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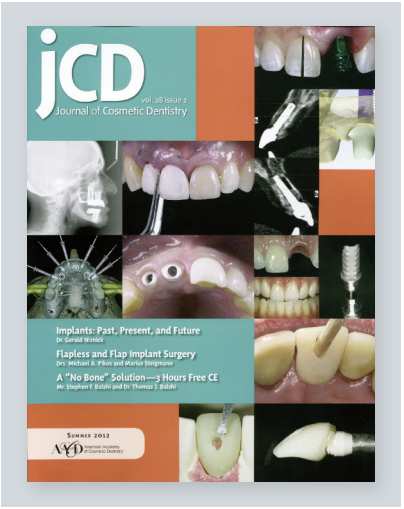

Editorial on - **Dental Implant Industry and Product Development**

Interview with - **Dr. Niznick on Value Segment Market**

Article on - **InterActive Evolution**

Article on - **GPS Attachment and GoDirect Implants**

Article on - **Implant-Abutment Connection**

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Implant Prosthodontics:
Past, Present, and Future

Reprint from:
Journal of Cosmetic Dentistry, Summer 2012

Dr. Niznick graduated from the University of Manitoba Dental School in 1966 and earned a Master's degree in prosthodontics from Indiana University in 1968. He has been awarded 36 U.S. Patents and has received honorary doctorates from the University of Manitoba and Tel Aviv University. Dr. Niznick can be reached at **drniznick@implantdirect.com**.

Disclosure: Dr. Niznick is founder and president of Implant Direct. He developed the Core-Vent system discussed in this editorial.

Research published in 1983 documenting the long-term success of titanium screw implants which, by a process called Osseointegration, became firmly attached to bone, changed the course of implant dentistry.[1,2] The Brånemark external hex implants used in that study offered a single abutment option for a screw-retained attachment of a hybrid prosthesis for restoring edentulous jaws.

The Core-Vent hollow basket implant had been introduced in 1982.[3] Unlike Brånemark's 0.7-mm short external hex implant, the Core-Vent had an 8-mm deep internal hex for ratcheting insertion and to receive a variety of cemented abutments. This system was the first to document the use of freestanding implants to retain an overdenture, screw-retained bar overdentures, and single tooth replacements with bendable and castable abutments.[4]

In 1986, Core-Vent introduced the Screw-Vent implant, featuring an internal lead-in bevel, hex, and threaded connection.[5] This became the cornerstone of modern implant design and is today referred to as a *"conical connection."* This advance paved the way for greater use of cemented restorations, which resulted in acceptance by general practitioners of fixed prosthetics on implants, as the procedures more closely paralleled the restoration of natural teeth. The internal connection provided a greater tactile sense when seating an abutment, thus eliminating the need for x-rays to determine whether transfers and abutments were fully seated. It also allowed for smaller-diameter implants with adequate strength to be designed, thereby expanding clinical applications.

Implant dentistry is a prosthetic discipline with a surgical component; thus, Core-Vent's system was designed for simplified surgical procedures, allowing general practitioners to learn implant placement.

The key to proper training was to establish educational courses that focused on case selection and treatment planning.

In the three decades since the Core-Vent and Brånemark systems were introduced, the number and diversity of implant designs, surface treatments, and abutment options have proliferated. I believe this has been spurred primarily by implant companies, in an attempt to justify price increases. Unfortunately, this has compounded the confusion associated with selecting the implant system that best suits an individual dentist's practice and budget.

In the **30 years** I have been involved with the implant industry, my most difficult task has been to overcome the stereotypical thinking that there is a direct relationship between an implant's cost and clinical success. Many implant companies use paid opinion leaders in private practice and academia, along with large sales forces, to perpetuate this myth. Today, however, the Internet has leveled the playing field, making it possible to educate more dentists to the benefits and features of "appropriately priced" products—some with cross-compatibility to the surgical protocols and prosthetic connections with which dentists are familiar. Offering application-specific implants with **All-in-1 Packaging** simplifies implant selection, eliminates confusion with ordering ancillary products, and provides unprecedented value, thus allowing more patients to benefit from implant dentistry. Additionally, online education—aided by live surgical videos, lectures, product comparisons, and, especially, online ordering—is changing the implant industry's dynamics.

Today, most patients know about the benefits of implant solutions for their missing teeth, resulting in more restorative dentists making the investment in education to be able to offer these services in their practices.

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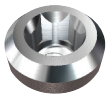

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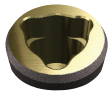

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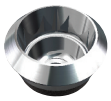

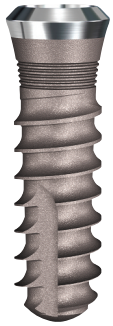

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An Interview with Implant Direct

Gerald A. Niznick, DMD, MSD, President and CEO

Reprint from:
Inside Dentistry, June 2012

INSIDE DENTISTRY (ID): How much has really changed about the implant industry since you started **Core-Vent Corporation in 1982**, **Paragon in 1997**, and **Implant Direct in 2004**?

GERALD A. NIZNICK (GN): The success of a broad range of implant designs, surfaces, and materials is now well established in the dental literature. What has changed, especially in the last decade, is that implant companies have segmented into three categories in order to find their USP (unique selling proposition). **Premium Priced Players** differentiate their products based on claims of research and the support of paid opinion leaders. This research is designed to create sound bites for marketing, comparing a company's new and improved products to their old ones without providing any clinical studies to show a significant improvement in success. Each new version is accompanied with a price increase, now reaching an average of about $350 to $450 per implant. **Discount Priced Players** sell on price alone, offering a limited range of implant designs and dimensions. These companies vary their implant prices and volume discounts based on the market and the negotiating skills of the dentists. With an average list price of $100 to $150 and substantial discounts for volume purchases, the dentists purchasing these products are prepared to accept possible compromises in quality, precision, packaging, and limitations in implant or abutment options in order to get what they perceive as a bargain. **Value Priced Players** is a segment of the market that Implant Direct created in 2006. Implant Direct targets the established Premium-priced product lines with systems that offer surgical and prosthetic compatibility for a non-negotiable list price of $150 to $200. We provide added value with All-in-1 Packaging that typically includes a cover screw, healing collar, transfer, and either final or temporary abutment. Quality and a broad line of products are essential for Implant Direct's "Value Strategy" to succeed. This is made possible, even at relatively low prices, by operating the industry's only "lights-out" 24/7 manufacturing facilities that can be viewed on five online cameras on our website. This strategy has forced many of the premium-priced companies to aggressively discount to volume purchasers to maintain their best customers.

(ID): You have been widely recognized and honored for your contributions to the dental implant market. Which of these contributions do you think made the biggest impact on how implant dentistry is practiced today?

