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DOCUMENT CONTENT

CREATE THE 3D VIRTUAL PATIENT

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- HEAD POSITION PROTOCOL
- EXTRAORAL FACIAL PHOTOS
- CLINICAL PHOTOGRAPHY
- RADIOLOGIC PROTOCOL

ORDER PROTOCOL

PACKAGE

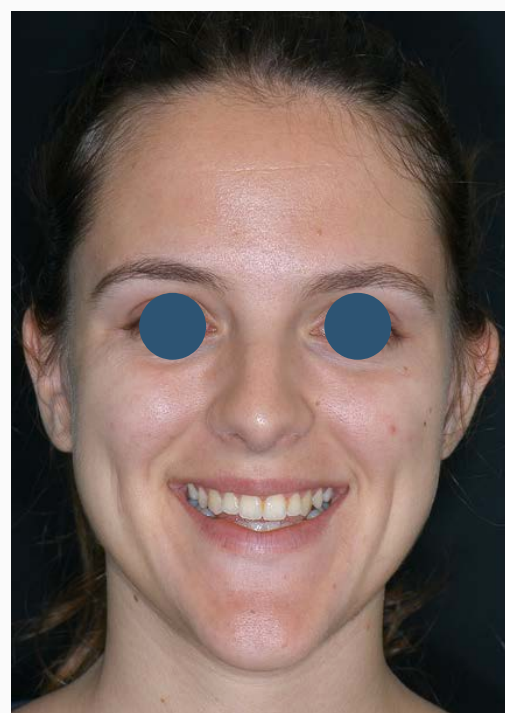
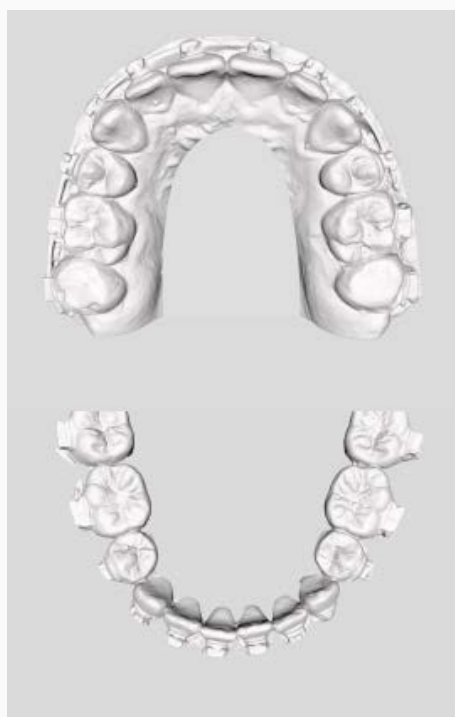
SURGICAL GUIDELINES - MAXILLA

SURGICAL GUIDELINES - MANDIBLE

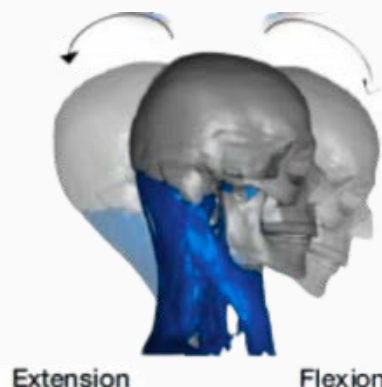
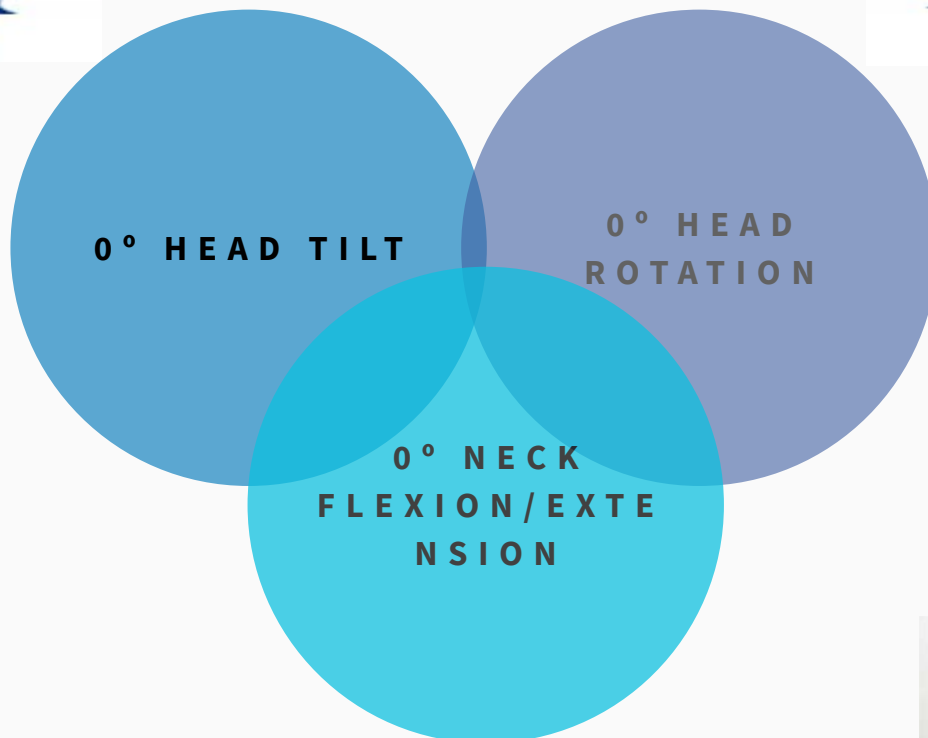
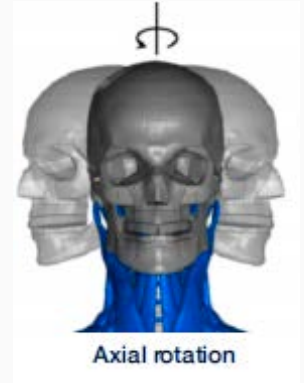
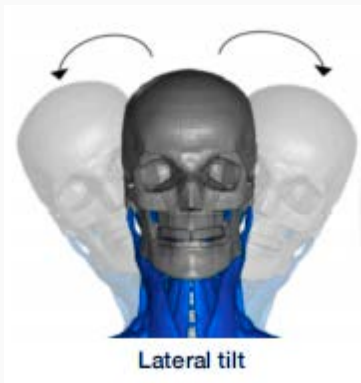
SURGICAL GUIDELINES - CHIN

