J DENTAL CARE

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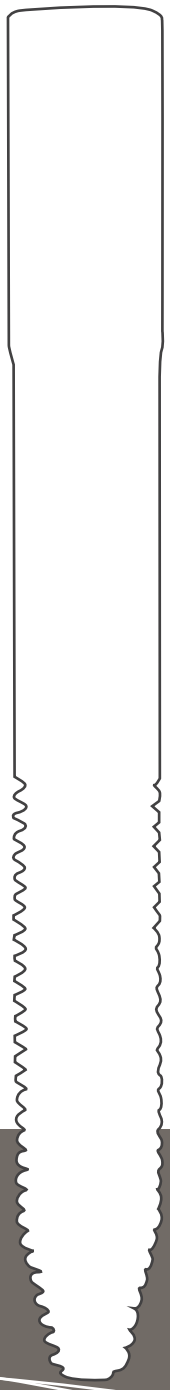

Dental Implant

JD ZYGOMA®

JD Zygoma surgical procedure.

JD ZYGOMA®

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PRE-OPERATIVE EXAMINATION OF THE PATIENT.

A thorough pre-treatment evaluation of edentulous patients or patients with failing/terminal dentitions is necessary to establish a predictable treatment outcome.
To begin the evaluation of this group of patients, the following may be taken into consideration.

1 Medical history and chief complaint
Any conditions that might affect the result or influence candidacy for surgery are noted here.
Consideration for referral for medical clearance as indicated.

2 Dental history
Ascertain the patient's expectations, past dental history with dental failure, e.g. periodontal disease, admitted or known habits including clenching and bruxing.

3 Radiographic analysis
Initial radiographic evaluation may be done with the help of a panoramic radiograph (OPG).
Upon the discretion of the practitioner, a full mouth periapical series (FMX/FMS) may be considered.
It is recommended to perform a medical (CB)CT scan analysis prior to the final decision.

4 Intra- and extraoral examination
For patients with existing non-restorable teeth, documentation of the findings for their removal is noted. A screening exam for intraoral soft tissue health is paramount. Evaluation
of the temporomandibular joint (TMJ) is also recommended.

5 Pre-surgical evaluation of maxillary sinus health
3D radiographic survey allows for the identification of the following in the maxillary sinus:
– Maxillary sinus polyps
– Thickness of the Schneiderian membrane
– Potential air-fluid level
– Patency of the osteomeatal complex
A healthy maxillary sinus is essential for the placement of zygoma implants.
Any pathology of the maxillary sinus must be considered a contraindication of the zygoma implant placement .

SURGICAL PROCEDURE.

1 Make incision
– Make an incision on the crest of the edentulous maxilla with distal vertical releasing incision.
– Reflect a full thickness mucoperiosteal flap exposing the lateral maxillary wall.

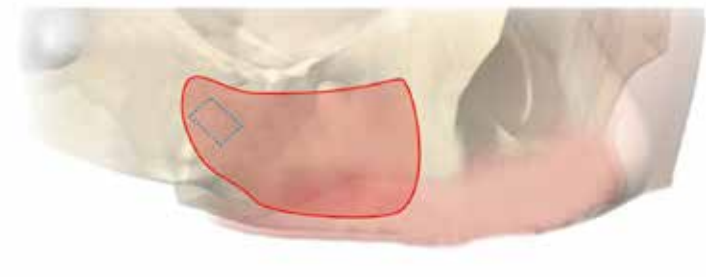
2 Be aware of anatomical landmarks
It is imperative to be aware of neighboring arteries, veins and nerves in the surgical area. Injuries to these anatomical structures can lead to complications such as eye injury, extensive bleeding, and nerve-related dysfunction.
1 Posterior wall of the maxillary sinus
2 Zygomatic-maxillary buttress
3 Infraorbital foramen
4 Frontozygomatic notch

3 Dissect to the level of the infraorbital foramen
– Expose the alveolar crest, including its palatal side.
– Dissect carefully to the level of the infraorbital foramen. Identification of the infraorbital foramen may assist with anatomic orientation.

4 Expose zygomatic body
Reflect laterally at the level of the infraorbital nerve and expose the body of the zygomatic bone.

Caution: It is essential to identify and protect the infraorbital nerve.

5 Place retractor to visualize apical point of implant
Place a retractor in the frontozygomatic notch to facilitate visualization of the intended apical point of the implant (with special emphasis on avoiding penetration of the orbital floor).
When the dissection is complete, the landmarks 1–4 will be visible.