(GN): The original **Core-Vent (1982)** two-stage implant had a hex hole into which a variety of application-specific prosthetic abutments could be cemented. This was in contrast to the Brånemark implant which did not come on the US market until a year later with only one multi-unit abutment for edentulous screw-retained bridges. That concept of versatile prosthetic applications contributed to making implant dentistry part of conventional fixed prosthetics with cemented crowns and bridges. The internal hex connection (Niznick US Pat. #4,960,381) and all the screw-retained abutments that I developed thereafter accomplished the same prosthetic versatility while offering retrievability. When these types of two-piece abutments were developed for the external hex implants, it became apparent that the internal connection offered greater stability and esthetics. The industry was slow to change over because the internal connection was patent-protected, whereas any company could make an external hex. In 1999, I solved the problem of achieving high initial stability in soft bone with the development of a soft-bone/hard-bone surgical protocol, inserting the newly designed tapered **Screw-Vent** in undersized sockets prepared with straight step drills. Inserting a tapered implant into an undersized socket created with a straight step drill led the way for immediate loading of implants. When dense bone was encountered, the size of the socket would be enlarged, eliminating the need for bone taps and allowing self-tapping insertion in both soft and dense bone. In addition, I am especially proud of the *5-year clinical study conducted at 32 Veteran's Affairs centers that included 900 patients receiving over 2,800 implants*. This was the **largest dental implant study conducted worldwide** and special issues of Journal of Periodontology and Journal of Oral and Maxillofacial Surgery were dedicated to publishing the results, which added significantly to dental implant knowledge.

(ID): You've built Implant Direct into an international company with hundreds of employees and distributors in more than 30 countries. How would you define your approach to launching and successfully running a business?

(GN): Building and running a successful business in a relatively short time takes production capacity, an innovative product line, the right "go-to-market" strategy and a dedicated team of knowledgeable people. After selling Core-Vent/Paragon Implant Company to what is now Zimmer Dental in 2001, I retired for a few years. In 2004, Zimmer chose not to renew the lease on my Los Angeles factory and moved their manufacturing closer to their corporate headquarters near San Diego. This presented an opportunity to re-occupy the factory I had built in 1994 for producing implants and re-hire 80 of Zimmer's top machinists and QA specialists, many of whom had worked for me for years before the sale to Zimmer. In the next 3 years, my team developed the lights-out manufacturing processes that assured efficiency and quality. Together with my design engineering team, I developed the **Spectra-System®** of six 1 and 2-piece implants, all with the same body and, therefore, surgical protocol, but with different platforms and packaging for different clinical applications. This created the **industry's first application-specific implant system with each implant appropriately priced at $150**— low enough that the premium-priced implant companies could not

priced implant companies could not routinely discount to match that price. This formula of offering innovations, quality, and value was just what the industry was waiting for and the 2008 economic recession made the need for "appropriate" priced implants even more compelling. To keep the selling expenses low, I focused on the internet for education and sales. Demand grew globally for the products and, today, Implant Direct has almost 150 people in North America providing sales, customer service, and technical support. We opened an office in Zurich to support our direct sales forces in Germany and Italy, as well as shipping to our distributors throughout Europe.

(ID): How do you separate—if you do at all—your roles as clinician, inventor, entrepreneur, educator, and researcher?

(GN): I am first and foremost a clinician, having practiced the specialty of prosthodontics for 14 years before starting my implant business in 1982. Throughout the 1970s, I used the implants available at that time to help my patients. The Core-Vent was developed primarily to function free-standing to stabilize a lower overdenture. I published the first article showing the efficacy of this application, which has now become the minimum standard of care by the American College of Prosthodontists. My inventions were needed to implement my treatment philosophies of simplicity, versatility, and economy. I needed to become an educator and entrepreneur to have the financial resources to see my inventions, now numbering 35 US Patents, become clinical realities and to advance the field of implant dentistry. There is an invaluable symbiosis between these roles and I would not choose to separate them even if I could.

(ID): When you're not inventing an implant product, you're flying an airplane. What lessons have you learned from being a pilot that you can correlate to your life's work in dentistry?

(GN): To fly an airplane you need to be committed to education and you need to be extremely focused. I acquired a commercial, multi-engine, instrument rating with type ratings in two jets. Flying a plane is like playing the ultimate video game with all the avionics now available in the glass cockpits. You're going at 500 miles an hour, monitoring all sorts of electronics on the control panel. You have to be aware of everything that's going on around you. It definitely sharpened my abilities to multitask and respond quickly.

(ID): Implant companies continue to face some challenges with the economy. Have you done anything differently over the last few years to better position Implant Direct for growth? Did the recession alter your business model?

(GN): The recession has only further proven the Implant Direct business model. *Patients need and deserve affordable implant care.* While other implant companies may be contracting, we are consistently expanding not only with personnel but with new facilities. We just underwent an expansion of our manufacturing capacity by adding **18,000 square feet that provide room for 28 machines in addition to the 40 we already had operating 24/7**. We also have a new **state-of-the-art educational center in Las Vegas** with **computers at each desk** for **image-guided surgical training, models/mannequins** for **hands-on training,** and a **four-chair dental office** for **live surgical demonstrations.**

(ID): It's been over a year since Sybron Dental Specialties acquired a 75% interest in Implant Direct International. What impact has that had? What has changed in the scope and mission of Implant Direct since the acquisition?

(GN): The new joint venture between Implant Direct and Sybron Dental Specialties has created many new and exciting opportunities. We merged Implant Direct with Attachments International, a Sybron Company, and absorbed the sales force and distribution responsibilities for Sybron Implant Solutions primarily keeping their biologics products. Danaher owns such well-known brands as KaVo, Kerr, Image Sciences, Sybron, and Pelton & Crane, and we plan to integrate our efforts with our Danaher and Sybron Dental Specialties sister companies to bring full digital solutions for implant dentistry. I remain Implant Direct's president and CEO. I have been able to broaden the management team in sales and operations, leaving me even more time to focus on product development.

(ID): Can you share anything with us that you might have in the pipeline right now?

(GN): We will be launching a new implant system, the **InterActive™.** This system will provide prosthetic compatibility with **NobelActive™** and the **NobelReplace™** conical connection plus surgical compatibility with **Legacy™**, **Zimmer Dental Tapered Screw-Vent®**, and **NobelReplace drills**. It offers the first implant with both micro-grooves and micro-threads plus unique packaging that provides a patented cover screw/healing collar assembly and a new two-piece (patent pending) fixture-mount that can be modified for use as an abutment and serves as a transfer that provides the accuracy of an open-tray impression with the simplicity of a closed-tray impression. We also will be launching our own **image-guided software**, **surgical guide**, and **CAD-milled titanium bars** as well as **custom-milled titanium** and **zirconia abutments** by the end of this year. Our pricing for these ancillary services will be commensurate with our value-added philosophy, making Implant Direct a full service company.

(ID): If you could look into the future, what would your prediction be for dental implantology in the next 10 years?

