

Evidence-Based Journalism

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The cry for evidence-based treatment continues to grow. Since the literature is one major source of evidence for practitioners, professional journals must provide good evidence. But what is good evidence?

You can perform all of your patients' treatment based on case reports you read or heard or on claims by another orthodontist who appears to be very successful. This is evidence-based, but it clearly is one of the lowest forms of evidence. Obviously there are gradations of evidence that run the gauntlet from nearly perfect science to opinion-based clichés.

Let's see how the *Angle Orthodontist* is doing in performing its responsibility at 75 years of age. Through most of the 20th century the editor of an orthodontic journal was pretty much the czar. Articles were accepted or rejected based on editorial whims and biases (This is a point worth remembering as you read the older literature.).

It was only during Dave Turpin's stewardship that peer review was initiated at the *Angle Orthodontist*. This event passed relatively quietly, but it was the beginning of the modern era for our journal.

When I became the new kid on the block in 2000, we were struggling to get a quality issue out because of the limited number of manuscripts available. I literally was soliciting my friends to submit quality papers.

It was at this same time that the Angle Foundation made the decision to go electronic and all current issues went online. In 2002 we went to electronic submission and review and became totally electronic. The impact was hard to believe. Wow! In contrast to the relatively static number of paper subscriptions, the hits on the web site were awesome. Thus far, the number of hits has doubled each year as shown in the table (as you view this table, remember that the growth shown here is predominately occurring outside of the United States—a point worth remembering when considering where orthodontics might be headed).

	Hits on Web Site	Manuscripts Submitted
2001	90,664	122
2002	232,951	178
2003	486,144	251
2004	1,645,796	342
2005*	2,633,040	516

* Extrapolated from first three months.

The qualitative issue is harder to document. Certainly there is a better opportunity to publish the highest quality

of evidence if you have more from which to choose. Quality, however, is not guaranteed by quantity.

The best key to quality available today is anonymous peer review. Peer review of a scientific article requires evaluation by a person who is expert on that subject. No editor can be so well versed as to know what the state of the art is in all fields of modern science. When I assign reviewers, I do a literature search and find persons who have published recently on the topics in that article. I send the potential reviewer an e-mail requesting them to review the article and usually they accept. Besides being a service to the profession and to the journal, it is of value to a reviewer to see the current work others are doing in their field of interest.

The reviewer is able to open the article immediately, read it, and write a review. The review is immediately available to me, and theoretically this could all happen the same day. I have had reviewers respond so rapidly that I have sent the results of the peer review to the author the same week. This is the exception, however, and the system is only as fast as the humans can accomplish their work.

When an article is accepted, it then goes through the usual technical publication steps and a galley copy is sent electronically to the author for a final check. The author sends the corrected galley back to the editor, who forwards it for electronic publication as part of a future issue. The article goes up online and you can read it then, even though you will not get your paper copy for many months to come. Paper publication alone resulted in the articles sitting on the editor's desk for many months or even years. Authors are now gratified to see their articles electronically available as soon as completed.

Bottom line—electronic journalism is here to stay, but it does not guarantee the best evidence possible. The best treatment may not necessarily occur because you practice what is read in a peer-reviewed journal. The reader must still distill the evidence and put it in perspective. The journal's job is to bring you the best information available from the best minds working in that field at the time. Your job is to be a discerning reader and to place the information in perspective and continue to grow and learn as the field gains a better and better quality of evidence. What is guaranteed is if you don't grow, your treatment increasingly will be based on yesterday's best evidence.

The bottom line has not changed. The journals have to provide state-of-the-art evidence. The reader has to place it in perspective. We both have to work hard if we want to grow and stay on the cutting edge of our profession.