

3D-Druck in der Medizin

Anatomische Modelle, Schablonen, Implantate



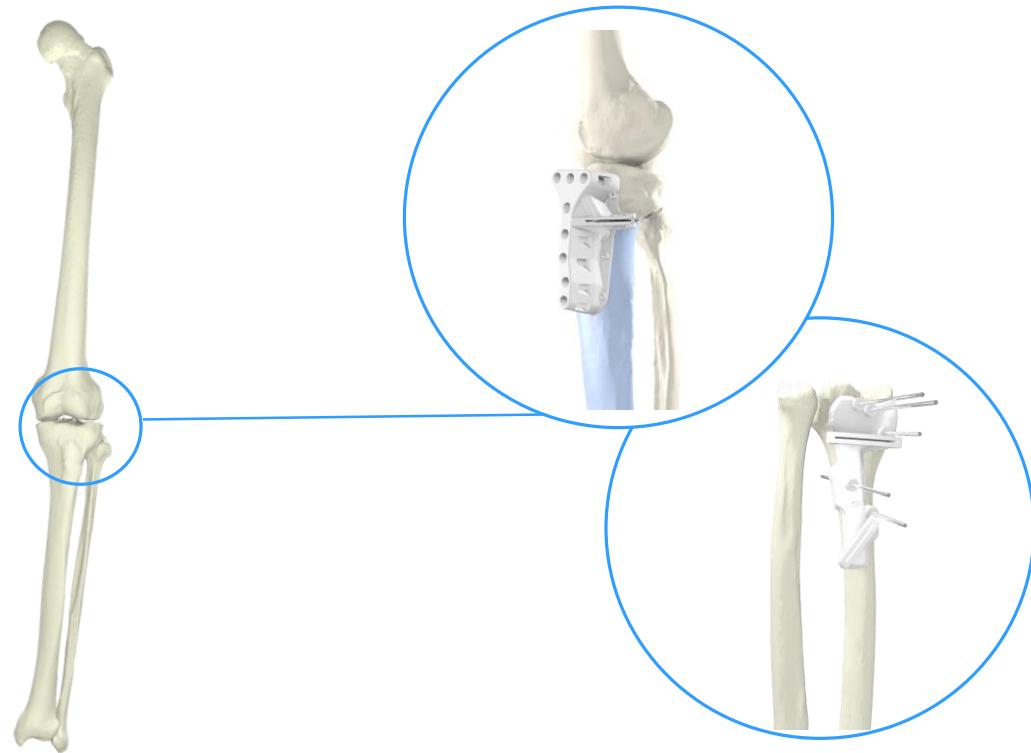
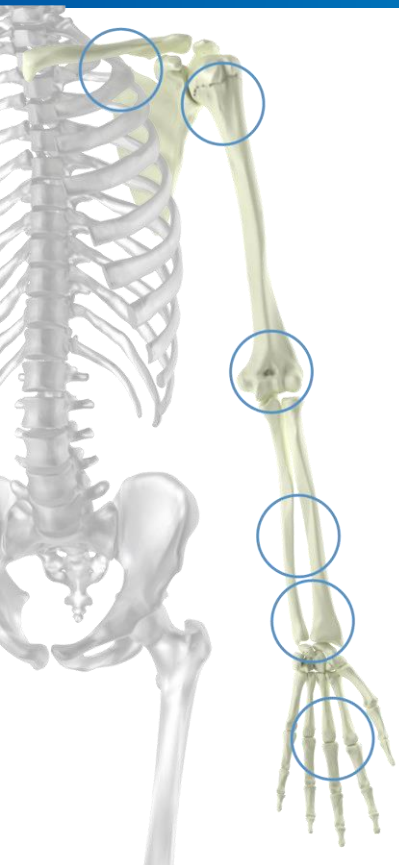


Was hat 3D Druck damit zu tun?