CREATE THE 3D VIRTUAL PATIENT VOLUMETRIC CAPTURE

- CT / CBCT IN CENTRIC RELATION
- SCANNING OF DENTAL ARCHES
- CLINICAL PHOTOGRAPHS

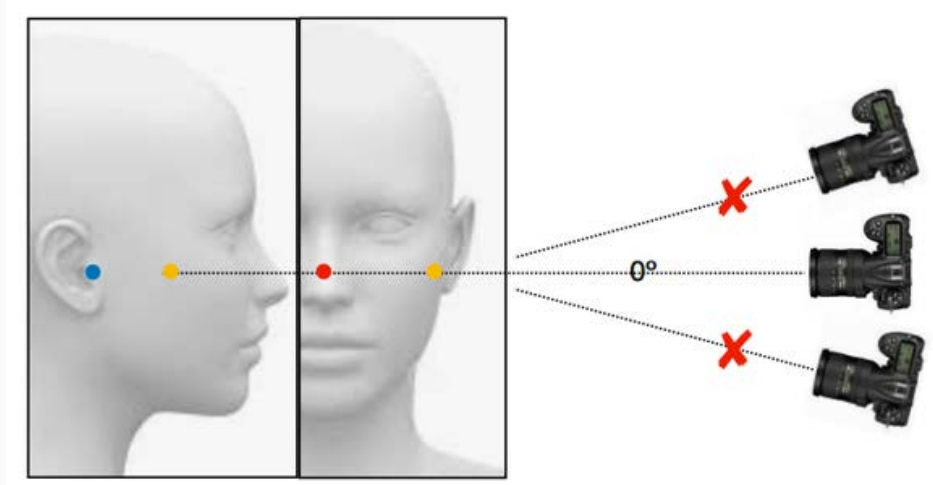


HEAD POSITION PROTOCOL THREE DIMENSIONAL WORKING POSITION CONCEPT



MIRROR FOR
ORIENTATIVE
PURPOSE, ONLY

EXTRAORAL FACIAL PHOTOS POINTS AND LEVELS OF FOCUS



OPERADOR INSTRUCTIONS

- INSTRUCT THE PATIENT ON POSITIONING AND PHOTOGRAPHIC SEQUENCE
- ALWAYS MAINTAIN THE SAME OPERATING CONDITIONS
 - APERTURE
 - SPEED
 - ISO
 - LIGHTING (FLASH). DO NOT USE DIFFUSERS OR REFLECTORS FOR ORTHODONTICS OR ORTHOGNATHIC SURGERY
- THESE CONDITIONS ARE CALCULATED WHEN:
 - THE PATIENT IS POSITIONED ACCORDING TO ORIENTATION MARKS ON THE FLOOR
 - THE OPERADOR IS ALWAYS POSITIONED IN THE SAME PLACE
- ALL PHOTOS ARE OBTAINED IN VERTICAL FRAME
- BE RIGOROUS WITH THE POINTS AND LEVELS OF FOCUS

EXTRAORAL PHOTOS VERTICAL FRAME

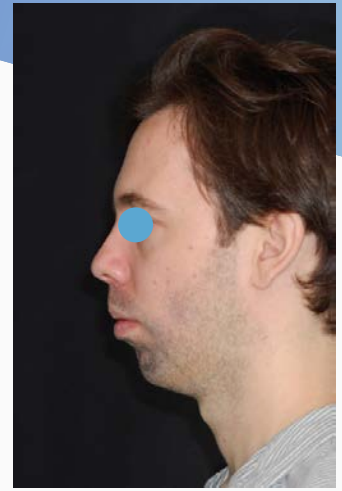


RIGHT PROFILE

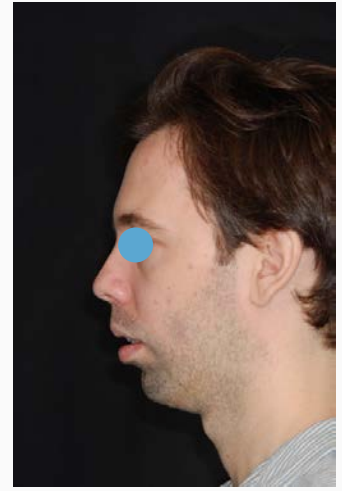
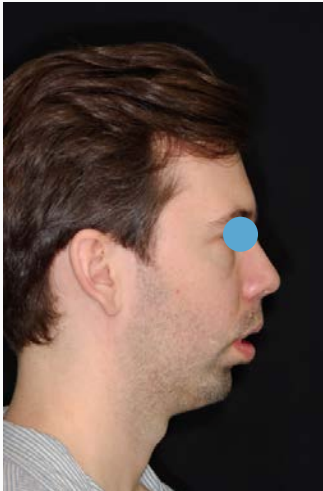
FRONTAL