(GN): My predictions 30 years ago, that implants would become an integral part of conventional dentistry, have come to pass. My gamble in 2004, with the start of Implant Direct, that dentists would look beyond the marketing hype of the premium-priced products and place a greater appreciation on value, has paid off for me as an entrepreneur. It will also continue to pay off for dentists who take the time to learn what is important for implant success and trust in their own good judgment. The day is fast approaching when patients, missing some or all their teeth, or needing an extraction, will seek out dentists capable of replacing the missing teeth with implants. While implants have become a major part of every oral surgery and periodontal practice, every general dentist removing a tooth should have the knowledge and confidence to either immediately place an implant into a resized socket or have the skills to perform the site preparation procedures needed to preserve bone for future implant placement. Good dentistry, as well as the patients, demands such services in ever-increasing number. Implant Direct's goal has been, and continues to be, to make that option accessible and affordable to a greater number of patients without any compromise in the quality or longevity of the treatment.

The Implant-Abutment Connection:
The Key to Prosthetic Success

Reprint from:
Implants, January 2011

In 1991, Compendium published an article by Dr. Gerald Niznick (Vol. XII, No. 12) with the same title as the heading above. The principles Niznick expounded 20 years ago are even more valid today with Implant Direct's broad line of application-specific and industry-compatible implants shown by the company's one- and two-piece implants below.

Dr. Gerald Niznick, a prosthodontist, revolutionized the implant industry with the introduction of the Screw-Vent® implant (now sold by Zimmer Dental) with its patented internal connection platform that featured a lead-in bevel for lateral stability and an internal hex for insertion and accurate transfer capabilities (Niznick U.S. Patent #4,960,381). This implant-abutment connection has become the cornerstone of modern implant design, licensed to eight implant companies and copied by many others following the expiration of the patent in 2007.

One such replication is the lead-in bevel/internal hex of Nobel Biocare's NobelActive™ implant. Whether the lead-in bevel is 45 degrees, as in the original Screw-Vent implant, or 8 degrees (Straumann®), 11 degrees (Astra™) or 12 degrees (NobelActive), a "conical" interface provides lateral stability, reducing the occurrence of screw loosening in comparison to butt joint connections (tri-lobe and external hex implants). The original 45-degree bevel, present in Implant Direct's Legacy™ System, has the added advantages of increased strength and improved tactile sense for seating an abutment without the need to take an X-ray as recommended by Nobel Biocare for NobelActive.

Dating back to the early 1980s, Niznick's focus has been to provide high-quality products at value added prices with simplified surgical procedures and versatile prosthetic options. Following this strategy and with a strong focus on use of the Internet for education, sales and marketing, Implant Direct has been credited with bringing about a price-point shift in the implant industry in just four years. The industry changes and recent economic factors have prompted many dentists to have a "reality check" on the best options for their practices and patients.

Today Implant Direct offers the broadest line of implants and abutments in the industry, many incorporating Niznick's patented innovations including double-lead body threads for faster insertion with coronal quadruple-lead micro-threads for reduced stress and increased stability (Niznick U.S. Patent #7,677,891).

The company philosophy has been to combine clinically proven implant design concepts with "All-in-1 Packaging" for maximum value and convenience. While the items included vary by product, All-in-1 Packaging reduces or even eliminates the need to purchase additional items at the restorative phase of treatment (Niznick U.S. Patents #7,396,231 and #7,785,107).

The application-specific Spectra-System® includes ScrewPlant® bone-level and ScrewPlus® tissue-level implants with the same internal hex/external bevel connection as well as several unique one-piece implants. The one-piece implants provide increased strength, allow use of smaller (3 mm) diameters while shortening chair time and reducing both cost and inventory requirements.

The GoDirect™ one-piece implant features a platform that is compatible with Zest Anchor's LOCATOR®

Fig 1

Fig. 1: Implant Direct's expansive product offering. Clockwise from top right: ScrewIndirect, RePlant, ScrewPlant, InterActive, SwishPlus, GoDirect, (center) Legacy3. (Images/Provided by Implant Direct)

United States Patent

Niznick

Patent Number: **4,960,381**

Date of Patent: **Oct. 2, 1990**

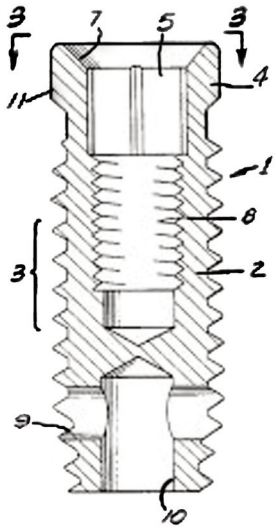

Fig 2

Fig. 2: Dr. Gerald A. Niznick's patent for the internal hex connection that became the foundation for modern implant design.

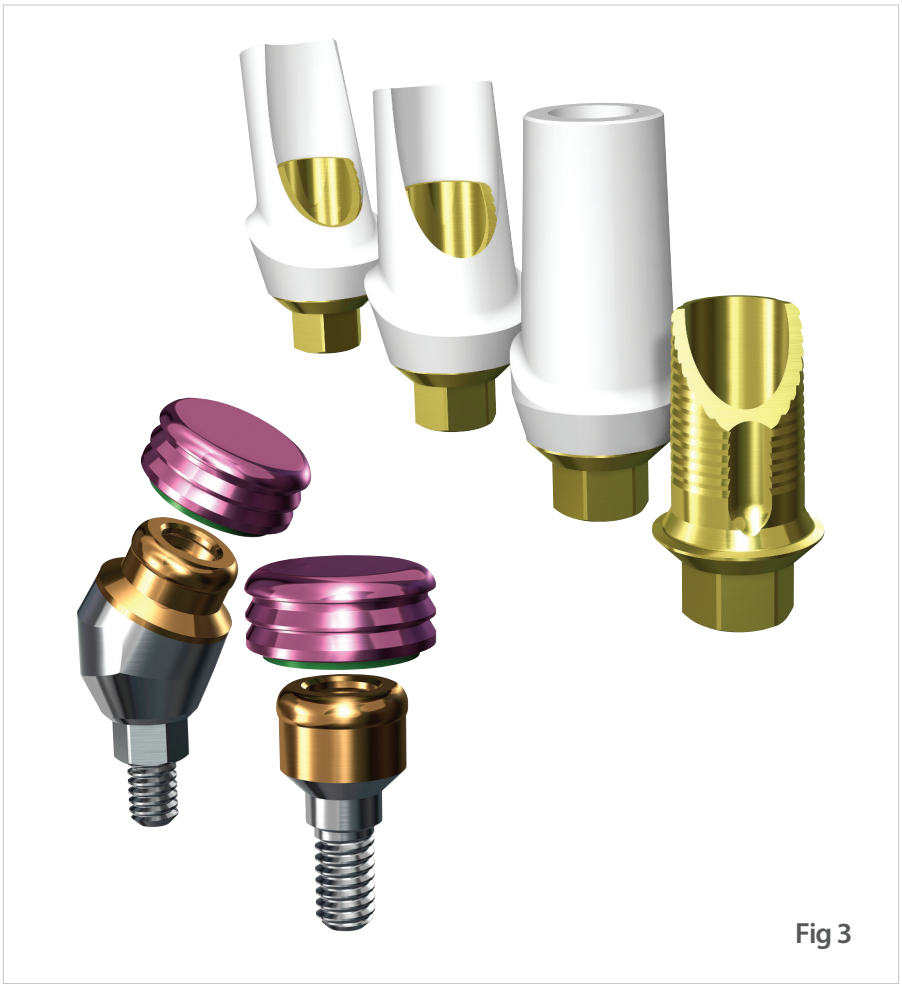

Fig 3

abutments[1] for overdenture attachments. GoDirect's innovative design also allows for conversion to screw-receiving, multi-unit abutments should the treatment plan change over the years. Implant Direct has recently launched a complete line of GPS™ abutments that are compatible with the LOCATOR system. Another Spectra-System one-piece implant, ScrewIndirect™, provides a multi-unit abutment platform for bar overdentures and fixed-detachable, hybrid prostheses — making Teeth-in-1Day™ a practical and cost-effective procedure.