Bohr- & Sägeschablonen // Osteotomien





Präoperative Fehlstellung



Kontralaterale Spiegelung



Virtuelle 3D Planung



Virtuelle 3D Planung



Bohrschablonen



Sägeschablonen



Endergebnis

Medizinischer 3D-Druck // Überblick

Visualisierung
Lehre

Diagnose

Anatomische Modelle

Chirurgischer
Eingriff

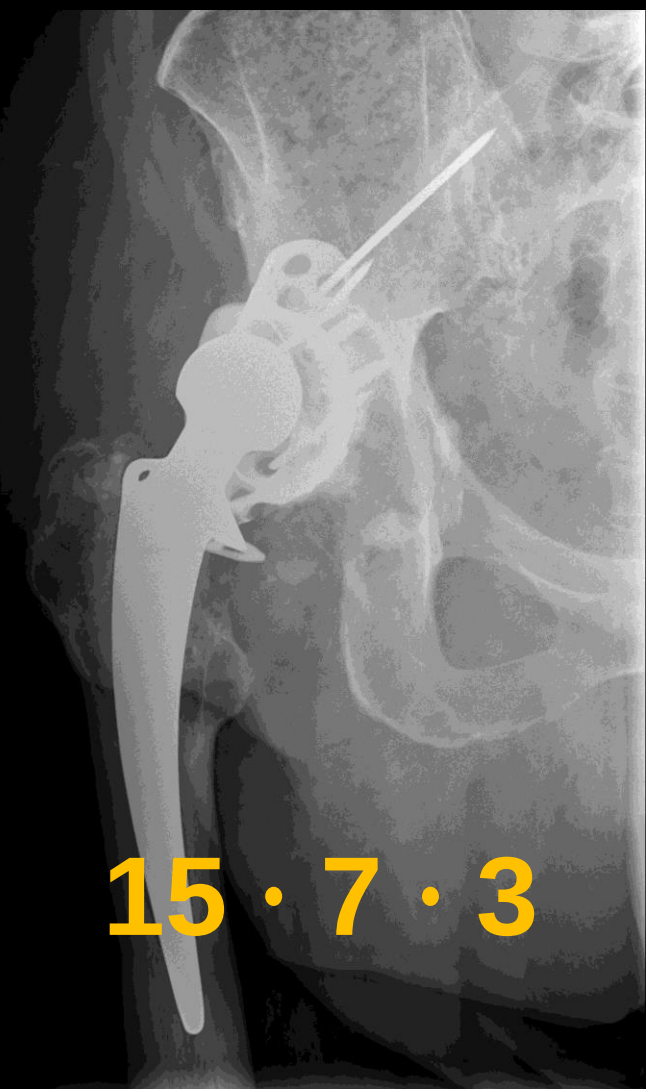
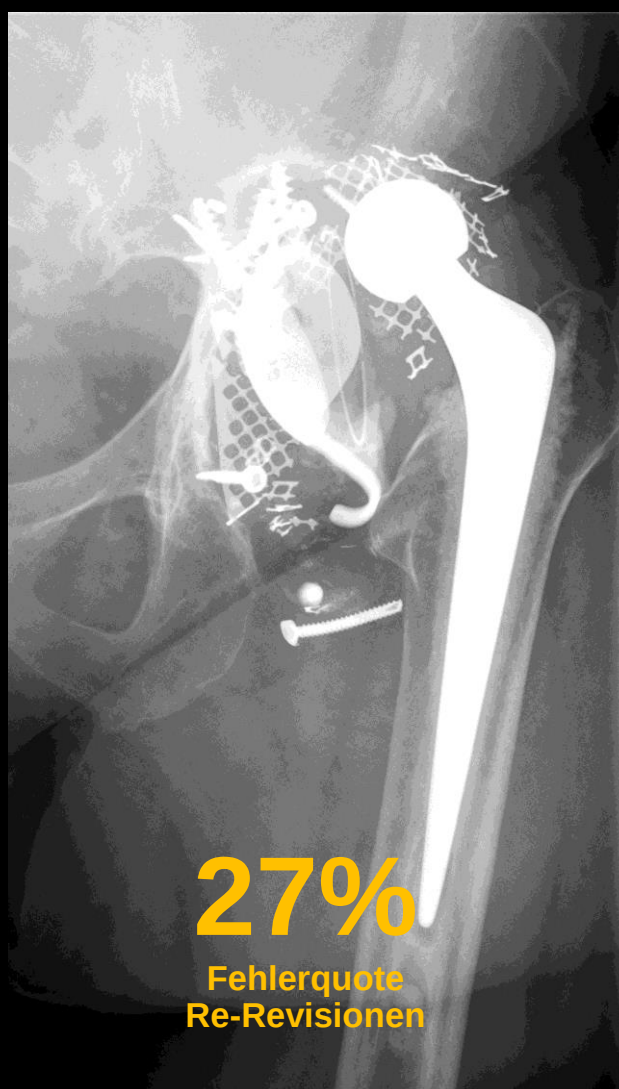
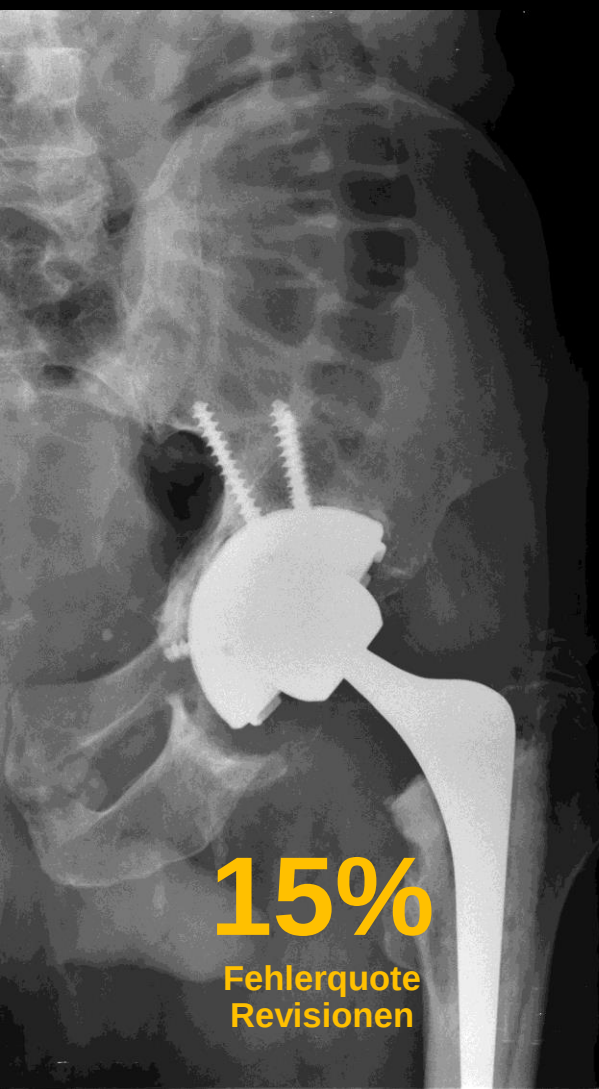
zeitlich
begrenzter
Körperkontakt