LEFT PROFILE

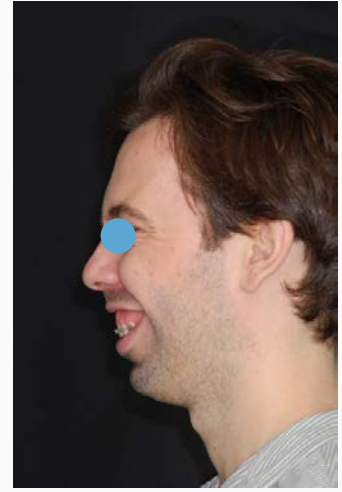
CLOSED
LIPS



RESTING
LIPS



OPEN
SMILE



EXTRAORAL PHOTOS



ADD-ONS

TOOTH-LIP RELATIONSHIP



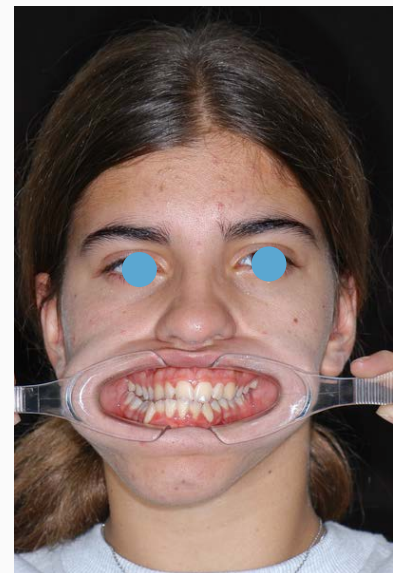
OVERBITE/ OVERJET



SMILE HEIGHT



FRONTAL VIEW WITH CHEEK RETRACTORS



EXTRAORAL PHOTOS

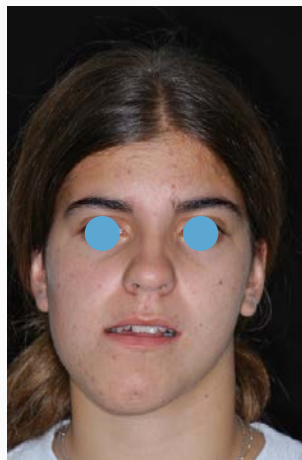


ADD-ONS

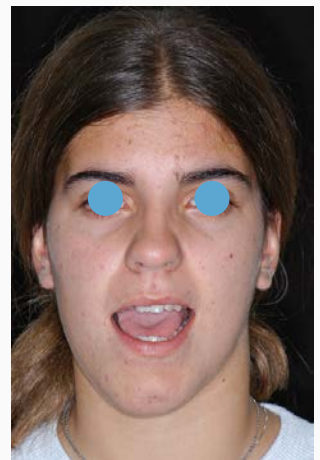
AXIAL



MANDIBULAR REST



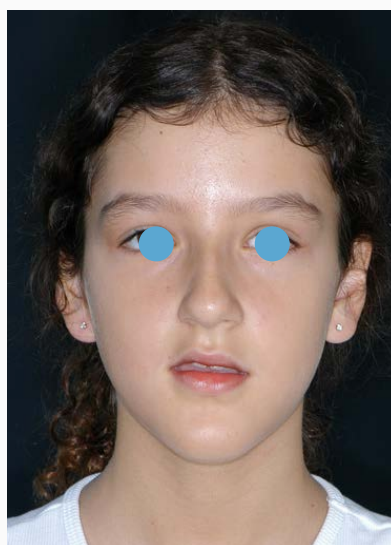
MD LATERAL DEVIATION



OTHER DEFORMITIES



INFANCY / ADOLESCENCE



FAMILY PHOTOS

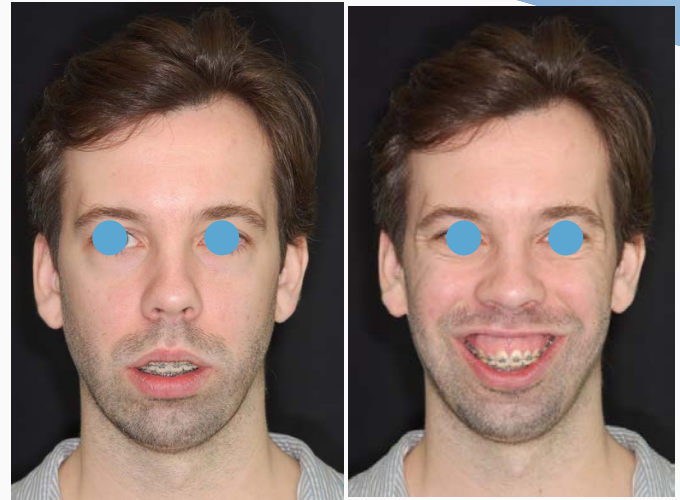


EXTRAORAL PHOTOS

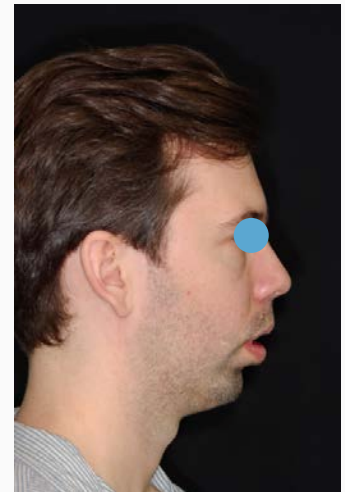
CALIBRATED PHOTOGRAPHS TO VIRTUAL SURGERY 3D



FRONTAL



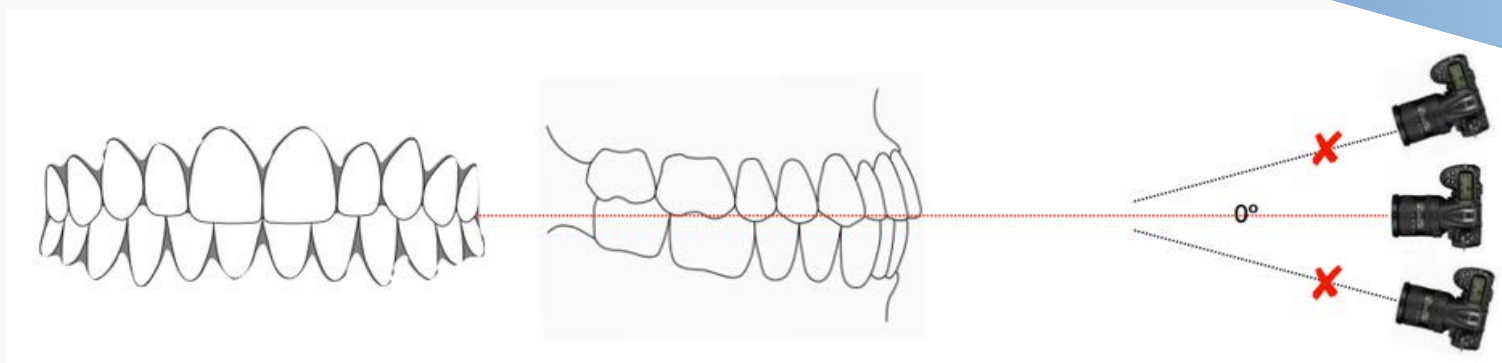
RIGHT PROFILE



CLINICAL PHOTOGRAPHY

INTRAOURAL VESTIBULAR PHOTOS

POINTS AND LEVELS OF FOCUS



ACCESSORIES



CLINICAL PHOTOGRAPHY

INTRAORAL VESTIBULAR PHOTOS

HORIZONTAL FRAME



CLOSE

REST

RIGHT
PROFILE



FRONTAL



LEFT
PROFILE



ACCESSORIES



CLINICAL PHOTOGRAPHY

INTRAORAL VESTIBULAR PHOTOS

OCCLUSAL

HORIZONTAL FRAME



ACCESSORIES



RADIOLOGIC PROTOCOL



INSTRUCTIONS FOR IMAGE ACQUISITION IN TC/CBCT FOR 3D VIRTUAL SURGERY

THE STUDY REGION IS THE ENTIRE HEAD. THE LOWER MINIMUM LIMIT SHOULD BE BELOW THE CERVICOFACIAL ANGLE

- THE PATIENT MUST **REMOVE ALL REMOVABLE DENTAL PROSTHESES AND ADORNMENT PIECES** FROM THE TARGET AND ADJACENT REGIONS.
- **MUST NOT WEAR - TURTLENECK SWEATERS OR SHIRT COLLARS.** IF NECESSARY, TURN IT INWARDS SO AS NOT TO INTERFERE WITH THE EXAM REGION.
- **TIE THE HAIR BACK**, WITH AN ELASTIC BAND TO FACILITATE DIGITAL CLEANING.



RADIOLOGIC PROTOCOL



STUDY POSITION

PLACE THE CENTRIC BITE REGISTRATION WAX BETWEEN THE TEETH, AS EXPLAINED IN THE CLINIC, DURING CONSTRUCTION, SO THAT THE EDGES OF THE INCISORS ARE SEPARATED VERTICALLY BY 1 MM. WITHOUT INTERFERING WITH THE NORMAL POSITION OF THE TONGUE OR LIPS.

- ▶ ALIGN THE CERVICAL SPINE THROUGH THE CRANIOFACIAL MIDLINE AND AVOID DEVIATIONS.

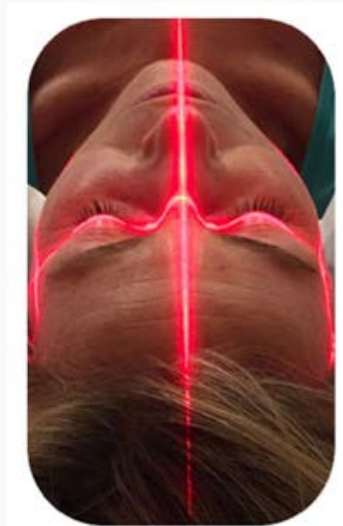
- ▶ PLACE THE CRANIOFACIAL MIDLINE WITHOUT DEVIATIONS OR LATERAL INCLINATIONS.

- ▶ KEEP YOUR EYES OPEN DURING THE EXAM, LOOKING STRAIGHT AHEAD.

- ▶ KEEP THE LIPS AT REST. DO NOT SWALLOW DURING THE WHOLE CAPTURE.

- ▶ KEEP THE BODY STILL AND STABILIZED THROUGHOUT THE EXAM.

- ▶ PLACE THE HEAD IN A NEUTRAL NECK FLEXION - EXTENSION POSITION



RADIOLOGIC PROTOCOL

PARTICULARITIES IN THE ACQUISITION OF DATA



THE TECHNICAL DETAILS ARE ALWAYS BASED ON THE RADIOLOGIST'S DECISIONS.

