

Special Issue

Advances and Challenges in Spine Surgery

Message from the Guest Editors

Spine surgery has undergone tremendous advancements, including a deeper understanding of approaching the spine while minimizing trauma to normal tissue, stabilizing the spine respecting natural biomechanics, and maintaining optimal alignment during reconstructive surgery. Technological advancements, such as segmental fixation and hardware technologies, spinal navigation, and biological material technology, have facilitated more secure and successful spine surgeries. A better understanding of the pathophysiology of back pain and molecular changes after spinal cord injury has been gained. However, challenges remain, such as decreasing disc degeneration and discogenic back pain, accurately determining the etiology of back pain, preserving spinal motion and flexibility, avoiding adjacent level disease with spinal fusion, and minimizing delayed iatrogenic spinal instability. Spinal cord injury remains a significant challenge in modern neuroscience, with no effective treatment for reversing functional loss. The Special Issue will present up-to-date advances in spine surgery, discussing the pathophysiology of the spine and spinal cord biology, and the challenges that remain in the field.

Guest Editors

Dr. Yi Lu

Department of Neurosurgery, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, USA

Prof. Dr. Micheal Wang

Department of Neurosurgery and Rehab Medicine, University of Miami Leonard M. Miller School of Medicine, Miami, FL, USA

Deadline for manuscript submissions

closed (25 November 2024)



Journal of Clinical Medicine

an Open Access Journal
by MDPI

Impact Factor 2.9
CiteScore 5.2
Indexed in PubMed



mdpi.com/si/157798

Journal of Clinical Medicine
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
jcm@mdpi.com

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