

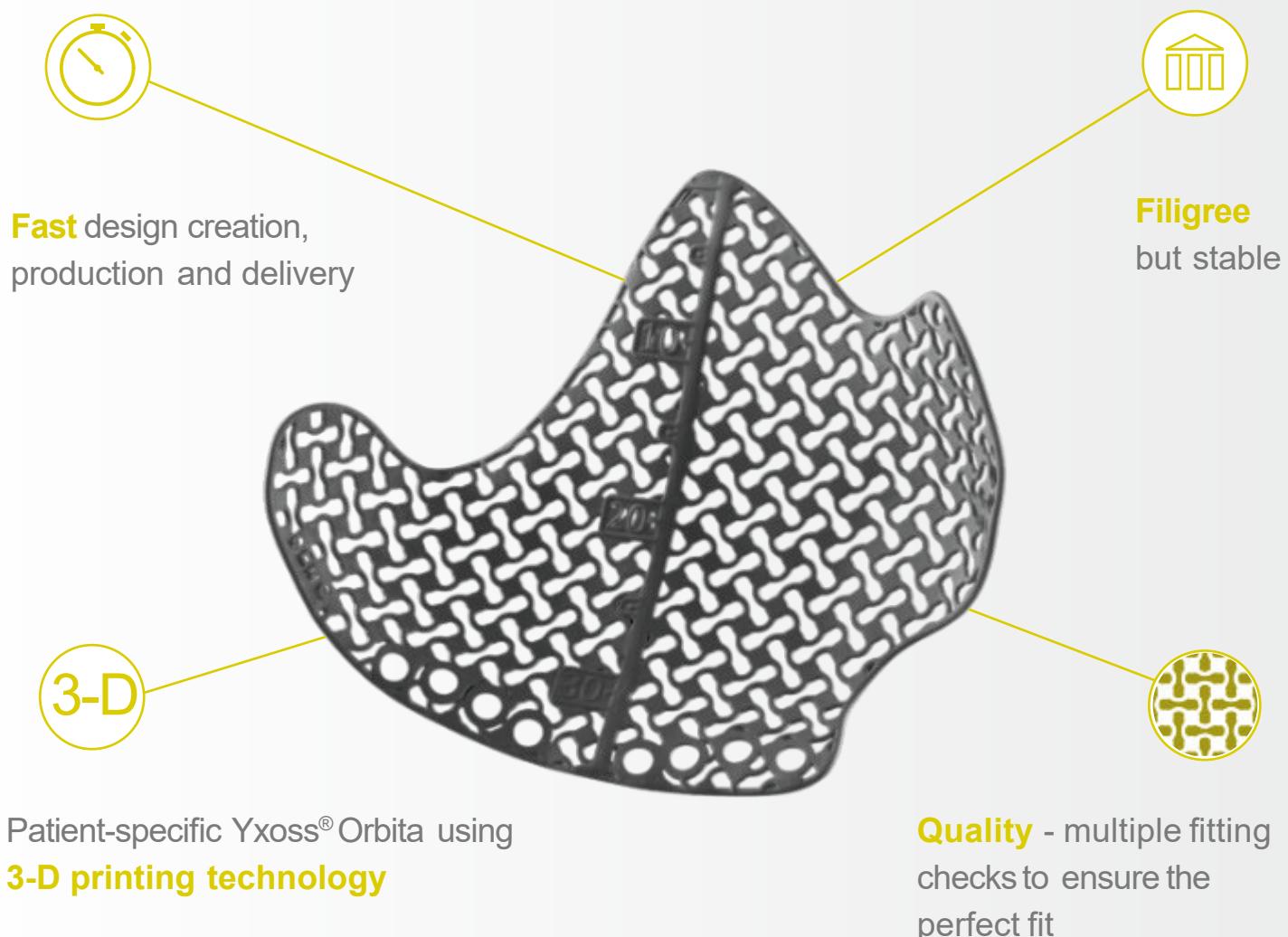
# Yxoss® Orbita

Precise, customized and fast in your hands



# Features Yxoss® Orbita

Higher precision with customized implants

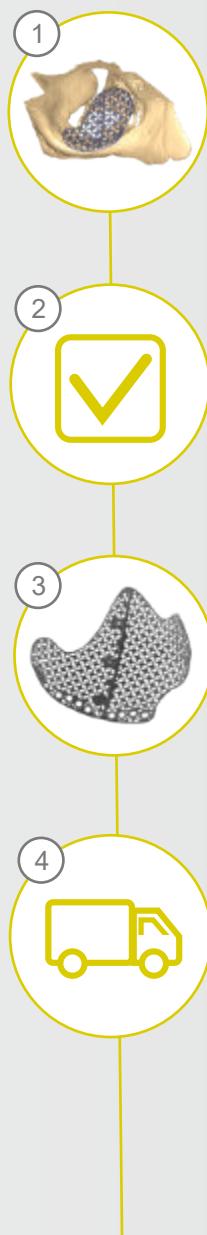


We make the difference by delivering patient as well as customer-specific solutions to you on time. To do this, we use state-of-the-art CAD/CAM technology to realize the specific reconstruction requirements. Based on CT or CBCT images, each lattice is designed to fit the patient's individual anatomy.

With the individualized implants, a significantly higher precise reconstruction is possible.<sup>1</sup>

# Fast delivery with ReOss® workflow

With our workflow, we can make it possible to have your patient-specific implant at your place within 5 business days (Monday-Friday). To accomplish this, we would appreciate your change requests or approval for production in the shortest possible time.



