Biodontics and Evidence-Based Dentistry

Edward F. Rossomando

University of Connecticut Health Center
School of Dental Medicine Farmington, CT

Those of us gathered under the umbrella of the emerging dental specialty Biodontics, who understand the importance of biotechnology to dental practice, welcome the shift in dental practice from one rooted in the 19th century experienced-based model to one that has embraced a 21st century evidenced-based paradigm.

This shift is consistent with the continued evolution of professional dentistry from its founding in 1840 with the Baltimore College of Dental Surgery. Even in its infancy, Horace Hayden and Chapin Harris recognized the importance of education and literature to development of professionalization of what was then a “trade”. As early as 1893, Harris recognized the importance of an authoritative dental periodical and founded the “American Journal of Dental Science”. As Harris stated in his prospectus for the new journal, “it will have the effect of giving dignity and importance to the general subject of practical dentistry and thus result in a solid advantage to each and all of its professors as well as to the community at large” (1).

Evidenced-based decision-making comes late to dentistry when compared to decision-making in other areas of daily life. For example, when purchasing a car, a refrigerator even a lawn mower, how many of us avail ourselves of information in Consumer Reports or some other publication that experimentally tests products and reports, in publications untainted by pressure from a manufacturer, the results of these studies.

In contrast, for those new products not evaluated in academic institutions and the FDA, dentists must rely on results produced by a patchwork of testing organizations that are not regulated and operate in the absence of oversight by any accrediting body. As a result, decision-making about the purchase of a new product is guided by reports that are usually prepared without scientific rigor or oversight and therefore, are for the most part, verging on anecdotal.

If the entry of biotechnology products and services into clinical dentistry is to continue and hopefully accelerate, the present situation cannot continue. For dentists to purchase new products based on 21st century genomic science, they must be confident that the new product or technology was tested using best practices and best methods in a setting independent of any influence. Given the recent report in the New York Times (2) that some research organizations are owned wholly or in part by advertising firms and the implication of the article that even the most respected of scientific journals might be unreliable, the dental profession should be in the forefront of insisting on credible mechanisms for product evaluation and testing.

The importance of credibility was brought to the forefront recently in what I will call the case of the Corked Bat. It seems that Sammy Sosa, one of baseball’s all time greats, swung at a pitch, cracked his bat, and was caught using a bat with a corked center. When the umpire retrieved the broken bat he found the center had been drilled out and filled with cork. Batters apparently believe that a cork filled bat will allow them to swing faster and produce a springboard effect thus driving the ball further. I feel for Sammy, not because he got caught, but because there is no such a thing as evidence-based baseball. Were it so, Sammy would have been aware of experiments that showed that a corked bat unequivocally does not help a hitter. While the bat is lighter, allowing more time to swing, the introduction of the cork decreases the bat’s mass and the ball does not travel as far. He would also be aware that the introduction of cork makes the bat neither spongier nor act like a springboard. In fact, experi-

---

J Evid Base Dent Pract 2003;3:183-4
© 2003 Mosby, Inc. All rights reserved.
1532-3382/2003/$30.00 + 0
doi:10.1016/med.2003.82
ments have shown that the contact between the ball and bat is too brief – 1,000th of a second for there to be any springboard effect (3).

The lesson here is about **credibility**; once lost, it is difficult to regain. By availing himself of the results of scientific studies, Sammy Sosa could have avoided embarrassment and saved his reputation. Who can forget the response of Johnson and Johnson to the Tylenol tapering episode and how the public responded to the Herculean effort the company made to insure the safety of the public–and in so doing protected the Tylenol brand name and Johnson and Johnson’s credibility. (For additional comments about credibility and its importance to the dental industry please see (4)).

As shown by the existence of the “Journal of Evidence-Based Dental Practice”, the dental profession currently is moving from an experienced-based decision-making process to one that is more evidence-based; that is, treatment protocols are based increasingly on the results of scientific studies. This shift adds considerable credibility to the statements made by the dental professional. The public has responded positively to this shift, and it should come as no surprise that credibility has become critically important for the members of the dental industry as well.

Both the dental profession and the dental industry have humble beginnings. The first dental practices were set up in barbershops and saloons, and the dental industries initial products were tonics and toothache remedies sold from the back of a wagon. Both groups have come a long way from these early days and humble beginnings. Today, the public expects dental practitioners and industries to act as professionals with codes of conduct and adherence to ethical standards. Both groups have set codes of ethical conduct and standards to which members are expected to adhere, ensuring credibility of claims for therapies and products.

Of course, the importance of educating dentists on new products is well known to the dental industry as evidenced by its support of numerous workshops, seminars and the distribution of significant amount of printed and electronic material in support of products. Clearly, the dental industry is well aware that the ability of dentists, or other dental office personnel, to evaluate products and technologies is critical to their sale.

Given the importance of a company’s reputation when selling a product, it is crucial that when a dental company is considering a new biotechnology based product or the bigger investment of acquisition of a biotechnology company, it should evaluate the results of the scientific studies on the biotechnology company’s product. Clearly, a little dose of science can go a long way to protecting the credibility of the dental company when considering acquisition. And regardless of whether or not the dental company sells to dentists, the public or to a distributor, they have a reputation to protect–remember, dental companies are not selling snake oil from the back of the wagon anymore!

**REFERENCES**