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Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Machine generated contents note: Section 1 The foundation Chapter 1 Orientation Chapter 2 Measurements and models Chapter 3 Evolutionary theory of aging Section 2 Basic components Chapter 4 Aging of macromolecules Chapter 5 Aging of cells Section 3 Organ-systems: outer covering & Movement Chapter 6 Aging of the skin Chapter 7 Aging of the skeletal muscle system Chapter 8 Aging of the skeletal system Section 4 Internal organ-systems: cardiovascular, pulmonary, gastrointestinal & Urinary Chapter 9 Aging of the cardiovascular system Chapter 10 Aging of the pulmonary system Chapter 11 Aging of the gastrointestinal and urinary systems Section 5 Regulatory organ-systems: central nervous system, sensory, endocrine & immune systems Chapter 12 Aging of the central nervous system Chapter 13 Aging in the sensory system Chapter 14 Aging of the endocrine system Chapter 15 Aging of the immune system.
Sommario/riassunto	"Human Biological Aging will introduce the student to human aging from the level of macromolecules to organ systems. Age changes in proteins, DNA, polysaccharides and lipids are discussed relative to known age-related alterations in structure and function produced by free radicals and oxidants. At the cellular level, age-dependent mechanisms that diminish organelle function are described. Cellular

phenomena of replicative senescence apoptosis, autophagy and neuroplasticity are detailed as to their contribution to compromised cellular functions. The unique age changes of each organ-system are presented. Some important changes include photo-aging in the integument, increased airway resistance, decreased thoracic chest compliance and reduction of active lung tissue in the pulmonary system, endothelial dysfunction in the cardiovascular system, cognitive changes influenced by negative and positive neuroplasticity in the central nervous system, the impact of presbyopia, presbycusis and sensory fiber loss on sensory perception, sarcopenia and dynapenia in the skeletal muscle system, the effects of menopause, altered stress response and loss of growth hormone in the hypothalamic pituitary system, age changes in bone remodeling and modeling in the skeletal system and prostatic hypertrophy and urinary incontinence in the excretory system. The selection of book material is based on Dr. Bilder's lectures developed over the years as the teacher for a Biology of Aging course at Gwynedd Mercy University. Her lectures covered biological aging from the bottom up - macromolecules to organ-systems. Additionally the student is introduced to methods and measurements in aging and the tools to critique future findings, the effects of classic caloric restriction studies and newer gene manipulations and the evolutionary theory of aging that accepted biological aging as truly biological. Major age-related diseases are absent from this textbook as biogerontologists consider disease distinct from aging. Instead this textbook includes many age changes that highlight how aging is a risk factor for disease. To fully understand biological aging, it is necessary to include primary biological content and then to develop aging insights. For example, to understand the role of aging in the development of sarcopenia and dynapenia, an appreciation of skeletal muscle structure and function is important, after which age changes of sarcopenia and dynapenia and the influence of exercise and protein consumption becomes meaningful. Similarly comprehension of the theories of aging require rudimentary knowledge of oxidation/reduction reactions, protein function, cell organelles, mitosis, acquired immunity, and evolution, to name a few basic biological concepts. Without some biological fundamentals, the student of biological aging struggles to learn the essentials of biological aging and to appreciate the research advances on aging. With regards to format, basic knowledge is given first. Biological terms are defined; key questions to aid with study are given with each chapter. Specifically the reader will learn the current theories of aging, their origins and their value in the scientific literature. The reader will learn why aging is not a disease but a risk for disease. The reader will understand how age changes are measured and appreciate the difficulties of obtaining accurate observations on aging. Thus, in forthcoming findings, the student will be equipped to discriminate between hype and worthwhile advances. This textbook will provide the reader with an overview of the major animal models of aging so that the relevance of this data on conserved mechanisms is evident. Finally, this textbook will give to the reader a framework to incorporate new information. The reader will realize the significance of the health span and gain competency to select lifestyle choices that prolong it. "--
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