**Day 1**

Ordering in MyReOss

3-D planning and creation by ReOss® within 24h

**Day 2**

Modification and approval by the treating physician

**Day 3**

Production via 3-D laser printing

**Day 4**

Packaging and express shipping

**Day 5**

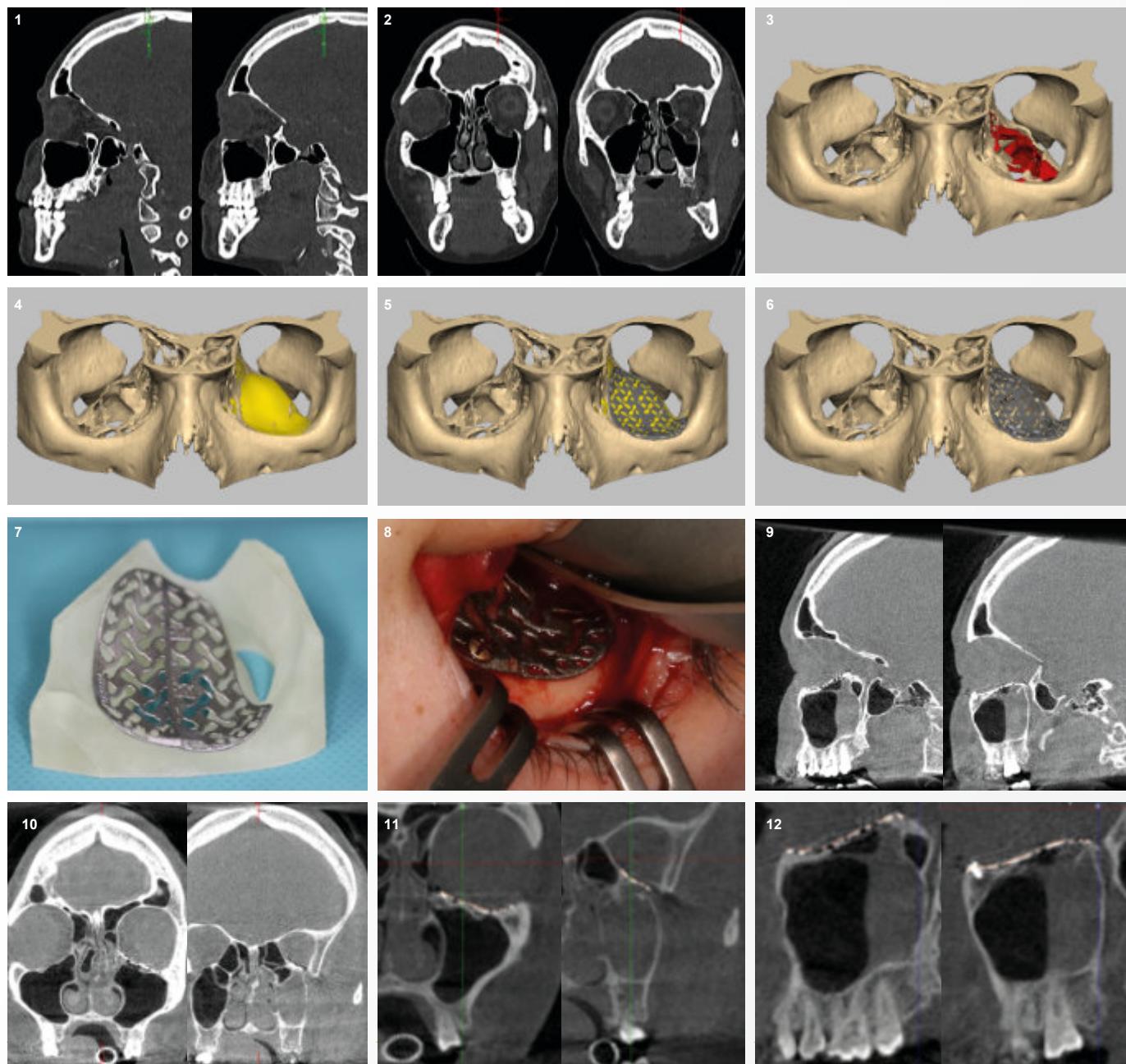
In your hands



# Orbital floor fracture on the left



Surgery and concept by Dr. Dr. Sebastian Pietzka



**1-2** A 24-year-old patient fell on her face after tripping down several steps at a train station. CT imaging revealed a complex orbital floor fracture of the left orbit.

**3** Preoperatively, the patient complained of double vision on upward gaze and there was an onset of exophthalmos. Due to the complexity of the fracture and in particular the lack of posterior bony support, we decided to design and fabricate

a patient-specific implant. Using CAD software, the DICOM data is aligned and the unaffected bone of the left orbit is detected (shown in red).

**4-6** Digital reconstruction of the orbita was then performed according to the bone support obtained (shown in yellow).

The implant was planned according to the digital reconstruction. The screw holes were positioned easily accessible in the anterior part of the orbital rim.

**7** After design review and approval by the surgeon, the implant was manufactured using the 3D lasermelting technique.

After post-processing of the surface, the implant is delivered with a partial model of the orbita. The surgeon can additionally check the defect coverage and fit on this model.

**8** The patient-specific CAD/CAM implant could be inserted precisely with highly accurate fit into the orbital cavity employing a transconjunctival approach.

**9-10** Due to the one-fit design, sufficient fixation of the implant could be achieved with only one microscrew at the infraorbital rim. The intraoperative 3D C-arm control showed a highly precise anatomical reconstruction of the orbit corresponding to the preliminary plan.

Clinical follow-up after 6 weeks showed no double vision. Apart from minor hypoesthesia in the infraorbital region, the patient was almost symptom-free.

