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Book Review

Aging Bones: A Short History of Osteoporosis. Gerald N. Grob. Baltimore, MD: Johns Hopkins University Press. 2014. ISBN 978-1-4214-1318-1, 284 pp. $24.95 (Paperback)

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In referring to pre-WWII approaches to the study of aging and gerontology, Gerald Grob refers to the prevailing paradigm of, "Old age itself was generally offered as the cause of death" (pg. 3). This idea permeated clinical and anthropological studies until recently, and is at the foundation of Grob's Aging Bones: A Short History of Osteoporosis. This book, part of John Hopkins' series 'Biographies of Disease', traces the origins, attitudes, diagnosis, and treatments of osteoporosis from clinical and cultural viewpoints. The book begins with the changing views towards aging in the 18th and 19th centuries, tracing the rise of a pejorative attitude towards "old age" from one of reverence to that of a diminished and devalued population at the fringes of medical research. During this time, clinicians saw age itself as a disease, and 'senescence' synonymous with 'decline'. The opening of this work provides an account of the increase in childhood survival rates, concomitant with the decrease of infectious diseases during the late 19th century, as the primary factor behind the rise in the number of "old" and "very old" in changing national demography. These changes led to an increase in deaths from chronic diseases such as heart disease and neoplasms, with osteoporosis remaining an amorphous, fringe malady of the elderly. Coupled with the rise of endocrinology and a better of understanding of bone physiology, nutrition, and bone fracture mechanics throughout the early-20th century, Grob weaves medical and social history together in Chapters 2 and 3 to paint a picture of the evolving views of osteoporosis and bone biology. Central to the discussion are the roles of age and sex in disease and the notions that the likelihood of contracting many diseases increases with age (e.g., heart disease, cancer). Therefore was the rise in osteoporotic patients simply a product of an aging population, or was it fundamentally linked to metabolic dysfunction? Simply put, at what point does a seemingly normal aging process become a disease (pg. 42)?

From a biological standpoint, the author recounts the often-pessimistic approach of past researchers debating whether osteoporosis arose from too little bone matrix formation, poor calcification of that matrix, or too much bone reabsorption. As such, a strict definition of osteoporosis required more elaborate and precise diagnostic criteria before a consensus on the disease process could be reached. Confounding this entire process, however, were attitudes towards femininity and menopause, and the prevailing view that menopause was a medical condition to be treated rather than a natural process of life. It was not until the 1980s, when the estrogen-replacement therapies for menopausal women were becoming common medical practice, that osteoporosis gained national attention. Beginning with the 1985 Senate Subcommittee on Aging's public hearing regarding osteoporosis, Grob moves on to issues of etiology and diagnostic criteria in Chapter 4. Integral to this section are reviews of risk factors,

screening methods, and therapy; a three-pronged approach was strewn with political, financial, and practical quagmires. Without a consensus on which individuals were at risk for osteoporosis, or how to consistently diagnose the disease, estrogen treatments continued to be the therapy of choice. Coupled with their advertised benefit of "preserving youth and vitality", the popularity of estrogen treatments was largely driven by their pharmaceutical manufacturers. Many other therapies (e.g., bisphosphonates, calcium, calcitonin) faded in and out of popularity as the drive to raise public awareness of osteoporosis finally came to the forefront; this led to an international effort to combat the disease. Chapter 5 deals not only with the expansion of research and global organizations during the 1990's, but also the ever-increasing influence of pharmaceutical companies and their multifaceted interests in health. The international interest finally formed a definition of osteoporosis (2.5 standard deviations below mean BMD) and explications of existing prevention and treatment possibilities. Clinicians used the same "scale" approach to diagnosing other common diseases such as hypertension, so an "aura of certainty" in diagnosis was finally achieved, as osteoporosis became a progressive, systemic disease rather than inevitable (pg. 135). The international effort also brought about epidemiological studies to evaluate the dissimilar rates of osteoporosis across individuals of varying age, sex, geographic, family history, behavioral, and genetic backgrounds.

The final two chapters of the book seamlessly tie the multiple threads together to present an exhaustive and cohesive account of how the myriad of approaches to osteoporosis research attained their current position. With the semblance of a consensus regarding a working definition, along with a better (though certainly not exhaustive) understanding of many of the contributing factors, researchers could finally build a therapeutic arsenal to combat osteoporosis. National and international studies led to a reevaluation of hormone treatments, namely estrogen, though the air of contradictory reports that had haunted past osteoporosis studies still found its way into therapeutic research. Grob does an eloquent job in presenting the various contemporary viewpoints regarding hormone therapy, bisphosphonates, and screening techniques to provide the reader with a balanced perspective of the nuanced phase at which osteoporosis studies stand today. Hormone replacement therapy now holds less status in the pantheon of therapeutic treatments, partly due to continued studies concerning its efficacy for osteoporosis, and partly due to the refreshing perspective that menopause is a natural biological processes in desperate need of demedicalization. The current, pyramidal approach to treatment, with pharmaceutical intervention being a last resort built only upon effective diagnostic techniques and lifestyle practices, provides a fitting end to an elaborate and well-researched history of a complex disease. Grob's concluding sections provide an articulate outline of current standards for screening, risk factors, and treatments of osteoporosis that proves invaluable for anthropologists, medical researchers, clinicians, and the public interested in aging.