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Novel Research about Biomechanics and Biomaterials Used in Hip, Knee and Related Joints

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Message from the Guest Editors

Joint replacement is a very successful medical treatment. However, the survivorship of hip, knee, shoulder, and other implants is limited. The degradation of materials, but also the immune response against degradation products or an altered tissue loading condition as well as infections remain key factors of their failure. Current research in biomechanics and biomaterials is trying to overcome the existing limitations. This includes new implant designs and materials, bearings concepts and tribology, kinematical concepts, surgical techniques, and anti-inflammatory and infection prevention strategies. A careful evaluation of new materials and concepts is required in order to fully assess strengths and weaknesses and improve the quality and outcomes of joint replacements. Therefore, extensive research and clinical trials are essential. This Special Issue gives an overview of the ongoing research in that field. Contributions are solicited from researchers working in the fields of biomechanics, biomaterials, and bio- and tissue-engineering.



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Special Issue



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Message from the Editor-in-Chief

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