

Special Issue

Spine Surgery Innovations: Treatments and Technologies

Message from the Guest Editors

This Journal of Clinical Medicine (JCM) Special Issue explores groundbreaking advancements transforming spine surgery. The integration of artificial intelligence (AI) and robotics enhances surgical navigation, intraoperative decision-making, and predictive analytics, enabling patient-specific planning for complex degenerative, deformity, and reconstructive procedures. Minimally invasive and muscle-preserving techniques are revolutionizing traditional approaches by reducing tissue damage, accelerating recovery, and preserving spinal function. Evidence supports motion-preserving strategies and optimized alignment targets in reducing adjacent segment disease and improving long-term quality of life. Parallel innovations in implant technology—including porous materials, bioactive coatings, and bone growth factors—promote superior osseointegration and fusion success. The rise of custom-made, patient-specific implants further advances personalized spine care. Through original research and reviews, this issue examines how technological and biological innovations converge to shape the future of spine surgery, delivering safer, smarter, and more durable solutions for patients worldwide.

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There has been an explosion of gene and target based research and therapeutics in the multitude of fields that compose clinical medicine. The *Journal of Clinical Medicine's* (JCM) staff and editorial board are dedicated to providing cutting edge, timely, and peer-reviewed articles covering the diverse subspecialties of clinical medicine. The journal publishes concise, innovative, and exciting research articles as well as clinically significant articles and reviews that are pertinent to the myriad of disciplines within medicine. The articles published are relevant to both primary care physicians and specialists. The journal's full-texts are archived in PubMed Central and indexed in PubMed. Please consider submitting your manuscripts for publication to our journal and check us out on-line!

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