1. Record Nr. UNINA9910792273803321 Autore Vijg Jan Titolo Aging of the genome [[electronic resource]]: the dual role of DNA in life and death / / Jan Vijg Oxford,: Oxford University Press, 2007 Pubbl/distr/stampa **ISBN** 9786611145255 1-281-14525-4 0-19-856922-X 0-19-152458-1 1-4294-6993-5 Descrizione fisica 1 online resource (385 p.) Disciplina 571.878 Aging - Genetic aspects Soggetti Genomes Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Includes bibliographical references. Nota di bibliografia Nota di contenuto Contents; Preface; 1 Introduction: the coming of age of the genome; 1.1 The age of biology; 1.2 From genetics to genomics; 1.3 A return to function; 1.4 The causes of aging: a random affair; 2 The logic of aging; 2.1 Aging genes; 2.2 Pleiotropy in aging; 2.3 Interrupting the pathways of aging; 2.4 Longevity-assurance genes; 2.5 Somatic damage and the aging genome; 3 Genome structure and function; 3.1 DNA primary structure; 3.2 Higher-order DNA structure; 3.3 Nuclear architecture; 3.4 Transcription regulation; 3.5 Conclusions; 4 Genome maintenance; 4.1 Why genome maintenance? 4.2 DNA-damage signaling and cellular responses 4.3 DNA-repair mechanisms; 4.4 Genome maintenance and aging; 5 Genome instability and accerated aging; 5.1 Premature aging; 5.2 Validity of acceleratedaging phenotypes; 5.3 Genome maintenance and accelerated aging in

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Sommario/riassunto

Aging has long been ascribed to the gradual accumulation of mutations in the genome. However, it is only recently that the necessary sophisticated technology has been developed to begin testing this theory and its consequences. This book reviews the concept of genomic instability as a possible universal cause of aging in complex organisms resulting from recent advances in functional genomics and systems biology. -; Aging has long since been ascribed to the gradual accumulation of DNA mutations in the genome of somatic cells. However, it is only recently that the necessary sophisticated technol