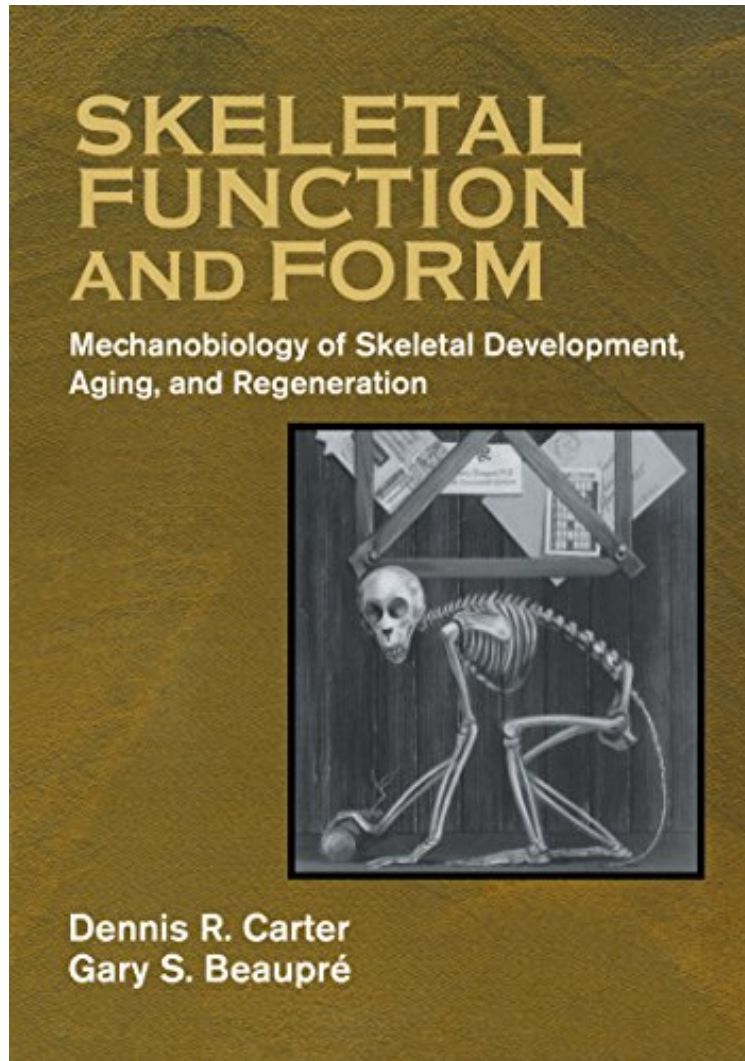


Skeletal Function and Form: Mechanobiology of Skeletal Development, Aging, and Regeneration

Dennis R. Carter, Gary S. Beaupr
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Dennis R. Carter, Gary S. Beaupr : Skeletal Function and Form: Mechanobiology of Skeletal Development, Aging, and Regeneration before purchasing it in order to gage whether or not it would be worth my time, and all praised Skeletal Function and Form: Mechanobiology of Skeletal Development, Aging, and Regeneration:

0 of 0 people found the following review helpful. Another great supplemental textBy DRSIt wasn't required reading for my comp osteo course but it helped fill in the gaps the required text left.

The intimate relationship between form and function inherent in the design of animals is perhaps nowhere more evident than in the musculoskeletal system. In the bones, cartilage, tendons, ligaments, and muscles of all vertebrates

there is a graceful and efficient physical order. This book is about how function determines form. It addresses the role of mechanical factors in the development, adaptation, maintenance, ageing and repair of skeletal tissues. The authors refer to this process as mechanobiology and develop their theme within an evolutionary framework. They show how the normal development of skeletal tissues is influenced by mechanical stimulation beginning in the embryo and continuing throughout life into old age. They also show how degenerative disorders such as arthritis and osteoporosis are regulated by the same mechanical processes that influence development and growth. *Skeletal Function and Form* bridges important gaps among disciplines, providing a common ground for understanding, and will appeal to a wide audience of bioengineers, zoologists, anthropologists, palaeontologists and orthopaedists.

"...interesting and thought-provoking..." *International Journal of Osteoarchaeology*"Overall it is a masterly treatment of the subject..." *Journal of the Geological Magazine*"Excellent.... The text is concise, direct and erudite. ... This is an informative and enjoyable book..." *Times Higher Education Supplement*"A terrific job...the authors have admirably achieved their ambitious objective of 'bridging important gaps between disciplines in a manner that will provide common ground for understanding and future investigation' by providing a 'single source in which these ideas are summarized'...I believe that all readers with an interest in skeletal form and function will gain new understanding of the possible roles of physical forces in skeletal tissue processes, will have ideas about new hypotheses to pose and test, and will be drawn to wonder about the physical, biological, and evolutionary mechanisms responsible for skeletal tissue function and form." *Journal of Biomechanics*"A very detailed treatment of skeletal tissues and developmental mechanics. It is perfectly suited for students of functional anatomy or bioengineering, and those engaged in applied biomedical pursuits.... *Skeletal Function and Form* is a beautifully executed book that sticks to the point and makes its case. The reader is treated to a solid base of information that clarifies how mechanical factors impact development, and how function determines form. The book is well written and wonderfully illustrated, and it deserves a home on the bookshelf of anyone curious about the structure of the vertebrate skeleton." *Palaios*"Technical and authoritative. It will be particularly useful to researchers and graduate students one step removed in their direct research interests from the topics covered. Readers interested in the mechanics of bone and cartilage as tissues will certainly find this a valuable resource." *Richard J. Smith, American Journal of Human Biology*"The preface to *Skeletal Function and Form* states that the main goal of the book is to demonstrate that function determines form. In a wide variety of ways, the authors succeed admirably.... This book also has appeal for students of many biological disciplines because of the emphasis on evolutionary changes that affect organisms at many taxonomic levels.... It is at a level of sophistication and covers its intended ground in sufficient depth for serious students of biomechanics, evolutionary biology, and skeletal development and growth. As a functional morphologist, human anatomist, evolutionist, and vertebrate paleontologist, I found many answers to important questions that I have not seen addressed elsewhere, particularly discussed in a comparative, functional, and evolutionary context in a single location. I recommend the book as an excellent reference and an enjoyable read!" *Journal of Mammalogy*