The Biostatistics of Aging. From Gompertzian Mortality to an Index of Aging-Relatedness

Description: A practical and clarifying approach to aging and aging-related diseases

Providing a thorough and extensive theoretical framework, The Biostatistics of Aging: From Gompertzian Mortality to an Index of Aging-Relatedness addresses the surprisingly subtle notion with consequential biomedical and public health relevance of what it means for a condition to be related to aging. In this pursuit, the book presents a new quantitative method to examine the relative contributions of genetic and environmental factors to mortality and disease incidence in a population.

With input from evolutionary biology, population genetics, demography, and epidemiology, this medically motivated book describes an index of aging-relatedness and also features:

- Original results on the asymptotic behavior of the minimum of time-to-event random variables, which extends those of the classical statistical theory of extreme values
- A comprehensive and satisfactory explanation based on biological principles of the Gompertz pattern of mortality in human populations
- The development of an evolution-based model of causation relevant to mortality and aging-related diseases of complex etiology
- An explanation of how and why the description of human mortality by the Gompertz distribution can be improved upon from first principles
- The amply illustrated analysis of real-world data, including a program for conducting the analysis written in the freely available R statistical software
- Technical appendices including mathematical material as well as an extensive and multidisciplinary bibliography on aging and aging-related diseases

The Biostatistics of Aging: From Gompertzian Mortality to an Index of Aging-Relatedness is an excellent resource for practitioners and researchers with an interest in aging and aging-related diseases from the fields of medicine, biology, gerontology, biostatistics, epidemiology, demography, and public health.

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