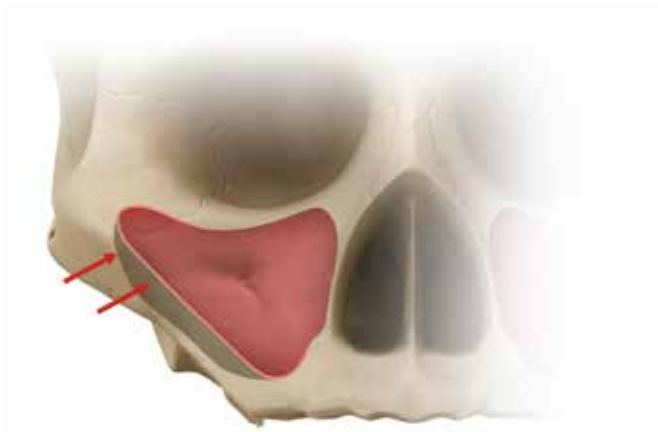


SURGICAL PROCEDURE.

6 Make window
Make an approximately 10 mm × 5 mm window on the lateral wall of the sinus, close to the infrazygomatic crest.

7 Lift sinus mucosa
Carefully lift the sinus mucosa away from the area where the implant will pass through the sinus, from the floor of the sinus to the roof, trying not to penetrate the membrane.

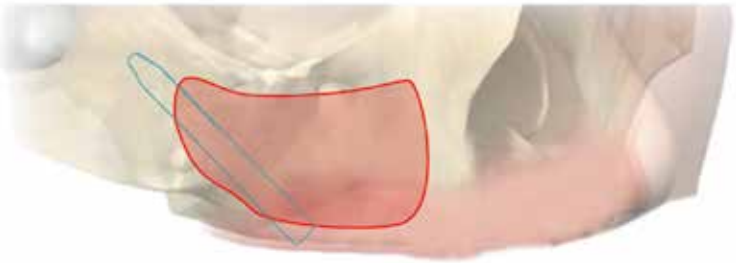
Caution: Try to keep the sinus membrane intact during this process. However, penetration of the sinus membrane will not result in an adverse outcome.



8 Identify implant trajectory and starting point for drilling
–Identify the trajectory of the implant by placing the round bur over the lateral wall of the maxilla:
- The tip of the bur at the frontozygomatic notch
- The body of the bur over the posterior lateral corner of the maxillary sinus
- The base of the bur at the crest of the ridge in the 2nd bicuspid / 1st molar position

–Determine the exact point on the alveolar crest at which to start the drilling sequence, and the direction of the long axis of the implant, based on the known anatomy of the maxilla, the sinus, and the zygomatic bone.
–Aim for the middle of the retractor during the drilling sequence.

9 Plan implant placement
Plan to place the implant as posteriorly as possible, with the implant head as close to the alveolar crest as possible (typically in the 2nd premolar region.) The implant must simultaneously pass through the floor of the sinus and the maxillary sinus, enter the base of the zygoma bone (the posterior-lateral portion of the maxillary sinus roof) and travel through it, exiting through the lateral cortex of the zygoma below the frontozygomatic notch.
Note: Adjustment to this implant placement may be considered due to anatomical variations.



OSTEOTOMY PREPARATION.

