DENTSPLY Implants is pleased to introduce SmartFix™, available for ANKYLOS® and XiVE® implant systems.

According to DENTSPLY, SmartFix is an effective and time-saving implant-prosthetic technique for immediate, screw-retained restoration in the upper and lower jaw.

The SmartFix Concept allows for restorations on angled implants using either a 15- or 30-degree angled ANKYLOS Balance Base or XiVE MP abutment. These two-piece abutments provide the optimal design freedom for the superstructure in terms of height and diameter, the company said. The abutment components are pre-mounted in a short, flexible seating instrument for easier handling and placement of the abutment into the implant.

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Implant position in the esthetic zone

Since the advent of modern root form osseointegrated implant dentistry in 1952, clinicians have strived for improvements in implant positioning in the esthetic zone to achieve predictable restorative and esthetic results.

Years of clinical experience in congruence with controlled clinical studies have helped establish parameters as a guide for these results. Establishing a treatment plan and clinical protocol prior to implant placement is paramount.

Treatment planning traditionally begins with comprehensive medical and dental evaluations, articulated diagnostic casts, radiographs, cone-beam computed tomography (CBCT) scans and a diagnostic wax-up. Patient demands must be taken into consideration prior to surgery, and pre-surgical mockups may be necessary to convey the information to the patient.

The advancement of CBCT technology has led dentistry into a new realm of dimensional accuracy. In combination with the use of a surgical or guided stent, proper 3-D positioning of an implant has led to more accurate clinical results. The importance of the implant position can be manifested in the four dimensionally sensitive positioning criteria: mesiodistal, labiolingual and apico-coronal location, as well as implant angulation. The ultimate goal is not only to avoid sensitive structures but to respect the established biological principles to achieve esthetic results.

**Mesiodistal criteria**

Correct implant position in a mesiodistal orientation allows the clinician to avoid damaging adjacent critical structures. A minimum distance of 1.5 mm between implant and existing dentition prevents damage to the adjacent teeth and provides proper osseointegration and gingival contours (Fig. 1a). Distances of less than 3 mm between two adjacent

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Author: Siamak Abai, DDS, MMedSc
implants leads to increased bone loss and can reduce the height of the inter-implant bone crest. A distance of more than 3 mm between two adjacent implants preserves the bone, giving a better chance of proper interproximal papillary height (Fig. 1b).

Labiolingual criteria

An implant placed too far labially can cause bone dehiscence and gingival recession while an implant placed too far lingually can cause prosthetic difficulties. A thickness of 1.8 mm of labial bone is critical in maintaining an implant soft-tissue profile (Fig. 2). Labially oriented implants compromise the subgingival emergence profile development, creating long crowns and misalignment of the collar with respect to the adjacent teeth.6

Apico–coronal criteria

Peri-implant crestal bone stability plays a critical role in the presence of interdental papilla.7 Implants placed too shallow may reveal the metal collar of the implant through the gingiva. Countersinking implants below the level of the crestal bone may give prosthetic advantages but can lead to crestal bone loss. The ideal solution would be the placement of an implant equicrestal or subcrestal to the ridge. However, the existing microgap at the implant abutment junction leads to bone resorption because of peri-implant inflammation.8 It is suggested that an implant collar be located 2 mm apical to the CEJ of an adjacent tooth if no gingival recession is present (Fig. 3).

Implant angulation

Implant angulation is particularly important in treatment planning for screw-retained restorations. Implants angled too far labially compromise the placement of the restorative screw while implants angled too far lingually can result in unhygienic and unesthetic prosthetic design. For every millimeter of lingual inclination, the implant should be placed an additional millimeter apically to create an optimal emergence profile.10 In general, implant angulation should mimic angulation of adjacent teeth (Fig. 4). Furthermore, maxillary anterior regions require a subtle palatal angulation to increase labial soft-tissue bulk.11

Inclusive Tooth Replacement Solution

The Inclusive Tooth Replacement Solution was developed by Glidewell Laboratories as a complete, prosthetically driven method of restoring missing dentition. The solution is composed of treatment planning, implant placement, patient-specific temporization and the definitive restoration (Figs. 5a–5f).

