Clinical evaluation and laboratory comparison of chairside CAD/CAM systems

Bluestone Center for Clinical Research at the New York University College of Dentistry recently released the results of several projects that evaluated the clinical efficacy and performance of the E4D Dentist System (D4D Technologies) and compared the fit and strength of restorations produced by the E4D Dentist System with those from a competitive chairside CAD/CAM system.

In the clinical evaluation, the investigators reported the E4D Dentist System was “… easy to learn by both experienced and inexperienced CAD/CAM users. Restorations were captured (scanned), designed, milled, occlusion adjusted and inserted in an average of less than 45 minutes. One hundred percent of all restorations created were found to be clinically acceptable by an independent examiner—.”

In a separate in-vitro investigation, full coverage restorations of similar design were fabricated by the E4D Dentist System and a competitive system, seated onto composite dies using resin-based cements and then sectioned for fit analysis. The analysis showed that the E4D fabricated crowns exhibited a reduced and more homogeneous fit at all measured positions (buccal, lingual and center). The results demonstrated a mean marginal fit of less than 20 microns, with an upper limit of 50 microns for E4D restorations and a mean marginal fit of 43 microns with an upper limit of 68 microns for the competitive system.

In a subsequent in-vitro evaluation, the mouth-motion fatigue reliability and failure modes of monolithic crowns (IPS Empress CAD, Ivoclar Vivadent) fabricated by the E4D Dentist System and a competitive system were evaluated. Results from the single load to failure provided a value of 1175 N for the E4D fabricated restorations and 1087 N for the competitive system. In the fatigue failure evaluation, no statistical difference was noted between the two systems.

Dr. Gary Severance, D4D Technologies’ vice president of clinical affairs, said: “Clinicians who currently embrace chairside CAD/CAM dentistry and those who may have been cautious in the past due to misconceptions regarding the integrity and ease of use of such systems will be encouraged by these results. We are grateful to researchers at NYU’s dental school for their contribution and effort and for making their findings available to the profession.”

It should be noted that different operators fabricated the samples from each system.

The authors of the reports are Van P. Thompson, E. Dianne Rekow, Mark Wolff and Nelson RFA Silva. Copies of the complete reports are available online at www.e4d.com/resources/nyuReports.php.

About D4D Technologies LLC
D4D Technologies is taking the dental profession to a higher level of productivity, patient com-
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Zimmer Dental Inc., a leading provider of dental oral rehabilitation products and a subsidiary of Zimmer Holdings, Inc., is pleased to announce the availability of the Sinus Crestal Approach Kit and Sinus Lateral Approach Kit for minimally invasive and streamlined sinus lift procedures. Stemming from an exclusive U.S. distribution agreement with Neobiotech Co., Ltd, the two kits are the latest additions to Zimmer Dental’s expanding sinus lift instrumentation portfolio.

The Sinus Lateral Approach Kit offers a complete solution for accessing the sinus via opening the lateral wall. The result is minimal flap size and a smaller window than conventional techniques. The Sinus Lateral Approach Kit’s reamers can be used with a standard surgical motor handpiece (2,000 rpm) for an expedient osteotomy. The tapered trunk on the kit’s LS-reamer is designed to control drilling depth up to 3.5 mm without the use of drill stops, and the special blade design creates a thin bone disc that protects the Schneiderian membrane. In addition, the C-reamer can be used to cut through the lateral wall and save a piece of circular bone that can be used to close the opening after the procedure.

Like the Sinus Lateral Approach Kit, Sinus Crestal Approach Kit offers a minimally invasive option for sinus lift procedures. The unique drill design of the Sinus Crestal Approach Kit’s S-reamer head (800-1200 rpm) also leaves a thin bone disk between the Schneiderian membrane and the reamer for optimum protection, and it can be used in misaligned and septum cases.

Furthermore, an assortment of stoppers control the drilling depth of the S-reamer from 2 mm to 11 mm, and the stoppers can be mounted on the bone spreader and inserter, thus making the kit a complete solution for performing a crestal sinus lift.

For more information on these sinus lift kits, contact a Zimmer Dental sales consultant or customer service at (800) 854-7019, or visit www.zimmerdental.com.

Zimmer Dental offers minimally invasive sinus lift instrumentation

Sinus Crestal Approach Kit by Zimmer Dental. (Photo/Provided by Zimmer Dental)
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BIOMET 3i recognized for contributions to DDS

BIOMET 3i has been honored with an award for its significant contributions to Donated Dental Services (DDS), a program of Dental Lifeline Network.

Dental Lifeline Network, formerly known as the National Foundation of Dentistry for the Handicapped, is a charitable affiliate of the ADA. Through DDS and other programs, the organization provides comprehensive dental care to people who are disabled, elderly or medically at-risk and has a nationwide volunteer network of 15,000 dentists and 3,000 laboratories.

“The outstanding support of BIOMET 3i has helped DDS reach today’s milestone of providing dental therapies valued at $181 million to 100,000 people in 50 states.” Fred Leviton, president of Dental Lifeline Network, noted. Leviton went on to say: “Since we first approached BIOMET 3i years ago, the company has provided hundreds of dental implants, never once refusing a request on behalf of our patients. As the need for implants increased, BIOMET 3i became a role model for other implant companies, enabling us to expand our services to those in need. We are profoundly grateful for its partnership.”

