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Nota di contenuto	Introduction -- Section-1 BIOMARKERS OF AGING AND HEALTH -- Practical Detection of Biological Age: Why it is not a trivial task -- Biological age is a universal marker of aging, stress, and frailty -- Biomarkers of health and healthy ageing from the outside-in -- Biomarkers of aging -- Review of molecular and cellular biomarkers of aging -- Section-2 PROTEOMICS AND GLYCOMICS BIOMARKERS OF AGING -- IgG glycans as a biomarker of biological age -- Oxidatively modified proteins and maintenance systems as biomarkers of aging -- Is impaired proteodynamics a key to understand the biomarkers of cellular aging -- Section-3 GENETICS AND EPIGENETICS AGING MARKERS -- Genetic markers of extreme human longevity -- Epigenetic biomarkers of aging -- DNA methylation biomarkers to assess biological age -- Epigenetics of brain aging: lessons from chemo brain and tumor brain -- Approaches and methods for variant analysis in a cell -- Section 4 IMMUNOSENESCENCE AND

INFLAMMAGING MARKERS -- Is there any reliable biomarker for immunosenescence and inflammaging? -- Immune parameters associated with mortality in longitudinal studies of very old people can be markedly dissimilar even in apparently similar populations -- Gut microbiota and aging -- Section-5 SYSTEMS BIOLOGY OF AGING, BIOLOGICAL AGE AND MORTALITY MARKERS -- Deep integrated biomarkers of aging -- Quantification of the biological age of the brain using -- Arterial aging: the role of hormonal and metabolic status and telomere biology -- Circulating Biomarkers of Aging -- Molecular signature of aging driven by Wnt signaling pathway: Lessons from nematodes -- The problem of integrating of biological and clinical markers of aging -- Index.

| Sommario/riassunto | This book collects and reviews, for the first time, a wide range of advances in the area of human aging biomarkers. This accumulated data allows researchers to assess the rate of aging processes in various organs and systems, and to individually monitor the effectiveness of therapies intended to slow aging. In an introductory chapter, the editor defines biomarkers of aging as molecular, cellular and physiological parameters that demonstrate reproducible changes - quantitative or qualitative - with age. The introduction recounts a study which aimed to create a universal model of biological age, whose most predictive parameters were albumin and alkaline phosphatase (indication liver function), glucose (metabolic syndrome), erythrocytes (respiratory function) and urea (renal function). The book goes on to describe DNA methylation, known as the "epigenetic clock," as currently the most comprehensive predictor of total mortality. It is also useful for predicting mortality from cancer and cardiovascular diseases, and for analyzing the effects of lifestyle factors including diet, exercise, and education. Individual contributions draw additional insight from research on genetics and epigenetic aging markers, and immunosenescence and inflammaging markers. A concluding chapter outlines the challenge of integrating of biological and clinical markers of aging. Biomarkers of Human Aging is written for professionals and practitioners engaged in the study of aging, and will be useful to both advanced students and researchers. . |