

## Preface

---

This volume includes 11 contributions from an international panel of experts which cover from basic science to clinical relevant work concerning Human Telomere Homeostasis.

The major aim of the present book is to provide an in depth review of our current knowledge on human telomere integrity in regard to the risk of major diseases and also examine the influence of lifestyle choices. It also illustrates future directions in research on ageing, nutrition, telomeres, and relevant diseases such as cancer, and cardiovascular diseases.

The first part of the volume focuses on general aspects of telomere biology, mainly the molecular mechanisms underlying the telomere machinery, the role of telomerase activity and the current methods to measure telomere length.

A review of the evidence on Telomere length, aging and disease risk is reported in the second part. Since telomere length is considered as a marker of cellular and biological aging, several epidemiological studies have investigated the association between telomere length and aging-related diseases.

The third part is devoted to the influence of lifestyle choice on telomere integrity. It is well known that, environmental factors can modify telomere length and this area is receiving major attention in disease prevention and treatment. Successful lifestyle interventions could lessen telomere attrition, like those based on Mediterranean diet.

The fourth part deals with clinical aspect relevant to telomere maintenance and therapeutic opportunities. Chronic oxidative stress, together with a reduction in anti-ageing molecules (sirtuins), accelerates the ageing process and is involved in the pathophysiology of chronic diseases. Understanding these molecular mechanisms has provided evidence for novel therapeutic targets that may slow the ageing process. Dysfunction in telomere maintenance pathways plays a role in aging, cancer, atherosclerosis and other diseases. This has led to telomere maintenance as a prime target for patient therapies.

As demonstrated in this volume, the inter-disciplinary approach has yielded a rich harvest of basic knowledge concerning telomere integrity and will provide the seeds for future breakthroughs in clinical progress. The text is intended to furnish the reader with a general view of the state of the art in this novel area of research. We will be satisfied if the multidisciplinary nature of these proceedings informs and stimulates the readers. It is our hope that the volume will encourage further research and understanding of all aspects of this intriguing and complex telomere field.

The editors express their gratitude to the authors of the articles and to CRC Press for having made possible the publication of this volume.

**Amelia Marti del Moral**  
**Guillermo Zalba Goñi**