



A CLINICIAN'S GUIDE TO SYNERGETIC WORKFLOW FROM SURGERY TO FINAL

NAVAGATION™ SYNERGY



GUIDED WORKFLOW

*Synergetic workflow from diagnostically planned guided surgery,
chairside conversions to final prosthetics*



Dear Doctor,

Since the inception of the All-on-Four® hybrid concept, we have seen a true evolution in the way we restore the edentulous arch.

Being able to extract a patient's teeth, place implants and have them wake up a few hours later with a fixed prosthesis, is a key factor in patient acceptance. Unfortunately, this chairside conversion process has been the most unpredictable, expensive and challenging part of this procedure. Furthermore, the conversion denture, in most cases, was nothing more than an "emergency device" with occlusion and esthetics a secondary consideration.

Today's technology is allowing the technical, restorative and surgical teams to come together starting at the planning phase. We now have the ability to plan our surgical cases with a true, transferable, digital diagnostic wax-up. Superimposing this wax-up onto actual patient pictures assists in patient approval and allows us to place implants based on the final prosthesis, not a pre-op or existing denture tooth position. Once patient approval is received, we process the entire case within the parameters set by the approved wax-up.

Absolute's in-house surgical planning software is allowing our pre-planning team to assist the surgeon with model matching, DICOM clean-up, suggested bone-reduction as well as proposed implant placement. This saves the clinician time and renders unnecessary the need to learn how the software functions.

After pre-planning is completed, a review is scheduled allowing the technical, restorative and surgical teams to fine tune the plan for final guide design and printing.

Our NavaGation™ Synergy Guided Workflow now allows for a true all-encompassing process; from diagnostic planning, tooth down implant placement, guided surgery with chairside immediate latched conversion to the final prosthetic solution.

I invite you to restore your next case with us!

Conrad J. Rensburg



Why Choose the Synergy Guided Workflow

SIGNIFICANTLY REDUCED TISSUE REFLECTIONS

UKF bone seating volume is reduced by up to 80% without sacrificing stability. The buccal only, reduced bone seating area, requires minimal tissue reflection for efficient seating of the base guide. This unique feature reduces the traditional time required for surgery and the conversion process, while aiding in patient recovery with decreased morbidity.



FAST AND ACCURATE SEATING BASE GUIDE

The UKF (Unilateral Key Fixation) base guide is fixated on only two 10x12mm reflected areas. It is stabilized by a tooth / bone or denture based aligner for faster and more accurate seating. This extremely accurate, dual verified, bone and tooth aligned seating, allows for a streamlined and efficient chairside conversion process.

TRUE SEQUENTIAL WORKFLOW

A true sequential workflow allows the surgeon to complete the Synergy surgery without the need to check occlusion. The conversion process is guided by the accurate seating of the UKF guide and not by closing the patient into occlusion by hand with a nose-chin measured vertical. In case of a dual arch the entire case is surgically sequenced and not converted one arch at a time.

In documented “simple cases” a dentate single arch case (surgery to conversion) is regularly processed in 120 to 160 minutes, while the conversion process is reduced to between 20 and 30 minutes. Dual arch cases are regularly processed with our team in 4 hours or less.

10-DAY PROCESSING FROM REVIEW TO SURGERY

The NavaGation™ team has processed hundreds of surgical cases with some of the leading clinicians in the US. Complete in-house processing from planning to final prosthetics, by some of the best technicians in the industry, not only allows for an impressive 10-day Synergy turnaround but also gives our surgeons a world class prosthetic support structure for the final.

SYNERGETIC LINK FROM SURGERY TO FINAL

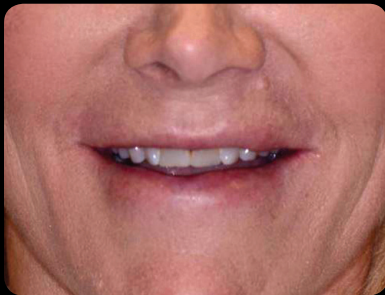
The Synergy workflow creates a predictable link between the surgical plan, converted PMMA, prototype and the final prosthesis. All cases are planned from the final prosthesis back to the surgical plan, this minimizes any potential restorative surprises or complications. The NavaGation™ team is led by experienced technicians who ensures the Synergy workflow is designed to support the final prosthetic solution.