To read the article in its entirety, see www.inclusivemagazine.com

References


Fig. 3_Lateral view of implant placed with the collar at the level of crestal bone with adjacent teeth CEJ 2 mm coronal to the collar of the implant.

Fig. 4_Proper implant angulation with screw access in the cingulum area.

Fig. 5a_Inclusive Tapered Implant at placement.

Fig. 5b_Inclusive custom healing abutment in place.


**Fig. 5c** Contoured soft-tissue sulcus after healing.

**Fig. 5d** Screw-retained IPS e.max crown (Ivoclar Vivadent; Amherst, N.Y.) in place.

**Fig. 5e** PA to verify seating of crown.

**Fig. 5f** Buccal view of final restoration at delivery.

**about the author**

Siamak Abai, DDS, received his doctorate of dental surgery degree from Columbia University, School of Dental and Oral Surgery, and his masters of medical sciences degree in oral biology and prosthodontics from Harvard School of Dental Medicine. He received two certificates of advanced graduate studies from Columbia University’s Advanced Education in General Dentistry program, where he was recognized as chief resident, while concurrently holding a position as associate clinical instructor of operative dentistry. In addition, he has held a prosthodontics position as an attending at the Edith Nourse Rogers Memorial Veterans Hospital. Abai is a specialist in prosthodontics and practices esthetics, reconstructive and implant dentistry at the W-Clinic in Newport Beach, Calif., while holding a faculty appointment at UCLA School of Dentistry.
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Straumann — a global leader in implant dentistry offering surgical, regeneration, restorative and digital solutions for the dental and lab business — is a pioneer of innovative technologies. We have won the confidence of our customers with this promise: a strong foundation of scientific and clinical evidence supporting the specialization, reliability and simplicity that define every Straumann solution.

As a pioneer of innovation, Straumann is now introducing a new implant line — Roxolid® for All.

Roxolid — the first titanium zirconium alloy designed specifically for implant dentistry — launched in 2009 has been implemented in practices all around the country. Initially designed to offer more confidence when placing small-diameter implants and to help increase patient acceptance of implant treatment, the Roxolid Ø3.3 implants were just the beginning.

This month, Roxolid for All expands to all diameters the advanced combination of the Roxolid material, the SLActive® surface technology and the new Loxim™ transfer piece for simplified implant handling.

Loxim is a pre-mounted, self-retained transfer piece that offers clockwise and counter-clockwise rotations for one-step implant insertion. With Loxim, the holding key is no longer required to remove the transfer piece, helping to make implant placement more efficient.

The Roxolid material and the SLActive surface technology each received the Frost & Sullivan Medical Device Technology of the Year Award. This award, which recognizes excellence in technological innovation, is one of the Best Practices Awards bestowed by Frost & Sullivan, the global growth consulting company.

In 2005, the SLActive surface technology was noted as a “next-generation dental implant surface technology” and, in 2009, the Roxolid material was noted as an “innovative high performance material for dental implants.”

Now Straumann includes these two award-winning technologies along with simplified handling with the introduction of Roxolid for All.

What does this mean for you? Roxolid for All with the Loxim transfer piece is designed to provide you with confidence in all cases, the flexibility of more treatment options, help increasing patient acceptance of implant treatment, improved osseointegration properties1 and efficient implant placement through simplified handling.

Today, life expectancy is longer. The scientific advancements in modern medicine along with an individual focus on good health and well-being all contribute to the potential of our life spans. It is important to place an implant you and your patients can trust — and depend on to last. Straumann invites you to try Roxolid for All.

For more information, contact your local Straumann territory manager or call customer service at (800) 448-8168. You can also visit www.straumann.us.

References