

Critical Information

When I was a freshman in college I read Alvin Toffler's book *Future Shock*. This was a very helpful book for a young person entering into higher education. The author is often described as a futurist, an appropriate description as many of the comments made by Toffler in 1970 remain true today—40 years after the publication of the book. One definition of "future shock" is that of an appreciation that there is "too much change in too short a period of time," thereby eliciting anxiety.

The idea of information overload was not unique to 1970. In fact, we often recognize the massive amount of scientific information that is produced today. Keeping up with this literature demands a different strategy than the ones employed a few years ago. Today, library searches are used to limit the material to those articles that are pertinent to the subject at hand. Once a search identifies a series of pertinent articles, the reader must then utilize a strategy to compare the available articles and then use the information gained from them. For all intents and purposes, this method represents an evidence-based approach to assessment of the scientific literature.

The world of science is not really that much different than the world of computing. Intel co-founder Gordon Moore made the observation that, since the invention of the integrated circuit, the number of transistors per square inch had doubled virtually every year. "Moore's law" now states that the number of transistors on a chip will double every 2 years and, indeed, this has been the case for the last four decades.

With rapid change and large volumes of information, it is incumbent upon readers to understand what absolutely needs to be known in comparison to what might be available to learn. This task presents itself in implant dentistry just as it does in all other phases of dentistry.

Although implant dentistry has observed dramatic growth since the earliest descriptions of osseointegration, it should be clear that much of the information that has been gathered is incremental in nature rather than being so unique as to establish new treatment paradigms. In implant dentistry, the change in paradigms came with the recognition that direct bone-to-implant contact could occur when a series of requisite procedures and events were combined. Osseointegration occurs when the appropriate implant materials are used in a receptive host who

has received surgical and prosthetic care that follows a specific technique. Since that time, implant designs have changed, surfaces altered, site preparations modified, and new grafting materials added. These changes resulted in minor improvements in implant survival for the average patient while demonstrating definite advancements for specific subsets of patients. In addition, newer techniques, materials, and designs have allowed the implant option to be available to a broader group of patients.

One factor that limits dramatic advancement in this field is the high survival rate experienced by most patients. When implants survive more than 95% of the time it is difficult to identify significant improvements with modified procedures or devices. An additional factor that hampers advancement is the fact that there has been no routine acceptance of a set of success criteria.

Fortunately, the Academy of Osseointegration is currently planning a summit designed to assess many of the areas of potential advancement for the field of implant dentistry. This summit will be held in the summer of 2010 as part of the ongoing celebration of the 25th anniversary of the Academy. A variety of topics will be presented by scientists to clinicians who ultimately will participate in translational research to bridge the gap between scientific research and clinical practice. At that same meeting, clinical outcomes will be discussed in such a way as to assist in the development of definitive success criteria that must be adopted by the profession. It is an ambitious agenda but one that promises to advance the field.

Toffler wrote about rapid change in an attempt at defusing the fear that accompanies it, while Moore told us that change, in the form of technological advancements, was sustainable. The task that we face is one of identifying the areas where change may be beneficial while also embracing standard assessment guidelines. Fortunately, we have the assistance of professional organizations, dedicated scientists and clinicians, and publishers willing to bring this information to the profession.

A handwritten signature in black ink that reads "Steven E. Eckert DDS MS".

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Editor-in-Chief