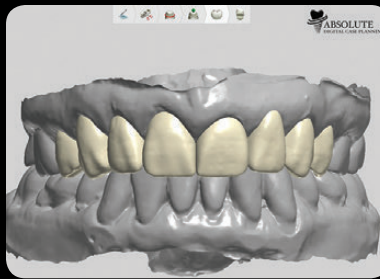
Diagnostic Implant Pre-Planning



PRE-OP STL SCANS



PRE-OP



WAX-UP

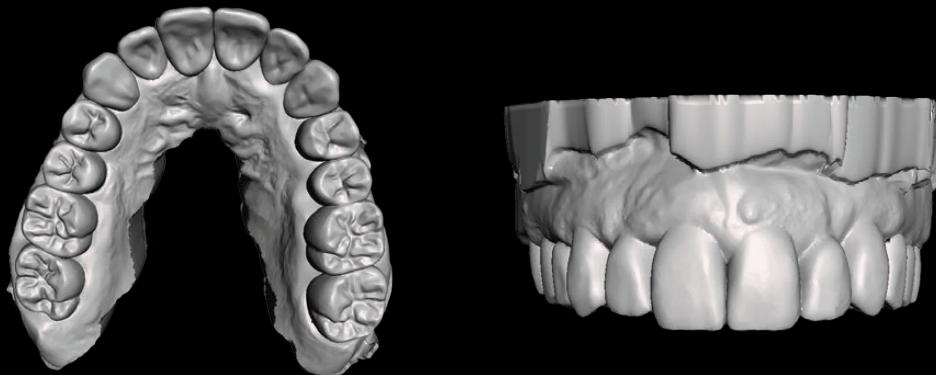


DIAGNOSTIC WAX-UP

SUPER IMPOSED WAX-UP FOR PATIENT APPROVAL

In this step our diagnostic team performs a full digital diagnostic work-up. Once completed, the restorative clinician can remotely evaluate and make changes, if required, via TeamView.

The diagnostic wax-up can now be superimposed over the original patient pictures for approval. Pre-op and post-op mounted models can also be requested for patient evaluation.



DIAGNOSTIC SCANS

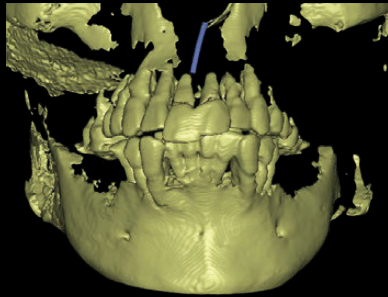
DIAGNOSTIC FOR SURGICAL PLANNING

The diagnostic wax-up, pre-op model STL and DICOM scan are now imported into the NavaGation™ implant planning software. The suggested plan is designed based off of these three data points .

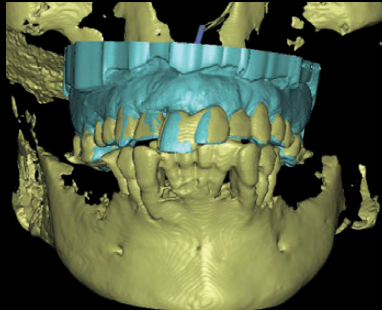
Implant Pre-planning from Diagnostic

MODEL MATCHING & CLEAN-UP

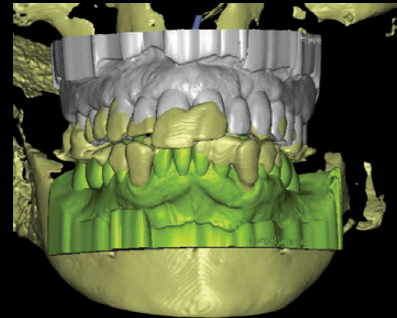
The Absolute ADIA certified NavaGation™ team will clean up the DICOM data, model match the pre-op model and approved diagnostic STL. After model matching, the team will mark anatomical landmarks, process tooth segmentation (if necessary), mark suggested bone reduction (as required by smile line) and final prosthetic requirements.



CBCT SCAN



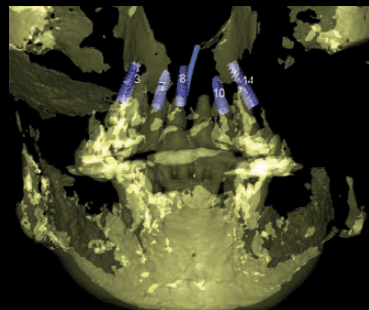
PRE-OP MODEL MATCH



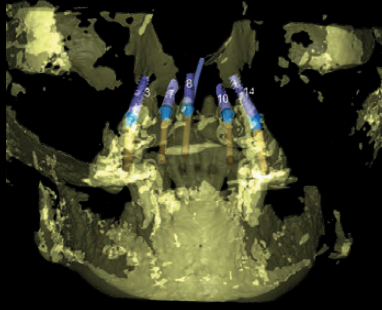
DIAGNOSTIC MODEL MATCH

IMPLANT PLANNING

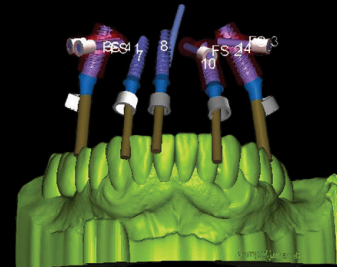
A proposal for suggested placement of implants will be processed based off of the DICOM and diagnostic tooth positions. Correction abutments, to control screw access, are placed digitally. This allows for pre-operative planning of all components needed before surgery.



IMPLANT PRE-PLANNING



ABUTMENT SELECTION



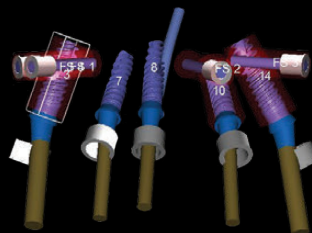
GUIDE SLEEVE DESIGN

DIAGNOSTIC EVALUATION

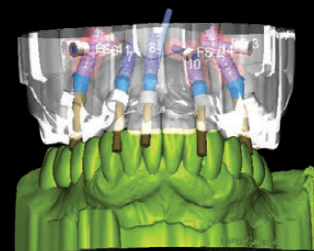
The surgeon and/or restorative clinician will review, adjust and approve the suggested plan via very efficient remote webinar.



