

1. Record Nr.	UNINA9910349455903321
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Titolo	Mathematical Modelling of Haemodialysis : Cardiovascular Response, Body Fluid Shifts, and Solute Kinetics // by Leszek Pstras, Jacek Waniewski
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019
ISBN	3-030-21410-9
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (156 pages)
Disciplina	617.461059 583.44
Soggetti	Biomedical engineering Biomathematics Cardiovascular system Biomedical Engineering/Biotechnology Physiological, Cellular and Medical Topics Biomedical Engineering and Bioengineering Cardiovascular Biology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction to renal replacement therapies and mathematical modelling in physiology -- Mathematical modelling in physiology -- Model structure, equations and parameters -- Model analysis and validation -- Simulation results and model outcomes -- Conclusions, challenges and future research directions.
Sommario/riassunto	Beginning with an introduction to kidney function, renal replacement therapies, and an overview of clinical problems associated with haemodialysis, this book explores the principles of the short-term baroreflex regulation of the cardiovascular system and the mechanisms of water and solute transport across the human body from a mathematical model perspective. It synthesizes theoretical physiological concepts and practical aspects of mathematical modelling needed for simulation and quantitative analysis of the haemodynamic response to dialysis therapy. Including an up-to-date review of the

literature concerning the modelled physiological mechanisms and processes, the book serves both as an overview of transport and regulatory mechanisms related to the cardiovascular system and body fluids and as a useful reference for the study and development of mathematical models of dynamic physiological processes. **Mathematical Modelling of Haemodialysis: Cardiovascular Response, Body Fluid Shifts, and Solute Kinetics** is intended for researchers and graduate students in biomedical engineering, physiology, or medicine interested in mathematical modelling of cardiovascular dynamics and fluid and solute transport across the human body, both under physiological conditions and during haemodialysis therapy.