In addition, Implant Direct offers implant solutions with industry-compatible internal hex, tri-lobe and octagon connections. The Legacy System offers surgical and prosthetic compatibility with Zimmer Dental's Tapered Screw-Vent developed by Niznick in 1999. Legacy abutments are compatible with several other internal-hex implant systems, such as BioHorizons®, BlueSky and MIS®. Implant Direct's RePlant®, RePlus® and ReActive™ Tri-lobe system provide prosthetic compatibility with for Nobel Biocare's Replace implants and Implant Direct's SwishPlus™ and SwishPlant™ internal octagon tissue-level implants provide prosthetic and surgical compatibility for Straumann customers. Implant Direct does not make clones. It designs updated versions of these popular competitors' products by adding features to improve self-tapping insertion as well as increase strength and surface area.

Implant Direct is in the process of increasing its manufacturing capacity from 40 CNC machines to 68 to keep up with the demand for its products. The additional manufacturing space will allow Implant Direct to offer CAD-milled titanium bars, custom abutments and surgical guides.

In addition to an already broad product line, Implant Direct will be launching the InterActive implant system (Q12012) with prosthetic compatibility to Nobel Biocare's NobelActive implant plus surgical compatibility with Nobel Biocare's Replace, Zimmer Dental's Screw-Vent and Implant Direct's Legacy implants. Implant Direct will also launch a full line of 3i Certain™ compatible abutments. With 60 outside sales representatives and 40 inside customer support representatives in the United States, plus the industry's most intuitive online support and shopping cart, it's no wonder that Implant Direct received the highest customer satisfaction rating among seven implant companies in an independent study by Millennium Research Group.[2]

Implant Direct is truly transforming the implant industry and allowing implant treatment to become an affordable part of conventional dentistry.

1. LOCATOR is a registered trademark of Zest Anchors Company. The GoDirect and GPS Systems are neither authorized, endorsed, nor sponsored by Zest Anchors Company.
2. Satisfaction among current and former users, US, Q211. Global Dental Implant Perception Pulse Study, Millennium Research Group.

Fig. 3: GPS and Zirconia abutments, the latest in a line of simply smarter prosthetic solutions.

Dr. Gerald A. Niznick
President and CEO of Implant Direct

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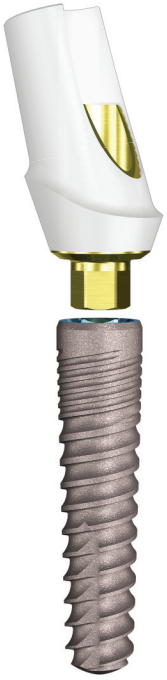
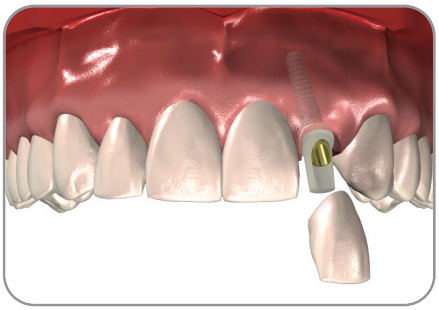
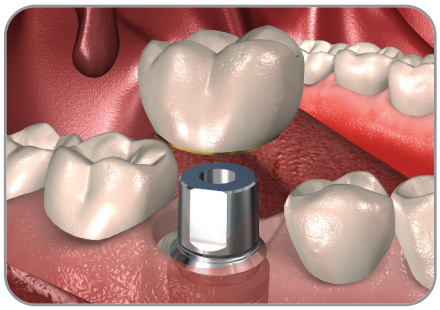


Legacy™3
3.2mmD



Single Tooth Restoration
with Legacy3 & Zirconia Abutment



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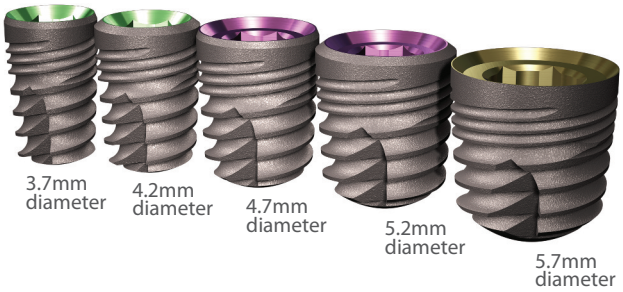
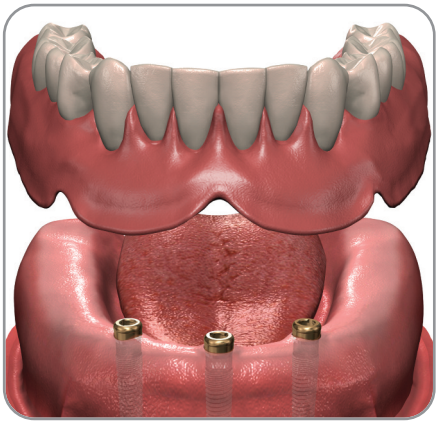
Legacy™3
6mmL[1]



GoDirect™
3.0mmD



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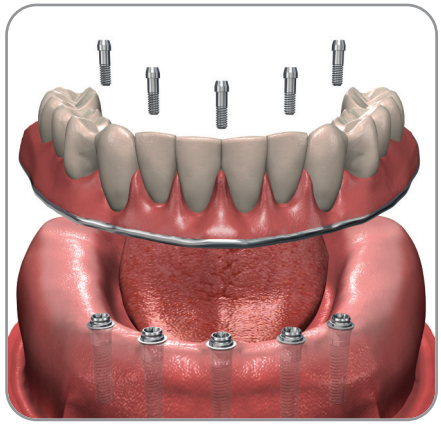
with GoDirect 1-Piece Implants



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[2]Terms and conditions apply.

