Straumann[®] Guided Surgery - Synergy Workflow

Fully-Digital Guided Surgery Solutions The pathway to immediate digital tooth replacement.





Digitally-Guided Implant Surgery. A workflow that works for patients.

Technology has been cited as making the single biggest improvement on people's lives over the past 50 years. Today, it has become an integral part of dentistry as patients seek faster, esthetic results in few appointments.

How Does it Work?

Guided implant surgery is a technique in which digital imaging is combined with CADCAM software and equipment to plan the most accurate approach to implant surgery. This method enables the clinician to select the most appropriate implants for a case, based on the patient's anatomy and dimensions of their soft-tissue, available bone, and arch. A surgical guide is fabricated in the shape of an orthodontic splint and worn by the patient during surgery. Small sleeves are inserted into the surgical guide to direct the drill so the implant can be placed precisely.

Why Digital?

Guided surgery solutions offer clinicians the predictability and confidence of optimal implant positioning, and the satisfaction in knowing patients will receive a customized smile restoration that meets their needs.

The International Journal of Implant Dentistry identifies two advantages of digital surgical workflows. First is better pre-operative preparation of the implant depth and trajectory for the surgeon. Second, the patient is better informed about what to expect before and after surgery. Digitally-guided surgery may also reduce the overall time necessary for implant surgery, and eliminate the need for flap surgery and bone grafts.

How to Get Started?

Four steps to help you maximize treatment outcomes through digital, collaborative surgical planning.



FACT: Guided surgery was originally developed to help neurosurgeons perform safer, less invasive procedures. It has now become a recognized standard of surgical care in many medical industries.

CBCT and Intraoral Scanning It all starts with a scan.

Step 1 - SCAN



The first step in guided surgery is to conduct or receive a patient's digital CBCT scan and an intraoral scan. The CBCT provides DICOM images of the anatomic structure of the patient's jaw. The intraoral scan is used to create digital impression images of the patient's mouth.

TRY IT

Make a great impression with intraoral scanners from Straumann Group Digital Solutions. Straumann offers a variety of scanner options for entry-level to advanced users.



Straumann[®] Virtuo Vivo[™]

- Scanning in real color increases field and depth of view
- Small, light-weight handpiece for patient comfort
- Easy-to-use pen-grip hold for user comfort
- Removable & autoclavable sleeves that reduce patient turnaround time

3Shape TRIOS[®]

- Realistic colors and shade measurements
- Removes unnecessary images of soft tissue as you scan
- Send production-ready scans with a 'scan and send-to' workflow
- Available in multiple pod styles to match user experience and needs



Implant Planning & Prosthetic Design Softwares Maximize treatment outcomes with the click of a button.

Pre-planning a case from root to tooth is made possible through computer-aided design (CAD softwares. CBCT and intraoral scans data can be seamlessly uploaded to implant planning software to allow the clinician to plan the implant position by virtually placing implants into three dimensional images of the patient's jawbone.

Step 2 - DESIGN



TRY IT

A computer-designed treatment plan facilitates a collaborative, team approach to maximize treatment outcomes for patients. Straumann Group Digital Solutions offers a Synergy Work-flow of coDiagnostiX[®] Surgical Planning Software partnered with CARES[®] Visual Restorative Planning Software.



coDiagnostiX®

- Ideal for guided surgery treatment planning and team collaboration
- Precisely and easily plan digital implant placement
- Nerve canal detection and distance monitoring
- Available in EASY mode for more simplified workflows
- Visualization features can be shown to patients for improved communication
- A variety of licenses available based on user types and needs

CARES[®] Visual

- Designs of a wide range of prosthetic restorations
- Accurate color scans allow precise and user-friendly design of restorations
- Integrates predefined milling parameters for ease-of-use
- Streamlined connection to Straumann milling machines
- Output files available for transfer to lab technicians or milling centers



Surgical Guides & Milled Prosthetics Where the magic happens.

Step 3 - **PRODUCE**



3D printed surgical guides have made surgical precision easier. You simply scan the patient's mouth, design and 3D print a guide to indicate where the implants should be placed, mill a provisional, then verify the implant, abutment and crown fit before beginning surgery.

By combining the power of patient imaging files with the production capabilities of a desktop mill, labs and clinicians can also fabricate a custom dental restoration in-house and on-demand. Dental mills are designed to create crowns, bridges, implant abutments, screw-retained restorations and more from materials such as ceramic, zirconia, PMMA, metal and wax. Centralized milling is also available for those seeking to outsource services.