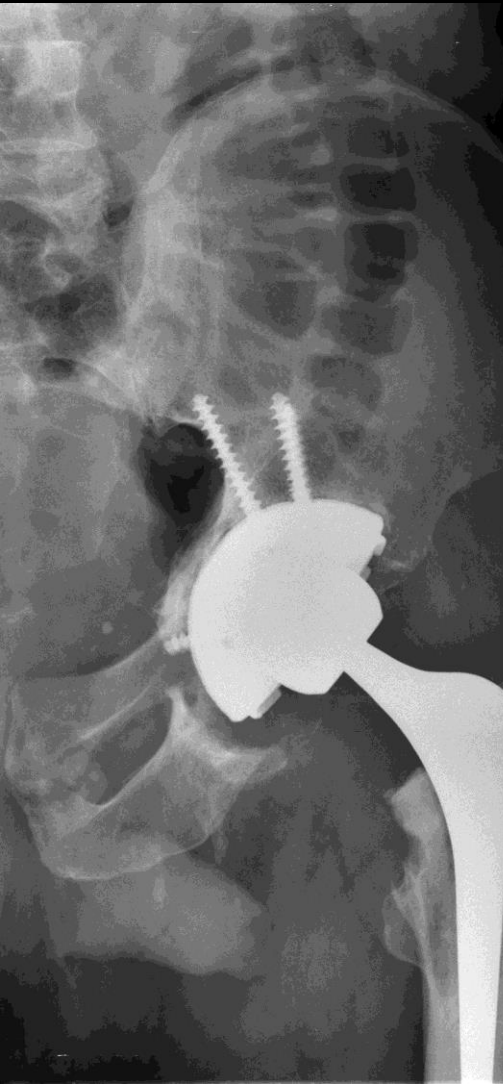
Schablonen und Splints

Chirurgischer
Eingriff

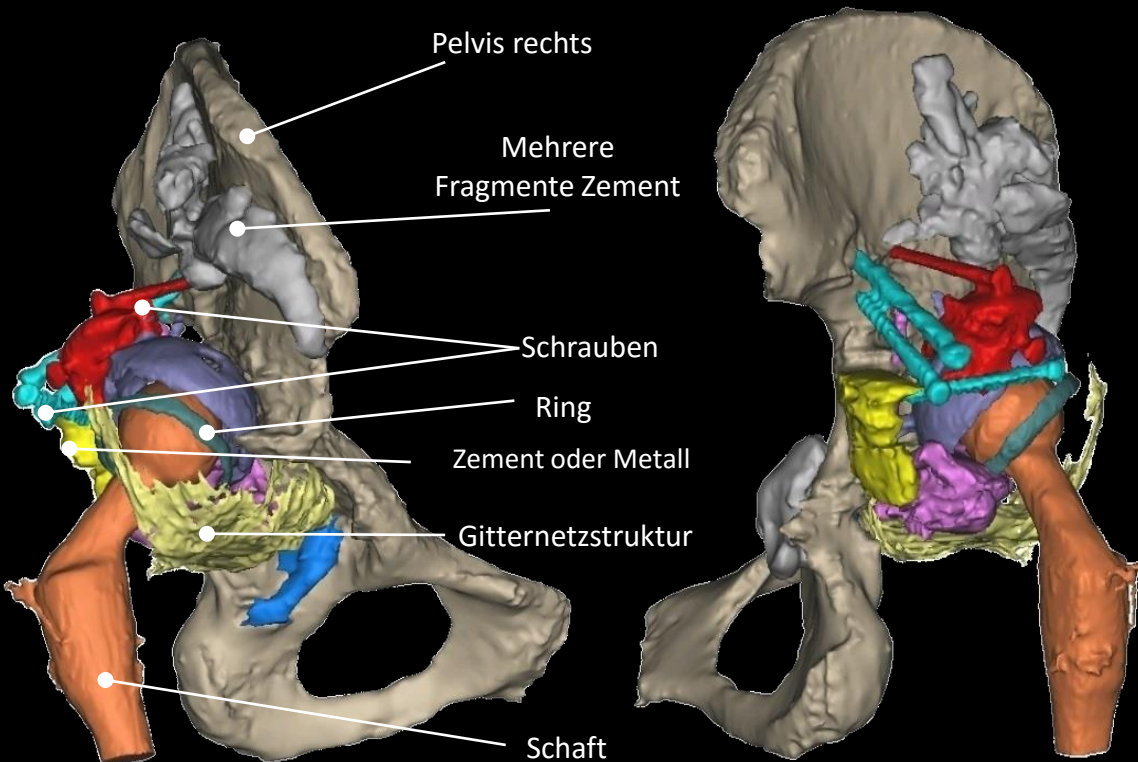
zeitlich
unbegrenzter
Körperkontakt

Implantate & BioPrinting



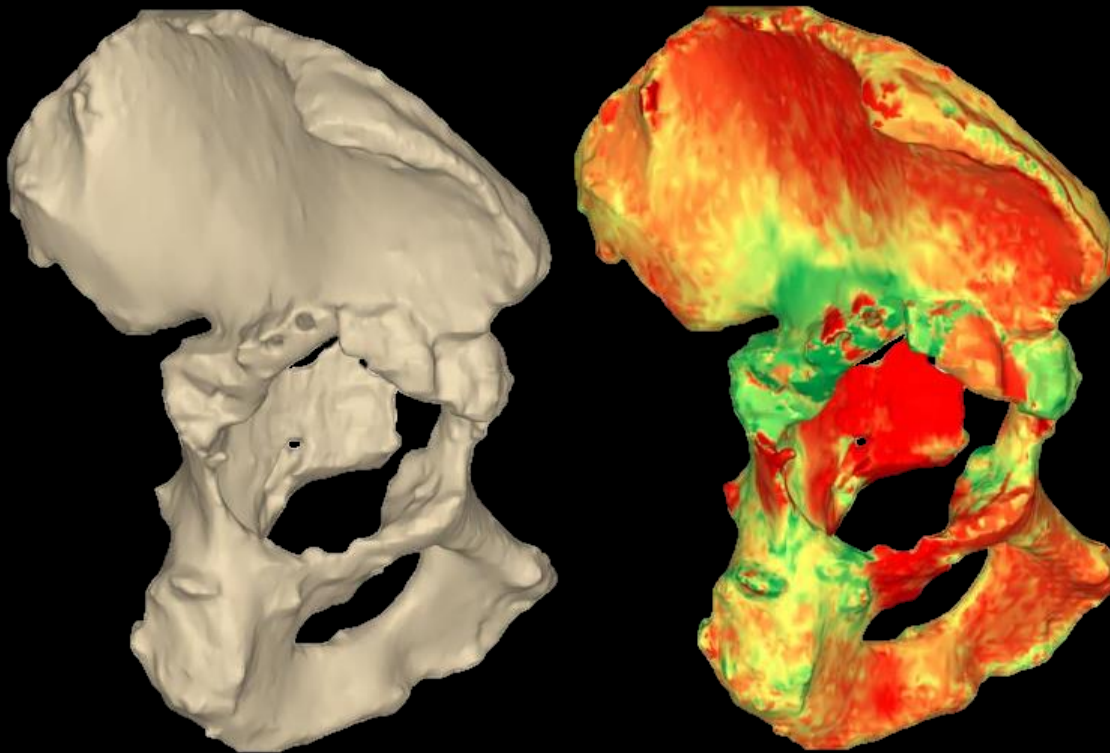


2D oder 3D ?
Mehr Information dank 3D