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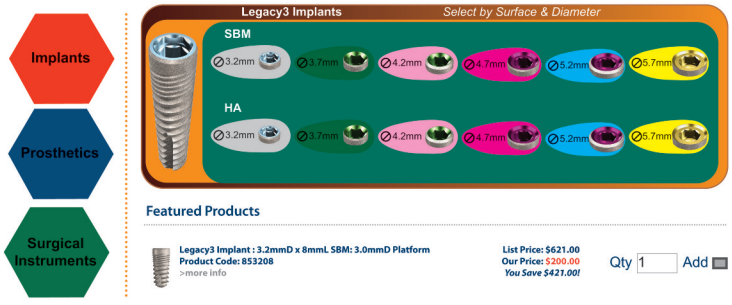

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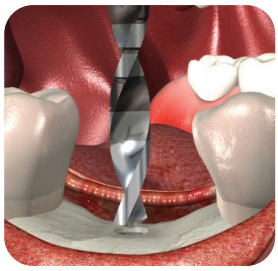
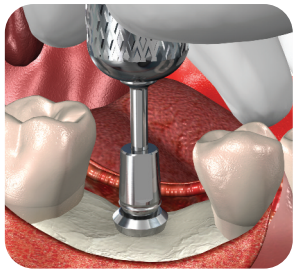


Prosthetic Procedures



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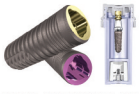

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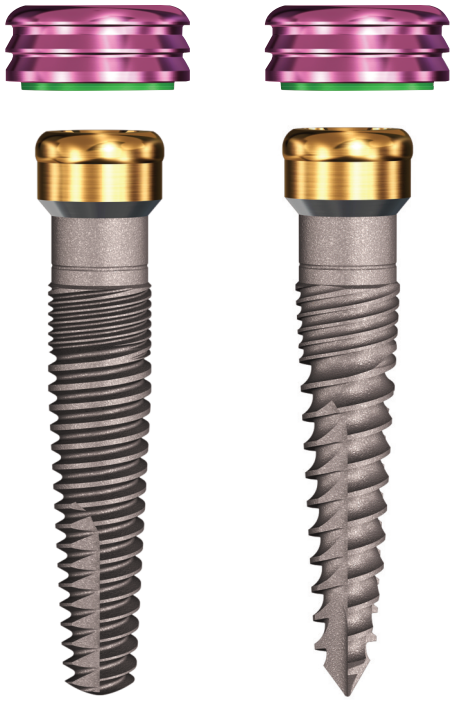
One-piece, Application Specific Implants
for Treatment of Narrow Ridges

Reprint from:
Implant Practice US, May/June 2012

There are many clinical situations in which bone limitations may necessitate use of a narrow diameter. The term "Mini-implants" is generally attributed to implants with diameters of 3mm or less, 2.4mm and 2.8mm being the most popular diameters. Mini-implants are available from many companies with either Ball, ERA or O-ring abutment platforms for retention of over-dentures. There are also 3.0mmD 1-piece implants with application specific platform options available **(Implant Direct, Calabasas, CA):** GoDirect™ with a Zest LOCATOR® compatible platform for retaining over-dentures with GPS™ attachments, ScrewIndirect® with a multi-unit platform for screw-retained restorations and ScrewDirect® with a tapered abutment for cemented restorations. Implants less than 3mm have not received FDA pre-market approval for claims of being a permanent tooth replacement, although they can be marketed with claims of "long-term" usage, an upgrade from their prior classification as temporary solutions.

Traditional mini-implants have a sharp, pointed apex to allow insertion in a socket not fully prepared to depth. These implants have gained popularity in part due to their relatively low cost compared to traditional implants from the major implant companies and because the narrow diameter encourages placement without laying a soft tissue flap. Both of these "simplified" surgical procedures have risks and drawbacks that should be considered. Preparing a socket half the depth of the implant, and screwing in the pointed implant into unprepared bone will undoubtedly increase initial stability but, given the narrow diameter of mini-implants, there is an increased risk of implant fracture if dense bone is encountered. The alternative procedure if dense bone is encountered is to unscrew the implant, prepare the socket to its full depth and re-insert the implant.

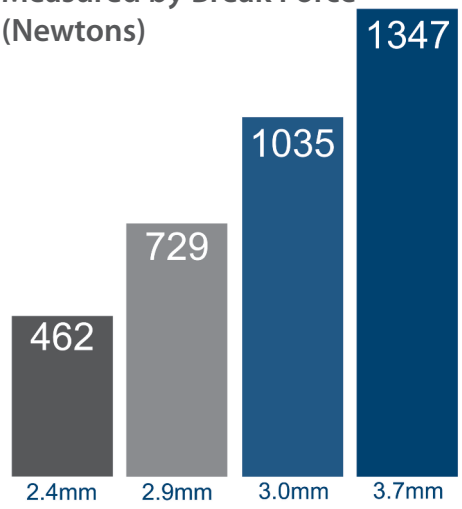


One-Piece GoDirect™ 3.0mm Implants for use with Implant Direct's Internal and External GPS™ Overdenture Attachments. Standard apex (left) as tested by CLINICIANS REPORT and pointed apex (right) which will be available soon.

Tapered Implants with a rounded apex require preparation of the socket to full depth, giving the dentist the opportunity to determine the density of the bone. If soft bone is encountered, the tapered implant can be inserted into the undersized socket expanding and compressing the bone for increased stability. If dense bone is encountered, the dentist follows up with a final sizing drill closer to the diameter of the implant, eliminating the need to remove the implant after insertion is initiated.

Narrowing the apical end to a point reduces the strength of the implant compared to the same diameter implant with a rounded apex because of greater metal diameter in the lower half of the implant. A recent study published by CLINICIANS REPORT, Dr. Gordon Christensen's research group, compared fracture strengths of the 3.0mm and 3.7mm GoDirect 1-piece implants to commercially available 2.4mm and 2.9mm mini-implants. Although there was only a **3.5%** increase in diameter between the

Strength Comparison as Measured by Break Force (Newtons)



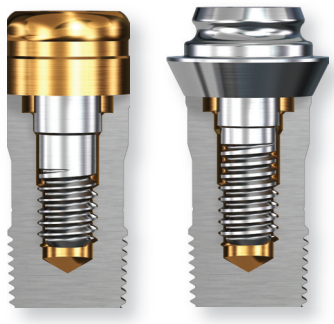
Source: Gordon J. Christensen's CLINICIANS REPORT, February 2012

Dr. Gerald Niznick graduated from the University of Manitoba Dental School in 1966 and then earned a master's degree in prosthodontics at Indiana University in 1968. He has been awarded 36 U.S. patents and has received honorary doctorate degrees. Reach him at **drniznick@implantdirect.com**.

2.9mm and 3.0mm implants, there was a **42%** greater strength. The 3.7mm GoDirect demonstrated **30%** greater strength, which is more proportional to the **23%** increase in diameter compared to the 3.0mm GoDirect. Wider implants also provide greater surface area, thereby reducing the number of implants needed to provide the same amount of load carrying capabilities. The difference in diameter between 2.4mm and 3.0mm is only 0.6mm/2 = 0.3mm (0.012") on each side, which is about the thickness of 3 human hairs so the diameter of the osteotomy required to place each of these diameter implants is not significant, especially with tapered implants in soft bone. Mini-implants gained popularity in part to the belief that narrower implants better facilitated insertion without requiring a soft tissue flap. This is a misconception because if the narrow implant was selected because of a narrow ridge, it is exceedingly unpredictable to blindly place an implant in the center of the narrow ridge without causing buccal or lingual perforations. On the other hand, if the ridge is wide enough to predictably place the implant flapless in the center of the ridge, a Mini-implant, if placed in the center of the ridge, would only engage cancellous bone. A 3.7mm or wider implant would provide greater strength and stability in this situation, and fewer implants would be needed to achieve the same or even greater surface area for load support. A slight increase in implant diameter from 2.4mm to 3.0mm can also provide an adequate dimension as it emerges from the crest of the ridge, to provide a more natural emergence profile for cemented restorations and an adequate width for multi-unit (screw-retained) restorations.

