonious environment for our dentistry. The use of T-Scan, EMG, and JVA allow me to objectively see the impact my treatments have on creating balance in the stomatognathic system. What's most important is they make it easier to know when I am finished treating and the patient is ready for the next step by removing much of the subjective guesswork of a purely subjective analysis.

We can deliver beautiful, healthy and longer lasting dentistry if we work with the patients craniofacial physiology, instead of simply putting man made materials into a hostile environment that has already destroyed the natural teeth! This is hardly a new concept but the objective tools of today allow us to see the physiology much easier and with more accuracy than ever before.

Computer diagnosis will be important in the future of dentistry. Come and speak to Dr. Maini about the future of dentistry at the BACD Edinburgh annual conference in November 2009 (www.BACD.com)

ⁱ *James E. Carlson DDS "Occlusal Diagnosis"*

ⁱⁱ *Reference www.occlusion.co.uk*

ⁱⁱⁱ *Peter E. Dawson DDS Functional Occlusion: From TMJ to Smile Design 2007 Mosby, inc. pg. 33*

About the author



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