

1. Record Nr.	UNINA9910453598403321
Autore	Currey John D
Titolo	Bones : structure and mechanics // John D. Currey
Pubbl/distr/stampa	Princeton, New Jersey ; ; Oxfordshire, England : , : Princeton University Press, , 2002 ©2002
ISBN	0-691-09096-3 1-4008-4950-0
Edizione	[Course Book]
Descrizione fisica	1 online resource (453 p.)
Classificazione	WW 5540
Disciplina	573.7/6
Soggetti	Bones Biomechanics Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Frontmatter -- CONTENTS -- PREFACE TO THE SECOND EDITION -- PREFACE TO THE FIRST EDITION -- INTRODUCTION -- Chapter One. The Structure of Bone Tissue -- Chapter Two. The Mechanical Properties of Materials -- Chapter Three. The Mechanical Properties of Bone -- Chapter Four. The Adaptation of Mechanical Properties to Different Functions -- Chapter Five. Cancellous Bone -- Chapter Six. The Properties of Allied Tissues -- Chapter Seven. The Shapes of Bones -- Chapter Eight. Articulations -- Chapter Nine. Bones, Tendons, and Muscles -- Chapter Ten. Safety Factors and Scaling Effects in Bones -- Chapter Eleven. Modeling and Reconstruction -- Chapter Twelve. Summing up -- REFERENCES -- INDEX
Sommario/riassunto	This is a comprehensive and accessible overview of what is known about the structure and mechanics of bone, bones, and teeth. In it, John Currey incorporates critical new concepts and findings from the two decades of research since the publication of his highly regarded The Mechanical Adaptations of Bones. Crucially, Currey shows how bone structure and bone's mechanical properties are intimately bound up with each other and how the mechanical properties of the material interact with the structure of whole bones to produce an adapted

structure. For bone tissue, the book discusses stiffness, strength, viscoelasticity, fatigue, and fracture mechanics properties. For whole bones, subjects dealt with include buckling, the optimum hollowness of long bones, impact fracture, and properties of cancellous bone. The effects of mineralization on stiffness and toughness and the role of microcracking in the fracture process receive particular attention. As a zoologist, Currey views bone and bones as solutions to the design problems that vertebrates have faced during their evolution and throughout the book considers what bones have been adapted to do. He covers the full range of bones and bony tissues, as well as dentin and enamel, and uses both human and non-human examples. Copiously illustrated, engagingly written, and assuming little in the way of prior knowledge or mathematical background, *Bones* is both an ideal introduction to the field and also a reference sure to be frequently consulted by practicing researchers.

---