3D Analyse

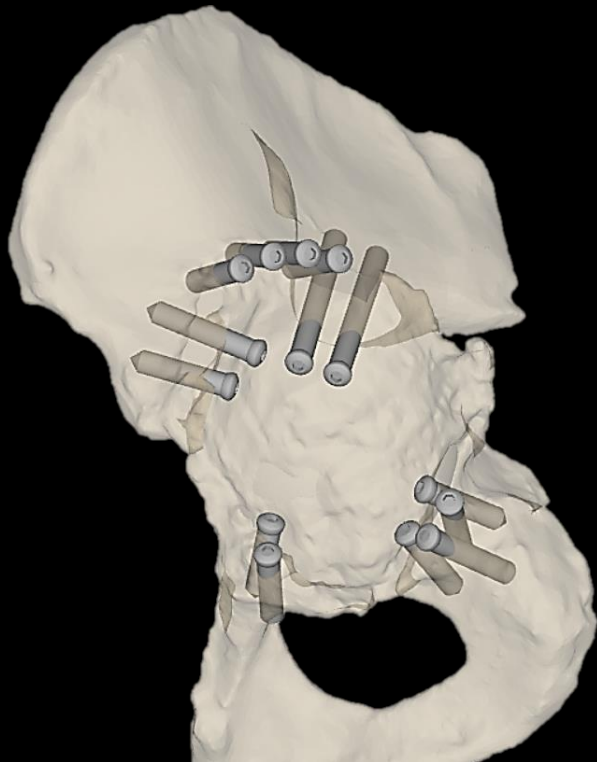
Ist-Zustand des Patienten



3D Analyse

Knochenqualität zur
Schraubenplanung

➤ Schraubenplanung



➤ Schraubensetzung im OP



➤ Schraubenplanung

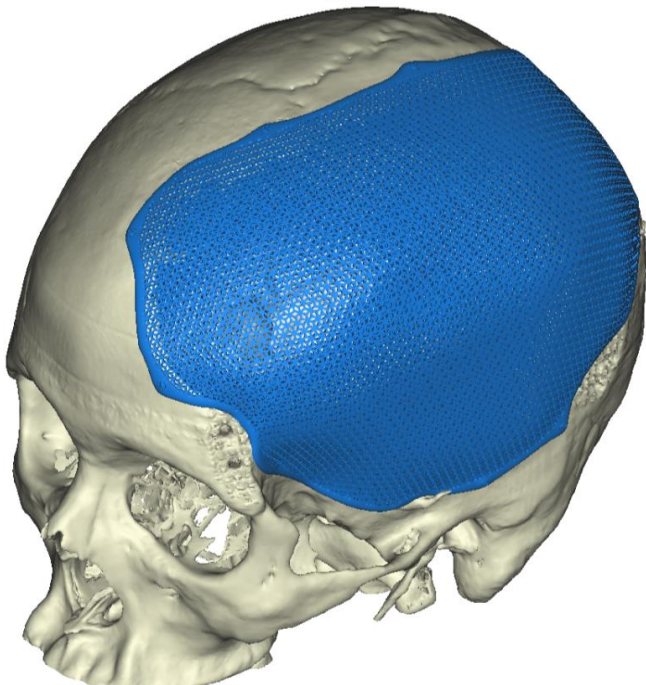


Schablonen