SCREW ACCESS EVALUATION



PLACEMENT EVALUATION



DIAGNOSTIC EVALUATION

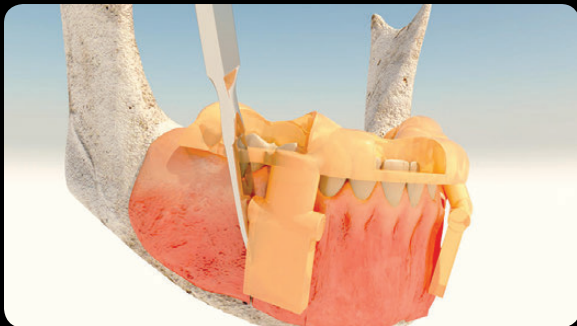
Navagation™ Synergy Quick Reference



DENTATE PATIENT



SEAT TOOTH BORNE INCISION GUIDE



*MAKE VERTICAL INCISIONS AS
SHOWN BY THE GUIDE*



LAY BLOCK REFLECTION

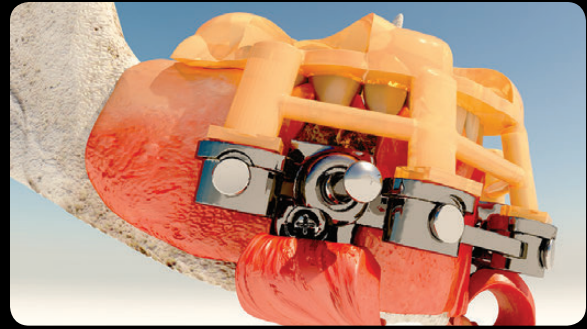


SEAT UKF BASE GUIDE BY HAND TO CONFIRM CLEAN REFLECTION - DO NOT FIXATE

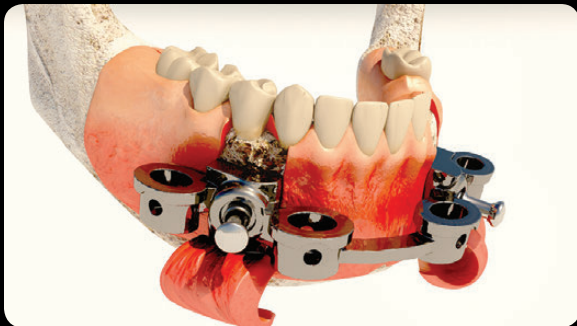




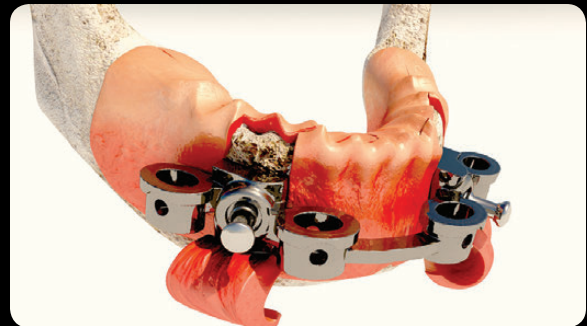
SEAT AND LATCH THE TOOTH
ALIGNER INTO THE UKF



DRILL FIXATION



AFTER FIXATION REMOVE TOOTH ALIGNER



EXTRACT TEETH



SEAT BONE PLANE REDUCTION GUIDE



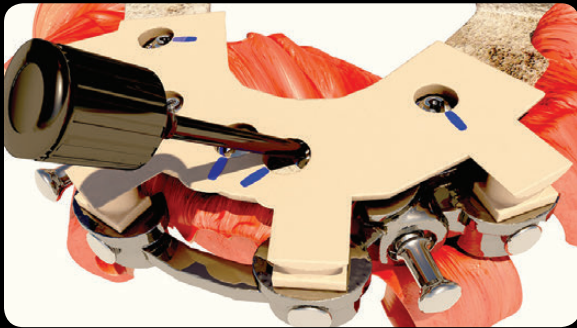
REDUCE BONE TO GUIDE LEVEL



REDUCED BONE



*LATCH DRILL - GUIDE AND PLACE
IMPLANTS WITH GUIDED PROCEDURE*



*LATCH ABUTMENT ALIGNER - POSITION AND
TORQUE ABUTMENTS IN CORRECT ROTATION*



*LATCH PMMA CONVERSION - PLACE TEMPORARY
CYLINDERS AND LUTE PMMA*



REMOVE UKF BASE GUIDE AND SUTURE



*CUT LATCHES FROM PMMA AND REPLACE
CONVERSION*

*For assistance or questions on NavaGation™ please call 844 293 ADS1 (2371)
or visit www.navagation.net*

Synergy Planning Workflow

CLINICAL



PATIENT



PVS or STL IMPRESSION U / L



RAW DICOM



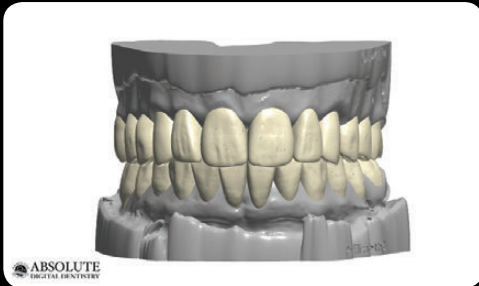
SMILE PICS

SUBMIT DIGITAL RX & DICOM AT ABSOLUTEDENTALLAB.COM NAVAGATION™ TAB
SEND STL THROUGH SCANNER OF CHOICE TO ABSOLUTE DENTAL LAB

