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Nota di contenuto	The Spine: Its Evolution, Function, and Shape -- The Cervical Spine -- Basic Biomechanics of the Thoracic Spine and Rib Cage -- Basic Biomechanics of the Lumbar Spine -- The Vertebral Bone -- Intervertebral Disc -- The Mechanical Role of Collagen Fibers in the Intervertebral Disc -- Vertebral Endplates -- Spinal Muscles -- In Vivo Studies: Spinal Imaging -- In Vivo Measurements: Motion Analysis -- In Vitro Testing of Cadaveric Specimens -- Standard Testing -- Mathematical and Finite Element Modeling -- Musculoskeletal Modeling -- Animal Models for Spine Biomechanics -- Fixation and Fusion -- Motion Preservation -- Scoliosis -- Neuromuscular Disorders -- Sagittal Imbalance -- Biomechanics of Vertebral Fractures and Their Treatment -- Spine Tumors.
Sommario/riassunto	Biomechanics of the Spine encompasses the basics of spine biomechanics, spinal tissues, spinal disorders and treatment methods. Organized into four parts, the first chapters explore the functional anatomy of the spine, with special emphasis on aspects which are

biomechanically relevant and quite often neglected in clinical literature. The second part describes the mechanics of the individual spinal tissues, along with commonly used testing set-ups and the constitutive models used to represent them in mathematical studies. The third part covers in detail the current methods which are used in spine research: experimental testing, numerical simulation and in vivo studies (imaging and motion analysis). The last part covers the biomechanical aspects of spinal pathologies and their surgical treatment. This valuable reference is ideal for bioengineers who are involved in spine biomechanics, and spinal surgeons who are looking to broaden their biomechanical knowledge base. The contributors to this book are from the leading institutions in the world that are researching spine biomechanics.