patentierte Bohrschablone

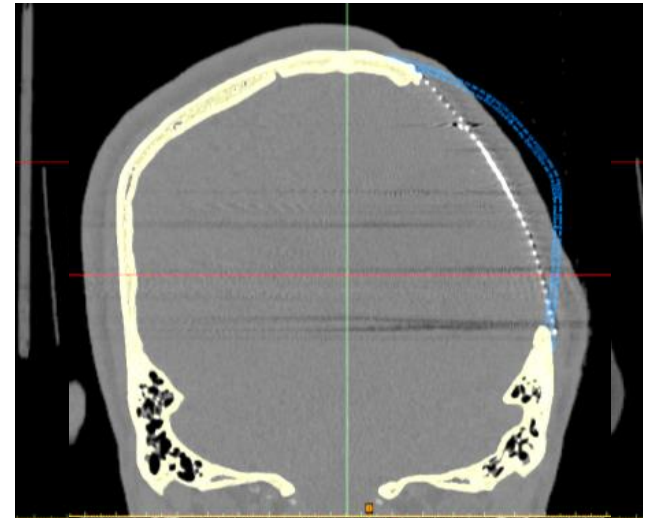
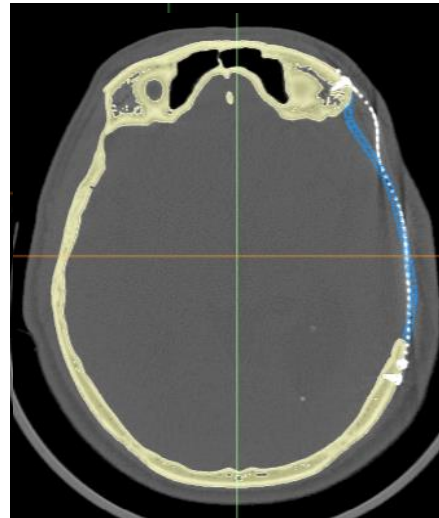


Chance auf Perfektion
Patientenindividuelle Lösung

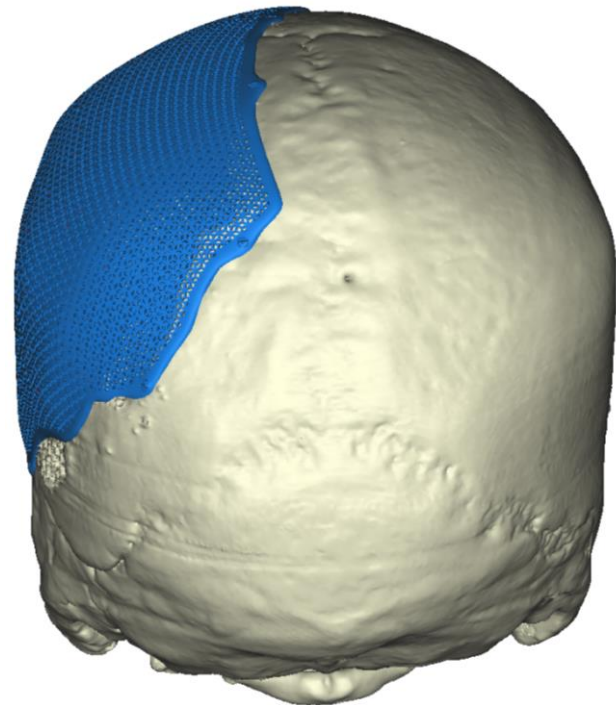
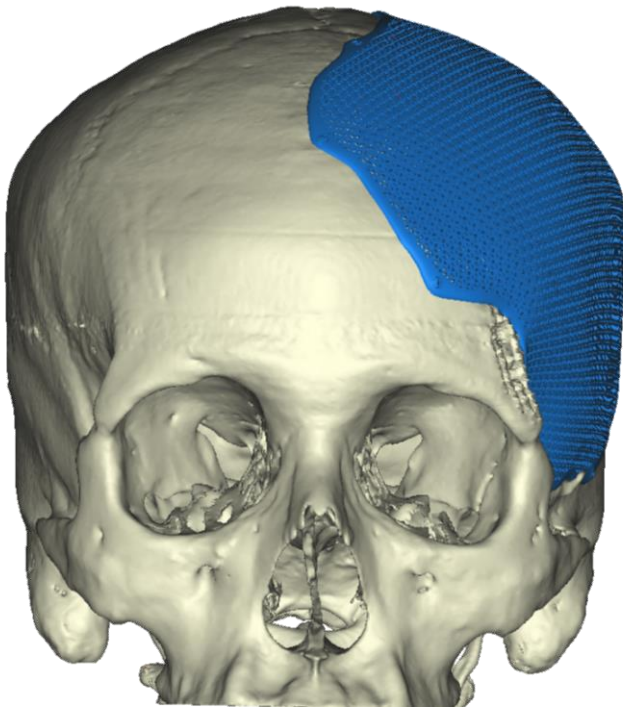
Mund-, Kiefer-, Gesichtschirurgie