The decision to place an implant without laying a flap depends on the clinician's ability to visualize the ridge width in order to determine adequate bone to support the implant. This cost of the procedures, which obviates the savings that have perpetuated the use of Mini implants.

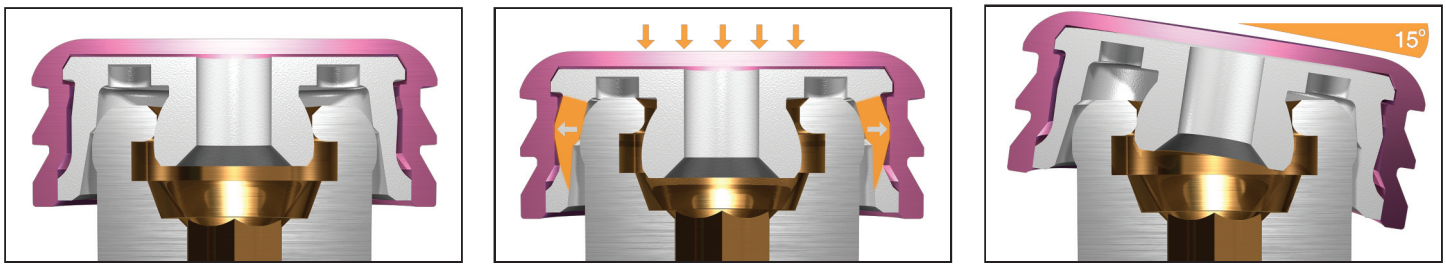
Once the decision is made to lay a flap and visualize the ridge width, narrow lower edentulous ridges can narrow lower edentulous ridges can often be flattened to create adequate width to place a 3.7mmD implant. The visualization allows placement in the center of the ridge without perforations or compromise to the labial or lingual cortical plates. In narrow maxillary ridges, laying a flap provides opportunities to surgically spread and widen the ridge before implant placement, with or without bone grafting. A 3.0mm, evenly tapered screw implant with a rounded apex can be inserted into an undersized osteotomy using only a 2.3mmD drill, gradually expanding the cortical walls of the socket, compressing the soft bone and increasing mechanical retention for initial stability.
(G. Niznick: Clinical Oral Health 2000 "Achieving Success in Soft Bone").



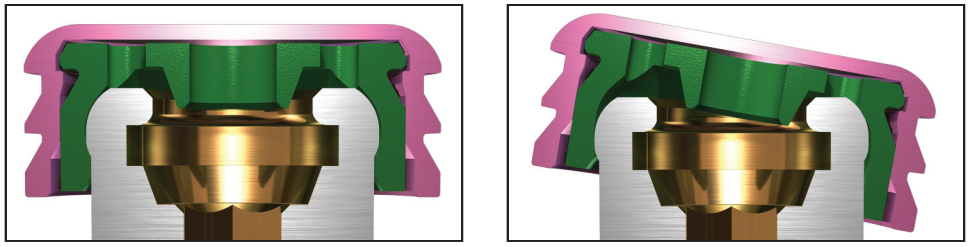
The internal threads of the GoDirect implant allow the addition of an extender (center) if needed to accommodate soft tissue height or conversion to a multi-unit abutment (right) for treatment plan flexibility.

In the case shown, four 3.0mmD, 13mmL GoDirect™ implants where placed free-hand with a flapless surgery in a rather narrow ridge by a very experienced clinician. The X-ray reveals that there was more than adequate bone height to allow for removal of 4-6mm of crestal bone to achieve a wider ridge since the symphysis widens towards its base. Visualization of the edentulous ridge would have assured optimum placement in the center of the modified ridge without risking compromise to the buccal or lingual cortical plates. These 1-piece implants provide a cost-effective option for stabilizing overdentures and with the launch of the 3.0mmD with a pointed apex in Q312, will provide dental professions a full range of diameter and surgical options with this system. As can be seen in the X-ray, the GoDirect implant is internally threaded, allowing subsequent attachment of different abutment options if required for tissue overgrowth or a change of treatment options, such as conversion to a screw-receiving abutment.

The GoDirect implant is not recommended for use in situations where the implants diverge more than 20-30 degrees. The GPS™ attachments are available with GPS Abutments for a variety of popular implant platforms in both straight, 15 and 30 degrees.

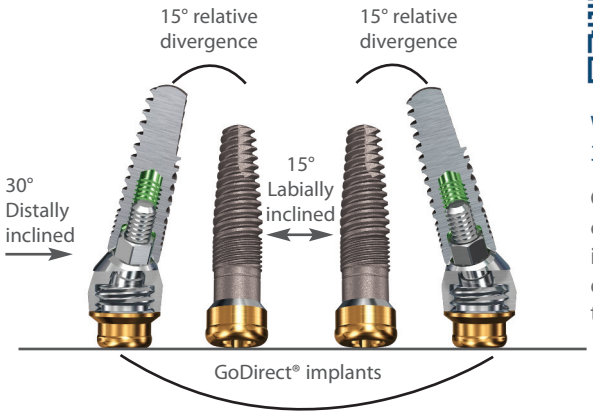


GPS™ Internal Attachment designed to provide vertical and rotational stress-breaking. Under biting forces, the lateral walls of the liner flex outward to allow the retentive ball to move downward into the internal cavity. Indicated for use with 2 to 3 implants placed in the anterior symphsis, up to 30 degree divergence.



GPS™ External Attachment is recommended for cases of four or more implants which are relatively parallel or have platforms made parallel using angled abutments.

GPS™ straight and angled abutments (15° or 30°) for use with two-piece implants.



Watch **"All-over-4"** 3D Graphic Video

GPS angled abutments combined with GoDirect implants provide an economical solution for treating edentulous jaws.

Attachments International
Implant Direct Int'l

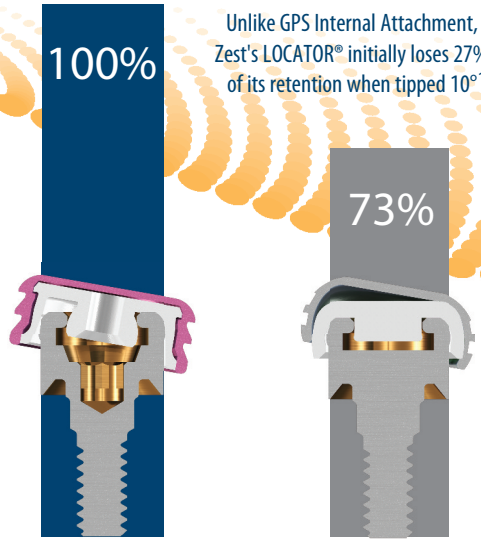
Implant Direct
simply smarter.

