DESCRIPTION

An emerging field at the interface of biology and engineering, mechanobiology explores the mechanisms by which cells sense and respond to mechanical signals—and holds great promise in one day unravelling the mysteries of cellular and extracellular matrix mechanics to cure a broad range of diseases. *Mechanobiology: Exploitation for Medical Benefit* presents a comprehensive overview of principles of mechanobiology, highlighting the extent to which biological tissues are exposed to the mechanical environment, demonstrating the importance of the mechanical environment in living systems, and critically reviewing the latest experimental procedures in this emerging field.

Featuring contributions from several top experts in the field, chapters begin with an introduction to fundamental mechanobiological principles; and then proceed to explore the relationship of this extensive force in nature to tissues of musculoskeletal systems, heart and lung vasculature, the kidney glomerulus, and cutaneous tissues. Examples of some current experimental models are presented conveying relevant aspects of mechanobiology, highlighting emerging trends and promising avenues of research in the development of innovative therapies.

Timely and important, *Mechanobiology: Exploitation for Medical Benefit* offers illuminating insights into an emerging field that has the potential to revolutionise our comprehension of appropriate cell biology and the future of biomedical research.
ABOUT THE AUTHOR

Simon Rawlinson, PhD, is a Lecturer in the Institute of Bioengineering in the Queen Mary's School of Medicine & Dentistry. The majority of his research has concentrated on the response of limb bone cells in situ to applied, physiological, dynamic mechanical loads with the objective of gaining an insight to the mechanotransduction consequences to usage.

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