► NEVER USE CHIN OR NECK RESTS, HEAD SUPPORT OR FRONT BANDS.

► OBTAIN THE IMAGES IN A SINGLE SCAN COVERING THE ENTIRE SKULL AND FACE WITH THE STERNAL NOTCH AS THE LOWER LIMIT.

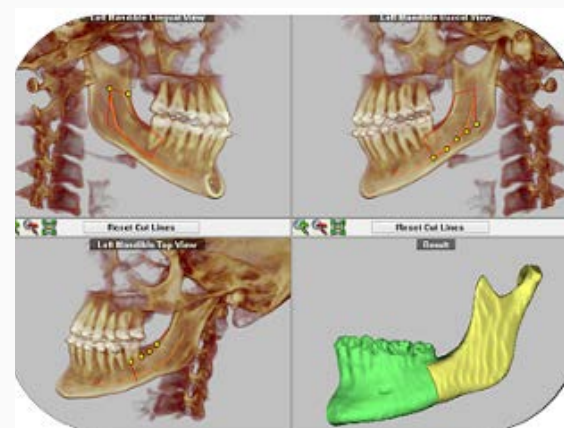
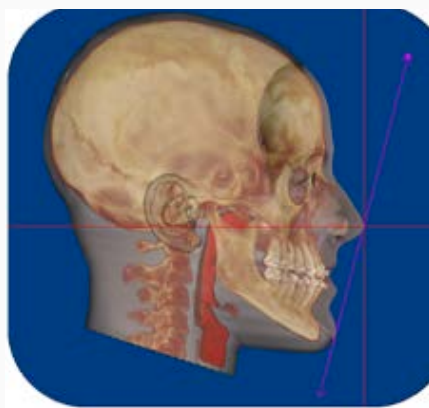
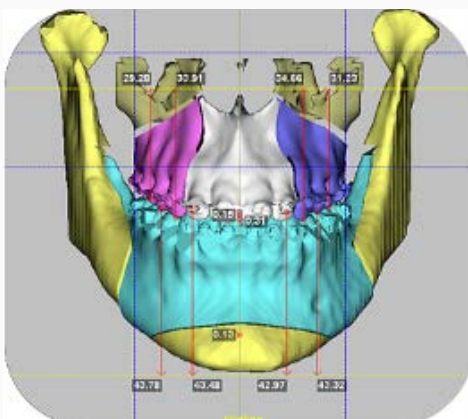
► THE MINIMUM LOWER LIMIT OF IMAGE ACQUISITION MUST BE BELOW THE CERVICOFACIAL ANGLE.

► SOFT FILTER. IF POSSIBLE, USE VERY FINE CUTS FROM 0.5 TO 0.625 MM. (DEPENDS ON THE EQUIPMENT USED).

► USE ENOUGH MILLIAMPS TO OUTLINE THE SOFT TISSUES.

► RECONSTRUCTING AT A LOWER SLICE THICKNESS THAN THAT USED FOR ACQUISITION WILL NOT IMPROVE DATA RESOLUTION.

► TRANSFER ALL DATA TO A CD OR DVD



CLINICAL PHOTOGRAPHY



INTRAORAL VESTIBULAR PHOTOS OCCLUSAL HORIZONTAL FRAME



ACCESSORIES



ORDER PROTOCOL

DENTLAB|SOFT



AFTER DATA ACQUISITION, THESE MUST BE UPLOADED TO THE BONEEASY DENTLABSOFT PLATFORM.

DENTLAB|SOFT

ALL FILES MUST BE COMPRESSED AND SENT AS A SINGLE FILE.

AT THIS POINT, YOU MUST ALSO INDICATE WHICH AREAS YOU WANT TO OSTEOTOMIZE:

- LEFORT I
- BSSO
- GENIOPLASTY

YOU CAN ALSO INDICATE THE TYPES OF MOVEMENT DESIRED:

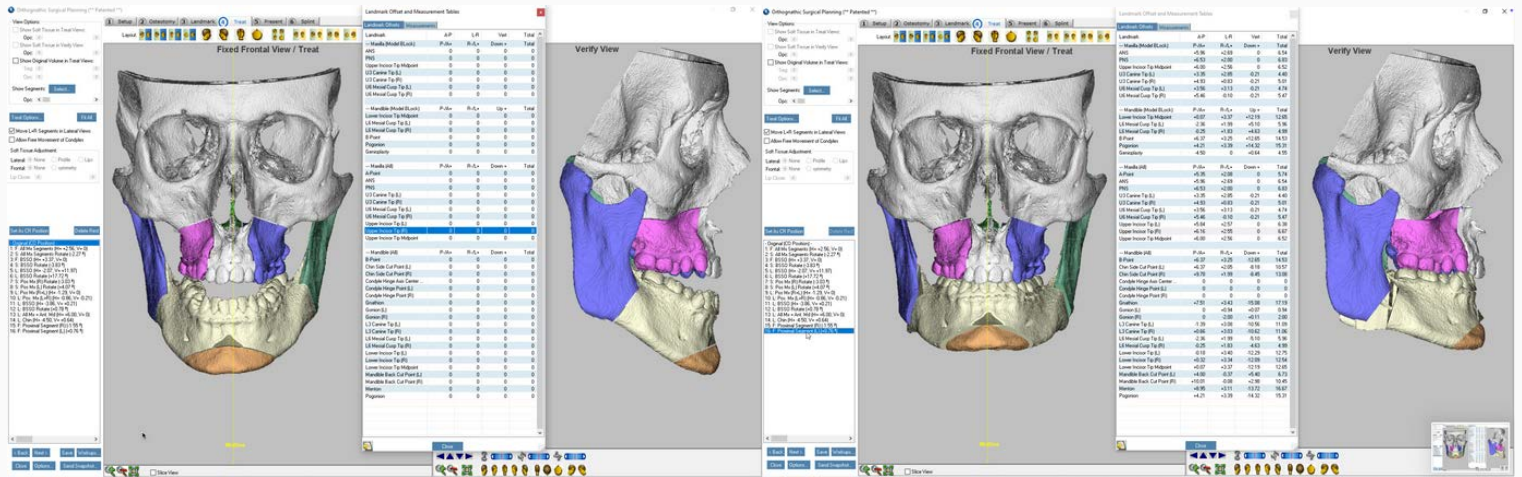
- ADVANCES
- SETBACKS
- ROTATIONS AND DISTRACTIONS
- IMPACTIONS

ORDER PROTOCOL

DENTLABISOFT

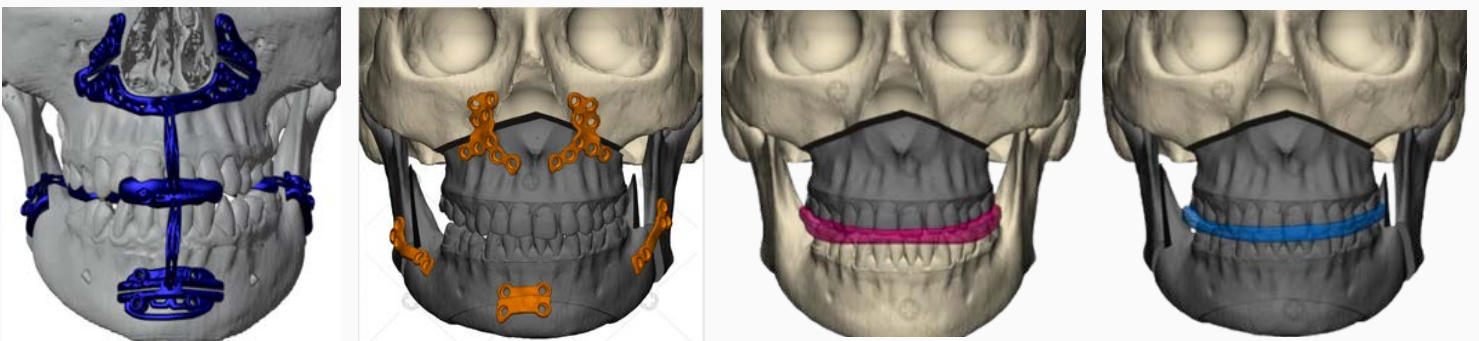


BASED ON THIS SIMULATION, A SURGICAL PLAN REPORT IS GENERATED AND SUBMITTED TO THE HEALTHCARE PROVIDER FOR VALIDATION.



UPON APPROVAL OF THE VIRTUAL SURGICAL PLAN, THE DESIGN PROCESS FOR THE MEDICAL DEVICES IS INITIATED. THIS INCLUDES THE DESIGN OF:

- OSTEOTOMY AND DRILLING GUIDES
- OSTEOSYNTHESIS PLATES
- INTERMEDIATE AND FINAL SURGICAL SPLINTS



THE CAD DESIGNS OF THESE COMPONENTS ARE SENT FOR FINAL APPROVAL BEFORE PROCEEDING TO THE MANUFACTURING PHASE.

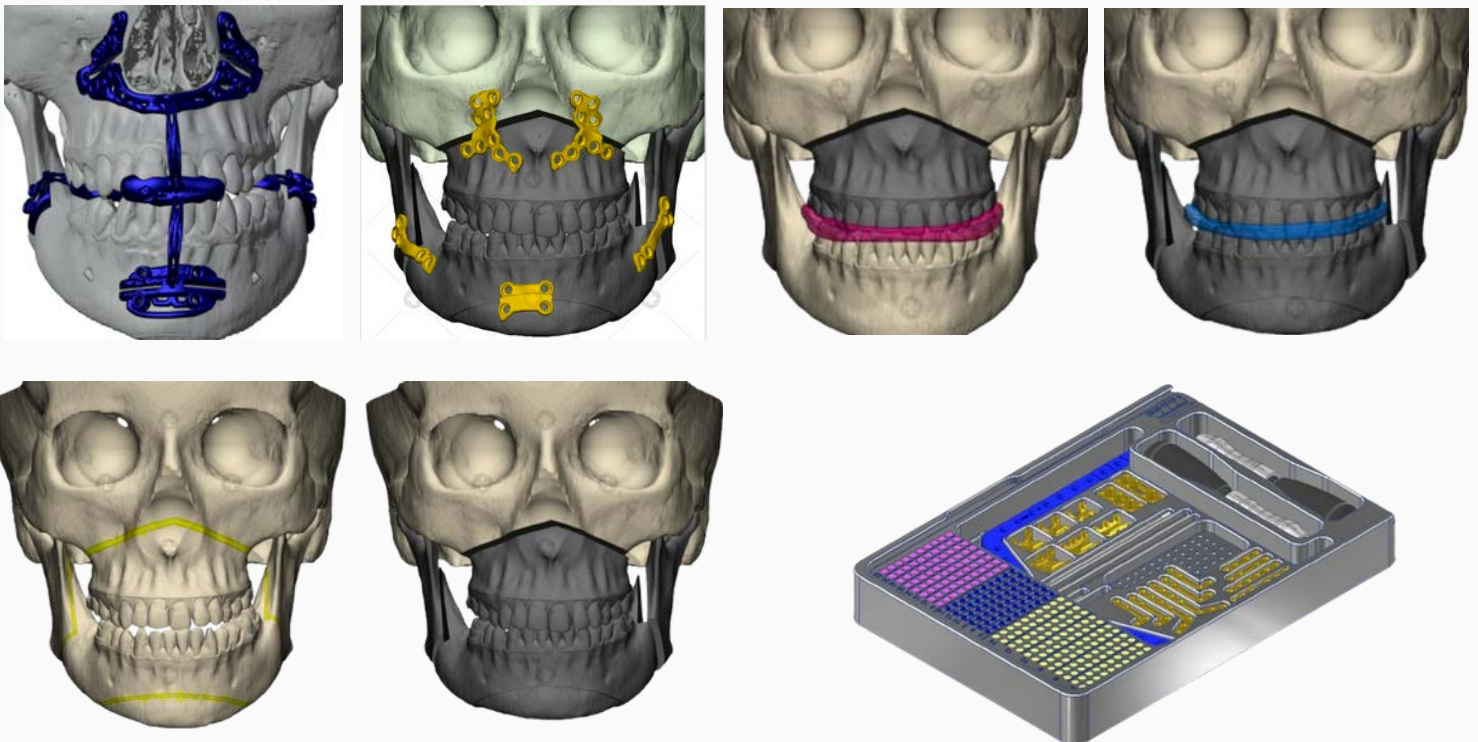
PACKAGE



THE FINAL DEVICE PACKAGE IS DELIVERED IN A DOUBLE STERILE BARRIER SYSTEM, AND INCLUDES:

- PATIENT-SPECIFIC OSTEOTOMY AND DRILLING GUIDES
- OSTEOSYNTHESIS PLATES
- OSTEOSYNTHESIS SCREWS
- INTERMEDIATE AND FINAL SURGICAL SPLINTS
- PREOPERATIVE AND POSTOPERATIVE ANATOMICAL BIOMODELS

THIS COMPREHENSIVE WORKFLOW ENSURES THAT SURGICAL TOOLS AND FIXATION DEVICES ARE TAILORED TO THE PATIENT'S ANATOMY AND THE PLANNED SURGICAL MOVEMENTS.