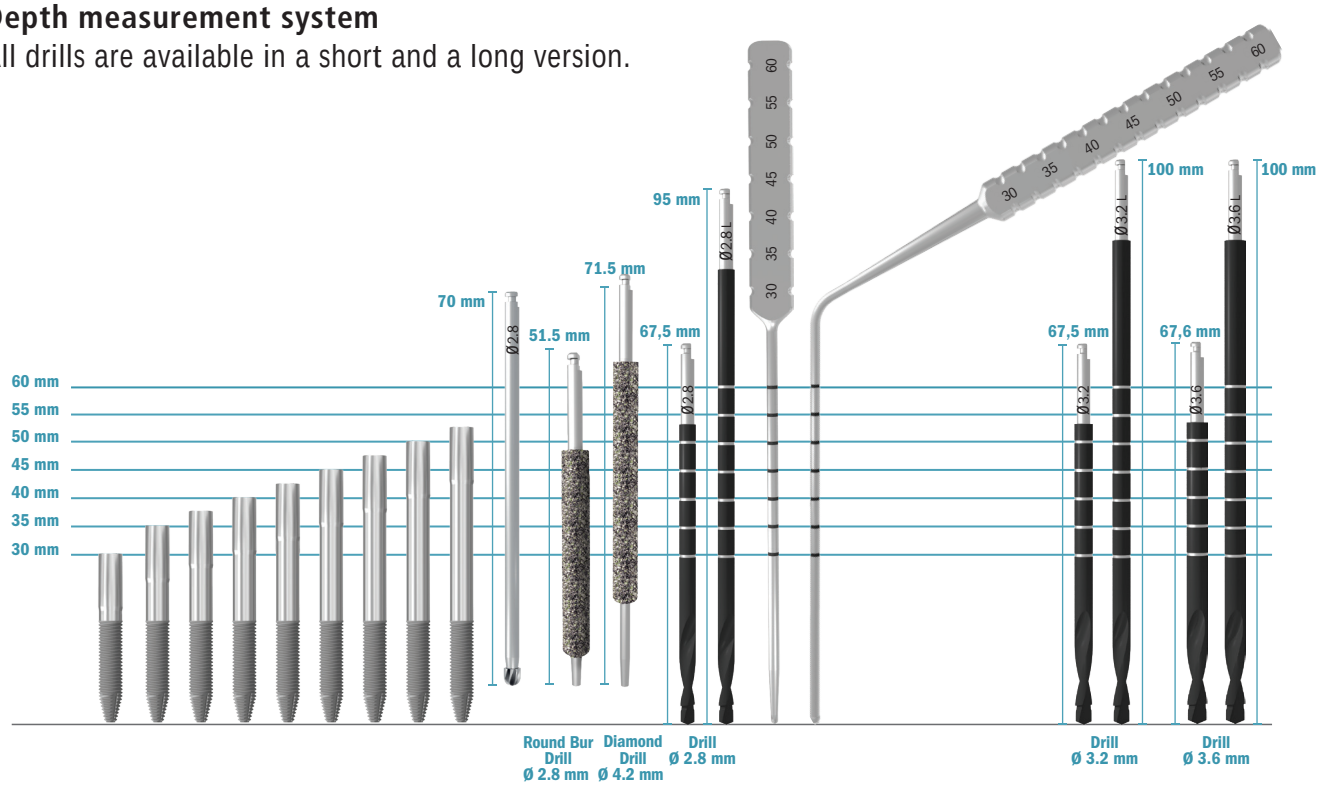
Drill technique

–Use an in-and-out motion and drill into the bone for 1 to 2 seconds.
–Move the drill up without stopping handpiece motor. This also allows the irrigation to flush away debris.
–Proceed until desired depth is reached.
–Do not exceed 2000 rpm when drilling.
–Copious irrigation is recommended throughout the drilling sequence.
Notes:
–Round bur, twist drills and pilot drills are delivered nonsterile and need to be sterilized prior to use.
–Drills are disposable and should be used for one surgery only.
–The twist drills and pilot drills are made of stainless steel with an amorphous diamond coating, which gives them their black color.

Caution:
–Avoid lateral pressure on drills during implant-site preparation. Lateral pressure may cause drill fracture.
–Verify that drills lock in the handpiece before starting any drilling. A loose drill may accidentally harm the patient or members of the surgical team.
–Verify that all interconnecting instruments lock properly before intraoral use to prevent accidental swallowing or aspiration.

Depth measurement system

All drills are available in a short and a long version.



OSTEOTOMY PREPARATION.

1 Make entrance mark with round bur

–Make the palatal/crestal mark for the implant entrance with the round bur.

–Penetrate and pass the round bur through to the sinus while checking the direction of the bur through the sinus window. The bur must be directed towards the retractor that was previously placed in the notch.

–Make an entrance mark in the posterior-superior roof of the sinus to allow seating of the 2.8 mm drill without chatter. Maximum speed 2000 rpm.

2 Drill with Twist Drill 2.8 mm

Continue with the Twist Drill 2.8 mm until it penetrates the outer cortical layer of the zygomatic bone at the incisura.

Maximum speed 2000 rpm.

3 Determine implant length

Use the Straight Depth Indicator to determine the required implant length.

4 Widen osteotomy with Twist Drill 3.2 mm

Maximum speed 2000 rpm.

5 Finalize osteotomy with Twist Drill 3.6 mm in case of dense bone.

Maximum speed 2000 rpm

Caution:

–Ensure correct angulation and avoid drill wobble, as this can inadvertently widen the preparation site.

–If the sinus membrane cannot be kept intact during osteotomy preparation, carefully irrigate away debris when inserting the implant. Any mucosal remnants in the bone site may prevent osseointegration of the implant.

6 Verify depth

Verify the depth of the prepared bone site with the Angled Depth Indicator to ensure that the selected implant length will fully seat without apical bone interference.

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IMPLANT INSERTION/PLACEMENT.