Kollabierte Gitternetzstruktur nach dem ersten Eingriff

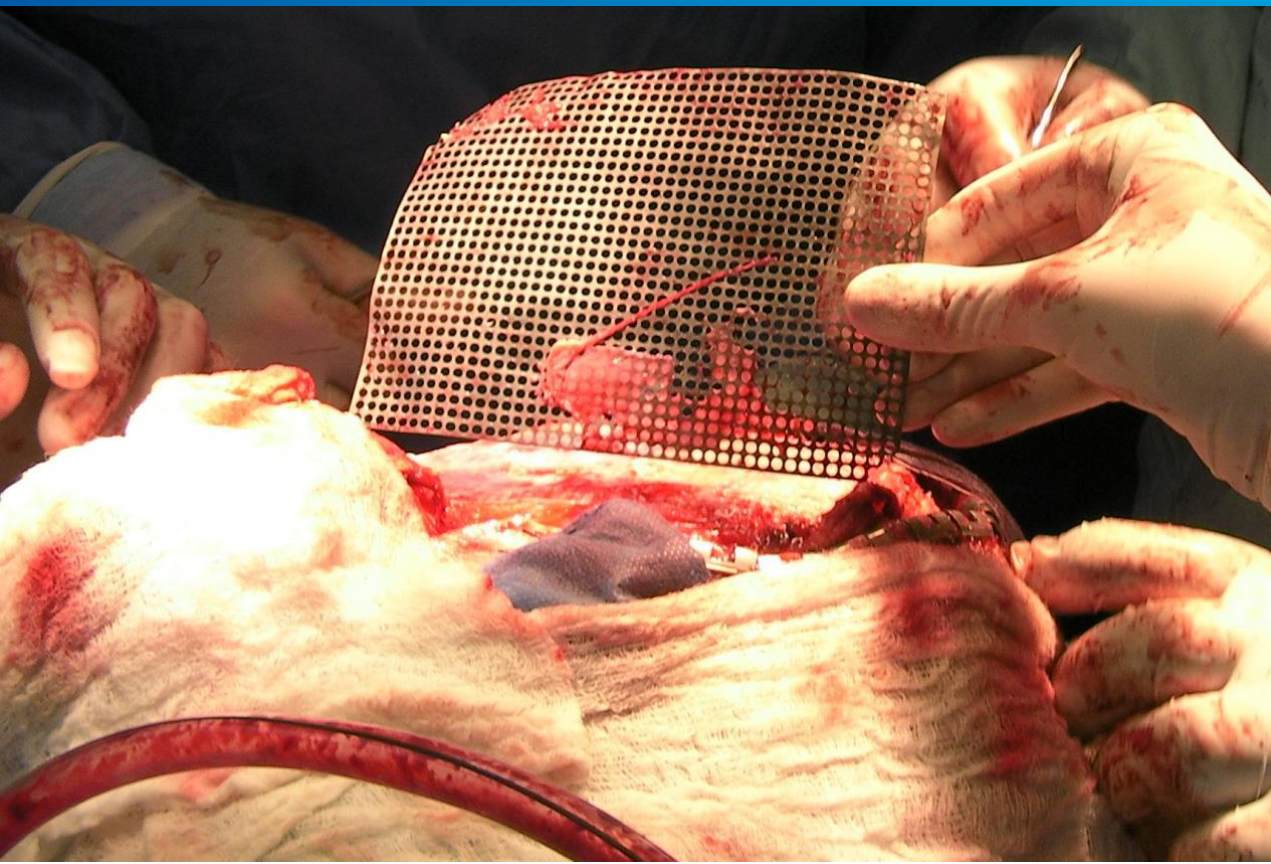


Geplantes Ergebnis post-op



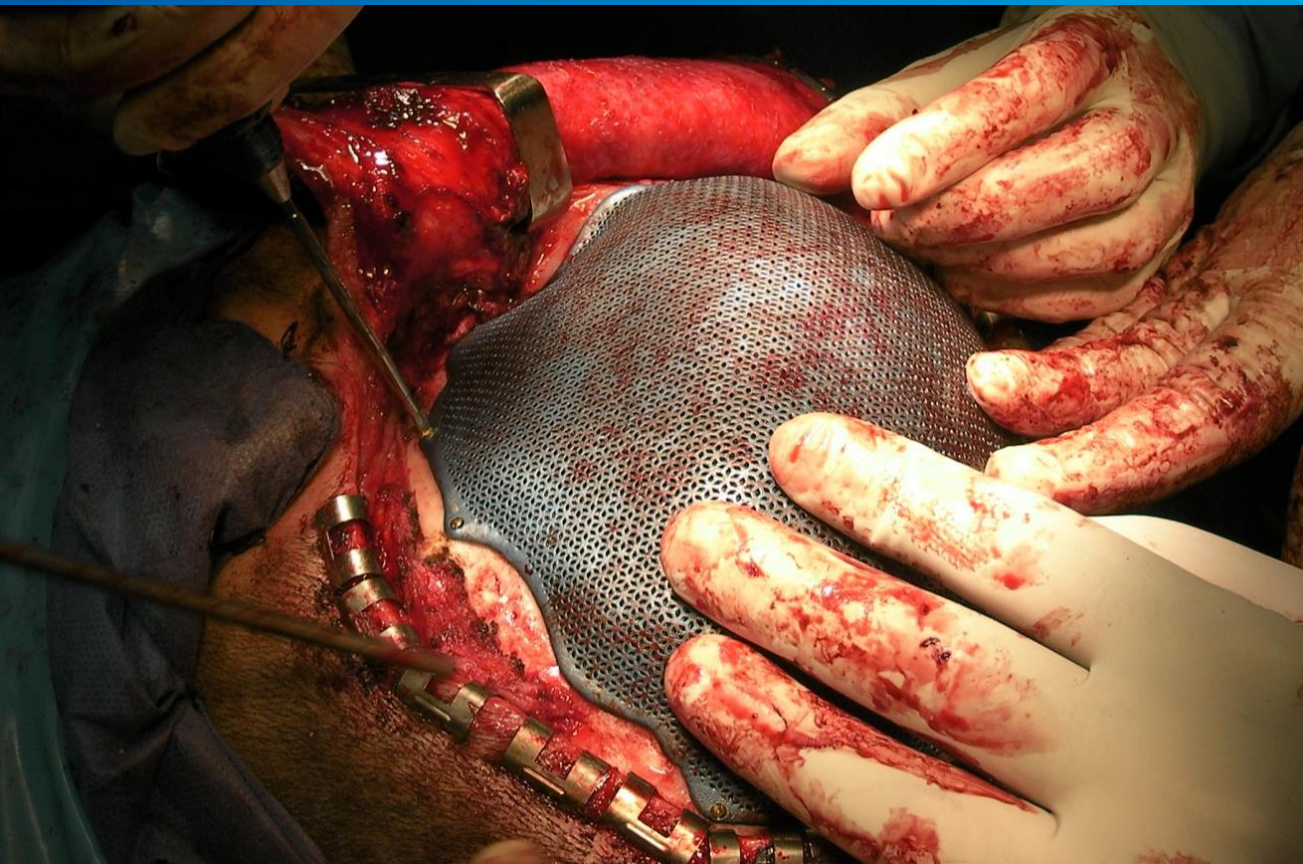
Rekonstruktion der Schädelssymmetrie (funktional und ästhetisch)

Eingriff intraoperativ



Entfernen der
Gitternetzstruktur

Eingriff intraoperativ

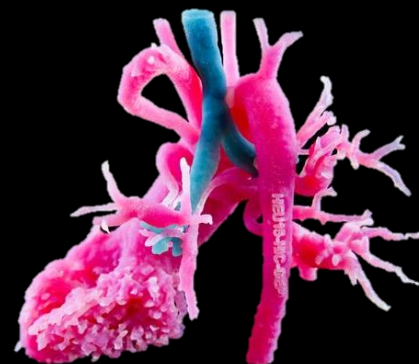
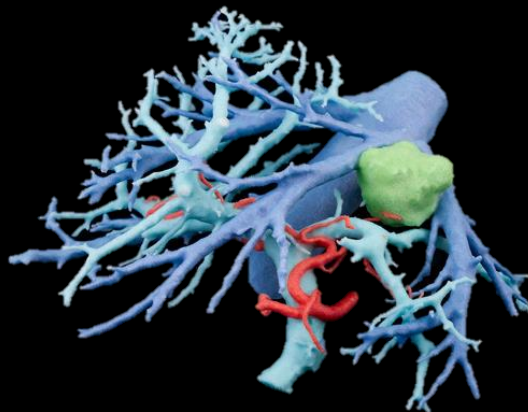