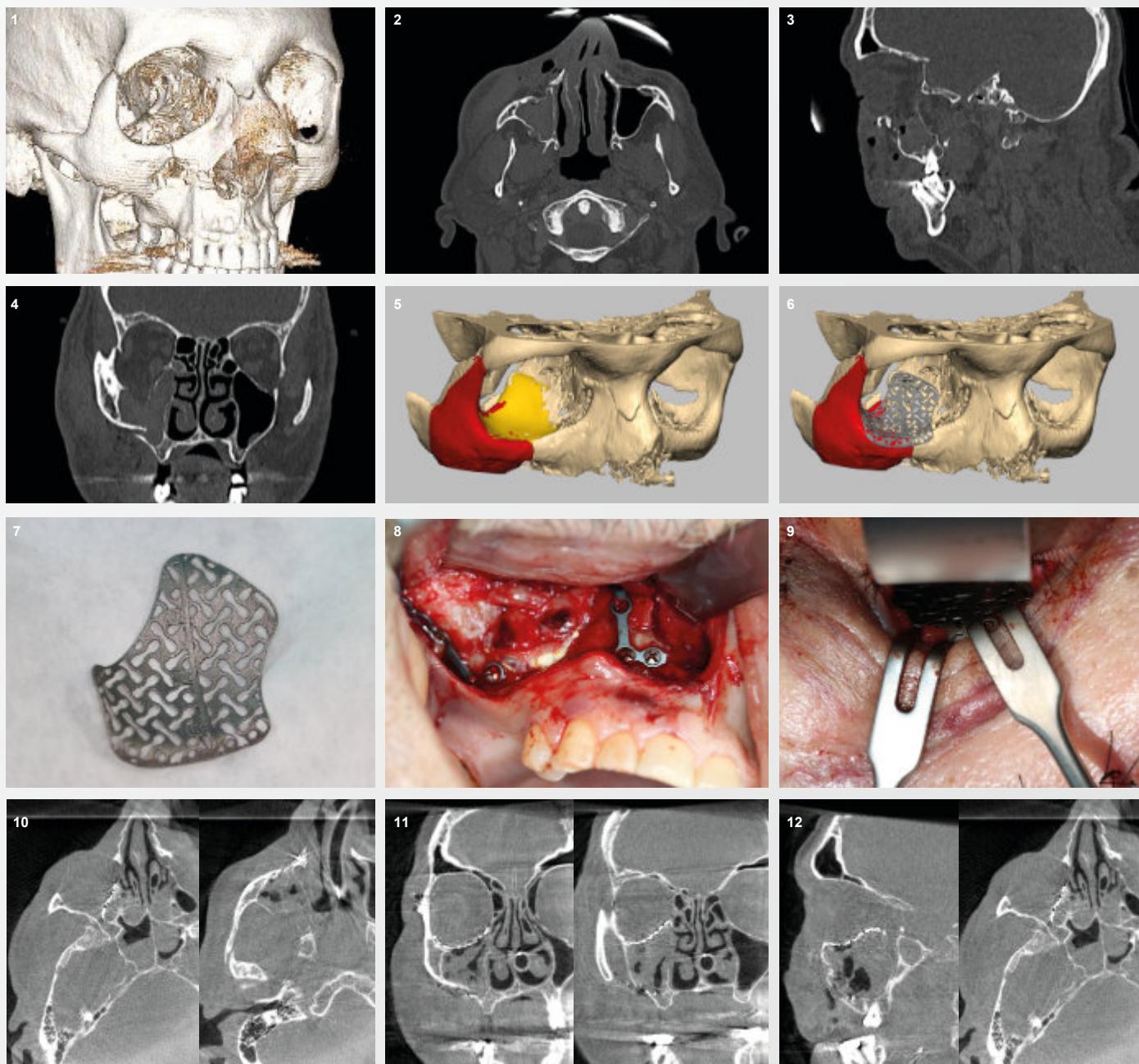
The final clinical follow-up 6 months after surgery still showed neither double vision nor exophthalmos. The initial infraorbital hypoesthesia had disappeared completely.

**11-12** The fusion of the preliminary planning and the intraoperative 3D C-arm control shows a highly precise overlay of the virtual and real implant without any significant deviations.

# Fracture of the zygomatico-orbital complex



Surgery and concept by Prof. Dr. Dr. Frank Wilde



**1-4** CT imaging is showing a 61-year old patient with a complex dislocated fracture of the zygomatico-orbital complex.

Open reduction and internal fixation of the zygomatico-orbital complex in combination with a primary reconstruction of the orbit with a customized CAD/CAM fabricated titanium mesh was planned.

An order was placed at ReOss® and the DICOM data were uploaded. A design draft was created within 24h.

**5** For the planning the fracture was repositioned virtually using digital software. The template for this was the mirrored unaffected left side.

**6** The design for the patient-specific implant was then created by a medical engineer and was reviewed in a digital 3D viewer in which change requests can be drawn in.

**7** The released design was produced by 3D printing. Afterwards the mesh was cleaned and packaged in sterilizable peel bags.

**8** During surgery primary reposition and osteosynthesis of zygomatic fracture was performed employing intra-oral, transconjunctival and blepharoplasty approaches.