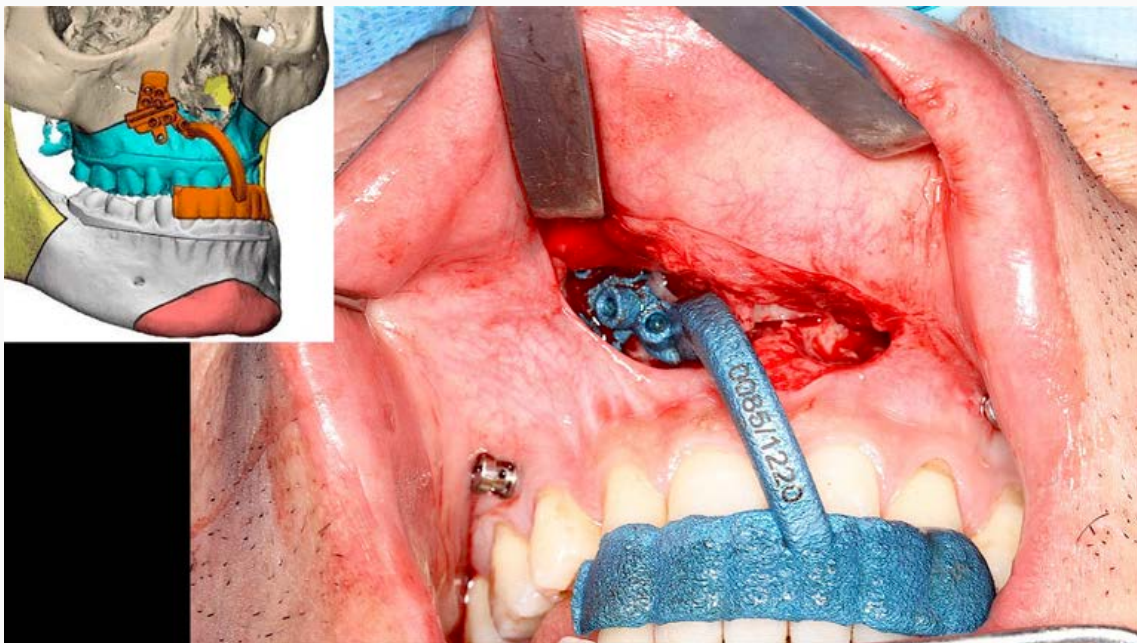


SURGICAL GUIDELINES

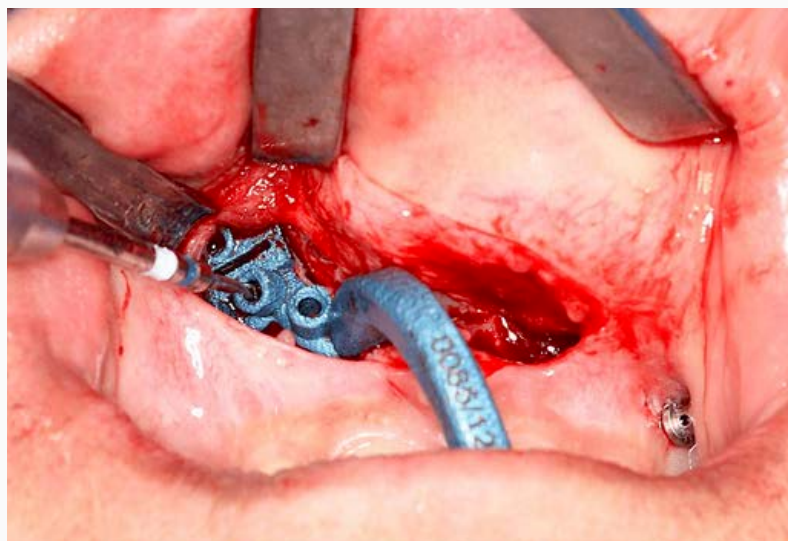
MAXILLA



THE RECOMMENDED INCISION IS MADE AT THE DEPTH OF THE VESTIBULE, POSITIONED BETWEEN THE APICES OF THE LATERAL INCISORS. THIS ACCESS ALLOWS FOR APPROPRIATE SUBPERIOSTEAL DISSECTION EXTENDING TO THE PTERYGOID PROCESSES, ENABLING PROPER PLACEMENT OF THE SURGICAL GUIDE.



ONCE POSITIONED, THE SURGICAL GUIDE INDICATES THE OSTEOTOMY LINES AND DRILL HOLE POSITIONS, CORRESPONDING PRECISELY TO THE DESIGN OF THE PATIENT-SPECIFIC FIXATION PLATE.

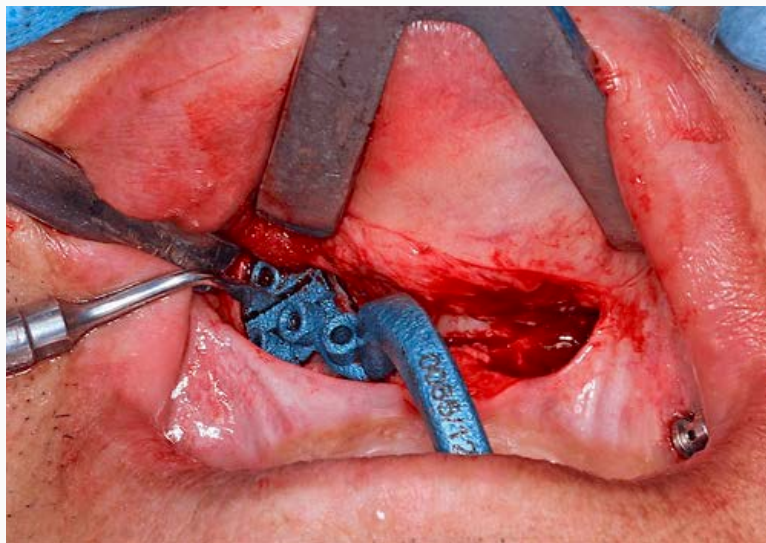


SURGICAL GUIDELINES

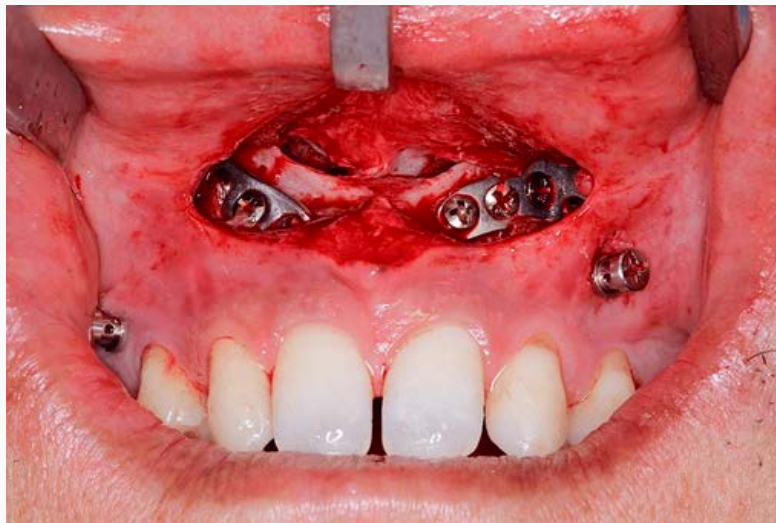
MAXILLA



OSTEOTOMY CAN BE PERFORMED USING EITHER PIEZOELECTRIC INSTRUMENTS OR OSCILLATING SAWS, FOLLOWED BY OSTEOTOMES TO COMPLETE THE SEGMENTATION. DURING OSTEOTOMY EXECUTION, IT IS ESSENTIAL TO DIRECT THE FRACTURE LINE POSTERIORLY TOWARD THE MAXILLARY TUBEROSITY TO ACHIEVE THE DESIRED SEGMENT MOBILIZATION.



