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Aging and Health – A Systems Biology Perspective
Anatoliy I. Yashin
S. Michal Jazwinski

Aging is a major risk factor for chronic diseases, which in turn can provide information about the aging of a biological system. This publication serves as an introduction to systems biology and its application to biological aging. Key pathways and processes that impinge on aging are reviewed, and how they contribute to health and disease during aging is discussed. The evolution of this situation is analyzed, and the consequences for the study of genetic effects on aging are presented. Epigenetic programming of aging, as a continuation of development, creates an interface between the genome and the environment. New research into the gut microbiome describes how this interface may operate in practice with marked consequences for a variety of disorders. This analysis is bolstered by a view of the aging organism as a whole, with conclusions about the mechanisms underlying resilience of the organism to change, and is expanded with a discussion of circadian rhythms in aging. Finally, the book presents an outlook for the development of interventions to delay or to reverse the features of aging. The publication is recommended to students, researchers as well as professionals dealing with public health and public policy related to an aging society.

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• Conservative Growth Hormone/IGF-1 and mTOR Signaling Pathways as a Target for Aging and Cancer Prevention: Do We Really Have an Antiaging Drug? Anisimov, V.N.
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The emerging field of nutrigenetics and nutrigenomics is rapidly gaining importance, and this new international journal has been established to meet the needs of the investigators for a high-quality platform for their research. Endorsed by the recently founded ‘International Society of Nutrigenetics/Nutrigenomics’ (ISNN), the Journal of Nutrigenetics and Nutrigenomics welcomes contributions not only investigating the role of genetic variation in response to diet and that of nutrients in the regulation of gene expression, but is also open for articles covering all aspects of gene-environment interactions in the determination of health and disease. Original papers and reviews cover the genetic basis for the variable responses to diet and lifestyle factors in chronic conditions (e.g. cardiovascular disease, obesity, diabetes, cancer), methods to assess gene-environment interactions and other related relevant topics, with research drawing from both human and animal studies.

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