1 Unpack the implant

Each implant is protected by a sterile barrier with above a printed label containing variable data:
- Diameters, length
- REF implant, lot number, raw materials, expiry date

Before use check the integrity of the sterile barrier, check that the welds are intact, and the Tyvek is not damaged or cut and that there are no detachment points from the plastic laminate blister.
The blister label shows the symbol SBS indicating the "aseptic presentation" which denotes the presence of the external sterile barrier (consisting of the closed blister) which contains an additional packaging system (vial with cap) to minimize the risk of contamination after opening the single package.

Step-1 Open the blister and remove the vial
Open by pulling the peel tab located on the lower left corner of the blister. Attention: the blister guarantees the sterility of the implant. Open the blister only immediately before inserting the implant.
Step 2 Remove the cap via

2 Pick up the implant

The final placement of the dental implant, depending on the clinical situation, can be carried out with one of the following methods:
1.The JDTorque dynamometric key
2.The surgical engine
3.The surgical driver

Use of the JDTorque® dynanometric key

Connect the implant driver to the JDTorque® dynamometric key with the mounted surgical adapter.

IMPLANT INSERTION/PLACEMENT.

To connect the implant put light pressure on the driver.

Insert the implant in the previously made osteotomy.

Use of the surgical engine

Connect the implant driver to the hand piece.

To connect the implant, apply light pressure on the driver.

Slowly insert the implant in the previously made osteotomy. (25 rotations/minute)

Use of the surgical driver

It is also possible to use the surgical driver to position the implants.
Connect the implant driver to the surgical driver.

To connect the implant, apply light pressure on the driver.

Insert the implant in the osteotomy previously carried out.

Important: An excessive torque on the implant may compromise the integrity of the internal connection and put excessive pressure on the surrounding bone, negatively affecting bone integration. The implant insertion torque cannot exceed 80 Ncm.

IMPLANT INSERTION/PLACEMENT.

3 Place the implant
–Insert the implant in the prepared bone site with 20 Ncm setting on the drilling unit. The setting may be increased to 50 Ncm to facilitate implant insertion.
–Confirm the correct insertion angle of the implant while continuing through the sinus until the implant apex engages in the zygomatic bone.

4 Tighten manually the implant with the JD torque wrench

5 Verify the correct position of the implant

6 Place the implant
The anterior maxillary implants are placed according to their surgical protocol.

7 Close and suture tissue flap around the implant using desired technique.

FINALISATION OF IMPLANT SURGERY.

There are two options for finalizing the implant surgery.

Two-stage delayed function
Use the JD Screwdriver to connect a cover screw to the implant. Suture tissue flap using desired technique.
Note: Be sure to relieve denture intaglio (tissue) surface to avoid contact between implants and denture.

or

One-stage Immediate Function
Provisionalize implants for Immediate Function on abutment level by fabricating a provisional bridge using JD Conical Abutments in combination with JD Temporary Cylinder Abutments for Conical abutments.

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POST-OPERATIVE INSTRUCTIONS.

Medication
Appropriate antibiotics as well as analgesic for pain management are prescribed for one week following the surgical procedure.

Diet
A soft diet is to be maintained throughout the period of using the immediately loaded provisional prosthesis. Strongly recommend that “tearing” forces and hard food (e.g. raw vegetables and fruit, nuts) are to be avoided.

Oral hygiene
Encourage the use of salt water rinses for the first week and prescribe 2% Chlorhexadine rinse b.i.d. (twice daily) for one month following surgery. In addition, ensure that the use of pulsating mechanical hygiene instruments is avoided. The modification of oral hygiene protocols is an ongoing process monitored by the surgical team on an individual patient basis.
Also remind patients that they are not to blow their nose until instructed.

Follow-up appointments
The patients are seen one week post-operatively by the surgical as well as the prosthetic team. The need for more frequent surgical or prosthetic monitoring is determined by each team on an individual basis.

For immediate loading cases: post-insertion visit
At each visit, the stability of the restoration is checked, and a general evaluation of function, phonetics and esthetics is made. The stability of the prosthetic screws is also tested and, if necessary, the screws are retightened. The screw-access holes can be sealed by placing a soft, easily removable material over the screw head and a temporary or more permanent filling material of choice, such as composite resin, on top. The immediately loaded provisional prosthesis is normally left undisturbed for the first six months of the osseointegration.

Appointment for final prosthesis
After an osseointegration period of six months, the surgical team determines the integrity of all implants. The patients are then referred back to their prosthetic team for the fabrication of the final prosthesis.

Re-call schedule
A re-call schedule is established, based on an individual evaluation of each patient’s needs and circumstances. Annual clinical check-ups are recommended, with intraoral radiographic examinations after 1, 3 and 5 years. Encourage patients that they should return immediately if they feel pain or anything move.

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