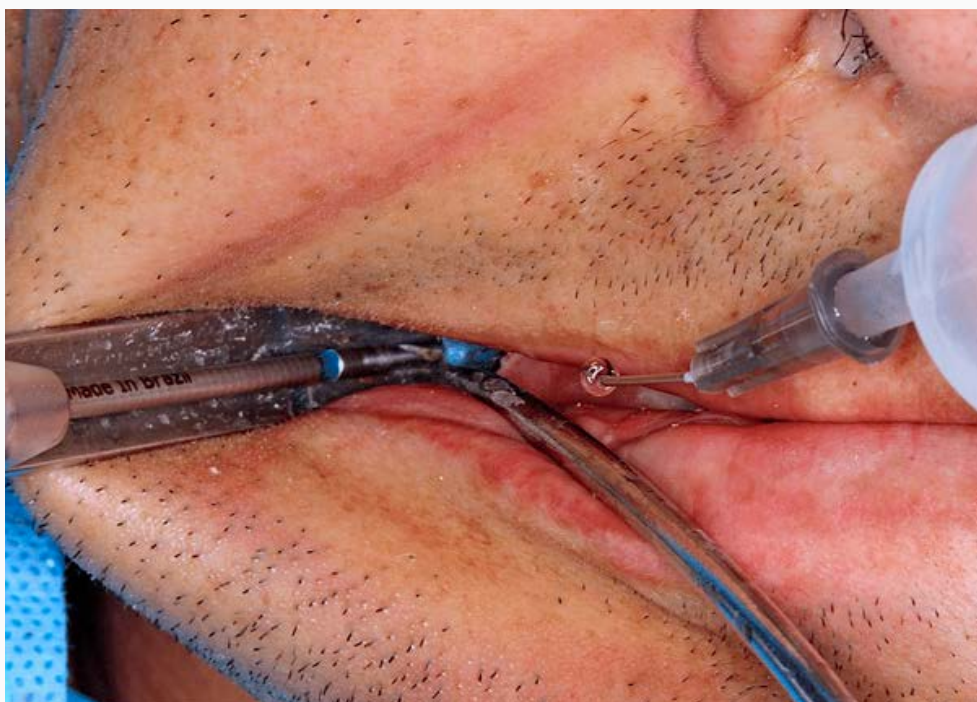
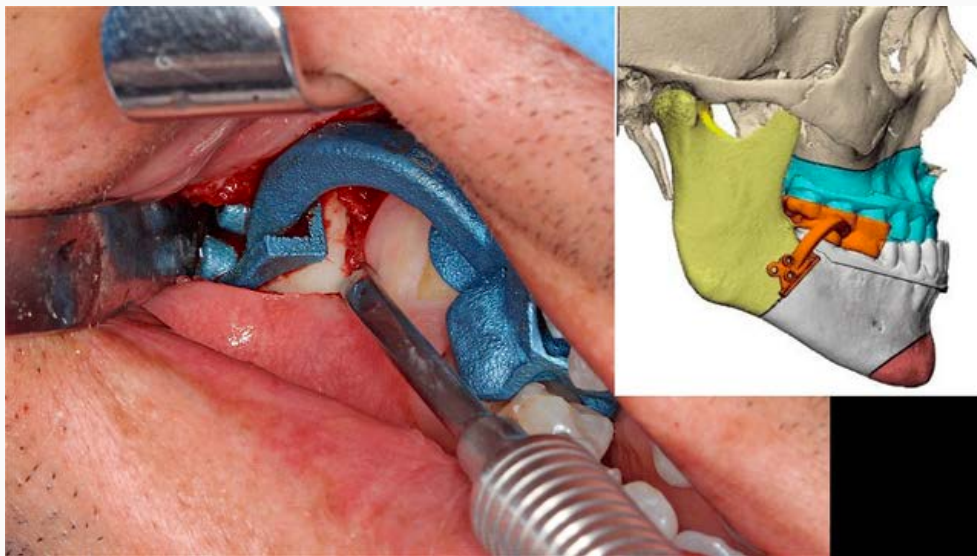
AFTER THE OSTEOTOMY AND DOWN-FRACTURE, THE SURGEON MUST VERIFY THAT NO BONY INTERFERENCES HINDER THE REPOSITIONING OF THE MAXILLA. IF INTERFERENCE IS IDENTIFIED, A CHISEL OR BONE RONGEUR SHOULD BE USED TO REMOVE THE OBSTRUCTIVE BONE AND FACILITATE CORRECT REPOSITIONING.



SURGICAL GUIDELINES MANDIBLE



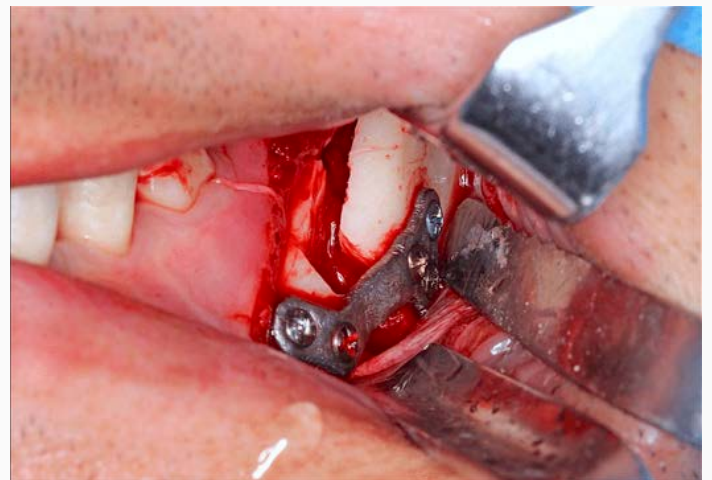
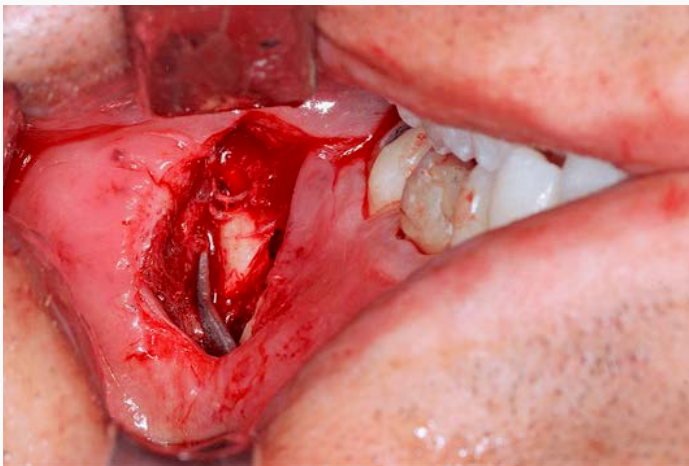
THE IMIOS SYSTEM FOR BSSO PRESCRIBES A SAGITTAL OSTEOTOMY WITH AN OBLIQUE VERTICAL CUT, BEGINNING FROM THE POSTERIOR CREST OF THE MANDIBULAR RAMUS AND DIRECTED DISTALLY TOWARD THE MANDIBULAR ANGLE, TYPICALLY IN ALIGNMENT WITH THE THIRD MOLAR.



SURGICAL GUIDELINES MANDIBLE



THE SURGICAL ACCESS IS OBTAINED THROUGH AN INCISION EXTENDING FROM THE ANTERIOR BORDER OF THE ASCENDING RAMUS TO THE MESIAL ASPECT OF THE SECOND MOLAR. ONCE EXPOSED, THE OSTEOTOMY AND DRILLING GUIDES ARE POSITIONED. THESE GUIDES FEATURE A PREDEFINED ANGULATION, DIRECTING THE DRILLING PATH ANTERIORLY TO AVOID TRANS-JUGAL TRAJECTORIES AND POTENTIAL INJURY TO SURROUNDING NEUROVASCULAR STRUCTURES.