TRY IT

With Straumann[®] CARES[®] 3D printing technology, a dental lab or clinician can print two dental implant models and two precision designed surgical guides in about an hour of production time.



CARES® P Series 3D Printers

- Desktop printers ideal for the cost-effective production of surgical guides, models and more
- Reduces total treatment time for implant placement
- 2 precision designed surgical guides in approximately 16 minutes
- Options available for user needs, and with wash and cure systems and resin packages

CARES[®] M Series Mill

- More robust solution, ideal for high capacity production and multiple materials
- 5-axis mill for inlays, onlays, veneers and more
- Produces casework for an extensive range of restorations, materials and indications
- Designed for wet or dry milling workflows
- Fast processing times



Straumann[®] milling machines enable technicians to grind or mill inlays, onlays, veneers, single crowns, bridges and screw-retained restorations from a variety of materials.



CARES[®] D Series Mill

- 5-axis technology in a smaller machine
- Masters conventional crown and bridge work, and complex casework
- Designed for dry milling-only

CARES[®] C Series Mill

- Smaller solution, ideal for chairside dentistry
- 4-axis mill for inlays, onlays, veneers and more
- Handles hybrid and glass-ceramic materials



Guided Implant Surgery A visual example.

Step 4 - **RESTORE**





Straumann® Drill Handles – The drill handles are of ergonomic design, color-coded and marked with a symbol. The drill handle cylinders fit into the Straumann® Sleeve to ensure precise drilling guidance. **Straumann® Guided Drills** – The guided drills are designed with a collar for a physical depth control.

TRY IT

Whether a practitioner is restoring at the bone level or the tissue level, Straumann[®] offers a variety of high-quality, proven implant and prosthetic solutions for all indications.

Orientation for bone level implants:

thanks to the implant rotational markers on the surgical template, the marking on the bone level guided transfer piece allows you to visualize the implant connection position. This enables more treatment options (e.g. designing and producing CARES[®] restorations prior to the surgery).

Guided transfer piece:

the guided transfer piece fits the surgical sleeve and ensures a fully guided implant insertion by providing physical depth control with the stop key.



Straumann[®] Implants

- Straumann[®] BLX implants include dual threads & bi-directional cutting
- SLActive[®] hydrophilic surface technology can reduce patients healing time by 50% compared to SLA
- Roxolid[®] materials designed to treat challenging anatomical situations and narrow interdental spaces
- One system with one kit can be used for all indications
- Unique portfolio of different materials and surfaces available

The VeloDrill[™] System

- Minimizes heat generation and delivers high drilling stability
- Suitable for all surgical protocols
- Lowers set-up costs by maximizing the synergy between instrumentation and guided surgery





Straumann[®] Pro Arch

- An immediate, fixed, full-arch treatment solution
- Ideal for edentulous patients with limited bone availability
- Implant and prosthetic components combined
 (both bone and soft tissue level) to provide a seamless treatment



Clinical Case Example

Straumann[®] Guided Surgery Clinical Case



17 year old female in good overall health with a congenitally missing tooth #10. Orthodontist had taken serial cephs over 6 months and noted that skeletal growth was complete.



Digital Drill Guide Designed to the final surgical protocol and to accommodate ortho brackets



The design tools in the CARES software were used to create the ideal tooth using The Golden Ratio. This opened a diastema on the lateral of the implant, giving the team the confidence to place the implant and allow the orthodontist to finish treatment during healing.



Treatment Planning from coDiagnostiX™ Software is imported into CARES Visual and used to convert the prosthetic design to an immediate provisional



Prosthetically driven implant plan in coDiagnostiX based on prosthetic proposal and the bony anatomy (inset)



Printed digital drill guide with Surgical Sleeve Provisional is designed via the CARES X-Stream solution. (PMMA polycon ae luted to a Straumann Variobase Abutment)



Printed Surgical Guide with implant in place through the guide



Digital provisional placed at the time of surgery. Image taken at 3 weeks post-surgery



Final prosthesis delivered



The Plan and the Outcome

Resources:

Four-in-ten Americans credit technology with improving life most in the past 50 years. Pew Research Center. October 12, 2017. http://pewrsr.ch/2yhL9da.

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Dental 3D Printing Market, Global Forecast, Dec 2018

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