Biofluid Mechanics: The Human Circulation

Krishnan B. Chandran, Stanley E. Rittgers, Ajit P. Yoganathan
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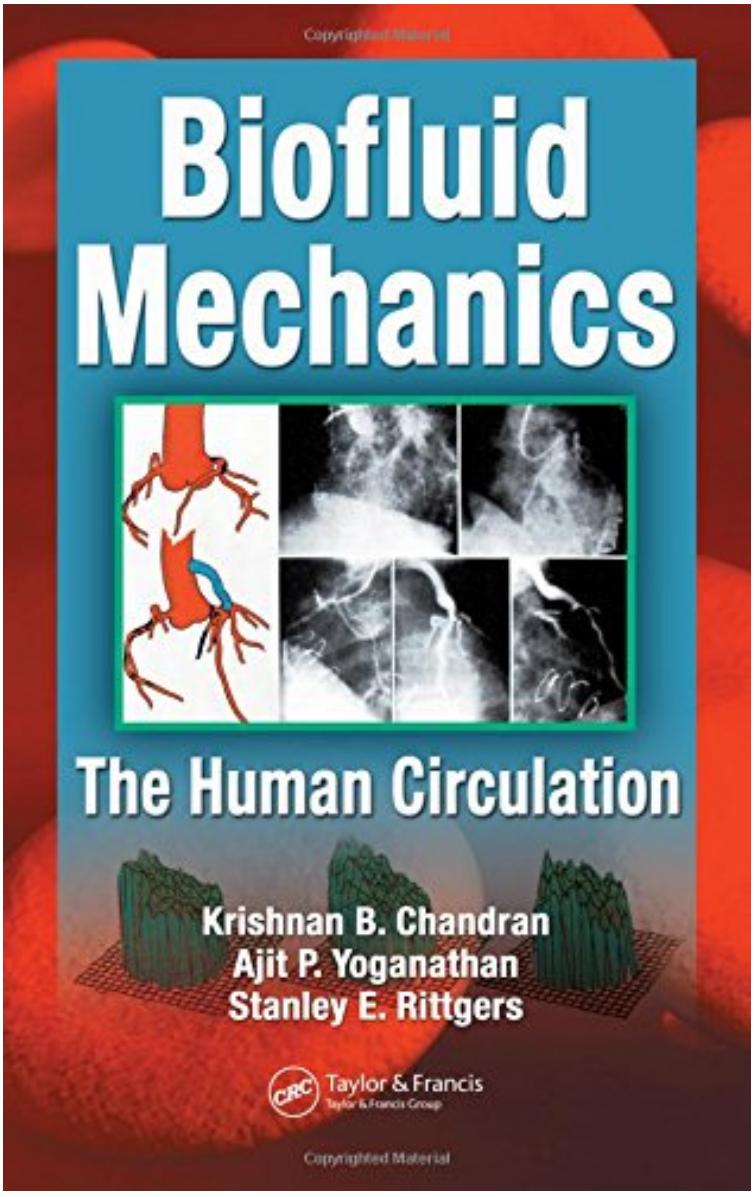

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Krishnan B. Chandran, Stanley E. Rittgers, Ajit P. Yoganathan : Biofluid Mechanics: The Human Circulation before purchasing it in order to gage whether or not it would be worth my time, and all praised Biofluid Mechanics: The Human Circulation:

0 of 0 people found the following review helpful. ExcellentBy ubpdqnI read the first edition of this book. It is excellent. It provides a systematic approach/ It covers fluid mechanics: steady flow, unsteady flow, viscoelastic

properties of tissues, Windkessel and more sophisticated models of the circulation.It provides clear examples and figures from the in-vitro and in-vivo data.The section of valve physiology and pathophysiology was excellent. The discussion on prosthetic valves, grafts and other vascular scaffolds was very instructive, clearly written with illuminating figures.The book ends with discussion of measurement techniques: pressure, flow, velocity including discussions of doppler echocardiography, magnetic resonance imaging, computer fluid dynamics.I hope the subsequent editions continue in this tradition and I look forward to seeing them.0 of 1 people found the following review helpful. I awesomeBy GBI found the book wonderful because at the first time I did not think I will get a very good price.

Part medicine, part biology, and part engineering, biomedicine and bioengineering are by their nature hybrid disciplines. To make these disciplines work, engineers need to speak "medicine," and clinicians and scientists need to speak "engineering." Building a bridge between these two worlds, Biofluid Mechanics: The Human Circulation integrates fluid and solid mechanics relationships and cardiovascular physiology.The book focuses on blood rheology, steady and unsteady flow models in the arterial circulation, and fluid mechanics through native heart valves. The authors delineate the relationship between fluid mechanics and the development of arterial diseases in the coronary, carotid, and ileo-femoral arteries. They go on to elucidate methods used to evaluate the design of circulatory implants such as artificial heart valves, stents, and vascular grafts. The book covers design requirements for the development of an ideal artificial valve, including a discussion of the currently available mechanical and bioprosthetic valves. It concludes with a detailed description of common fluid mechanical measurements used for diagnosing arterial and valvular diseases as well as research studies that examine the possible interactions between hemodynamics and arterial disease. Drawing on a wide range of material, the authors cover both theory and practical applications. The book breaks down fluid mechanics into key definitions and specific properties and then uses these pieces to construct a solid foundation for analyzing biofluid mechanics in both normal and diseased conditions.