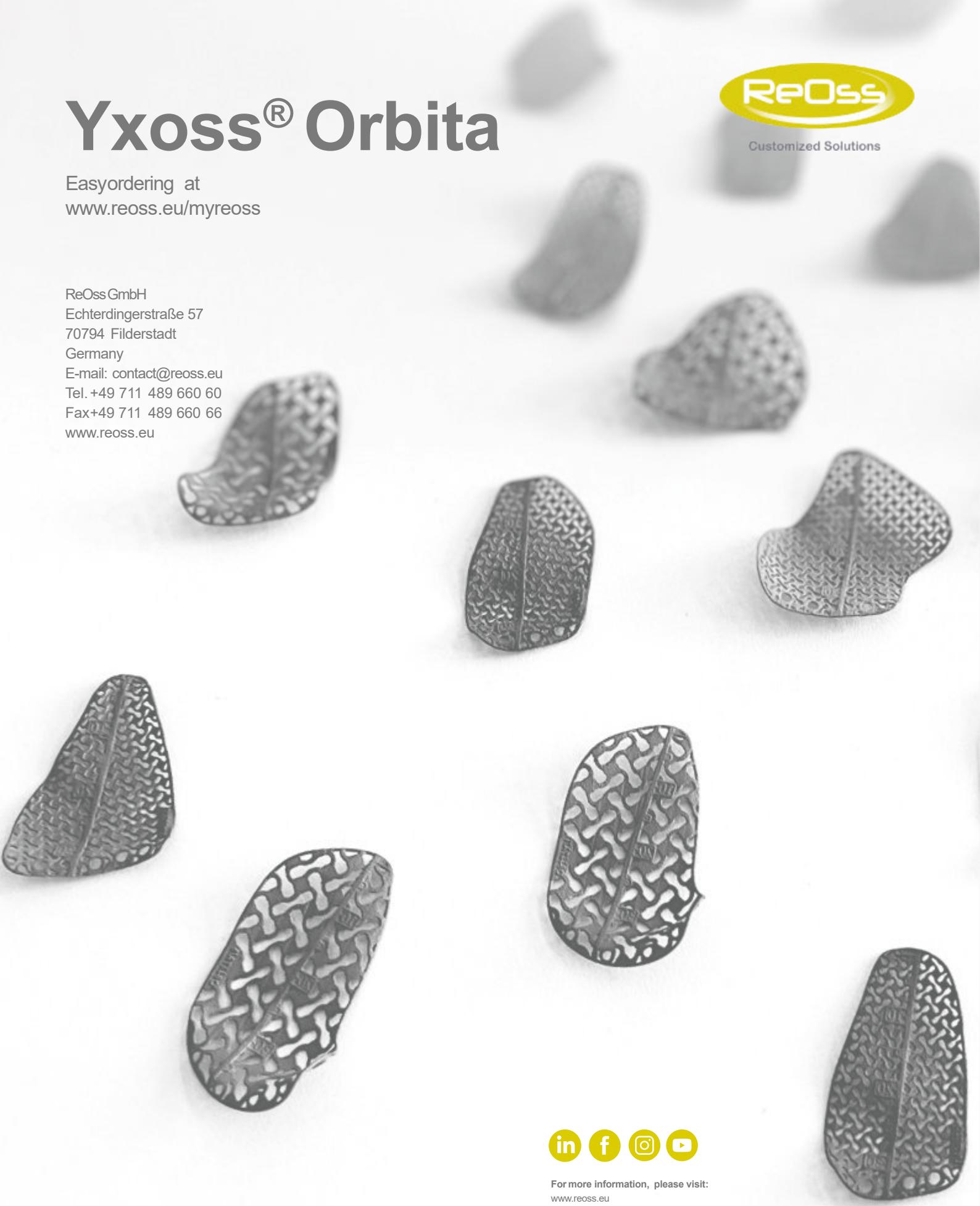
**9** After anatomically correct repositioning of the zygomatico-orbital complex, the orbital reconstruction followed with the patient-specific CAD/CAM implant using the transconjunctival approach.

**10-12** Intraoperative imaging with a 3D C-arm was performed before wound closure. This demonstrated anatomically sufficient reduction and osteosynthesis of the zygomatico-orbital complex, and a perfect reconstruction of the right orbit using the patient-specific CAD/CAM implant.

# Yxoss® Orbita

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For more information, please visit:  
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<sup>1</sup> Zimmerer, R.M., et al., A prospective multicenter study to compare the precision of posttraumatic internal orbital reconstruction with standard preformed and individualized orbital implants. *J Craniomaxillofac Surg*. 2016; 44(9): p. 1485-97.

**CAUTION:** Federal law restricts these devices to sale by or on the order of a physician. For more information on contraindications, precautions, and directions for use, please refer to the Instructions for Use.