IN CASES INVOLVING MANDIBULAR SETBACK, THE GUIDES INCLUDE TWO VERTICAL OSTEOTOMY LANDMARKS, WHICH ASSIST IN THE REMOVAL OF THE INTERPOSITIONAL BONE SEGMENT, ENSURING PRECISE REPOSITIONING OF THE DISTAL MANDIBULAR SEGMENT.

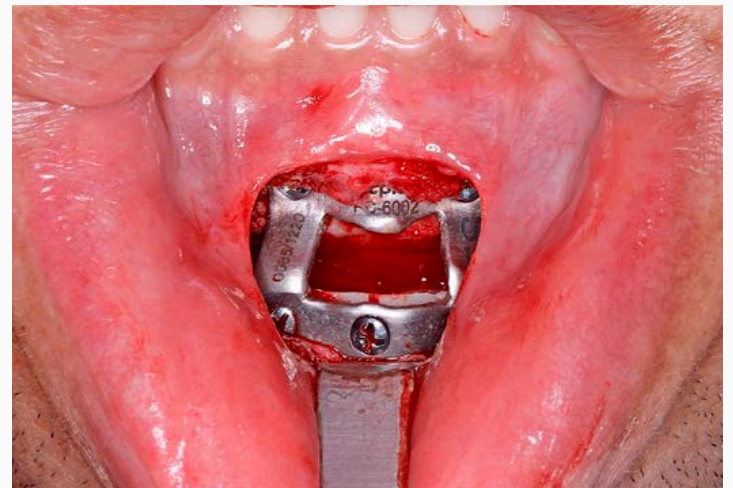
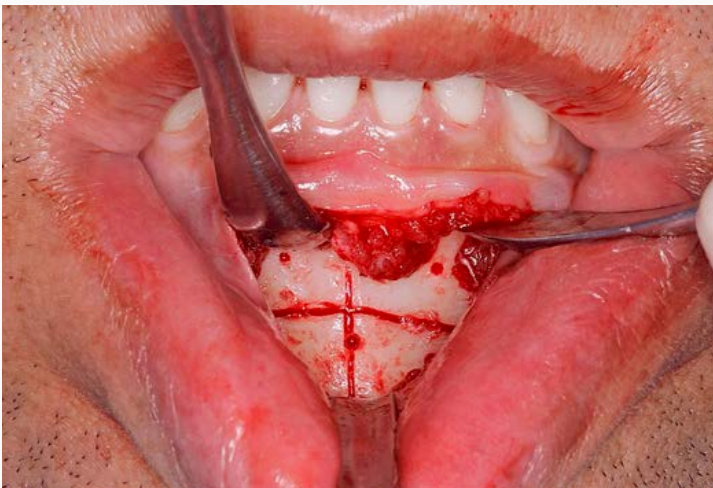
SURGICAL GUIDELINES CHIN



THE IMIOS SYSTEM FOR GENIOPLASTY USES TOOTH-SUPPORTED SURGICAL GUIDES, WHICH PROVIDE CLEAR INDICATIONS FOR:

- THE STARTING POINT OF THE OSTEOTOMY, AND
- THE PRECISE LOCATIONS FOR SCREW DRILLING.

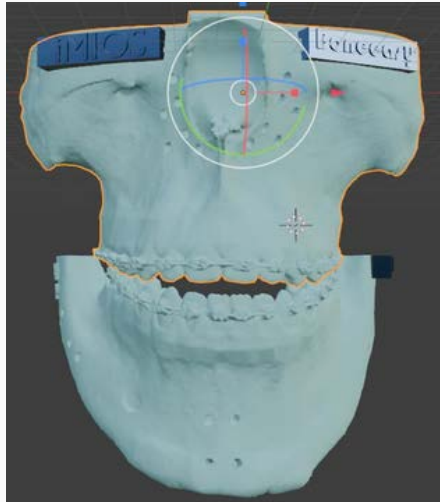
DUE TO THE ANATOMICAL PRECISION OF THE GUIDES, THE REQUIRED SURGICAL ACCESS CAN BE LIMITED TO 1.5 CM IN LENGTH, TYPICALLY POSITIONED BETWEEN THE APICES OF THE LATERAL INCISORS. THIS MINIMAL INCISION ALLOWS FOR INSERTION OF THE GUIDE AND EXECUTION OF THE OSTEOTOMY WITH REDUCED SOFT TISSUE DISRUPTION.



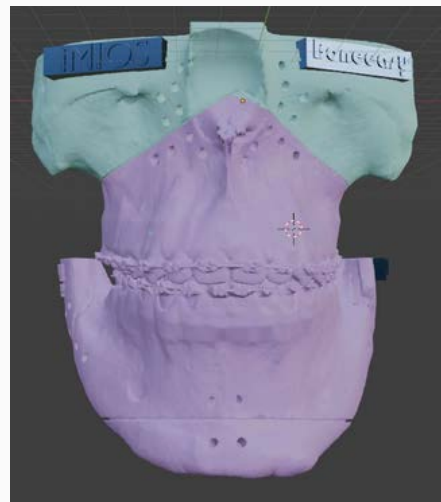
COMPONENTS SENT WITH IMIOS



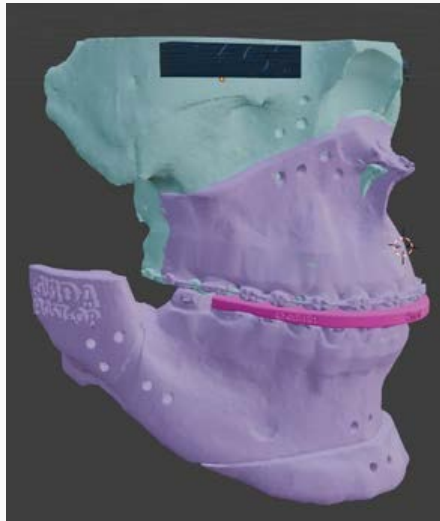
**PRE SURGICAL
BIOMODEL**



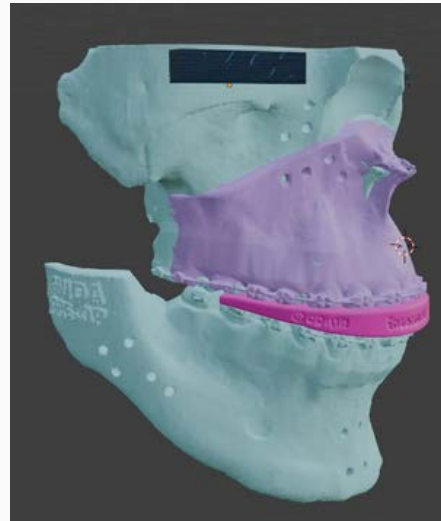
**POST SURGICAL
BIOMODEL**



**INTERMEDIATE
OCCLUSION
GUIDE**



**FINAL
OCCLUSION
GUIDE**



COMPONENTS SENT WITH IMIOS



LEFORT I GUIDE*

BSSO GUIDE*

GENIOPLASTY GUIDE*

LEFORT I PLATE*

BSSO PLATE*

GENIOPLASTY PLATE*

TECHNICAL FILE
SURGICAL KIT

• IF APPLICABLE





RG.PR.25.33	Protocol - iMIOS	Approval	Observations
1.0	16 July 2025	Rui Coelho	Document creation