GPS Pat. Pend. Attachment
Leading the Way

GPS® with Internal Connection

- Retention Initially Retained when Tipped 10°[1]
- Vertical Resiliency for Less Stress on Implant

GPS® Overdenture Attachment System



Unlike GPS Internal Attachment, Zest's LOCATOR® initially loses 27% of its retention when tipped 10°[1]

GPS® Internal

LOCATOR® Dual Retention

New Internal Cap Attachment with Added Advantages

External Retention

Pink Anodized Titanium Cap with increased retention in denture base

Black Processing Cap made from high melting point plastic

Abutment inserted with standard insertion tools for each system

Internal Retention

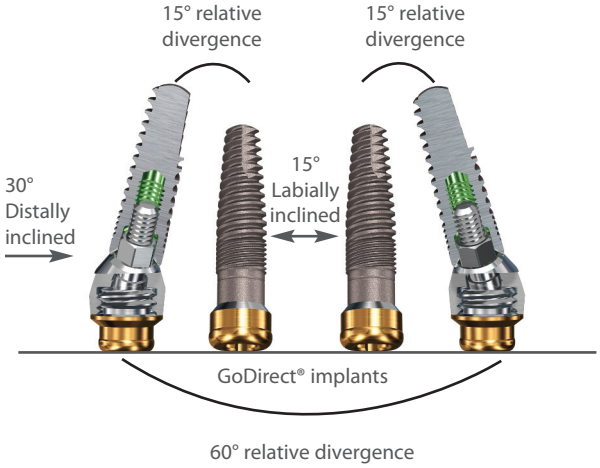
Maintains greater % of initial retention over the first year in function than Zest's LOCATOR® Attachment (Insertion at 0° for 1200 cycles[1])

Internal cavity of abutment allows for increased vertical resiliency with occlusal loading

Titanium & nylon cap rotate together - eliminating cavity for plaque and debris present with Zest's LOCATOR Attachment

Straight Abutment with Cap Attachment, Transfer, Spacer & Comfort Cap: $100	Zimmer: $166; Straumann: $195 Nobel Biocare: $149, Zest Anchors Co: $156

Only GPS offers 15° & 30° Angled Abutments with LOCATOR®-compatible platforms
Rated "Excellent" for "Tolerance of Non-Parallelism" in an Independent Report
- Gordon J. Christensen CLINICIANS REPORT, November 2011



GPS angled abutments accommodate the greatest degree of relative divergence available on the market

Straight and angled GPS abutments are available for: NobelReplace, NobelActive, Straumann Tissue Level, Zimmer's Screw-Vent, BioHorizons®, MIS & Blue Sky Bio

GoDirect® 1-piece implants with LOCATOR®-compatible platform. $175 includes transfer and comfort cap. Internal threads allow for attachment of multi-unit abutment to convert treatment to fixed prosthesis.

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GPS angled abutments combined with GoDirect implants provide an economical solution for treating edentulous jaws.

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[1]Data on file regarding GPS Internal and Zest Anchor's LOCATOR attachment with dual retention.
LOCATOR® is a registered trademark of Zest Anchors Company. The GoDirect® and GPS® Systems are neither authorized, endorsed, nor sponsored by Zest Anchors Company.
Price comparisons based upon US list prices as of February 2012. All trademarks are the property of their respective companies.

The InterActive Evolution of Conical Connection Implants

Author_Gerald A. Niznick, DMD, MSD

Reprint from:
Implants, March 2012

Fig 1.

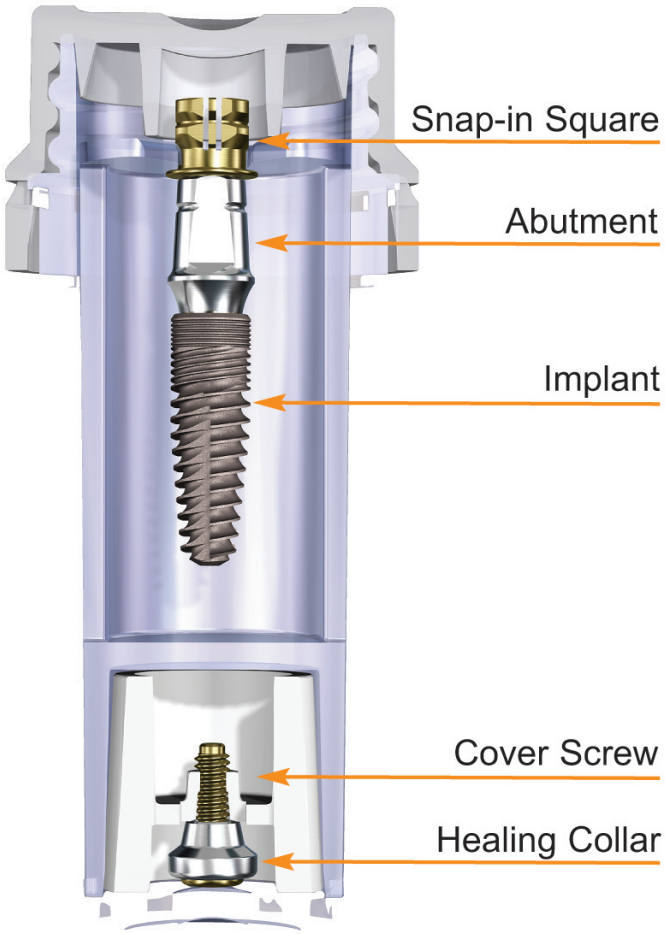

Fig. 1: InterActive's All-in-1 Packaging (4.3 mm shown). Includes implant, fixture mount/abutment/transfer, cover screw and healing collar for convenience and up to 70 percent savings. (Photos/Provided by Implant Direct)

The publication of the 15 year results with Brånemark external hex screw implants (Adell R., Brånemark P-I., et al: Int. J. Oral Surg. 1981 10:387-416) documented the long-term success with osseointegrated titanium implants. The Core-Vent (1982) internal hex implant (Niznick G. US Pat. # 4,431,416) with cemented abutments brought versatile prosthetics to implant dentistry but it was the Screw-Vent® (1986) internal hex-thread connection with a lead-in bevel (Niznick G. US Pat. #4,960,381) that brought together stability and detachability. This connection facilitated the design of narrow diameters implants and its stability made cementation in partially edentulous jaws the treatment of choice.

This type of implant-abutment connection became the cornerstone of modern implant design and is today referred to as a conical connection in the most popular implant systems. Before the patent's expiration in 2007, this connection was licensed to eight different implant companies, and since, has been incorporated into most implants including the NobelActive™ and NobelReplace™ Conical Connection implants.