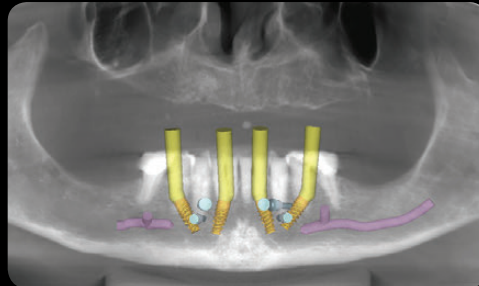
or

MAIL PVS U/L FOR DIGITIZATION VIA UPS LABEL – CALL TO SET UP

NAVAGATION™ TEAM



DIGITAL DIAGNOSTIC WORK-UP



DATA CLEAN-UP, MODEL MATCHING
AND SURGICAL PRE-PLANNING

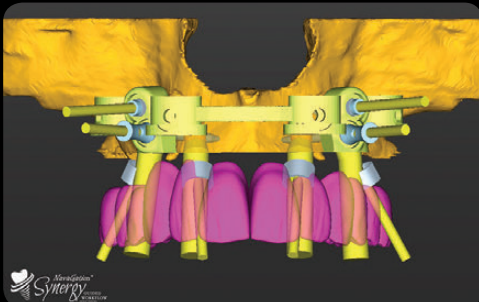
TEAM COLLABORATION



TeamViewer

REMOTE REVIEW BY:
SURGEON/RESTORATIVE/TECHNICIAN

NAVAGATION™ TEAM



GUIDE AND CONVERSION DESIGN.
PRINTING AND MILLING OF COMPONENTS



CASE PREPARED FOR SURGERY

Surgery - Dr Uday Reebye,
Triangle Implant Center



Dentate Single-Arch Surgery

INCISION GUIDE

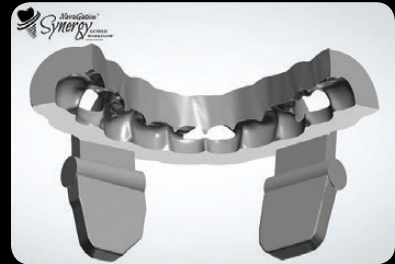
The most unique feature of the Synergy UKF device is the nominal tissue reflection required to seat the base guide. The incision guide assists the surgeon in making the vertical incisions as accurately as possible, thus greatly reducing the invasiveness of the surgery.



PRE-OP



POSITION TOOTH BORNE INCISION GUIDE



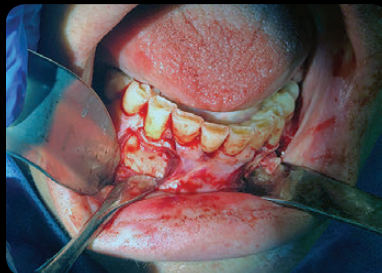
INCISION GUIDE

GUIDED INCISION AND REFLECTION

After seating the incision guide on the occlusal table, make two vertical incisions on the outer margins of the incision block.



VERTICAL INCISION



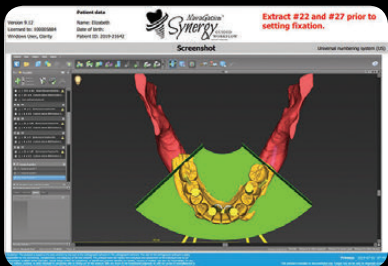
BLOCK TISSUE REFLECTION



UKF DEVICE

PRE-EXTRACTION BEFORE FIXATION

A collaborative planning approach between the surgeon, restorative and the NavaGation™ team ensures a predictable surgical procedure. Fixation position is planned, and pre-extraction instructions are printed on the supplied surgical workflow.



PLANNED SURGICAL WORKFLOW



PRE-EXTRACTION



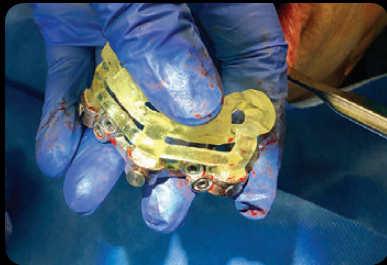
UKF TOOTH ALIGNER

SEATING OF THE UKF BASE GUIDE – CRUCIAL STEP

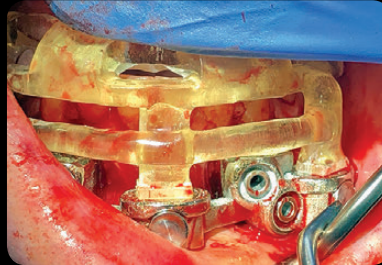
The NavaGation™ Synergy Protocol utilizes the UKF base guide as a fixed point between the pre-operative centric occlusion and planned diagnostic/conversion tooth position. The UKF base guide also acts as the carrier for all surgical and prosthetic devices. Seating the base guide accurately is the most CRUCIAL component to ensure a predictable conversion process. Always latch the components between every step using the supplied latch pins. These pins play an integral part in securing the accuracy and predictability of the Synergy system.

Once tissue reflection is complete, the UKF base guide is seated by hand but not fixated. The base guide is designed to seat onto the buccal bone and engage the bony anatomy for a tactile seat. This allows the surgeon to verify a clean buccal bone surface before continuing.

