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Titolo	Handbook of Spine Technology // edited by Boyle C. Cheng
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Descrizione fisica	1 online resource (1,294 pages)
Disciplina	611
Soggetti	Nervous system - Surgery Biomedical engineering Biotechnology Biomaterials Materials Control engineering Robotics Automation Neurosurgery Biomedical Engineering and Bioengineering Materials Engineering Control, Robotics, Automation Columna vertebral Tecnologia mèdica Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Cervical Spine Anatomy -- Thoracic Spine Anatomy -- Lumbar Spine Anatomy -- Pathology -- Clinically Diagnosed Spinal Instability -- Adult Onset Deformity -- Oncology -- Trauma with Neurologic Deficiencies -- Cervical Trauma -- Thoracolumbar Trauma -- Clinical Outcomes -- Diagnosis -- Imaging Studies -- Intraoperative Imaging -- Clinical Biomechanics -- Characterizing Fixation Devices -- Bone Implant Interface -- Biomechanics for Patient Diagnosis -- Metrics for Cervical Total Disc Replacements -- Metrics for Lumbar Total Disc

Replacements -- Metrics for Posterior Dynamic Stabilization -- Facet Mechanics -- Articulation for Motion Preservation within the Spine -- Cervical Injury Mechanics -- Thoracolumbar Injury Mechanics -- Lesson Learned from Positive Biomechanics and Poor Clinical Outcomes -- Positive Biomechanics, Positive Clinical Outcomes -- Metal Design Materials -- Metal Ion Exposure -- Surface Treatments -- Bone Apposition -- Characterizing Roughness -- Biodegradable Materials -- Polymer Design Materials -- Composite Materials -- Fiber Reinforced Composite Materials -- Bone Substitutes -- Biologics -- Stem Cell Therapies -- Annulus Repair -- Preclinical Studies for Products -- Approved Products in the US -- Approved Products Outside the US -- Fixation Products -- Trauma Products -- Deformity Correction Products -- Cleared Products -- Withdrawn Products -- Motion Preservation Products -- Posterior Dynamic Stabilization -- Failed Products -- Abandoned Products -- Retrieved Implant Analysis -- Radiologic Assessments -- Radiographic Considerations -- Sagittal Balance -- Biomarkers for Deformity -- Patient Positioning -- Minimally Invasive Surgery -- Posterior Approaches to Lumbar Spine -- Lateral Approaches to the Lumbar Spine -- Anterior Approaches to the Lumbar Spine -- Approaches to the Cervical Spine -- Image Guided Surgery -- Robotic Assisted Surgery.

Sommario/riassunto

This handbook is the most authoritative and up-to-date reference on spine technology written for practitioners, researchers, and students in bioengineering and clinical medicine. It is the first resource to provide a road map of both the history of the field and its future by documenting the poor clinical outcomes and failed spinal implants that contributed to problematic patient outcomes, as well as the technologies that are currently leading the way towards positive clinical outcomes. The contributors are leading authorities in the fields of engineering and clinical medicine and represent academia, industry, and international government and regulatory agencies. The chapters are split into five sections, with the first addressing clinical issues such as anatomy, pathology, oncology, trauma, diagnosis, and imaging studies. The second section, on biomechanics, delves into fixation devices, the bone implant interface, total disc replacements, injury mechanics, and more. The last three sections, on technology, are divided into materials, commercialized products, and surgery. All appropriate chapters will be continually updated and available on the publisher's website, in order to keep this important reference as up-to-date as possible in a fast-moving field. .