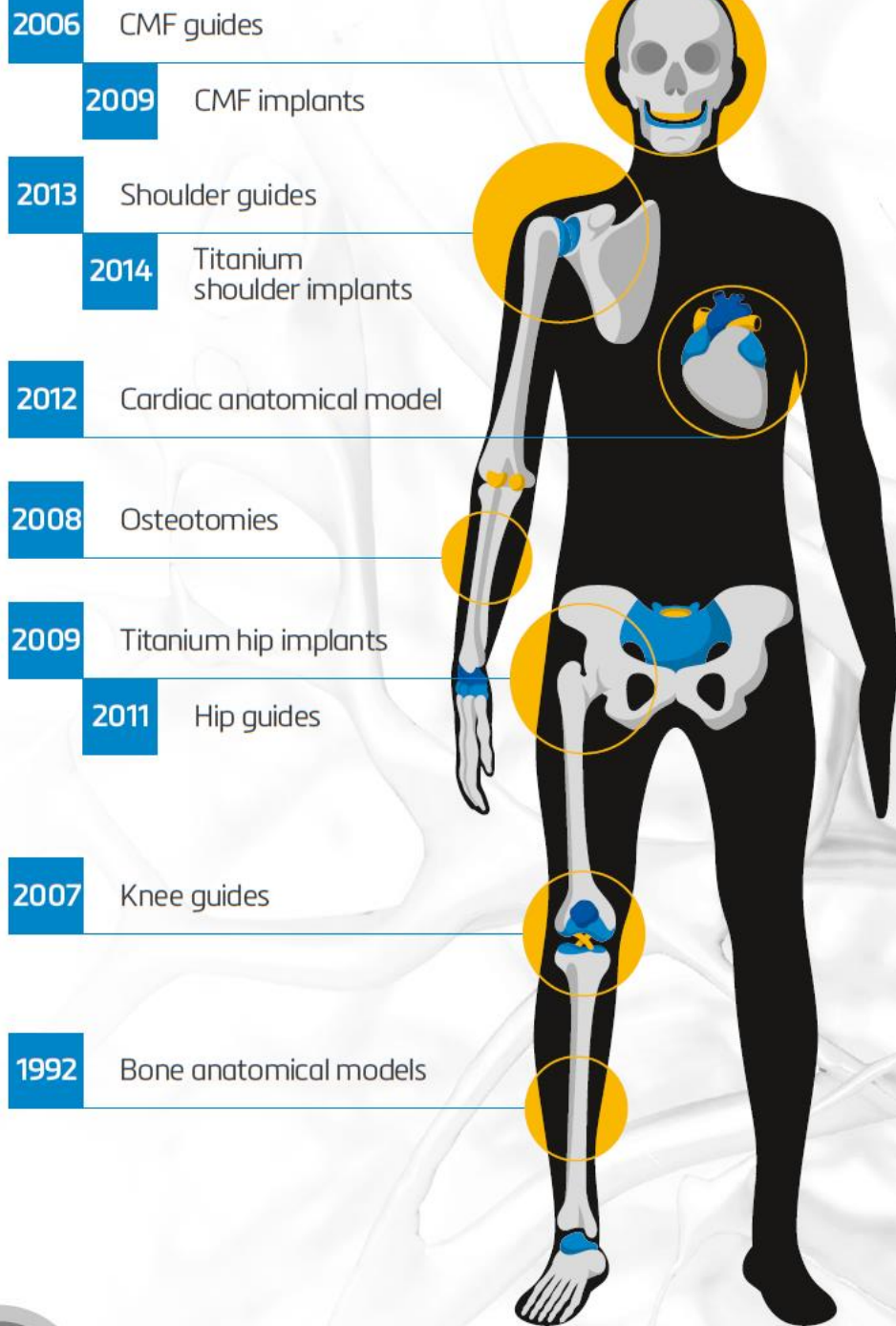
Einsetzen der gedruckten
Schädelplatte aus Titan

Metal Printing

Zusammenfassung // Übersicht Workflow





- 
- A vertical timeline on the left side of the image, overlaid on a black silhouette of a human figure. The timeline consists of blue rectangular boxes with white text, each connected by a thin blue line to a specific anatomical area on the silhouette. The areas are highlighted with yellow circles. The timeline items are: 1992 Bone anatomical models (pointing to the lower leg/ankle), 2007 Knee guides (pointing to the knee), 2009 Titanium hip implants (pointing to the hip), 2009 Hip guides (pointing to the hip), 2008 Osteotomies (pointing to the upper leg), 2012 Cardiac anatomical model (pointing to the heart area), 2014 Titanium shoulder implants (pointing to the shoulder), 2013 Shoulder guides (pointing to the shoulder), 2009 CMF implants (pointing to the jaw area), and 2006 CMF guides (pointing to the jaw area).
- 2006 CMF guides
 - 2009 CMF implants
 - 2013 Shoulder guides
 - 2014 Titanium shoulder implants
 - 2012 Cardiac anatomical model
 - 2008 Osteotomies
 - 2009 Titanium hip implants
 - 2011 Hip guides
 - 2007 Knee guides
 - 1992 Bone anatomical models

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εξ' *fa:Ruη*

klinische Erfahrung





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