After tactile seating is verified, the tooth aligner is seated and latched into the UKF base guide. This UKF “stack” now engages the buccal undercut while locking into the occlusal aligner. The fixation pilot hole is drilled, and the guide is secured with either pins or screws, according to the NavaGation™ plan. The UKF is fixated with one or two bi-cortical pin engagements and/or one uni-cortical screw depending on the bone quality.



STACKED UKF AND ALIGNER



SEATED INTO THE UNDERCUT



DRILLING AND FIXATION

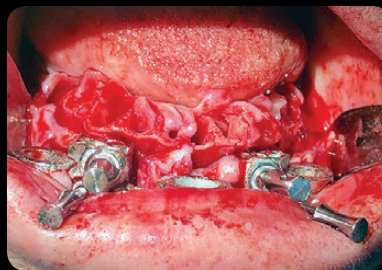
EXTRACTIONS AND BONE REDUCTION

After seating is verified with an intimate bone to UKF integration and proper seating of the tooth aligner, the stack is un-latched, and the tooth aligner is discarded. Extractions are done, and after the bone reduction guide is latched and pinned.

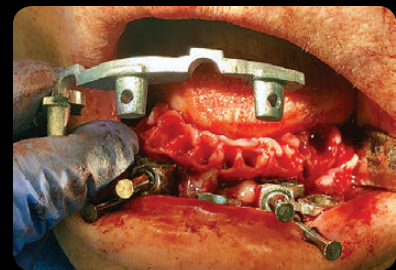
The UKF base guide can be printed with multiple innovative materials ranging from cobalt alloys to the latest polymers, carbon and nylon materials. These options will be discussed at the NavaGation™ review



UKF SEATED



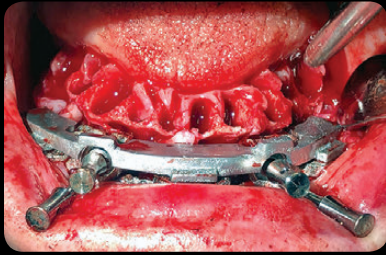
EXTRACTIONS



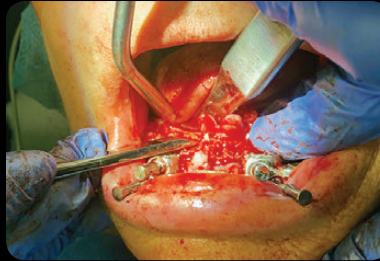
BONE REDUCTION GUIDE

BONE REDUCTION

The bone reduction guide can be printed with multiple innovative materials ranging from cobalt alloys to the latest polymers, carbon and nylon materials. These options will be discussed at the NavaGation™ review. After bone reduction is completed, the latched conversions prosthesis is seated into the UKF and a quick bite and bone height check is done.



REDUCTION GUIDE LATCHED



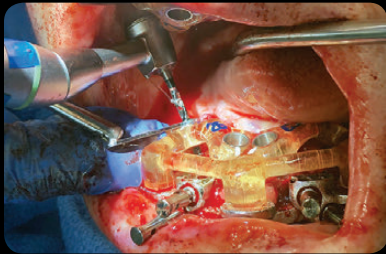
BONE REDUCTION



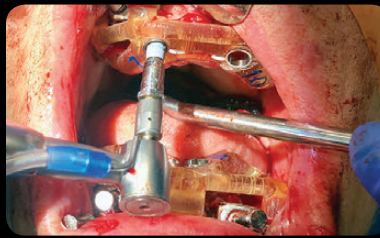
BONE AND BITE CHECK

SURGICAL PROCEDURE

All surgical devices are now latched into the UKF and guided procedures are processed as normal. Synergy requires a fully guided surgical kit and can be processed on most all popular implant systems.



DRILL GUIDE LATCHED



PLACED THROUGH THE GUIDE



GUIDED TO DEPTH AND ROTATION

COMPONENT IDENTIFICATION

Implant rotation is marked on the hex point and marked on the drill guide with a line. The abutment screw position is marked on the abutment aligner and shows the screw driver access position to correctly line up the abutment rotation.



BONE REDUCTION GUIDE



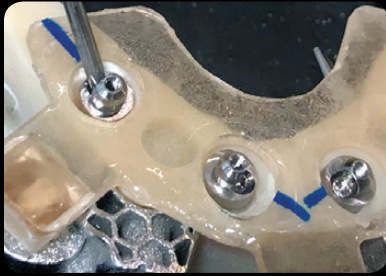
DRILL GUIDE



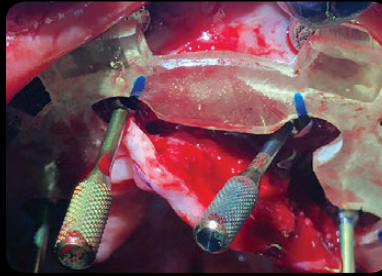
ABUTMENT ROTATION GUIDE

CORRECTION ABUTMENT PLACEMENT

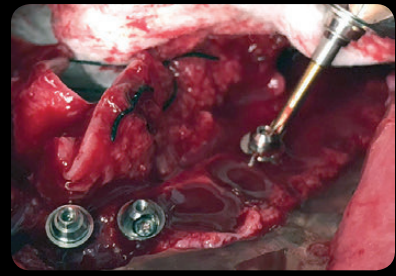
After implant placement the drill guide is unlatched and removed. The abutment aligner is now latched into the UKF base guide to assist with placing the correction abutments in the proper rotational position. The line indicates the screw access position, which aligns the abutment rotation. IMPORTANT – Torque all restorative abutments to manufacturer torque values before proceeding to the conversion process.



