The amount of load that can be borne by the different components of the lumbar region is fairly well understood, as are resulting injuries from overloading. Less severe lumbar injuries involve a wide range of factors, including heredity, obesity, age, occupation, sports, cardiovascular risk factors, and depression. Some of the most painful conditions that require high levels of care involve lumbar spine fracture or soft tissue injury from falls, contact sports, vehicle collisions, aircraft ejection, and underbody blasts from roadway explosions (military injuries). Each of these injury scenarios elicits a different kinematic response of the spine as a result of load direction, magnitude, and duration.

The book will be helpful to those studying lumbar injury from a broad range of causes, including transportation, falls, sports, personal violence, and blast-related. Professionals from a variety of disciplines will find the book useful: biomechanics, accident reconstruction, medical and rehabilitation, insurance, legal, and law enforcement.

About the editor
Jeffrey A. Pike is president of Biomechanics Consulting, Inc., which provides research, education, and forensic biomechanics consulting services. His previous experience includes senior technical specialist, Ford Motor Company and adjunct professor, Wayne State University, Biomedical Engineering Department. He has been a consultant to the Centers for Disease Control, National Academy of Sciences, National Highway Traffic Safety Administration, Department of Justice, and state and local governments. His current projects include consulting on a CDC/NIOSH contract to develop restraint systems for providers of in-ambulance care.

Updated from a popular earlier volume, this new compendium includes landmark papers from 1994 through 2013 that focus exclusively on lumbar injuries. It also features an introductory chapter, “Blunt Lumbar Trauma,” that provides an overview of the anatomy of the lumbar region, injury, and injury mechanisms, as well as an extensive literature update.

This edition is the third in a series of biomechanics compendia edited by Mr. Pike. Earlier editions covered injuries of the neck and head. For this volume, Mr. Pike and the advisory panel selected 15 of the best papers from a variety of sources including SAE International, IRCOBI, Stapp, NHTSA, ESV, and the Association for the Advancement of Automotive Medicine.
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