

# Applying technology to your practice

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With the increased use of technology in society, patient expectations are on the rise. As patients strive to become decision-makers there is increased pressure on practitioners and staff to educate them sufficiently so they can make intelligent choices. Solutions include the use of digital imaging, high-definition screens and interactive media. There is little doubt in my mind that the continuum of a contemporary orthodontic practice will include technology as a core component of optimal functioning. As everything speeds up, the range of people who are touched by the typical orthodontic practice broadens...and the reason is technology. As if this isn't enough, everyone we communicate with – our patients, the dental community, and the public in general – will tend to have higher expectations of the specialty of orthodontics.

According to the Wall Street Journal, "More people are using Internet health sites, but fewer are satisfied." It seems that patients are asking for better data and more direct interaction with health-care providers – including the ability to communicate with doctors online. People have been frustrated largely because their own physicians have been slow to adopt Internet technology to improve patient care. With this awareness there are a number of ways your office can use technology to improve the care of your patients.

Is it possible to use the web to help educate your patients and train your staff? What is the AAO doing to assist in the exposure of your web site to the public? Regarding a desire for greater access to our scientific base, the address for the National Library of Medicine (NLM) is ([www.ncbi.nlm.gov.PubMed/clinical.html](http://www.ncbi.nlm.gov/PubMed/clinical.html)). This site alone can open the door to over 9 million references to articles published in 3800 biomedical journals.

You are encouraged to use the online version of the AJO-DO and will be told how to register for this free service. Examples of finding answers to clinical diagnostic questions will be a part of this presentation. Access to the online AJO-DO can be found at ([www.mosby.com/ajodo](http://www.mosby.com/ajodo))

The history of digital imaging will be reviewed including the early publication of a study by a group of ear, nose and throat specialists regarding the education of patients in need of rhinoplasty. "Orthodontic treatment planning is an interactive process, in which the patient and the doctor serve as co-decision makers," noted Ackerman and Proffit in an article published in 1995. It is all too true that when presented with two different treatment plans, the patient always assumes the end result will be the same. Such is not necessarily the case, but if the patient is to become a co-decision maker, they must have a greater understanding of all treatment options. The imaging of records can be of help in this educational process.

How accurate are the myriad of imaging software packages and the morphing techniques now available? The latest study just completed by Nicholas Salome (U of Washington) compared the accuracy of predicting the facial profile outcomes of 41 consecutive mandibular advancement patients. The first prediction was made using Orthodontic

Treatment Planner (OTP), and the second was made by having the patient posture the mandible forward into a normal overbite and overjet. Results showed that both types of predictions were reasonably accurate for OTP and for the posturing method of imaging. The posture prediction was more accurate than OTP on both objective and subjective scores, and these differences were statistically significant. As a clinician using morphed images when proposing orthognathic surgery, I prefer images that are accurate, but not more attractive than the post-treatment result.

The need for digital images of the highest quality is of ongoing concern. Although the quality of cameras has risen dramatically and the costs have dropped, most orthodontists do not understand the need to save their raw data (digital images) in the highest possible resolution. As images are imported into most software programs, they are compressed and the resolution automatically reduced. At this lower resolution (72 ppi) the production of photos from an inkjet printer might be acceptable for use, but they are not adequate for projecting in a large lecture room or for publication. For instance, the publication of a case report requires that the color images be submitted as Jpeg's, or Tiff files at no less than 300 ppi and 5 inches or more in size. These original images can easily be stored on CD's at minimal cost.

The opportunity to create visual letters is another task made easier as a result of expanded technology in the office. Author Robert L. Lindstrom noted in his book on photography, "As we move further into the digital age, we must relearn the all-but-forgotten visual-communication skills of our past." Several examples of placing photos in routine office correspondence using Microsoft Word will be explored during the presentation.

Yes, technology will be the driving force behind the 21st century practice.

## **References:**

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