ABUTMENT ALIGNER



SCREW ACCESS MARKED



ABUTMENTS TORQUED

CHAIRSIDE CONVERSION PROCESS

The Synergy workflow greatly streamlines and simplifies the conversion process. The latched PMMA hybrid system significantly reduces the required chairtime and technical skill required to complete the conversion. The NavaGation™ team can be chairside to assist with a conversion and/or teach one of the surgical team members this very predictable process.

CONVERSION WITH COMMON PATH OF INSERTION

Included with every case is a detailed drill and conversion report. This explains the sequence of placing the temporary cylinders to allow for a common path of insertion through the PMMA. If all temporary abutments share a common path of insertion, simply place the temporary cylinders, slide the PMMA over, latch it into the UKF base guide and lute them into the PMMA. The NavaGation™ team suggests a self or dual cure luting agent like Quick Up from VOCO.

CONVERSION WITHOUT COMMON PATH OF INSERTION

If allowed by the implant position in the bone, the NavaGation™ team will always plan to create draw with all the temporary cylinders. If a common path with all correction abutments could not be established, place all the temporary cylinders with draw and lute those into the PMMA as noted in the conversion notes. After luting these cylinders, unlatch and remove the PMMA, place the remaining temporary cylinders and lute into the PMMA to complete the chairside pickup.



LATCHED PMMA
CONVERSION PROSTHESIS

CONVERSION – CHAIRSIDE WORKFLOW

The conversion process will also be discussed at the case review and extensively described in the NavaGation™ conversion instructions included with every case.

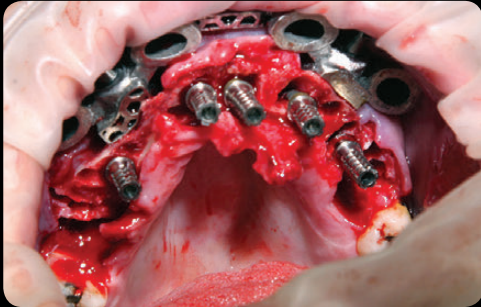
In a case with a common path of insertion:

Place all temporary cylinders, seat the PMMA, latch into the UKF and lute the pick-up.

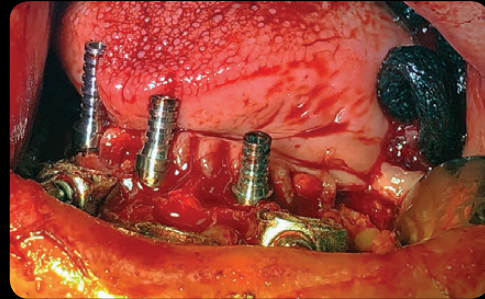
In case a common path of insertion between all temporary cylinders could not be established:

Place all temporary cylinders with a common path of insertion according to the conversion plan, latch and lute the PMMA. Repeat the process with remaining temporary cylinders.

After all components are luted, remove the PMMA and simply cut the latches to complete the conversion.



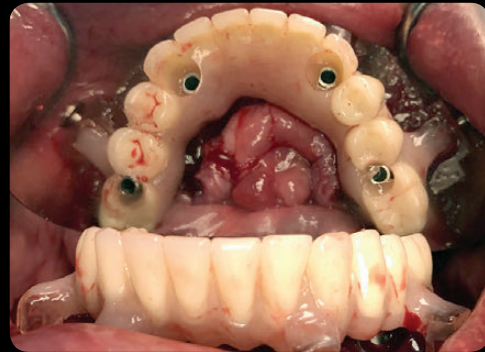
COMMON PATH OF INSERTION - ALL ABUTMENTS PLACED



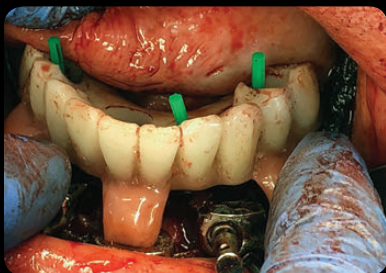
*#'s 29, 27, AND 24 SEQUENCED FOR DRAW
#'s 19 AND 22 PLACED AFTER*



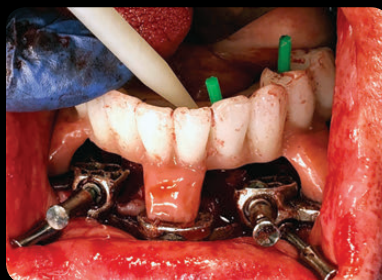
VERIFY FREE SPACE



COMPONENTS IN PLACE READY FOR LUTING



PLACE SCREW ACCESS PROTECTORS



LUTING



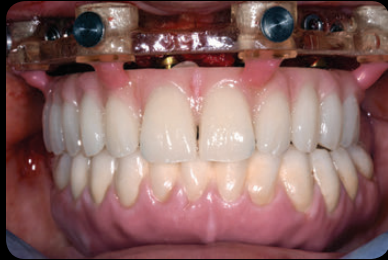
*CUT LATCHES TO COMPLETE
THE CONVERSION*

Remove the UKF base guide, suture the patient and seat the PMMA conversion to complete the process.

