Just when orthodontists thought that cone-beam technology had changed the face of orthodontics as much as possible, Imaging Sciences International announced enhanced diagnosis and planning through the flexibility of the i-CAT and Invivo5 software applications. These new tools go hand-in-hand with i-CAT’s flexibility in dose management, especially with the Quick-Scan — the 4.8-second, lowered-dose scan that closely compares in exposure to 2-D pan-ceph sets.

The new software takes the precise three-dimensional information provided by the CBCT scan itself and delivers easy-to-use and informative tools specifically designed with the orthodontist in mind:

- **The Cephalometric Analysis Tool** option allows the clinician to take measurements and establish norm data statistics with one easy click. This option also yields full traditional 2-D analysis. The latest version of the software features an updated anchor pin library for virtual TAD placement and virtual TMJ visualization, a study model and a simulation tool.

- **The Airway Analysis Tool** facilitates quick airway tracing and automatic calculations, instant measurement of total airway volume, localization and area measurement of maximum constriction and automatic color-coded constriction values of the airway volume.

- **Virtual study models make orthodontic patient education and treatment planning easier and more productive.** The AnatoModel module allows the orthodontist to create virtual study models that contain crowns, roots, developing teeth, impactions and alveolar bone. This impression-less model is created from CBCT data. Patients will not miss the impression-taking part of their visit, and the practice will save on time and materials used in taking traditional study models.

- **To keep organized and improve communications between colleagues and patients, the software system contains Advanced Annotation Capabilities**, such as custom labeling on 3-D volume renderings and layout display options.

- **Customer support for the Invivo software** is now available through the company’s customer care department, and a variety of training programs are available to help maximize the productivity that can be achieved by using the Invivo5 Software with i-CAT.

The software also contains an expanded implant library for restoration-based implant planning, as well as applications for virtual modeling and surgical guides for guided surgery.

In orthodontics, it is very beneficial to have a complete 3-D picture of the dentition and face. i-CAT scans already provide an undistorted view of impacted supernumerary teeth and unusual anatomical variations, as well as the location of teeth in relation to roots and sinuses. Now, orthodontists can calculate more efficiently and plan more effectively with the virtual wealth of information possible from i-CAT and Invivo5.
3rd Annual TAD User Forum
November 4-6, 2011 · Las Vegas, Nevada
Wynn Las Vegas
www.wynnlasvegas.com

Don’t Gamble with Your TAD Success...
Stack the deck in your favor

Forum Overview
♦ Choose from Multi-Track Lecture Schedule
♦ Hear from 10 Market-Leading Experts
♦ Beginner & Advanced Level Education
♦ Dynamic Round-Table Workshops
♦ Optional Sunday Hands-On Activities:
  Hands-On w/Demo Models
  Place your 1st TAD on a LIVE Patient

SAVE $100!
Mention Code #TUFOT7
tomasforum.com
800.523.3946
Code valid thru July 31
Tooth movement: Is it health science or unhealthy cosmetics?

By Rohan Wijey, B Oral H (Dent. Sci.), Grad. Dip. Dent. (Griffith), OM

Moving teeth with braces has long been considered a permanent cure to crowded teeth. However, we now know this traditional approach is neither permanent nor a cure.

The literature accepts that the only way to ensure satisfactory alignment is by use of fixed or removable retention for life. Orthodontics has thus proven its reliance on these interventions.

When we graduate as dentists or specialists, we are all implicitly bound to honor the trust placed in us as medical professionals. Despite this, traditional orthodontics may cause root resorption or enamel damage, exacerbate periodontal disease, increase the chance of caries and devitalize teeth. After this begins the need for lifelong maintenance of permanent retainers, the burden of which is borne by both the patient and the practitioner.

Despite our status as medical professionals, has the orthodontic profession veered away from being a health science and moved toward the realm of cosmetics?

Premolar extractions

There is no better example than the prevalence of premolar extractions in private practice. Epidemiological data is sparse, but according to the most contemporary survey conducted of U.S. private practices, 25 percent to 85 percent of our children have healthy teeth extracted in the name of orthodontics.

The justification and rationale behind premolar extractions today rests with P.R. Begg’s 1954 assertion that the low incidence of malocclusion in primitive dentitions was because of gritty diets causing interproximal attrition; Begg suggested that this amounted to a premolar’s width in each quadrant.

