

the disagreement revolves around politics rather than science. At the very core of this disagreement is the issue of money.<sup>7</sup> Insurance companies have successfully shunned their responsibility, as if TMD is not a reality. Similarly, the academics have their agenda — obtaining research grants, seeking specialty status and defending the outdated methods they are still teaching — but this agenda will not stand in the way of objective scientific progress. This bioinstrumentation has been given the “seal of approval” by the American Dental Association. Is the CDA lagging behind? If we intend to perpetuate the myth of centric relation vs. neuromuscular occlusal position, there will be fallout. Reasonable people serving as jurors in court will

ultimately decide. If we are to be the leaders in oral health in our country, we need to look at the scientific evidence and move forward by promoting functional jaw orthopedics and neuromuscular occlusion. Given that a “causal relationship can be demonstrated such that successful occlusal management of certain myogenous problems results in repeatable improvement of relevant parameters and symptoms,”<sup>7</sup> unsuccessful occlusal management can have a causal relationship of certain myogenous disorders. Unsuccessful occlusal treatment is often the result of distalizing forces acting on the mandible and the loss of posterior vertical dimension.

## Occlusion: The “Science-Based” Approach

• James P. Lund, BDS, PhD •

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Dr. Dale makes many statements in his short article and cites the opinions of people with whom he agrees. He is pushing dentists to buy a set of electronic instruments with which they can recognize “physiologic harmony” of joint muscles and teeth, and then correct any disharmony they uncover using the same instruments. He repeats many of the claims that the manufacturers and their allies have made during the last decades of the 20th century:

- that elevated muscle activity “results from malocclusion-directed nociception” and that this can be detected with surface electromyography (EMG);
- that computerized mandibular kinesiography can be used to locate the “true mandibular rest position”;
- that electrical stimulation of the skin over the mandibular notch can be used to uncover “the myotrajectory for a peaceful neuromuscular occlusal position.”

He calls these methods an “objective, science-based approach,” but cites no scientific studies to back up the claim. He also decries the fact that academics have not embraced these instruments, and accuses us of having “an agenda” that is non-scientific. However, if he were to read just some of the articles that academics like me have written, he would find that our objections to the use of these methods are clearly based on science, and on a desire to prevent harm to patients. Consider the following.

- There is a great deal of evidence from well-controlled studies that EMG activity is not higher than normal in people who have pain in the masticatory muscle and joints.<sup>1,2</sup> Therefore, there is no reason to try to lower EMG levels to find the so-called “true mandibular rest position.”
- Computerized mandibular kinesiographs have been shown to be inaccurate and very difficult to calibrate in a dental office.<sup>3,4</sup>

- Electrical stimulators used in the dental office activate the fibres of the superficial masseter muscle, not the masseter nerve.<sup>5</sup> The so-called “neuromuscular occlusal position” is really a superficial masseter occlusal position.

None of the papers that are critical of this methodology are ever cited by the proponents of this instrumentation, except in letters which are sent to people like myself, and to deans and university presidents, ordering us not to publicize our findings. Dr. Dale uses the same approach when he implies that those who do not embrace the faith will be dragged into court. However, if the scientific evidence for and against the ideas that he has acquired were ever placed on the scales of justice, he would be surprised by the height to which his weighing pan would rise. ♦

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*The views expressed are those of the author and do not necessarily reflect the opinion or official policies of the Canadian Dental Association.*

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