NavaGation™ Synergy Workflow: Surgery to Final

The Synergy Guided workflow not only provides the surgeon with a predictable surgical solution, but also gives the restorative clinician an efficient restorative starting point. Planning the implant emergence, required bone reduction and conversion PMMA, from a true diagnostic work-up, equates to no economical or restorative surprises when processing the final.

The Synergy diagnostically designed latched conversion is now the starting point of a predictable hybrid restorative workflow.



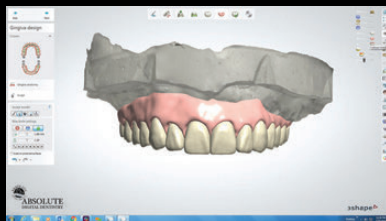
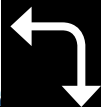
DIAGNOSTIC LATCHED CONVERSION



LESS INVASIVE UKF - FASTER RECOVERY



*Surgery -
Dr Jeffrey Ganeles,
Design - NavaGation™ Team*



CONVERSION STL IMPRESSION AND DIAGNOSTIC CHANGES



CONVERSION BASED PROTOTYPE



FINAL DELIVERY MONOLITHIC ZIRCONIA

*Restorative - Dr Mark Scurria and
Absolute Signature Prosthetics*



Edentulous Single Arch Surgery

The only difference between dentate and edentulous surgical workflows is the dual verified method of seating the UKF base guide. This section will discuss the steps required to accurately seat the edentulous UKF base guide. After seating is verified, all latched surgical and prosthetic steps are the same as the dentate surgery shown in the previous section.

INCISION GUIDE

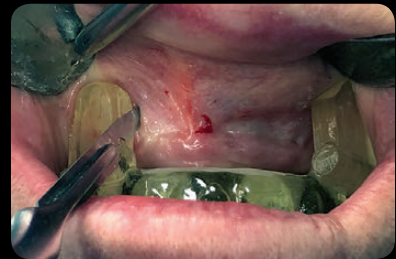
The incision guide assists the surgeon in laying a conservative block reflection to seat the UKF base guide on.



INCISION GUIDE



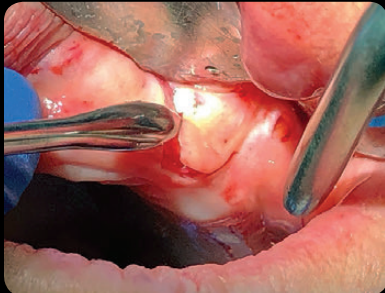
PALATAL/OCCUSAL POSITIONING



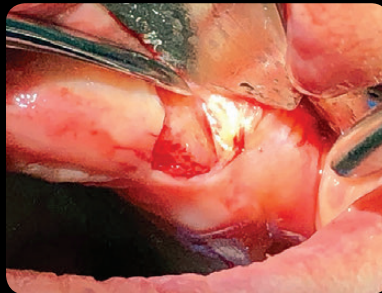
GUIDED INCISION

REFLECTION AND BONE SEATING – PRIMARY SEATING VERIFICATION

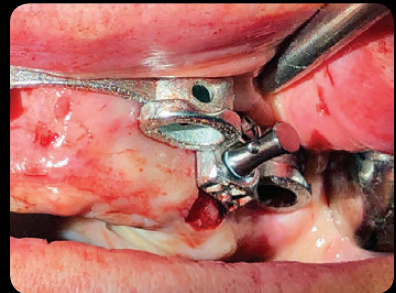
After guided vertical incisions are made, the tissue reflection is completed. The UKF base guide is now seated by hand to verify a clean reflection and active engagement between the guide and bone. The UKF engages the bony anatomy of the buccal plate and allows for a tactile seating verification.



TISSUE REFLECTION



BLOCK REFLECTION



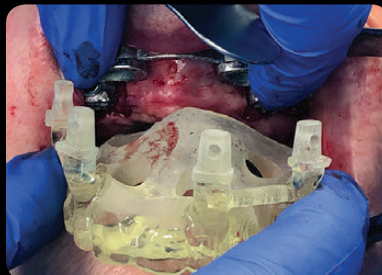
TACTILE SEATING OF UKF

DENTURE ALIGNER - SECONDARY SEATING VERIFICATION

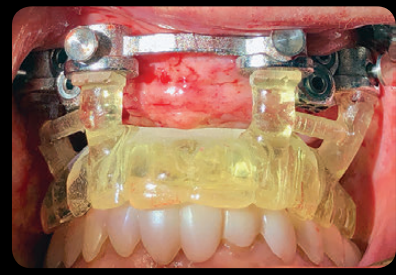
The NavaGation™ Synergy system engages primary as well as secondary seating points to ensure an accurate fixation of the base guide. The denture aligner is fabricated from the dual scan tomography data of a new or relined denture. The palatal area of the denture, in combination with the occlusal seating position with the opposing dentition, effectively allows for three seating verification points.



DENTURE ALIGNER



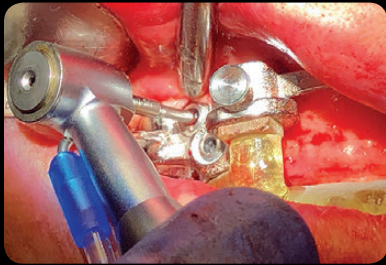
LATCHING ALIGNER WITH SEATED UKF



OCCUSAL SEATING

SYNERGY EDENTULOUS GUIDED SURGERY AND CONVERSION PROCESS

After UKF base guide seating is finalized, the components, surgical workflow and conversion process is the same as the dentate protocol. Please refer to “dentate guided procedures” in previous chapter for detailed explanations. The UKF base guide can be secured with two bi-cortical fixation pins, or a combination of a uni-cortical screw and bi-cortical pin, depending on the bone quality.



