

Welcome to Healthy Aging Research

Sophie Domingues-Montanari ^{1*}

¹ Neurovascular Research Laboratory and Neurovascular Unit, Neurology and Medicine Departments, Universitat Autònoma de Barcelona, Vall d’Hebron Hospital Research Institute, Spain

Abstract

There has been a complete change in the diseases that impact our lives in the last century, with a shift away from infectious diseases to age-related disorders, such as of cancer, cardiovascular, and neurological diseases. Telomere shortening, mitochondrial changes, immune system regulation, cell senescence, and stem cells are routinely cited as major contributors to the extraordinary process of aging. In vitro and in vivo models have been invaluable, leading to new therapies and technologies. Transversal and longitudinal observational studies are now needed to establish the biochemical, genetic, and lifestyle factors that discriminate healthy from unhealthy aging.

Citation: Domingues-Montanari S (2012) Welcome to Healthy Aging Research. *Healthy Aging Research* 1:1. doi:10.12715/har.2012.1.1

Received: August 28, 2012; **Accepted:** September 30, 2012; **Published:** December 31, 2012

Copyright: © 2012 Domingues-Montanari. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

* Email: sdomingues@har-journal.com

Editorial

Life expectancy for human beings is rapidly increasing. Thus, the world’s demographic pyramid has radically transformed in the last 50 years, and will continue doing so [1, 2]. There has also been a complete change in the diseases that impact our lives in the last century, with a shift away from infectious diseases to a predominance of cancer, cardiovascular, and neurological diseases [3].

The population is aging, not only in developed countries, but also in those with fewer socioeconomic resources. Globally, humans have continued to progress, prosper, and overcome disease. While these changes represent a triumph, emphasizing the evolution and resilience of humanity, they also create new challenges due to the emerging needs of an aged society. Indeed, the social, economic, and healthcare infrastructures must be poised to provide resources for a growing elderly population.

Governmental agencies and the medical community have begun to focus their attention on healthy aging. It has become evident that effective strategies for actively combatting age-related functional decline are fundamentally essential and will have a tremendous impact on society as a whole. Therefore, from scientific and social stand points, there has been a gradual paradigm shift; although the notion of life span has been an invaluable tool for understanding aging, this idea has steadily moved towards a more modern concept of health span, referring to the functional healthy years free from disabling diseases [2].

Our current knowledge suggests that aging is multifactorial [4]. Many studies and theories have attempted to explain the molecular basis of aging. Telomere shortening, mitochondrial changes, immune system regulation, cell senescence, and stem cells are routinely cited as major contributors to this extraordinary process. Adding to the complexity of aging, recent reports have indicated that these pathways should not be viewed as mutually exclusive

because they have the potential to interact in an “Axis of Aging” [5]. There is also progress in the research of cognitive decline; however, this remains one of the most challenging areas, which will require a more in depth understanding of the healthy and diseased brain [6]. Also, continued study of social, psychological, and emotional factors will be essential for promoting successful aging [7].

In addition, *in vitro* and *in vivo* models of aging have been invaluable, leading to new therapies and technologies, which should one day allow us to maintain our full functional capacity. Moreover, transversal and longitudinal observational studies are needed to establish the biochemical, genetic, and lifestyle factors that discriminate healthy from unhealthy aging. In this regard, the study of centenarians, who tend to remain healthy for longer, could reveal characteristics that promote successful aging [8].

Aging research is more active and fruitful than ever, and the field continues to grow and attract attention from scientists, government, industry, and society. It has become clear that understanding the complex interaction between life span and biology will benefit us all, and should set the stage for a world in which healthy aging contributes to independence, autonomy, and quality of life for all elderly individuals.

This journal has been conceived as an open-access, peer-reviewed journal devoted to deepening our understanding of the mechanisms that dictate aging and longevity through multidisciplinary approaches. Topics of interest include, but are not limited to, drug development, oncology, neurology, internal medicine, age-related diseases, epidemiology, rehabilitation, critical care medicine, physiology, psychology, and ophthalmology. We look forward to receiving high quality manuscripts on this exciting multidisciplinary field, and aim to contribute to advances in the quest for living longer and living better.

References

1. Scully T. Demography: To the limit. *Nature*. 2012;492:S2-3.
2. World Health Organization. Active ageing: a policy framework. 2002, Report WHO/NMH/NPH/02.8
3. Jones DS, Podolsky SH, Greene JA. The burden of disease and the changing task of medicine. *N Engl J Med*. 2012;366:2333-8.
4. Blagosklonny MV, Campisi J, Sinclair DA, Bartke A, Blasco MA, Bonner WM, et al. Impact papers on aging in 2009. *Aging* (Albany NY). 2010;2:111-21.
5. Sahin E, DePinho RA. Axis of ageing: telomeres, p53 and mitochondria. *Nat Rev Mol Cell Biol*. 2012;13:397-404.
6. Abbott A. Cognition: The brain’s decline. *Nature*. 2012 Dec 6;492(7427):S4-5.
7. Brassens S, Gamer M, Peters J, Gluth S, Büchel C. Don’t look back in anger! Responsiveness to missed chances in successful and unsuccessful aging. *Science*. 2012;336:612-4.
8. Eisenstein M. Centenarians: Great expectations. *Nature*. 2012;492:S6-8.
9. Ducharme F, Lévesque L, Lachance L, Gangbè M, Zarit SH, Vezina J, et al. Older husbands as caregivers. Factors associated with health and the intention to end home caregiving. *Res Aging*. 2007;29:3-31.