About BIOMET 3i

BIOMET 3i, a division of Biomet, Inc., is a leading manufacturer of dental implants, abutments and related products. Since its inception in 1987, BIOMET 3i has been on the forefront in developing, manufacturing and distributing oral reconstructive products, including dental implant components and bone and tissue regenerative materials. The company also provides educational programs and seminars for dental professionals around the world. BIOMET 3i is based in Palm Beach Gardens, Fla., with operations throughout North America, Latin America, Europe and Asia-Pacific.

For more information about BIOMET 3i, please visit www.biomet3i.com or contact the company at (800) 342-5454; outside the United States, dial (561) 776-6700.

About Dental Lifeline Network

Dental Lifeline Network is a 55-year-old, national humanitarian network dedicated to transforming lives through the delivery of life-saving and dignity-enhancing dentistry services for individuals who are disabled, elderly or medically at-risk. Donated Dental Services (DDS), a program of Dental Lifeline Network, involves more than 15,000 volunteer dentists and 3,000 volunteer laboratories and has arranged for $181 million in donated dental therapies for 100,000 of society’s most vulnerable individuals in all 50 states.
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Materialise Dental launches DentalPlanit

There’s a growing need to simplify the interaction between imaging providers and clinicians. Similarly, clinicians increasingly request treatment planning assistance with regards to performing guided surgery and SurgiGuide® online ordering. That’s why Materialise Dental is launching a free online space called DentalPlanit®.

Efficient patient-case management for dental professionals

DentalPlanit makes dental professionals’ lives easier. It facilitates the method of searching for and working with any imaging provider, whether large or small.

Everything flows together in one seamless process — managing and tracing patient cases takes no time at all as vital information is at one’s fingertips. Even an all-round treatment planning assistance service called PlanAssist is part of the deal. Clinicians can request full-fledged treatment-planning assistance during live PlanAssist sessions. Or they can choose to have a treatment-plan suggestion delivered to them. Tailored treatment-planning services are thus provided upon request.

During a patient visit, the scan procedure is swiftly scheduled online via the DentalPlanit directory by choosing a favorite imaging partner or one that is nearest to the patient. Next, the scan procedure can be tracked online and an automatic notification informs the clinic as soon as the 3-D patient images are available. The images can then be opened instantly with the clinic’s preferred implant planning software. “3-D patient images are necessary for most of my implant procedures. With DentalPlanit, this information is kept in one place, making it easy to access,” says Neil Matthews, a Rochester, Mich., prosthodontist.

Time- and money-saving procedures for imaging providers

Imaging providers can send images to their customers via DentalPlanit with amazing efficiency, according to Materialise Dental. Expensive IT resources and infrastructure are no longer needed to ensure secure online communication with referrals. By using DentalPlanit, imaging companies gain both time and money.

“Also on DentalPlanit, imaging companies can advertise their services to dentists in a much larger area than they could cover through their own marketing channels,” said Cassandra Gozin, product manager at Materialise Dental.

Thanks to DentalPlanit, imaging providers can offer their services to dentists. These services include the delivery of standard CT images or files, which are ready to be used in market-leading implant planning software such as SimPlant®, Facilitate™ and ExpertEase™. DentalPlanit doesn’t require any additional efforts from the imaging company or the clinician and is accessible via www.dentalplanit.com.

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Exactech has recently expanded its family of bone-grafting products to continue offering cost-effective options for high-quality bone-grafting performance.

Exactech’s Oralife products include DBM, cortical particulate, cancellous particulate and, now, a pre-mixed 50:50 cortical-cancellous particulate option.

Mixed cortical and cancellous particles provide the combined excellence of structural strength and volume while also providing the environment for the infiltration of blood cells and the remodeling process that promotes bone growth.

In addition to the new mixed option, smaller particle sizes of 0.25-1 mm are available for cortical, cancellous and the cortical-cancellous mix.

Oralife allografts may be used in clinical situations where human allograft is appropriate, such as periodontal defects and sinus-grafting procedures, extraction sockets, intrabony defects and in conjunction with dental implant placement.

All Oralife products are single-donor grafts that are recovered and processed in accordance with FDA and AATB guidelines using Allowash® Technology.

These products are aseptically-processed human allografts that are pre- and post-processing microbial tested.

Oralife joins Exactech’s flagship regenerative products, Regenaform® and Regenafil® allograft, to continue to offer simple, predictable results. Both products have been clinically shown to induce bone formation and facilitate bone growth.

Offering only an optimum DBM concentration that is demonstrated by histology to meet high osteoinductive standards after sterilization ensures the overall quality and regeneration you’ve come to expect in Exactech’s bone paste products.

References

Nobel Biocare’s new product catalog is now available

Nobel Biocare has now released its new, user-friendly product catalog 2011 with up-to-date content, illustrations and detailed product information.

The new product catalog provides a comprehensive source of the company’s extensive assortment of dental products. The product catalog, featuring updated images, graphics, product information and a user-friendly design, allows users to easily find and order the products they need.

The product catalog also includes flow charts and decision trees to support dental professionals in making the right product decisions.

Highlights of the new product catalog include:

- Recently extended product lines, NobelReplace and Replace Select.
- Information about Nobel Biocare’s heritage and production facilities worldwide.
- Information about patient education materials to support dental professionals with patient communication.
- Extended appendices to include information on torque guide, cleaning and sterilization guidelines and warranty.
- Tabs with chapter information on every page for easy navigation.
- View and interact with the online catalog by turning its pages, zooming in and searching for products using keywords.

To receive your own copy of Nobel Biocare’s comprehensive product catalog, please contact your local sales representative.

Nobel Biocare is the world leader in innovative restorative and esthetic dental solutions, providing dental professionals with advanced science-based tooth-to-root solutions.

(Source: Nobel Biocare)