Whether the lead-in bevel is 45 degrees, as in the original Screw-Vent (Zimmer Dental), MIS or BioHorizons implants, 82 degrees (Straumann®), 79 degrees (Astra™) or 78 degrees (NobelActive™), a "conical" interface provides lateral stability to reduce the occurrence of screw loosening in comparison to butt joint connections (tri-lobe and external hex implants). One problem with increasing the slope of the lead-in bevel is that it moves the anti-rotational feature (internal hex) farther down the internal shaft, often requiring X-rays to verify full seating of the abutments. It also thins the walls of smaller diameter implants, increasing the risk of fracture under lateral load.

The new InterActive™ system of conical connection implants and abutments from Implant Direct (anticipated launch 4Q12) provides a platform compatible to the NobelActive and NobelReplace Conical Connection. The InterActive abutments incorporate design modifications to help ensure full seating of the abutments without the necessity of confirming radiographs. This is accomplished by lengthening the hex and shortening the bevel so that a lack of full seating is readily apparent as the hex will be visible above the implant. Two other features also assist full seating. A piloting feature has been added to the bottom of the abutment's hex to help guide insertion and an internal thread has been added to the abutment shaft to retain the screw while the abutment is rotated to a full seat in the implant's deep hex. The contour of the InterActive abutments, transfers and healing collars have been designed for improved soft tissue management with a concave emergence profile. The InterActive implant is available in four diameters with the same platform for the 3.2mm & 3.7mm implants

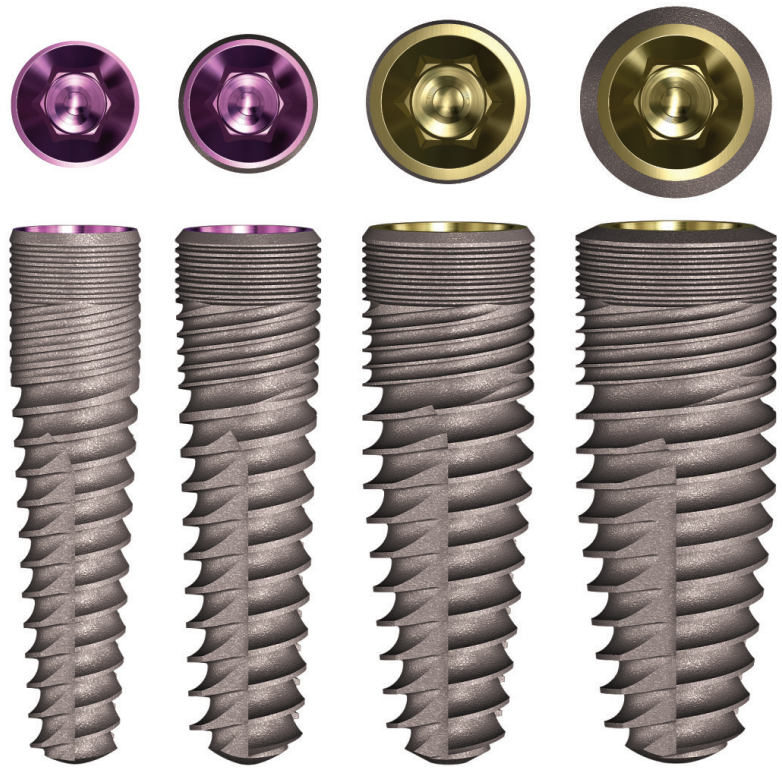

Fig 2.

Fig 3.

Fig. 2: InterActive diameter and platform options (from left, 3.2, 3.7 (both with 3.0 mm platform), 4.3 and 5.0 (both with 3.4 mm platform)

Fig. 3: Abutment and matching healing collar with uniform concave emergence profiles for soft-tissue management.

as the NobelActive 3.5mm implant, and the same platform for the 4.3mm and 5.0mm implants as used with the NobelActive implants of these diameters. The platforms are color-coded for easy identification with matching anodized cover screws, healing collars and transfers. The body of the InterActive implant matches that of the successful Legacy2 implant with double lead body threads over the tapered 2/3rds of the implant for faster insertion. These threads are flat based and become progressively deeper towards the apex for increased surface area. Three long vertical cutting grooves and tapered body with a round apex ensure the implant will follow the trajectory of the osteotomy and allow self-tapping insertion using dense-bone drills without the need for a bone tap. An additional design improvement incorporated into these new implants is the combination of coronal quadruple-lead micro-threads (Niznick Pat. #7,677,891) with the micro-grooves (Niznick Pat. Pending) for enhanced crestal bone preservation and initial stability. The InterActive's revolutionary 2-piece fixture-mount (Niznick Pat. Pending) serves as a transfer and final preparable abutment. The square top is friction retained in the top of the abutment, and, when used as a transfer, will pull with the impression. The abutment, attached to an implant analog, then snaps into the impression, mating metal with metal for accuracy. The square top also offers a torque safety feature, stripping when over-torqued to prevent damage to the implant's interface. The All-in-1 Packaging of the InterActive further includes a cover screw that can be used for submerged healing or with a 2mm extender/healing collar (Niznick US Patent #7,396,231) for added value and simplicity.

InterActive as featured on the cover

Dare to Compare on Innovation, Quality, Service and Value

Legacy™3 Implant

All-in-1 Packaging includes implant, abutment, transfer, cover screw & healing collar
$200 vs $633[1] from Zimmer Dental

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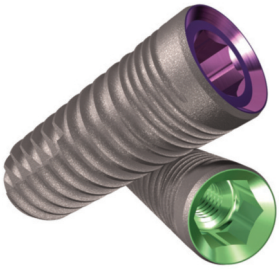
Save $433 with Legacy3



SwishPlant™ Implant

All-in-1 Packaging includes implant, straight abutment/transfer, cover screw & healing collar
$200 vs $737[2] from Straumann®

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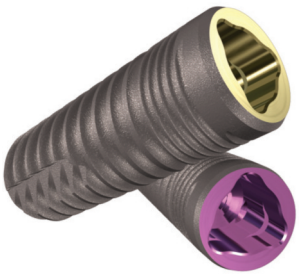
Straumann Customers
Save $537 with SwishPlant

ReActive™ Implant

All-in-1 Packaging includes implant, abutment, transfer & cover screw
$200 vs $718[3] from Nobel Biocare™

✓ **Reality Check**
Nobel Customers
Save $518 with ReActive



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Price comparisons based upon US list prices as of January 2013. All trademarks are property of their respective companies.
Satisfied among Current and Former Users, by Company US Q211 Millenium Research Group A Decision Research, Inc. Company
[1]US list price for Tapered Screw-Vent with micro grooves, healing collar & straight abutment
[2]US list price for SLActive Tapered Effect implant, closure screw, healing abutment, solid abutment, transfer and comfort cap.
[3]US list price for NobelActive with cover screw, impression coping & abutment
[4]Terms and conditions apply
Live surgical demonstrations not available at all courses

Academy of General Dentistry PACE Program Approval for Continuing Education

Approved PACE Program Provider FAGD/MAGD Credit
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