This book presents a novel strategy to improve the outcome of maxillofacial reconstruction by combining evolving principles of neurophysiology and tissue engineering with an integrated surgical and laboratory technique. The objective of this book is to bridge the gap between the routine practice of maxillofacial surgery and theoretical laboratory science. The early chapters set down clear, specific treatment-planning principles that should be considered in every surgical design to optimize healing. Subsequent chapters detail the laboratory and surgical techniques that make precise skeletal movements predictable. This methodology is validated with comprehensively illustrated clinical examples, including long-term follow-up. This integrated approach to reconstructive therapy offers the potential to solve clinical problems that are known to be resistant to conventional treatments. Guided by this book, the reader will be able to exploit emerging biotechnical discoveries to establish a working model that can be applied to real problems affecting real patients.

Contents
Chapter 01. Introduction to Surgical Design Using Embryologic Processes
Chapter 02. Establishing and Maintaining Osseointegration Within the Functional Matrix
Chapter 03. Engineering Environments for Simultaneous Bone Growth and Osseointegration
Chapter 04. Using Bone Morphogenetic Protein to Generate Bone
Chapter 05. Using Developing Teeth to Generate Bone
Chapter 06. Using Osteotomies to Generate Bone in Defects of Local Origin
Chapter 07. Using Osteotomies to Generate Bone in Patients with Systemic Disorders
Chapter 08. Designing Bone-Forming Constructs for Major Skeletal Reconstruction
Chapter 09. Controlling the Accuracy of Osteotomy Fragment Repositioning
Chapter 10. Comparing Mechanical and Virtual Surgical Planning
Chapter 11. Design and Surgical Technique in Detail: A Clinical Demonstration

Categories: Implantology, Oral/Maxillofacial Surgery, Oral Surgery