Special Issue

Mechanobiology of Regeneration: From Physical Aspects

Message from the Guest Editors

We invite you to submit original research and review articles that address the physical principles underpinning regenerative biology to our Special Issue, “Mechanobiology of Regeneration: From Physical Aspects”. Mechanical forces, including tension, compression, shear stress, and substrate stiffness, are key regulators of cellular behavior and tissue regeneration. The focus of this issue is on how these physical cues are sensed, transmitted, and integrated at the cellular and tissue levels to guide repair and remodeling. We welcome contributions that explore the role of biomechanics, the material properties of the extracellular matrix, cytoskeletal responses, and mechanosensitive signaling in the context of regeneration. Studies employing biophysical techniques, modeling, and engineered systems to dissect mechanical contributions to regenerative processes are highly encouraged. Interdisciplinary approaches bridging physics, engineering, and cell biology are particularly relevant. Our goal is to highlight how physical factors contribute to regenerative outcomes and promote a deeper mechanistic understanding to advance regenerative medicine one day at a time.

Guest Editors

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Deadline for manuscript submissions

closed (30 November 2025)

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