Begg’s research has been roundly refuted in the literature, not least because his own theory refutes his results: both crowding and attrition increased with age.

Extractions lead to stability?

Do premolar extractions lead to more stability? No. R. M. Little’s definitive 1981 study showed satisfactory mandibular anterior alignment in less than 30 percent of extraction cases 10 years post-retention, and in less than 10 percent of cases 20 years post-retention. Many other studies have corroborated this conclusion.

Although hygienists, dentists and all other specialists strive to preserve teeth, this principle seems outside the orthodontic profession’s orbit of thinking.

What causes malocclusion?

“Whenver there is a struggle between muscle and bone, bone yields,” wrote T. M. Graber in his seminal 1963 manifesto on the influence of muscles on malformation and malocclusion. In their review of the orthodontic influence of mandibular muscles, Pepicelli et al. (2005) corroborated this by saying it is “well accepted” that the position and function of the facial muscles...
A complete orthodontic imaging workup in one scan.

- Powerful Treatment Tools
  Optimize treatment plans with greater accuracy & better clinical tools

- More Clinical Control
  Proprietary technologies deliver high definition, low dose scans quickly & easily

- Fastest Workflow
  Capture all diagnostic images in 4.8 seconds & treatment planning within minutes

- The i-CAT Network
  Exceptional experience & world-class support

Don’t miss the 5th International Congress on Cone Beam 3D Imaging, November 4-5 – in Dallas, TX

www.i-CAT.com
Align Technology announced May 13 that a total of $165,000 in scientific research funding is being awarded to three universities in North America and to three universities internationally for one- and two-year projects seeking to better understand orthodontic treatment with clear aligners.

“We are extremely pleased to see a growing level of scientific interest in orthodontic treatment with clear aligners and excited that we can help support leading researchers seeking to gain greater insight into the science behind Invisalign treatment,” said Dr. Eric Kuo, Align Technology vice president of clinical technology.

“This is also the first year where participation in Align’s research award program also includes universities outside of North America, which reflects strong adoption of Invisalign treatment worldwide,” said Dr. Mitra Derakhshan, Align Technology director of clinical international.

The North America research award recipients for 2011 are:
- Dr. Sheldon Baumrind and Dr. Heesoo Oh at the University of the Pacific (San Francisco): $50,000 over two years;
- Dr. Peter Buschang, Dr. Phillip Campbell and Dr. Doug Crosby at Baylor College of Dentistry (Dallas): $25,000 over one year;
- Dr. Madhur Upadhyay and Dr. Sumit Yadav at the University of Connecticut (Farmington, Conn.): $50,000 over two years.

The International research award recipients for 2011 are:
- Prof. Dr. Athanasios Athanasiou and Dr. Andreas Karamouzos at Aristotle University of Thessaloniki (Greece): $10,000 over one year;
- Prof. Dr. Christoph Bourauel, Dr. Ludger Keilig, Dr. J. Schwarze and Mareike Simon at the University of Bonn (Germany): $20,000 over two years;
- Prof. Dr. Luca Levirini, Prof. Dr. Gian Marco Abbate, Dr. Federico Migliori and Silvia Margherini at the University of Insubria, Varese (Italy): $10,000 over one year.

Study proposals approved for funding this year include a periodontal health evaluation of teenagers treated with Invisalign aligners, an analysis of treatment changes in adolescent clear aligner patients, a biomechanical evaluation of clear aligners, an assessment of the efficiency and effectiveness of clear aligner treatment, an evaluation of root resorption and periodontal status of patients treated with Invisalign aligners and a color evaluation of Vivera® orthodontic retainers.

Program details and instructions for prospective applicants are available at www.aligntechinstitute.com/researchawards (for North America) and www.aligntechinstitute.com/internationalresearch (for international).

The weight of the literature rests with the fact that muscle function and posture (the way patients swallow and posture their tongue) is the most significant cause of malocclusion.

A time for change?
Throughout its 100-year history, the orthodontic tradition has been evolved by great minds, such as Angle, Frankel, Graber, Rickets, Garliner and Little. However, if we aspire to be considered a scientific medical profession, orthodontics must continue to evolve with the research. This means re-orientation toward a more evidence- and health-based approach.

Are we going to continue to accept relapse or retention until the death of the patient or the orthodontist? The science is there: The cause is muscle function, and the solution is myofunctional orthodontics. (References are available from the publisher.)