Orthopaedic Biomechanics Made Easy
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Sheraz S. Malik, MRCS, MSc
trust-grade registrar in orthopaedics, Newham University Hospital, Barts Healthcare NHS Trust, UK

Shahbaz S. Malik, MRCS, MSc
specialty registrar in orthopaedics, West Midlands Deanery, UK
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Also to my wife Nadia, for her endless patience.

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CONTRIBUTORS

Usman Ahmed MRCS, PhD
Specialty Registrar in Trauma & Orthopaedics
West Midlands Deanery

Bola Akinola MRCS, MSc, FRCS (Tr & Orth)
Specialty Registrar in Trauma & Orthopaedics
East of England Deanery

Chee Gan FRCR
Interventional Neuroradiology Fellow
The National Hospital of Neurology and Neurosurgery

Simon MacLean MRCS(Ed) FRCS (Tr & Orth)
Specialty Registrar in Trauma & Orthopaedics
West Midlands Deanery

Ravi Shenoy MRCS(Ed), MS(Orth), DNB(Orth), MD
Specialty Registrar in Trauma & Orthopaedics
Northeast (Stanmore) Rotation, London Deanery

Proofreading and editing work
By
Pritam Tharmarajah MRSC(Ed), MD
Specialty Registrar in General Practice
East Midlands Deanery

Art direction and illustrations
By
Shaheryar Malik
This type of surgery demands training in mechanical techniques, which, though elementary in practical engineering, are as yet unknown in the training of a surgeon.

Sir John Charnley

Everything should be made as simple as possible, but no simpler.

Albert Einstein
Orthopaedic Biomechanics Made Easy introduces you to the fundamental biomechanical principles in orthopaedics, and shows you how these relate to the clinical practice. The book seeks to fulfil two objectives:

- To bring together important biomechanical concepts relevant to surgical practice.
- To make these ideas simple and easy to learn.

Our efforts have been about taking you back to the first principles, and making them more interesting and fun to learn. We have avoided point-by-point references for this reason, as we feel that this might affect the reading experience.

To help you explore the subject, the book is signposted into three parts: Orthopaedic biomaterials and their properties; Engineering theory applied to orthopaedics; and, Clinical biomechanics. Each concept is introduced and explained in a discrete double-page spread. Consecutive sections are usually related and follow a common theme. Naturally, some ideas are more difficult than others, and we expect you to skip over them initially and to come back to them after covering the simpler topics. You do not need to deal with advanced maths to understand the presented biomechanical principles. Mathematical explanations are provided in some sections only to demonstrate how a particular biomechanical fact is derived. You may skip over the mathematical workings without missing out on the learning points.

We hope this book helps to make your clinical practice easier and more rewarding.

Sheraz S. Malik
Shahbaz S. Malik
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