



## 3D virtual treatment planning of orthognathic surgery : a step-by-step approach for orthodontists and surgeons /

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editor

Internet Resources

Monografía

This color atlas and manual provides clinicians with systematic, standardized, but also individualized step-by-step guidance on 3D virtual diagnosis, treatment planning, and outcome assessment in patients undergoing orthognathic surgery for maxillofacial deformities. Drawing on 20 years of experience, the authors elucidate the clinical potential of the approach while also highlighting current pitfalls and limitations. The opening two chapters discuss the 3D imaging workflow and its integration into daily clinical routine and comprehensively describe cone-beam CT virtual diagnosis. The stepwise 3D virtual planning of orthognathic surgery and transfer of the 3D virtual treatment plan to the patient in the operating room are then thoroughly explained, and the unprecedented potential of 3D virtual evaluation of treatment outcome, documented. Finally, after provision of all this essential background information, the closing chapter illustrates the application of the 3D virtual approach in different types of maxillofacial deformity. Orthodontists and orthognathic and orthofacial surgeons will find 3D Virtual Treatment Planning of Orthognathic Surgery to be a superb guide and resource. .

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**Nota general:** Includes index

**Contenido:** Foreword I; Foreword II; Preface; Acknowledgements; Introduction; Contents; Abbreviations; Contributor; 1: Imaging Workflow for 3D Virtual Treatment Planning of Orthognathic Surgery; 1.1 Image Acquisition for 3D Virtual Treatment Planning of Orthognathic Surgery; 1.1.1 Image Acquisition and Virtual Rendering of the Patient's Head; 1.1.2 Additional Image Acquisition of the Patient's Dentition and Occlusion; 1.1.3 Additional Image Acquisition of the Texture of the Patient's Head; 1.2 Processing of Acquired Image Data Towards a 3D Virtual Augmented Model of the Patient's Head 1.2.1 Principles of Rigid Registration 1.2.2 Without the Use of Plaster Dental Models; 1.2.3 With the Use of Plaster Dental Models; 1.3 Virtual Mandibular Autorotation;

Additional Recommended Reading; 2: 3D Virtual Diagnosis of the Orthognathic Patient; 2.1 Systematic Virtual Diagnosis of the Patient's Deformity, Anatomy and Pathology; 2.1.1 Dento-maxillo-facial Deformity and Bite; 2.1.2 Individual Anatomy and Pathology; 2.1.3 Airway; 2.1.4 TMJ; 2.2 3D Cephalometric Analysis of the Patient; 2.2.1 Set-Up of a 3D Cephalometry Reference Frame 2.2.2 3D Cephalometry of the Patient's Hard Tissues and Teeth (3D-VPS1) 2.2.3 3D Cephalometry of the Patient's Soft Tissues (3D-VPS2); 2.3 The Potential of 3D Mirroring and Colour Distance Maps in Enhanced Patient Diagnostics; 2.3.1 3D Virtual Mirroring; 2.3.2 Colour Distance Maps; Additional Recommended Reading; 3: 3D Virtual Treatment Planning of Orthognathic Surgery; 3.1 The Virtual Natural Head Position (v-NHP) and Planning Head Position (PHP); 3.2 3D Virtual Osteotomies (3D-VPS3); 3.2.1 Le Fort I Osteotomy: Video; 3.2.2 Bilateral Sagittal Split Osteotomy: Video 3.2.3 Chin Osteotomy: Video 3.2.4 Additional Facial Osteotomies; 3.3 3D Virtual Occlusal Definition (3D-VPS4); 3.3.1 Non-segmental Occlusal Definition; 3.3.2 Segmental Occlusal Definition; 3.4 Principles of "Roll", "Yaw" and "Pitch" in the 3D Virtual Scene; 3.5 "Step-by-Step" Individualised 3D Virtual Treatment Planning (3D-VPS5); 3.5.1 "Step 1": Maxillary Occlusal Cant Evaluation/Correction ("Roll"); 3.5.2 "Step 2": Upper Dental Midline Evaluation/Correction; 3.5.3 "Step 3": Overall Evaluation of Facial Asymmetry After Virtual Occlusal Definition 3.5.4 "Step 4": Evaluation/Correction of Flaring ("Yaw") 3.5.5 "Step 5": Upper Vertical Incisal Position Evaluation/Correction; 3.5.6 "Step 6": Sagittal Upper Incisal Position Evaluation/Correction; 3.5.7 "Step 7": Profile Evaluation/Occlusal Plane Correction ("Pitch"); 3.5.8 "Step 8": 3D Chin Position Evaluation/Correction; 3.5.9 "Step 9": Patient Communication of the Individualised Treatment Plan; 3.5.10 "Step 10": Final Adjustments of the 3D Virtual Treatment Plan; Additional Recommended Reading; 4: 3D Virtual Treatment Planning Transfer in the Operation Theatre

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