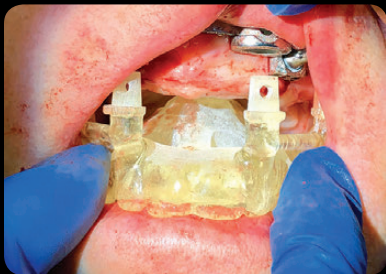
DRILLING FIXATION



SECURING FIXATION SCREW



SECURING FIXATION PIN



UNLATCH THE ALIGNER



UKF ACCURATELY SEATED



QUICK BITE CHECK



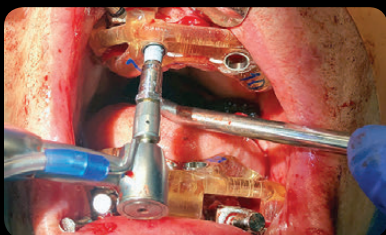
BONE REDUCTION PLANE GUIDE



BONE REDUCTION



DRILL GUIDE



GUIDED IMPLANT PLACEMENT



LATCHED CONVERSION



FINAL CONVERSION

Once the conversion PMMA is fixated onto the temporary cylinders unlatch the conversion and remove it. After confirming a stable pick-up of the temporary cylinders inside the PMMA, the surgeon removes the UKF base guide and sutures the patient. Simply cut the latches off the PMMA and replace after suturing.

Sequenced Dual Arch Surgery

The NavaGation™ team has successfully processed numerous dual arch cases, over multiple years, with incredibly predictable results. These cases were processed with a multitude of clinicians, with dissimilar experience levels from around the United States. They found the NavaGation™ Synergy system to be as predictable in single as in dual arch application. Our team will gladly discuss the many unique attributes contributing to this system's effectiveness.

The system allows for a true sequenced workflow and does not require the surgeon to verify bites during the surgical process. Furthermore, the dual arch surgery does not require one arch to be converted before proceeding to the opposing.

The very unique NavaGation™ Synergy system allows for simultaneous processing of both arches. This allows for extractions, bone reduction, implant and abutment placement to dual arch conversions in complete sequence. This feature has proven to produce a more predictable surgical result. It has eradicated the historical bite errors that traditionally occurred when processing each arch independently, in dual arch surgeries.

NAVAGATION™ SYNERGY WORKFLOW

- Seat incision guide on arch of choice
- Make vertical incisions as shown by the guide
- Lay the block refection
- Clean periosteum for passive seat surface
- Seat the UKF base guide by hand
- Confirm passive seating by hand
- Seat the tooth-aligner and UKF to create the "stack"
- Confirm accurate UKF seating by:
- Accurate tooth aligner seating in window cut out – Primary
- Intimate bone to UKF surface integration – Secondary
- Drill fixation and remove tooth aligner



► Repeat above steps for opposing arch

After seating both UKF base guides, continue with a fully sequential surgical process:

- Extractions
- Bone reduction
- Implant placement
- Abutment placement
- Conversion process on both arches

The NavaGation™ Synergy surgical process utilizes the UKF base guide to index and maintain the patient's vertical and bite. Therefore, it does not require bite checks during surgery and has eradicated the need to process one arch at a time. This unique feature greatly increases the predictability and reduces the chair time required for these surgeries. Our NavaGation™ Synergy team is always available to assist our surgeons through this process.

Absolute Dental Lab

Established in 1994, Absolute Dental Services started as a small fixed prosthetics lab in the Triangle area of North Carolina. More than two decades later, Absolute's restorative focus is much broader but their attention to product detail and exceptional customer service has not changed.

Today, Absolute is a true full-service partner, with a team nationally and internationally renowned for their expertise in creating world-class esthetics. Their use of cutting edge technology in CAD and milling as well as their extraordinary dental implant, guided surgery and high-end removables sections, enables them to deliver lifelike and functional dental prosthetics in even the most complex cases.



The company motto, *Perfection Is Not Optional*, holds true and serving their customers with Absolute Excellence has always been the primary focus of the owners, branch partners and team members. They welcome clinicians from all over the country to become part of the Absolute family!

NavaGation™ Team

The NavaGation™ guided surgery division was established in 2014 with the goal to create synergy between the surgeon, restorative and technical teams. Today, with more than 2000 guides and successful surgeries behind them, Absolute is proud to offer their expertise in diagnostic work-up, pre-planning, guide design, processing and chairside support to our clinicians.

By offering a true “prosthetic down” planning approach, our NavaGation™ team has become a trusted partner for surgical and restorative teams across the United States. Advancements in planning software, 3D printing and other technologies like select laser melting, has created a true synergy between the surgical plan and the final prosthetics. Having an experienced technician assist with plan set-up, team review and fabrication of the final prosthesis has proven to create a very predictable workflow.

Select Laser Melting
done exclusively by



We invite you to restore your next case with us!





Ceramic Artistry by Yunsoo Kim

Absolute Dental's Signature Prosthetic Team

*NavaGation™ Synergy
the ultimate link between
surgery and final prosthetics*



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